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PUBLIC SERVICE
COMMISSION

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

THE APPLICATION OF)	
RURAL CELLULAR CORPORATION)	
d/b/a VERIZON WIRELESS)	
FOR ISSUANCE OF A CERTIFICATE OF PUBLIC)	CASE NO.: 2017-00128
CONVENIENCE AND NECESSITY TO CONSTRUCT)	
A WIRELESS COMMUNICATIONS FACILITY)	
IN THE COMMONWEALTH OF KENTUCKY)	
IN THE COUNTY OF PULASKI)	

SITE NAME: SOMERSET WT RELO

**APPLICATION FOR
CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY
FOR CONSTRUCTION OF A WIRELESS COMMUNICATIONS FACILITY**

Rural Cellular Corporation d/b/a Verizon Wireless ("Applicant"), by counsel, pursuant to (i) KRS §§ 278.020, 278.040, 278.650, 278.665, and other statutory authority, and the rules and regulations applicable thereto, and (ii) the Telecommunications Act of 1996, respectfully submit this Application requesting issuance of a Certificate of Public Convenience and Necessity ("CPCN") from the Kentucky Public Service Commission ("PSC") to construct, maintain, and operate a Wireless Communications Facility ("WCF") to serve the customers of Verizon Wireless with wireless communications services.

In support of this Application, Applicant respectfully provides and states the following information:

1. The complete names and addresses of the Applicant is Rural Cellular Corporation d/b/a Verizon Wireless, having an address of 2421 Holloway Road, Louisville,

KY 40299.

2. Applicants propose construction of an antenna tower for communications services, which is to be located in an area outside the jurisdiction of a planning commission, and Applicants submit this application to the PSC for a certificate of public convenience and necessity pursuant to KRS §§ 278.020(1), 278.040, 278.650, 278.665, and other statutory authority.

3. The Amended and Restated Articles of Incorporation filed with the Minnesota Secretary of State and the Certificate of Authority issued by the Kentucky Secretary of State for Rural Cellular Corporation are attached as part of **Exhibit A**. Applicant is in good standing in the state in which they are organized and are authorized to transact business in Kentucky.

4. Verizon Wireless operates on frequencies licensed by the Federal Communications Commission ("FCC") pursuant to applicable FCC requirements. A copy of the Verizon Wireless' FCC license to provide wireless services is attached to this Application or described as part of **Exhibit A**, and the facility will be constructed and operated in accordance with applicable FCC regulations. Verizon Wireless will build, own and manage the tower and tower compound and place its equipment building, antennas, radio electronics equipment and appurtenances.

5. The public convenience and necessity require the construction of the proposed WCF. The construction of the WCF will bring or improve Verizon Wireless' services to an area currently not served or not adequately served by the Applicant by increasing coverage or capacity and thereby enhancing the public's access to innovative

and competitive wireless communications services. The WCF will provide a necessary link in Verizon Wireless' communications network that is designed to meet the increasing demands for wireless services in Kentucky's wireless communications service area. The WCF is an integral link in the Verizon Wireless' network design that must be in place to provide adequate coverage to the service area.

6. To address the above-described service needs, Applicants propose to construct a WCF at 1170 Bourbon Road in Somerset, Kentucky (37°02'20.56" North latitude, 84°38'42.26" West longitude), on a parcel of land located entirely within the county referenced in the caption of this application. The property on which the WCF will be located is owned by S & C Land Company, LLC pursuant to a Deed recorded at Deed Book 957, Page 59 in the office of the Pulaski County Clerk. The proposed WCF will consist of a 100-foot tall tower, with an approximately 5-foot tall lightning arrestor attached at the top, for a total height of 105-feet. The WCF will also include concrete foundations and a shelter or cabinets to accommodate the placement of Verizon Wireless' radio electronics equipment and appurtenant equipment. Verizon Wireless' equipment cabinet or shelter will be approved for use in the Commonwealth of Kentucky by the relevant building inspector. The WCF compound will be fenced and all access gate(s) will be secured. A description of the manner in which the proposed WCF will be constructed is attached as **Exhibit B** and **Exhibit C**.

7. A list of utilities, corporations, or persons with whom the proposed WCF is likely to compete is attached as **Exhibit D**.

8. The site development plan and a vertical profile sketch of the WCF signed

and sealed by a professional engineer registered in Kentucky depicting the tower height, as well as a proposed configuration for the antennas has also been included as part of **Exhibit B**. As shown on this exhibit, the site has been designed to accommodate the co-location of future antennas.

9. Foundation design plans signed and sealed by a professional engineer registered in Kentucky and a description of the standards according to which the tower was designed are included as part of **Exhibit C**.

10. Applicant has considered the likely effects of the installation of the proposed WCF on nearby land uses and values and has concluded that there is no more suitable location reasonably available from which adequate services can be provided, and that there are no reasonably available opportunities to co-locate Verizon Wireless' antennas on an existing structure. When suitable towers or structures exist, Applicants attempt to co-locate on existing structures such as communications towers or other structures capable of supporting Applicants' facilities; however, no other suitable or available co-location site was found to be located in the vicinity of the site.

11. A copy of the Determination of No Hazard to Air Navigation issued by the Federal Aviation Administration ("FAA") is attached as **Exhibit E**.

12. A copy of the application for Kentucky Airport Zoning Commission ("KAZC") Approval to construct the tower is attached as **Exhibit F**.

13. A geotechnical engineering firm has performed soil boring(s) and subsequent geotechnical engineering studies at the WCF site. A copy of the geotechnical engineering report, signed and sealed by a professional engineer registered in the Commonwealth of

Kentucky, is attached as **Exhibit G**. The name and address of the geotechnical engineering firm and the professional engineer registered in the Commonwealth of Kentucky who supervised the examination of this WCF site are included as part of this exhibit.

14. Clear directions to the proposed WCF site from the County seat are attached as **Exhibit H**. The name and telephone number of the preparer of **Exhibit H** are included as part of this exhibit.

15. Applicants, pursuant to a written agreement, have acquired the right to use the WCF site and associated property rights. A copy of the agreement or an abbreviated agreement recorded with the County Clerk is attached as **Exhibit I**.

16. Personnel directly responsible for the design and construction of the proposed WCF are well qualified and experienced. The tower and foundation drawings for the proposed tower submitted as part of **Exhibit C** bear the signature and stamp of a professional engineer registered in the Commonwealth of Kentucky. All tower designs meet or exceed the minimum requirements of applicable laws and regulations.

17. The identities of each person directly responsible for design and construction of the proposed tower are included in tower and foundation design plans attached as part of **Exhibit B** and **Exhibit C**. Construction of the tower will be under the supervision of Applicants.

18. As noted on the Survey attached as part of **Exhibit B**, the surveyor has determined that the site is not within any flood hazard area.

19. **Exhibit B** includes a map drawn to an appropriate scale that shows the

location of the proposed tower and identifies every owner of real estate within 500 feet of the proposed tower (according to the records maintained by the County Property Valuation Administrator). Every structure and every easement within 500 feet of the proposed tower or within 200 feet of the access road including intersection with the public street system is illustrated in **Exhibit B**.

20. Applicants have notified every person who, according to the records of the County Property Valuation Administrator, owns property which is within 500 feet of the proposed tower or contiguous to the site property, by certified mail, return receipt requested, of the proposed construction. Each notified property owner has been provided with a map of the location of the proposed construction, the telephone number and address of the PSC, and has been informed of his or her right to request intervention. A list of the notified property owners and a copy of the form of the notice sent by certified mail to each landowner are attached as **Exhibit J** and **Exhibit K**, respectively.

21. Applicants have notified the applicable County Judge/Executive by certified mail, return receipt requested, of the proposed construction. This notice included the PSC docket number under which the application will be processed and informed the County Judge/Executive of his/her right to request intervention. A copy of this notice is attached as **Exhibit L**.

22. Notice signs meeting the requirements prescribed by 807 KAR 5:063, Section 1(2) that measure at least 2 feet in height and 4 feet in width and that contain all required language in letters of required height, have been posted, one in a visible location on the proposed site and one on the nearest public road. Such signs shall remain posted for at

least two weeks after filing of the Application, and a copy of the posted text is attached as **Exhibit M**. Notice of the location of the proposed facility has been published in a newspaper of general circulation in the county in which the WCF is proposed to be located.

23. The general area where the proposed facility is very sparsely populated with more than 700' separating the proposed tower from the nearest residence.

24. The process that was used by Verizon Wireless' radio frequency engineers in selecting the site for the proposed WCF was consistent with the general process used for selecting all other existing and proposed WCF facilities within the proposed network design area. Verizon Wireless' radio frequency engineers have conducted studies and tests in order to develop a highly efficient network that is designed to handle voice and data traffic in the service area. The engineers determined an optimum area for the placement of the proposed facility in terms of elevation and location to provide the best quality service to customers in the service area. A radio frequency design search area prepared in reference to these radio frequency studies was considered by the Applicant when searching for sites for its antennas that would provide the coverage deemed necessary by Verizon Wireless. A map of the area in which the tower is proposed to be located which is drawn to scale and clearly depicts the necessary search area within which the site should be located pursuant to radio frequency requirements is attached as **Exhibit N**.

25. The tower must be located at the proposed location and proposed height to provide necessary service to wireless communications users in the subject area. A report prepared by a radio frequency engineer that describes the need for the proposed facility is attached as **Exhibit O**.

26. All Exhibits to this Application are hereby incorporated by reference as if fully set out as part of the Application.

27. All responses and requests associated with this Application may be directed to:

David A. Pike
Pike Legal Group, PLLC
1578 Highway 44 East, Suite 6
P. O. Box 369
Shepherdsville, KY 40165-0369
Telephone: (502) 955-4400
Telefax: (502) 543-4410
Email: dpike@pikelegal.com

WHEREFORE, Applicants respectfully request that the PSC accept the foregoing Application for filing, and having met the requirements of KRS §§ 278.020(1), 278.650, and 278.665 and all applicable rules and regulations of the PSC, grant a Certificate of Public Convenience and Necessity to construct and operate the WCF at the location set forth herein.

Respectfully submitted,



David A. Pike
Pike Legal Group, PLLC
1578 Highway 44 East, Suite 6
P. O. Box 369
Shepherdsville, KY 40165-0369
Telephone: (502) 955-4400
Telefax: (502) 543-4410
Email: dpike@pikelegal.com
Attorney for Applicants

LIST OF EXHIBITS

- A - FCC License Documentation and Corporate Documents
- B - Site Development Plan:
 - 500' Vicinity Map
 - Legal Descriptions
 - Flood Plain Certification
 - Site Plan
 - Vertical Tower Profile
- C - Tower and Foundation Design
- D - Competing Utilities, Corporations, or Persons List
- E - FAA
- F - Kentucky Airport Zoning Commission
- G - Geotechnical Report
- H - Directions to WCF Site
- I - Copy of Real Estate Agreement
- J - Notification Listing
- K - Copy of Property Owner Notification
- L - Copy of County Judge/Executive Notice
- M - Copy of Posted Notices
- N - Copy of Radio Frequency Design Search Area
- O - Radio Frequency Report

**EXHIBIT A
FCC LICENSE DOCUMENTATION
AND CORPORATE DOCUMENTS**

601-804

DC PA CS



4305032002

ARTICLES OF AMENDMENT
OF
RURAL CELLULAR CORPORATION

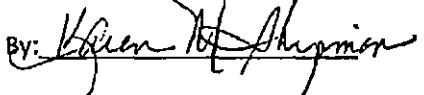
May 13, 2011

Pursuant to Section 302A.139 of the Minnesota Business Corporation Act, the undersigned domestic corporation (the "Corporation") hereby certifies as follows:

1. The name of the Corporation is Rural Cellular Corporation.
2. By virtue of the filing of the Articles of Merger filed with the Department of State on August 6, 2008 and the approval of the Plan of Merger set forth as Exhibit A thereto, the Corporation has adopted an amendment to its Articles of Incorporation (the "Articles") providing that the Articles are amended and restated so as to read in their entirety as set forth in Exhibit A hereto.
3. This amendment restating the Articles correctly sets forth without change the corresponding provisions of the Articles as previously amended.
4. This amendment has been adopted pursuant to chapter 302A of the Minnesota Business Corporation Act.

IN WITNESS WHEREOF, the Corporation has duly executed these Articles of Amendment as of the date first set forth above.

RURAL CELLULAR CORPORATION

By: 

Name: Karen M. Shipman

Title: Assistant Secretary

**AMENDED AND RESTATED ARTICLES OF INCORPORATION
OF
RURAL CELLULAR CORPORATION**

The following amended and restated articles have been duly adopted by Rural Cellular Corporation, a Profit Business Corporation organized and existing under Chapter 302A of the laws of the State of Minnesota:

ARTICLE I – BUSINESS NAME

Name of Corporation is: Rural Cellular Corporation

ARTICLE II – REGISTERED OFFICE AND AGENT

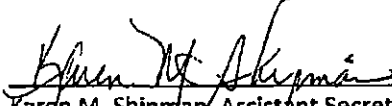
The Registered Office Address of the Corporation is: 100 South Fifth Street, Suite 1075, Minneapolis, MN 55402

The Registered Agent at the above address is: C T Corporation System Inc.

ARTICLE III – SHARES

The Corporation is authorized to issues a total of 1,000 shares at \$0.01 par value per share. ✓

I, the undersigned Assistant Secretary of the Corporation, certify as of this 13 day of May, 2011, that I am authorized to sign these articles and that the information in these articles is true and correct. I also understand that if any of this information is intentionally or knowingly misstated that criminal penalties will apply as if I had signed these Articles under oath.



Karen M. Shipman, Assistant Secretary

STATE OF MINNESOTA
DEPARTMENT OF STATE
FILED

MAY 16 2011


Mark Ritchie
Secretary of State

m



COMMONWEALTH OF KENTUCKY
TREY GRAYSON, SECRETARY OF STATE

0783682.09 amcra
ADD
Elaine N. Walker, Secretary of State
Received and Filed:
2/3/2011 12:15 PM
Fee Receipt: \$90.00

Division of Corporations
Business Filings
PO Box 718
Frankfort, KY 40602
(502) 564-3490
www.sos.ky.gov

Certificate of Authority
(Foreign Business Entity)

FBE

Pursuant to the provisions of KRS 14A and KRS 271B, 273, 274, 275, 362 and 386 the undersigned hereby applies for authority to transact business in Kentucky on behalf of the entity named below and, for that purpose, submits the following statements:

1. The entity is a : profit corporation (KRS 271B). nonprofit corporation (KRS 273). professional service corporation (KRS 274).
 business trust (KRS 386). limited liability company (KRS 275). professional limited liability company (KRS 275).
 limited partnership (KRS 382).

2. The name of the entity is Rural Cellular Corporation
(The name must be identical to the name on record with the Secretary of State.)

3. The name of the entity to be used in Kentucky is (if applicable): _____
(Only provide if "real name" is unavailable for use; otherwise, leave blank.)

4. The state or country under whose law the entity is organized is Minnesota

5. The date of organization is 10/01/1990 and the period of duration is perpetual
(If left blank, the period of duration is considered perpetual.)

6. The mailing address of the entity's principal office is
One Verizon Way Basking Ridge NJ 07920
Street Address City State Zip Code

7. The street address of the entity's registered office in Kentucky is
306 W. Main Street, Suite 512, Frankfort KY 40601
Street Address (No P.O. Box Numbers) City State Zip Code

and the name of the registered agent at that office is C T Corporation System

8. The names and business addresses of the entity's representatives (secretary, officers and directors, managers, trustees or general partners):

See Addendum

Name	Street or P.O. Box	City	State	Zip Code

9. If a professional service corporation, all the individual shareholders, not less than one half (1/2) of the directors, and all of the officers other than the secretary and treasurer are licensed in one or more states or territories of the United States or District of Columbia to render a professional service described in the statement of purposes of the corporation.

10. I certify that, as of the date of filing this application, the above-named entity validly exists under the laws of the jurisdiction of its formation.

11. If a limited partnership, it elects to be a limited liability limited partnership. Check the box if applicable:

12. This application will be effective upon filing, unless a delayed effective date and/or time is provided.
The effective date or the delayed effective date cannot be prior to the date the application is filed. The date and/or time is _____
(Delayed effective date and/or time)

Karen M. Shipman Karen M. Shipman, Assistant Secretary 1/26/2011
Signature of Authorized Agent Printed Name & Title Date

I, C T Corporation System, consent to serve as the registered agent on behalf of the corporation.

By: Maria T. Chambers Maria T. Chambers Special Assistant Secretary
Signature of Registered Agent Printed Name Title Date

(01/11)

Addendum

Rural Cellular Corporation

Officers and Directors

NAME	TITLE	BUSINESS ADDRESS
John G. Stratton	Director President/ Chief Executive Officer	One Verizon Way Basking Ridge, NJ 07920
Andrew Davies	Director Vice President/ Chief Financial Officer	One Verizon Way Basking Ridge, NJ 07920
Steven E. Zipperstein	Director	One Verizon Way Basking Ridge, NJ 07920
Thomas Mahr	Secretary	15505 Sand Canyon Ave Bldg E Irvine, CA 92618
Karen M. Shipman	Assistant Secretary	One Verizon Way Basking Ridge, NJ 07920

State of Minnesota

SECRETARY OF STATE

Certificate of Good Standing

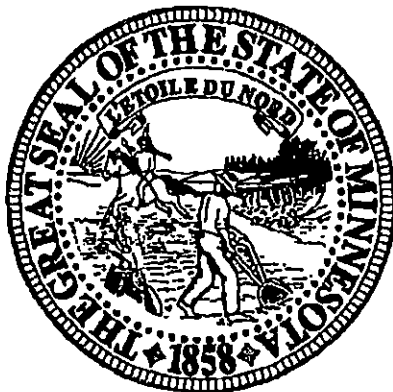
I, Mark Ritchie, Secretary of State of Minnesota, do certify that: The corporation listed below is a corporation formed under the laws of Minnesota; that the corporation was formed by the filing of Articles of Incorporation with the Office of the Secretary of State on the date listed below; that the corporation is governed by the chapter of Minnesota Statutes listed below; and that this corporation is authorized to do business as a corporation at the time this certificate is issued.

Name: Rural Cellular Corporation

Date Formed: 10/01/1990

Chapter Governed By: 302A

This certificate has been issued on 01/24/11.



Mark Ritchie
Secretary of State.

ULS License

Cellular License - KNKN940 - Rural Cellular Corporation

Call Sign	KNKN940	Radio Service	CL - Cellular
Status	Active	Auth Type	Regular

Market

Market	CMA448 - Kentucky 6 - Madison	Channel Block	A
Submarket	0	Phase	2

Dates

Grant	08/31/2010	Expiration	10/01/2020
Effective	11/02/2016	Cancellation	

Five Year Buildout Date

03/11/1996

Control Points

2 500 W Dove Rd, TARRANT, Southlake, TX
P: (800)264-6620

Licensee

FRN	0003715919	Type	Corporation
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Licensee

Rural Cellular Corporation	P:(770)797-1070
5055 North Point Pkwy, NP2NE Network Engineering	F:(770)797-1036
Alpharetta, GA 30022	E:LicensingCompliance@VerizonWireless.com
ATTN Regulatory	

Contact

Verizon Wireless	P:(770)797-1070
Licensing Manager	F:(770)797-1036
5055 North Point Pkwy, NP2NE Network Engineering	E:LicensingCompliance@VerizonWireless.com
Alpharetta, GA 30022	
ATTN Regulatory	

Ownership and Qualifications

Radio Service Type	Mobile
Regulatory Status	Common Carrier Interconnected Yes

Alien Ownership

Is the applicant a foreign government or the representative of any foreign government?	No
--	----

Is the applicant an alien or the representative of an alien?	No
--	----

Is the applicant a corporation organized under the laws of any foreign government?	No
--	----

Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	No
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Is the applicant directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a	Yes
--	------------

foreign government or representative thereof, or by any corporation organized under the laws of a foreign country?

If the answer to the above question is 'Yes', has the applicant received a ruling(s) under Section 310(b)(4) of the Communications Act with respect to the same radio service involved in this application? **Yes**

Basic Qualifications

The Applicant answered "No" to each of the Basic Qualification questions.

Demographics

Race

Ethnicity

Gender

ULS Lease

WQJQ692 - L000008937 - Rural Cellular CorporationLicense Details : Leases : **Lease Details**

Lease ID	L000008937	Radio Service	WU - 700 MHz Upper Band (Block C)
Status	Active	Classification of Lease	Spectrum Manager Lease
		Term of Lease	Long

Dates

Grant/Accepted	11/04/2011	Expiration	06/13/2019
Commencement	10/06/2011	Cancellation	

Lessee

FRN	0003715919	Type	Corporation
-----	------------	------	-------------

Lessee

Rural Cellular Corporation 1120 Sanctuary Pkwy #150 - GASA5REG Alpharetta, GA 30009 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:licensingcompliance@verizonwireless.com
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Real Party in Interest	Cellco Partnership	FRN of Real Party in Interest	0003290673
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Contact

Verizon Sarah Trosch 1300 I Street, NW - Suite 400 West Washington, DC 20005	P:(202)589-3764 F:(202)589-3750 E:sarah.trosch@verizonwireless.com
---	--

Lessee Qualifications and Ownership Information

Radio Service Type	Mobile		
Regulatory Status	Common Carrier	Interconnected	Yes

Alien Ownership

Is the applicant a foreign government or the representative of any foreign government?	No
--	----

Is the applicant an alien or the representative of an alien?	No
--	----

Is the applicant a corporation organized under the laws of any foreign government?	No
--	----

Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	No
---	----

Is the applicant directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof, or by any corporation organized under the laws of a foreign country?	Yes
---	------------

If the answer to the above question is 'Yes', has the applicant received a ruling(s) under Section 310(b)(4) of the Communications Act with respect to the same radio service involved in this application? **Yes**

Basic Qualifications

The Applicant answered "No" to each of the Basic Qualification questions.

Demographics

Race

Ethnicity

Gender

ULS License

AWS (1710-1755 MHz and 2110-2155 MHz) License - WQGA819 - Rural Cellular Corporation

Call Sign	WQGA819	Radio Service	AW - AWS (1710-1755 MHz and 2110-2155 MHz)
Status	Active	Auth Type	Regular
Market			
Market	CMA448 - Kentucky 6 - Madison	Channel Block	A
Submarket	0	Associated Frequencies (MHz)	001710.00000000- 001720.00000000 002110.00000000- 002120.00000000

Dates

Grant	11/29/2006	Expiration	11/29/2021
Effective	11/02/2016	Cancellation	

Buildout Deadlines

1st	2nd
-----	-----

Notification Dates

1st	2nd
-----	-----

Licensee

FRN	0003715919	Type	Corporation
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Licensee

Rural Cellular Corporation 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com
---	---

Contact

Verizon Wireless Licensing - Manager 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com
--	---

Ownership and Qualifications

Radio Service Type	Mobile
Regulatory Status	Common Carrier Interconnected Yes

Alien Ownership

Is the applicant a foreign government or the representative of any foreign government?	No
Is the applicant an alien or the representative of an alien?	No
Is the applicant a corporation organized under the laws of any foreign government?	No
Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their	No

representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?

Is the applicant directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof, or by any corporation organized under the laws of a foreign country? **Yes**

The Alien Ruling question is not answered.

Basic Qualifications

The Applicant answered "No" to each of the Basic Qualification questions.

Tribal Land Bidding Credits

This license did not have tribal land bidding credits.

Demographics

Race

Ethnicity

Gender

EXHIBIT B

SITE DEVELOPMENT PLAN:

**500' VICINITY MAP
LEGAL DESCRIPTIONS
FLOOD PLAIN CERTIFICATION
SITE PLAN
VERTICAL TOWER PROFILE**

RURAL CELLULAR CORPORATION
D/B/A



2421 HOLLOWAY ROAD
LOUISVILLE, KY 40299

LV SOMERSET WATER TANK RELO

1170 BOURBON ROAD
SOMERSET, KY 42503
PULASKI COUNTY

TENANT: RURAL CELLULAR CORPORATION d/b/a VERIZON WIRELESS

FROM PULASKI COUNTY COURT: 100 N MAIN ST #202, SOMERSET, KY 42501: HEAD SOUTH ON N MAIN ST TOWARD W MT VERNON ST (1.0 MI). CONTINUE ONTO MONTICELLO ST (0.5 MI). TURN RIGHT ONTO STATE HWY 1577/OAK HILL RD (2.1 MI). TURN LEFT ONTO KY-914 E (1.5 MI). TURN RIGHT ONTO ROYAL OAK DR (446 FT). SITE WILL BE LOCATED ON LEFT (WEST) SIDE OF ROAD.

FROM LOUISVILLE MTSO: 2421 HOLLOWAY ROAD LOUISVILLE, KY 40299: HEAD SOUTH ON HOLLOWAY RD TOWARD PLANTSIDE DR (0.1 MI). TURN LEFT AT THE 1ST CROSS STREET ONTO PLANTSIDE DR (0.9 MI). TURN LEFT ONTO BLANKENBAKER PKWY (0.7 MI). USE THE RIGHT LANE TO TAKE THE RAMP ONTO I-64 E (0.3 MI). MERGE ONTO I-64 E (30.2 MI). TAKE EXIT 48 FOR KY-151 S TOWARD US-127 S/LAWRENCEBURG/GRAEFENBURG (0.1 MI). TURN RIGHT ONTO KY-151 S (SIGNS FOR LAWRENCEBURG) (6.7 MI). TURN RIGHT ONTO US-127 S (20.3 MI). USE THE LEFT 2 LANES TO TURN LEFT ONTO US-127 BYP S (4.5 MI). USE THE LEFT 2 LANES TO TURN LEFT ONTO US-127 S (4.8 MI). CONTINUE ONTO US-127 BYP S (2.3 MI). CONTINUE STRAIGHT ONTO US-150 BYP S/DANVILLE BYPASS (5.2 MI). CONTINUE ONTO US-150 E (7.5 MI). TURN RIGHT ONTO US-27 S (29.5 MI). TURN RIGHT ONTO THE RAMP TO CUMBERLAND PKWY (0.4 MI). CONTINUE ONTO CUMBERLAND PKWY (1.3 MI). TAKE THE EXIT TOWARD KY-914 (0.5 MI). CONTINUE ONTO KY-914 (1.5 MI). CONTINUE STRAIGHT ONTO KY-914 E (3.6 MI). TURN RIGHT ONTO ROYAL OAK DR (446 FTA). SITE WILL BE LOCATED ON LEFT (WEST) SIDE OF ROAD.

PREPARED BY: POWER OF DESIGN GROUP, LLC - (502) 437-5252

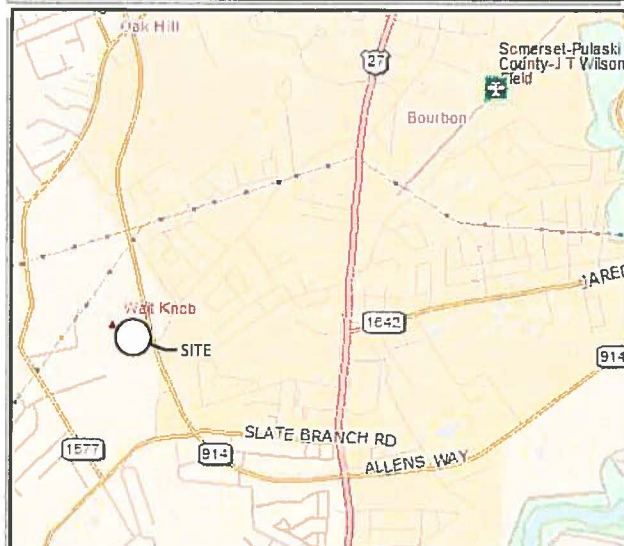
NEW 100' MONOPOLE
w/5' LIGHTNING ARRESTOR
TOTAL TOWER HEIGHT 105'

<p>VERIZON WIRELESS SITE</p> <p>LV SOMERSET WATER TANK RELO PROJECT#: 20151282786 MARKET ID: KY RSA 6 LOCATION CODE: 193765</p> <p>SITE ADDRESS</p> <p>1170 BOURBON ROAD SOMERSET, KY 42503 PULASKI COUNTY E911 ADDRESS: TBD</p> <p>TOWER OWNER</p> <p>RURAL CELLULAR CORPORATION d/b/a VERIZON WIRELESS 2421 HOLLOWAY ROAD LOUISVILLE, KY 40299 CONTACT: AMY HARPER MOBILE: (502) 552-0330 E-MAIL: AMY.HARPER@VERIZONWIRELESS.COM</p> <p>PROPERTY OWNER</p> <p>S & C LAND COMPANY, LLC PO BOX 983 SOMERSET, KY 42503 CONTACT: STEPHEN D. MERRICK PHONE: (606) 678-8887 OFFICE: (606) 678-2842</p>	<p>POLICE</p> <p>PULASKI COUNTY SHERIFF 100 N MAIN ST #101 SOMERSET, KY 42501 PHONE: (606) 678-5145</p> <p>FIRE</p> <p>PARKERS MILL FIRE DEPARTMENT 299 HERITAGE DR SOMERSET, KY 42501 PHONE: (606) 679-7598</p> <p>GENERAL INFORMATION</p> <p>LATITUDE : 37° 02' 20.56" N LONGITUDE : 84° 38' 42.26" W 1983 (NAD83) ELEVATION : 1111.00' AMSL 1988 (NAVD88)</p> <p>VERIZON WIRELESS LEASE AREA</p> <p>100'-0" x 100'-0" (10,000 SF)</p> <p>PROJECT TOTAL DISTURBED AREA</p> <p>COMPOUND: (10,000 SF) = (0.23 ACRE) ACCESS DRIVE: (15,763 SF) = (0.36 ACRE) GROSS AREA: (25,763 SF) = (0.59 ACRE)</p>
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<p>VERIZON WIRELESS SCOPE (VZW GC):</p> <ul style="list-style-type: none"> INSTALL A NEW 100' MONOPOLE w/ 5' LIGHTNING ARRESTOR (TOTAL 105') INSTALL A NEW TOWER FOUNDATION SYSTEM INSTALL A NEW 98'X98' FENCED GRAVEL COMPOUND INSTALL A NEW SITE H-FRAME INSTALL A NEW ELECTRICAL SERVICE RUN TO SITE H-FRAME NO WATER OR SEWAGE SERVICES RUN TO SITE INSTALL NEW GRAVEL ACCESS DRIVE INSTALL NEW TOWER & SITE GROUNDING SYSTEM INSTALL NEW VZW SUBSURFACE GROUNDING SYSTEM INSTALL A NEW 11'-6"x25'-5.5" CONCRETE SHELTER FOUNDATION INSTALL ELECTRICAL SERVICE CONDUIT WITH PULL TAPES FROM EQUIPMENT SHELTER TO UTILITY H-FRAME INSTALL (1) NEW "VERIZON WIRELESS ONLY" FIBER OPTIC CONDUIT WITH PULL TAPE AND TRACER WIRE FROM VZW EQUIPMENT TO NEW "VERIZON WIRELESS ONLY" HAND HOLE OUTSIDE COMPOUND INSTALL (1) NEW "VERIZON WIRELESS ONLY" FIBER OPTIC CONDUIT WITH PULL TAPE FROM NEW "VERIZON WIRELESS ONLY" HAND HOLE AND STUB UP AT FUTURE FIBER PEDESTAL LOCATION INSTALL A NEW 11'-6"x25'-5.5" (STANDARD) PREFABRICATED RADIO EQUIPMENT SHELTER ON EXISTING CONCRETE FOUNDATION INSTALL CONCRETE STOOP FOR SHELTER INSTALL VZW ICE BRIDGE AND FOUNDATIONS INSTALL VZW ANTENNA MOUNTING SUPPORT STRUCTURE ON TOWER INSTALL VZW ANTENNAS, LINES, COAX, GPS ANTENNAS AND RADIO EQUIPMENT INSTALL EXISTING SUBSURFACE GROUND LEADS TO VZW EQUIPMENT & FACILITIES INSTALL VZW ELECTRIC SERVICE CONDUCTORS FROM UTILITY H-FRAME TO VZW EQUIPMENT SHELTER INSTALL (2) 1-1/4" & (1) 1" INNERDUCTS WITH PULL TAPES AND TRACER WIRE WITHIN INSTALLED "VERIZON WIRELESS ONLY" FIBER OPTIC CONDUIT 	<p>ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES.</p> <p>BUILDING CODE 2013 KENTUCKY BUILDING CODE (KBC 2012) STRUCTURAL CODE TIA/EIA-222 - REVISION G (INCLUDES ADDENDUM #2) MECHANICAL CODE 2012 INTERNATIONAL MECHANICAL CODE (IMC 2012) PLUMBING CODE KENTUCKY STATE PLUMBING CODE (815 KAR CHAP. 20) ELECTRICAL CODE 2014 NATIONAL ELECTRICAL CODE (NEC) - NFPA 70 FIRE/LIFE SAFETY CODE 2012 INTERNATIONAL FIRE CODE (2012 IFC) ENERGY CODE 2012 INTERNATIONAL ENERGY CODE (COMMERCIAL) GAS CODE 2009 NATIONAL FUEL GAS CODE (NFPA 54)</p> <p>ACCESSIBILITY REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH THE 2009 IBC BUILDING CODE.</p> <p>APPLICABLE CODES</p>
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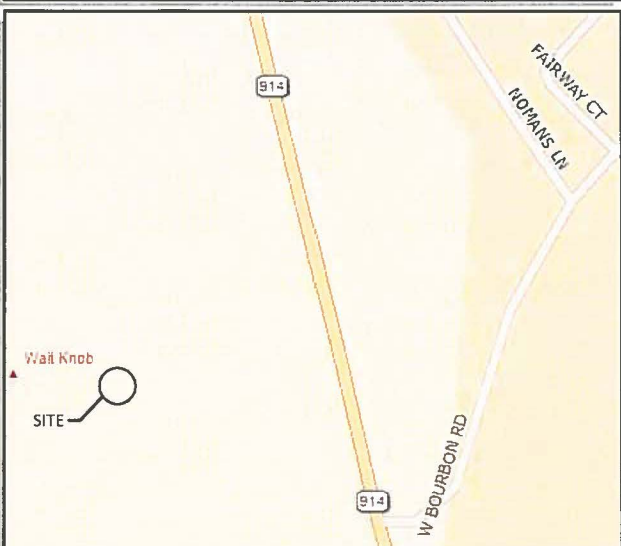
<p>SHEET NUMBER</p> <p>T-1 PROJECT INFORMATION, SITE MAPS, SHEET INDEX B-1 TO B-1.2 SITE SURVEY B-2 TO B-2.1 500' RADIUS & ABUTTERS MAP R-1 REVISION LOG</p> <p>TOWER ELEVATION</p> <p>TE-1 TOWER ELEVATION</p> <p>CIVIL</p> <p>C-1 OVERALL SITE PLAN w/AERIAL OVERLAY C-1A OVERALL SITE PLAN w/DISTANCES TO PROPERTY LINES C-1B TOWER DISTANCE TO RESIDENTIAL STRUCTURES C-3 DETAILED SITE PLAN C-4 DIMENSIONED SITE PLAN</p>	<p>ARCHITECTURAL</p> <p>POWER OF DESIGN GROUP, LLC 11490 BLUEGRASS PARKWAY LOUISVILLE, KY 40299 PHONE: (502) 437-5252</p> <p>ELECTRICAL</p> <p>SOUTH KENTUCKY RECC ADDRESS: 925 N MAIN ST #929 SOMERSET, KY 42503 CONTACT: TBD PHONE: (606) 678 4121 EMAIL: TBD</p> <p>ELECTRICAL UTILITY COORDINATION IS NOT FINALIZED. DO NOT PROCEED WITH CONSTRUCTION.</p>
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PROJECT SUMMARY



VICINITY MAP

PROJECT DESCRIPTION



LOCATION MAP

CONSULTANT TEAM



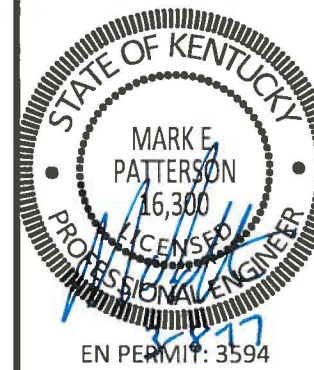
AERIAL



RURAL CELLULAR CORPORATION
D/B/A



2421 HOLLOWAY ROAD
LOUISVILLE, KY 40299



ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	11.30.16	ISSUED FOR REVIEW
B	12.14.16	OLC COMMENTS
C	2.10.17	SURVEY REVISIONS
D	2.28.17	OLC COMMENTS

SITE INFORMATION:
LV SOMERSET WATER TANK RELO
1170 BOURBON ROAD
SOMERSET, KY 42503
PULASKI COUNTY

POD NUMBER: 16-10388
DRAWN BY: POD
CHECKED BY: MEP
DATE: 11.23.16

SHEET TITLE:
PROJECT INFORMATION, SITE MAPS, SHEET INDEX

SHEET NUMBER:
T-1

GENERAL NOTES

BASIS OF BEARING IS GPS OBSERVATIONS COMPLETED ON MARCH 1, 2016.

NO SEARCH OF PUBLIC RECORDS HAS BEEN COMPLETED BY POD GROUP TO DETERMINE ANY DEFECTS AND/OR AMBIGUITIES IN THE TITLE OF THE PARENT PARCEL.

THIS SURVEY IS FOR THE PROPOSED LEASE AREA, THE PROPOSED ACCESS & UTILITY EASEMENT AND ONLY A PARTIAL BOUNDARY SURVEY OF THE PARENT TRACT HAS BEEN PERFORMED.

A PORTION OF THIS SURVEY WAS CONDUCTED BY METHOD OF RANDOM TRAVERSE WITH SIDE SHOTS. UNADJUSTED CLOSURE FOR THIS TRACT EQUALS 0.06', FOR A PRECISION OF 1:48,333 AND HAS NOT BEEN ADJUSTED.

THIS PROPERTY IS SUBJECT TO ANY RECORDED EASEMENTS AND/OR RIGHTS OF WAY SHOWN HEREON OR NOT.

THE PROPOSED LEASE AREA, THE PROPOSED ACCESS & UTILITY EASEMENT AND PARENT PARCEL SHOWN HEREON ARE NOT LOCATED IN A 100-YEAR FLOOD PLAIN PER FLOOD HAZARD BOUNDARY MAP, COMMUNITY-PANEL NUMBER 21199C0292C, DATED JULY 22, 2010. THE PROPOSED LEASE AREA IS LOCATED IN ZONE X.

THIS DRAWING IS NOT INTENDED FOR LAND TRANSFER.

FAA COORDINATE POINT

NAD 83
 LATITUDE: 37°02'20.56"
 LONGITUDE: 84°38'42.26"
 NAVD 88
 ELEVATION: 1111'+/- AMSL
 NORTHING: 1899242.111
 EASTING: 1962905.393

TEMPORARY BENCHMARK

NORTHING: 1899321.100
 EASTING: 1962819.837
 ELEVATION: 1117.02'
 LOCATION: FOUND 1" OPEN PIPE
 N44°48'W 45.8'± FROM THE
 NORTHWEST CORNER OF THE
 PROPOSED LEASE AREA.

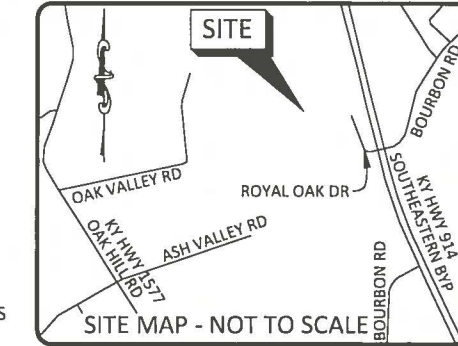
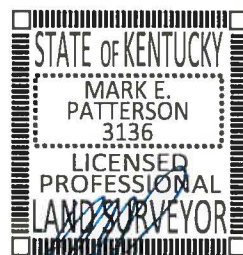
LEGEND

- UTILITY POLE
- GUY ANCHOR
- WATER VALVE
- EX. OVERHEAD ELECTRIC
- EX. OVERHEAD ELECTRIC & TELE
- EX. FENCE
- FOUND MONUMENT AS NOTED
- SET 1/2" REBAR 18" LONG
- CAPPED "PATTERSON PLS 3136"
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- ROW RIGHT OF WAY
- EOP EDGE OF PAVEMENT
- CONC. CONCRETE
- P.O.C. POINT OF COMMENCEMENT
- P.O.B. POINT OF BEGINNING

LAND SURVEYOR'S CERTIFICATE

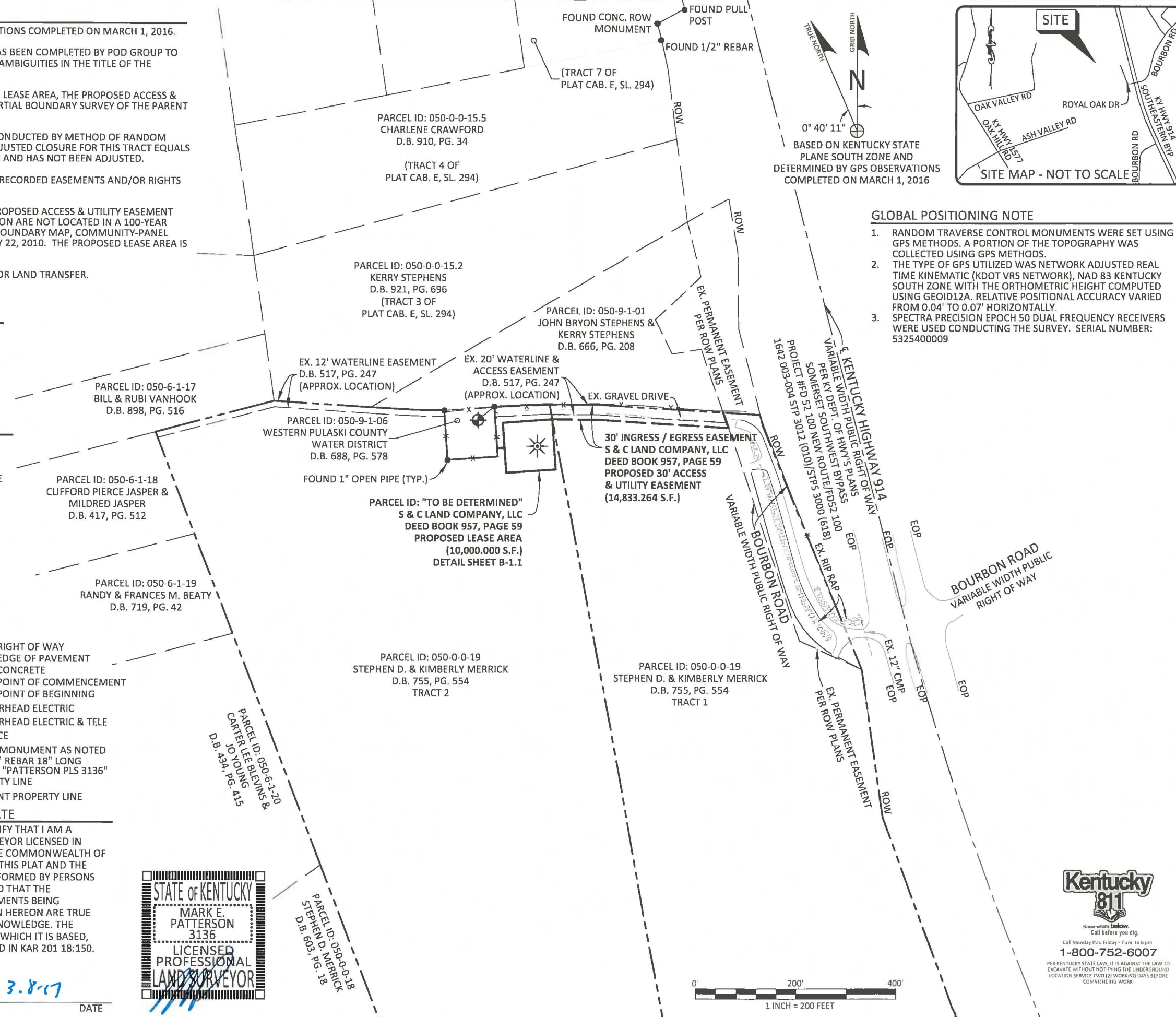
I, MARK E. PATTERSON, HEREBY CERTIFY THAT I AM A LICENSED PROFESSIONAL LAND SURVEYOR LICENSED IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF KENTUCKY. I FURTHER CERTIFY THAT THIS PLAT AND THE SURVEY ON THE GROUND WERE PERFORMED BY PERSONS UNDER MY DIRECT SUPERVISION, AND THAT THE DIRECTIONAL AND LINEAR MEASUREMENTS BEING WITNESSED BY MONUMENTS SHOWN HEREON ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. THE "URBAN" SURVEY, AND THE PLAT ON WHICH IT IS BASED, MEETS ALL SPECIFICATIONS AS STATED IN KAR 201 18:150.

Mark E. Patterson 3.8.17
 MARK E. PATTERSON, PLS #3136 DATE



GLOBAL POSITIONING NOTE

1. RANDOM TRAVERSE CONTROL MONUMENTS WERE SET USING GPS METHODS. A PORTION OF THE TOPOGRAPHY WAS COLLECTED USING GPS METHODS.
2. THE TYPE OF GPS UTILIZED WAS NETWORK ADJUSTED REAL TIME KINEMATIC (KDOT VRS NETWORK), NAD 83 KENTUCKY SOUTH ZONE WITH THE ORTHOMETRIC HEIGHT COMPUTED USING GEOID12A. RELATIVE POSITIONAL ACCURACY VARIED FROM 0.04' TO 0.07' HORIZONTALLY.
3. SPECTRA PRECISION EPOCH 50 DUAL FREQUENCY RECEIVERS WERE USED CONDUCTING THE SURVEY. SERIAL NUMBER: 5325400009



POD
 POWER OF DESIGN
 11490 BLUEGRASS PARKWAY
 LOUISVILLE, KY 40299
 502-437-5252

RURAL CELLULAR CORPORATION
 D/B/A
verizon

SURVEY

REV.	DATE	DESCRIPTION
3	9.8.16	OLC COMMENTS
4	11.23.16	ADDRESS PER NPM REVIEW
5	2.6.17	LEASE AREA & ESMT TITLE HOLDER INFO
6	2.10.17	PARCEL ID "TBD"
7	2.28.17	OLC COMMENTS

SITE INFORMATION:
LV SOMERSET WATER TANK RELO
 1170 BOURBON ROAD
 SOMERSET, KY 42503
 PULASKI COUNTY
 TAX PARCEL NUMBER:
 "TO BE DETERMINED"
 PROPERTY OWNER:
 S & C LAND COMPANY, LLC
 P.O. BOX 983
 SOMERSET, KY 42503
 SOURCE OF TITLE:
 DEED BOOK 957, PAGE 59

SITE NUMBER:
 POD NUMBER: 16-7952
 DRAWN BY: DAP
 CHECKED BY: MEP
 DATE: 3.8.16

SHEET TITLE:
SITE SURVEY
SHEET NUMBER:
B-1

Kentucky 811
 Know what's below.
 Call before you dig.
 Call Monday thru Friday - 7 am to 6 pm
1-800-752-6007
PER KENTUCKY STATE LAW, IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

SURVEY

REV.	DATE	DESCRIPTION
3	9.8.16	OLC COMMENTS
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SOMERSET, KY 42503
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SITE NUMBER:

POD NUMBER: 16-7952
DRAWN BY: DAP
CHECKED BY: MEP
DATE: 3.8.16

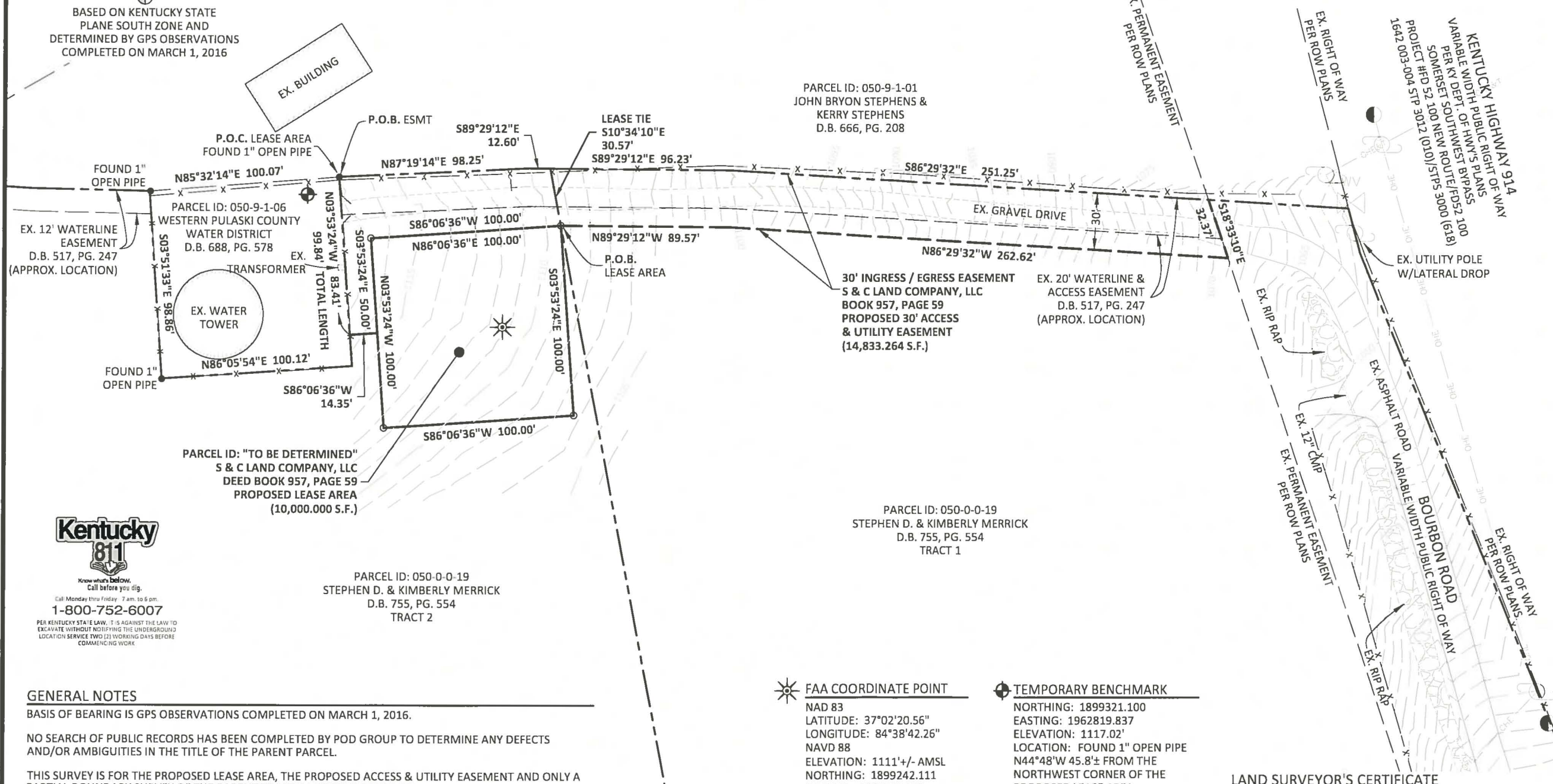
SHEET TITLE:
SITE SURVEY

SHEET NUMBER:
B-1.1

GLOBAL POSITIONING NOTE

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3. SPECTRA PRECISION EPOCH 50 DUAL FREQUENCY RECEIVERS WERE USED CONDUCTING THE SURVEY. SERIAL NUMBER: 5325400009

0° 40' 11"
BASED ON KENTUCKY STATE PLANE SOUTH ZONE AND DETERMINED BY GPS OBSERVATIONS COMPLETED ON MARCH 1, 2016

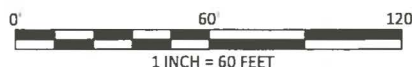


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- THIS SURVEY IS FOR THE PROPOSED LEASE AREA, THE PROPOSED ACCESS & UTILITY EASEMENT AND ONLY A PARTIAL BOUNDARY SURVEY OF THE PARENT TRACT HAS BEEN PERFORMED.
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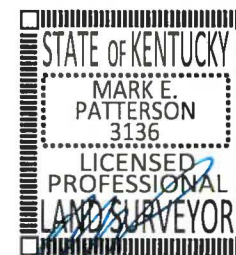


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LONGITUDE: 84°38'42.26"
NAVD 88
ELEVATION: 1111'+/- AMSL
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EASTING: 1962905.393

TEMPORARY BENCHMARK
NORTHING: 1899321.100
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ELEVATION: 1117.02'
LOCATION: FOUND 1" OPEN PIPE
N44°48'W 45.8'± FROM THE
NORTHWEST CORNER OF THE
PROPOSED LEASE AREA.

LEGEND

- UTILITY POLE
- GUY ANCHOR
- WATER VALVE
- ROW RIGHT OF WAY
- EOP EDGE OF PAVEMENT
- CONC. CONCRETE
- P.O.C. POINT OF COMMENCEMENT
- P.O.B. POINT OF BEGINNING
- EX. OVERHEAD ELECTRIC
- EX. OVERHEAD ELECTRIC & TELE
- EX. FENCE
- FOUND MONUMENT AS NOTED
- SET 1/2" REBAR 18" LONG
- CAPPED "PATTERSON PLS 3136"
- PROPERTY LINE
- ADJACENT PROPERTY LINE



LAND SURVEYOR'S CERTIFICATE

I, MARK E. PATTERSON, HEREBY CERTIFY THAT I AM A LICENSED PROFESSIONAL LAND SURVEYOR LICENSED IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF KENTUCKY. I FURTHER CERTIFY THAT THIS PLAT AND THE SURVEY ON THE GROUND WERE PERFORMED BY PERSONS UNDER MY DIRECT SUPERVISION, AND THAT THE DIRECTIONAL AND LINEAR MEASUREMENTS BEING WITNESSED BY MONUMENTS SHOWN HEREON ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. THE "URBAN" SURVEY, AND THE PLAT ON WHICH IT IS BASED, MEETS ALL SPECIFICATIONS AS STATED IN KAR 201 18:150.

MARK PATTERSON, PLS #3136
DATE: 3-8-17



SURVEY

REV.	DATE	DESCRIPTION
3	9.8.16	OLC COMMENTS
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DEED BOOK 957, PAGE 59

SITE NUMBER:

POD NUMBER: 16-7952
DRAWN BY: DAP
CHECKED BY: MEP
DATE: 3.8.16

SHEET TITLE:

SITE SURVEY

SHEET NUMBER:
B-1.2

PROPOSED LEASE AREA

THE FOLLOWING IS A DESCRIPTION OF THE PROPOSED LEASE AREA TO BE LEASED FROM PARCEL CONVEYED TO S & C LAND COMPANY, LLC AS RECORDED IN DEED BOOK 957, PAGE 59, PARCEL ID: "TO BE DETERMINED", WHICH IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEARING DATUM USED HEREIN IS BASED UPON KENTUCKY STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83, FROM A REAL TIME KINEMATIC GLOBAL POSITIONING SYSTEM OBSERVATION USING THE KENTUCKY TRANSPORTATION CABINET REAL TIME GPS NETWORK COMPLETED ON FEBRUARY 15, 2016.

COMMENCING AT A FOUND 1" OPEN PIPE BEING COMMON CORNER TO STEPHEN D. & KIMBERLY MERRICK AS RECORDED IN DEED BOOK 755, PAGE 554, TRACT 2, PARCEL ID: 050-0-0-19 (PARENT PARCEL) ALSO CORNER TO WESTERN PULASKI COUNTY WATER DISTRICT AS RECORDED IN DEED BOOK 688, PAGE 578, PARCEL ID: 050-9-1-06 AND CORNER TO JOHN BRYON STEPHENS & KERRY STEPHENS AS RECORDED IN DEED BOOK 666, PAGE 208, SAID PIPE IS N85°32'14"E 100.07' FROM A FOUND 1" OPEN PIPE CORNER TO THE SAME; THENCE WITH THE LINE OF STEPHENS AND MERRICK, N87°19'14"E 98.25' TO A POINT; THENCE S89°29'12"E 12.60' TO THE COMMON CORNER TO STEPHENS AFOREMENTIONED AND MERRICK TRACTS 1 & 2 AFOREMENTIONED; THENCE LEAVING THE COMMON LINE OF STEPHENS AND MERRICK, WITH THE COMMON LINE OF MERRICK TRACTS 1 & 2, S10°34'10"E 30.57' TO A SET 1/2" REBAR CAPPED "PATTERSON PLS 3136", HEREAFTER REFERRED TO AS A SET IPC, IN THE NORTHEAST CORNER OF THE PARCEL CONVEYED TO S & C LAND COMPANY, LLC AS RECORDED IN DEED BOOK 957, PAGE 59, AND BEING THE TRUE POINT OF BEGINNING OF THE PROPOSED LEASE AREA; THENCE S03°53'24"E 100.00' TO A SET IPC; THENCE S86°06'36"W 100.00' TO A SET IPC; THENCE N03°53'24"W 100.00' TO A SET IPC; THENCE N86°06'36"E 100.00' TO THE POINT OF BEGINNING CONTAINING 10,000.000 SQUARE FEET AS PER SURVEY BY MARK E. PATTERSON, PLS #3136 DATED MARCH 1, 2016.

PROPOSED 30' ACCESS & UTILITY EASEMENT

THE FOLLOWING IS A DESCRIPTION OF THE PROPOSED ACCESS & UTILITY EASEMENT TO BE GRANTED FROM THE PARCEL CONVEYED TO S & C LAND COMPANY, LLC AS RECORDED IN DEED BOOK 957, PAGE 59, PARCEL ID: "TO BE DETERMINED", WHICH IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEARING DATUM USED HEREIN IS BASED UPON KENTUCKY STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83, FROM A REAL TIME KINEMATIC GLOBAL POSITIONING SYSTEM OBSERVATION USING THE KENTUCKY TRANSPORTATION CABINET REAL TIME GPS NETWORK COMPLETED ON FEBRUARY 15, 2016.

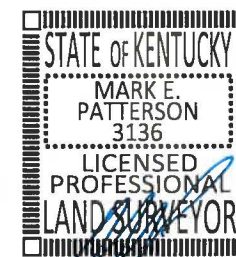
BEGINNING AT A FOUND 1" OPEN PIPE BEING COMMON CORNER TO STEPHEN D. & KIMBERLY MERRICK AS RECORDED IN DEED BOOK 755, PAGE 554, TRACT 2, PARCEL ID: 050-0-0-19 (PARENT PARCEL), ALSO BEING THE NORTHWEST CORNER OF THE 30' EASEMENT FOR INGRESS AND EGRESS CONVEYED TO S & C LAND COMPANY, LLC AS DESCRIBED IN DEED BOOK 957, PAGE 59, ALSO A COMMON CORNER TO WESTERN PULASKI COUNTY WATER DISTRICT AS RECORDED IN DEED BOOK 688, PAGE 578, PARCEL ID: 050-9-1-06 AND CORNER TO JOHN BRYON STEPHENS & KERRY STEPHENS AS RECORDED IN DEED BOOK 666, PAGE 208, SAID PIPE IS N85°32'14"E 100.07' FROM A FOUND 1" OPEN PIPE CORNER TO THE SAME; THENCE WITH THE LINE OF STEPHENS AND MERRICK, N87°19'14"E 98.25' TO A POINT; THENCE S89°29'12"E 12.60' TO THE COMMON CORNER TO STEPHENS AFOREMENTIONED AND MERRICK TRACTS 1 & 2 AFOREMENTIONED; THENCE S89°29'12"E 96.23' TO A POINT; THENCE S86°29'32"E 251.25' TO A POINT IN THE EXISTING PERMANENT EASEMENT, PER KY DEPARTMENT OF HIGHWAYS PLANS, SOMERSET SOUTHWEST BYPASS, PROJECT #FD 52 100 NEW ROUTE/FD52 100 1642 003-004 STP 3012 (010)/STPS 3000 (618); THENCE LEAVING SAID COMMON LINE AND WITH THE LINE OF MERRICK AND STATE EASEMENT, S18°33'10"E 32.37' TO A POINT; THENCE TRAVERSING THE LANDS OF MERRICK, TRACT 1, AND ALONG THE SOUTH LINE OF THE 30' EASEMENT FOR INGRESS AND EGRESS CONVEYED TO S & C LAND COMPANY, LLC AS DESCRIBED IN DEED BOOK 957, PAGE 59, N86°29'32"W 262.62' TO A POINT; THENCE N89°29'12"W 89.57' TO A SET 1/2" REBAR CAPPED "PATTERSON PLS 3136", HEREAFTER REFERRED TO AS A SET IPC, THE NORTHEAST CORNER OF THE PARCEL CONVEYED TO S & C LAND COMPANY, LLC AS RECORDED IN DEED BOOK 957, PAGE 59 AND BEING THE NORTHEAST CORNER OF THE PROPOSED LEASE AREA; THENCE WITH SAID NORTH BOUNDARY LINE AND NORTH LEASE AREA LINE, S86°06'36"W 100.00' TO A SET IPC; THENCE S03°53'24"E 50.00' TO A POINT; THENCE LEAVING THE WEST BOUNDARY LINE OF S & C COMPANY, LLC AND THE PROPOSED LEASE AREA, S86°06'36"W 14.35' TO A POINT IN THE COMMON LINE OF THE AFOREMENTIONED WATER DISTRICT AND MERRICK; THENCE WITH SAID COMMON LINE, N03°53'24"W 83.41' TO THE POINT OF BEGINNING CONTAINING 14,833.264 SQUARE FEET AS PER SURVEY BY MARK E. PATTERSON, PLS #3136 DATED MARCH 1, 2016.

TITLE REPORT

THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY POD GROUP, LLC. AND AS SUCH WE ARE NOT RESPONSIBLE FOR THE INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP TITLE EVIDENCE, UNRECORDED EASEMENTS, AUGMENTING EASEMENTS, IMPLIED OR PRESCRIPTIVE EASEMENTS, OR ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE. INFORMATION REGARDING THESE MATTERS WERE GAINED FROM FIRST AMERICAN TITLE INSURANCE COMPANY, FILE NUMBER: CT-546, DATED FEBRUARY 22, 2016 AT 8:00 AM. THE FOLLOWING COMMENTS ARE IN REGARD TO SAID REPORT AND THE NUMBERS IN THE COMMENTS CORRESPOND TO THE NUMBERING SYSTEM IN SAID POLICY.

SCHEDULE B - PART 2 - EXCEPTIONS

1. NONE OF RECORD.
2. NOTE: PER VESTING DEED TRACT 1 IS 34.45 ACRES MORE OR LESS AND TRACT 2 IS 34.45 ACRES MORE OR LESS. PULASKI COUNTY PVA IS ONLY TAXING 57 ACRES. THERE ARE NO OUTSALES AND PVA IS UNCERTAIN WHY THERE IS A HUGE DIFFERENCE IN THE ACREAGE. (ACREAGE DIFFERENCE IS FROM THE KENTUCKY DEPARTMENT OF HIGHWAYS ACQUIRING RIGHT OF WAY FOR THE SOMERSET SOUTHWEST BYPASS, KENTUCKY HIGHWAY 912, PER KY DEPT. OF HWY'S PLANS, SOMERSET SOUTHWEST BYPASS, ITEM #8-259.10/8-999.0 AND AS SHOWN HEREON.)



LAND SURVEYOR'S CERTIFICATE

I, MARK E. PATTERSON, HEREBY CERTIFY THAT I AM A LICENSED PROFESSIONAL LAND SURVEYOR LICENSED IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF KENTUCKY. I FURTHER CERTIFY THAT THIS PLAT AND THE SURVEY ON THE GROUND WERE PERFORMED BY PERSONS UNDER MY DIRECT SUPERVISION, AND THAT THE DIRECTIONAL AND LINEAR MEASUREMENTS BEING WITNESSED BY MONUMENTS SHOWN HEREON ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. THE "URBAN" SURVEY, AND THE PLAT ON WHICH IT IS BASED, MEETS ALL SPECIFICATIONS AS STATED IN KAR 201.18:150.

Mark E. Patterson 3.8.17
MARK PATTERSON, PLS #3136 DATE

PARCEL ID: "TO BE DETERMINED"
S & C LAND COMPANY, LLC
PO BOX 983
SOMERSET, KY 42503

PARCEL ID: 050-0-0-19
STEPHEN D. & KIMBERLY MERRICK
5012 ASH VALLEY ROAD
SOMERSET, KY 42503-9634

PARCEL ID: 050-0-0-18.1
STEPHEN D. & KIMBERLY MERRICK
5012 ASH VALLEY ROAD
SOMERSET, KY 42503-9634

PARCEL ID: 050-0-0-18
STEPHEN D. MERRICK
5012 ASH VALLEY ROAD
SOMERSET, KY 42503

PARCEL ID: 050-6-1-20
CARTER LEE & JO YOUNG BLEVINS
5071 ASH VALLEY ROAD
SOMERSET, KY 42503

PARCEL ID: 050-6-1-19
RANDY & FRANCES M. BEATY
101 N. STARVIEW DRIVE
SOMERSET, KY 42503

PARCEL ID: 050-6-1-18
CLIFFORD PIERCE JASPER &
MILDRED JASPER
103 N. STARVIEW DRIVE
SOMERSET, KY 42503

PARCEL ID: 050-6-1-17
BILL & RUBI VANHOOK
107 N. STARVIEW ROAD
SOMERSET, KY 42503

PARCEL ID: 050-6-1-16
BILLY & RUBI VANHOOK
107 N. STARVIEW ROAD
SOMERSET, KY 42503

PARCEL ID: 050-0-0-15.5
CHARLENE CRAWFORD
1340 S. HIGHWAY 27, STE C
SOMERSET, KY 42501

PARCEL ID: 050-0-0-15.2
KERRY STEPHENS
1399 W. HIGHWAY 914
SOMERSET, KY 42503

PARCEL ID: 050-9-1-01
JOHN BRYON STEPHENS &
KERRY STEPHENS
1399 W. HIGHWAY 914
SOMERSET, KY 42503

A0

A1

B1

C1

D1

E1

F1

G1

H1

I1

J1

K1

I1

J1

M1

N1

O1

P1

Q1

A1

R1

GENERAL NOTE:

- ALL INFORMATION SHOWN HEREON WAS OBTAINED FROM THE RECORDS OF THE PULASKI COUNTY KENTUCKY PROPERTY VALUATION ADMINISTRATION OFFICE ON MARCH 1, 2016 AND UPDATED FROM THE PVA WEB SITE ON AUGUST 5, 2016 AND FEBRUARY 28, 2017. THE PROPERTY VALUATION ADMINISTRATION RECORDS MAY NOT REFLECT THE CURRENT OWNERS AND ADDRESSES DUE TO THE INACCURACIES AND TIME LAPSE IN UPDATING FILES. POD AND THE COUNTY PROPERTY VALUATION ADMINISTRATION EXPRESSLY DISCLAIMS ANY WARRANTY FOR THE CONTENT AND ANY ERRORS CONTAINED IN THEIR FILES
- THIS MAP IS FOR GENERAL INFORMATIONAL PURPOSES ONLY AND IS NOT A BOUNDARY SURVEY
- NOT FOR RECORDING OR PROPERTY TRANSFER.

NOTE:
R = RESIDENCE
G = GARAGE
B = BUILDING

PARCEL ID: 050-9-1-06
WESTERN PULASKI COUNTY
WATER DISTRICT
1059 W. HIGHWAY 80
SOMERSET, KY 42503

L1

PARCEL ID: 050-0-0-15.3
KEVIN E. & AMANDA HAYNES
1540 ANTIOCH ROAD
BURNSIDE, KY 42519

M1

PARCEL ID: 050-9-1-01.1
JOHN BRYON STEPHENS &
KERRY STEPHENS
1399 W. HIGHWAY 914
SOMERSET, KY 42503

N1

PARCEL ID: 050-9-1-05
TIMOTHY D. PERRY
1270 W. BOURBON ROAD
SOMERSET, KY 42503

O1

PARCEL ID: 050-9-1-08
FRANK & SHARON K. HOPSON
P.O. BOX 288
WOOTON, KY 41776

P1

PARCEL ID: 050-9-1-07
DONNIE & LONNIE & GLEN CASADA
c/o DONNIE L. CASADA
1325 W. BOURBON ROAD
SOMERSET, KY 42503

Q1

PARCEL ID: 050-0-0-19.3
JOHN W. TUTTLE III &
TERRI H. TUTTLE
214 BOLTON DRIVE
SOMERSET, KY 42503

R1

PARCEL ID: 050-0-0-19.1
JOHN W. TUTTLE III &
TERRI H. TUTTLE
214 BOLTON DRIVE
SOMERSET, KY 42503

S1

PARCEL ID: 051-7-1-01
WAITSBORO HILLS, LLC
380 WAITSBORO DRIVE
SOMERSET, KY 42503

T1

PARCEL ID: 051-7-2-01
WAITSBORO HILLS, LLC
380 WAITSBORO DRIVE
SOMERSET, KY 42503

U1

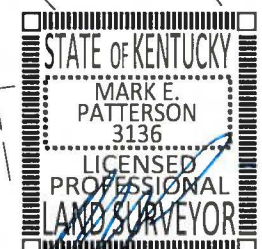
PARCEL ID: 050-0-0-19.2
JOHN W. TUTTLE III &
TERRI H. TUTTLE
214 BOLTON DRIVE
SOMERSET, KY 42503

V1

CERTIFICATE

I HEREBY CERTIFY THAT THIS EXHIBIT PERTAINING TO THE ADJOINING PROPERTY OWNERS PER PVA RECORDS WAS PREPARED UNDER MY DIRECT SUPERVISION. NO BOUNDARY SURVEYING OF ANY KIND HAS BEEN PERFORMED FOR THIS EXHIBIT.

Mark Patterson 3.8.17
MARK PATTERSON, LPLS #3136 DATE



EXHIBIT

REV.	DATE	DESCRIPTION
A	8.5.16	ISSUED FOR REVIEW
B	11.14.16	UPDATED PER OLC COMMENTS
C	2.10.17	SURVEY REVISIONS
D	2.28.17	OLC COMMENTS
O	3.7.17	ISSUED AS FINAL

SITE INFORMATION:
LV SOMERSET WATER TANK RELO
1170 BOURBON ROAD
SOMERSET, KY 42503
PULASKI COUNTY
TAX PARCEL NUMBER:
"TO BE DETERMINED"
PROPERTY OWNER:
S & C LAND COMPANY, LLC
P.O. BOX 983
SOMERSET, KY 42503
SOURCE OF TITLE:
DEED BOOK 957, PAGE 59

SITE NUMBER:

POD NUMBER: 16-10389

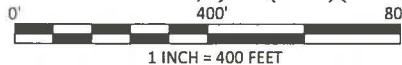
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CHECKED BY: MEP
DATE: 3.8.16

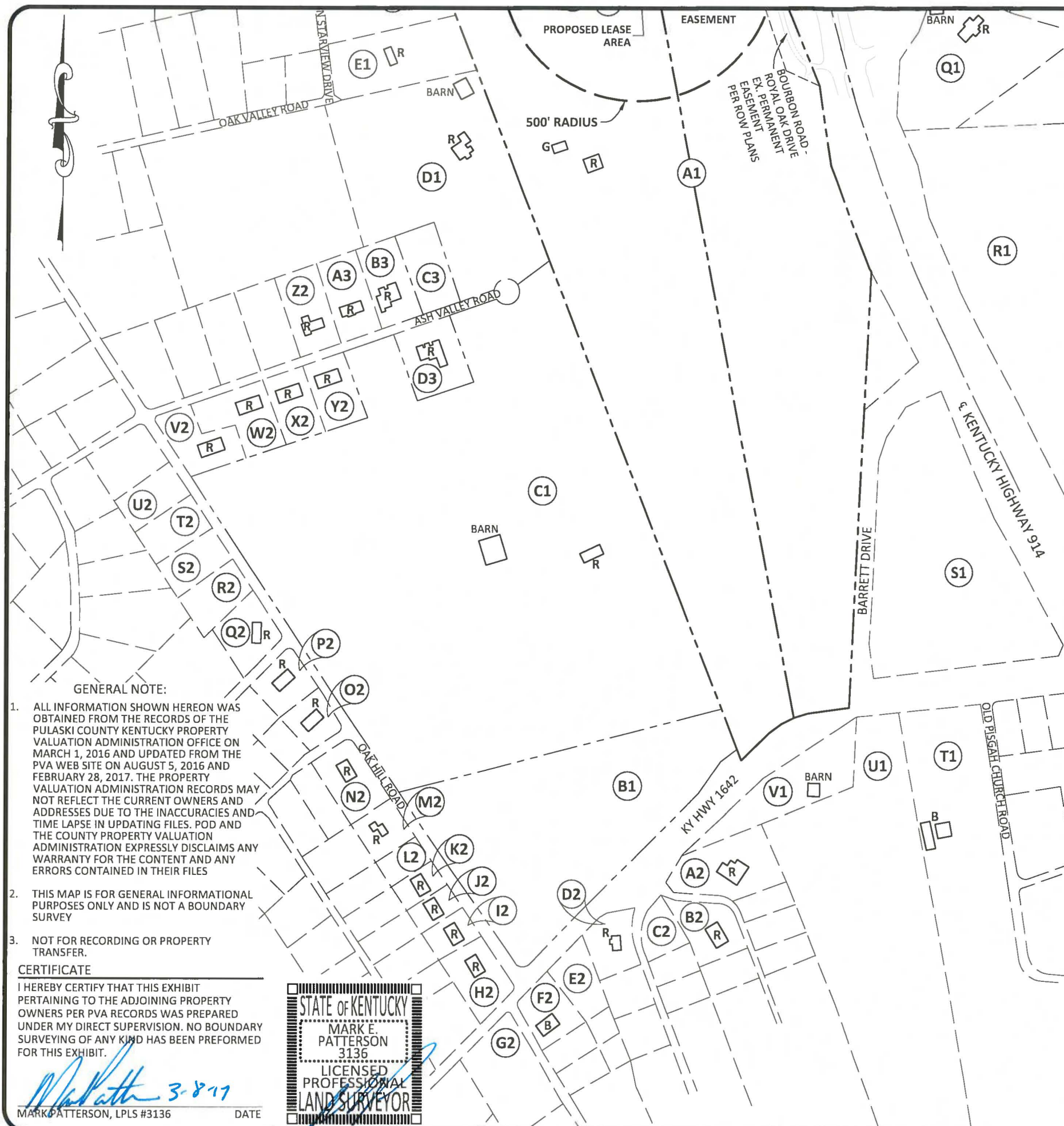
SHEET TITLE:

500' RADIUS & ABUTTERS MAP

SHEET NUMBER:

B-2





**ADDITIONAL ABUTTER'S FOR B1 AND C1
(A1-V1 SEE SHEET B-2)**

- A2** PARCEL ID: 051-7-2-28 ED & DEBBIE PETERSON 1002 SOUTH FORK DRIVE SOMERSET, KY 42501
- B2** PARCEL ID: 051-7-2-02 BUCHANAN FAMILY IRR TR c/o CALVIN BUCHANAN 1001 SOUTH FORK DRIVE SOMERSET, KY 42503
- C2** PARCEL ID: 051-7-2-58 BUCHANAN FAMILY IRR TR c/o CALVIN BUCHANAN 1001 SOUTH FORK DRIVE SOMERSET, KY 42503
- D2** PARCEL ID: 051-7-2-29 HARVEY G. MAYNARD JR. & CAROL J. MAYNARD 43 HIDDEN LOOP SOMERSET, KY 42503
- E2** PARCEL ID: 051-7-2-59 ALL SECURE HOLDINGS, INC. 650 S. HIGHWAY 27, STE 5201 SOMERSET, KY 42501
- F2** PARCEL ID: 051-7-2-60 SHARDA PROPERTY, INC. 22 HIDDEN CREEK DRIVE SOMERSET, KY 42503-4115
- G2** PARCEL ID: 051-7-2-70.1 ALL SECURE HOLDINGS, INC. 650 S. HIGHWAY 27, STE 5201 SOMERSET, KY 42501
- H2** PARCEL ID: 051-4-4-56 GEORGE & NONA REBUCK 4254 OAK HILL ROAD SOMERSET, KY 42503
- I2** PARCEL ID: 051-4-4-55 CHRISTOPHER & AMI HIGGINS 4198 OAK HILL ROAD SOMERSET, KY 42503
- J2** PARCEL ID: 051-4-4-54 JONATHAN DAVID ABSHER 4174 OAK HILL ROAD SOMERSET, KY 42503
- K2** PARCEL ID: 051-4-4-53 JEREMY JOHNSON 2817 HIGHWAY 196 NANCY, KY 42544
- L2** PARCEL ID: 051-4-4-52 TROY HALL JR. & MARY ALICE HALL 4120 OAK HILL ROAD SOMERSET, KY 42503
- M2** PARCEL ID: 051-4-4-51 TROY HALL JR. & MARY ALICE HALL 4120 OAK HILL ROAD SOMERSET, KY 42503
- N2** PARCEL ID: 051-4-4-50 HALL FAMILY REVOCABLE LIVING TRUST c/o TROY HALL SR. 4064 OAK HILL ROAD SOMERSET, KY 42503
- O2** PARCEL ID: 050-6-1-48 MORRIS & PEARL & DEARL DUNBAR 1100 HEARTLAND DRIVE SOMERSET, KY 42501
- P2** PARCEL ID: 050-6-1-47 JONATHAN RUBY & KAREN RANAE 311 COLLEGE STREET SOMERSET, KY 42501-1311
- Q2** PARCEL ID: 050-6-1-41 RUBY B. BURNS 311 EULA NICKELL WAY CAMPTON, KY 41301
- R2** PARCEL ID: 050-6-1-40 RICHARD & LINDA WHITAKER 260 WHITAKER ROAD SOMERSET, KY 42503-4641
- S2** PARCEL ID: 050-6-1-39 RICHARD & LINDA WHITAKER 260 WHITAKER ROAD SOMERSET, KY 42503-4641
- T2** PARCEL ID: 050-6-1-38 JOHN J. & JOAN C. ROBINETTE 300 PLANTERS WAY SOMERSET, KY 42503
- U2** PARCEL ID: 050-6-1-37 JOHN J. & JOAN C. ROBINETTE 300 PLANTERS WAY SOMERSET, KY 42503
- V2** PARCEL ID: 050-6-1-36 FRANKLIN LAY NELSON & BRENDA NELSON 3825 OAK HILL ROAD SOMERSET, KY 42503
- W2** PARCEL ID: 050-6-1-35 IMANTS & PATRICIA RIZENBERG 5004 ASH VALLEY ROAD SOMERSET, KY 42503
- X2** PARCEL ID: 050-6-1-34 ORWIN A. & NANCY KUHNAPFEL TR 5006 ASH VALLEY ROAD SOMERSET, KY 42503-6295
- Y2** PARCEL ID: 050-6-1-33 ALAN J. & SHELLEY R. GOVER 5008 ASH VALLEY ROAD SOMERSET, KY 42503
- Z2** PARCEL ID: 050-6-1-28 CHARLES GLENN YONTS & SHARON YONTS 5011 ASH VALLEY DRIVE SOMERSET, KY 42503-9119
- A3** PARCEL ID: 050-6-1-29 STEPHEN C. & CLARINE ABBOTT 5013 ASH VALLEY DRIVE SOMERSET, KY 42503
- B3** PARCEL ID: 050-6-1-30 NANCY LEE MERRICK 5015 ASH VALLEY ROAD SOMERSET, KY 42503
- C3** PARCEL ID: 050-6-1-31 STEPHEN D. & KIMBERLY MERRICK 5012 ASH VALLEY ROAD SOMERSET, KY 42503-9634
- D3** PARCEL ID: 050-6-1-32 STEPHEN D. & KIMBERLY MERRICK 5012 ASH VALLEY ROAD SOMERSET, KY 42503-9634



EXHIBIT

REV.	DATE	DESCRIPTION
A	8.5.16	ISSUED FOR REVIEW
B	11.14.16	UPDATED PER OLC COMMENTS
C	2.10.17	SURVEY REVISIONS
D	2.28.17	OLC COMMENTS
O	3.7.17	ISSUED AS FINAL

SITE INFORMATION:
LV SOMERSET WATER TANK RELO
1170 BOURBON ROAD
SOMERSET, KY 42503
PULASKI COUNTY
TAX PARCEL NUMBER:
"TO BE DETERMINED"
PROPERTY OWNER:
S & C LAND COMPANY, LLC
P.O. BOX 983
SOMERSET, KY 42503
SOURCE OF TITLE:
DEED BOOK 957, PAGE 59

SITE NUMBER:
POD NUMBER: 16-10389
DRAWN BY: DAP
CHECKED BY: MEP
DATE: 3.8.16

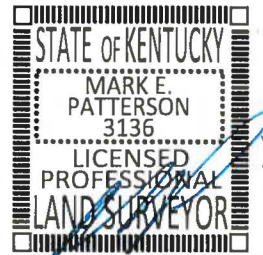
SHEET TITLE:
500' RADIUS & ABUTTERS MAP

SHEET NUMBER:
B-2.1

GENERAL NOTE:

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CERTIFICATE
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Mark E. Patterson 3-8-17
MARK PATTERSON, LPLS #3136 DATE



REVISION LOG

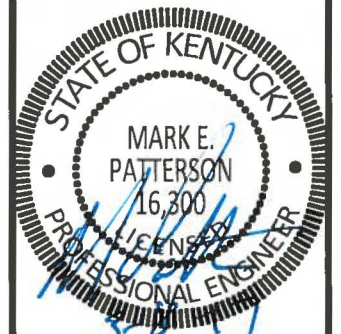
REV *	MM/DD/YY	SHEET NUMBER & NAME	DESCRIPTION OF REVISION
A	11/30/2016	ALL SHEETS	ISSUED FOR REVIEW
B	12/14/2016	C-1, C-1A, C-1B	CORRECTED PARCEL INFORMATION PER OLC COMMENTS
B	12/14/2016	B-2, B-2.1	UPDATED INFORMATION PER OLC COMMENTS
C	2/10/2017	T-1, C-1, C-1A, C-1B, & C-3	SURVEY REVISIONS - OWNER CONVEYANCE OF PROPERTY
D	2/28/2017	B-1 TO B-1.2, B-2 TO B-2.1	PER OLC COMMENTS
O	3/7/2017	ALL SHEETS	ISSUED AS FINAL



RURAL CELLULAR CORPORATION
D/B/A



2421 HOLLOWAY ROAD
LOUISVILLE, KY 40299



EN PERMIT: 3594

ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	11.30.16	ISSUED FOR REVIEW
B	12.14.16	OLC COMMENTS
C	2.10.17	SURVEY REVISIONS
D	2.28.17	OLC COMMENTS

SITE INFORMATION:
**LV SOMERSET
WATER TANK RELO**
1170 BOURBON ROAD
SOMERSET, KY 42503
PULASKI COUNTY

POD NUMBER: 16-10388
DRAWN BY: POD
CHECKED BY: MEP
DATE: 11.23.16

SHEET TITLE:

REVISION LOG

SHEET NUMBER:

R-1

NOTE:

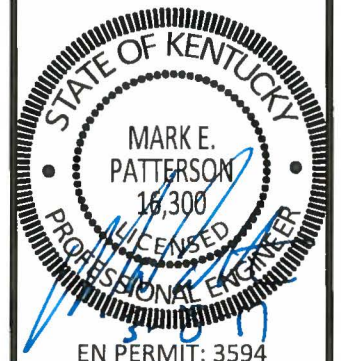
1. IT IS THE INSTALLING CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL ANTENNA INFORMATION AGAINST FINAL RADIO ENGINEERING PLAN PROVIDED BY RURAL CELLULAR CORPORATION d/b/a VERIZON WIRELESS (VZW GC).
2. MARKING AND LIGHTING ARE REQUIRED AS PER FAA ADVISORY CIRCULAR 70/7460-1 L (OBSTRUCTION MARKING AND LIGHTING, A MED-DUAL SYSTEM - CHAPTER 4, 8(M-DUAL), & 12).
3. FAA FORM 7460-2, PART II, NOTICE OF ACTUAL CONSTRUCTION OR ALTERATION, IS ALSO REQUIRED TO BE E-FILED ANY TIME THE PROJECT IS ABANDONED OR WITHIN 5 DAYS AFTER CONSTRUCTION REACHES ITS GREATEST HEIGHT.



RURAL CELLULAR CORPORATION
D/B/A



2421 HOLLOWAY ROAD
LOUISVILLE, KY 40299



ZONING DRAWINGS

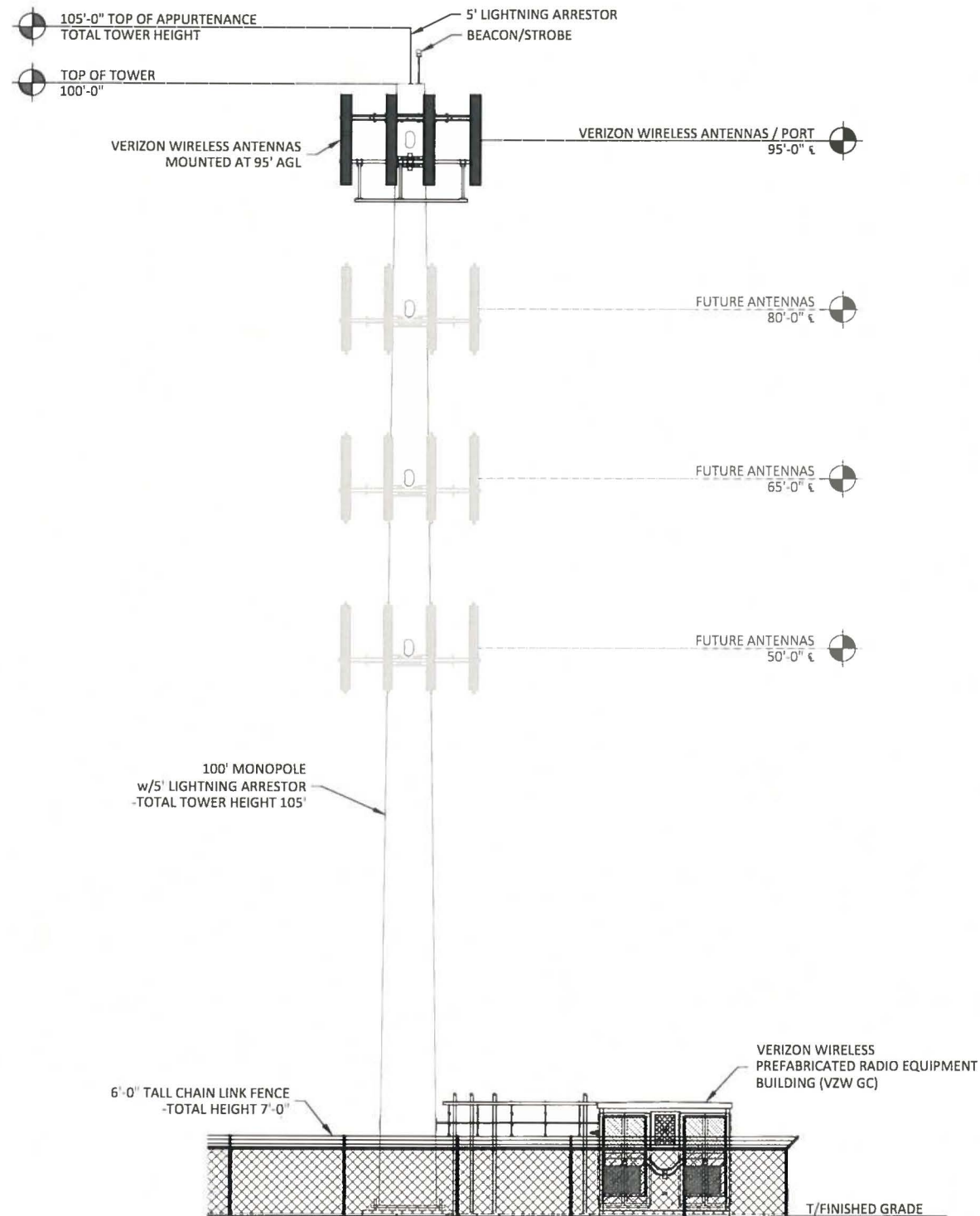
REV.	DATE	DESCRIPTION
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B	12.14.16	OLC COMMENTS
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SITE INFORMATION:
LV SOMERSET WATER TANK RELO
1170 BOURBON ROAD
SOMERSET, KY 42503
PULASKI COUNTY

POD NUMBER: 16-10388
DRAWN BY: POD
CHECKED BY: MEP
DATE: 11.23.16

SHEET TITLE:
TOWER ELEVATION

SHEET NUMBER:
TE-1



TOWER ELEVATION
SCALE: N.T.S.

1
TE-1



POD
 POWER OF DESIGN
 11490 BLUEGRASS PARKWAY
 LOUISVILLE, KY 40299
 502-437-5252

RURAL CELLULAR CORPORATION
 D/B/A
verizon
 2421 HOLLOWAY ROAD
 LOUISVILLE, KY 40299

STATE OF KENTUCKY
 MARK E. PATTERSON
 16,300
 LICENSED PROFESSIONAL ENGINEER
 EN PERMIT: 3594

ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	11.30.16	ISSUED FOR REVIEW
B	12.14.16	OLC COMMENTS
C	2.10.17	SURVEY REVISIONS
D	2.28.17	OLC COMMENTS

SITE INFORMATION:
LV SOMERSET WATER TANK RELO
 1170 BOURBON ROAD
 SOMERSET, KY 42503
 PULASKI COUNTY

POD NUMBER: 16-10388
 DRAWN BY: POD
 CHECKED BY: MEP
 DATE: 11.23.16

SHEET TITLE:
OVERALL SITE PLAN w/AERIAL OVERLAY

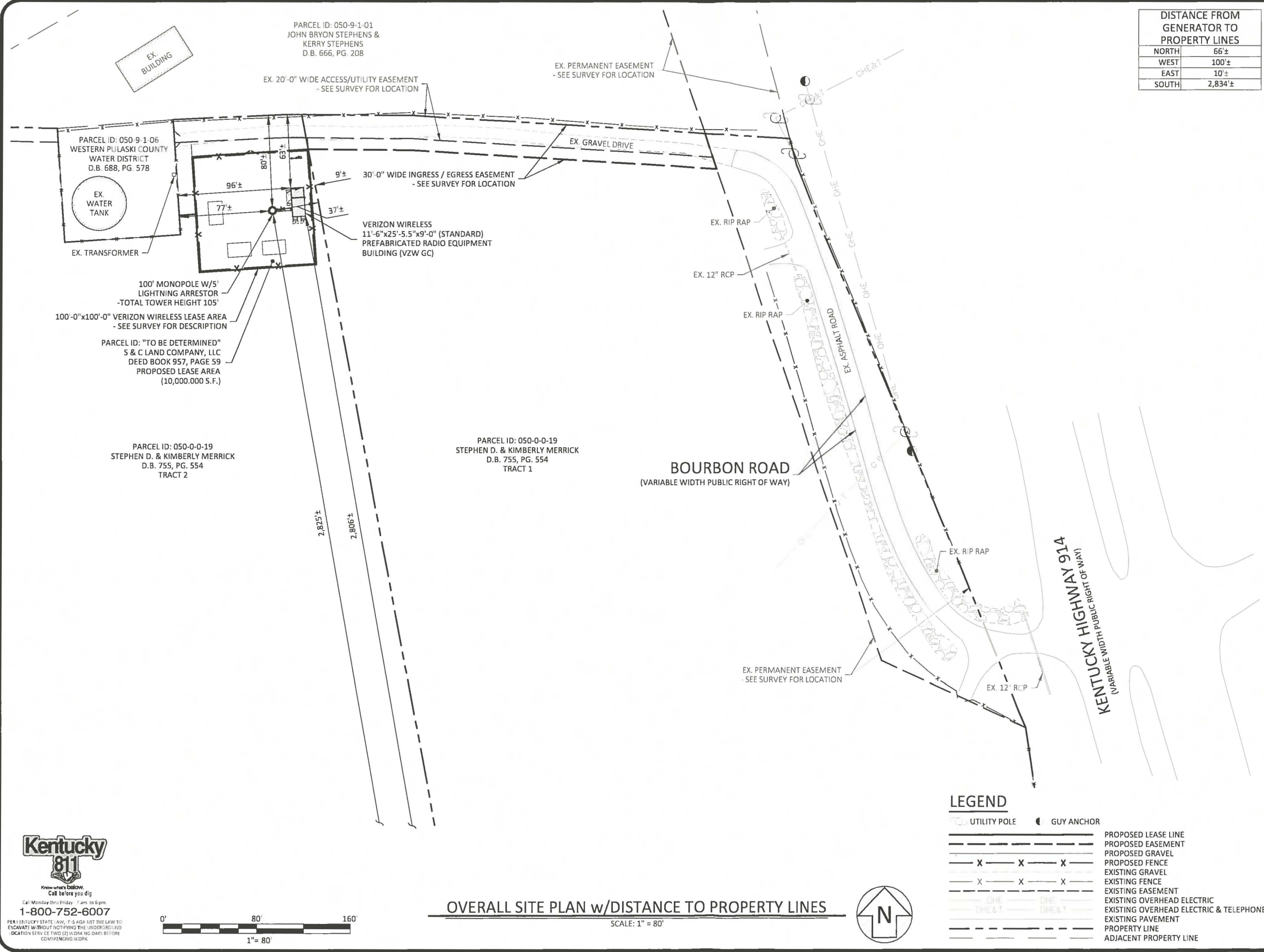
SHEET NUMBER:
C-1

Kentucky 811
 Know what's below.
 Call before you dig.
 Call Monday thru Friday 7am to 6pm
 1-800-752-6007

OVERALL SITE PLAN w/AERIAL OVERLAY
 SCALE: N.T.S.



PER KENTUCKY STATE LAW, IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE (W/811) WORKING DAY BEFORE COMMENCING WORK.



DISTANCE FROM GENERATOR TO PROPERTY LINES	
NORTH	66'±
WEST	100'±
EAST	10'±
SOUTH	2,834'±

POD
POWER OF DESIGN
11490 BLUEGRASS PARKWAY
LOUISVILLE, KY 40299
502-437-5252

RURAL CELLULAR CORPORATION
D/B/A
verizon
2421 HOLLOWAY ROAD
LOUISVILLE, KY 40299

STATE OF KENTUCKY
MARK E. PATTERSON
16,300
LICENSED PROFESSIONAL ENGINEER
EN PERMIT: 3594

ZONING DRAWINGS

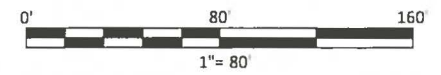
REV.	DATE	DESCRIPTION
A	11.30.16	ISSUED FOR REVIEW
B	12.14.16	OLC COMMENTS
C	2.10.17	SURVEY REVISIONS
D	2.28.17	OLC COMMENTS

SITE INFORMATION:
LV SOMERSET WATER TANK RELO
1170 BOURBON ROAD
SOMERSET, KY 42503
PULASKI COUNTY

POD NUMBER: 16-10388
DRAWN BY: POD
CHECKED BY: MEP
DATE: 11.23.16

SHEET TITLE:
OVERALL SITE PLAN w/DISTANCE TO PROPERTY LINES

SHEET NUMBER:
C-1A

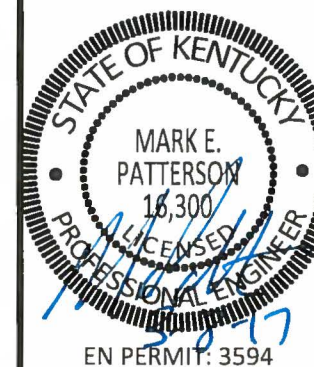


OVERALL SITE PLAN w/DISTANCE TO PROPERTY LINES
SCALE: 1" = 80'



LEGEND

	UTILITY POLE		GUY ANCHOR
	PROPOSED LEASE LINE		PROPOSED EASEMENT
	PROPOSED GRAVEL		PROPOSED FENCE
	EXISTING GRAVEL		EXISTING FENCE
	EXISTING EASEMENT		EXISTING OVERHEAD ELECTRIC
	EXISTING OVERHEAD ELECTRIC & TELEPHONE		EXISTING PAVEMENT
	PROPERTY LINE		ADJACENT PROPERTY LINE



ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	11.30.16	ISSUED FOR REVIEW
B	12.14.16	OLC COMMENTS
C	2.10.17	SURVEY REVISIONS
D	2.28.17	OLC COMMENTS

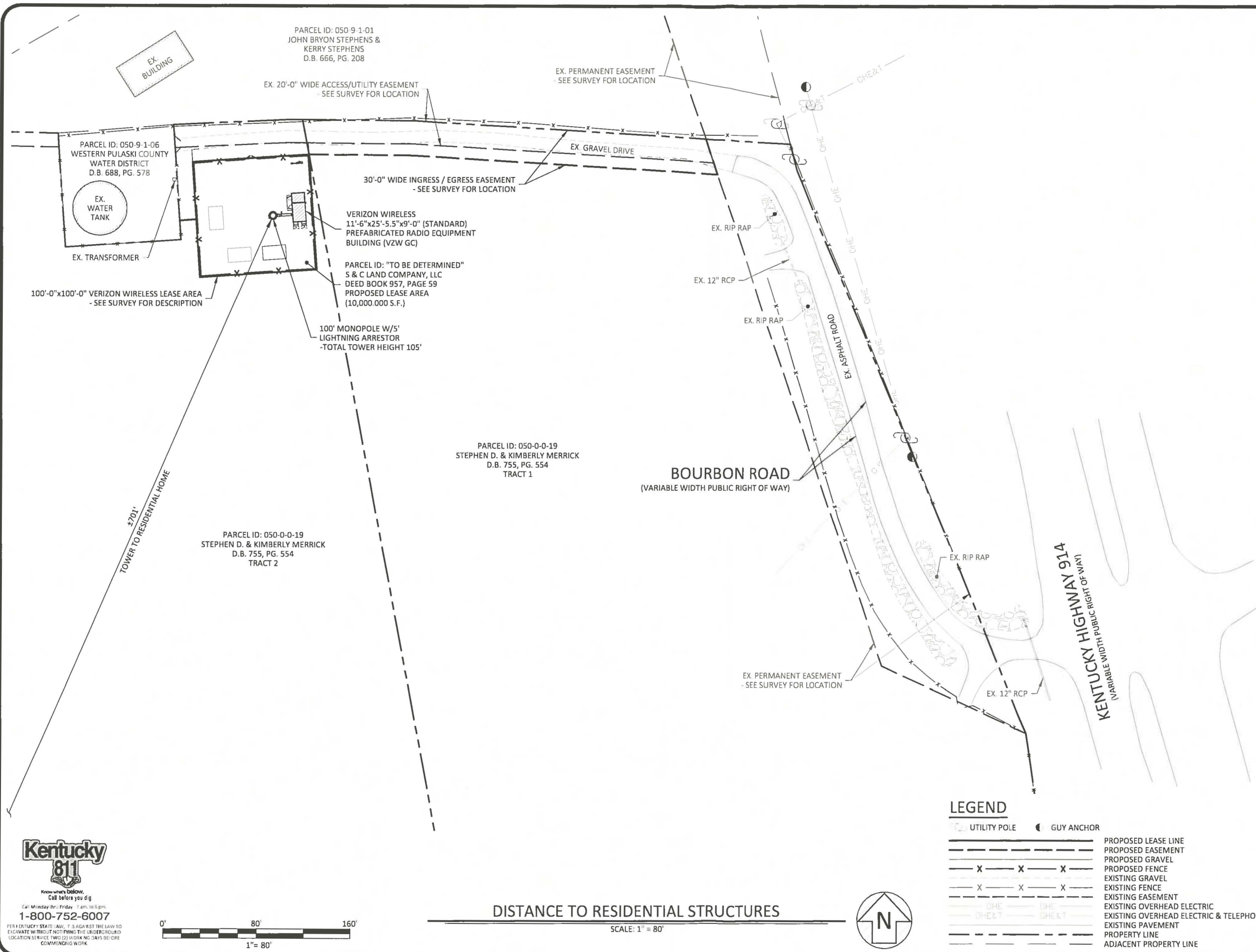
SITE INFORMATION:
LV SOMERSET WATER TANK RELO
1170 BOURBON ROAD
SOMERSET, KY 42503
PULASKI COUNTY

POD NUMBER: 16-10388
DRAWN BY: POD
CHECKED BY: MEP
DATE: 11.23.16

SHEET TITLE:

DISTANCE TO RESIDENTIAL STRUCTURES

SHEET NUMBER:
C-1B



LEGEND

	UTILITY POLE		GUY ANCHOR
	PROPOSED LEASE LINE		PROPOSED EASEMENT
	PROPOSED GRAVEL		PROPOSED FENCE
	EXISTING GRAVEL		EXISTING FENCE
	EXISTING EASEMENT		EXISTING OVERHEAD ELECTRIC
	EXISTING OVERHEAD ELECTRIC & TELEPHONE		EXISTING PAVEMENT
	PROPERTY LINE		ADJACENT PROPERTY LINE

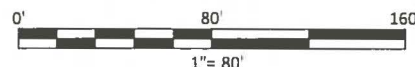
DISTANCE TO RESIDENTIAL STRUCTURES

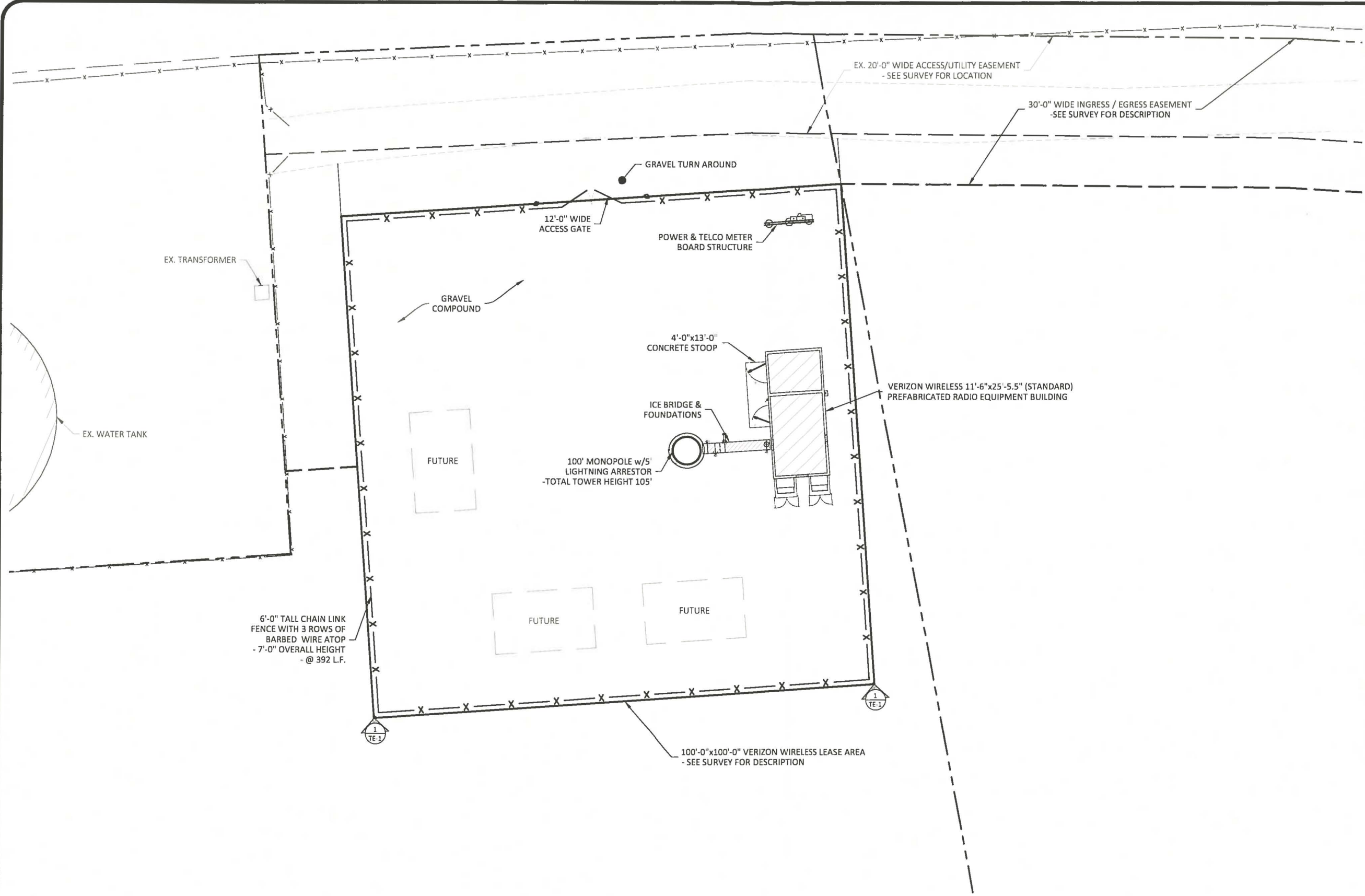
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1-800-752-6007

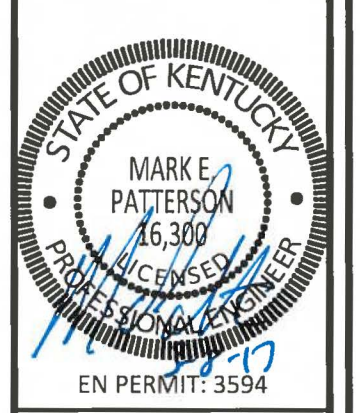
PER KENTUCKY STATE LAW, IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.





POD
POWER OF DESIGN
11490 BLUEGRASS PARKWAY
LOUISVILLE, KY 40299
502-437-5252

RURAL CELLULAR CORPORATION
D/B/A
verizon
2421 HOLLOWAY ROAD
LOUISVILLE, KY 40299



ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	11.30.16	ISSUED FOR REVIEW
B	12.14.16	OLC COMMENTS
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SITE INFORMATION:
LV SOMERSET WATER TANK RELO
1170 BOURBON ROAD
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PULASKI COUNTY

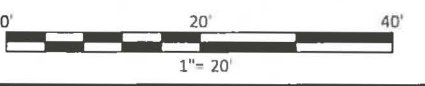
POD NUMBER: 16-10388
DRAWN BY: POD
CHECKED BY: MEP
DATE: 11.23.16

SHEET TITLE:
DETAILED SITE PLAN

SHEET NUMBER:
C-3

Kentucky 811
Know what's below.
Call before you dig.
Call Monday thru Friday 7 am to 5 pm
1-800-752-6007

*NOTE:
GENERAL CONTRACTOR IS TO ENSURE THERE IS NO DISTURBANCE OF PROPERTY, SOIL, ETC. OUTSIDE OF THE STAKED LEASE AREA WITHOUT APPROVAL FROM VERIZON WIRELESS CONSTRUCTION MANAGER



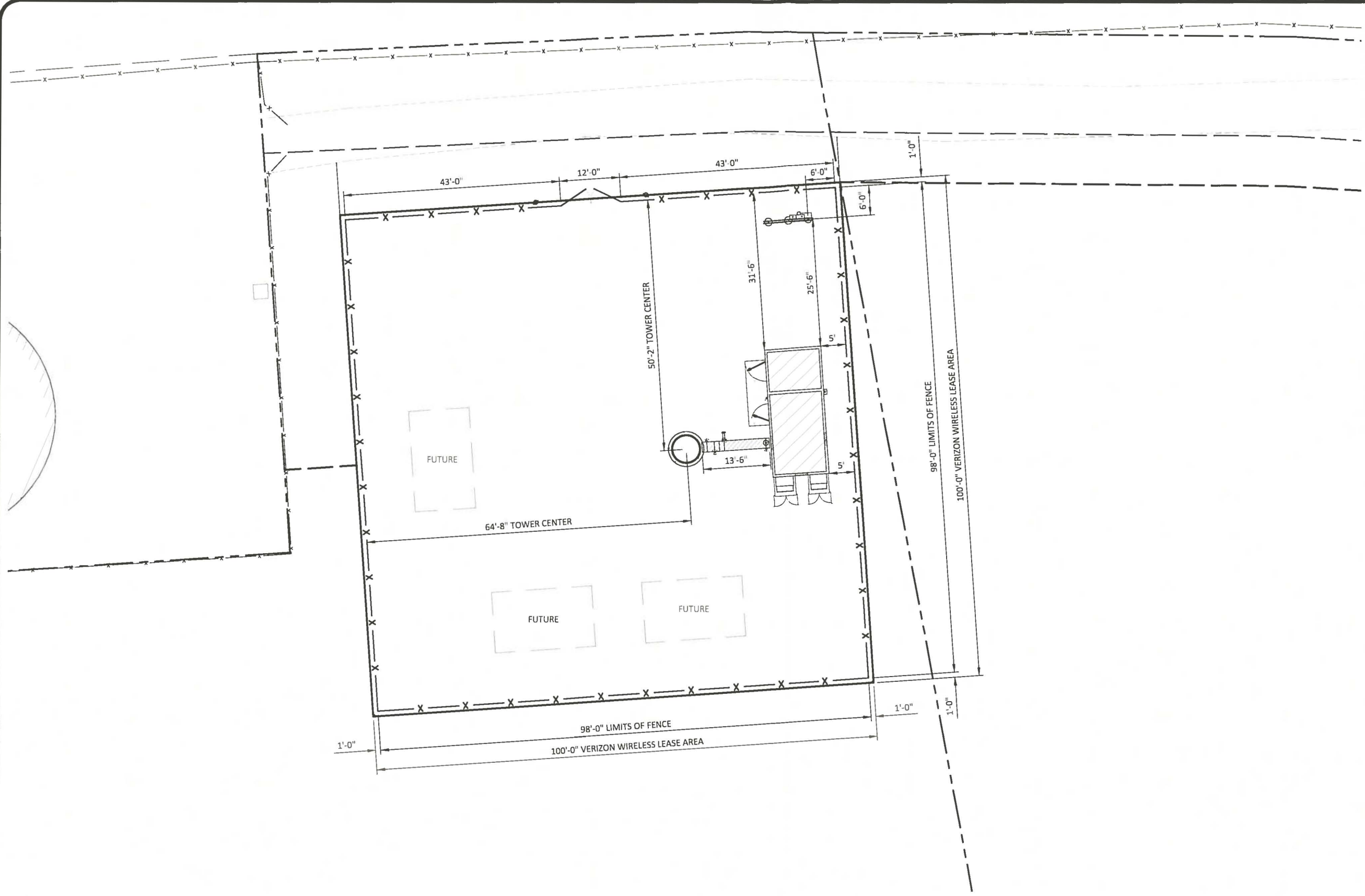
DETAILED SITE PLAN
SCALE: 1" = 20'-0"



LEGEND

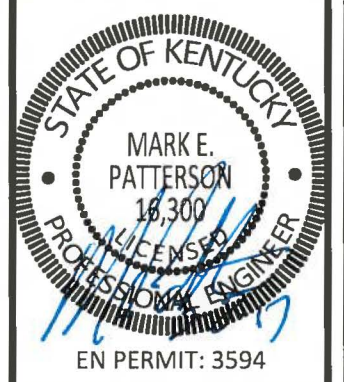
-----	PROPOSED LEASE LINE
-----	PROPOSED EASEMENT
-----	PROPOSED GRAVEL
- x - x - x -	PROPOSED FENCE
-----	EXISTING GRAVEL
- x - x - x -	EXISTING FENCE
-----	EXISTING EASEMENT
-----	PROPERTY LINE
-----	ADJACENT PROPERTY LINE

PER KENTUCKY STATE LAW, IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE (TWO) (2) WORKING DAYS BEFORE COMMENCING WORK



POD
 POWER OF DESIGN
 11490 BLUEGRASS PARKWAY
 LOUISVILLE, KY 40299
 502-437-5252

RURAL CELLULAR CORPORATION
 D/B/A
verizon
 2421 HOLLOWAY ROAD
 LOUISVILLE, KY 40299



ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	11.30.16	ISSUED FOR REVIEW
B	12.14.16	OLC COMMENTS
C	2.10.17	SURVEY REVISIONS
D	2.28.17	OLC COMMENTS

SITE INFORMATION:
LV SOMERSET WATER TANK RELO
 1170 BOURBON ROAD
 SOMERSET, KY 42503
 PULASKI COUNTY

POD NUMBER: 16-10388
 DRAWN BY: POD
 CHECKED BY: MEP
 DATE: 11.23.16

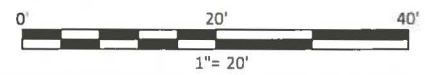
SHEET TITLE:
DIMENSIONED SITE PLAN

SHEET NUMBER:
C-4



Know what's below.
 Call before you dig.
 Monday thru Friday 7 am to 5 pm
1-800-752-6007
PER KENTUCKY STATE LAW, IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE (TWO (2) WORKING DAYS BEFORE COMMENCING WORK

*NOTE:
 GENERAL CONTRACTOR IS TO ENSURE THERE IS NO DISTURBANCE OF PROPERTY, SOIL, ETC. OUTSIDE OF THE STAKED LEASE AREA WITHOUT APPROVAL FROM VERIZON WIRELESS CONSTRUCTION MANAGER



DIMENSIONED SITE PLAN

SCALE: 1" = 20'-0"



LEGEND

- PROPOSED LEASE LINE
- PROPOSED EASEMENT
- PROPOSED GRAVEL
- PROPOSED FENCE
- EXISTING GRAVEL
- EXISTING FENCE
- EXISTING EASEMENT
- PROPERTY LINE
- ADJACENT PROPERTY LINE

EXHIBIT C
TOWER AND FOUNDATION DESIGN



N E L L O CORPORATION

Design Supporting Calculations

Sales Order: SO23778
Drawing Number(s)
Tower: 345621
Foundation: 345622
Order Description: NTP 45 x 100'
Site Name: LV Somerset WT
Location: Pulaski County, KY

Prepared For:
Customer: Verizon Wireless
Contact: Tom Boone
Date: 12/15/2016

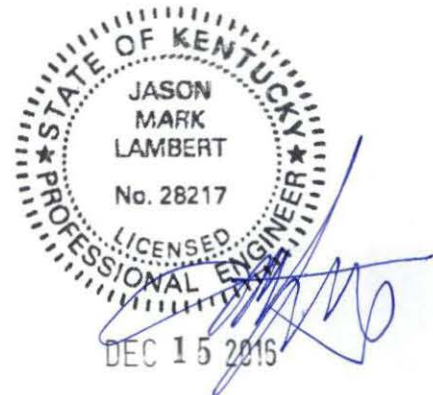


Table of Contents

Tower Analysis - Short form

Tower Analysis - Long form

Foundation Analysis

Section	1	51.50	18	0.1875	4.50	18.0000	32.5750	A572-65	2963.4	100.0 ft
Length (ft)	2	51.50	18	0.3125	30.9625	45.1250	7214.3	A572-65	2963.4	100.0 ft
Number of Sides										
Thickness (in)										
Socket Length (ft)										
Top Dia (in)										
Bot Dia (in)										
Grade										
Weight (lb)										

47.0 ft

0.0 ft

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
6' Lightning Rod	100	MTC3619 - 3 T-Frame Mounts	95
874G90VTE-SX	95	AIR-32	80
874G90VTE-SX	95	AIR-32	80
LNX-8514DS	95	AIR-32	80
LNX-8514DS	95	HBX-6517DS-VTM	80
LNX-8514DS	95	HBX-6517DS-VTM	80
AIR-32	95	HBX-6517DS-VTM	80
AIR-32	95	Raycap RxxDC-3315-PF-48	80
AIR-32	95	MTC3619 - 3 T-Frame Mounts	80
(2) RRUS-12 A2	95	Dish Pipe Mount	75
(2) RRUS-12 A2	95	(2) Clamp Ring Assembly	75
(2) RRUS-12 A2	95	PAR8-59	75
Raycap RxxDC-3315-PF-48	95	(4) LNX-6515DS	65
Raycap RxxDC-3315-PF-48	95	Low-ProX Platform 12'	65
Raycap RxxDC-3315-PF-48	95	Low-Profile Support Rail 12'	65
(2) Westell BWC-TTMA-700C-VG	95	(4) LNX-6515DS	65
(2) Westell BWC-TTMA-700C-VG	95	(4) LNX-6515DS	65
(2) Westell BWC-TTMA-700C-VG	95	(4) LNX-6515DS	50
SC-100-13	95	Low-ProX Platform 12'	50
SC-100-13	95	Low-Profile Support Rail 12'	50
SC-6014	95	(4) LNX-6515DS	50
SC-6014	95	(4) LNX-6515DS	50

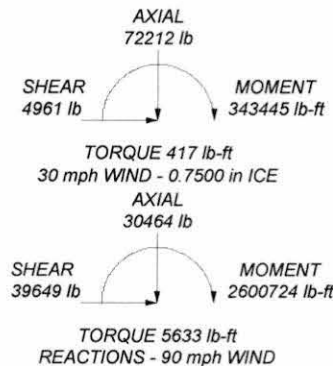
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-G Standard.
2. Tower designed for a 90 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 30 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 3 with Crest Height of 130.00 ft
7. TOWER RATING: 98.6%

ALL REACTIONS
ARE FACTORED



Nello Corporation 1201 South Sheridan St. South Bend, IN 46619 Phone: 574-288-3632 FAX: 574-288-5860	Job: S023778; Tower 345621; Foundation 34502
	Project: NP 100' - LV Somerset WT - Pulaski Co., KY
	Client: Verizon Wireless Drawn by: tkrou App'd:
	Code: TIA-222-G Date: 12/14/16 Scale: NTS
	Path: N:\eri\3456\345621.eri Dwg No. E-1

tnxTower Nello Corporation 1201 South Sheridan St. South Bend, IN 46619 Phone: 574-288-3632 FAX: 574-288-5860	Job SO23778; Tower 345621; Foundation 345622	Page 1 of 73
	Project NP 100' - LV Somerset WT - Pulaski Co., KY	Date 09:04:56 12/14/16
	Client Verizon Wireless	Designed by tkrou

Tower Input Data

There is a pole section.
 This tower is designed using the TIA-222-G standard.
 The following design criteria apply:

- Basic wind speed of 90 mph.
- Structure Class II.
- Exposure Category C.
- Topographic Category 3.
- Crest Height 130.00 ft.
- Nominal ice thickness of 0.7500 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 30 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity √ Leg Bolts Are At Top Of Section √ Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) Add IBC .6D+W Combination | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r √ Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. √ Autocalc Torque Arm Areas √ SR Members Have Cut Ends Sort Capacity Reports By Component √ Triangulate Diamond Inner Bracing | <ul style="list-style-type: none"> Treat Feedline Bundles As Cylinder Use ASCE 10 X-Brace Ly Rules √ Calculate Redundant Bracing Forces √ Ignore Redundant Members in FEA √ SR Leg Bolts Resist Compression √ All Leg Panels Have Same Allowable Offset Girt At Foundation Consider Feedline Torque Include Angle Block Shear Check <li style="text-align: center;">Poles √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets |
|--|--|--|

Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	
L1	100.00-47.00	53.00	4.50	18	18.0000	32.5750	0.1875	0.7500	A572-65 (65 ksi)
L2	47.00-0.00	51.50		18	30.9625	45.1250	0.3125	1.2500	A572-65 (65 ksi)

tnxTower Nello Corporation 1201 South Sheridan St. South Bend, IN 46619 Phone: 574-288-3632 FAX: 574-288-5860	Job SO23778; Tower 345621; Foundation 345622	Page 2 of 73
	Project NP 100' - LV Somerset WT - Pulaski Co., KY	Date 09:04:56 12/14/16
	Client Verizon Wireless	Designed by tkrou

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ³	w in	w/t
L1	18.2777 33.0775	10.6007 19.2746	424.9328 2554.3354	6.3234 11.4976	9.1440 16.5481	46.4712 154.3582	850.4248 5112.0319	5.3013 9.6391	2.8380 5.4032	15.136 28.817
L2	32.6967 45.8211	30.4010 44.4484	3608.1604 11276.9567	10.8807 15.9084	15.7289 22.9235	229.3961 491.9387	7221.0684 22568.7519	15.2034 22.2284	4.8994 7.3920	15.678 23.654

Tower Elevation	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
L1 100.00- 47.00				1	1	1.1		
L2 47.00-0.00				1	1	1.1		

Monopole Base Plate Data

Base Plate Data	
Base plate is square	
Base plate is grouted	
Anchor bolt grade	A615-75
Anchor bolt size	2.2500 in
Number of bolts	12
Embedment length	60.0000 in
f _c	4 ksi
Grout space	3.3750 in
Base plate grade	A572-50
Base plate thickness	2.5000 in
Bolt circle diameter	52.0000 in
Outer diameter	58.0000 in
Inner diameter	41.5000 in
Base plate type	Plain Plate

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight plf
H+S_MLC Hybrid (1-7/16" - 24 Fibers)	C	No	Inside Pole	95.00 - 0.00	3	No Ice	0.00	1.72
						1/2" Ice	0.00	1.72
						1" Ice	0.00	1.72
LDF7-50A (1-5/8 FOAM)	B	No	Inside Pole	95.00 - 0.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
HYBRIFLEX 1-1/4"	A	No	Inside Pole	80.00 - 0.00	1	No Ice	0.00	1.51
						1/2" Ice	0.00	1.51
						1" Ice	0.00	1.51
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	75.00 - 0.00	1	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82

tnxTower Nello Corporation 1201 South Sheridan St. South Bend, IN 46619 Phone: 574-288-3632 FAX: 574-288-5860	Job SO23778; Tower 345621; Foundation 345622	Page 3 of 73
	Project NP 100' - LV Somerset WT - Pulaski Co., KY	Date 09:04:56 12/14/16
	Client Verizon Wireless	Designed by tkrou

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C _{AA}		Weight plf
						In Face ft ² /ft	Out Face ft ² /ft	
LDF7-50A (1-5/8 FOAM)	B	No	Inside Pole	65.00 - 0.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
LDF7-50A (1-5/8 FOAM)	A	No	Inside Pole	50.00 - 0.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA}		Weight lb
					In Face ft ²	Out Face ft ²	
L1	100.00-47.00	A	0.000	0.000	0.000	0.000	79.35
		B	0.000	0.000	0.000	0.000	649.44
		C	0.000	0.000	0.000	0.000	269.92
L2	47.00-0.00	A	0.000	0.000	0.000	0.000	533.45
		B	0.000	0.000	0.000	0.000	924.96
		C	0.000	0.000	0.000	0.000	280.36

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA}		Weight lb
						In Face ft ²	Out Face ft ²	
L1	100.00-47.00	A	1.816	0.000	0.000	0.000	0.000	79.35
		B		0.000	0.000	0.000	0.000	649.44
		C		0.000	0.000	0.000	0.000	269.92
L2	47.00-0.00	A	1.803	0.000	0.000	0.000	0.000	533.45
		B		0.000	0.000	0.000	0.000	924.96
		C		0.000	0.000	0.000	0.000	280.36

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA}		Weight lb	
			Horz ft	Vert ft			Front ft ²	Side ft ²		
6' Lightning Rod	C	From Leg	0.00		0.0000	100.00	No Ice	0.76	0.76	10.00
			0.00				1/2" Ice	1.45	1.45	15.34
			3.00				1" Ice	2.13	2.13	20.67

tnxTower <i>Nello Corporation</i> 1201 South Sheridan St. South Bend, IN 46619 Phone: 574-288-3632 FAX: 574-288-5860	Job SO23778; Tower 345621; Foundation 345622	Page 4 of 73
	Project NP 100' - LV Somerset WT - Pulaski Co., KY	Date 09:04:56 12/14/16
	Client Verizon Wireless	Designed by tkrou

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A ₁		Weight	
			Horz	Vert			Front	Side		
			ft	ft	°	ft	ft ²	ft ²	lb	
874G90VTE-SX	C	From Leg	0.00	0.00	0.0000	95.00	No Ice	4.67	3.43	31.14
			0.00	0.00			1/2" Ice	5.24	4.32	65.48
			0.00	0.00			1" Ice	5.81	5.20	114.46
874G90VTE-SX	B	From Leg	0.00	0.00	0.0000	95.00	No Ice	4.67	3.43	31.14
			0.00	0.00			1/2" Ice	5.24	4.32	65.48
			0.00	0.00			1" Ice	5.81	5.20	114.46
LNX-8514DS	C	From Leg	0.00	0.00	0.0000	95.00	No Ice	11.45	9.60	80.30
			0.00	0.00			1/2" Ice	12.38	11.33	160.56
			0.00	0.00			1" Ice	13.31	13.05	270.23
LNX-8514DS	B	From Leg	0.00	0.00	0.0000	95.00	No Ice	11.45	9.60	80.30
			0.00	0.00			1/2" Ice	12.38	11.33	160.56
			0.00	0.00			1" Ice	13.31	13.05	270.23
LNX-8514DS	A	From Leg	0.00	0.00	0.0000	95.00	No Ice	11.45	9.60	80.30
			0.00	0.00			1/2" Ice	12.38	11.33	160.56
			0.00	0.00			1" Ice	13.31	13.05	270.23
AIR-32	C	From Leg	0.00	0.00	0.0000	95.00	No Ice	6.30	5.58	124.97
			0.00	0.00			1/2" Ice	6.95	6.68	175.01
			0.00	0.00			1" Ice	7.60	7.78	241.51
AIR-32	B	From Leg	0.00	0.00	0.0000	95.00	No Ice	6.30	5.58	124.97
			0.00	0.00			1/2" Ice	6.95	6.68	175.01
			0.00	0.00			1" Ice	7.60	7.78	241.51
AIR-32	A	From Leg	0.00	0.00	0.0000	95.00	No Ice	6.30	5.58	124.97
			0.00	0.00			1/2" Ice	6.95	6.68	175.01
			0.00	0.00			1" Ice	7.60	7.78	241.51
(2) RRUS-12 & A2	C	From Leg	0.00	0.00	0.0000	95.00	No Ice	3.14	1.84	71.50
			0.00	0.00			1/2" Ice	3.48	2.10	98.98
			0.00	0.00			1" Ice	3.81	2.37	126.46
(2) RRUS-12 & A2	B	From Leg	0.00	0.00	0.0000	95.00	No Ice	3.14	1.84	71.50
			0.00	0.00			1/2" Ice	3.48	2.10	98.98
			0.00	0.00			1" Ice	3.81	2.37	126.46
(2) RRUS-12 & A2	A	From Leg	0.00	0.00	0.0000	95.00	No Ice	3.14	1.84	71.50
			0.00	0.00			1/2" Ice	3.48	2.10	98.98
			0.00	0.00			1" Ice	3.81	2.37	126.46
Raycap RxxDC-3315-PF-48	C	From Leg	0.00	0.00	0.0000	95.00	No Ice	3.01	1.96	32.00
			0.00	0.00			1/2" Ice	3.34	2.25	58.19
			0.00	0.00			1" Ice	3.67	2.53	84.38
Raycap RxxDC-3315-PF-48	B	From Leg	0.00	0.00	0.0000	95.00	No Ice	3.01	1.96	32.00
			0.00	0.00			1/2" Ice	3.34	2.25	58.19
			0.00	0.00			1" Ice	3.67	2.53	84.38
Raycap RxxDC-3315-PF-48	A	From Leg	0.00	0.00	0.0000	95.00	No Ice	3.01	1.96	32.00
			0.00	0.00			1/2" Ice	3.34	2.25	58.19
			0.00	0.00			1" Ice	3.67	2.53	84.38
(2) Westell BWC-TTMA-700C-VG	C	From Leg	0.00	0.00	0.0000	95.00	No Ice	0.50	0.67	28.00
			0.00	0.00			1/2" Ice	0.64	0.82	35.30
			0.00	0.00			1" Ice	0.78	0.98	42.60
(2) Westell BWC-TTMA-700C-VG	B	From Leg	0.00	0.00	0.0000	95.00	No Ice	0.50	0.67	28.00
			0.00	0.00			1/2" Ice	0.64	0.82	35.30
			0.00	0.00			1" Ice	0.78	0.98	42.60
(2) Westell BWC-TTMA-700C-VG	A	From Leg	0.00	0.00	0.0000	95.00	No Ice	0.50	0.67	28.00
			0.00	0.00			1/2" Ice	0.64	0.82	35.30
			0.00	0.00			1" Ice	0.78	0.98	42.60
SC-100-13	A	From Leg	0.00	0.00	0.0000	95.00	No Ice	6.24	8.99	46.23
			0.00	0.00			1/2" Ice	7.04	10.54	104.49
			0.00	0.00			1" Ice	7.84	12.10	188.98
SC-100-13	C	From Leg	0.00	0.00	0.0000	95.00	No Ice	6.24	8.99	46.23
			0.00	0.00			1/2" Ice	7.04	10.54	104.49
			0.00	0.00			1" Ice	7.84	12.10	188.98

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA}		Weight	
			Horz	Vert			Front	Side		
			ft	ft	°	ft	ft ²	ft ²	lb	
SC-6014	B	From Leg	0.00	0.00	0.0000	95.00	No Ice	6.69	5.66	33.12
			0.00	0.00			1/2" Ice	7.27	6.58	86.30
			0.00	0.00			1" Ice	7.86	7.51	152.60
SC-6014	A	From Leg	0.00	0.00	0.0000	95.00	No Ice	6.69	5.66	33.12
			0.00	0.00			1/2" Ice	7.27	6.58	86.30
			0.00	0.00			1" Ice	7.86	7.51	152.60
MTC3619 - 3 T-Frame Mounts	C	None	0.00	0.00	0.0000	95.00	No Ice	34.40	34.40	2486.00
			0.00	0.00			1/2" Ice	52.70	52.70	4350.00
			0.00	0.00			1" Ice	71.00	71.00	6214.00
AIR-32	C	From Leg	0.00	0.00	0.0000	80.00	No Ice	6.30	5.58	124.97
			0.00	0.00			1/2" Ice	6.95	6.68	175.01
			0.00	0.00			1" Ice	7.60	7.78	241.51
AIR-32	B	From Leg	0.00	0.00	0.0000	80.00	No Ice	6.30	5.58	124.97
			0.00	0.00			1/2" Ice	6.95	6.68	175.01
			0.00	0.00			1" Ice	7.60	7.78	241.51
AIR-32	A	From Leg	0.00	0.00	0.0000	80.00	No Ice	6.30	5.58	124.97
			0.00	0.00			1/2" Ice	6.95	6.68	175.01
			0.00	0.00			1" Ice	7.60	7.78	241.51
HBX-6517DS-VTM	C	From Leg	0.00	0.00	0.0000	80.00	No Ice	5.24	4.78	41.54
			0.00	0.00			1/2" Ice	5.95	6.11	80.05
			0.00	0.00			1" Ice	6.65	7.44	141.41
HBX-6517DS-VTM	B	From Leg	0.00	0.00	0.0000	80.00	No Ice	5.24	4.78	41.54
			0.00	0.00			1/2" Ice	5.95	6.11	80.05
			0.00	0.00			1" Ice	6.65	7.44	141.41
HBX-6517DS-VTM	A	From Leg	0.00	0.00	0.0000	80.00	No Ice	5.24	4.78	41.54
			0.00	0.00			1/2" Ice	5.95	6.11	80.05
			0.00	0.00			1" Ice	6.65	7.44	141.41
Raycap RxxDC-3315-PF-48	C	From Leg	0.00	0.00	0.0000	80.00	No Ice	3.01	1.96	32.00
			0.00	0.00			1/2" Ice	3.34	2.25	58.19
			0.00	0.00			1" Ice	3.67	2.53	84.38
MTC3619 - 3 T-Frame Mounts	B	None	0.00	0.00	0.0000	80.00	No Ice	34.40	34.40	2486.00
			0.00	0.00			1/2" Ice	52.70	52.70	4350.00
			0.00	0.00			1" Ice	71.00	71.00	6214.00
Dish Pipe Mount	C	From Leg	0.00	0.00	0.0000	75.00	No Ice	0.00	1.80	103.00
			0.00	0.00			1/2" Ice	0.00	2.10	119.00
			0.00	0.00			1" Ice	0.00	2.40	135.00
(4) LNX-6515DS	C	From Leg	0.00	0.00	0.0000	65.00	No Ice	11.43	9.59	80.27
			0.00	0.00			1/2" Ice	12.36	11.31	160.45
			0.00	0.00			1" Ice	13.29	13.03	270.01
(4) LNX-6515DS	B	From Leg	0.00	0.00	0.0000	65.00	No Ice	11.43	9.59	80.27
			0.00	0.00			1/2" Ice	12.36	11.31	160.45
			0.00	0.00			1" Ice	13.29	13.03	270.01
(4) LNX-6515DS	A	From Leg	0.00	0.00	0.0000	65.00	No Ice	11.43	9.59	80.27
			0.00	0.00			1/2" Ice	12.36	11.31	160.45
			0.00	0.00			1" Ice	13.29	13.03	270.01
Low-ProX Platform 12'	B	None	0.00	0.00	0.0000	65.00	No Ice	19.00	19.00	1055.00
			0.00	0.00			1/2" Ice	27.00	27.00	1470.00
			0.00	0.00			1" Ice	35.00	35.00	1885.00
Low-Profile Support Rail 12'	A	None	0.00	0.00	0.0000	65.00	No Ice	5.50	5.50	288.00
			0.00	0.00			1/2" Ice	7.50	7.50	420.00
			0.00	0.00			1" Ice	9.50	9.50	552.00
(4) LNX-6515DS	C	From Leg	0.00	0.00	0.0000	50.00	No Ice	11.43	9.59	80.27
			0.00	0.00			1/2" Ice	12.36	11.31	160.45
			0.00	0.00			1" Ice	13.29	13.03	270.01
(4) LNX-6515DS	B	From Leg	0.00	0.00	0.0000	50.00	No Ice	11.43	9.59	80.27
			0.00	0.00			1/2" Ice	12.36	11.31	160.45
			0.00	0.00			1" Ice	13.29	13.03	270.01

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
(4) LNX-6515DS	A	From Leg	0.00 0.00 0.00	0.0000	50.00	No Ice	11.43	9.59	80.27
						1/2" Ice	12.36	11.31	160.45
						1" Ice	13.29	13.03	270.01
Low-ProX Platform 12'	B	None		0.0000	50.00	No Ice	19.00	19.00	1055.00
						1/2" Ice	27.00	27.00	1470.00
						1" Ice	35.00	35.00	1885.00
Low-Profile Support Rail 12'	A	None		0.0000	50.00	No Ice	5.50	5.50	288.00
						1/2" Ice	7.50	7.50	420.00
						1" Ice	9.50	9.50	552.00
(2) Clamp Ring Assembly	C	None		0.0000	75.00	No Ice	0.01	0.01	231.00
						1/2" Ice	0.01	0.01	340.25
						1" Ice	0.01	0.01	449.49

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight lb	
PAR8-59	C	Paraboloid w/o Radome	From Leg	0.00 0.00 0.00	60.0000		75.00	8.00	No Ice 1/2" Ice 1" Ice	50.26 51.29 52.32	251.00 514.30 777.60

Tower Pressures - No Ice

$$G_H = 1.100$$

Section Elevation ft	z ft	K _z	q _z psf	A _G ft ²	F _a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L1 100.00-47.00	70.68	1.176	32	113.409	A	0.000	113.409	113.409	100.00	0.000	0.000
					B	0.000	113.409		100.00	0.000	0.000
					C	0.000	113.409		100.00	0.000	0.000
L2 47.00-0.00	22.08	0.921	35	153.764	A	0.000	153.764	153.764	100.00	0.000	0.000
					B	0.000	153.764		100.00	0.000	0.000
					C	0.000	153.764		100.00	0.000	0.000

Tower Pressure - With Ice

$$G_H = 1.100$$

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Section Elevation	z	K _Z	q _z	t _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face	C _A A _A Out Face
ft	ft		psf	in	ft ²		ft ²	ft ²	ft ²		ft ²	ft ²
L1 100.00-47.00	70.68	1.176	4	1.8161	129.452	A	0.000	129.452	129.452	100.00	0.000	0.000
						B	0.000	129.452		100.00	0.000	0.000
						C	0.000	129.452		100.00	0.000	0.000
L2 47.00-0.00	22.08	0.921	4	1.8029	167.990	A	0.000	167.990	167.990	100.00	0.000	0.000
						B	0.000	167.990		100.00	0.000	0.000
						C	0.000	167.990		100.00	0.000	0.000

Tower Pressure - Service

$G_H = 1.100$

Section Elevation	z	K _Z	q _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face	C _A A _A Out Face
ft	ft		psf	ft ²		ft ²	ft ²	ft ²		ft ²	ft ²
L1 100.00-47.00	70.68	1.176	13	113.409	A	0.000	113.409	113.409	100.00	0.000	0.000
					B	0.000	113.409		100.00	0.000	0.000
					C	0.000	113.409		100.00	0.000	0.000
L2 47.00-0.00	22.08	0.921	14	153.764	A	0.000	153.764	153.764	100.00	0.000	0.000
					B	0.000	153.764		100.00	0.000	0.000
					C	0.000	153.764		100.00	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
L1 100.00-47.00	998.71	2963.37	A	1	0.65	32	1	1	113.409	2614.27	49.33	C
			B	1	0.65		1	1	113.409			
			C	1	0.65		1	1	113.409			
L2 47.00-0.00	1738.77	7214.29	A	1	0.65	35	1	1	153.764	3807.29	81.01	C
			B	1	0.65		1	1	153.764			
			C	1	0.65		1	1	153.764			
Sum Weight:	2737.47	10177.66						OTM	268835.25 lb-ft	6421.56		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
L1 100.00-47.00	998.71	2963.37	A	1	0.65	32	1	1	113.409	2614.27	49.33	C
			B	1	0.65		1	1	113.409			
			C	1	0.65		1	1	113.409			
L2 47.00-0.00	1738.77	7214.29	A	1	0.65	35	1	1	153.764	3807.29	81.01	C

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
Sum Weight:	2737.47	10177.66	B C	1 1	0.65 0.65		1 1	1 1	153.764 153.764 268835.25 lb-ft	6421.56		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
L1 100.00-47.00	998.71	2963.37	A B C	1 1 1	0.65 0.65 0.65	32	1 1 1	1 1 1	113.409 113.409 113.409	2614.27	49.33	C
L2 47.00-0.00	1738.77	7214.29	A B C	1 1 1	0.65 0.65 0.65	35	1 1 1	1 1 1	153.764 153.764 153.764	3807.29	81.01	C
Sum Weight:	2737.47	10177.66						OTM	268835.25 lb-ft	6421.56		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
L1 100.00-47.00	998.71	6183.53	A B C	1 1 1	1.2 1.2 1.2	4	1 1 1	1 1 1	129.452 129.452 129.452	612.12	11.55	C
L2 47.00-0.00	1738.77	11446.67	A B C	1 1 1	1.2 1.2 1.2	4	1 1 1	1 1 1	167.990 167.990 167.990	853.24	18.15	C
Sum Weight:	2737.47	17630.20						OTM	62102.50 lb-ft	1465.35		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
L1 100.00-47.00	998.71	6183.53	A B C	1 1 1	1.2 1.2 1.2	4	1 1 1	1 1 1	129.452 129.452 129.452	612.12	11.55	C

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
L2 47.00-0.00	1738.77	11446.67	A	1	1.2	4	1	1	167.990	853.24	18.15	C
			B	1	1.2		1	1	167.990			
			C	1	1.2		1	1	167.990			
Sum Weight:	2737.47	17630.20						OTM	62102.50 lb-ft	1465.35		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
L1 100.00-47.00	998.71	6183.53	A	1	1.2	4	1	1	129.452	612.12	11.55	C
			B	1	1.2		1	1	129.452			
			C	1	1.2		1	1	129.452			
L2 47.00-0.00	1738.77	11446.67	A	1	1.2	4	1	1	167.990	853.24	18.15	C
			B	1	1.2		1	1	167.990			
			C	1	1.2		1	1	167.990			
Sum Weight:	2737.47	17630.20						OTM	62102.50 lb-ft	1465.35		

Tower Forces - Service - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
L1 100.00-47.00	998.71	2963.37	A	1	0.65	13	1	1	113.409	1039.59	19.61	C
			B	1	0.65		1	1	113.409			
			C	1	0.65		1	1	113.409			
L2 47.00-0.00	1738.77	7214.29	A	1	0.65	14	1	1	153.764	1514.01	32.21	C
			B	1	0.65		1	1	153.764			
			C	1	0.65		1	1	153.764			
Sum Weight:	2737.47	10177.66						OTM	106905.25 lb-ft	2553.60		

Tower Forces - Service - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
L1 100.00-47.00	998.71	2963.37	A	1	0.65	13	1	1	113.409	1039.59	19.61	C
			B	1	0.65		1	1	113.409			

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Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
L2 47.00-0.00	1738.77	7214.29	C	1	0.65	14	1	1	113.409	1514.01	32.21	C
			A	1	0.65		1	1	153.764			
			B	1	0.65		1	1	153.764			
			C	1	0.65		1	1	153.764			
Sum Weight:	2737.47	10177.66						OTM	106905.25 lb-ft	2553.60		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
L1 100.00-47.00	998.71	2963.37	A	1	0.65	13	1	1	113.409	1039.59	19.61	C
			B	1	0.65		1	1	113.409			
			C	1	0.65		1	1	113.409			
L2 47.00-0.00	1738.77	7214.29	A	1	0.65	14	1	1	153.764	1514.01	32.21	C
			B	1	0.65		1	1	153.764			
			C	1	0.65		1	1	153.764			
Sum Weight:	2737.47	10177.66						OTM	106905.25 lb-ft	2553.60		

Mast Vectors - No Ice

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
L1	100.00-47.00	0	Wind Normal	2614.27	0.00	-2614.27	-184773.55	0.00	0.00
		30	Wind 90	2614.27	1307.13	-2264.02	-160018.59	-92386.77	0.00
		60	Wind 60	2614.27	2264.02	-1307.13	-92386.77	-160018.59	0.00
		90	Wind 90	2614.27	2614.27	0.00	0.00	-184773.55	0.00
		120	Wind Normal	2614.27	2264.02	1307.13	92386.77	-160018.59	0.00
		150	Wind 90	2614.27	1307.13	2264.02	160018.59	-92386.77	0.00
		180	Wind 60	2614.27	0.00	2614.27	184773.55	0.00	0.00
		210	Wind 90	2614.27	-1307.13	2264.02	160018.59	92386.77	0.00
		240	Wind Normal	2614.27	-2264.02	1307.13	92386.77	160018.59	0.00
		270	Wind 90	2614.27	-2614.27	0.00	0.00	184773.55	0.00
		300	Wind 60	2614.27	-2264.02	-1307.13	-92386.77	160018.59	0.00
		330	Wind 90	2614.27	-1307.13	-2264.02	-160018.59	92386.77	0.00
L2	47.00-0.00	0	Wind Normal	3807.29	0.00	-3807.29	-84061.71	0.00	0.00
		30	Wind 90	3807.29	1903.65	-3297.21	-72799.57	-42030.85	0.00
		60	Wind 60	3807.29	3297.21	-1903.65	-42030.85	-72799.57	0.00
		90	Wind 90	3807.29	3807.29	0.00	0.00	-84061.71	0.00
		120	Wind Normal	3807.29	3297.21	1903.65	42030.85	-72799.57	0.00
		150	Wind 90	3807.29	1903.65	3297.21	72799.57	-42030.85	0.00
		180	Wind 60	3807.29	0.00	3807.29	84061.71	0.00	0.00
		210	Wind 90	3807.29	-1903.65	3297.21	72799.57	42030.85	0.00
		240	Wind Normal	3807.29	-3297.21	1903.65	42030.85	72799.57	0.00
		270	Wind 90	3807.29	-3807.29	0.00	0.00	84061.71	0.00

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Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
		300	Wind 60	3807.29	-3297.21	-1903.65	-42030.85	72799.57	0.00
		330	Wind 90	3807.29	-1903.65	-3297.21	-72799.57	42030.85	0.00

Mast Totals - No Ice

Wind Azimuth °	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	0.00	-6421.56	-268835.25	0.00	0.00
30	3210.78	-5561.23	-232818.16	-134417.63	0.00
60	5561.23	-3210.78	-134417.63	-232818.16	0.00
90	6421.56	0.00	0.00	-268835.25	0.00
120	5561.23	3210.78	134417.63	-232818.16	0.00
150	3210.78	5561.23	232818.16	-134417.63	0.00
180	0.00	6421.56	268835.25	0.00	0.00
210	-3210.78	5561.23	232818.16	134417.63	0.00
240	-5561.23	3210.78	134417.63	232818.16	0.00
270	-6421.56	0.00	0.00	268835.25	0.00
300	-5561.23	-3210.78	-134417.63	232818.16	0.00
330	-3210.78	-5561.23	-232818.16	134417.63	0.00

Mast Vectors - With Ice

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
L1	100.00-47.00	0	Wind Normal	612.12	0.00	-612.12	-43263.72	0.00	0.00
		30	Wind 90	612.12	306.06	-530.11	-37467.48	-21631.86	0.00
		60	Wind 60	612.12	530.11	-306.06	-21631.86	-37467.48	0.00
		90	Wind 90	612.12	612.12	0.00	0.00	-43263.72	0.00
		120	Wind Normal	612.12	530.11	306.06	21631.86	-37467.48	0.00
		150	Wind 90	612.12	306.06	530.11	37467.48	-21631.86	0.00
		180	Wind 60	612.12	0.00	612.12	43263.72	0.00	0.00
		210	Wind 90	612.12	-306.06	530.11	37467.48	21631.86	0.00
		240	Wind Normal	612.12	-530.11	306.06	21631.86	37467.48	0.00
		270	Wind 90	612.12	-612.12	0.00	0.00	43263.72	0.00
		300	Wind 60	612.12	-530.11	-306.06	-21631.86	37467.48	0.00
		330	Wind 90	612.12	-306.06	-530.11	-37467.48	21631.86	0.00
		L2	47.00-0.00	0	Wind Normal	853.24	0.00	-853.24	-18838.78
30	Wind 90			853.24	426.62	-738.93	-16314.86	-9419.39	0.00
60	Wind 60			853.24	738.93	-426.62	-9419.39	-16314.86	0.00
90	Wind 90			853.24	853.24	0.00	0.00	-18838.78	0.00
120	Wind Normal			853.24	738.93	426.62	9419.39	-16314.86	0.00
150	Wind 90			853.24	426.62	738.93	16314.86	-9419.39	0.00
180	Wind 60			853.24	0.00	853.24	18838.78	0.00	0.00
210	Wind 90			853.24	-426.62	738.93	16314.86	9419.39	0.00
240	Wind Normal			853.24	-738.93	426.62	9419.39	16314.86	0.00
270	Wind 90			853.24	-853.24	0.00	0.00	18838.78	0.00
300	Wind 60			853.24	-738.93	-426.62	-9419.39	16314.86	0.00
330	Wind 90			853.24	-426.62	-738.93	-16314.86	9419.39	0.00

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Mast Totals - With Ice

Wind Azimuth °	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	0.00	-1465.35	-62102.50	0.00	0.00
30	732.68	-1269.03	-53782.34	-31051.25	0.00
60	1269.03	-732.68	-31051.25	-53782.34	0.00
90	1465.35	0.00	0.00	-62102.50	0.00
120	1269.03	732.68	31051.25	-53782.34	0.00
150	732.68	1269.03	53782.34	-31051.25	0.00
180	0.00	1465.35	62102.50	0.00	0.00
210	-732.68	1269.03	53782.34	31051.25	0.00
240	-1269.03	732.68	31051.25	53782.34	0.00
270	-1465.35	0.00	0.00	62102.50	0.00
300	-1269.03	-732.68	-31051.25	53782.34	0.00
330	-732.68	-1269.03	-53782.34	31051.25	0.00

Mast Vectors - Service

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
L1	100.00-47.00	0	Wind Normal	1039.59	0.00	-1039.59	-73477.20	0.00	0.00
		30	Wind 90	1039.59	519.80	-900.31	-63633.12	-36738.60	0.00
		60	Wind 60	1039.59	900.31	-519.80	-36738.60	-63633.12	0.00
		90	Wind 90	1039.59	1039.59	0.00	0.00	-73477.20	0.00
		120	Wind Normal	1039.59	900.31	519.80	36738.60	-63633.12	0.00
		150	Wind 90	1039.59	519.80	900.31	63633.12	-36738.60	0.00
		180	Wind 60	1039.59	0.00	1039.59	73477.20	0.00	0.00
		210	Wind 90	1039.59	-519.80	900.31	63633.12	36738.60	0.00
		240	Wind Normal	1039.59	-900.31	519.80	36738.60	63633.12	0.00
		270	Wind 90	1039.59	-1039.59	0.00	0.00	73477.20	0.00
		300	Wind 60	1039.59	-900.31	-519.80	-36738.60	63633.12	0.00
		330	Wind 90	1039.59	-519.80	-900.31	-63633.12	36738.60	0.00
		L2	47.00-0.00	0	Wind Normal	1514.01	0.00	-1514.01	-33428.05
30	Wind 90			1514.01	757.01	-1311.17	-28949.54	-16714.02	0.00
60	Wind 60			1514.01	1311.17	-757.01	-16714.02	-28949.54	0.00
90	Wind 90			1514.01	1514.01	0.00	0.00	-33428.05	0.00
120	Wind Normal			1514.01	1311.17	757.01	16714.02	-28949.54	0.00
150	Wind 90			1514.01	757.01	1311.17	28949.54	-16714.02	0.00
180	Wind 60			1514.01	0.00	1514.01	33428.05	0.00	0.00
210	Wind 90			1514.01	-757.01	1311.17	28949.54	16714.02	0.00
240	Wind Normal			1514.01	-1311.17	757.01	16714.02	28949.54	0.00
270	Wind 90			1514.01	-1514.01	0.00	0.00	33428.05	0.00
300	Wind 60			1514.01	-1311.17	-757.01	-16714.02	28949.54	0.00
330	Wind 90			1514.01	-757.01	-1311.17	-28949.54	16714.02	0.00

Mast Totals - Service

Wind Azimuth °	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
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Wind Azimuth °	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	0.00	-2553.60	-106905.25	0.00	0.00
30	1276.80	-2211.48	-92582.66	-53452.62	0.00
60	2211.48	-1276.80	-53452.62	-92582.66	0.00
90	2553.60	0.00	0.00	-106905.25	0.00
120	2211.48	1276.80	53452.62	-92582.66	0.00
150	1276.80	2211.48	92582.66	-53452.62	0.00
180	0.00	2553.60	106905.25	0.00	0.00
210	-1276.80	2211.48	92582.66	53452.62	0.00
240	-2211.48	1276.80	53452.62	92582.66	0.00
270	-2553.60	0.00	0.00	106905.25	0.00
300	-2211.48	-1276.80	-53452.62	92582.66	0.00
330	-1276.80	-2211.48	-92582.66	53452.62	0.00

Discrete Appurtenance Pressures - No Ice $G_H = 1.100$

Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{MAc} Front ft ²	C _{MAc} Side ft ²
6' Lightning Rod	240.0000	10.00	-0.65	0.38	103.00	1.274	31	0.76	0.76
874G90VTE-SX	240.0000	31.14	-0.70	0.40	95.00	1.252	31	4.67	3.43
874G90VTE-SX	120.0000	31.14	0.70	0.40	95.00	1.252	31	4.67	3.43
LNx-8514DS	240.0000	80.30	-0.70	0.40	95.00	1.252	31	11.45	9.60
LNx-8514DS	120.0000	80.30	0.70	0.40	95.00	1.252	31	11.45	9.60
LNx-8514DS	0.0000	80.30	0.00	-0.81	95.00	1.252	31	11.45	9.60
AIR-32	240.0000	124.97	-0.70	0.40	95.00	1.252	31	6.30	5.58
AIR-32	120.0000	124.97	0.70	0.40	95.00	1.252	31	6.30	5.58
AIR-32	0.0000	124.97	0.00	-0.81	95.00	1.252	31	6.30	5.58
RRUS-12 & A2	240.0000	143.00	-0.70	0.40	95.00	1.252	31	6.29	3.67
RRUS-12 & A2	120.0000	143.00	0.70	0.40	95.00	1.252	31	6.29	3.67
RRUS-12 & A2	0.0000	143.00	0.00	-0.81	95.00	1.252	31	6.29	3.67
Raycap RxxDC-3315-PF-48	240.0000	32.00	-0.70	0.40	95.00	1.252	31	3.01	1.96
Raycap RxxDC-3315-PF-48	120.0000	32.00	0.70	0.40	95.00	1.252	31	3.01	1.96
Raycap RxxDC-3315-PF-48	0.0000	32.00	0.00	-0.81	95.00	1.252	31	3.01	1.96
Westell BWC-TTMA-700C-VG	240.0000	56.00	-0.70	0.40	95.00	1.252	31	1.01	1.34
Westell BWC-TTMA-700C-VG	120.0000	56.00	0.70	0.40	95.00	1.252	31	1.01	1.34
Westell BWC-TTMA-700C-VG	0.0000	56.00	0.00	-0.81	95.00	1.252	31	1.01	1.34
SC-100-13	0.0000	46.23	0.00	-0.81	95.00	1.252	31	6.24	8.99
SC-100-13	240.0000	46.23	-0.70	0.40	95.00	1.252	31	6.24	8.99
SC-6014	120.0000	33.12	0.70	0.40	95.00	1.252	31	6.69	5.66
SC-6014	0.0000	33.12	0.00	-0.81	95.00	1.252	31	6.69	5.66
MTC3619 - 3 T-Frame Mounts	0.0000	2486.00	0.00	0.00	95.00	1.252	31	34.40	34.40
AIR-32	240.0000	124.97	-0.85	0.49	80.00	1.208	32	6.30	5.58
AIR-32	120.0000	124.97	0.85	0.49	80.00	1.208	32	6.30	5.58
AIR-32	0.0000	124.97	0.00	-0.98	80.00	1.208	32	6.30	5.58
HBX-6517DS-VTM	240.0000	41.54	-0.85	0.49	80.00	1.208	32	5.24	4.78
HBX-6517DS-VTM	120.0000	41.54	0.85	0.49	80.00	1.208	32	5.24	4.78
HBX-6517DS-VTM	0.0000	41.54	0.00	-0.98	80.00	1.208	32	5.24	4.78
Raycap RxxDC-3315-PF-48	240.0000	32.00	-0.85	0.49	80.00	1.208	32	3.01	1.96
MTC3619 - 3 T-Frame	0.0000	2486.00	0.00	0.00	80.00	1.208	32	34.40	34.40

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Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{MAC} Front ft ²	C _{MAC} Side ft ²
Mounts									
Dish Pipe Mount	240.0000	103.00	-0.90	0.52	75.00	1.191	32	0.00	1.80
LNX-6515DS	240.0000	321.08	-1.00	0.58	65.00	1.156	33	45.72	38.37
LNX-6515DS	120.0000	321.08	1.00	0.58	65.00	1.156	33	45.72	38.37
LNX-6515DS	0.0000	321.08	0.00	-1.15	65.00	1.156	33	45.72	38.37
Low-ProX Platform 12'	0.0000	1055.00	0.00	0.00	65.00	1.156	33	19.00	19.00
Low-Profile Support Rail 12'	0.0000	288.00	0.00	0.00	65.00	1.156	33	5.50	5.50
LNX-6515DS	240.0000	321.08	-1.15	0.66	50.00	1.094	33	45.72	38.37
LNX-6515DS	120.0000	321.08	1.15	0.66	50.00	1.094	33	45.72	38.37
LNX-6515DS	0.0000	321.08	0.00	-1.32	50.00	1.094	33	45.72	38.37
Low-ProX Platform 12'	0.0000	1055.00	0.00	0.00	50.00	1.094	33	19.00	19.00
Low-Profile Support Rail 12'	0.0000	288.00	0.00	0.00	50.00	1.094	33	5.50	5.50
Clamp Ring Assembly	0.0000	462.00	0.00	0.00	75.00	1.191	32	0.02	0.02
Sum		12220.80							
Weight:									

Discrete Appurtenance Vectors - No Ice

6' Lightning Rod - Elevation 103 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	12.96	22.44	0.00	-25.91	-2665.04	6.50	-16.83
30	22.44	12.96	12.96	-22.44	-2307.49	-1327.90	-9.72
60	25.91	0.00	22.44	-12.96	-1330.64	-2304.74	0.00
90	22.44	12.96	25.91	0.00	3.75	-2662.29	9.72
120	12.96	22.44	22.44	12.96	1338.14	-2304.74	16.83
150	0.00	25.91	12.96	22.44	2314.99	-1327.90	19.43
180	12.96	22.44	0.00	25.91	2672.54	6.50	16.83
210	22.44	12.96	-12.96	22.44	2314.99	1340.89	9.72
240	25.91	0.00	-22.44	12.96	1338.14	2317.73	0.00
270	22.44	12.96	-25.91	0.00	3.75	2675.28	-9.72
300	12.96	22.44	-22.44	-12.96	-1330.64	2317.73	-16.83
330	0.00	25.91	-12.96	-22.44	-2307.49	1340.89	-19.43

874G90VTE-SX - Elevation 95 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	63.86	81.24	14.68	-102.28	-9704.34	-1372.93	-65.58
30	110.60	46.90	72.33	-95.92	-9099.87	-6849.76	-37.86
60	127.71	0.00	110.60	-63.86	-6053.73	-10485.37	0.00
90	110.60	46.90	119.24	-14.68	-1382.13	-11305.60	37.86
120	63.86	81.24	95.92	38.43	3663.18	-9090.67	65.58
150	0.00	93.81	46.90	81.24	7730.31	-4434.07	75.73
180	63.86	81.24	-14.68	102.28	9729.48	1416.47	65.58
210	110.60	46.90	-72.33	95.92	9125.01	6893.30	37.86
240	127.71	0.00	-110.60	63.86	6078.87	10528.91	0.00
270	110.60	46.90	-119.24	14.68	1407.27	11349.14	-37.86
300	63.86	81.24	-95.92	-38.43	-3638.04	9134.21	-65.58
330	0.00	93.81	-46.90	-81.24	-7705.17	4477.61	-75.73

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874G90VTE-SX - Elevation 95 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	63.86	81.24	-14.68	-102.28	-9704.34	1372.93	65.58
30	0.00	93.81	46.90	-81.24	-7705.17	-4477.61	75.73
60	63.86	81.24	95.92	-38.43	-3638.04	-9134.21	65.58
90	110.60	46.90	119.24	14.68	1407.27	-11349.14	37.86
120	127.71	0.00	110.60	63.86	6078.87	-10528.91	0.00
150	110.60	46.90	72.33	95.92	9125.01	-6893.30	-37.86
180	63.86	81.24	14.68	102.28	9729.48	-1416.47	-65.58
210	0.00	93.81	-46.90	81.24	7730.31	4434.07	-75.73
240	63.86	81.24	-95.92	38.43	3663.18	9090.67	-65.58
270	110.60	46.90	-119.24	-14.68	-1382.13	11305.60	-37.86
300	127.71	0.00	-110.60	-63.86	-6053.73	10485.37	0.00
330	110.60	46.90	-72.33	-95.92	-9099.87	6849.76	37.86

LNX-8514DS - Elevation 95 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	156.61	227.63	21.82	-275.43	-26133.83	-2016.36	-183.76
30	271.26	131.42	169.21	-249.44	-23664.47	-16018.38	-106.09
60	313.22	0.00	271.26	-156.61	-14845.55	-25713.24	0.00
90	271.26	131.42	300.62	-21.82	-2040.09	-28503.22	106.09
120	156.61	227.63	249.44	118.82	11320.70	-23640.74	183.76
150	0.00	262.84	131.42	227.63	21656.79	-12428.70	212.19
180	156.61	227.63	-21.82	275.43	26198.66	2128.64	183.76
210	271.26	131.42	-169.21	249.44	23729.30	16130.66	106.09
240	313.22	0.00	-271.26	156.61	14910.37	25825.53	0.00
270	271.26	131.42	-300.62	21.82	2104.91	28615.50	-106.09
300	156.61	227.63	-249.44	-118.82	-11255.87	23753.02	-183.76
330	0.00	262.84	-131.42	-227.63	-21591.97	12540.98	-212.19

LNX-8514DS - Elevation 95 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	156.61	227.63	-21.82	-275.43	-26133.83	2016.36	183.76
30	0.00	262.84	131.42	-227.63	-21591.97	-12540.98	212.19
60	156.61	227.63	249.44	-118.82	-11255.87	-23753.02	183.76
90	271.26	131.42	300.62	21.82	2104.91	-28615.50	106.09
120	313.22	0.00	271.26	156.61	14910.37	-25825.53	0.00
150	271.26	131.42	169.21	249.44	23729.30	-16130.66	-106.09
180	156.61	227.63	21.82	275.43	26198.66	-2128.64	-183.76
210	0.00	262.84	-131.42	227.63	21656.79	12428.70	-212.19
240	156.61	227.63	-249.44	118.82	11320.70	23640.74	-183.76
270	271.26	131.42	-300.62	-21.82	-2040.09	28503.22	-106.09
300	313.22	0.00	-271.26	-156.61	-14845.55	25713.24	0.00
330	271.26	131.42	-169.21	-249.44	-23664.47	16018.38	106.09

LNX-8514DS - Elevation 95 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	313.22	0.00	0.00	-313.22	-29820.75	0.00	0.00
30	271.26	131.42	131.42	-271.26	-25834.21	-12484.84	-106.09
60	156.61	227.63	227.63	-156.61	-14942.79	-21624.38	-183.76

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<i>LNX-8514DS - Elevation 95 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
90	0.00	262.84	262.84	0.00	-64.83	-24969.68	-212.19
120	156.61	227.63	227.63	156.61	14813.14	-21624.38	-183.76
150	271.26	131.42	131.42	271.26	25704.56	-12484.84	-106.09
180	313.22	0.00	0.00	313.22	29691.10	0.00	0.00
210	271.26	131.42	-131.42	271.26	25704.56	12484.84	106.09
240	156.61	227.63	-227.63	156.61	14813.14	21624.38	183.76
270	0.00	262.84	-262.84	0.00	-64.83	24969.68	212.19
300	156.61	227.63	-227.63	-156.61	-14942.79	21624.38	183.76
330	271.26	131.42	-131.42	-271.26	-25834.21	12484.84	106.09

<i>AIR-32 - Elevation 95 - From Leg C</i>							
Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	86.21	132.34	8.49	-157.71	-14931.96	-718.96	-106.83
30	149.31	76.40	91.11	-140.82	-13327.87	-8567.67	-61.68
60	172.41	0.00	149.31	-86.21	-8139.06	-14097.27	0.00
90	149.31	76.40	167.51	-8.49	-755.89	-15826.10	61.68
120	86.21	132.34	140.82	71.50	6843.35	-13290.94	106.83
150	0.00	152.81	76.40	132.34	12622.42	-7171.06	123.36
180	86.21	132.34	-8.49	157.71	15032.85	893.70	106.83
210	149.31	76.40	-91.11	140.82	13428.75	8742.41	61.68
240	172.41	0.00	-149.31	86.21	8239.95	14272.01	0.00
270	149.31	76.40	-167.51	8.49	856.77	16000.85	-61.68
300	86.21	132.34	-140.82	-71.50	-6742.46	13465.68	-106.83
330	0.00	152.81	-76.40	-132.34	-12521.54	7345.81	-123.36

<i>AIR-32 - Elevation 95 - From Leg B</i>							
Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	86.21	132.34	-8.49	-157.71	-14931.96	718.96	106.83
30	0.00	152.81	76.40	-132.34	-12521.54	-7345.81	123.36
60	86.21	132.34	140.82	-71.50	-6742.46	-13465.68	106.83
90	149.31	76.40	167.51	8.49	856.77	-16000.85	61.68
120	172.41	0.00	149.31	86.21	8239.95	-14272.01	0.00
150	149.31	76.40	91.11	140.82	13428.75	-8742.41	-61.68
180	86.21	132.34	8.49	157.71	15032.85	-893.70	-106.83
210	0.00	152.81	-76.40	132.34	12622.42	7171.06	-123.36
240	86.21	132.34	-140.82	71.50	6843.35	13290.94	-106.83
270	149.31	76.40	-167.51	-8.49	-755.89	15826.10	-61.68
300	172.41	0.00	-149.31	-86.21	-8139.06	14097.27	0.00
330	149.31	76.40	-91.11	-140.82	-13327.87	8567.67	61.68

<i>AIR-32 - Elevation 95 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	172.41	0.00	0.00	-172.41	-16479.90	0.00	0.00
30	149.31	76.40	76.40	-149.31	-14285.53	-7258.44	-61.68
60	86.21	132.34	132.34	-86.21	-8290.39	-12571.98	-106.83
90	0.00	152.81	152.81	0.00	-100.89	-14516.87	-123.36
120	86.21	132.34	132.34	86.21	8088.62	-12571.98	-106.83
150	149.31	76.40	76.40	149.31	14083.75	-7258.44	-61.68

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AIR-32 - Elevation 95 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
180	172.41	0.00	0.00	172.41	16278.12	0.00	0.00
210	149.31	76.40	-76.40	149.31	14083.75	7258.44	61.68
240	86.21	132.34	-132.34	86.21	8088.62	12571.98	106.83
270	0.00	152.81	-152.81	0.00	-100.89	14516.87	123.36
300	86.21	132.34	-132.34	-86.21	-8290.39	12571.98	106.83
330	149.31	76.40	-76.40	-149.31	-14285.53	7258.44	61.68

RRUS-12 & A2 - Elevation 95 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	86.01	86.98	31.00	-118.33	-11183.98	-2844.99	-70.22
30	148.98	50.22	103.91	-117.98	-11150.36	-9771.57	-40.54
60	172.03	0.00	148.98	-86.01	-8113.55	-14053.08	0.00
90	148.98	50.22	154.13	-31.00	-2887.25	-14542.28	40.54
120	86.01	86.98	117.98	32.32	3128.15	-11108.11	70.22
150	0.00	100.44	50.22	86.98	8320.84	-4670.74	81.08
180	86.01	86.98	-31.00	118.33	11299.42	3044.95	70.22
210	148.98	50.22	-103.91	117.98	11265.81	9971.52	40.54
240	172.03	0.00	-148.98	86.01	8228.99	14253.03	0.00
270	148.98	50.22	-154.13	31.00	3002.69	14742.24	-40.54
300	86.01	86.98	-117.98	-32.32	-3012.71	11308.06	-70.22
330	0.00	100.44	-50.22	-86.98	-8205.39	4870.69	-81.08

RRUS-12 & A2 - Elevation 95 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	86.01	86.98	-31.00	-118.33	-11183.98	2844.99	70.22
30	0.00	100.44	50.22	-86.98	-8205.39	-4870.69	81.08
60	86.01	86.98	117.98	-32.32	-3012.71	-11308.06	70.22
90	148.98	50.22	154.13	31.00	3002.69	-14742.24	40.54
120	172.03	0.00	148.98	86.01	8228.99	-14253.03	0.00
150	148.98	50.22	103.91	117.98	11265.81	-9971.52	-40.54
180	86.01	86.98	31.00	118.33	11299.42	-3044.95	-70.22
210	0.00	100.44	-50.22	86.98	8320.84	4670.74	-81.08
240	86.01	86.98	-117.98	32.32	3128.15	11108.11	-70.22
270	148.98	50.22	-154.13	-31.00	-2887.25	14542.28	-40.54
300	172.03	0.00	-148.98	-86.01	-8113.55	14053.08	0.00
330	148.98	50.22	-103.91	-117.98	-11150.36	9771.57	40.54

RRUS-12 & A2 - Elevation 95 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	172.03	0.00	0.00	-172.03	-16457.98	0.00	0.00
30	148.98	50.22	50.22	-148.98	-14268.50	-4770.71	-40.54
60	86.01	86.98	86.98	-86.01	-8286.71	-8263.11	-70.22
90	0.00	100.44	100.44	0.00	-115.44	-9541.42	-81.08
120	86.01	86.98	86.98	86.01	8055.83	-8263.11	-70.22
150	148.98	50.22	50.22	148.98	14037.61	-4770.71	-40.54
180	172.03	0.00	0.00	172.03	16227.10	0.00	0.00
210	148.98	50.22	-50.22	148.98	14037.61	4770.71	40.54
240	86.01	86.98	-86.98	86.01	8055.83	8263.11	70.22

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<i>RRUS-12 & A2 - Elevation 95 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
270	0.00	100.44	-100.44	0.00	-115.44	9541.42	81.08
300	86.01	86.98	-86.98	-86.01	-8286.71	8263.11	70.22
330	148.98	50.22	-50.22	-148.98	-14268.50	4770.71	40.54

<i>Raycap RxxDC-3315-PF-48 - Elevation 95 - From Leg C</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	41.21	46.52	12.43	-60.90	-5772.37	-1158.59	-37.56
30	71.39	26.86	48.39	-58.95	-5587.76	-4574.84	-21.68
60	82.43	0.00	71.39	-41.21	-3902.46	-6759.27	0.00
90	71.39	26.86	75.25	-12.43	-1168.04	-7126.56	21.68
120	41.21	46.52	58.95	19.68	1882.82	-5578.31	37.56
150	0.00	53.72	26.86	46.52	4432.64	-2529.36	43.37
180	41.21	46.52	-12.43	60.90	5798.20	1203.33	37.56
210	71.39	26.86	-48.39	58.95	5613.60	4619.58	21.68
240	82.43	0.00	-71.39	41.21	3928.30	6804.01	0.00
270	71.39	26.86	-75.25	12.43	1193.88	7171.31	-21.68
300	41.21	46.52	-58.95	-19.68	-1856.98	5623.05	-37.56
330	0.00	53.72	-26.86	-46.52	-4406.80	2574.10	-43.37

<i>Raycap RxxDC-3315-PF-48 - Elevation 95 - From Leg B</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	41.21	46.52	-12.43	-60.90	-5772.37	1158.59	37.56
30	0.00	53.72	26.86	-46.52	-4406.80	-2574.10	43.37
60	41.21	46.52	58.95	-19.68	-1856.98	-5623.05	37.56
90	71.39	26.86	75.25	12.43	1193.88	-7171.31	21.68
120	82.43	0.00	71.39	41.21	3928.30	-6804.01	0.00
150	71.39	26.86	48.39	58.95	5613.60	-4619.58	-21.68
180	41.21	46.52	12.43	60.90	5798.20	-1203.33	-37.56
210	0.00	53.72	-26.86	46.52	4432.64	2529.36	-43.37
240	41.21	46.52	-58.95	19.68	1882.82	5578.31	-37.56
270	71.39	26.86	-75.25	-12.43	-1168.04	7126.56	-21.68
300	82.43	0.00	-71.39	-41.21	-3902.46	6759.27	0.00
330	71.39	26.86	-48.39	-58.95	-5587.76	4574.84	21.68

<i>Raycap RxxDC-3315-PF-48 - Elevation 95 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	82.43	0.00	0.00	-82.43	-7856.60	0.00	0.00
30	71.39	26.86	26.86	-71.39	-6807.47	-2551.73	-21.68
60	41.21	46.52	46.52	-41.21	-3941.21	-4419.72	-37.56
90	0.00	53.72	53.72	0.00	-25.83	-5103.45	-43.37
120	41.21	46.52	46.52	41.21	3889.55	-4419.72	-37.56
150	71.39	26.86	26.86	71.39	6755.81	-2551.73	-21.68
180	82.43	0.00	0.00	82.43	7804.93	0.00	0.00
210	71.39	26.86	-26.86	71.39	6755.81	2551.73	21.68
240	41.21	46.52	-46.52	41.21	3889.55	4419.72	37.56
270	0.00	53.72	-53.72	0.00	-25.83	5103.45	43.37
300	41.21	46.52	-46.52	-41.21	-3941.21	4419.72	37.56
330	71.39	26.86	-26.86	-71.39	-6807.47	2551.73	21.68

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Westell BWC-TTMA-700C-VG - Elevation 95 - From Leg C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	13.77	31.66	-3.91	-34.30	-3236.23	410.65	-25.56
30	23.84	18.28	11.51	-27.75	-2613.87	-1054.05	-14.76
60	27.53	0.00	23.84	-13.77	-1285.08	-2225.82	0.00
90	23.84	18.28	29.79	3.91	394.11	-2790.70	14.76
120	13.77	31.66	27.75	20.54	1973.75	-2597.33	25.56
150	0.00	36.56	18.28	31.66	3030.58	-1697.51	29.52
180	13.77	31.66	3.91	34.30	3281.43	-332.35	25.56
210	23.84	18.28	-11.51	27.75	2659.08	1132.35	14.76
240	27.53	0.00	-23.84	13.77	1330.29	2304.13	0.00
270	23.84	18.28	-29.79	-3.91	-348.90	2869.01	-14.76
300	13.77	31.66	-27.75	-20.54	-1928.54	2675.63	-25.56
330	0.00	36.56	-18.28	-31.66	-2985.38	1775.81	-29.52

Westell BWC-TTMA-700C-VG - Elevation 95 - From Leg B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	13.77	31.66	3.91	-34.30	-3236.23	-410.65	25.56
30	0.00	36.56	18.28	-31.66	-2985.38	-1775.81	29.52
60	13.77	31.66	27.75	-20.54	-1928.54	-2675.63	25.56
90	23.84	18.28	29.79	-3.91	-348.90	-2869.01	14.76
120	27.53	0.00	23.84	13.77	1330.29	-2304.13	0.00
150	23.84	18.28	11.51	27.75	2659.08	-1132.35	-14.76
180	13.77	31.66	-3.91	34.30	3281.43	332.35	-25.56
210	0.00	36.56	-18.28	31.66	3030.58	1697.51	-29.52
240	13.77	31.66	-27.75	20.54	1973.75	2597.33	-25.56
270	23.84	18.28	-29.79	3.91	394.11	2790.70	-14.76
300	27.53	0.00	-23.84	-13.77	-1285.08	2225.82	0.00
330	23.84	18.28	-11.51	-27.75	-2613.87	1054.05	14.76

Westell BWC-TTMA-700C-VG - Elevation 95 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	27.53	0.00	0.00	-27.53	-2660.58	0.00	0.00
30	23.84	18.28	18.28	-23.84	-2310.18	-1736.66	-14.76
60	13.77	31.66	31.66	-13.77	-1352.89	-3007.98	-25.56
90	0.00	36.56	36.56	0.00	-45.21	-3473.32	-29.52
120	13.77	31.66	31.66	13.77	1262.48	-3007.98	-25.56
150	23.84	18.28	18.28	23.84	2219.77	-1736.66	-14.76
180	27.53	0.00	0.00	27.53	2570.16	0.00	0.00
210	23.84	18.28	-18.28	23.84	2219.77	1736.66	14.76
240	13.77	31.66	-31.66	13.77	1262.48	3007.98	25.56
270	0.00	36.56	-36.56	0.00	-45.21	3473.32	29.52
300	13.77	31.66	-31.66	-13.77	-1352.89	3007.98	25.56
330	23.84	18.28	-18.28	-23.84	-2310.18	1736.66	14.76

SC-100-13 - Elevation 95 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	170.80	0.00	0.00	-170.80	-16262.87	0.00	0.00

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SC-100-13 - Elevation 95 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
30	147.91	122.99	122.99	-147.91	-14089.06	-11683.95	-99.29
60	85.40	213.02	213.02	-85.40	-8150.09	-20237.19	-171.97
90	0.00	245.98	245.98	0.00	-37.32	-23367.89	-198.58
120	85.40	213.02	213.02	85.40	8075.45	-20237.19	-171.97
150	147.91	122.99	122.99	147.91	14014.41	-11683.95	-99.29
180	170.80	0.00	0.00	170.80	16188.22	0.00	0.00
210	147.91	122.99	-122.99	147.91	14014.41	11683.95	99.29
240	85.40	213.02	-213.02	85.40	8075.45	20237.19	171.97
270	0.00	245.98	-245.98	0.00	-37.32	23367.89	198.58
300	85.40	213.02	-213.02	-85.40	-8150.09	20237.19	171.97
330	147.91	122.99	-122.99	-147.91	-14089.06	11683.95	99.29

SC-100-13 - Elevation 95 - From Leg C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	85.40	213.02	-32.56	-227.18	-21563.64	3125.05	-171.97
30	147.91	122.99	66.60	-180.47	-17125.80	-6294.87	-99.29
60	170.80	0.00	147.91	-85.40	-8094.11	-14019.41	0.00
90	147.91	122.99	189.59	32.56	3111.39	-17978.81	99.29
120	85.40	213.02	180.47	141.78	13488.19	-17112.14	171.97
150	0.00	245.98	122.99	213.02	20255.85	-11651.62	198.58
180	85.40	213.02	32.56	227.18	21600.96	-3060.41	171.97
210	147.91	122.99	-66.60	180.47	17163.12	6359.51	99.29
240	170.80	0.00	-147.91	85.40	8131.43	14084.06	0.00
270	147.91	122.99	-189.59	-32.56	-3074.07	18043.45	-99.29
300	85.40	213.02	-180.47	-141.78	-13450.87	17176.78	-171.97
330	0.00	245.98	-122.99	-213.02	-20218.53	11716.27	-198.58

SC-6014 - Elevation 95 - From Leg B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	91.53	134.11	-12.21	-161.91	-15367.91	1136.62	108.27
30	0.00	154.86	77.43	-134.11	-12727.32	-7379.00	125.02
60	91.53	134.11	146.32	-70.38	-6672.88	-13923.62	108.27
90	158.53	77.43	176.00	12.21	1173.14	-16743.62	62.51
120	183.05	0.00	158.53	91.53	8708.40	-15083.39	0.00
150	158.53	77.43	98.57	146.32	13913.83	-9387.78	-62.51
180	91.53	134.11	12.21	161.91	15394.64	-1182.93	-108.27
210	0.00	154.86	-77.43	134.11	12754.06	7332.68	-125.02
240	91.53	134.11	-146.32	70.38	6699.61	13877.31	-108.27
270	158.53	77.43	-176.00	-12.21	-1146.40	16697.31	-62.51
300	183.05	0.00	-158.53	-91.53	-8681.66	15037.08	0.00
330	158.53	77.43	-98.57	-146.32	-13887.09	9341.47	62.51

SC-6014 - Elevation 95 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	183.05	0.00	0.00	-183.05	-17416.80	0.00	0.00
30	158.53	77.43	77.43	-158.53	-15086.97	-7355.84	-62.51
60	91.53	134.11	134.11	-91.53	-8721.77	-12740.69	-108.27
90	0.00	154.86	154.86	0.00	-26.74	-14711.68	-125.02

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<i>SC-6014 - Elevation 95 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
120	91.53	134.11	134.11	91.53	8668.29	-12740.69	-108.27
150	158.53	77.43	77.43	158.53	15033.50	-7355.84	-62.51
180	183.05	0.00	0.00	183.05	17363.32	0.00	0.00
210	158.53	77.43	-77.43	158.53	15033.50	7355.84	62.51
240	91.53	134.11	-134.11	91.53	8668.29	12740.69	108.27
270	0.00	154.86	-154.86	0.00	-26.74	14711.68	125.02
300	91.53	134.11	-134.11	-91.53	-8721.77	12740.69	108.27
330	158.53	77.43	-77.43	-158.53	-15086.97	7355.84	62.51

<i>MTC3619 - 3 T-Frame Mounts - Elevation 95 - None C</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	1176.77	0.00	0.00	-1176.77	-111793.24	0.00	0.00
30	1176.77	0.00	588.39	-1019.11	-96815.78	-55896.62	0.00
60	1176.77	0.00	1019.11	-588.39	-55896.62	-96815.78	0.00
90	1176.77	0.00	1176.77	0.00	0.00	-111793.24	0.00
120	1176.77	0.00	1019.11	588.39	55896.62	-96815.78	0.00
150	1176.77	0.00	588.39	1019.11	96815.78	-55896.62	0.00
180	1176.77	0.00	0.00	1176.77	111793.24	0.00	0.00
210	1176.77	0.00	-588.39	1019.11	96815.78	55896.62	0.00
240	1176.77	0.00	-1019.11	588.39	55896.62	96815.78	0.00
270	1176.77	0.00	-1176.77	0.00	0.00	111793.24	0.00
300	1176.77	0.00	-1019.11	-588.39	-55896.62	96815.78	0.00
330	1176.77	0.00	-588.39	-1019.11	-96815.78	55896.62	0.00

<i>AIR-32 - Elevation 80 - From Leg C</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	87.93	134.99	8.66	-160.87	-12808.48	-586.65	-132.18
30	152.30	77.94	92.93	-143.65	-11430.58	-7328.57	-76.31
60	175.87	0.00	152.30	-87.93	-6973.48	-12078.42	0.00
90	152.30	77.94	170.87	-8.66	-631.44	-13563.46	76.31
120	87.93	134.99	143.65	72.94	5896.18	-11385.79	132.18
150	0.00	155.87	77.94	134.99	10860.32	-6128.91	152.62
180	87.93	134.99	-8.66	160.87	12930.84	798.60	132.18
210	152.30	77.94	-92.93	143.65	11552.95	7540.52	76.31
240	175.87	0.00	-152.30	87.93	7095.84	12290.36	0.00
270	152.30	77.94	-170.87	8.66	753.81	13775.40	-76.31
300	87.93	134.99	-143.65	-72.94	-5773.82	11597.74	-132.18
330	0.00	155.87	-77.94	-134.99	-10737.96	6340.86	-152.62

<i>AIR-32 - Elevation 80 - From Leg B</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	87.93	134.99	-8.66	-160.87	-12808.48	586.65	132.18
30	0.00	155.87	77.94	-134.99	-10737.96	-6340.86	152.62
60	87.93	134.99	143.65	-72.94	-5773.82	-11597.74	132.18
90	152.30	77.94	170.87	8.66	753.81	-13775.40	76.31
120	175.87	0.00	152.30	87.93	7095.84	-12290.36	0.00
150	152.30	77.94	92.93	143.65	11552.95	-7540.52	-76.31
180	87.93	134.99	8.66	160.87	12930.84	-798.60	-132.18

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AIR-32 - Elevation 80 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
210	0.00	155.87	-77.94	134.99	10860.32	6128.91	-152.62
240	87.93	134.99	-143.65	72.94	5896.18	11385.79	-132.18
270	152.30	77.94	-170.87	-8.66	-631.44	13563.46	-76.31
300	175.87	0.00	-152.30	-87.93	-6973.48	12078.42	0.00
330	152.30	77.94	-92.93	-143.65	-11430.58	7328.57	76.31

AIR-32 - Elevation 80 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	175.87	0.00	0.00	-175.87	-14191.69	0.00	0.00
30	152.30	77.94	77.94	-152.30	-12306.75	-6234.89	-76.31
60	87.93	134.99	134.99	-87.93	-7157.03	-10799.14	-132.18
90	0.00	155.87	155.87	0.00	-122.37	-12469.77	-152.62
120	87.93	134.99	134.99	87.93	6912.29	-10799.14	-132.18
150	152.30	77.94	77.94	152.30	12062.02	-6234.89	-76.31
180	175.87	0.00	0.00	175.87	13946.95	0.00	0.00
210	152.30	77.94	-77.94	152.30	12062.02	6234.89	76.31
240	87.93	134.99	-134.99	87.93	6912.29	10799.14	132.18
270	0.00	155.87	-155.87	0.00	-122.37	12469.77	152.62
300	87.93	134.99	-134.99	-87.93	-7157.03	10799.14	132.18
330	152.30	77.94	-77.94	-152.30	-12306.75	6234.89	76.31

HBX-6517DS-VTM - Elevation 80 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	73.18	115.64	5.55	-136.74	-10918.90	-409.06	-113.23
30	126.75	66.77	76.39	-121.20	-9675.46	-6075.67	-65.38
60	146.36	0.00	126.75	-73.18	-5834.05	-10104.87	0.00
90	126.75	66.77	143.15	-5.55	-423.95	-11417.03	65.38
120	73.18	115.64	121.20	63.56	5105.19	-9660.58	113.23
150	0.00	133.53	66.77	115.64	9271.85	-5306.14	130.75
180	73.18	115.64	-5.55	136.74	10959.57	479.51	113.23
210	126.75	66.77	-76.39	121.20	9716.14	6146.12	65.38
240	146.36	0.00	-126.75	73.18	5874.72	10175.32	0.00
270	126.75	66.77	-143.15	5.55	464.63	11487.48	-65.38
300	73.18	115.64	-121.20	-63.56	-5064.52	9731.03	-113.23
330	0.00	133.53	-66.77	-115.64	-9231.18	5376.59	-130.75

HBX-6517DS-VTM - Elevation 80 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	73.18	115.64	-5.55	-136.74	-10918.90	409.06	113.23
30	0.00	133.53	66.77	-115.64	-9231.18	-5376.59	130.75
60	73.18	115.64	121.20	-63.56	-5064.52	-9731.03	113.23
90	126.75	66.77	143.15	5.55	464.63	-11487.48	65.38
120	146.36	0.00	126.75	73.18	5874.72	-10175.32	0.00
150	126.75	66.77	76.39	121.20	9716.14	-6146.12	-65.38
180	73.18	115.64	5.55	136.74	10959.57	-479.51	-113.23
210	0.00	133.53	-66.77	115.64	9271.85	5306.14	-130.75
240	73.18	115.64	-121.20	63.56	5105.19	9660.58	-113.23
270	126.75	66.77	-143.15	-5.55	-423.95	11417.03	-65.38

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HBX-6517DS-VTM - Elevation 80 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
300	146.36	0.00	-126.75	-73.18	-5834.05	10104.87	0.00
330	126.75	66.77	-76.39	-121.20	-9675.46	6075.67	65.38

HBX-6517DS-VTM - Elevation 80 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	146.36	0.00	0.00	-146.36	-11749.44	0.00	0.00
30	126.75	66.77	66.77	-126.75	-10180.77	-5341.36	-65.38
60	73.18	115.64	115.64	-73.18	-5895.06	-9251.51	-113.23
90	0.00	133.53	133.53	0.00	-40.67	-10682.73	-130.75
120	73.18	115.64	115.64	73.18	5813.71	-9251.51	-113.23
150	126.75	66.77	66.77	126.75	10099.42	-5341.36	-65.38
180	146.36	0.00	0.00	146.36	11668.09	0.00	0.00
210	126.75	66.77	-66.77	126.75	10099.42	5341.36	65.38
240	73.18	115.64	-115.64	73.18	5813.71	9251.51	113.23
270	0.00	133.53	-133.53	0.00	-40.67	10682.73	130.75
300	73.18	115.64	-115.64	-73.18	-5895.06	9251.51	113.23
330	126.75	66.77	-66.77	-126.75	-10180.77	5341.36	65.38

Raycap RxxDC-3315-PF-48 - Elevation 80 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	42.04	47.46	12.68	-62.12	-4953.80	-987.29	-46.47
30	72.82	27.40	49.36	-60.14	-4795.23	-3921.80	-26.83
60	84.08	0.00	72.82	-42.04	-3347.59	-5798.19	0.00
90	72.82	27.40	76.76	-12.68	-998.76	-6113.69	26.83
120	42.04	47.46	60.14	20.08	1621.88	-4783.76	46.47
150	0.00	54.80	27.40	47.46	3812.14	-2164.76	53.66
180	42.04	47.46	-12.68	62.12	4985.14	1041.56	46.47
210	72.82	27.40	-49.36	60.14	4826.57	3976.07	26.83
240	84.08	0.00	-72.82	42.04	3378.92	5852.46	0.00
270	72.82	27.40	-76.76	12.68	1030.09	6167.96	-26.83
300	42.04	47.46	-60.14	-20.08	-1590.55	4838.03	-46.47
330	0.00	54.80	-27.40	-47.46	-3780.81	2219.03	-53.66

MTC3619 - 3 T-Frame Mounts - Elevation 80 - None B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	1200.36	0.00	0.00	-1200.36	-96028.69	0.00	0.00
30	1200.36	0.00	600.18	-1039.54	-83163.28	-48014.34	0.00
60	1200.36	0.00	1039.54	-600.18	-48014.34	-83163.28	0.00
90	1200.36	0.00	1200.36	0.00	0.00	-96028.69	0.00
120	1200.36	0.00	1039.54	600.18	48014.34	-83163.28	0.00
150	1200.36	0.00	600.18	1039.54	83163.28	-48014.34	0.00
180	1200.36	0.00	0.00	1200.36	96028.69	0.00	0.00
210	1200.36	0.00	-600.18	1039.54	83163.28	48014.34	0.00
240	1200.36	0.00	-1039.54	600.18	48014.34	83163.28	0.00
270	1200.36	0.00	-1200.36	0.00	0.00	96028.69	0.00
300	1200.36	0.00	-1039.54	-600.18	-48014.34	83163.28	0.00
330	1200.36	0.00	-600.18	-1039.54	-83163.28	48014.34	0.00

tnxTower

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Dish Pipe Mount - Elevation 75 - From Leg C

Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	54.82	-27.41	-47.47	-3507.09	2148.09	-56.82
30	0.00	31.65	-15.82	-27.41	-2002.26	1279.28	-32.80
60	0.00	0.00	0.00	0.00	53.38	92.45	0.00
90	0.00	31.65	15.82	27.41	2109.01	-1094.37	32.80
120	0.00	54.82	27.41	47.47	3613.84	-1963.18	56.82
150	0.00	63.30	31.65	54.82	4164.65	-2281.19	65.60
180	0.00	54.82	27.41	47.47	3613.84	-1963.18	56.82
210	0.00	31.65	15.82	27.41	2109.01	-1094.37	32.80
240	0.00	0.00	0.00	0.00	53.38	92.45	0.00
270	0.00	31.65	-15.82	-27.41	-2002.26	1279.28	-32.80
300	0.00	54.82	-27.41	-47.47	-3507.09	2148.09	-56.82
330	0.00	63.30	-31.65	-54.82	-4057.90	2466.10	-65.60

LNX-6515DS - Elevation 65 - From Leg C

Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	654.16	950.76	91.14	-1150.46	-74595.24	-5604.34	-1094.36
30	1133.05	548.92	706.79	-1041.90	-67538.82	-45621.09	-631.83
60	1308.33	0.00	1133.05	-654.16	-42335.91	-73327.95	0.00
90	1133.05	548.92	1255.71	-91.14	-5739.62	-81300.88	631.83
120	654.16	950.76	1041.90	496.30	32444.12	-67403.54	1094.36
150	0.00	1097.84	548.92	950.76	61983.99	-35359.72	1263.66
180	654.16	950.76	-91.14	1150.46	74964.81	6244.47	1094.36
210	1133.05	548.92	-706.79	1041.90	67908.39	46261.22	631.83
240	1308.33	0.00	-1133.05	654.16	42705.49	73968.07	0.00
270	1133.05	548.92	-1255.71	91.14	6109.19	81941.00	-631.83
300	654.16	950.76	-1041.90	-496.30	-32074.54	68043.67	-1094.36
330	0.00	1097.84	-548.92	-950.76	-61614.41	35999.85	-1263.66

LNX-6515DS - Elevation 65 - From Leg B

Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	654.16	950.76	-91.14	-1150.46	-74595.24	5604.34	1094.36
30	0.00	1097.84	548.92	-950.76	-61614.41	-35999.85	1263.66
60	654.16	950.76	1041.90	-496.30	-32074.54	-68043.67	1094.36
90	1133.05	548.92	1255.71	91.14	6109.19	-81941.00	631.83
120	1308.33	0.00	1133.05	654.16	42705.49	-73968.07	0.00
150	1133.05	548.92	706.79	1041.90	67908.39	-46261.22	-631.83
180	654.16	950.76	91.14	1150.46	74964.81	-6244.47	-1094.36
210	0.00	1097.84	-548.92	950.76	61983.99	35359.72	-1263.66
240	654.16	950.76	-1041.90	496.30	32444.12	67403.54	-1094.36
270	1133.05	548.92	-1255.71	-91.14	-5739.62	81300.88	-631.83
300	1308.33	0.00	-1133.05	-654.16	-42335.91	73327.95	0.00
330	1133.05	548.92	-706.79	-1041.90	-67538.82	45621.09	631.83

LNX-6515DS - Elevation 65 - From Leg A

Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	1308.33	0.00	0.00	-1308.33	-85410.97	0.00	0.00
30	1133.05	548.92	548.92	-1133.05	-74017.59	-35679.78	-631.83

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<i>LNX-6515DS - Elevation 65 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	654.16	950.76	950.76	-654.16	-42890.28	-61799.20	-1094.36
90	0.00	1097.84	1097.84	0.00	-369.58	-71359.57	-1263.66
120	654.16	950.76	950.76	654.16	42151.12	-61799.20	-1094.36
150	1133.05	548.92	548.92	1133.05	73278.43	-35679.78	-631.83
180	1308.33	0.00	0.00	1308.33	84671.82	0.00	0.00
210	1133.05	548.92	-548.92	1133.05	73278.43	35679.78	631.83
240	654.16	950.76	-950.76	654.16	42151.12	61799.20	1094.36
270	0.00	1097.84	-1097.84	0.00	-369.58	71359.57	1263.66
300	654.16	950.76	-950.76	-654.16	-42890.28	61799.20	1094.36
330	1133.05	548.92	-548.92	-1133.05	-74017.59	35679.78	631.83

<i>Low-ProX Platform 12' - Elevation 65 - None B</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	679.56	0.00	0.00	-679.56	-44171.58	0.00	0.00
30	679.56	0.00	339.78	-588.52	-38253.71	-22085.79	0.00
60	679.56	0.00	588.52	-339.78	-22085.79	-38253.71	0.00
90	679.56	0.00	679.56	0.00	0.00	-44171.58	0.00
120	679.56	0.00	588.52	339.78	22085.79	-38253.71	0.00
150	679.56	0.00	339.78	588.52	38253.71	-22085.79	0.00
180	679.56	0.00	0.00	679.56	44171.58	0.00	0.00
210	679.56	0.00	-339.78	588.52	38253.71	22085.79	0.00
240	679.56	0.00	-588.52	339.78	22085.79	38253.71	0.00
270	679.56	0.00	-679.56	0.00	0.00	44171.58	0.00
300	679.56	0.00	-588.52	-339.78	-22085.79	38253.71	0.00
330	679.56	0.00	-339.78	-588.52	-38253.71	22085.79	0.00

<i>Low-Profile Support Rail 12' - Elevation 65 - None A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	196.72	0.00	0.00	-196.72	-12786.51	0.00	0.00
30	196.72	0.00	98.36	-170.36	-11073.44	-6393.25	0.00
60	196.72	0.00	170.36	-98.36	-6393.25	-11073.44	0.00
90	196.72	0.00	196.72	0.00	0.00	-12786.51	0.00
120	196.72	0.00	170.36	98.36	6393.25	-11073.44	0.00
150	196.72	0.00	98.36	170.36	11073.44	-6393.25	0.00
180	196.72	0.00	0.00	196.72	12786.51	0.00	0.00
210	196.72	0.00	-98.36	170.36	11073.44	6393.25	0.00
240	196.72	0.00	-170.36	98.36	6393.25	11073.44	0.00
270	196.72	0.00	-196.72	0.00	0.00	12786.51	0.00
300	196.72	0.00	-170.36	-98.36	-6393.25	11073.44	0.00
330	196.72	0.00	-98.36	-170.36	-11073.44	6393.25	0.00

<i>LNX-6515DS - Elevation 50 - From Leg C</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	672.55	977.49	93.71	-1182.80	-58927.85	-4317.50	-1293.13
30	1164.90	564.35	726.66	-1071.19	-53347.24	-35964.98	-746.59
60	1345.11	0.00	1164.90	-672.55	-33415.37	-57877.12	0.00
90	1164.90	564.35	1291.01	-93.71	-4472.97	-64182.55	746.59
120	672.55	977.49	1071.19	510.25	25724.86	-53191.76	1293.13

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LNX-6515DS - Elevation 50 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
150	0.00	1128.70	564.35	977.49	49086.65	-27849.72	1493.18
180	672.55	977.49	-93.71	1182.80	59352.61	5053.21	1293.13
210	1164.90	564.35	-726.66	1071.19	53772.00	36700.69	746.59
240	1345.11	0.00	-1164.90	672.55	33840.13	58612.82	0.00
270	1164.90	564.35	-1291.01	93.71	4897.73	64918.26	-746.59
300	672.55	977.49	-1071.19	-510.25	-25300.10	53927.47	-1293.13
330	0.00	1128.70	-564.35	-977.49	-48661.89	28585.43	-1493.18

LNX-6515DS - Elevation 50 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	672.55	977.49	-93.71	-1182.80	-58927.85	4317.50	1293.13
30	0.00	1128.70	564.35	-977.49	-48661.89	-28585.43	1493.18
60	672.55	977.49	1071.19	-510.25	-25300.10	-53927.47	1293.13
90	1164.90	564.35	1291.01	93.71	4897.73	-64918.26	746.59
120	1345.11	0.00	1164.90	672.55	33840.13	-58612.82	0.00
150	1164.90	564.35	726.66	1071.19	53772.00	-36700.69	-746.59
180	672.55	977.49	93.71	1182.80	59352.61	-5053.21	-1293.13
210	0.00	1128.70	-564.35	977.49	49086.65	27849.72	-1493.18
240	672.55	977.49	-1071.19	510.25	25724.86	53191.76	-1293.13
270	1164.90	564.35	-1291.01	-93.71	-4472.97	64182.55	-746.59
300	1345.11	0.00	-1164.90	-672.55	-33415.37	57877.12	0.00
330	1164.90	564.35	-726.66	-1071.19	-53347.24	35964.98	746.59

LNX-6515DS - Elevation 50 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	1345.11	0.00	0.00	-1345.11	-67680.26	0.00	0.00
30	1164.90	564.35	564.35	-1164.90	-58669.73	-28217.57	-746.59
60	672.55	977.49	977.49	-672.55	-34052.51	-48874.27	-1293.13
90	0.00	1128.70	1128.70	0.00	-424.76	-56435.14	-1493.18
120	672.55	977.49	977.49	672.55	33202.99	-48874.27	-1293.13
150	1164.90	564.35	564.35	1164.90	57820.21	-28217.57	-746.59
180	1345.11	0.00	0.00	1345.11	66830.74	0.00	0.00
210	1164.90	564.35	-564.35	1164.90	57820.21	28217.57	746.59
240	672.55	977.49	-977.49	672.55	33202.99	48874.27	1293.13
270	0.00	1128.70	-1128.70	0.00	-424.76	56435.14	1493.18
300	672.55	977.49	-977.49	-672.55	-34052.51	48874.27	1293.13
330	1164.90	564.35	-564.35	-1164.90	-58669.73	28217.57	746.59

Low-ProX Platform 12' - Elevation 50 - None B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	698.67	0.00	0.00	-698.67	-34933.36	0.00	0.00
30	698.67	0.00	349.33	-605.06	-30253.17	-17466.68	0.00
60	698.67	0.00	605.06	-349.33	-17466.68	-30253.17	0.00
90	698.67	0.00	698.67	0.00	0.00	-34933.36	0.00
120	698.67	0.00	605.06	349.33	17466.68	-30253.17	0.00
150	698.67	0.00	349.33	605.06	30253.17	-17466.68	0.00
180	698.67	0.00	0.00	698.67	34933.36	0.00	0.00
210	698.67	0.00	-349.33	605.06	30253.17	17466.68	0.00

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<i>Low-ProX Platform 12' - Elevation 50 - None B</i>							
Wind Azimuth °	F _a lb	F _z lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
240	698.67	0.00	-605.06	349.33	17466.68	30253.17	0.00
270	698.67	0.00	-698.67	0.00	0.00	34933.36	0.00
300	698.67	0.00	-605.06	-349.33	-17466.68	30253.17	0.00
330	698.67	0.00	-349.33	-605.06	-30253.17	17466.68	0.00

<i>Low-Profile Support Rail 12' - Elevation 50 - None A</i>							
Wind Azimuth °	F _a lb	F _z lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	202.25	0.00	0.00	-202.25	-10112.29	0.00	0.00
30	202.25	0.00	101.12	-175.15	-8757.50	-5056.14	0.00
60	202.25	0.00	175.15	-101.12	-5056.14	-8757.50	0.00
90	202.25	0.00	202.25	0.00	0.00	-10112.29	0.00
120	202.25	0.00	175.15	101.12	5056.14	-8757.50	0.00
150	202.25	0.00	101.12	175.15	8757.50	-5056.14	0.00
180	202.25	0.00	0.00	202.25	10112.29	0.00	0.00
210	202.25	0.00	-101.12	175.15	8757.50	5056.14	0.00
240	202.25	0.00	-175.15	101.12	5056.14	8757.50	0.00
270	202.25	0.00	-202.25	0.00	0.00	10112.29	0.00
300	202.25	0.00	-175.15	-101.12	-5056.14	8757.50	0.00
330	202.25	0.00	-101.12	-175.15	-8757.50	5056.14	0.00

<i>Clamp Ring Assembly - Elevation 75 - None C</i>							
Wind Azimuth °	F _a lb	F _z lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	0.70	0.00	0.00	-0.70	-52.75	0.00	0.00
30	0.70	0.00	0.35	-0.61	-45.68	-26.37	0.00
60	0.70	0.00	0.61	-0.35	-26.37	-45.68	0.00
90	0.70	0.00	0.70	0.00	0.00	-52.75	0.00
120	0.70	0.00	0.61	0.35	26.37	-45.68	0.00
150	0.70	0.00	0.35	0.61	45.68	-26.37	0.00
180	0.70	0.00	0.00	0.70	52.75	0.00	0.00
210	0.70	0.00	-0.35	0.61	45.68	26.37	0.00
240	0.70	0.00	-0.61	0.35	26.37	45.68	0.00
270	0.70	0.00	-0.70	0.00	0.00	52.75	0.00
300	0.70	0.00	-0.61	-0.35	-26.37	45.68	0.00
330	0.70	0.00	-0.35	-0.61	-45.68	26.37	0.00

Discrete Appurtenance Totals - No Ice

Wind Azimuth °	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	-59.49	-15536.43	-1100350.05	5428.96	-183.82
30	7736.89	-13425.19	-950275.41	-547613.55	-167.55
60	13460.17	-7716.69	-545557.59	-953887.21	-106.39
90	15576.82	59.49	5359.61	-1104531.32	-16.72
120	13519.67	7819.73	554858.37	-959180.92	77.43
150	7839.93	13484.69	955700.93	-556782.52	150.83
180	59.49	15536.43	1100481.86	-5158.46	183.82
210	-7736.89	13425.19	950407.22	547884.05	167.55

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Wind Azimuth °	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
240	-13460.17	7716.69	545689.40	954157.71	106.39
270	-15576.82	-59.49	-5227.81	1104801.82	16.72
300	-13519.67	-7819.73	-554726.56	959451.42	-77.43
330	-7839.93	-13484.69	-955569.12	557053.02	-150.83

Discrete Appurtenance Pressures - With Ice $G_H = 1.100$

Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AC} Front ft ²	C _{AC} Side ft ²	t _z in
6' Lightning Rod	240.0000	30.06	-0.65	0.38	103.00	1.274	3	3.33	3.33	1.8802
874G90VTE-SX	240.0000	199.75	-0.70	0.40	95.00	1.252	3	6.81	6.75	1.8706
874G90VTE-SX	120.0000	199.75	0.70	0.40	95.00	1.252	3	6.81	6.75	1.8706
LNX-8514DS	240.0000	461.18	-0.70	0.40	95.00	1.252	3	14.93	16.05	1.8706
LNX-8514DS	120.0000	461.18	0.70	0.40	95.00	1.252	3	14.93	16.05	1.8706
LNX-8514DS	0.0000	461.18	0.00	-0.81	95.00	1.252	3	14.93	16.05	1.8706
AIR-32	240.0000	357.31	-0.70	0.40	95.00	1.252	3	8.74	9.69	1.8706
AIR-32	120.0000	357.31	0.70	0.40	95.00	1.252	3	8.74	9.69	1.8706
AIR-32	0.0000	357.31	0.00	-0.81	95.00	1.252	3	8.74	9.69	1.8706
RRUS-12 & A2	240.0000	348.62	-0.70	0.40	95.00	1.252	3	8.78	5.68	1.8706
RRUS-12 & A2	120.0000	348.62	0.70	0.40	95.00	1.252	3	8.78	5.68	1.8706
RRUS-12 & A2	0.0000	348.62	0.00	-0.81	95.00	1.252	3	8.78	5.68	1.8706
Raycap RxxDC-3315-PF-48	240.0000	129.99	-0.70	0.40	95.00	1.252	3	4.25	3.03	1.8706
Raycap RxxDC-3315-PF-48	120.0000	129.99	0.70	0.40	95.00	1.252	3	4.25	3.03	1.8706
Raycap RxxDC-3315-PF-48	0.0000	129.99	0.00	-0.81	95.00	1.252	3	4.25	3.03	1.8706
Westell BWC-TTMA-700C-VG	240.0000	110.62	-0.70	0.40	95.00	1.252	3	2.05	2.51	1.8706
Westell BWC-TTMA-700C-VG	120.0000	110.62	0.70	0.40	95.00	1.252	3	2.05	2.51	1.8706
Westell BWC-TTMA-700C-VG	0.0000	110.62	0.00	-0.81	95.00	1.252	3	2.05	2.51	1.8706
SC-100-13	0.0000	336.10	0.00	-0.81	95.00	1.252	3	9.22	14.80	1.8706
SC-100-13	240.0000	336.10	-0.70	0.40	95.00	1.252	3	9.22	14.80	1.8706
SC-6014	120.0000	268.04	0.70	0.40	95.00	1.252	3	8.87	9.12	1.8706
SC-6014	0.0000	268.04	0.00	-0.81	95.00	1.252	3	8.87	9.12	1.8706
MTC3619 - 3 T-Frame Mounts	0.0000	9459.67	0.00	0.00	95.00	1.252	3	102.86	102.86	1.8706
AIR-32	240.0000	353.07	-0.85	0.49	80.00	1.208	4	8.70	9.62	1.8387
AIR-32	120.0000	353.07	0.85	0.49	80.00	1.208	4	8.70	9.62	1.8387
AIR-32	0.0000	353.07	0.00	-0.98	80.00	1.208	4	8.70	9.62	1.8387
HBX-6517DS-VTM	240.0000	244.32	-0.85	0.49	80.00	1.208	4	7.83	9.67	1.8387
HBX-6517DS-VTM	120.0000	244.32	0.85	0.49	80.00	1.208	4	7.83	9.67	1.8387
HBX-6517DS-VTM	0.0000	244.32	0.00	-0.98	80.00	1.208	4	7.83	9.67	1.8387
Raycap RxxDC-3315-PF-48	240.0000	128.32	-0.85	0.49	80.00	1.208	4	4.23	3.01	1.8387
MTC3619 - 3 T-Frame Mounts	0.0000	9340.85	0.00	0.00	80.00	1.208	4	101.70	101.70	1.8387
Dish Pipe Mount	240.0000	161.46	-0.90	0.52	75.00	1.191	4	0.00	2.90	1.8269
LNX-6515DS	240.0000	1782.03	-1.00	0.58	65.00	1.156	4	59.12	63.17	1.8010
LNX-6515DS	120.0000	1782.03	1.00	0.58	65.00	1.156	4	59.12	63.17	1.8010
LNX-6515DS	0.0000	1782.03	0.00	-1.15	65.00	1.156	4	59.12	63.17	1.8010
Low-ProX Platform 12'	0.0000	2549.80	0.00	0.00	65.00	1.156	4	47.82	47.82	1.8010
Low-Profile Support Rail 12'	0.0000	763.45	0.00	0.00	65.00	1.156	4	12.70	12.70	1.8010

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Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AC} Front ft ²	C _{AC} Side ft ²	t _z in
LNX-6515DS	240.0000	1741.16	-1.15	0.66	50.00	1.094	4	58.77	62.53	1.7543
LNX-6515DS	120.0000	1741.16	1.15	0.66	50.00	1.094	4	58.77	62.53	1.7543
LNX-6515DS	0.0000	1741.16	0.00	-1.32	50.00	1.094	4	58.77	62.53	1.7543
Low-ProX Platform 12'	0.0000	2511.09	0.00	0.00	50.00	1.094	4	47.07	47.07	1.7543
Low-Profile Support Rail 12'	0.0000	751.14	0.00	0.00	50.00	1.094	4	12.52	12.52	1.7543
Clamp Ring Assembly	0.0000	1260.33	0.00	0.00	75.00	1.191	4	0.02	0.02	1.8269
Sum Weight:		45148.88								

Discrete Appurtenance Vectors - With Ice

6' Lightning Rod - Elevation 103 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	6.27	10.86	0.00	-12.53	-1279.80	19.53	-8.14
30	10.86	6.27	6.27	-10.86	-1106.83	-626.01	-4.70
60	12.53	0.00	10.86	-6.27	-634.27	-1098.58	0.00
90	10.86	6.27	12.53	0.00	11.27	-1271.55	4.70
120	6.27	10.86	10.86	6.27	656.81	-1098.58	8.14
150	0.00	12.53	6.27	10.86	1129.38	-626.01	9.40
180	6.27	10.86	0.00	12.53	1302.35	19.53	8.14
210	10.86	6.27	-6.27	10.86	1129.38	665.06	4.70
240	12.53	0.00	-10.86	6.27	656.81	1137.63	0.00
270	10.86	6.27	-12.53	0.00	11.27	1310.60	-4.70
300	6.27	10.86	-10.86	-6.27	-634.27	1137.63	-8.14
330	0.00	12.53	-6.27	-10.86	-1106.83	665.06	-9.40

874G90VTE-SX - Elevation 95 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	10.36	17.78	0.08	-20.57	-1873.84	131.84	-14.35
30	17.94	10.26	10.41	-17.86	-1615.90	-848.85	-8.29
60	20.72	0.00	17.94	-10.36	-903.37	-1564.68	0.00
90	17.94	10.26	20.67	-0.08	72.82	-1823.83	8.29
120	10.36	17.78	17.86	10.22	1051.10	-1556.87	14.35
150	0.00	20.53	10.26	17.78	1769.34	-835.33	16.57
180	10.36	17.78	-0.08	20.57	2035.09	147.46	14.35
210	17.94	10.26	-10.41	17.86	1777.15	1128.15	8.29
240	20.72	0.00	-17.94	10.36	1064.62	1843.98	0.00
270	17.94	10.26	-20.67	0.08	88.43	2103.13	-8.29
300	10.36	17.78	-17.86	-10.22	-889.85	1836.17	-14.35
330	0.00	20.53	-10.26	-17.78	-1608.09	1114.63	-16.57

874G90VTE-SX - Elevation 95 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	10.36	17.78	-0.08	-20.57	-1873.84	-131.84	14.35
30	0.00	20.53	10.26	-17.78	-1608.09	-1114.63	16.57
60	10.36	17.78	17.86	-10.22	-889.85	-1836.17	14.35
90	17.94	10.26	20.67	0.08	88.43	-2103.13	8.29

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874G90VTE-SX - Elevation 95 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
120	20.72	0.00	17.94	10.36	1064.62	-1843.98	0.00
150	17.94	10.26	10.41	17.86	1777.15	-1128.15	-8.29
180	10.36	17.78	0.08	20.57	2035.09	-147.46	-14.35
210	0.00	20.53	-10.26	17.78	1769.34	835.33	-16.57
240	10.36	17.78	-17.86	10.22	1051.10	1556.87	-14.35
270	17.94	10.26	-20.67	-0.08	72.82	1823.83	-8.29
300	20.72	0.00	-17.94	-10.36	-903.37	1564.68	0.00
330	17.94	10.26	-10.41	-17.86	-1615.90	848.85	8.29

LNX-8514DS - Elevation 95 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	22.69	42.27	-1.48	-47.95	-4369.14	463.05	-34.12
30	39.31	24.40	21.84	-40.79	-3688.54	-1752.25	-19.70
60	45.39	0.00	39.31	-22.69	-1969.71	-3411.64	0.00
90	39.31	24.40	46.24	1.48	326.78	-4070.49	19.70
120	22.69	42.27	40.79	25.26	2585.58	-3552.26	34.12
150	0.00	48.81	24.40	42.27	4201.47	-1995.81	39.40
180	22.69	42.27	1.48	47.95	4741.45	181.81	34.12
210	39.31	24.40	-21.84	40.79	4060.84	2397.10	19.70
240	45.39	0.00	-39.31	22.69	2342.02	4056.50	0.00
270	39.31	24.40	-46.24	-1.48	45.53	4715.35	-19.70
300	22.69	42.27	-40.79	-25.26	-2213.28	4197.12	-34.12
330	0.00	48.81	-24.40	-42.27	-3829.16	2640.67	-39.40

LNX-8514DS - Elevation 95 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	22.69	42.27	1.48	-47.95	-4369.14	-463.05	34.12
30	0.00	48.81	24.40	-42.27	-3829.16	-2640.67	39.40
60	22.69	42.27	40.79	-25.26	-2213.28	-4197.12	34.12
90	39.31	24.40	46.24	-1.48	45.53	-4715.35	19.70
120	45.39	0.00	39.31	22.69	2342.02	-4056.50	0.00
150	39.31	24.40	21.84	40.79	4060.84	-2397.10	-19.70
180	22.69	42.27	-1.48	47.95	4741.45	-181.81	-34.12
210	0.00	48.81	-24.40	42.27	4201.47	1995.81	-39.40
240	22.69	42.27	-40.79	25.26	2585.58	3552.26	-34.12
270	39.31	24.40	-46.24	1.48	326.78	4070.49	-19.70
300	45.39	0.00	-39.31	-22.69	-1969.71	3411.64	0.00
330	39.31	24.40	-21.84	-40.79	-3688.54	1752.25	19.70

LNX-8514DS - Elevation 95 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	45.39	0.00	0.00	-45.39	-4684.04	0.00	0.00
30	39.31	24.40	24.40	-39.31	-4106.38	-2318.24	-19.70
60	22.69	42.27	42.27	-22.69	-2528.17	-4015.31	-34.12
90	0.00	48.81	48.81	0.00	-372.31	-4636.48	-39.40
120	22.69	42.27	42.27	22.69	1783.56	-4015.31	-34.12
150	39.31	24.40	24.40	39.31	3361.76	-2318.24	-19.70
180	45.39	0.00	0.00	45.39	3939.42	0.00	0.00

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<i>LNX-8514DS - Elevation 95 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
210	39.31	24.40	-24.40	39.31	3361.76	2318.24	19.70
240	22.69	42.27	-42.27	22.69	1783.56	4015.31	34.12
270	0.00	48.81	-48.81	0.00	-372.31	4636.48	39.40
300	22.69	42.27	-42.27	-22.69	-2528.17	4015.31	34.12
330	39.31	24.40	-24.40	-39.31	-4106.38	2318.24	19.70

<i>AIR-32 - Elevation 95 - From Leg C</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	13.28	25.51	-1.25	-28.73	-2585.22	368.50	-20.59
30	23.01	14.73	12.56	-24.26	-2160.20	-943.60	-11.89
60	26.57	0.00	23.01	-13.28	-1117.71	-1935.93	0.00
90	23.01	14.73	27.29	1.25	262.92	-2342.59	11.89
120	13.28	25.51	24.26	15.45	1611.74	-2054.61	20.59
150	0.00	29.45	14.73	25.51	2567.34	-1149.18	23.78
180	13.28	25.51	1.25	28.73	2873.67	131.12	20.59
210	23.01	14.73	-12.56	24.26	2448.65	1443.22	11.89
240	26.57	0.00	-23.01	13.28	1406.16	2435.54	0.00
270	23.01	14.73	-27.29	-1.25	25.54	2842.20	-11.89
300	13.28	25.51	-24.26	-15.45	-1323.28	2554.23	-20.59
330	0.00	29.45	-14.73	-25.51	-2278.88	1648.79	-23.78

<i>AIR-32 - Elevation 95 - From Leg B</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	13.28	25.51	1.25	-28.73	-2585.22	-368.50	20.59
30	0.00	29.45	14.73	-25.51	-2278.88	-1648.79	23.78
60	13.28	25.51	24.26	-15.45	-1323.28	-2554.23	20.59
90	23.01	14.73	27.29	-1.25	25.54	-2842.20	11.89
120	26.57	0.00	23.01	13.28	1406.16	-2435.54	0.00
150	23.01	14.73	12.56	24.26	2448.65	-1443.22	-11.89
180	13.28	25.51	-1.25	28.73	2873.67	-131.12	-20.59
210	0.00	29.45	-14.73	25.51	2567.34	1149.18	-23.78
240	13.28	25.51	-24.26	15.45	1611.74	2054.61	-20.59
270	23.01	14.73	-27.29	1.25	262.92	2342.59	-11.89
300	26.57	0.00	-23.01	-13.28	-1117.71	1935.93	0.00
330	23.01	14.73	-12.56	-24.26	-2160.20	943.60	11.89

<i>AIR-32 - Elevation 95 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	26.57	0.00	0.00	-26.57	-2812.32	0.00	0.00
30	23.01	14.73	14.73	-23.01	-2474.19	-1398.98	-11.89
60	13.28	25.51	25.51	-13.28	-1550.39	-2423.11	-20.59
90	0.00	29.45	29.45	0.00	-288.45	-2797.97	-23.78
120	13.28	25.51	25.51	13.28	973.48	-2423.11	-20.59
150	23.01	14.73	14.73	23.01	1897.28	-1398.98	-11.89
180	26.57	0.00	0.00	26.57	2235.42	0.00	0.00
210	23.01	14.73	-14.73	23.01	1897.28	1398.98	11.89
240	13.28	25.51	-25.51	13.28	973.48	2423.11	20.59
270	0.00	29.45	-29.45	0.00	-288.45	2797.97	23.78

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<i>AIR-32 - Elevation 95 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
300	13.28	25.51	-25.51	-13.28	-1550.39	2423.11	20.59
330	23.01	14.73	-14.73	-23.01	-2474.19	1398.98	11.89

<i>RRUS-12 & A2 - Elevation 95 - From Leg C</i>							
Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	13.35	14.95	4.08	-19.62	-1722.76	-144.33	-12.07
30	23.11	8.63	15.70	-19.03	-1667.13	-1248.12	-6.97
60	26.69	0.00	23.11	-13.35	-1127.09	-1952.18	0.00
90	23.11	8.63	24.33	-4.08	-247.34	-2067.84	6.97
120	13.35	14.95	19.03	6.27	736.39	-1564.12	12.07
150	0.00	17.26	8.63	14.95	1560.51	-575.99	13.93
180	13.35	14.95	-4.08	19.62	2004.20	631.79	12.07
210	23.11	8.63	-15.70	19.03	1948.57	1735.59	6.97
240	26.69	0.00	-23.11	13.35	1408.53	2439.64	0.00
270	23.11	8.63	-24.33	4.08	528.78	2555.30	-6.97
300	13.35	14.95	-19.03	-6.27	-454.96	2051.58	-12.07
330	0.00	17.26	-8.63	-14.95	-1279.08	1063.45	-13.93

<i>RRUS-12 & A2 - Elevation 95 - From Leg B</i>							
Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	13.35	14.95	-4.08	-19.62	-1722.76	144.33	12.07
30	0.00	17.26	8.63	-14.95	-1279.08	-1063.45	13.93
60	13.35	14.95	19.03	-6.27	-454.96	-2051.58	12.07
90	23.11	8.63	24.33	4.08	528.78	-2555.30	6.97
120	26.69	0.00	23.11	13.35	1408.53	-2439.64	0.00
150	23.11	8.63	15.70	19.03	1948.57	-1735.59	-6.97
180	13.35	14.95	4.08	19.62	2004.20	-631.79	-12.07
210	0.00	17.26	-8.63	14.95	1560.51	575.99	-13.93
240	13.35	14.95	-19.03	6.27	736.39	1564.12	-12.07
270	23.11	8.63	-24.33	-4.08	-247.34	2067.84	-6.97
300	26.69	0.00	-23.11	-13.35	-1127.09	1952.18	0.00
330	23.11	8.63	-15.70	-19.03	-1667.13	1248.12	6.97

<i>RRUS-12 & A2 - Elevation 95 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	26.69	0.00	0.00	-26.69	-2817.06	0.00	0.00
30	23.11	8.63	8.63	-23.11	-2477.35	-819.72	-6.97
60	13.35	14.95	14.95	-13.35	-1549.25	-1419.79	-12.07
90	0.00	17.26	17.26	0.00	-281.44	-1639.44	-13.93
120	13.35	14.95	14.95	13.35	986.37	-1419.79	-12.07
150	23.11	8.63	8.63	23.11	1914.47	-819.72	-6.97
180	26.69	0.00	0.00	26.69	2254.18	0.00	0.00
210	23.11	8.63	-8.63	23.11	1914.47	819.72	6.97
240	13.35	14.95	-14.95	13.35	986.37	1419.79	12.07
270	0.00	17.26	-17.26	0.00	-281.44	1639.44	13.93
300	13.35	14.95	-14.95	-13.35	-1549.25	1419.79	12.07
330	23.11	8.63	-8.63	-23.11	-2477.35	819.72	6.97

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Raycap RxxDC-3315-PF-48 - Elevation 95 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	6.46	7.98	1.61	-10.14	-910.77	-61.86	-6.44
30	11.19	4.61	7.39	-9.58	-858.09	-611.20	-3.72
60	12.92	0.00	11.19	-6.46	-561.43	-972.42	0.00
90	11.19	4.61	12.00	-1.61	-100.27	-1048.73	3.72
120	6.46	7.98	9.58	3.68	401.82	-819.68	6.44
150	0.00	9.21	4.61	7.98	810.30	-346.65	7.44
180	6.46	7.98	-1.61	10.14	1015.72	243.62	6.44
210	11.19	4.61	-7.39	9.58	963.04	792.97	3.72
240	12.92	0.00	-11.19	6.46	666.37	1154.19	0.00
270	11.19	4.61	-12.00	1.61	205.21	1230.50	-3.72
300	6.46	7.98	-9.58	-3.68	-296.88	1001.45	-6.44
330	0.00	9.21	-4.61	-7.98	-705.35	528.41	-7.44

Raycap RxxDC-3315-PF-48 - Elevation 95 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	6.46	7.98	-1.61	-10.14	-910.77	61.86	6.44
30	0.00	9.21	4.61	-7.98	-705.35	-528.41	7.44
60	6.46	7.98	9.58	-3.68	-296.88	-1001.45	6.44
90	11.19	4.61	12.00	1.61	205.21	-1230.50	3.72
120	12.92	0.00	11.19	6.46	666.37	-1154.19	0.00
150	11.19	4.61	7.39	9.58	963.04	-792.97	-3.72
180	6.46	7.98	1.61	10.14	1015.72	-243.62	-6.44
210	0.00	9.21	-4.61	7.98	810.30	346.65	-7.44
240	6.46	7.98	-9.58	3.68	401.82	819.68	-6.44
270	11.19	4.61	-12.00	-1.61	-100.27	1048.73	-3.72
300	12.92	0.00	-11.19	-6.46	-561.43	972.42	0.00
330	11.19	4.61	-7.39	-9.58	-858.09	611.20	3.72

Raycap RxxDC-3315-PF-48 - Elevation 95 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	12.92	0.00	0.00	-12.92	-1332.74	0.00	0.00
30	11.19	4.61	4.61	-11.19	-1168.25	-437.53	-3.72
60	6.46	7.98	7.98	-6.46	-718.84	-757.82	-6.44
90	0.00	9.21	9.21	0.00	-104.94	-875.06	-7.44
120	6.46	7.98	7.98	6.46	508.96	-757.82	-6.44
150	11.19	4.61	4.61	11.19	958.36	-437.53	-3.72
180	12.92	0.00	0.00	12.92	1122.86	0.00	0.00
210	11.19	4.61	-4.61	11.19	958.36	437.53	3.72
240	6.46	7.98	-7.98	6.46	508.96	757.82	6.44
270	0.00	9.21	-9.21	0.00	-104.94	875.06	7.44
300	6.46	7.98	-7.98	-6.46	-718.84	757.82	6.44
330	11.19	4.61	-4.61	-11.19	-1168.25	437.53	3.72

Westell BWC-TTMA-700C-VG - Elevation 95 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	3.11	6.61	-0.61	-7.28	-647.07	135.45	-5.34
30	5.39	3.82	2.76	-6.00	-525.34	-184.64	-3.08

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Westell BWC-TTMA-700C-VG - Elevation 95 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
60	6.22	0.00	5.39	-3.11	-250.88	-434.53	0.00
90	5.39	3.82	6.57	0.61	102.77	-547.27	3.08
120	3.11	6.61	6.00	4.17	440.84	-492.65	5.34
150	0.00	7.63	3.82	6.61	672.75	-285.30	6.16
180	3.11	6.61	0.61	7.28	736.37	19.23	5.34
210	5.39	3.82	-2.76	6.00	614.64	339.32	3.08
240	6.22	0.00	-5.39	3.11	340.18	589.21	0.00
270	5.39	3.82	-6.57	-0.61	-13.46	701.95	-3.08
300	3.11	6.61	-6.00	-4.17	-351.54	647.33	-5.34
330	0.00	7.63	-3.82	-6.61	-583.45	439.98	-6.16

Westell BWC-TTMA-700C-VG - Elevation 95 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	3.11	6.61	0.61	-7.28	-647.07	-135.45	5.34
30	0.00	7.63	3.82	-6.61	-583.45	-439.98	6.16
60	3.11	6.61	6.00	-4.17	-351.54	-647.33	5.34
90	5.39	3.82	6.57	-0.61	-13.46	-701.95	3.08
120	6.22	0.00	5.39	3.11	340.18	-589.21	0.00
150	5.39	3.82	2.76	6.00	614.64	-339.32	-3.08
180	3.11	6.61	-0.61	7.28	736.37	-19.23	-5.34
210	0.00	7.63	-3.82	6.61	672.75	285.30	-6.16
240	3.11	6.61	-6.00	4.17	440.84	492.65	-5.34
270	5.39	3.82	-6.57	0.61	102.77	547.27	-3.08
300	6.22	0.00	-5.39	-3.11	-250.88	434.53	0.00
330	5.39	3.82	-2.76	-6.00	-525.34	184.64	3.08

Westell BWC-TTMA-700C-VG - Elevation 95 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	6.22	0.00	0.00	-6.22	-680.37	0.00	0.00
30	5.39	3.82	3.82	-5.39	-601.18	-362.64	-3.08
60	3.11	6.61	6.61	-3.11	-384.83	-628.10	-5.34
90	0.00	7.63	7.63	0.00	-89.30	-725.27	-6.16
120	3.11	6.61	6.61	3.11	206.23	-628.10	-5.34
150	5.39	3.82	3.82	5.39	422.57	-362.64	-3.08
180	6.22	0.00	0.00	6.22	501.76	0.00	0.00
210	5.39	3.82	-3.82	5.39	422.57	362.64	3.08
240	3.11	6.61	-6.61	3.11	206.23	628.10	5.34
270	0.00	7.63	-7.63	0.00	-89.30	725.27	6.16
300	3.11	6.61	-6.61	-3.11	-384.83	628.10	5.34
330	5.39	3.82	-3.82	-5.39	-601.18	362.64	3.08

SC-100-13 - Elevation 95 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	28.05	0.00	0.00	-28.05	-2936.13	0.00	0.00
30	24.29	22.51	22.51	-24.29	-2579.11	-2138.23	-18.17
60	14.03	38.98	38.98	-14.03	-1603.73	-3703.52	-31.47
90	0.00	45.02	45.02	0.00	-271.33	-4276.45	-36.34
120	14.03	38.98	38.98	14.03	1061.07	-3703.52	-31.47

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SC-100-13 - Elevation 95 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
150	24.29	22.51	22.51	24.29	2036.46	-2138.23	-18.17
180	28.05	0.00	0.00	28.05	2393.47	0.00	0.00
210	24.29	22.51	-22.51	24.29	2036.46	2138.23	18.17
240	14.03	38.98	-38.98	14.03	1061.07	3703.52	31.47
270	0.00	45.02	-45.02	0.00	-271.33	4276.45	36.34
300	14.03	38.98	-38.98	-14.03	-1603.73	3703.52	31.47
330	24.29	22.51	-22.51	-24.29	-2579.11	2138.23	18.17

SC-100-13 - Elevation 95 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	14.03	38.98	-7.35	-40.77	-3737.88	932.84	-31.47
30	24.29	22.51	9.78	-31.64	-2869.99	-694.51	-18.17
60	28.05	0.00	24.29	-14.03	-1196.74	-2072.81	0.00
90	24.29	22.51	32.29	7.35	833.53	-2832.74	18.17
120	14.03	38.98	31.64	26.75	2676.80	-2770.67	31.47
150	0.00	45.02	22.51	38.98	3839.18	-1903.25	36.34
180	14.03	38.98	7.35	40.77	4009.20	-462.89	31.47
210	24.29	22.51	-9.78	31.64	3141.32	1164.46	18.17
240	28.05	0.00	-24.29	14.03	1468.06	2542.76	0.00
270	24.29	22.51	-32.29	-7.35	-562.20	3302.69	-18.17
300	14.03	38.98	-31.64	-26.75	-2405.47	3240.63	-31.47
330	0.00	45.02	-22.51	-38.98	-3567.85	2373.20	-36.34

SC-6014 - Elevation 95 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	13.49	24.02	0.33	-27.55	-2509.05	-218.91	19.40
30	0.00	27.74	13.87	-24.02	-2174.17	-1505.11	22.40
60	13.49	24.02	23.69	-14.06	-1227.72	-2438.23	19.40
90	23.36	13.87	27.17	-0.33	76.68	-2768.25	11.20
120	26.98	0.00	23.36	13.49	1389.52	-2406.72	0.00
150	23.36	13.87	13.30	23.69	2359.03	-1450.53	-11.20
180	13.49	24.02	-0.33	27.55	2725.43	-155.88	-19.40
210	0.00	27.74	-13.87	24.02	2390.55	1130.33	-22.40
240	13.49	24.02	-23.69	14.06	1444.11	2063.45	-19.40
270	23.36	13.87	-27.17	0.33	139.71	2393.46	-11.20
300	26.98	0.00	-23.36	-13.49	-1173.14	2031.93	0.00
330	23.36	13.87	-13.30	-23.69	-2142.65	1075.74	11.20

SC-6014 - Elevation 95 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	26.98	0.00	0.00	-26.98	-2779.04	0.00	0.00
30	23.36	13.87	13.87	-23.36	-2435.71	-1317.72	-11.20
60	13.49	24.02	24.02	-13.49	-1497.71	-2282.36	-19.40
90	0.00	27.74	27.74	0.00	-216.38	-2635.44	-22.40
120	13.49	24.02	24.02	13.49	1064.95	-2282.36	-19.40
150	23.36	13.87	13.87	23.36	2002.94	-1317.72	-11.20
180	26.98	0.00	0.00	26.98	2346.28	0.00	0.00
210	23.36	13.87	-13.87	23.36	2002.94	1317.72	11.20

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SC-6014 - Elevation 95 - From Leg A

Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	13.49	24.02	-24.02	13.49	1064.95	2282.36	19.40
270	0.00	27.74	-27.74	0.00	-216.38	2635.44	22.40
300	13.49	24.02	-24.02	-13.49	-1497.71	2282.36	19.40
330	23.36	13.87	-13.87	-23.36	-2435.71	1317.72	11.20

MTC3619 - 3 T-Frame Mounts - Elevation 95 - None C

Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	390.98	0.00	0.00	-390.98	-37143.32	0.00	0.00
30	390.98	0.00	195.49	-338.60	-32167.06	-18571.66	0.00
60	390.98	0.00	338.60	-195.49	-18571.66	-32167.06	0.00
90	390.98	0.00	390.98	0.00	0.00	-37143.32	0.00
120	390.98	0.00	338.60	195.49	18571.66	-32167.06	0.00
150	390.98	0.00	195.49	338.60	32167.06	-18571.66	0.00
180	390.98	0.00	0.00	390.98	37143.32	0.00	0.00
210	390.98	0.00	-195.49	338.60	32167.06	18571.66	0.00
240	390.98	0.00	-338.60	195.49	18571.66	32167.06	0.00
270	390.98	0.00	-390.98	0.00	0.00	37143.32	0.00
300	390.98	0.00	-338.60	-195.49	-18571.66	32167.06	0.00
330	390.98	0.00	-195.49	-338.60	-32167.06	18571.66	0.00

AIR-32 - Elevation 80 - From Leg C

Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	13.49	25.83	-1.24	-29.11	-2156.11	398.30	-25.29
30	23.36	14.91	12.77	-24.59	-1794.64	-722.33	-14.60
60	26.97	0.00	23.36	-13.49	-905.97	-1569.19	0.00
90	23.36	14.91	27.68	1.24	271.76	-1915.37	14.60
120	13.49	25.83	24.59	15.63	1422.99	-1668.09	25.29
150	0.00	29.83	14.91	25.83	2239.25	-893.64	29.20
180	13.49	25.83	1.24	29.11	2501.83	200.50	25.29
210	23.36	14.91	-12.77	24.59	2140.35	1321.13	14.60
240	26.97	0.00	-23.36	13.49	1251.69	2167.99	0.00
270	23.36	14.91	-27.68	-1.24	73.96	2514.16	-14.60
300	13.49	25.83	-24.59	-15.63	-1077.28	2266.89	-25.29
330	0.00	29.83	-14.91	-25.83	-1893.54	1492.43	-29.20

AIR-32 - Elevation 80 - From Leg B

Wind Azimuth °	F_a lb	F_x lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	13.49	25.83	1.24	-29.11	-2156.11	-398.30	25.29
30	0.00	29.83	14.91	-25.83	-1893.54	-1492.43	29.20
60	13.49	25.83	24.59	-15.63	-1077.28	-2266.89	25.29
90	23.36	14.91	27.68	-1.24	73.96	-2514.16	14.60
120	26.97	0.00	23.36	13.49	1251.69	-2167.99	0.00
150	23.36	14.91	12.77	24.59	2140.35	-1321.13	-14.60
180	13.49	25.83	-1.24	29.11	2501.83	-200.50	-25.29
210	0.00	29.83	-14.91	25.83	2239.25	893.64	-29.20
240	13.49	25.83	-24.59	15.63	1422.99	1668.09	-25.29
270	23.36	14.91	-27.68	1.24	271.76	1915.37	-14.60
300	26.97	0.00	-23.36	-13.49	-905.97	1569.19	0.00

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AIR-32 - Elevation 80 - From Leg B							
Wind Azimuth °	F _a lb	F _x lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
330	23.36	14.91	-12.77	-24.59	-1794.64	722.33	14.60

AIR-32 - Elevation 80 - From Leg A							
Wind Azimuth °	F _a lb	F _x lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	26.97	0.00	0.00	-26.97	-2503.38	0.00	0.00
30	23.36	14.91	14.91	-23.36	-2214.31	-1193.03	-14.60
60	13.49	25.83	25.83	-13.49	-1424.55	-2066.40	-25.29
90	0.00	29.83	29.83	0.00	-345.72	-2386.07	-29.20
120	13.49	25.83	25.83	13.49	733.12	-2066.40	-25.29
150	23.36	14.91	14.91	23.36	1522.87	-1193.03	-14.60
180	26.97	0.00	0.00	26.97	1811.95	0.00	0.00
210	23.36	14.91	-14.91	23.36	1522.87	1193.03	14.60
240	13.49	25.83	-25.83	13.49	733.12	2066.40	25.29
270	0.00	29.83	-29.83	0.00	-345.72	2386.07	29.20
300	13.49	25.83	-25.83	-13.49	-1424.55	2066.40	25.29
330	23.36	14.91	-14.91	-23.36	-2214.31	1193.03	14.60

HBX-6517DS-VTM - Elevation 80 - From Leg C							
Wind Azimuth °	F _a lb	F _x lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	12.14	25.98	-2.48	-28.56	-2165.58	405.32	-25.44
30	21.02	15.00	10.71	-23.50	-1760.35	-649.43	-14.68
60	24.28	0.00	21.02	-12.14	-851.39	-1474.65	0.00
90	21.02	15.00	25.71	2.48	317.75	-1849.23	14.68
120	12.14	25.98	23.50	16.43	1433.80	-1672.79	25.44
150	0.00	29.99	15.00	25.98	2197.72	-992.61	29.37
180	12.14	25.98	2.48	28.56	2404.81	9.05	25.44
210	21.02	15.00	-10.71	23.50	1999.59	1063.80	14.68
240	24.28	0.00	-21.02	12.14	1090.63	1889.02	0.00
270	21.02	15.00	-25.71	-2.48	-78.52	2263.59	-14.68
300	12.14	25.98	-23.50	-16.43	-1194.57	2087.15	-25.44
330	0.00	29.99	-15.00	-25.98	-1958.49	1406.98	-29.37

HBX-6517DS-VTM - Elevation 80 - From Leg B							
Wind Azimuth °	F _a lb	F _x lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	12.14	25.98	2.48	-28.56	-2165.58	-405.32	25.44
30	0.00	29.99	15.00	-25.98	-1958.49	-1406.98	29.37
60	12.14	25.98	23.50	-16.43	-1194.57	-2087.15	25.44
90	21.02	15.00	25.71	-2.48	-78.52	-2263.59	14.68
120	24.28	0.00	21.02	12.14	1090.63	-1889.02	0.00
150	21.02	15.00	10.71	23.50	1999.59	-1063.80	-14.68
180	12.14	25.98	-2.48	28.56	2404.81	-9.05	-25.44
210	0.00	29.99	-15.00	25.98	2197.72	992.61	-29.37
240	12.14	25.98	-23.50	16.43	1433.80	1672.79	-25.44
270	21.02	15.00	-25.71	2.48	317.75	1849.23	-14.68
300	24.28	0.00	-21.02	-12.14	-851.39	1474.65	0.00
330	21.02	15.00	-10.71	-23.50	-1760.35	649.43	14.68

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HBX-6517DS-VTM - Elevation 80 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	24.28	0.00	0.00	-24.28	-2181.25	0.00	0.00
30	21.02	15.00	15.00	-21.02	-1921.07	-1199.79	-14.68
60	12.14	25.98	25.98	-12.14	-1210.24	-2078.10	-25.44
90	0.00	29.99	29.99	0.00	-239.23	-2399.59	-29.37
120	12.14	25.98	25.98	12.14	731.78	-2078.10	-25.44
150	21.02	15.00	15.00	21.02	1442.60	-1199.79	-14.68
180	24.28	0.00	0.00	24.28	1702.78	0.00	0.00
210	21.02	15.00	-15.00	21.02	1442.60	1199.79	14.68
240	12.14	25.98	-25.98	12.14	731.78	2078.10	25.44
270	0.00	29.99	-29.99	0.00	-239.23	2399.59	29.37
300	12.14	25.98	-25.98	-12.14	-1210.24	2078.10	25.44
330	21.02	15.00	-15.00	-21.02	-1921.07	1199.79	14.68

Raycap RccDC-3315-PF-48 - Elevation 80 - From Leg C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	6.56	8.09	1.64	-10.28	-759.90	-22.07	-7.92
30	11.36	4.67	7.50	-9.72	-715.12	-491.47	-4.57
60	13.12	0.00	11.36	-6.56	-461.89	-800.01	0.00
90	11.36	4.67	12.17	-1.64	-68.06	-865.04	4.57
120	6.56	8.09	9.72	3.73	360.83	-669.13	7.92
150	0.00	9.34	4.67	8.09	709.88	-264.76	9.14
180	6.56	8.09	-1.64	10.28	885.55	239.70	7.92
210	11.36	4.67	-7.50	9.72	840.77	709.09	4.57
240	13.12	0.00	-11.36	6.56	587.54	1017.64	0.00
270	11.36	4.67	-12.17	1.64	193.71	1082.67	-4.57
300	6.56	8.09	-9.72	-3.73	-235.19	886.76	-7.92
330	0.00	9.34	-4.67	-8.09	-584.23	482.39	-9.14

MTC3619 - 3 T-Frame Mounts - Elevation 80 - None B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	394.30	0.00	0.00	-394.30	-31543.73	0.00	0.00
30	394.30	0.00	197.15	-341.47	-27317.67	-15771.86	0.00
60	394.30	0.00	341.47	-197.15	-15771.86	-27317.67	0.00
90	394.30	0.00	394.30	0.00	0.00	-31543.73	0.00
120	394.30	0.00	341.47	197.15	15771.86	-27317.67	0.00
150	394.30	0.00	197.15	341.47	27317.67	-15771.86	0.00
180	394.30	0.00	0.00	394.30	31543.73	0.00	0.00
210	394.30	0.00	-197.15	341.47	27317.67	15771.86	0.00
240	394.30	0.00	-341.47	197.15	15771.86	27317.67	0.00
270	394.30	0.00	-394.30	0.00	0.00	31543.73	0.00
300	394.30	0.00	-341.47	-197.15	-15771.86	27317.67	0.00
330	394.30	0.00	-197.15	-341.47	-27317.67	15771.86	0.00

Dish Pipe Mount - Elevation 75 - From Leg C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	9.80	-4.90	-8.49	-552.85	512.42	-10.16
30	0.00	5.66	-2.83	-4.90	-283.82	357.10	-5.86

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<i>Dish Pipe Mount - Elevation 75 - From Leg C</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	0.00	0.00	0.00	0.00	83.67	144.93	0.00
90	0.00	5.66	2.83	4.90	451.17	-67.25	5.86
120	0.00	9.80	4.90	8.49	720.20	-222.57	10.16
150	0.00	11.32	5.66	9.80	818.67	-279.42	11.73
180	0.00	9.80	4.90	8.49	720.20	-222.57	10.16
210	0.00	5.66	2.83	4.90	451.17	-67.25	5.86
240	0.00	0.00	0.00	0.00	83.67	144.93	0.00
270	0.00	5.66	-2.83	-4.90	-283.82	357.10	-5.86
300	0.00	9.80	-4.90	-8.49	-552.85	512.42	-10.16
330	0.00	11.32	-5.66	-9.80	-651.32	569.28	-11.73

<i>LNX-6515DS - Elevation 65 - From Leg C</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	93.97	173.92	-5.58	-197.61	-11818.84	2138.88	-200.19
30	162.77	100.41	90.75	-168.34	-9916.77	-4122.62	-115.58
60	187.95	0.00	162.77	-93.97	-5082.70	-8803.49	0.00
90	162.77	100.41	191.17	5.58	1388.09	-10649.48	115.58
120	93.97	173.92	168.34	103.63	7761.74	-9165.98	200.19
150	0.00	200.83	100.41	173.92	12330.45	-4750.47	231.16
180	93.97	173.92	5.58	197.61	13870.04	1413.90	200.19
210	162.77	100.41	-90.75	168.34	11967.96	7675.40	115.58
240	187.95	0.00	-162.77	93.97	7133.89	12356.26	0.00
270	162.77	100.41	-191.17	-5.58	663.11	14202.26	-115.58
300	93.97	173.92	-168.34	-103.63	-5710.55	12718.75	-200.19
330	0.00	200.83	-100.41	-173.92	-10279.26	8303.25	-231.16

<i>LNX-6515DS - Elevation 65 - From Leg B</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	93.97	173.92	5.58	-197.61	-11818.84	-2138.88	200.19
30	0.00	200.83	100.41	-173.92	-10279.26	-8303.25	231.16
60	93.97	173.92	168.34	-103.63	-5710.55	-12718.75	200.19
90	162.77	100.41	191.17	-5.58	663.11	-14202.26	115.58
120	187.95	0.00	162.77	93.97	7133.89	-12356.26	0.00
150	162.77	100.41	90.75	168.34	11967.96	-7675.40	-115.58
180	93.97	173.92	-5.58	197.61	13870.04	-1413.90	-200.19
210	0.00	200.83	-100.41	173.92	12330.45	4750.47	-231.16
240	93.97	173.92	-168.34	103.63	7761.74	9165.98	-200.19
270	162.77	100.41	-191.17	5.58	1388.09	10649.48	-115.58
300	187.95	0.00	-162.77	-93.97	-5082.70	8803.49	0.00
330	162.77	100.41	-90.75	-168.34	-9916.77	4122.62	115.58

<i>LNX-6515DS - Elevation 65 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	187.95	0.00	0.00	-187.95	-14267.78	0.00	0.00
30	162.77	100.41	100.41	-162.77	-12631.07	-6526.86	-115.58
60	93.97	173.92	173.92	-93.97	-8159.49	-11304.85	-200.19
90	0.00	200.83	200.83	0.00	-2051.20	-13053.72	-231.16
120	93.97	173.92	173.92	93.97	4057.10	-11304.85	-200.19

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<i>LNX-6515DS - Elevation 65 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	162.77	100.41	100.41	162.77	8528.68	-6526.86	-115.58
180	187.95	0.00	0.00	187.95	10165.39	0.00	0.00
210	162.77	100.41	-100.41	162.77	8528.68	6526.86	115.58
240	93.97	173.92	-173.92	93.97	4057.10	11304.85	200.19
270	0.00	200.83	-200.83	0.00	-2051.20	13053.72	231.16
300	93.97	173.92	-173.92	-93.97	-8159.49	11304.85	200.19
330	162.77	100.41	-100.41	-162.77	-12631.07	6526.86	115.58

<i>Low-ProX Platform 12' - Elevation 65 - None B</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	190.02	0.00	0.00	-190.02	-12351.35	0.00	0.00
30	190.02	0.00	95.01	-164.56	-10696.58	-6175.67	0.00
60	190.02	0.00	164.56	-95.01	-6175.67	-10696.58	0.00
90	190.02	0.00	190.02	0.00	0.00	-12351.35	0.00
120	190.02	0.00	164.56	95.01	6175.67	-10696.58	0.00
150	190.02	0.00	95.01	164.56	10696.58	-6175.67	0.00
180	190.02	0.00	0.00	190.02	12351.35	0.00	0.00
210	190.02	0.00	-95.01	164.56	10696.58	6175.67	0.00
240	190.02	0.00	-164.56	95.01	6175.67	10696.58	0.00
270	190.02	0.00	-190.02	0.00	0.00	12351.35	0.00
300	190.02	0.00	-164.56	-95.01	-6175.67	10696.58	0.00
330	190.02	0.00	-95.01	-164.56	-10696.58	6175.67	0.00

<i>Low-Profile Support Rail 12' - Elevation 65 - None A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	50.49	0.00	0.00	-50.49	-3281.57	0.00	0.00
30	50.49	0.00	25.24	-43.72	-2841.92	-1640.79	0.00
60	50.49	0.00	43.72	-25.24	-1640.79	-2841.92	0.00
90	50.49	0.00	50.49	0.00	0.00	-3281.57	0.00
120	50.49	0.00	43.72	25.24	1640.79	-2841.92	0.00
150	50.49	0.00	25.24	43.72	2841.92	-1640.79	0.00
180	50.49	0.00	0.00	50.49	3281.57	0.00	0.00
210	50.49	0.00	-25.24	43.72	2841.92	1640.79	0.00
240	50.49	0.00	-43.72	25.24	1640.79	2841.92	0.00
270	50.49	0.00	-50.49	0.00	0.00	3281.57	0.00
300	50.49	0.00	-43.72	-25.24	-1640.79	2841.92	0.00
330	50.49	0.00	-25.24	-43.72	-2841.92	1640.79	0.00

<i>LNX-6515DS - Elevation 50 - From Leg C</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	96.05	176.99	-5.32	-201.30	-8913.51	2260.59	-234.15
30	166.36	102.19	92.98	-171.68	-7432.14	-2654.18	-135.18
60	192.10	0.00	166.36	-96.05	-3650.74	-6323.26	0.00
90	166.36	102.19	195.17	5.32	1417.48	-7763.51	135.18
120	96.05	176.99	171.68	105.26	6414.48	-6589.03	234.15
150	0.00	204.37	102.19	176.99	10001.32	-3114.52	270.37
180	96.05	176.99	5.32	201.30	11216.92	1729.04	234.15
210	166.36	102.19	-92.98	171.68	9735.55	6643.81	135.18

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<i>LNX-6515DS - Elevation 50 - From Leg C</i>							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
240	192.10	0.00	-166.36	96.05	5954.15	10312.88	0.00
270	166.36	102.19	-195.17	-5.32	885.93	11753.14	-135.18
300	96.05	176.99	-171.68	-105.26	-4111.07	10578.66	-234.15
330	0.00	204.37	-102.19	-176.99	-7697.91	7104.14	-270.37

<i>LNX-6515DS - Elevation 50 - From Leg B</i>							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	96.05	176.99	5.32	-201.30	-8913.51	-2260.59	234.15
30	0.00	204.37	102.19	-176.99	-7697.91	-7104.14	270.37
60	96.05	176.99	171.68	-105.26	-4111.07	-10578.66	234.15
90	166.36	102.19	195.17	-5.32	885.93	-11753.14	135.18
120	192.10	0.00	166.36	96.05	5954.15	-10312.88	0.00
150	166.36	102.19	92.98	171.68	9735.55	-6643.81	-135.18
180	96.05	176.99	-5.32	201.30	11216.92	-1729.04	-234.15
210	0.00	204.37	-102.19	176.99	10001.32	3114.52	-270.37
240	96.05	176.99	-171.68	105.26	6414.48	6589.03	-234.15
270	166.36	102.19	-195.17	5.32	1417.48	7763.51	-135.18
300	192.10	0.00	-166.36	-96.05	-3650.74	6323.26	0.00
330	166.36	102.19	-92.98	-171.68	-7432.14	2654.18	135.18

<i>LNX-6515DS - Elevation 50 - From Leg A</i>							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	192.10	0.00	0.00	-192.10	-11908.29	0.00	0.00
30	166.36	102.19	102.19	-166.36	-10621.48	-5109.33	-135.18
60	96.05	176.99	176.99	-96.05	-7105.85	-8849.62	-234.15
90	0.00	204.37	204.37	0.00	-2303.41	-10218.66	-270.37
120	96.05	176.99	176.99	96.05	2499.03	-8849.62	-234.15
150	166.36	102.19	102.19	166.36	6014.66	-5109.33	-135.18
180	192.10	0.00	0.00	192.10	7301.47	0.00	0.00
210	166.36	102.19	-102.19	166.36	6014.66	5109.33	135.18
240	96.05	176.99	-176.99	96.05	2499.03	8849.62	234.15
270	0.00	204.37	-204.37	0.00	-2303.41	10218.66	270.37
300	96.05	176.99	-176.99	-96.05	-7105.85	8849.62	234.15
330	166.36	102.19	-102.19	-166.36	-10621.48	5109.33	135.18

<i>Low-ProX Platform 12' - Elevation 50 - None B</i>							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	192.31	0.00	0.00	-192.31	-9615.70	0.00	0.00
30	192.31	0.00	96.16	-166.55	-8327.44	-4807.85	0.00
60	192.31	0.00	166.55	-96.16	-4807.85	-8327.44	0.00
90	192.31	0.00	192.31	0.00	0.00	-9615.70	0.00
120	192.31	0.00	166.55	96.16	4807.85	-8327.44	0.00
150	192.31	0.00	96.16	166.55	8327.44	-4807.85	0.00
180	192.31	0.00	0.00	192.31	9615.70	0.00	0.00
210	192.31	0.00	-96.16	166.55	8327.44	4807.85	0.00
240	192.31	0.00	-166.55	96.16	4807.85	8327.44	0.00
270	192.31	0.00	-192.31	0.00	0.00	9615.70	0.00
300	192.31	0.00	-166.55	-96.16	-4807.85	8327.44	0.00

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<i>Low-ProX Platform 12' - Elevation 50 - None B</i>							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
330	192.31	0.00	-96.16	-166.55	-8327.44	4807.85	0.00

<i>Low-Profile Support Rail 12' - Elevation 50 - None A</i>							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	51.14	0.00	0.00	-51.14	-2557.14	0.00	0.00
30	51.14	0.00	25.57	-44.29	-2214.55	-1278.57	0.00
60	51.14	0.00	44.29	-25.57	-1278.57	-2214.55	0.00
90	51.14	0.00	51.14	0.00	0.00	-2557.14	0.00
120	51.14	0.00	44.29	25.57	1278.57	-2214.55	0.00
150	51.14	0.00	25.57	44.29	2214.55	-1278.57	0.00
180	51.14	0.00	0.00	51.14	2557.14	0.00	0.00
210	51.14	0.00	-25.57	44.29	2214.55	1278.57	0.00
240	51.14	0.00	-44.29	25.57	1278.57	2214.55	0.00
270	51.14	0.00	-51.14	0.00	0.00	2557.14	0.00
300	51.14	0.00	-44.29	-25.57	-1278.57	2214.55	0.00
330	51.14	0.00	-25.57	-44.29	-2214.55	1278.57	0.00

<i>Clamp Ring Assembly - Elevation 75 - None C</i>							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	0.08	0.00	0.00	-0.08	-5.86	0.00	0.00
30	0.08	0.00	0.04	-0.07	-5.08	-2.93	0.00
60	0.08	0.00	0.07	-0.04	-2.93	-5.08	0.00
90	0.08	0.00	0.08	0.00	0.00	-5.86	0.00
120	0.08	0.00	0.07	0.04	2.93	-5.08	0.00
150	0.08	0.00	0.04	0.07	5.08	-2.93	0.00
180	0.08	0.00	0.00	0.08	5.86	0.00	0.00
210	0.08	0.00	-0.04	0.07	5.08	2.93	0.00
240	0.08	0.00	-0.07	0.04	2.93	5.08	0.00
270	0.08	0.00	-0.08	0.00	0.00	5.86	0.00
300	0.08	0.00	-0.07	-0.04	-2.93	5.08	0.00
330	0.08	0.00	-0.04	-0.07	-5.08	2.93	0.00

Discrete Appurtenance Totals - With Ice

Wind Azimuth °	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	-10.28	-3154.82	-228566.23	1223.81	-38.30
30	1571.15	-2727.01	-197482.61	-113511.38	-31.99
60	2731.59	-1568.51	-113463.55	-197745.31	-17.12
90	3160.10	10.28	978.13	-228907.58	2.34
120	2741.87	1586.31	115177.86	-198648.27	21.17
150	1588.95	2737.29	198535.91	-115075.35	34.33
180	10.28	3154.82	228716.57	-582.11	38.30
210	-1571.15	2727.01	197632.95	114153.08	31.99
240	-2731.59	1568.51	113613.88	198387.02	17.12
270	-3160.10	-10.28	-827.79	229549.29	-2.34
300	-2741.87	-1586.31	-115027.52	199289.98	-21.17

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Wind Azimuth °	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
330	-1588.95	-2737.29	-198385.58	115717.06	-34.33

Discrete Appurtenance Pressures - Service $G_H = 1.100$

Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AC} Front ft ²	C _{AC} Side ft ²
6' Lightning Rod	240.0000	10.00	-0.65	0.38	103.00	1.274	12	0.76	0.76
874G90VTE-SX	240.0000	31.14	-0.70	0.40	95.00	1.252	12	4.67	3.43
874G90VTE-SX	120.0000	31.14	0.70	0.40	95.00	1.252	12	4.67	3.43
LNX-8514DS	240.0000	80.30	-0.70	0.40	95.00	1.252	12	11.45	9.60
LNX-8514DS	120.0000	80.30	0.70	0.40	95.00	1.252	12	11.45	9.60
LNX-8514DS	0.0000	80.30	0.00	-0.81	95.00	1.252	12	11.45	9.60
AIR-32	240.0000	124.97	-0.70	0.40	95.00	1.252	12	6.30	5.58
AIR-32	120.0000	124.97	0.70	0.40	95.00	1.252	12	6.30	5.58
AIR-32	0.0000	124.97	0.00	-0.81	95.00	1.252	12	6.30	5.58
RRUS-12 & A2	240.0000	143.00	-0.70	0.40	95.00	1.252	12	6.29	3.67
RRUS-12 & A2	120.0000	143.00	0.70	0.40	95.00	1.252	12	6.29	3.67
RRUS-12 & A2	0.0000	143.00	0.00	-0.81	95.00	1.252	12	6.29	3.67
Raycap RxxDC-3315-PF-48	240.0000	32.00	-0.70	0.40	95.00	1.252	12	3.01	1.96
Raycap RxxDC-3315-PF-48	120.0000	32.00	0.70	0.40	95.00	1.252	12	3.01	1.96
Raycap RxxDC-3315-PF-48	0.0000	32.00	0.00	-0.81	95.00	1.252	12	3.01	1.96
Westell BWC-TTMA-700C-VG	240.0000	56.00	-0.70	0.40	95.00	1.252	12	1.01	1.34
Westell BWC-TTMA-700C-VG	120.0000	56.00	0.70	0.40	95.00	1.252	12	1.01	1.34
Westell BWC-TTMA-700C-VG	0.0000	56.00	0.00	-0.81	95.00	1.252	12	1.01	1.34
SC-100-13	0.0000	46.23	0.00	-0.81	95.00	1.252	12	6.24	8.99
SC-100-13	240.0000	46.23	-0.70	0.40	95.00	1.252	12	6.24	8.99
SC-6014	120.0000	33.12	0.70	0.40	95.00	1.252	12	6.69	5.66
SC-6014	0.0000	33.12	0.00	-0.81	95.00	1.252	12	6.69	5.66
MTC3619 - 3 T-Frame Mounts	0.0000	2486.00	0.00	0.00	95.00	1.252	12	34.40	34.40
AIR-32	240.0000	124.97	-0.85	0.49	80.00	1.208	13	6.30	5.58
AIR-32	120.0000	124.97	0.85	0.49	80.00	1.208	13	6.30	5.58
AIR-32	0.0000	124.97	0.00	-0.98	80.00	1.208	13	6.30	5.58
HBX-6517DS-VTM	240.0000	41.54	-0.85	0.49	80.00	1.208	13	5.24	4.78
HBX-6517DS-VTM	120.0000	41.54	0.85	0.49	80.00	1.208	13	5.24	4.78
HBX-6517DS-VTM	0.0000	41.54	0.00	-0.98	80.00	1.208	13	5.24	4.78
Raycap RxxDC-3315-PF-48	240.0000	32.00	-0.85	0.49	80.00	1.208	13	3.01	1.96
MTC3619 - 3 T-Frame Mounts	0.0000	2486.00	0.00	0.00	80.00	1.208	13	34.40	34.40
Dish Pipe Mount	240.0000	103.00	-0.90	0.52	75.00	1.191	13	0.00	1.80
LNX-6515DS	240.0000	321.08	-1.00	0.58	65.00	1.156	13	45.72	38.37
LNX-6515DS	120.0000	321.08	1.00	0.58	65.00	1.156	13	45.72	38.37
LNX-6515DS	0.0000	321.08	0.00	-1.15	65.00	1.156	13	45.72	38.37
Low-ProX Platform 12'	0.0000	1055.00	0.00	0.00	65.00	1.156	13	19.00	19.00
Low-Profile Support Rail 12'	0.0000	288.00	0.00	0.00	65.00	1.156	13	5.50	5.50
LNX-6515DS	240.0000	321.08	-1.15	0.66	50.00	1.094	13	45.72	38.37
LNX-6515DS	120.0000	321.08	1.15	0.66	50.00	1.094	13	45.72	38.37
LNX-6515DS	0.0000	321.08	0.00	-1.32	50.00	1.094	13	45.72	38.37

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Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _y ft	z ft	K _z	q _z psf	C _{MAc} Front ft ²	C _{MAc} Side ft ²
Low-ProX Platform 12'	0.0000	1055.00	0.00	0.00	50.00	1.094	13	19.00	19.00
Low-Profile Support Rail 12'	0.0000	288.00	0.00	0.00	50.00	1.094	13	5.50	5.50
Clamp Ring Assembly	0.0000	462.00	0.00	0.00	75.00	1.191	13	0.02	0.02
	Sum Weight:	12220.80							

Discrete Appurtenance Vectors - Service

6' Lightning Rod - Elevation 103 - From Leg C

Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _y lb	OTM _x lb-ft	OTM _y lb-ft	Torque lb-ft
0	5.15	8.92	0.00	-10.30	-1057.52	6.50	-6.69
30	8.92	5.15	5.15	-8.92	-915.34	-524.14	-3.86
60	10.30	0.00	8.92	-5.15	-526.89	-912.59	0.00
90	8.92	5.15	10.30	0.00	3.75	-1054.78	3.86
120	5.15	8.92	8.92	5.15	534.39	-912.59	6.69
150	0.00	10.30	5.15	8.92	922.84	-524.14	7.73
180	5.15	8.92	0.00	10.30	1065.02	6.50	6.69
210	8.92	5.15	-5.15	8.92	922.84	537.13	3.86
240	10.30	0.00	-8.92	5.15	534.39	925.58	0.00
270	8.92	5.15	-10.30	0.00	3.75	1067.77	-3.86
300	5.15	8.92	-8.92	-5.15	-526.89	925.58	-6.69
330	0.00	10.30	-5.15	-8.92	-915.34	537.13	-7.73

874G90VTE-SX - Elevation 95 - From Leg C

Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _y lb	OTM _x lb-ft	OTM _y lb-ft	Torque lb-ft
0	25.39	32.31	5.84	-40.67	-3851.47	-532.85	-26.08
30	43.98	18.65	28.76	-38.14	-3611.09	-2710.77	-15.06
60	50.79	0.00	43.98	-25.39	-2399.76	-4156.51	0.00
90	43.98	18.65	47.42	-5.84	-542.05	-4482.68	15.06
120	25.39	32.31	38.14	15.28	1464.28	-3601.89	26.08
150	0.00	37.30	18.65	32.31	3081.61	-1750.14	30.11
180	25.39	32.31	-5.84	40.67	3876.61	576.39	26.08
210	43.98	18.65	-28.76	38.14	3636.23	2754.31	15.06
240	50.79	0.00	-43.98	25.39	2424.90	4200.05	0.00
270	43.98	18.65	-47.42	5.84	567.19	4526.22	-15.06
300	25.39	32.31	-38.14	-15.28	-1439.14	3645.43	-26.08
330	0.00	37.30	-18.65	-32.31	-3056.48	1793.68	-30.11

874G90VTE-SX - Elevation 95 - From Leg B

Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _y lb	OTM _x lb-ft	OTM _y lb-ft	Torque lb-ft
0	25.39	32.31	-5.84	-40.67	-3851.47	532.85	26.08
30	0.00	37.30	18.65	-32.31	-3056.48	-1793.68	30.11
60	25.39	32.31	38.14	-15.28	-1439.14	-3645.43	26.08
90	43.98	18.65	47.42	5.84	567.19	-4526.22	15.06
120	50.79	0.00	43.98	25.39	2424.90	-4200.05	0.00
150	43.98	18.65	28.76	38.14	3636.23	-2754.31	-15.06
180	25.39	32.31	5.84	40.67	3876.61	-576.39	-26.08

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874G90VTE-SX - Elevation 95 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
210	0.00	37.30	-18.65	32.31	3081.61	1750.14	-30.11
240	25.39	32.31	-38.14	15.28	1464.28	3601.89	-26.08
270	43.98	18.65	-47.42	-5.84	-542.05	4482.68	-15.06
300	50.79	0.00	-43.98	-25.39	-2399.76	4156.51	0.00
330	43.98	18.65	-28.76	-38.14	-3611.09	2710.77	15.06

LNX-8514DS - Elevation 95 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	62.28	90.52	8.68	-109.53	-10372.88	-768.01	-73.07
30	107.87	52.26	67.29	-99.19	-9390.91	-6336.07	-42.19
60	124.56	0.00	107.87	-62.28	-5883.97	-10191.33	0.00
90	107.87	52.26	119.55	-8.68	-791.74	-11300.80	42.19
120	62.28	90.52	99.19	47.25	4521.32	-9367.18	73.07
150	0.00	104.52	52.26	90.52	8631.58	-4908.59	84.38
180	62.28	90.52	-8.68	109.53	10437.70	880.29	73.07
210	107.87	52.26	-67.29	99.19	9455.73	6448.35	42.19
240	124.56	0.00	-107.87	62.28	5948.80	10303.62	0.00
270	107.87	52.26	-119.55	8.68	856.57	11413.08	-42.19
300	62.28	90.52	-99.19	-47.25	-4456.50	9479.46	-73.07
330	0.00	104.52	-52.26	-90.52	-8566.76	5020.87	-84.38

LNX-8514DS - Elevation 95 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	62.28	90.52	-8.68	-109.53	-10372.88	768.01	73.07
30	0.00	104.52	52.26	-90.52	-8566.76	-5020.87	84.38
60	62.28	90.52	99.19	-47.25	-4456.50	-9479.46	73.07
90	107.87	52.26	119.55	8.68	856.57	-11413.08	42.19
120	124.56	0.00	107.87	62.28	5948.80	-10303.62	0.00
150	107.87	52.26	67.29	99.19	9455.73	-6448.35	-42.19
180	62.28	90.52	8.68	109.53	10437.70	-880.29	-73.07
210	0.00	104.52	-52.26	90.52	8631.58	4908.59	-84.38
240	62.28	90.52	-99.19	47.25	4521.32	9367.18	-73.07
270	107.87	52.26	-119.55	-8.68	-791.74	11300.80	-42.19
300	124.56	0.00	-107.87	-62.28	-5883.97	10191.33	0.00
330	107.87	52.26	-67.29	-99.19	-9390.91	6336.07	42.19

LNX-8514DS - Elevation 95 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	124.56	0.00	0.00	-124.56	-11897.59	0.00	0.00
30	107.87	52.26	52.26	-107.87	-10312.30	-4964.73	-42.19
60	62.28	90.52	90.52	-62.28	-5981.21	-8599.17	-73.07
90	0.00	104.52	104.52	0.00	-64.83	-9929.47	-84.38
120	62.28	90.52	90.52	62.28	5851.56	-8599.17	-73.07
150	107.87	52.26	52.26	107.87	10182.65	-4964.73	-42.19
180	124.56	0.00	0.00	124.56	11767.94	0.00	0.00
210	107.87	52.26	-52.26	107.87	10182.65	4964.73	42.19
240	62.28	90.52	-90.52	62.28	5851.56	8599.17	73.07
270	0.00	104.52	-104.52	0.00	-64.83	9929.47	84.38

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LNx-8514DS - Elevation 95 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
300	62.28	90.52	-90.52	-62.28	-5981.21	8599.17	73.07
330	107.87	52.26	-52.26	-107.87	-10312.30	4964.73	42.19

AIR-32 - Elevation 95 - From Leg C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	34.28	52.63	3.38	-62.71	-5907.47	-233.27	-42.48
30	59.38	30.38	36.23	-56.00	-5269.59	-3354.40	-24.53
60	68.56	0.00	59.38	-34.28	-3206.20	-5553.30	0.00
90	59.38	30.38	66.61	-3.38	-270.20	-6240.79	24.53
120	34.28	52.63	56.00	28.43	2751.71	-5232.66	42.48
150	0.00	60.77	30.38	52.63	5049.83	-2799.02	49.06
180	34.28	52.63	-3.38	62.71	6008.36	408.02	42.48
210	59.38	30.38	-36.23	56.00	5370.47	3529.14	24.53
240	68.56	0.00	-59.38	34.28	3307.09	5728.05	0.00
270	59.38	30.38	-66.61	3.38	371.09	6415.54	-24.53
300	34.28	52.63	-56.00	-28.43	-2650.83	5407.40	-42.48
330	0.00	60.77	-30.38	-52.63	-4948.94	2973.77	-49.06

AIR-32 - Elevation 95 - From Leg B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	34.28	52.63	-3.38	-62.71	-5907.47	233.27	42.48
30	0.00	60.77	30.38	-52.63	-4948.94	-2973.77	49.06
60	34.28	52.63	56.00	-28.43	-2650.83	-5407.40	42.48
90	59.38	30.38	66.61	3.38	371.09	-6415.54	24.53
120	68.56	0.00	59.38	34.28	3307.09	-5728.05	0.00
150	59.38	30.38	36.23	56.00	5370.47	-3529.14	-24.53
180	34.28	52.63	3.38	62.71	6008.36	-408.02	-42.48
210	0.00	60.77	-30.38	52.63	5049.83	2799.02	-49.06
240	34.28	52.63	-56.00	28.43	2751.71	5232.66	-42.48
270	59.38	30.38	-66.61	-3.38	-270.20	6240.79	-24.53
300	68.56	0.00	-59.38	-34.28	-3206.20	5553.30	0.00
330	59.38	30.38	-36.23	-56.00	-5269.59	3354.40	24.53

AIR-32 - Elevation 95 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	68.56	0.00	0.00	-68.56	-6614.18	0.00	0.00
30	59.38	30.38	30.38	-59.38	-5741.56	-2886.40	-24.53
60	34.28	52.63	52.63	-34.28	-3357.53	-4999.38	-42.48
90	0.00	60.77	60.77	0.00	-100.89	-5772.79	-49.06
120	34.28	52.63	52.63	34.28	3155.76	-4999.38	-42.48
150	59.38	30.38	30.38	59.38	5539.79	-2886.40	-24.53
180	68.56	0.00	0.00	68.56	6412.40	0.00	0.00
210	59.38	30.38	-30.38	59.38	5539.79	2886.40	24.53
240	34.28	52.63	-52.63	34.28	3155.76	4999.38	42.48
270	0.00	60.77	-60.77	0.00	-100.89	5772.79	49.06
300	34.28	52.63	-52.63	-34.28	-3357.53	4999.38	42.48
330	59.38	30.38	-30.38	-59.38	-5741.56	2886.40	24.53

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RRUS-12 & A2 - Elevation 95 - From Leg C							
Wind Azimuth °	F_u lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	34.20	34.59	12.33	-47.06	-4412.66	-1071.12	-27.92
30	59.24	19.97	41.32	-46.92	-4399.29	-3825.55	-16.12
60	68.41	0.00	59.24	-34.20	-3191.67	-5528.14	0.00
90	59.24	19.97	61.29	-12.33	-1113.38	-5722.68	16.12
120	34.20	34.59	46.92	12.85	1278.71	-4357.04	27.92
150	0.00	39.94	19.97	34.59	3343.64	-1797.15	32.24
180	34.20	34.59	-12.33	47.06	4528.11	1271.08	27.92
210	59.24	19.97	-41.32	46.92	4514.74	4025.50	16.12
240	68.41	0.00	-59.24	34.20	3307.11	5728.09	0.00
270	59.24	19.97	-61.29	12.33	1228.82	5922.63	-16.12
300	34.20	34.59	-46.92	-12.85	-1163.27	4556.99	-27.92
330	0.00	39.94	-19.97	-34.59	-3228.20	1997.10	-32.24

RRUS-12 & A2 - Elevation 95 - From Leg B							
Wind Azimuth °	F_u lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	34.20	34.59	-12.33	-47.06	-4412.66	1071.12	27.92
30	0.00	39.94	19.97	-34.59	-3228.20	-1997.10	32.24
60	34.20	34.59	46.92	-12.85	-1163.27	-4556.99	27.92
90	59.24	19.97	61.29	12.33	1228.82	-5922.63	16.12
120	68.41	0.00	59.24	34.20	3307.11	-5728.09	0.00
150	59.24	19.97	41.32	46.92	4514.74	-4025.50	-16.12
180	34.20	34.59	12.33	47.06	4528.11	-1271.08	-27.92
210	0.00	39.94	-19.97	34.59	3343.64	1797.15	-32.24
240	34.20	34.59	-46.92	12.85	1278.71	4357.04	-27.92
270	59.24	19.97	-61.29	-12.33	-1113.38	5722.68	-16.12
300	68.41	0.00	-59.24	-34.20	-3191.67	5528.14	0.00
330	59.24	19.97	-41.32	-46.92	-4399.29	3825.55	16.12

RRUS-12 & A2 - Elevation 95 - From Leg A							
Wind Azimuth °	F_u lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	68.41	0.00	0.00	-68.41	-6614.23	0.00	0.00
30	59.24	19.97	19.97	-59.24	-5743.56	-1897.12	-16.12
60	34.20	34.59	34.59	-34.20	-3364.84	-3285.92	-27.92
90	0.00	39.94	39.94	0.00	-115.44	-3794.25	-32.24
120	34.20	34.59	34.59	34.20	3133.95	-3285.92	-27.92
150	59.24	19.97	19.97	59.24	5512.67	-1897.12	-16.12
180	68.41	0.00	0.00	68.41	6383.34	0.00	0.00
210	59.24	19.97	-19.97	59.24	5512.67	1897.12	16.12
240	34.20	34.59	-34.59	34.20	3133.95	3285.92	27.92
270	0.00	39.94	-39.94	0.00	-115.44	3794.25	32.24
300	34.20	34.59	-34.59	-34.20	-3364.84	3285.92	27.92
330	59.24	19.97	-19.97	-59.24	-5743.56	1897.12	16.12

Raycap RxxDC-3315-PF-48 - Elevation 95 - From Leg C							
Wind Azimuth °	F_u lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	16.39	18.50	4.94	-24.22	-2287.66	-447.25	-14.94
30	28.39	10.68	19.24	-23.44	-2214.25	-1805.76	-8.62

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Raycap RxxDC-3315-PF-48 - Elevation 95 - From Leg C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	32.78	0.00	28.39	-16.39	-1544.08	-2674.42	0.00
90	28.39	10.68	29.92	-4.94	-456.70	-2820.48	8.62
120	16.39	18.50	23.44	7.83	756.50	-2204.80	14.94
150	0.00	21.36	10.68	18.50	1770.47	-992.35	17.25
180	16.39	18.50	-4.94	24.22	2313.50	491.99	14.94
210	28.39	10.68	-19.24	23.44	2240.09	1850.50	8.62
240	32.78	0.00	-28.39	16.39	1569.91	2719.16	0.00
270	28.39	10.68	-29.92	4.94	482.54	2865.22	-8.62
300	16.39	18.50	-23.44	-7.83	-730.67	2249.54	-14.94
330	0.00	21.36	-10.68	-18.50	-1744.63	1037.09	-17.25

Raycap RxxDC-3315-PF-48 - Elevation 95 - From Leg B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	16.39	18.50	-4.94	-24.22	-2287.66	447.25	14.94
30	0.00	21.36	10.68	-18.50	-1744.63	-1037.09	17.25
60	16.39	18.50	23.44	-7.83	-730.67	-2249.54	14.94
90	28.39	10.68	29.92	4.94	482.54	-2865.22	8.62
120	32.78	0.00	28.39	16.39	1569.91	-2719.16	0.00
150	28.39	10.68	19.24	23.44	2240.09	-1850.50	-8.62
180	16.39	18.50	4.94	24.22	2313.50	-491.99	-14.94
210	0.00	21.36	-10.68	18.50	1770.47	992.35	-17.25
240	16.39	18.50	-23.44	7.83	756.50	2204.80	-14.94
270	28.39	10.68	-29.92	-4.94	-456.70	2820.48	-8.62
300	32.78	0.00	-28.39	-16.39	-1544.08	2674.42	0.00
330	28.39	10.68	-19.24	-23.44	-2214.25	1805.76	8.62

Raycap RxxDC-3315-PF-48 - Elevation 95 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	32.78	0.00	0.00	-32.78	-3139.82	0.00	0.00
30	28.39	10.68	10.68	-28.39	-2722.63	-1014.72	-8.62
60	16.39	18.50	18.50	-16.39	-1582.83	-1757.55	-14.94
90	0.00	21.36	21.36	0.00	-25.83	-2029.44	-17.25
120	16.39	18.50	18.50	16.39	1531.16	-1757.55	-14.94
150	28.39	10.68	10.68	28.39	2670.96	-1014.72	-8.62
180	32.78	0.00	0.00	32.78	3088.15	0.00	0.00
210	28.39	10.68	-10.68	28.39	2670.96	1014.72	8.62
240	16.39	18.50	-18.50	16.39	1531.16	1757.55	14.94
270	0.00	21.36	-21.36	0.00	-25.83	2029.44	17.25
300	16.39	18.50	-18.50	-16.39	-1582.83	1757.55	14.94
330	28.39	10.68	-10.68	-28.39	-2722.63	1014.72	8.62

Westell BWC-TTMA-700C-VG - Elevation 95 - From Leg C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	5.47	12.59	-1.56	-13.64	-1273.30	186.88	-10.16
30	9.48	7.27	4.58	-11.04	-1025.82	-395.57	-5.87
60	10.95	0.00	9.48	-5.47	-497.41	-861.54	0.00
90	9.48	7.27	11.85	1.56	170.34	-1086.17	5.87
120	5.47	12.59	11.04	8.17	798.50	-1009.27	10.16

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<i>Westell BWC-TTMA-700C-VG - Elevation 95 - From Leg C</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	0.00	14.54	7.27	12.59	1218.76	-651.45	11.74
180	5.47	12.59	1.56	13.64	1318.51	-108.58	10.16
210	9.48	7.27	-4.58	11.04	1071.03	473.87	5.87
240	10.95	0.00	-9.48	5.47	542.62	939.84	0.00
270	9.48	7.27	-11.85	-1.56	-125.13	1164.47	-5.87
300	5.47	12.59	-11.04	-8.17	-753.29	1087.58	-10.16
330	0.00	14.54	-7.27	-12.59	-1173.55	729.75	-11.74

<i>Westell BWC-TTMA-700C-VG - Elevation 95 - From Leg B</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	5.47	12.59	1.56	-13.64	-1273.30	-186.88	10.16
30	0.00	14.54	7.27	-12.59	-1173.55	-729.75	11.74
60	5.47	12.59	11.04	-8.17	-753.29	-1087.58	10.16
90	9.48	7.27	11.85	-1.56	-125.13	-1164.47	5.87
120	10.95	0.00	9.48	5.47	542.62	-939.84	0.00
150	9.48	7.27	4.58	11.04	1071.03	-473.87	-5.87
180	5.47	12.59	-1.56	13.64	1318.51	108.58	-10.16
210	0.00	14.54	-7.27	12.59	1218.76	651.45	-11.74
240	5.47	12.59	-11.04	8.17	798.50	1009.27	-10.16
270	9.48	7.27	-11.85	1.56	170.34	1086.17	-5.87
300	10.95	0.00	-9.48	-5.47	-497.41	861.54	0.00
330	9.48	7.27	-4.58	-11.04	-1025.82	395.57	5.87

<i>Westell BWC-TTMA-700C-VG - Elevation 95 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	10.95	0.00	0.00	-10.95	-1085.24	0.00	0.00
30	9.48	7.27	7.27	-9.48	-945.90	-690.60	-5.87
60	5.47	12.59	12.59	-5.47	-565.22	-1196.16	-10.16
90	0.00	14.54	14.54	0.00	-45.21	-1381.20	-11.74
120	5.47	12.59	12.59	5.47	474.81	-1196.16	-10.16
150	9.48	7.27	7.27	9.48	855.48	-690.60	-5.87
180	10.95	0.00	0.00	10.95	994.82	0.00	0.00
210	9.48	7.27	-7.27	9.48	855.48	690.60	5.87
240	5.47	12.59	-12.59	5.47	474.81	1196.16	10.16
270	0.00	14.54	-14.54	0.00	-45.21	1381.20	11.74
300	5.47	12.59	-12.59	-5.47	-565.22	1196.16	10.16
330	9.48	7.27	-7.27	-9.48	-945.90	690.60	5.87

<i>SC-100-13 - Elevation 95 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	67.92	0.00	0.00	-67.92	-6489.58	0.00	0.00
30	58.82	48.91	48.91	-58.82	-5625.15	-4646.25	-39.48
60	33.96	84.71	84.71	-33.96	-3263.45	-8047.54	-68.39
90	0.00	97.82	97.82	0.00	-37.32	-9292.49	-78.97
120	33.96	84.71	84.71	33.96	3188.81	-8047.54	-68.39
150	58.82	48.91	48.91	58.82	5550.50	-4646.25	-39.48
180	67.92	0.00	0.00	67.92	6414.94	0.00	0.00
210	58.82	48.91	-48.91	58.82	5550.50	4646.25	39.48

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SC-100-13 - Elevation 95 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
240	33.96	84.71	-84.71	33.96	3188.81	8047.54	68.39
270	0.00	97.82	-97.82	0.00	-37.32	9292.49	78.97
300	33.96	84.71	-84.71	-33.96	-3263.45	8047.54	68.39
330	58.82	48.91	-48.91	-58.82	-5625.15	4646.25	39.48

SC-100-13 - Elevation 95 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	33.96	84.71	-12.95	-90.34	-8563.78	1262.18	-68.39
30	58.82	48.91	26.48	-71.77	-6799.02	-2483.75	-39.48
60	67.92	0.00	58.82	-33.96	-3207.47	-5555.50	0.00
90	58.82	48.91	75.39	12.95	1248.52	-7130.00	39.48
120	33.96	84.71	71.77	56.38	5374.97	-6785.36	68.39
150	0.00	97.82	48.91	84.71	8066.20	-4613.93	78.97
180	33.96	84.71	12.95	90.34	8601.10	-1197.53	68.39
210	58.82	48.91	-26.48	71.77	6836.34	2548.40	39.48
240	67.92	0.00	-58.82	33.96	3244.79	5620.15	0.00
270	58.82	48.91	-75.39	-12.95	-1211.20	7194.64	-39.48
300	33.96	84.71	-71.77	-56.38	-5337.64	6850.00	-68.39
330	0.00	97.82	-48.91	-84.71	-8028.88	4678.57	-78.97

SC-6014 - Elevation 95 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	36.40	53.33	-4.85	-64.38	-6103.16	438.04	43.05
30	0.00	61.58	30.79	-53.33	-5053.10	-2948.28	49.71
60	36.40	53.33	58.19	-27.99	-2645.49	-5550.82	43.05
90	63.04	30.79	69.99	4.85	474.56	-6672.23	24.86
120	72.79	0.00	63.04	36.40	3471.04	-6012.02	0.00
150	63.04	30.79	39.20	58.19	5541.04	-3747.10	-24.86
180	36.40	53.33	4.85	64.38	6129.90	-484.35	-43.05
210	0.00	61.58	-30.79	53.33	5079.84	2901.97	-49.71
240	36.40	53.33	-58.19	27.99	2672.23	5504.51	-43.05
270	63.04	30.79	-69.99	-4.85	-447.83	6625.92	-24.86
300	72.79	0.00	-63.04	-36.40	-3444.30	5965.71	0.00
330	63.04	30.79	-39.20	-58.19	-5514.30	3700.79	24.86

SC-6014 - Elevation 95 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	72.79	0.00	0.00	-72.79	-6942.08	0.00	0.00
30	63.04	30.79	30.79	-63.04	-6015.60	-2925.13	-24.86
60	36.40	53.33	53.33	-36.40	-3484.41	-5066.47	-43.05
90	0.00	61.58	61.58	0.00	-26.74	-5850.26	-49.71
120	36.40	53.33	53.33	36.40	3430.94	-5066.47	-43.05
150	63.04	30.79	30.79	63.04	5962.13	-2925.13	-24.86
180	72.79	0.00	0.00	72.79	6888.61	0.00	0.00
210	63.04	30.79	-30.79	63.04	5962.13	2925.13	24.86
240	36.40	53.33	-53.33	36.40	3430.94	5066.47	43.05
270	0.00	61.58	-61.58	0.00	-26.74	5850.26	49.71
300	36.40	53.33	-53.33	-36.40	-3484.41	5066.47	43.05

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SC-6014 - Elevation 95 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	63.04	30.79	-30.79	-63.04	-6015.60	2925.13	24.86

MTC3619 - 3 T-Frame Mounts - Elevation 95 - None C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	467.96	0.00	0.00	-467.96	-44455.79	0.00	0.00
30	467.96	0.00	233.98	-405.26	-38499.84	-22227.89	0.00
60	467.96	0.00	405.26	-233.98	-22227.89	-38499.84	0.00
90	467.96	0.00	467.96	0.00	0.00	-44455.79	0.00
120	467.96	0.00	405.26	233.98	22227.89	-38499.84	0.00
150	467.96	0.00	233.98	405.26	38499.84	-22227.89	0.00
180	467.96	0.00	0.00	467.96	44455.79	0.00	0.00
210	467.96	0.00	-233.98	405.26	38499.84	22227.89	0.00
240	467.96	0.00	-405.26	233.98	22227.89	38499.84	0.00
270	467.96	0.00	-467.96	0.00	0.00	44455.79	0.00
300	467.96	0.00	-405.26	-233.98	-22227.89	38499.84	0.00
330	467.96	0.00	-233.98	-405.26	-38499.84	22227.89	0.00

AIR-32 - Elevation 80 - From Leg C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	34.97	53.68	3.44	-63.97	-5056.58	-169.46	-52.56
30	60.57	30.99	36.96	-57.12	-4508.64	-2850.46	-30.35
60	69.94	0.00	60.57	-34.97	-2736.23	-4739.28	0.00
90	60.57	30.99	67.95	-3.44	-214.25	-5329.83	30.35
120	34.97	53.68	57.12	29.00	2381.53	-4463.85	52.56
150	0.00	61.98	30.99	53.68	4355.58	-2373.40	60.69
180	34.97	53.68	-3.44	63.97	5178.94	381.40	52.56
210	60.57	30.99	-36.96	57.12	4631.01	3062.40	30.35
240	69.94	0.00	-60.57	34.97	2858.59	4951.23	0.00
270	60.57	30.99	-67.95	3.44	336.61	5541.77	-30.35
300	34.97	53.68	-57.12	-29.00	-2259.17	4675.80	-52.56
330	0.00	61.98	-30.99	-53.68	-4233.21	2585.34	-60.69

AIR-32 - Elevation 80 - From Leg B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	34.97	53.68	-3.44	-63.97	-5056.58	169.46	52.56
30	0.00	61.98	30.99	-53.68	-4233.21	-2585.34	60.69
60	34.97	53.68	57.12	-29.00	-2259.17	-4675.80	52.56
90	60.57	30.99	67.95	3.44	336.61	-5541.77	30.35
120	69.94	0.00	60.57	34.97	2858.59	-4951.23	0.00
150	60.57	30.99	36.96	57.12	4631.01	-3062.40	-30.35
180	34.97	53.68	3.44	63.97	5178.94	-381.40	-52.56
210	0.00	61.98	-30.99	53.68	4355.58	2373.40	-60.69
240	34.97	53.68	-57.12	29.00	2381.53	4463.85	-52.56
270	60.57	30.99	-67.95	-3.44	-214.25	5329.83	-30.35
300	69.94	0.00	-60.57	-34.97	-2736.23	4739.28	0.00
330	60.57	30.99	-36.96	-57.12	-4508.64	2850.46	30.35

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AIR-32 - Elevation 80 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	69.94	0.00	0.00	-69.94	-5717.18	0.00	0.00
30	60.57	30.99	30.99	-60.57	-4967.62	-2479.37	-30.35
60	34.97	53.68	53.68	-34.97	-2919.77	-4294.39	-52.56
90	0.00	61.98	61.98	0.00	-122.37	-4958.74	-60.69
120	34.97	53.68	53.68	34.97	2675.04	-4294.39	-52.56
150	60.57	30.99	30.99	60.57	4722.89	-2479.37	-30.35
180	69.94	0.00	0.00	69.94	5472.45	0.00	0.00
210	60.57	30.99	-30.99	60.57	4722.89	2479.37	30.35
240	34.97	53.68	-53.68	34.97	2675.04	4294.39	52.56
270	0.00	61.98	-61.98	0.00	-122.37	4958.74	60.69
300	34.97	53.68	-53.68	-34.97	-2919.77	4294.39	52.56
330	60.57	30.99	-30.99	-60.57	-4967.62	2479.37	30.35

HBX-6517DS-VTM - Elevation 80 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	29.10	45.99	2.21	-54.38	-4329.77	-141.45	-45.03
30	50.40	26.55	30.38	-48.20	-3835.30	-2394.84	-26.00
60	58.20	0.00	50.40	-29.10	-2307.72	-3997.09	0.00
90	50.40	26.55	56.93	-2.21	-156.34	-4518.89	26.00
120	29.10	45.99	48.20	25.28	2042.38	-3820.42	45.03
150	0.00	53.10	26.55	45.99	3699.30	-2088.83	51.99
180	29.10	45.99	-2.21	54.38	4370.44	211.90	45.03
210	50.40	26.55	-30.38	48.20	3875.98	2465.29	26.00
240	58.20	0.00	-50.40	29.10	2348.40	4067.54	0.00
270	50.40	26.55	-56.93	2.21	197.01	4589.34	-26.00
300	29.10	45.99	-48.20	-25.28	-2001.71	3890.87	-45.03
330	0.00	53.10	-26.55	-45.99	-3658.63	2159.28	-51.99

HBX-6517DS-VTM - Elevation 80 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	29.10	45.99	-2.21	-54.38	-4329.77	141.45	45.03
30	0.00	53.10	26.55	-45.99	-3658.63	-2159.28	51.99
60	29.10	45.99	48.20	-25.28	-2001.71	-3890.87	45.03
90	50.40	26.55	56.93	2.21	197.01	-4589.34	26.00
120	58.20	0.00	50.40	29.10	2348.40	-4067.54	0.00
150	50.40	26.55	30.38	48.20	3875.98	-2465.29	-26.00
180	29.10	45.99	2.21	54.38	4370.44	-211.90	-45.03
210	0.00	53.10	-26.55	45.99	3699.30	2088.83	-51.99
240	29.10	45.99	-48.20	25.28	2042.38	3820.42	-45.03
270	50.40	26.55	-56.93	-2.21	-156.34	4518.89	-26.00
300	58.20	0.00	-50.40	-29.10	-2307.72	3997.09	0.00
330	50.40	26.55	-30.38	-48.20	-3835.30	2394.84	26.00

HBX-6517DS-VTM - Elevation 80 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	58.20	0.00	0.00	-58.20	-4696.79	0.00	0.00
30	50.40	26.55	26.55	-50.40	-4072.99	-2124.05	-26.00

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<i>HBX-6517DS-VTM - Elevation 80 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	29.10	45.99	45.99	-29.10	-2368.73	-3678.96	-45.03
90	0.00	53.10	53.10	0.00	-40.67	-4248.10	-51.99
120	29.10	45.99	45.99	29.10	2287.38	-3678.96	-45.03
150	50.40	26.55	26.55	50.40	3991.64	-2124.05	-26.00
180	58.20	0.00	0.00	58.20	4615.44	0.00	0.00
210	50.40	26.55	-26.55	50.40	3991.64	2124.05	26.00
240	29.10	45.99	-45.99	29.10	2287.38	3678.96	45.03
270	0.00	53.10	-53.10	0.00	-40.67	4248.10	51.99
300	29.10	45.99	-45.99	-29.10	-2368.73	3678.96	45.03
330	50.40	26.55	-26.55	-50.40	-4072.99	2124.05	26.00

<i>Raycap RccxDC-3315-PF-48 - Elevation 80 - From Leg C</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	16.72	18.87	5.04	-24.70	-1960.50	-376.26	-18.48
30	28.96	10.90	19.63	-23.91	-1897.44	-1543.20	-10.67
60	33.44	0.00	28.96	-16.72	-1321.77	-2289.37	0.00
90	28.96	10.90	30.52	-5.04	-387.73	-2414.83	10.67
120	16.72	18.87	23.91	7.98	654.40	-1885.97	18.48
150	0.00	21.79	10.90	18.87	1525.38	-844.50	21.34
180	16.72	18.87	-5.04	24.70	1991.83	430.53	18.48
210	28.96	10.90	-19.63	23.91	1928.77	1597.47	10.67
240	33.44	0.00	-28.96	16.72	1353.10	2343.64	0.00
270	28.96	10.90	-30.52	5.04	419.06	2469.10	-10.67
300	16.72	18.87	-23.91	-7.98	-623.06	1940.24	-18.48
330	0.00	21.79	-10.90	-18.87	-1494.04	898.77	-21.34

<i>MTC3619 - 3 T-Frame Mounts - Elevation 80 - None B</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	477.34	0.00	0.00	-477.34	-38186.85	0.00	0.00
30	477.34	0.00	238.67	-413.38	-33070.78	-19093.42	0.00
60	477.34	0.00	413.38	-238.67	-19093.42	-33070.78	0.00
90	477.34	0.00	477.34	0.00	0.00	-38186.85	0.00
120	477.34	0.00	413.38	238.67	19093.42	-33070.78	0.00
150	477.34	0.00	238.67	413.38	33070.78	-19093.42	0.00
180	477.34	0.00	0.00	477.34	38186.85	0.00	0.00
210	477.34	0.00	-238.67	413.38	33070.78	19093.42	0.00
240	477.34	0.00	-413.38	238.67	19093.42	33070.78	0.00
270	477.34	0.00	-477.34	0.00	0.00	38186.85	0.00
300	477.34	0.00	-413.38	-238.67	-19093.42	33070.78	0.00
330	477.34	0.00	-238.67	-413.38	-33070.78	19093.42	0.00

<i>Dish Pipe Mount - Elevation 75 - From Leg C</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	21.80	-10.90	-18.88	-1362.48	909.90	-22.59
30	0.00	12.59	-6.29	-10.90	-764.07	564.41	-13.04
60	0.00	0.00	0.00	0.00	53.38	92.45	0.00
90	0.00	12.59	6.29	10.90	870.82	-379.50	13.04
120	0.00	21.80	10.90	18.88	1469.24	-724.99	22.59

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Dish Pipe Mount - Elevation 75 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
150	0.00	25.17	12.59	21.80	1688.27	-851.45	26.09
180	0.00	21.80	10.90	18.88	1469.24	-724.99	22.59
210	0.00	12.59	6.29	10.90	870.82	-379.50	13.04
240	0.00	0.00	0.00	0.00	53.38	92.45	0.00
270	0.00	12.59	-6.29	-10.90	-764.07	564.41	-13.04
300	0.00	21.80	-10.90	-18.88	-1362.48	909.90	-22.59
330	0.00	25.17	-12.59	-21.80	-1581.51	1036.36	-26.09

LNX-6515DS - Elevation 65 - From Leg C							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	260.14	378.08	36.24	-457.49	-29552.30	-2035.84	-435.18
30	450.57	218.28	281.06	-414.32	-26746.24	-17948.94	-251.25
60	520.27	0.00	450.57	-260.14	-16724.03	-28966.87	0.00
90	450.57	218.28	499.35	-36.24	-2171.12	-32137.39	251.25
120	260.14	378.08	414.32	197.36	13013.06	-26610.96	435.18
150	0.00	436.57	218.28	378.08	24759.91	-13868.39	502.51
180	260.14	378.08	-36.24	457.49	29921.87	2675.97	435.18
210	450.57	218.28	-281.06	414.32	27115.81	18589.06	251.25
240	520.27	0.00	-450.57	260.14	17093.60	29606.99	0.00
270	450.57	218.28	-499.35	36.24	2540.69	32777.51	-251.25
300	260.14	378.08	-414.32	-197.36	-12643.48	27251.09	-435.18
330	0.00	436.57	-218.28	-378.08	-24390.33	14508.51	-502.51

LNX-6515DS - Elevation 65 - From Leg B							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	260.14	378.08	-36.24	-457.49	-29552.30	2035.84	435.18
30	0.00	436.57	218.28	-378.08	-24390.33	-14508.51	502.51
60	260.14	378.08	414.32	-197.36	-12643.48	-27251.09	435.18
90	450.57	218.28	499.35	36.24	2540.69	-32777.51	251.25
120	520.27	0.00	450.57	260.14	17093.60	-29606.99	0.00
150	450.57	218.28	281.06	414.32	27115.81	-18589.06	-251.25
180	260.14	378.08	36.24	457.49	29921.87	-2675.97	-435.18
210	0.00	436.57	-218.28	378.08	24759.91	13868.39	-502.51
240	260.14	378.08	-414.32	197.36	13013.06	26610.96	-435.18
270	450.57	218.28	-499.35	-36.24	-2171.12	32137.39	-251.25
300	520.27	0.00	-450.57	-260.14	-16724.03	28966.87	0.00
330	450.57	218.28	-281.06	-414.32	-26746.24	17948.94	251.25

LNX-6515DS - Elevation 65 - From Leg A							
Wind Azimuth °	F _a lb	F _s lb	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	520.27	0.00	0.00	-520.27	-34187.21	0.00	0.00
30	450.57	218.28	218.28	-450.57	-29656.50	-14188.45	-251.25
60	260.14	378.08	378.08	-260.14	-17278.39	-24575.12	-435.18
90	0.00	436.57	436.57	0.00	-369.58	-28376.90	-502.51
120	260.14	378.08	378.08	260.14	16539.24	-24575.12	-435.18
150	450.57	218.28	218.28	450.57	28917.35	-14188.45	-251.25
180	520.27	0.00	0.00	520.27	33448.06	0.00	0.00
210	450.57	218.28	-218.28	450.57	28917.35	14188.45	251.25

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<i>LNX-651SDS - Elevation 65 - From Leg A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	260.14	378.08	-378.08	260.14	16539.24	24575.12	435.18
270	0.00	436.57	-436.57	0.00	-369.58	28376.90	502.51
300	260.14	378.08	-378.08	-260.14	-17278.39	24575.12	435.18
330	450.57	218.28	-218.28	-450.57	-29656.50	14188.45	251.25

<i>Low-ProX Platform 12' - Elevation 65 - None B</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	270.24	0.00	0.00	-270.24	-17565.31	0.00	0.00
30	270.24	0.00	135.12	-234.03	-15212.00	-8782.65	0.00
60	270.24	0.00	234.03	-135.12	-8782.65	-15212.00	0.00
90	270.24	0.00	270.24	0.00	0.00	-17565.31	0.00
120	270.24	0.00	234.03	135.12	8782.65	-15212.00	0.00
150	270.24	0.00	135.12	234.03	15212.00	-8782.65	0.00
180	270.24	0.00	0.00	270.24	17565.31	0.00	0.00
210	270.24	0.00	-135.12	234.03	15212.00	8782.65	0.00
240	270.24	0.00	-234.03	135.12	8782.65	15212.00	0.00
270	270.24	0.00	-270.24	0.00	0.00	17565.31	0.00
300	270.24	0.00	-234.03	-135.12	-8782.65	15212.00	0.00
330	270.24	0.00	-135.12	-234.03	-15212.00	8782.65	0.00

<i>Low-Profile Support Rail 12' - Elevation 65 - None A</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	78.23	0.00	0.00	-78.23	-5084.69	0.00	0.00
30	78.23	0.00	39.11	-67.75	-4403.47	-2542.35	0.00
60	78.23	0.00	67.75	-39.11	-2542.35	-4403.47	0.00
90	78.23	0.00	78.23	0.00	0.00	-5084.69	0.00
120	78.23	0.00	67.75	39.11	2542.35	-4403.47	0.00
150	78.23	0.00	39.11	67.75	4403.47	-2542.35	0.00
180	78.23	0.00	0.00	78.23	5084.69	0.00	0.00
210	78.23	0.00	-39.11	67.75	4403.47	2542.35	0.00
240	78.23	0.00	-67.75	39.11	2542.35	4403.47	0.00
270	78.23	0.00	-78.23	0.00	0.00	5084.69	0.00
300	78.23	0.00	-67.75	-39.11	-2542.35	4403.47	0.00
330	78.23	0.00	-39.11	-67.75	-4403.47	2542.35	0.00

<i>LNX-651SDS - Elevation 50 - From Leg C</i>							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	267.45	388.71	37.26	-470.36	-23305.37	-1495.33	-514.23
30	463.23	224.42	288.96	-425.97	-21086.18	-14080.29	-296.89
60	534.90	0.00	463.23	-267.45	-13160.06	-22793.89	0.00
90	463.23	224.42	513.38	-37.26	-1650.80	-25301.31	296.89
120	267.45	388.71	425.97	202.91	10357.70	-20930.71	514.23
150	0.00	448.84	224.42	388.71	19647.76	-10853.17	593.78
180	267.45	388.71	-37.26	470.36	23730.13	2231.04	514.23
210	463.23	224.42	-288.96	425.97	21510.94	14816.00	296.89
240	534.90	0.00	-463.23	267.45	13584.82	23529.60	0.00
270	463.23	224.42	-513.38	37.26	2075.56	26037.02	-296.89
300	267.45	388.71	-425.97	-202.91	-9932.93	21666.42	-514.23

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LNX-6515DS - Elevation 50 - From Leg C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	0.00	448.84	-224.42	-388.71	-19223.00	11588.88	-593.78

LNX-6515DS - Elevation 50 - From Leg B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	267.45	388.71	-37.26	-470.36	-23305.37	1495.33	514.23
30	0.00	448.84	224.42	-388.71	-19223.00	-11588.88	593.78
60	267.45	388.71	425.97	-202.91	-9932.93	-21666.42	514.23
90	463.23	224.42	513.38	37.26	2075.56	-26037.02	296.89
120	534.90	0.00	463.23	267.45	13584.82	-23529.60	0.00
150	463.23	224.42	288.96	425.97	21510.94	-14816.00	-296.89
180	267.45	388.71	37.26	470.36	23730.13	-2231.04	-514.23
210	0.00	448.84	-224.42	388.71	19647.76	10853.17	-593.78
240	267.45	388.71	-425.97	202.91	10357.70	20930.71	-514.23
270	463.23	224.42	-513.38	-37.26	-1650.80	25301.31	-296.89
300	534.90	0.00	-463.23	-267.45	-13160.06	22793.89	0.00
330	463.23	224.42	-288.96	-425.97	-21086.18	14080.29	296.89

LNX-6515DS - Elevation 50 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	534.90	0.00	0.00	-534.90	-27169.64	0.00	0.00
30	463.23	224.42	224.42	-463.23	-23586.50	-11221.02	-296.89
60	267.45	388.71	388.71	-267.45	-13797.20	-19435.38	-514.23
90	0.00	448.84	448.84	0.00	-424.76	-22442.04	-593.78
120	267.45	388.71	388.71	267.45	12947.68	-19435.38	-514.23
150	463.23	224.42	224.42	463.23	22736.98	-11221.02	-296.89
180	534.90	0.00	0.00	534.90	26320.11	0.00	0.00
210	463.23	224.42	-224.42	463.23	22736.98	11221.02	296.89
240	267.45	388.71	-388.71	267.45	12947.68	19435.38	514.23
270	0.00	448.84	-448.84	0.00	-424.76	22442.04	593.78
300	267.45	388.71	-388.71	-267.45	-13797.20	19435.38	514.23
330	463.23	224.42	-224.42	-463.23	-23586.50	11221.02	296.89

Low-ProX Platform 12' - Elevation 50 - None B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	277.83	0.00	0.00	-277.83	-13891.63	0.00	0.00
30	277.83	0.00	138.92	-240.61	-12030.50	-6945.81	0.00
60	277.83	0.00	240.61	-138.92	-6945.81	-12030.50	0.00
90	277.83	0.00	277.83	0.00	0.00	-13891.63	0.00
120	277.83	0.00	240.61	138.92	6945.81	-12030.50	0.00
150	277.83	0.00	138.92	240.61	12030.50	-6945.81	0.00
180	277.83	0.00	0.00	277.83	13891.63	0.00	0.00
210	277.83	0.00	-138.92	240.61	12030.50	6945.81	0.00
240	277.83	0.00	-240.61	138.92	6945.81	12030.50	0.00
270	277.83	0.00	-277.83	0.00	0.00	13891.63	0.00
300	277.83	0.00	-240.61	-138.92	-6945.81	12030.50	0.00
330	277.83	0.00	-138.92	-240.61	-12030.50	6945.81	0.00

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<i>Low-Profile Support Rail 12' - Elevation 50 - None A</i>							
<i>Wind Azimuth °</i>	<i>F_a</i>	<i>F_s</i>	<i>V_x</i>	<i>V_z</i>	<i>OTM_x</i>	<i>OTM_z</i>	<i>Torque</i>
	<i>lb</i>	<i>lb</i>	<i>lb</i>	<i>lb</i>	<i>lb-ft</i>	<i>lb-ft</i>	<i>lb-ft</i>
0	80.43	0.00	0.00	-80.43	-4021.26	0.00	0.00
30	80.43	0.00	40.21	-69.65	-3482.51	-2010.63	0.00
60	80.43	0.00	69.65	-40.21	-2010.63	-3482.51	0.00
90	80.43	0.00	80.43	0.00	0.00	-4021.26	0.00
120	80.43	0.00	69.65	40.21	2010.63	-3482.51	0.00
150	80.43	0.00	40.21	69.65	3482.51	-2010.63	0.00
180	80.43	0.00	0.00	80.43	4021.26	0.00	0.00
210	80.43	0.00	-40.21	69.65	3482.51	2010.63	0.00
240	80.43	0.00	-69.65	40.21	2010.63	3482.51	0.00
270	80.43	0.00	-80.43	0.00	0.00	4021.26	0.00
300	80.43	0.00	-69.65	-40.21	-2010.63	3482.51	0.00
330	80.43	0.00	-40.21	-69.65	-3482.51	2010.63	0.00

<i>Clamp Ring Assembly - Elevation 75 - None C</i>							
<i>Wind Azimuth °</i>	<i>F_a</i>	<i>F_s</i>	<i>V_x</i>	<i>V_z</i>	<i>OTM_x</i>	<i>OTM_z</i>	<i>Torque</i>
	<i>lb</i>	<i>lb</i>	<i>lb</i>	<i>lb</i>	<i>lb-ft</i>	<i>lb-ft</i>	<i>lb-ft</i>
0	0.28	0.00	0.00	-0.28	-20.98	0.00	0.00
30	0.28	0.00	0.14	-0.24	-18.17	-10.49	0.00
60	0.28	0.00	0.24	-0.14	-10.49	-18.17	0.00
90	0.28	0.00	0.28	0.00	0.00	-20.98	0.00
120	0.28	0.00	0.24	0.14	10.49	-18.17	0.00
150	0.28	0.00	0.14	0.24	18.17	-10.49	0.00
180	0.28	0.00	0.00	0.28	20.98	0.00	0.00
210	0.28	0.00	-0.14	0.24	18.17	10.49	0.00
240	0.28	0.00	-0.24	0.14	10.49	18.17	0.00
270	0.28	0.00	-0.28	0.00	0.00	20.98	0.00
300	0.28	0.00	-0.24	-0.14	-10.49	18.17	0.00
330	0.28	0.00	-0.14	-0.24	-18.17	10.49	0.00

Discrete Appurtenance Totals - Service

<i>Wind Azimuth °</i>	<i>V_x</i>	<i>V_z</i>	<i>OTM_x</i>	<i>OTM_z</i>	<i>Torque</i>
	<i>lb</i>	<i>lb</i>	<i>lb-ft</i>	<i>lb-ft</i>	<i>lb-ft</i>
0	-23.66	-6178.23	-437526.41	2240.35	-73.10
30	3076.66	-5338.67	-377847.60	-217682.99	-66.63
60	5352.58	-3068.63	-216907.18	-379242.10	-42.31
90	6194.29	23.66	2171.00	-439147.36	-6.65
120	5376.24	3109.60	220685.13	-381347.20	30.79
150	3117.63	5362.33	380084.51	-221329.13	59.98
180	23.66	6178.23	437658.21	-1969.85	73.10
210	-3076.66	5338.67	377979.41	217953.48	66.63
240	-5352.58	3068.63	217038.99	379512.60	42.31
270	-6194.29	-23.66	-2039.20	439417.86	6.65
300	-5376.24	-3109.60	-220553.32	381617.70	-30.79
330	-3117.63	-5362.33	-379952.70	221599.63	-59.98

Dish Pressures - No Ice

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Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	K _z	A _A ft ²	q _z psf
75.00	PAR8-59	300.0000	251.00	-0.90	0.52	1.191	50.26	32
		Sum	251.00					
		Weight:						

Dish Vectors - No Ice

PAR8-59 - Elevation 75 - From Leg C											
Wind Azimuth °	C _A	C _S	C _M	F _A lb	F _S lb	F _M lb-ft	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	-0.001170	-0.001170	-0.000366	-807.76	-807.76	-2021.46	-295.66	-1103.42	-82626.09	22399.75	-3165.11
30	-0.000030	-0.000880	-0.000336	-20.71	-607.54	-1855.77	285.83	-536.50	-40107.70	-21212.31	-2189.21
60	0.004220	-0.000620	0.000223	2913.45	-428.04	1231.66	2737.14	1086.03	81582.16	-205060.11	3624.94
90	0.003980	0.000080	0.000108	2747.75	55.23	596.50	2352.01	1421.71	106758.15	-176175.26	3091.50
120	0.003970	-0.000000	-0.000000	2740.85	0.00	0.00	2373.64	1370.42	102911.88	-177798.01	2460.18
150	0.003980	-0.000080	-0.000108	2747.75	-55.23	-596.50	2407.24	1326.04	99583.41	-180317.60	1841.26
180	0.004220	0.000620	-0.000223	2913.45	428.04	-1231.66	2309.10	1827.42	137186.42	-172956.98	1605.27
210	-0.000030	0.000880	0.000336	-20.71	607.54	1855.77	-321.71	515.79	38814.47	24353.43	2152.02
240	-0.001170	0.001170	0.000366	-807.76	807.76	2021.46	-1103.42	295.66	22304.52	82981.46	1715.02
270	-0.001980	0.001000	0.000278	-1366.97	690.39	1535.43	-1529.03	-85.59	-6289.24	114902.37	666.21
300	-0.002700	-0.000000	-0.000000	-1864.05	0.00	0.00	-1614.32	-932.03	-69771.91	121299.08	-1673.17
330	-0.001980	-0.001000	-0.000278	-1366.97	-690.39	-1535.43	-838.64	-1281.38	-95973.52	63123.12	-3120.20

Dish Totals - No Ice

Wind Azimuth °	V _x lb	V _z lb	OTM _x lb-ft	OTM _z lb-ft	Torque lb-ft
0	-295.66	-1103.42	-82626.09	22399.75	-3165.11
30	285.83	-536.50	-40107.70	-21212.31	-2189.21
60	2737.14	1086.03	81582.16	-205060.11	3624.94
90	2352.01	1421.71	106758.15	-176175.26	3091.50
120	2373.64	1370.42	102911.88	-177798.01	2460.18
150	2407.24	1326.04	99583.41	-180317.60	1841.26
180	2309.10	1827.42	137186.42	-172956.98	1605.27
210	-321.71	515.79	38814.47	24353.43	2152.02
240	-1103.42	295.66	22304.52	82981.46	1715.02
270	-1529.03	-85.59	-6289.24	114902.37	666.21
300	-1614.32	-932.03	-69771.91	121299.08	-1673.17
330	-838.64	-1281.38	-95973.52	63123.12	-3120.20

Dish Pressures - With Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	K _z	A _A ft ²	q _z psf	t _z in
75.00	PAR8-59	300.0000	1213.06	-0.90	0.52	1.191	54.03	4	1.8269
		Sum	1213.06						
		Weight:							

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Dish Vectors - With Ice

PAR8-59 - Elevation 75 - From Leg C											
Wind Azimuth °	C _A	C _S	C _M	F _A	F _S	F _M	V _x	V _z	OTM _x	OTM _z	Torque
				lb	lb	lb-ft	lb	lb	lb-ft	lb-ft	lb-ft
0	-0.001170	-0.001170	-0.000366	-96.49	-96.49	-241.46	-35.32	-131.80	-9256.53	3737.56	-378.07
30	-0.000030	-0.000880	-0.000336	-2.47	-72.57	-221.67	34.14	-64.09	-4177.74	-1471.87	-261.50
60	0.004220	-0.000620	0.000223	348.01	-51.13	147.12	326.95	129.73	10358.04	-23432.37	433.00
90	0.003980	0.000080	0.000108	328.22	6.60	71.25	280.95	169.82	13365.29	-19982.10	369.28
120	0.003970	-0.000000	-0.000000	327.39	0.00	0.00	283.53	163.70	12905.86	-20175.93	293.87
150	0.003980	-0.000080	-0.000108	328.22	-6.60	-71.25	287.54	158.40	12508.28	-20476.90	219.94
180	0.004220	0.000620	-0.000223	348.01	51.13	-147.12	275.82	218.28	16999.93	-19597.67	191.75
210	-0.000030	0.000880	0.000336	-2.47	72.57	221.67	-38.43	61.61	5249.47	3970.93	257.06
240	-0.001170	0.001170	0.000366	-96.49	96.49	241.46	-131.80	35.32	3277.36	10974.01	204.86
270	-0.001980	0.001000	0.000278	-163.28	82.47	183.41	-182.64	-10.22	-138.14	14786.94	79.58
300	-0.002700	-0.000000	-0.000000	-222.66	0.00	0.00	-192.83	-111.33	-7721.11	15551.02	-199.86
330	-0.001980	-0.001000	-0.000278	-163.28	-82.47	-183.41	-100.17	-153.06	-10850.87	8601.94	-372.71

Dish Totals - With Ice

Wind Azimuth °	V _x	V _z	OTM _x	OTM _z	Torque
	lb	lb	lb-ft	lb-ft	lb-ft
0	-35.32	-131.80	-9256.53	3737.56	-378.07
30	34.14	-64.09	-4177.74	-1471.87	-261.50
60	326.95	129.73	10358.04	-23432.37	433.00
90	280.95	169.82	13365.29	-19982.10	369.28
120	283.53	163.70	12905.86	-20175.93	293.87
150	287.54	158.40	12508.28	-20476.90	219.94
180	275.82	218.28	16999.93	-19597.67	191.75
210	-38.43	61.61	5249.47	3970.93	257.06
240	-131.80	35.32	3277.36	10974.01	204.86
270	-182.64	-10.22	-138.14	14786.94	79.58
300	-192.83	-111.33	-7721.11	15551.02	-199.86
330	-100.17	-153.06	-10850.87	8601.94	-372.71

Dish Pressures - Service

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	K _z	A _d ft ²	q _z psf
75.00	PAR8-59	300.0000	251.00	-0.90	0.52	1.191	50.26	13
		Sum Weight:	251.00					

Dish Vectors - Service

PAR8-59 - Elevation 75 - From Leg C											
Wind Azimuth °	C _A	C _S	C _M	F _A	F _S	F _M	V _x	V _z	OTM _x	OTM _z	Torque
				lb	lb	lb-ft	lb	lb	lb-ft	lb-ft	lb-ft
0	-0.001170	-0.001170	-0.000366	-321.21	-321.21	-803.86	-117.57	-438.79	-32778.81	9043.21	-1258.64
30	-0.000030	-0.000880	-0.000336	-8.24	-241.60	-737.97	113.67	-213.35	-15870.91	-8299.60	-870.56
60	0.004220	-0.000620	0.000223	1158.56	-170.22	489.78	1088.45	431.87	32520.38	-81408.67	1441.50

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PAR8-59 - Elevation 75 - From Leg C

Wind Azimuth °	C _A	C _S	C _M	F _A	F _S	F _M	V _x	V _z	OTM _x	OTM _z	Torque
				lb	lb	lb-ft	lb	lb	lb-ft	lb-ft	lb-ft
90	0.003980	0.000080	0.000108	1092.67	21.96	237.20	935.30	565.36	42531.88	-69922.29	1229.37
120	0.003970	-0.000000	-0.000000	1089.93	0.00	0.00	943.91	544.96	41002.37	-70567.60	978.32
150	0.003980	-0.000080	-0.000108	1092.67	-21.96	-237.20	957.26	527.32	39678.77	-71569.54	732.20
180	0.004220	0.000620	-0.000223	1158.56	170.22	-489.78	918.24	726.69	54632.01	-68642.51	638.35
210	-0.000030	0.000880	0.000336	-8.24	241.60	737.97	-127.93	205.11	15513.34	9820.11	855.78
240	-0.001170	0.001170	0.000366	-321.21	321.21	803.86	-438.79	117.57	8947.98	33134.18	682.00
270	-0.001980	0.001000	0.000278	-543.59	274.54	610.58	-608.03	-34.04	-2422.63	45827.87	264.93
300	-0.002700	-0.000000	-0.000000	-741.26	0.00	0.00	-641.95	-370.63	-27667.20	48371.60	-665.36
330	-0.001980	-0.001000	-0.000278	-543.59	-274.54	-610.58	-333.49	-509.56	-38086.56	25237.30	-1240.78

Dish Totals - Service

Wind Azimuth °	V _x	V _z	OTM _x	OTM _z	Torque
	lb	lb	lb-ft	lb-ft	lb-ft
0	-117.57	-438.79	-32778.81	9043.21	-1258.64
30	113.67	-213.35	-15870.91	-8299.60	-870.56
60	1088.45	431.87	32520.38	-81408.67	1441.50
90	935.30	565.36	42531.88	-69922.29	1229.37
120	943.91	544.96	41002.37	-70567.60	978.32
150	957.26	527.32	39678.77	-71569.54	732.20
180	918.24	726.69	54632.01	-68642.51	638.35
210	-127.93	205.11	15513.34	9820.11	855.78
240	-438.79	117.57	8947.98	33134.18	682.00
270	-608.03	-34.04	-2422.63	45827.87	264.93
300	-641.95	-370.63	-27667.20	48371.60	-665.36
330	-333.49	-509.56	-38086.56	25237.30	-1240.78

Force Totals

Load Case	Vertical Forces	Sum of Forces X	Sum of Forces Z	Sum of Overturning Moments, M _x	Sum of Overturning Moments, M _z	Sum of Torques
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Leg Weight	10177.66					
Bracing Weight	0.00					
Total Member Self-Weight	10177.66			195.98	360.55	
Total Weight	25386.93			195.98	360.55	
Wind 0 deg - No Ice		-355.15	-23061.40	-1451811.40	27828.70	-3348.92
Wind 30 deg - No Ice		11233.50	-19522.93	-1223201.27	-703243.48	-2356.75
Wind 60 deg - No Ice		21758.54	-9841.44	-598393.06	-1391765.48	3518.55
Wind 90 deg - No Ice		24350.38	1481.20	112117.76	-1549541.84	3074.78
Wind 120 deg - No Ice		21454.54	12400.94	792187.88	-1369797.09	2537.61
Wind 150 deg - No Ice		13457.95	20371.96	1288102.50	-871517.75	1992.09
Wind 180 deg - No Ice		2368.59	23785.40	1506503.53	-178115.44	1789.09
Wind 210 deg - No Ice		-11269.37	19502.22	1222039.86	706655.10	2319.57
Wind 240 deg - No Ice		-20124.82	11223.13	702411.55	1269957.33	1821.41
Wind 270 deg - No Ice		-23527.40	-145.08	-11517.04	1488539.44	682.93
Wind 300 deg - No Ice		-20695.21	-11962.54	-758916.10	1313568.66	-1750.60
Wind 330 deg - No Ice		-11889.35	-20327.30	-1284360.81	754593.77	-3271.03
Member Ice	7452.55					
Total Weight Ice	66729.61			703.81	1409.69	
Wind 0 deg - Ice		-45.59	-4751.97	-299925.27	4961.37	-416.37

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Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Wind 30 deg - Ice		2337.97	-4060.13	-255442.70	-146034.50	-293.49
Wind 60 deg - Ice		4327.57	-2171.46	-134156.76	-274960.03	415.88
Wind 90 deg - Ice		4906.40	180.10	14343.42	-310992.18	371.62
Wind 120 deg - Ice		4294.43	2482.68	159134.97	-272606.55	315.04
Wind 150 deg - Ice		2609.17	4164.72	264826.53	-166603.50	254.27
Wind 180 deg - Ice		286.10	4838.45	307819.01	-20179.78	230.04
Wind 210 deg - Ice		-2342.26	4057.66	256664.76	149175.26	289.05
Wind 240 deg - Ice		-4132.43	2336.50	147942.50	263143.37	221.98
Wind 270 deg - Ice		-4808.10	-20.50	-965.93	306438.73	77.24
Wind 300 deg - Ice		-4203.73	-2430.32	-153799.88	268623.35	-221.03
Wind 330 deg - Ice		-2421.80	-4159.38	-263018.79	155370.25	-407.04
Total Weight	25386.93			195.98	360.55	
Wind 0 deg - Service		-141.23	-9170.61	-577210.46	11283.56	-1331.74
Wind 30 deg - Service		4467.12	-7763.50	-486301.17	-279435.21	-937.19
Wind 60 deg - Service		8652.52	-3913.56	-237839.43	-553233.43	1399.19
Wind 90 deg - Service		9683.19	589.01	44702.89	-615974.90	1222.72
Wind 120 deg - Service		8531.63	4931.37	315140.13	-544497.46	1009.11
Wind 150 deg - Service		5351.70	8101.13	512345.94	-346351.29	792.18
Wind 180 deg - Service		941.89	9458.52	599195.47	-70612.36	711.45
Wind 210 deg - Service		-4481.39	7755.27	486075.42	281226.22	922.40
Wind 240 deg - Service		-8002.85	4463.00	279439.60	505229.44	724.30
Wind 270 deg - Service		-9355.93	-57.69	-4461.83	592150.98	271.58
Wind 300 deg - Service		-8229.68	-4757.03	-301673.15	522571.96	-696.15
Wind 330 deg - Service		-4727.93	-8083.37	-510621.92	300289.55	-1300.76

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp

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Comb. No.	Description
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	100 - 47	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47126.67	1643.33	-821.56
			Max. Mx	8	-14975.13	-698251.08	-59717.30
			Max. My	14	-15054.97	-94117.61	-674787.35
			Max. Vy	8	25945.69	-698251.08	-59717.30
			Max. Vx	14	25017.70	-94117.61	-674787.35
			Max. Torque	7			-5661.28
L2	47 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72212.22	1643.31	-821.55
			Max. Mx	8	-30409.46	-	-184401.34
			Max. My	14	-30411.85	2546868.05	-293264.12
			Max. Vy	8	39003.24	-	2475928.17
			Max. Vx	14	38098.10	2546868.05	-184401.34
			Max. Torque	7		-293264.12	2475928.17
					-5646.04		

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	31	72212.23	-4294.69	-2482.84
	Max. H _x	20	30464.32	37643.85	232.13

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Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
	Max. H _z	2	30464.32	568.24	36898.24
	Max. M _x	2	2386331.56	568.24	36898.24
	Max. M _z	8	2546868.21	-38960.61	-2369.92
	Max. Torsion	3	5322.86	568.24	36898.24
	Min. Vert	5	22848.24	-17973.60	31236.68
	Min. H _x	9	22848.24	-38960.61	-2369.92
	Min. H _z	14	30464.32	-3789.74	-38056.64
	Min. M _x	14	-2475928.03	-3789.74	-38056.64
	Min. M _z	20	-2446476.06	37643.85	232.13
	Min. Torsion	7	-5632.63	-34813.67	15746.31

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturing Moment, M _x lb-ft	Overturing Moment, M _z lb-ft	Torque lb-ft
Dead Only	25386.93	0.00	0.00	195.98	360.55	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	30464.32	-568.24	-36898.24	-2386331.56	45666.00	-5322.51
0.9 Dead+1.6 Wind 0 deg - No Ice	22848.24	-568.24	-36898.24	-2369519.69	45210.86	-5322.86
1.2 Dead+1.6 Wind 30 deg - No Ice	30464.32	17973.60	-31236.68	-2010606.79	-1156060.52	-3743.07
0.9 Dead+1.6 Wind 30 deg - No Ice	22848.24	17973.60	-31236.68	-1996471.94	-1148005.58	-3743.34
1.2 Dead+1.6 Wind 60 deg - No Ice	30464.32	34813.67	-15746.31	-983277.73	-2287751.36	5631.83
0.9 Dead+1.6 Wind 60 deg - No Ice	22848.24	34813.67	-15746.31	-976452.33	-2271623.08	5632.63
1.2 Dead+1.6 Wind 90 deg - No Ice	30464.32	38960.61	2369.92	184399.21	-2546868.21	4906.43
0.9 Dead+1.6 Wind 90 deg - No Ice	22848.24	38960.61	2369.92	182975.51	-2528917.14	4907.19
1.2 Dead+1.6 Wind 120 deg - No Ice	30464.32	34327.26	19841.50	1301864.94	-2251424.35	4021.07
0.9 Dead+1.6 Wind 120 deg - No Ice	22848.24	34327.26	19841.50	1292566.59	-2235551.78	4021.65
1.2 Dead+1.6 Wind 150 deg - No Ice	30464.32	21532.71	32595.14	2116826.48	-1432727.70	3124.74
0.9 Dead+1.6 Wind 150 deg - No Ice	22848.24	21532.71	32595.14	2101785.15	-1422623.41	3125.30
1.2 Dead+1.6 Wind 180 deg - No Ice	30464.32	3789.74	38056.64	2475928.03	-293265.30	2783.43
0.9 Dead+1.6 Wind 180 deg - No Ice	22848.24	3789.74	38056.64	2458338.36	-291204.81	2784.08
1.2 Dead+1.6 Wind 210 deg - No Ice	30464.32	-18031.00	31203.55	2008567.70	1161359.93	3683.30
0.9 Dead+1.6 Wind 210 deg - No Ice	22848.24	-18031.00	31203.55	1994316.65	1153045.17	3683.57
1.2 Dead+1.6 Wind 240 deg - No Ice	30464.32	-32199.71	17957.01	1154374.63	2087268.74	2897.24
0.9 Dead+1.6 Wind 240 deg - No Ice	22848.24	-32199.71	17957.01	1146165.21	2072379.13	2897.55
1.2 Dead+1.6 Wind 270 deg - No Ice	30464.32	-37643.85	-232.13	-19060.28	2446476.06	1084.98
0.9 Dead+1.6 Wind 270 deg - No Ice	22848.24	-37643.84	-232.13	-18973.11	2429030.32	1085.24

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Load Combination	Vertical	Shear _x	Shear _y	Overturning Moment, M _x	Overturning Moment, M _y	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
1.2 Dead+1.6 Wind 300 deg - No Ice	30464.32	-33112.34	-19140.06	-1247447.26	2158849.22	-2775.97
0.9 Dead+1.6 Wind 300 deg - No Ice	22848.24	-33112.34	-19140.06	-1238661.46	2143426.82	-2776.25
1.2 Dead+1.6 Wind 330 deg - No Ice	30464.32	-19022.95	-32523.68	-2111069.07	1240165.44	-5190.94
0.9 Dead+1.6 Wind 330 deg - No Ice	22848.24	-19022.95	-32523.68	-2096182.17	1231256.19	-5191.48
1.2 Dead+1.0 Ice+1.0 Temp	72212.22	-0.00	0.00	821.55	1643.31	0.02
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	72212.23	-45.60	-4752.26	-326282.42	5653.73	-417.43
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	72212.23	2338.11	-4060.37	-277855.13	-158684.63	-294.60
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	72212.23	4327.83	-2171.58	-145830.86	-299049.40	415.45
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	72212.23	4906.70	180.12	15774.54	-338262.18	371.47
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	72212.23	4294.69	2482.84	173330.59	-296498.05	315.14
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	72212.23	2609.33	4164.97	288335.10	-181146.55	254.58
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	72212.23	286.12	4838.75	335122.07	-21799.56	230.52
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	72212.23	-2342.40	4057.90	279418.71	162564.77	290.18
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	72212.23	-4132.68	2336.64	161097.45	286616.21	222.97
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	72212.23	-4808.39	-20.50	-953.62	333751.31	77.75
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	72212.23	-4203.99	-2430.46	-167282.76	292608.54	-221.10
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	72212.23	-2421.95	-4159.63	-286134.65	169348.03	-407.67
Dead+Wind 0 deg - Service	25386.93	-141.23	-9170.61	-590718.45	11575.97	-1331.93
Dead+Wind 30 deg - Service	25386.93	4467.12	-7763.50	-497663.69	-285959.38	-937.13
Dead+Wind 60 deg - Service	25386.93	8652.52	-3913.56	-243343.29	-566232.89	1401.65
Dead+Wind 90 deg - Service	25386.93	9683.19	589.01	45806.81	-630433.07	1224.19
Dead+Wind 120 deg - Service	25386.93	8531.63	4931.37	322552.29	-557290.78	1008.79
Dead+Wind 150 deg - Service	25386.93	5351.70	8101.13	524356.57	-354521.36	790.04
Dead+Wind 180 deg - Service	25386.93	941.89	9458.52	613246.11	-72337.78	708.10
Dead+Wind 210 deg - Service	25386.93	-4481.39	7755.27	497443.22	287810.16	922.30
Dead+Wind 240 deg - Service	25386.93	-8002.85	4463.00	285969.60	517078.29	724.52
Dead+Wind 270 deg - Service	25386.93	-9355.93	-57.69	-4575.03	606049.28	271.51
Dead+Wind 300 deg - Service	25386.93	-8229.68	-4757.03	-308750.89	534850.45	-696.00
Dead+Wind 330 deg - Service	25386.93	-4727.93	-8083.37	-522585.57	307352.88	-1300.57

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-25386.93	0.00	0.00	25386.93	0.00	0.000%
2	-568.24	-30464.32	-36898.24	568.24	30464.32	36898.24	0.000%
3	-568.24	-22848.24	-36898.24	568.24	22848.24	36898.24	0.000%
4	17973.60	-30464.32	-31236.68	-17973.60	30464.32	31236.68	0.000%
5	17973.60	-22848.24	-31236.68	-17973.60	22848.24	31236.68	0.000%
6	34813.67	-30464.32	-15746.31	-34813.67	30464.32	15746.31	0.000%
7	34813.67	-22848.24	-15746.31	-34813.67	22848.24	15746.31	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
8	38960.61	-30464.32	2369.92	-38960.61	30464.32	-2369.92	0.000%
9	38960.61	-22848.24	2369.92	-38960.61	22848.24	-2369.92	0.000%
10	34327.26	-30464.32	19841.50	-34327.26	30464.32	-19841.50	0.000%
11	34327.26	-22848.24	19841.50	-34327.26	22848.24	-19841.50	0.000%
12	21532.71	-30464.32	32595.14	-21532.71	30464.32	-32595.14	0.000%
13	21532.71	-22848.24	32595.14	-21532.71	22848.24	-32595.14	0.000%
14	3789.74	-30464.32	38056.64	-3789.74	30464.32	-38056.64	0.000%
15	3789.74	-22848.24	38056.64	-3789.74	22848.24	-38056.64	0.000%
16	-18031.00	-30464.32	31203.55	18031.00	30464.32	-31203.55	0.000%
17	-18031.00	-22848.24	31203.55	18031.00	22848.24	-31203.55	0.000%
18	-32199.71	-30464.32	17957.01	32199.71	30464.32	-17957.01	0.000%
19	-32199.71	-22848.24	17957.01	32199.71	22848.24	-17957.01	0.000%
20	-37643.84	-30464.32	-232.13	37643.85	30464.32	232.13	0.000%
21	-37643.84	-22848.24	-232.13	37643.84	22848.24	232.13	0.000%
22	-33112.34	-30464.32	-19140.06	33112.34	30464.32	19140.06	0.000%
23	-33112.34	-22848.24	-19140.06	33112.34	22848.24	19140.06	0.000%
24	-19022.95	-30464.32	-32523.67	19022.95	30464.32	32523.68	0.000%
25	-19022.95	-22848.24	-32523.67	19022.95	22848.24	32523.68	0.000%
26	0.00	-72212.22	0.00	0.00	72212.22	-0.00	0.000%
27	-45.59	-72212.22	-4751.97	45.60	72212.23	4752.26	0.000%
28	2337.97	-72212.22	-4060.13	-2338.11	72212.23	4060.37	0.000%
29	4327.57	-72212.22	-2171.46	-4327.83	72212.23	2171.58	0.000%
30	4906.40	-72212.22	180.10	-4906.70	72212.23	-180.12	0.000%
31	4294.43	-72212.22	2482.68	-4294.69	72212.23	-2482.84	0.000%
32	2609.17	-72212.22	4164.72	-2609.33	72212.23	-4164.97	0.000%
33	286.10	-72212.22	4838.45	-286.12	72212.23	-4838.75	0.000%
34	-2342.26	-72212.22	4057.66	2342.40	72212.23	-4057.90	0.000%
35	-4132.43	-72212.22	2336.50	4132.68	72212.23	-2336.64	0.000%
36	-4808.10	-72212.22	-20.50	4808.39	72212.23	20.50	0.000%
37	-4203.73	-72212.22	-2430.32	4203.99	72212.23	2430.46	0.000%
38	-2421.80	-72212.22	-4159.38	2421.95	72212.23	4159.63	0.000%
39	-141.23	-25386.93	-9170.61	141.23	25386.93	9170.61	0.000%
40	4467.12	-25386.93	-7763.50	-4467.12	25386.93	7763.50	0.000%
41	8652.52	-25386.93	-3913.56	-8652.52	25386.93	3913.56	0.000%
42	9683.19	-25386.93	589.01	-9683.19	25386.93	-589.01	0.000%
43	8531.63	-25386.93	4931.37	-8531.63	25386.93	-4931.37	0.000%
44	5351.70	-25386.93	8101.13	-5351.70	25386.93	-8101.13	0.000%
45	941.89	-25386.93	9458.52	-941.89	25386.93	-9458.52	0.000%
46	-4481.39	-25386.93	7755.27	4481.39	25386.93	-7755.27	0.000%
47	-8002.85	-25386.93	4463.00	8002.85	25386.93	-4463.00	0.000%
48	-9355.93	-25386.93	-57.69	9355.93	25386.93	57.69	0.000%
49	-8229.68	-25386.93	-4757.03	8229.68	25386.93	4757.03	0.000%
50	-4727.93	-25386.93	-8083.37	4727.93	25386.93	8083.37	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00082584
3	Yes	4	0.00000001	0.00049204
4	Yes	5	0.00000001	0.00008086
5	Yes	5	0.00000001	0.00003318
6	Yes	5	0.00000001	0.00007053
7	Yes	5	0.00000001	0.00002841
8	Yes	5	0.00000001	0.00004486

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9	Yes	4	0.00000001	0.00070250
10	Yes	5	0.00000001	0.00012294
11	Yes	5	0.00000001	0.00004956
12	Yes	5	0.00000001	0.00010704
13	Yes	5	0.00000001	0.00004212
14	Yes	4	0.00000001	0.00051413
15	Yes	4	0.00000001	0.00029279
16	Yes	5	0.00000001	0.00010126
17	Yes	5	0.00000001	0.00004244
18	Yes	5	0.00000001	0.00008525
19	Yes	5	0.00000001	0.00003472
20	Yes	4	0.00000001	0.00020902
21	Yes	4	0.00000001	0.00012130
22	Yes	5	0.00000001	0.00009581
23	Yes	5	0.00000001	0.00003834
24	Yes	5	0.00000001	0.00011657
25	Yes	5	0.00000001	0.00004816
26	Yes	4	0.00000001	0.00000358
27	Yes	4	0.00000001	0.00047198
28	Yes	4	0.00000001	0.00048250
29	Yes	4	0.00000001	0.00050000
30	Yes	4	0.00000001	0.00048936
31	Yes	4	0.00000001	0.00052948
32	Yes	4	0.00000001	0.00052460
33	Yes	4	0.00000001	0.00048798
34	Yes	4	0.00000001	0.00049823
35	Yes	4	0.00000001	0.00050533
36	Yes	4	0.00000001	0.00048649
37	Yes	4	0.00000001	0.00051883
38	Yes	4	0.00000001	0.00051385
39	Yes	4	0.00000001	0.00006447
40	Yes	4	0.00000001	0.00005123
41	Yes	4	0.00000001	0.00005113
42	Yes	4	0.00000001	0.00007216
43	Yes	4	0.00000001	0.00011173
44	Yes	4	0.00000001	0.00007552
45	Yes	4	0.00000001	0.00001813
46	Yes	4	0.00000001	0.00008508
47	Yes	4	0.00000001	0.00005154
48	Yes	4	0.00000001	0.00001577
49	Yes	4	0.00000001	0.00006115
50	Yes	4	0.00000001	0.00010985

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	100 - 47	16.624	43	1.3579	0.0116
L2	51.5 - 0	4.601	43	0.8147	0.0040

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
100.00	6' Lightning Rod	43	16.624	1.3579	0.0116	24490
95.00	874G90VTE-SX	43	15.195	1.3074	0.0107	24490
80.00	AIR-32	43	11.028	1.1525	0.0081	6122
75.00	PAR8-59	43	9.721	1.0984	0.0073	4897
65.00	(4) LNX-6515DS	43	7.303	0.9847	0.0058	3498
50.00	(4) LNX-6515DS	43	4.350	0.7944	0.0038	2630

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	100 - 47	67.165	10	5.4987	0.0507
L2	51.5 - 0	18.591	10	3.2949	0.0155

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
100.00	6' Lightning Rod	10	67.165	5.4987	0.0507	6141
95.00	874G90VTE-SX	10	61.389	5.2938	0.0466	6141
80.00	AIR-32	10	44.556	4.6645	0.0345	1533
75.00	PAR8-59	10	39.275	4.4452	0.0307	1225
65.00	(4) LNX-6515DS	10	29.506	3.9837	0.0236	873
50.00	(4) LNX-6515DS	10	17.576	3.2126	0.0148	654

Base Plate Design Data

Plate Thickness	Number of Anchor Bolts	Anchor Bolt Size	Actual Allowable Ratio Bolt Tension	Actual Allowable Ratio Bolt Compression	Actual Allowable Ratio Plate Stress	Actual Allowable Ratio Stiffener Stress	Controlling Condition	Ratio
2.5000	12	2.2500	197521.71	202589.64	37.727		Bolt T	0.88 ✓
			223654.40	371266.30	45.000			
			0.88	0.55	0.84			

Compression Checks

Pole Design Data

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _n lb	φP _n lb	Ratio $\frac{P_n}{\phi P_n}$
	19.7895 - 17.3158					39.7252	-25607.30	2743420.00	0.009
	17.3158 - 14.8421					40.4000	-26266.80	2773630.00	0.009
	14.8421 - 12.3684					41.0747	-26935.20	2803300.00	0.010
	12.3684 - 9.89474					41.7495	-27612.30	2832420.00	0.010
	9.89474 - 7.42105					42.4242	-28298.20	2860990.00	0.010
	7.42105 - 4.94737					43.0989	-28992.70	2889010.00	0.010
	4.94737 - 2.47368					43.7737	-29695.80	2916490.00	0.010
	2.47368 - 0					44.4484	-30407.60	2943420.00	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{xx} lb-ft	φM _{xx} lb-ft	Ratio $\frac{M_{xx}}{\phi M_{xx}}$	M _{yy} lb-ft	φM _{yy} lb-ft	Ratio $\frac{M_{yy}}{\phi M_{yy}}$
L1	100 - 97.4474	TP32.575x18x0.1875	438.90	310961.67	0.001	0.00	310961.67	0.000
	97.4474 - 94.8947		451.47	333073.33	0.001	0.00	333073.33	0.000
	94.8947 - 92.3421		21564.00	354592.50	0.061	0.00	354592.50	0.000
	92.3421 - 89.7895		41668.67	376522.50	0.111	0.00	376522.50	0.000
	89.7895 - 87.2368		62222.92	398836.67	0.156	0.00	398836.67	0.000
	87.2368 - 84.6842		83239.25	421510.00	0.197	0.00	421510.00	0.000
	84.6842 - 82.1316		104730.00	444518.33	0.236	0.00	444518.33	0.000
	82.1316 - 79.5789		128294.17	467834.17	0.274	0.00	467834.17	0.000
	79.5789 - 77.0263		160462.50	491433.33	0.327	0.00	491433.33	0.000
	77.0263 - 74.4737		195295.83	515290.00	0.379	0.00	515290.00	0.000
	74.4737 - 71.9211		240025.83	539379.17	0.445	0.00	539379.17	0.000
	71.9211 - 69.3684		285264.17	563675.00	0.506	0.00	563675.00	0.000
	69.3684 - 66.8158		331018.33	588152.50	0.563	0.00	588152.50	0.000
	66.8158 - 64.2632		382730.00	612785.83	0.625	0.00	612785.83	0.000
	64.2632 - 61.7105		448330.00	637549.17	0.703	0.00	637549.17	0.000
	61.7105 - 59.1579		514447.50	662417.50	0.777	0.00	662417.50	0.000
	59.1579 - 56.6053		581085.00	687365.83	0.845	0.00	687365.83	0.000
	56.6053 - 54.0526		648249.17	712368.33	0.910	0.00	712368.33	0.000

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	Client Verizon Wireless	Designed by tkrou

Section No.	Elevation ft	Size	M_{ux}	ϕM_{ux}	Ratio	M_{uy}	ϕM_{uy}	Ratio
			lb-ft	lb-ft	$\frac{M_{ux}}{\phi M_{ux}}$	lb-ft	lb-ft	$\frac{M_{uy}}{\phi M_{uy}}$
L2	54.0526 - 51.5	TP45.125x30.9625x0.3125	715944.17	737399.17	0.971	0.00	737399.17	0.000
	51.5 - 47		333519.17	781518.33	0.427	0.00	781518.33	0.000
	51.5 - 47		525866.67	1530225.00	0.344	0.00	1530225.00	0.000
	47 - 44.5263		945325.00	1587775.00	0.595	0.00	1587775.00	0.000
	44.5263 - 42.0526		1031858.33	1645991.67	0.627	0.00	1645991.67	0.000
	42.0526 - 39.5789		1118991.67	1704841.67	0.656	0.00	1704841.67	0.000
	39.5789 - 37.1053		1206741.67	1764316.67	0.684	0.00	1764316.67	0.000
	37.1053 - 34.6316		1295100.00	1824383.33	0.710	0.00	1824383.33	0.000
	34.6316 - 32.1579		1384091.67	1885016.67	0.734	0.00	1885016.67	0.000
	32.1579 - 29.6842		1473700.00	1946208.33	0.757	0.00	1946208.33	0.000
	29.6842 - 27.2105		1563958.33	2007916.67	0.779	0.00	2007916.67	0.000
	27.2105 - 24.7368		1654850.00	2070125.00	0.799	0.00	2070125.00	0.000
	24.7368 - 22.2632		1746391.67	2132816.67	0.819	0.00	2132816.67	0.000
	22.2632 - 19.7895		1838591.67	2195958.33	0.837	0.00	2195958.33	0.000
	19.7895 - 17.3158		1931458.33	2259533.33	0.855	0.00	2259533.33	0.000
	17.3158 - 14.8421		2024991.67	2323525.00	0.872	0.00	2323525.00	0.000
	14.8421 - 12.3684		2119208.33	2387891.67	0.887	0.00	2387891.67	0.000
	12.3684 - 9.89474		2214108.33	2452625.00	0.903	0.00	2452625.00	0.000
	9.89474 - 7.42105		2309708.33	2517700.00	0.917	0.00	2517700.00	0.000
	7.42105 - 4.94737		2406000.00	2583091.67	0.931	0.00	2583091.67	0.000
4.94737 - 2.47368	2503000.00	2648775.00	0.945	0.00	2648775.00	0.000		
2.47368 - 0	2600725.00	2714725.00	0.958	0.00	2714725.00	0.000		

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u	ϕV_n	Ratio	Actual T_u	ϕT_n	Ratio
			lb	lb	$\frac{V_u}{\phi V_n}$	lb-ft	lb-ft	$\frac{T_u}{\phi T_n}$
L1	100 - 97.4474	TP32.575x18x0.1875	198.13	409307.00	0.000	0.22	622684.17	0.000
	97.4474 - 94.8947		1196.55	422242.00	0.003	8.41	666960.83	0.000
	94.8947 - 92.3421		7790.45	433532.00	0.018	40.59	710052.50	0.000
	92.3421 - 89.7895		7965.10	444531.00	0.018	40.59	753965.00	0.000
	89.7895 - 87.2368		8144.49	455239.00	0.018	40.62	798648.33	0.000
	87.2368 - 84.6842		8328.72	465655.00	0.018	40.67	844050.00	0.000

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Section No.	Elevation ft	Size	Actual V_n lb	ϕV_n lb	Ratio $\frac{V_n}{\phi V_n}$	Actual T_n lb-ft	ϕT_n lb-ft	Ratio $\frac{T_n}{\phi T_n}$
	84.6842 - 82.1316		8517.88	475780.00	0.018	40.77	890125.00	0.000
	82.1316 - 79.5789		12513.60	485613.00	0.026	40.90	936816.67	0.000
	79.5789 - 77.0263		12707.10	495156.00	0.026	33.00	984066.67	0.000
	77.0263 - 74.4737		17435.00	504406.00	0.035	4046.09	1031841.67	0.004
	74.4737 - 71.9211		17634.30	513366.00	0.034	4045.51	1080075.00	0.004
	71.9211 - 69.3684		17836.40	522034.00	0.034	4044.53	1128733.33	0.004
	69.3684 - 66.8158		18041.40	530410.00	0.034	4043.43	1177741.67	0.003
	66.8158 - 64.2632		25618.00	538495.00	0.048	4042.25	1227066.67	0.003
	64.2632 - 61.7105		25822.10	546289.00	0.047	4040.95	1276658.33	0.003
	61.7105 - 59.1579		26027.50	553792.00	0.047	4039.57	1326458.33	0.003
	59.1579 - 56.6053		26234.40	561003.00	0.047	4038.13	1376416.67	0.003
	56.6053 - 54.0526		26443.10	567922.00	0.047	4036.64	1426475.00	0.003
	54.0526 - 51.5		26653.80	574551.00	0.046	4035.15	1476600.00	0.003
	51.5 - 47		14728.20	585526.00	0.025	1557.92	1564950.00	0.001
L2	51.5 - 47	TP45.125x30.9625x0.3125	19918.20	1169090.00	0.017	2476.06	3064191.67	0.001
	47 - 44.5263		34885.80	1187480.00	0.029	4032.94	3179433.33	0.001
	44.5263 - 42.0526		35130.00	1205600.00	0.029	4031.94	3296008.33	0.001
	42.0526 - 39.5789		35376.60	1223440.00	0.029	4030.94	3413858.33	0.001
	39.5789 - 37.1053		35625.60	1241010.00	0.029	4029.95	3532950.00	0.001
	37.1053 - 34.6316		35877.20	1258300.00	0.029	4028.97	3653225.00	0.001
	34.6316 - 32.1579		36131.40	1275330.00	0.028	4028.03	3774650.00	0.001
	32.1579 - 29.6842		36388.20	1292070.00	0.028	4027.11	3897166.67	0.001
	29.6842 - 27.2105		36647.80	1308550.00	0.028	4026.24	4020741.67	0.001
	27.2105 - 24.7368		36910.10	1324750.00	0.028	4025.43	4145316.67	0.001
	24.7368 - 22.2632		37175.20	1340680.00	0.028	4024.67	4270841.67	0.001
	22.2632 - 19.7895		37443.20	1356330.00	0.028	4023.97	4397291.67	0.001
	19.7895 - 17.3158		37714.00	1371710.00	0.027	4023.35	4524600.00	0.001
	17.3158 - 14.8421		37987.80	1386820.00	0.027	4022.79	4652725.00	0.001
	14.8421 - 12.3684		38264.40	1401650.00	0.027	4022.31	4781625.00	0.001
	12.3684 - 9.89474		38544.10	1416210.00	0.027	4021.90	4911250.00	0.001
	9.89474 - 7.42105		38826.70	1430490.00	0.027	4021.57	5041558.33	0.001
	7.42105 - 4.94737		39112.30	1444510.00	0.027	4021.32	5172500.00	0.001

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	Client Verizon Wireless	Designed by tkrou

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
	4.94737 - 2.47368		39400.90	1458250.00	0.027	4021.16	5304025.00	0.001
	2.47368 - 0		39692.60	1471710.00	0.027	4021.07	5436091.67	0.001

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		ϕP_n	ϕM_{ux}	ϕM_{uy}	ϕV_n	ϕT_n			
L1	100 - 97.4474	0.000	0.001	0.000	0.000	0.000	0.002 ✓	1.000	4.8.2 ✓
	97.4474 - 94.8947	0.020	0.001	0.000	0.003	0.000	0.021 ✓	1.000	4.8.2 ✓
	94.8947 - 92.3421	0.005	0.061	0.000	0.018	0.000	0.067 ✓	1.000	4.8.2 ✓
	92.3421 - 89.7895	0.005	0.111	0.000	0.018	0.000	0.116 ✓	1.000	4.8.2 ✓
	89.7895 - 87.2368	0.006	0.156	0.000	0.018	0.000	0.162 ✓	1.000	4.8.2 ✓
	87.2368 - 84.6842	0.006	0.197	0.000	0.018	0.000	0.203 ✓	1.000	4.8.2 ✓
	84.6842 - 82.1316	0.006	0.236	0.000	0.018	0.000	0.242 ✓	1.000	4.8.2 ✓
	82.1316 - 79.5789	0.009	0.274	0.000	0.026	0.000	0.284 ✓	1.000	4.8.2 ✓
	79.5789 - 77.0263	0.009	0.327	0.000	0.026	0.000	0.336 ✓	1.000	4.8.2 ✓
	77.0263 - 74.4737	0.010	0.379	0.000	0.035	0.004	0.390 ✓	1.000	4.8.2 ✓
	74.4737 - 71.9211	0.010	0.445	0.000	0.034	0.004	0.456 ✓	1.000	4.8.2 ✓
	71.9211 - 69.3684	0.010	0.506	0.000	0.034	0.004	0.518 ✓	1.000	4.8.2 ✓
	69.3684 - 66.8158	0.010	0.563	0.000	0.034	0.003	0.574 ✓	1.000	4.8.2 ✓
	66.8158 - 64.2632	0.012	0.625	0.000	0.048	0.003	0.639 ✓	1.000	4.8.2 ✓
	64.2632 - 61.7105	0.012	0.703	0.000	0.047	0.003	0.718 ✓	1.000	4.8.2 ✓
	61.7105 - 59.1579	0.013	0.777	0.000	0.047	0.003	0.792 ✓	1.000	4.8.2 ✓
	59.1579 - 56.6053	0.013	0.845	0.000	0.047	0.003	0.861 ✓	1.000	4.8.2 ✓
	56.6053 - 54.0526	0.013	0.910	0.000	0.047	0.003	0.925 ✓	1.000	4.8.2 ✓
	54.0526 - 51.5	0.013	0.971	0.000	0.046	0.003	0.986 ✓	1.000	4.8.2 ✓
	51.5 - 47	0.006	0.427	0.000	0.025	0.001	0.434 ✓	1.000	4.8.2 ✓
L2	51.5 - 47	0.005	0.344	0.000	0.017	0.001	0.349 ✓	1.000	4.8.2 ✓
	47 - 44.5263	0.008	0.595	0.000	0.029	0.001	0.604 ✓	1.000	4.8.2 ✓
	44.5263 - 42.0526	0.008	0.627	0.000	0.029	0.001	0.636 ✓	1.000	4.8.2 ✓
	42.0526 - 39.5789	0.008	0.656	0.000	0.029	0.001	0.665 ✓	1.000	4.8.2 ✓

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	Client Verizon Wireless	Designed by tkrou

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_n	M_{ux}	M_{uy}	V_u	T_u			
	39.5789 - 37.1053	0.008	0.684	0.000	0.029	0.001	0.693 ✓	1.000	4.8.2 ✓
	37.1053 - 34.6316	0.008	0.710	0.000	0.029	0.001	0.719 ✓	1.000	4.8.2 ✓
	34.6316 - 32.1579	0.009	0.734	0.000	0.028	0.001	0.744 ✓	1.000	4.8.2 ✓
	32.1579 - 29.6842	0.009	0.757	0.000	0.028	0.001	0.767 ✓	1.000	4.8.2 ✓
	29.6842 - 27.2105	0.009	0.779	0.000	0.028	0.001	0.789 ✓	1.000	4.8.2 ✓
	27.2105 - 24.7368	0.009	0.799	0.000	0.028	0.001	0.809 ✓	1.000	4.8.2 ✓
	24.7368 - 22.2632	0.009	0.819	0.000	0.028	0.001	0.829 ✓	1.000	4.8.2 ✓
	22.2632 - 19.7895	0.009	0.837	0.000	0.028	0.001	0.847 ✓	1.000	4.8.2 ✓
	19.7895 - 17.3158	0.009	0.855	0.000	0.027	0.001	0.865 ✓	1.000	4.8.2 ✓
	17.3158 - 14.8421	0.009	0.872	0.000	0.027	0.001	0.882 ✓	1.000	4.8.2 ✓
	14.8421 - 12.3684	0.010	0.887	0.000	0.027	0.001	0.898 ✓	1.000	4.8.2 ✓
	12.3684 - 9.89474	0.010	0.903	0.000	0.027	0.001	0.913 ✓	1.000	4.8.2 ✓
	9.89474 - 7.42105	0.010	0.917	0.000	0.027	0.001	0.928 ✓	1.000	4.8.2 ✓
	7.42105 - 4.94737	0.010	0.931	0.000	0.027	0.001	0.942 ✓	1.000	4.8.2 ✓
	4.94737 - 2.47368	0.010	0.945	0.000	0.027	0.001	0.956 ✓	1.000	4.8.2 ✓
	2.47368 - 0	0.010	0.958	0.000	0.027	0.001	0.969 ✓	1.000	4.8.2 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	100 - 47	Pole	TP32.575x18x0.1875	1	-14910.50	1149100.00	98.6	Pass
L2	47 - 0	Pole	TP45.125x30.9625x0.3125	2	-30407.60	2943420.00	96.9	Pass
Summary								
Pole (L1)							98.6	Pass
Base Plate							88.3	Pass
RATING =							98.6	Pass

Pole Mat & Pier Foundation Design

Order/Quote Number: **SO23778**
 Part Number: **345622**
 Tower Model: **NTP 45" x 100"**
 Company: **Verizon Wireless**
 Site: **LV Somerset WT - Pulaski Co., KY**



Tower Reactions (Factored)

Shear:	39,849 kips
Moment:	2600,724 ft-kips
Weight:	30,464 kips
Compression:	30,464 kips
Uplift:	0.000 kips

Foundation Design Reactions

Additional Load Factor:	1.00
Shear:	39,849 kips
Moment:	2600,724 ft-kips
Weight:	30,464 kips
Compression:	30,464 kips

Site Details

Soil Type:	Clay
Soil Unit Weight (Backfill):	120 pcf
Allowable Bearing Pressure:	7000 psf
Factor of Safety:	2
Ultimate Bearing Pressure:	14,000 psf
Bearing Pressure Type:	Net Bearing Pressure
Angle of Internal Friction:	0 degrees
Cohesion:	2500 psf
Sliding Friction Coefficient:	0.3
Frost Depth (Neglected):	2.5 ft
Min. Bearing Depth:	4 ft
Water Depth:	999 ft
Rock Depth:	5.5 ft
Passive Pressure Coefficient:	1.00
Active Pressure Coefficient:	1.00

Geotechnical Report

Company:	Power of Design Group, LLC
Date:	6/30/2016
Project:	16-7955
Seismic Site Class:	B
Design Response Acc., S _D :	0.131 g
Design Response Acc., S _L :	0.066 g
Seismic Design Category:	A

Material Specifications

Concrete Unit Weight:	150 pcf
Concrete Strength:	4000 psi
Rebar Yield Strength:	60 ksi
Clear Cover:	3 in
Clear Cover (Top of Pier):	3 in
Clear Cover Tolerance, +/- (Top of Pier):	1 in

Development Length Requirements

Pad Reinforcement Location Factor:	1.0
Pier Reinforcement Location Factor:	1.0
Coating Factor:	1.0
Lightweight Concrete Factor:	1.0
Transverse Reinforcement Index:	0.0 in
Pad Development Length Reduction:	<input type="checkbox"/> No Reduction ACI 12.2.5
Compressive Development Length Red:	<input checked="" type="checkbox"/> Yes, Utilize Reduct ACI 12.3.3
Tension Development Length Reduction:	<input type="checkbox"/> No Reduction ACI 12.5.3
Pad Ties Development Length Reduction:	<input type="checkbox"/> No Ties in Pad ACI 12.3.3

Maximum Foundation Capacity Rating: **96.9%**

ANSI/TIA-222-G - Design Factors

Uplift Resistance Factor, Phi:	0.75
Compressive Resistance Factor, Phi:	0.75
Bearing Capacity Resistance, Phi:	0.75
Lateral Resistance Factor, Phi:	0.75

Summary Check

Minimum Depth:	OK
Lateral Check:	OK
Overturning Check:	OK
Bearing Check:	OK
Concrete Strength Check:	OK
Max Pad Reinforcement Spacing:	OK
Min. Pad Reinforcement Spacing:	OK
Pad Constructability Check:	OK
Min. Pad Reinforcement Check:	OK
Pad Reinforcement Yield Check:	OK
Pad Flexural Check:	OK
Pad Development Length:	OK
One Way Shear Check:	OK
Two-Way Shear Check:	OK
Vertical Bar Quantity Check:	OK
Min/Max Vertical Bar Spacing Check:	OK
Pier Constructability Check:	OK
Minimum Vertical Reinforcement:	OK
Pier Compressive Strength:	OK
Pier Flexural Strength:	OK
Shear Friction:	OK
Compressive Development in Pier:	OK
Compressive Development in Footing:	OK
Tensile Development in Pier:	OK
Tensile Development in Footing:	HOOK REQ'D
Hook Development Length:	OK
Space of Hook:	OK
Plate & Rebar Spacing Check:	OK
Anchor Embedment Clearance:	ABs IN PAD
Anchor Bolt Spacing:	OK
Anchor Embedment Depth:	OK
Anchor Pull-out Check:	OK
Anchor Strength Check:	OK

Weight

Concrete Pad Volume (cubic yd)	Concrete Pier Volume (cubic yd)	Total Concrete Volume (cubic yd)	Concrete Weight (kips)	Soil Volume (cubic yd)	Soil Weight (kips)	Soil Weight Removed (kips)	Total Factored Dead Load (kips)
29.96	4.45	34.41	139.37	80.27	195.29	305.09	324.04

Lateral Capacity

Minimum Depth Required (ft)	Soil Unit Weight Below GWT (pcf)	Ultimate Passive Pressure						Ultimate Active Pressure			
		@ Depth Neglected	@ Top of Footing	@ Bottom of Footing	@ Top of Pressure Zone	@ GWT	Average	@ Top of Footing	@ Bottom of Footing	@ GWT	Average
4	57.6	5.48	5.45	5.66	5.48	124.88	5.57	0.00	0.00	114.88	0.00

Effective Pad Thickness (ft)	Effective Pad Area (sq ft)	Nominal Passive Resistance (kips)	Nominal Active Loading (kips)	Friction Resistance (kips)	Design Lateral Resistance (kips)
1.5	32.25	179.63	0.00	97.2	231.9
OK					
17.1%					

Overturning

Weight of Soil Wedge on Back Face (kips)	Moment Resistance From Weight (ft-kips)	Moment Resistance from Soil Wedge (ft-kips)	Moment Resistance from Passive Pressure (ft-kips)	Moment Loading from Active Pressure (ft-kips)	Overturning Moment (ft-kips)	Design Overturning Resistance (ft-kips)
0.00	3483.40	0.00	89.82	0.00	2638.62	3550.8
OK						
79.9%						

Bearing Pressure

Solve for Min. Pressure 0.000 This Cell = 0 when spreadsheet is solved.

Case 1: Entire Mat is in Positive Bearing				Case 2: Back Edge of Mat is Uplifting			Minimum Gross Bearing Pressure (ksf)	Maximum Gross Bearing Pressure (ksf)	Maximum Net Bearing Pressure (ksf)	Maximum Bearing Pressure (ksf)
Minimum Pressure (ksf)	Maximum Pressure (ksf)	Entire Mat is in Positive Bearing (TRUE/FALSE)	Adjusted Bearing Width (ft)	Minimum Pressure (ksf)	Maximum Pressure (ksf)	Back Edge of Mat is Uplifting (TRUE/FALSE)				
-0.92	2.33	FALSE	5.97	0.00	5.05	TRUE	4.00	5.05	4.46	4.46
OK										
42.4%										

Pad Reinforcement Design

Flexural Strength Reduction Factor = 0.9 ACI 9.3.2.1

Number of Bars	Bar Size	Bar Length (in)	Bar Diameter (in)	Bar Weight (lb/ft)	Total Bar Weight (lb)	Bar Area (sq in)	Total Bar Area per Layer	Minimum Bar Area Required (sq in)	Ctrl-Ctrl Spacing (in)	Clear Spacing (in)
25	9	252	1.13	3.40	7140	1.00	25.00	4.88	10.5	9.3
OK										
Constructability: OK										

Flexural Strength							Required Development Length (in)	Available Development Length (in)
Effective Depth (in)	Effective Width (in)	Compressive Zone Depth (in)	Concrete Strength Factor	Moment Arm (ft)	Factored Moment (ft-kips)	Design Moment (ft-kips)		
16.31	258.00	1.710	0.85	5.76	1646.94	1738.46	32.10	90.00
Yield Check			OK			OK		OK
							94.7%	

Concrete Shear Capacity Shear Strength Reduction Factor = 0.75 ACI 9.3.2.3

Effective Shear Depth (ft)	One-Way Shear					Two-Way Shear				
	One-Way Shear Section Width (ft)	Factored Shear Force (kips)	Nominal Concrete Shear Strength (kips)	Nominal Rebar Shear Strength (kips)	Design Shear Strength (kips)	Shear Perimeter (ft)	Factored Shear Force (kips)	Nominal Concrete Shear Strength (kips)	Nominal Rebar Shear Strength (kips)	Design Shear Strength (kips)
1.36	6.39	285.92	532.21	0.00	399.16	23.12	30.46	1144.57	0.00	858.42
					OK					OK
					71.6%					3.6%

Tie Reinforcement Design

Number of Bars	Bar Size	Bar Diameter (in)	Bar Weight (lb/ft)	Total Bar Weight (lb)	Bar Area (sq in)	Overlap Length (in)	Total Length (in)	Zone	Maximum Tie Spacing (in)	Zone Distance (in)	Number of Tie Spaces	Actual Tie Spacing (in)	Number of Ties per Zone	
									End	Top				Middle
5	4	0.50	0.67	62	0.20	18.0	223.8	End	5	5	1	5	2	
								Top	0	0	0	0	0	
								Middle	16	43	3	14	5/16	3
								Pad	N/A	N/A	N/A	N/A	N/A	

Splice Length - Ties

Bar Size	Reinf. Location Factor, α	Coating Factor, β	Reinf. Size Factor, γ	Lightwt. Aggregate Factor, λ	Spacing or Cover, c (in)	Transverse Reinf. Index, K_T	Development Length l_d (in)	Splice Length Tolerance (in)	Splice Length $1.3 * l_d$ (in)
4	1.0	1.0	0.8	1.0	3.25	0.0	12.0	1.0	18.0

Pier Vertical Reinforcement Design

Number of Bars	Bar Size	Bar Diameter (in)	Bend Radius (in)	Hook Extension Length (in)	90 degree Std. Hook Length (ACI 7.1.2) (in)	Bar Length (in)	Bar Area (sq in)	Total Bar Area (sq in)	Minimum Bar Area Required (sq in)	Reinforcement Size Factor	Max Spacing/Cover Dimension (in)	Ct-Ct Spacing (in)	Clear Spacing (in)
30	8	1.00	3.00	12.00	15.00	78.00	0.79	23.70	20.36	1.00	3.35	6.7	5.7
OK													

Constructability: OK

Development Length - Vertical Pier Reinforcement

Compressive Development				Tension Development			Basic Development		Required Development Length (in)	Development Length Available (in)	Space for Hook		
Required Length (in)	Required Length Adj. (in)	Available in Pier (in)	Available in Footing (in)	Required Length (in)	Available in Pier (in)	Available in Footing (in)	Length (in)	Cover Factor			Hook Orientation	Space Available for Hook (in)	Space Required for Hook (in)
18.97	8.00	48.00	15.74	28.46	48.00	15.74	18.97	0.7	13.3	15.74	Hooks Extend Outward	93.50	15.0
OK			OK	OK		HOOK REQ'D	OK		OK				

Pier Strength - Compression / Flexure / Shear-Friction

Pier Gross Area (sq in)	Induced Compression Load (kip)	Nominal Compressive Strength (kip)	Compressive Strength Reduction Factor	Design Compressive Strength (kip)	Diameter of Reinforcement Circle (in)	Steel Location Factor	Induced Moment (kip-ft)	Flexure Reduction Factor	Design Moment Capacity (kip-ft)	Nominal Shear-Friction Strength (kip)	Design Shear-Friction Strength (kip)
4071.50	30	15184.53	0.65	7895.96	64.00	0.89	2789	0.90	2858	853.20	639.9
OK			0.4%	OK		96.9%		6.2%			

Anchor Bolt and Embedment Plate Details

Number of Bolts	Bolt Diameter (in)	Bolt Length (in)	Anchor Bolt PIN	Bolt Projection (in)	Projection Tolerance Above (in)	Projection Tolerance Below (in)	Plate PN	Plate O.D. / Width (in)	Bolt Circle Diameter (in)	Plate I.D. (in)	Plate Thickness (in)	Grout Space Beneath Plate (in)	Anchor Bolt Detail Type
12	2.25	72	108742	12	2	0	345624	57	52	47	0.375	3.375	(d) No Grout

Anchor Bolt Properties & Forces

Yield Strength (ksi)	Ultimate Tensile Strength (ksi)	Bolt Threads per Inch	Root Diameter of Bolt (in)	Bolt Gross Area (in ²)	Bolt Net Area (in ²)	Bolt Cage Moment of Inertia [Area] (in ⁴)	Top of Concrete to Bottom of Leveling Nut (in)	Plastic Section Modulus (in ³)	Maximum Bolt Tensile Force (kip)	Maximum Bolt Compressive Force (kip)	Maximum Bolt Shear Force (kip)	Bending Moment Due to Shear (kip-ft)	Maximum Force on Bolt Head (kip)
75	100	4.5	2.033	3.976	3.248	4056.00	1.125	1.401	197.517	202.594	3.304	0.201	60.875

Anchor Concrete Design

Anchor Embedment Depth (in)	Effective Embedment Depth (in)	Required Tensile Development Length (in)	Rebar Engaged by Bolts (in)	Spacing / Cover Dimension (in)	Transverse Reinf. Index (in)	Anchor Tensile Development Length (in)	Force Resisted by Development (%)	Hex Nut Width Across Flats (in)	Net Bearing Area of Hex Head (in ²)	Cracking Modification Factor	Pullout Reduction Factor	Design Pullout Strength (kip)	Pier Allowable Embedment Depth
58.00	55.38	28.46	44.13	6.81	0.05	80.05	69%	3.500	6.633	1.4	0.70	208.003	51.000
OK													ABs IN PAD

Anchor Steel Design

Bolt Resistance Factor	Bolt Nominal Tensile Strength (kip)	Bolt Design Tensile Strength (kip)	Shear Reduction Factor	Grout Factor	Bolt Design Shear Strength [ACI] (kip)	Bolt Design Shear Strength [TIA] (kip)	Combined Shear & Tension	Flexure Resistance Factor	Bolt Design Flexural Strength (kip-ft)	Interaction Resistance Factor	Eta	Anchor Bolt Interaction Equation	Anchor Spacing - Ct-Ct (in)
0.75	324.788	243.576	0.65	1.00	126.660	134.193	0.658	0.90	7.883	0.80	0.50	0.805	13.614
OK													OK

Notes

- Foundation design is based on the Geotechnical Report dated 06/30/2016, by Power of Design Group, LLC; Project No. 16-7955.
- Groundwater was not encountered during the geotechnical investigation.
- Hard rock conditions were encountered about 5.5 feet bgs in the geotechnical investigation (see geo report for details). The contractor should anticipate difficult excavation below this depth and be prepared with the necessary equipment to remove such material in order to create a level bearing surface. The depth to rock material may vary across the foundation footprint. The entire footing shall bear on leveled, competent rock or bear on a layer of lean concrete (2000 psi) placed in direct contact with competent rock. Proper drainage shall be provided to avoid a bathtub effect.
- This mat design assumes an ultimate bearing capacity of 14000 psf (allowable bearing capacity of 7000 psf) based on the geotechnical report. The bearing surface shall be inspected prior to concrete placement.

Pole Mat & Pier Foundation Design Summary

Max. Foundation Capacity Rating:	96.9%
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FOUNDATION DIMENSIONS		
Pole Diameter:	45.125	in
Pier Extension:	0.5	ft
Pad Depth:	5.5	ft
Pad Width:	21.5	ft
Pad Thickness:	1.75	ft
Pier Diameter:	6	ft
Clear Cover:	3	in
Total Volume:	34.4	yd ³

PAD REINFORCEMENT		
Bar Size:	9	
Bar Length:	252	in
Bar Quantity per Layer:	25	
Total Quantity:	100	
Weight per Bar:	71.4	lbs
Total Weight:	7140	lbs

PIER REINFORCEMENT		
Bar Size:	8	
Bar Length:	78	in
Bend Radius:	3	in
Standard Hook Length:	15	in
Hook Orientation:	Hooks Extend Outward	
Bar Quantity:	30	
Weight per Bar:	17.4	lbs
Total Weight:	521	lbs

TIE REINFORCEMENT		
Bar Size:	4	
Bar Length:	224	in
Circular Tie Outer Diameter:	66	in
Overlap:	18	in
Tie Termination Type:	Overlap	
Quantity of Ties in Pad:	N/A	
Bar Quantity:	5	
Total Weight:	62	lbs

TOWER REACTIONS	
Tower Shear:	39.6 kip
Tower Moment:	2600.7 ft-kip
Tower Weight:	30.5 kip

MATERIAL SPECIFICATIONS	
Concrete Strength:	4000 psi
Concrete Weight:	150 pcf
Soil Strength (Ultimate Bearing):	14,000 psf
Rebar Yield Strength:	60 ksi

ANCHORING DETAILS	
Anchor P/N:	108742
Anchor Diameter:	2.25 in
Anchor Length:	72 in
Anchor Quantity:	12
Anchor Projection:	12 in
	+ 2" - 0"
Embedment Plate P/N:	345624
Embedment Plate OD:	57 in
Bolt Circle Diameter:	52 in
Embedment Plate ID:	47 in

STRUCTURAL FILL CRITERIA	
Loose Lift Thickness:	8 in
Percent Compaction:	98%
ASTM Standard:	D698
Optimum Moisture Content	2%
Tolerance:	-2%

BACKFILL CRITERIA (NON-STRUCTURAL)	
Loose Lift Thickness:	8 in
Percent Compaction:	95%
ASTM Standard:	D698
Optimum Moisture Content	2%
Tolerance:	-2%

ECO #:	
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ADDITIONAL NOTES
<p>- Foundation design is based on the Geotechnical Report dated 06/30/2016, by Power of Design Group, LLC; Project No. 16-7955.</p> <p>- Groundwater was not encountered during the geotechnical investigation.</p> <p>- Hard rock conditions were encountered about 5.5 feet bgs in the geotechnical investigation (see geo report for details). The contractor should anticipate difficult excavation below this depth and be prepared with the necessary equipment to remove such material in order to create a level bearing surface. The depth to rock material may vary across the foundation footprint. The entire footing shall bear on leveled, competent rock or bear on a layer of lean concrete (2000 psi) placed in direct contact with competent rock. Proper drainage shall be provided to avoid a bathtub effect.</p> <p>- This mat design assumes an ultimate bearing capacity of 14000 psf (allowable bearing capacity of 7000 psf) based on the geotechnical report. The bearing surface shall be inspected prior to concrete placement.</p> <p>- During placement, concrete shall be suitably consolidated. Proper curing methods shall be used directly following concrete placement as established by the contractor. Concrete shall develop a minimum compressive strength of 2500 psi prior to backfill and compaction operations, and backfill shall be compacted to a minimum moist unit weight of 120 pcf.</p>

Drilled Pier Foundation Design

Order/Quote Number: SO23778
 Part Number: 345622
 Tower Model: NTP 45" x 100'
 Company: Verizon Wireless
 Site: LV Somerset WT - Pulaski Co., KY



NELLO CORPORATION
 211 W Washington St
 Suite 2000
 South Bend, IN 46601
 574-286-3632 (phone)
 574-286-5660 (fax)
 www.nelloinc.com

Tower Reactions (Factored)

Shear	39.649 kips
Moment	2600.724 ft-kips
Weight (Compression)	30.464 kips
Uplift	0.000 kips

Foundation Design Reactions

Additional Load Factor	1.00
Shear	39.649 kips
Moment	2600.724 ft-kips
Weight (Compression)	30.464 kips
Uplift	0.000 kips

ANSI/TIA-222-G - Design Factors

Uplift Resistance Phi	0.75
Compressive Resistance Phi	0.75
Bearing Capacity Phi	0.75
Lateral Resistance Phi	0.75

Design Dimensions

Pole OD	45.125 in
Pier Diameter	6 ft
Pier Extension	0.5 ft
Pier Depth	16 ft
Total Pier Length	16.5 ft
Volume	17.3 yd ³

Foundation LPILE Loads (Divided by Φ_s)

Shear Load	52.865 lb
Moment Load	41,611.584 lb-in
Axial Load	40,619 lb

Summary Check

Uplift	OK
Compression	OK
Max Pier Length to Width Ratio	OK
Neglect to Frost Depth	OK
Neglect Top Portion of Pier	OK
Minimum Depth	OK
Minimum Vertical Reinforcement	OK
Moment Capacity	OK
Rebar Spacing	OK
Anchor Steel Strength	OK
Anchor Embedment	OK
Anchor Concrete Strength	OK
Anchor Bolt Spacing	OK
Embedment Plate Fit	OK
Pier Deflection	OK

Site Details

Frost Depth	2.5 ft
Water Depth	999 ft
Upper Pier Neglected	5 ft
Minimum Pier Depth	ft
Soil Induced Uplift Load	kips
Seismic Site Class	B
Design Response Acc., S_{DS}	0.131 g
Design Response Acc., S_{D1}	0.066 g
Seismic Design Category	A

Material Specifications

Concrete Strength	4000 psi
Rebar Yield Strength	60 ksi
Concrete Weight	150 pcf
Clear Cover	3 in
Clear Cover (Top of Pier)	3 in
Geotechnical Report	
Company	Power of Design Group, LLC
Date	6/30/2016
Project	16-7955

Max. Foundation Capacity Rating
96.5%

Compression/Uplift Resistance Design

Layer	Depth (ft)	Depth (ft)	Length (ft)	Diameter (ft)	Allowable Skin Friction				Ultimate Skin Friction				Concrete Weight ⁽¹⁾		Ultimate Bearing		Total Resistance			
					Uplift		Compression		Uplift		Compression		(pcf)	(kips)	(ksf)	(kips)	(kips)	(kips)	(kips)	
					(ksf)	Safety Factor	(ksf)	Safety Factor	(kips)	(kips)	(kips)	(kips)								(kips)
1	0.5	0	0.5	6	0.000	0.000	2.0	0.000	0.000	0.000	0.000	0.000	150	2.12	7.60	2.0	21.21	0.00		
2	0	5	5	6	0.100	2.0	0.100	2.0	0.200	3.77	0.200	3.77	150	4.24	0.00	0.00	8.01	3.77		
3	5	6	1	6	0.500	2.0	0.500	2.0	1.000	188.50	1.000	75.40	150	42.41	0.00	0.00	230.91	75.40		
4	6	16	0	6	0.0	0.000	0.0	0.000	0.000	0.000	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00		
5	16	16	0	6	0.0	0.000	0.0	0.000	0.000	0.000	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00		
6	16	16	0	6	0.0	0.000	0.0	0.000	0.000	0.000	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00		
7	16	16	0	6	0.0	0.000	0.0	0.000	0.000	0.000	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00		
8	16	16	0	6	0.0	0.000	0.0	0.000	0.000	0.000	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00		
9	16	16	0	6	0.0	0.000	0.0	0.000	0.000	0.000	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00		
10	16	16	0	6	0.0	0.000	0.0	0.000	0.000	0.000	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00		
Total																				

Stability Analysis - Modified Broms' Method

Primary Soil Type	Soil Unit Weight (pcf)	Undrained Shear Strength (ksf)	Passive Pressure Coefficient	Shear Stability Distance, f (ft)	Distance to Maximum Moment (ft)	Max. Stability Moment [Geotechnical] (kip-ft)	Max. Flexural Moment [Structural] (kip-ft)	Moment Stability Distance, g (ft)	Minimum Depth of Drilled Pier (ft)	Actual Depth of Drilled Pier (ft)	$L_{min1} = 11.99011$ ft	Pier Element Rigidity	Lpile Induced Moment (kip-ft)	Lpile Ultimate Deflection (in)	Lpile Service Deflection (in)
Clay	135	0.000	20.000	-	0.05	6.55	3812.6	2730.6	3.76	12.81	16.00	OK	2819.64	1.33	0.01

Vertical Reinforcement Design

Number of Bars	Bar Size	Bar Length (in)	Bar Diameter (in)	Bar Weight (lb/ft)	Total Bar Weight (lb)	Bar Area (sq in)	Total Bar Area (sq in)	Gross Pier Area (sq in)	Minimum Bar Area Required (sq in)	Steel Cage Diameter (in)	Ctr-Ctr Spacing (in)	Clear Spacing (in)	Steel Location Factor	Flexure Reduction Factor	Design Moment Capacity (kip-ft)
31	8	192	1.000	2.670	1324	0.79	24.49	4071.50	20.36	64.000	6.5	5.5	0.89	0.90	2921

Development Length - Vertical Rebar

Bar Size	Reinf. Location Factor, ψ_r	Coating Factor, ψ_c	Reinf. Size Factor, ψ_s	Lightweight Concrete Strength Factor, λ	Spacing or Cover, c_s (in)	Transverse Reinf. Index, K_T	Develop. Length l_d (in)	Excess Reinf. Reduc. Use	Factor	Develop. Length l_e
8	1.0	1.0	1.0	1.0	3.24	0.0	28.5	no	1.00	28.5

Tie Reinforcement Design

Number of Bars	Bar Size	Bar Diameter (in)	Bar Weight (lb/ft)	Total Bar Weight (lb)	Bar Area (sq in)	Overlap Length (in)	Total Length (in)	Zone	Maximum Tie Spacing (in)	Zone Distance (in)	Number of Tie Spaces (in)	Actual Tie Spacing (in)	Number of Ties per Zone	Standard Confinement Applied	
															End
15	4	0.500	0.668	187	0.20	18.0	224.0	End	5	5	1	5	2		
								Top	0	0	0	0			
								Middle	16	181.5	12	15	2/16		11
								End	5	5	1	5	2		

Splice Length - Ties

Bar Size	Reinf. Location Factor, α	Coating Factor, β	Reinf. Size Factor, γ	Lightwt. Aggregate Factor, λ	Spacing or Cover, c (in)	Transverse Reinf. Index, K_T	Development Length l_d (in)	Splice Length Tolerance (in)	Splice Length $1.3 \cdot l_e$ (in)
4	1.0	1.0	0.8	1.0	3.25	0.0	12.0	1.0	18.0

Anchor Bolt and Embedment Plate Details

Number of Bolts	Bolt Diameter (in)	Bolt Length (in)	Anchor Bolt P/N	Bolt Projection (in)	Projection Tolerance Above (in)	Projection Tolerance Below (in)	Plate P/N	Plate O.D. / Width (in)	Bolt Circle Diameter (in)	Plate I.D. (in)	Plate Thickness (in)	Grout Space Beneath Plate (in)	Anchor Bolt Detail Type
12	2.25	72	108742	12	2	0	345624	57	52	47	0.375	3.375	(d) No Grout

Anchor Bolt Properties & Forces

Yield Strength (ksi)	Ultimate Tensile Strength (ksi)	Bolt Threads per inch	Root Diameter of Bolt (in)	Bolt Gross Area (in ²)	Bolt Net Area (in ²)	Bolt Cage Moment of Inertia [Area] (in ⁴)	Top of Concrete to Bottom of Leveling Nut (in)	Plastic Section Modulus (in ³)	Maximum Bolt Tensile Force (kip)	Maximum Bolt Compressive Force (kip)	Maximum Bolt Shear Force (kip)	Bending Moment Due to Shear (kip-ft)	Maximum Force on Bolt Head (kip)
75	100	4.5	2.033	3.976	3.248	4056.00	1.125	1.401	197.517	202.594	3.304	0.201	60.875

Anchor Concrete Design

Anchor Embedment Depth (in)	Effective Embedment Depth (in)	Required Rebar Tensile Development Length (in)	Rebar Engaged by Bolts (in)	Spacing / Cover Dimension (in)	Transverse Reinf. Index (in)	Anchor Tensile Development Length (in)	Force Resisted by Development (%)	Hex Nut Width Across Flats (in)	Net Bearing Area of Hex Head (in ²)	Cracking Modification Factor	Pullout Reduction Factor	Increase Pullout Strength of Single Anchor (kip)	Design Pullout Strength (kip)
58.00	55.38	28.46	44.13	6.81	0.04	80.05	69%	3.500	6.633	1.4	0.70	297.146	208.003

Anchor Steel Design

Bolt Resistance Factor	Bolt Nominal Tensile Strength (kp)	Bolt Design Tensile Strength (kp)	Shear Reduction Factor	Grout Factor	Bolt Design Shear Strength [ACI] (kp)	Bolt Design Shear Strength [TIA] (kp)	Combined Shear & Tension	Flexure Resistance Factor	Bolt Design Flexural Strength (kip-ft)	Interaction Resistance Factor	Eta	Anchor Bolt Interaction Equation	Anchor Spacing - Ctr-Ctr (in)	Gap Between Rebar & Plate (in)
0.75	324.768	243.576	0.65	1.00	126.660	134.193	0.658	0.90	7.883	0.80	0.50	0.805	13.614	3.00
		OK			OK	OK	OK		OK			OK	OK	OK

Notes

- Foundation design is based on the Geotechnical Report dated 08/30/2016, by Power of Design Group, LLC; Project No. 16-7955.
- Groundwater was not encountered during the geotechnical investigation.
- Temporary steel casing or drilling slurry may be required for installation of the drilled pier. A clean-out bucket should be used to remove any cuttings and loose soils in the bottom of the shaft excavation.
- Concrete shall be placed by tremie methods if there is more than 1 inch of water or drilling fluid at the bottom of the shaft excavation or if water infiltration exceeds a rise of 1/4" per minute.
- Shaft excavation will require high power and high torque rock drilling equipment to progress through the existing limestone. A series of progressively larger rock augers may be needed to ream out a small pilot hole.

Pole Drilled Pier Foundation Design Summary

Max. Foundation Capacity Rating:	96.5%
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FOUNDATION DIMENSIONS	
Pole Outside Diameter:	45.13 in
Pier Extension:	0.5 ft
Depth:	16 ft
Pier Diameter:	6 ft
Clear Cover:	3 in
Clear Cover (Top of Pier):	3 in
Volume:	17.3 yd ³

PIER REINFORCEMENT	
Size:	8
Individual Bars:	1
	Single Bar
On Center Spacing:	6.5 in
Length:	192 in
Total Bar Quantity:	31
Total Weight:	1324 lbs

TIE REINFORCEMENT	
Size:	4
Length:	224 in
Circular Tie Outer Diameter:	66 in
Overlap:	18 in
Tie Termination Type:	Overlap
Total Quantity:	15
Total Weight:	187 lbs
Top Zone - Quantity:	2
Top Zone - Spacing:	5 in
Anchor Zone - Quantity:	
Anchor Zone - Spacing:	in
Middle Zone - Quantity:	11
Middle Zone - Spacing:	15.125 in
Bottom Zone - Quantity:	2
Bottom Zone - Spacing:	5 in

TOWER REACTIONS	
Tower Shear:	39.6 kip
Tower Moment:	2600.7 ft-kip
Tower Weight:	30.5 kip

MATERIAL SPECIFICATIONS	
Concrete Strength:	4000 psi
Concrete Weight:	150 pcf
Rebar Yield Strength:	60 ksi

ANCHORING DETAILS	
Anchor P/N:	108742
Anchor Diameter:	2.25 in
Anchor Length:	72 in
Anchor Quantity:	12
Anchor Projection:	12 in
	+ 2" - 0"
Template P/N	345624
Embedment Plate OD:	57 in
Bolt Circle Diameter:	52 in
Embedment Plate ID:	47 in

BACKFILL CRITERIA (NON-STRUCTURAL)	
Loose Lift Thickness:	8 in
Percent Compaction:	95%
ASTM Standard:	D698
Optimum Moisture Content	2%
Tolerance:	-2%

ECO #:	
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ADDITIONAL NOTES

- Foundation design is based on the Geotechnical Report dated 06/30/2016, by Power of Design Group, LLC; Project No. 16-7955.
- Groundwater was not encountered during the geotechnical investigation.
- Temporary steel casing or drilling slurry may be required for installation of the drilled pier. A clean-out bucket should be used to remove any cuttings and loose soils in the bottom of the shaft excavation.
- Concrete shall be placed by tremie methods if there is more than 1 inch of water or drilling fluid at the bottom of the shaft excavation or if water infiltration exceeds a rise of 1/4" per minute.
- Shaft excavation will require high power and high torque rock drilling equipment to progress through the existing limestone. A series of progressively larger rock augers may be needed to ream out a small pilot hole.

345622.LPile.lp6o

Pile Plus for windows, Version 2012-06.030

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

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This copy of LPile is licensed to:

JLM
Nello Corporation

Serial Number of Security Device: 138583407
Company Name Stored in Security Device: Nello Corp.

Files Used for Analysis

Path to file locations: N:\SO\23778\
Name of input data file: 345622.LPile.lp6d
Name of output report file: 345622.LPile.lp6o
Name of plot output file: 345622.LPile.lp6p
Name of runtime message file: 345622.LPile.lp6r

Date and Time of Analysis

Date: December 14, 2016 Time: 12:16:28

Problem Title

Job Number: S023778

Client: Verizon Wireless

Engineer: JLM

Description: FDN NO: 345622

Program Options

Engineering units are US Customary Units: pounds, inches, feet

Basic Program Options:

This analysis computes pile response to lateral loading and will compute nonlinear moment-curvature and nominal moment capacity for section types with nonlinear properties.

Computation Options:

- Analysis does not use p-y multipliers (individual pile or shaft only)
- Analysis assumes no shear resistance at pile tip
- Analysis for fixed-length pile or shaft only
- No computation of foundation stiffness matrix values
- Report pile response for full length of pile
- Analysis assumes no loading by soil movements acting on pile
- No p-y curves to be computed and reported for user-specified depths

Solution Control Parameters:

- Number of pile increments = 100
- Maximum number of iterations allowed = 500
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 100.0000 in

Pile Response Output Options:

- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1

 Pile Structural Properties and Geometry

- Total Number of Sections = 1
- Total Pile Length = 16.50 ft
- Depth of ground surface below top of pile = 0.50 ft

Pile dimensions used for p-y curve computations defined using 2 points. p-y curves are computed using values of pile diameter interpolated over the length of the pile.

Point	Depth X ft	Pile Diameter in
1	0.00000	72.0000000
2	16.500000	72.0000000

Input Structural Properties:

Pile Section No. 1:

- Section Type = Drilled Shaft (Bored Pile)
- Section Length = 16.50000000 ft
- Section Diameter = 72.00000000 in


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Ground Slope Angle           =      0.000 degrees
                             =      0.000 radians

Pile Batter Angle           =      0.000 degrees
                             =      0.000 radians

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                        Soil and Rock Layering Information
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```

The soil profile is modelled using 3 layers

Layer 1 is soft clay, p-y criteria by Matlock, 1970

```

Distance from top of pile to top of layer   =      0.50000 ft
Distance from top of pile to bottom of layer =      3.50000 ft
Effective unit weight at top of layer       =     100.00000 pcf
Effective unit weight at bottom of layer    =     100.00000 pcf
Undrained cohesion at top of layer         =     250.00000 psi
Undrained cohesion at bottom of layer      =     250.00000 psi
Epsilon-50 at top of layer                 =       0.10000
Epsilon-50 at bottom of layer              =       0.10000

```

Layer 2 is stiff clay with water-induced erosion

```

Distance from top of pile to top of layer   =      3.50000 ft
Distance from top of pile to bottom of layer =      6.50000 ft
Effective unit weight at top of layer       =     120.00000 pcf
Effective unit weight at bottom of layer    =     120.00000 pcf
Undrained cohesion at top of layer         =     2500.00000 psi
Undrained cohesion at bottom of layer      =     2500.00000 psi
Epsilon-50 at top of layer                 =       0.00700
Epsilon-50 at bottom of layer              =       0.00700
Subgrade k at top of layer                 =     100.00000 pci
Subgrade k at bottom of layer              =     100.00000 pci

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Layer 3 is weak rock, p-y criteria by Reese, 1997

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Distance from top of pile to top of layer   =      6.50000 ft
Distance from top of pile to bottom of layer =     17.00000 ft
Effective unit weight at top of layer       =     135.00000 pcf
Effective unit weight at bottom of layer    =     135.00000 pcf
Uniaxial compressive strength at top of layer =     278.00000 psi
Uniaxial compressive strength at bottom of layer =     278.00000 psi
Initial modulus of rock at top of layer    =       27800. psi
Initial modulus of rock at bottom of layer =       27800. psi
RQD of rock at top of layer                =       75.00000 %
RQD of rock at bottom of layer             =       75.00000 %
krm of rock at top of layer          =     0.0005000
krm of rock at bottom of layer        =     0.0005000

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(Depth of lowest soil layer extends 0.50 ft below pile tip)

Summary of Soil Properties

of Layer Friction Num. deg.	Uniaxial In-situ Test (p-y Type)	Layer RQD % In-situ Soil Type or Test Criteria) GSI Property	Strain Elastic Factor Subgrade Epsilon 50 Mod. pci	Layer Depth ft Factor	Effective Unit wt. kpy pcf pci	Undrained Rock Mass Cohesion Rock psf psi	Angle Emass
1	Soft Clay	--	0.10000	0.500	100.000	250.000	--
2	Stiff Clay w/o Free water,	Free water,	using k 0.00700	3.500	120.000 100.000	2500.000	--
3	Weak Rock	75.000	--	6.500	135.000	--	--
5.00E-04	278.000	--	--	17.000	135.000	27800.	--
5.00E-04	278.000	75.000	--	--	--	27800.	--

Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 2

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs
1	1	V = 52865. lbs	M = 41611584. in-lbs	40619.
2	1	V = 9701.00000 lbs	M = 7585140. in-lbs	25387.

V = perpendicular shear force applied to pile head
M = bending moment applied to pile head
y = lateral deflection relative to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Axial thrust is assumed to be acting axially for all pile batter angles.

 Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft:

Length of Section	=	16.50000000	ft
Shaft Diameter	=	72.00000000	in
Concrete Cover Thickness	=	3.00000000	in
Number of Reinforcing Bars	=	31	bars
Yield Stress of Reinforcing Bars	=	60.00000000	ksi
Modulus of Elasticity of Reinforcing Bars	=	29000.	ksi
Gross Area of Shaft	=	4071.50407905	sq. in.
Total Area of Reinforcing Steel	=	24.49000000	sq. in.
Area Ratio of Steel Reinforcement	=	0.60	percent
Edge-to-Edge Bar Spacing	=	5.57594093	in
Rebar Offset	=	0.00000000	in

Axial Structural Capacities:

Nom. Axial Structural Capacity = $0.85 F_c A_c + F_y A_s$	=	15229.248	kips
Tensile Load for Cracking of Concrete	=	-1765.129	kips
Nominal Axial Tensile Capacity	=	-1469.400	kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches
1	1.00000	0.79000	32.50000	0.00000
2	1.00000	0.79000	31.83472	6.54220
3	1.00000	0.79000	29.86613	12.81657
4	1.00000	0.79000	26.67481	18.56622
5	1.00000	0.79000	22.39142	23.55577
6	1.00000	0.79000	17.19133	27.58094
7	1.00000	0.79000	11.28742	30.47694
8	1.00000	0.79000	4.92140	32.12522
9	1.00000	0.79000	-1.64610	32.45829
10	1.00000	0.79000	-8.14621	31.46251
11	1.00000	0.79000	-14.31281	29.17865
12	1.00000	0.79000	-19.89344	25.70021
13	1.00000	0.79000	-24.65964	21.16961
14	1.00000	0.79000	-28.41627	15.77231
15	1.00000	0.79000	-31.00953	9.72930
16	1.00000	0.79000	-32.33325	3.28797
17	1.00000	0.79000	-32.33325	-3.28797
18	1.00000	0.79000	-31.00953	-9.72930
19	1.00000	0.79000	-28.41627	-15.77231
20	1.00000	0.79000	-24.65964	-21.16961
21	1.00000	0.79000	-19.89344	-25.70021
22	1.00000	0.79000	-14.31281	-29.17865

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23	1.00000	0.79000	-8.14621	-31.46251
24	1.00000	0.79000	-1.64610	-32.45829
25	1.00000	0.79000	4.92140	-32.12522
26	1.00000	0.79000	11.28742	-30.47694
27	1.00000	0.79000	17.19133	-27.58094
28	1.00000	0.79000	22.39142	-23.55577
29	1.00000	0.79000	26.67481	-18.56622
30	1.00000	0.79000	29.86613	-12.81657
31	1.00000	0.79000	31.83472	-6.54220

Concrete Properties:

Compressive Strength of Concrete	=	4.00000000	ksi
Modulus of Elasticity of Concrete	=	3604.99653259	ksi
Modulus of Rupture of Concrete	=	-0.47434164	ksi
Compression Strain at Peak Stress	=	0.00188627	
Tensile Strain at Fracture of Concrete	=	-0.00011537	
Maximum Coarse Aggregate Size	=	0.75000000	in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 2

Number	Axial Thrust Force kips
1	25.387
2	40.619

Definitions of Run Messages and Notes:

- C = concrete in section has cracked in tension.
- Y = stress in reinforcing steel has reached yield stress.
- T = ACI 318-08 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than than 0.003. See ACI 318-08, Section 10.3.4.
- Z = depth of tensile zone in concrete section is less than 10 percent of section depth.

Bending Stiffness (EI) = Computed Bending Moment / Curvature.
 Position of neutral axis is measured from edge of compression side of pile.
 Compressive stresses and strains are positive in sign.
 Tensile stresses and strains are negative in sign.

Axial Thrust Force = 25.387 kips

Bending Concrete Stress ksi	Bending Max Steel Stress ksi	Bending Run Moment in-kip Msg	Bending Stiffness kip-in ²	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max
0.000000417	2458.5812040	5900594890.	39.4198991	0.0000164	-0.0000136		
0.0687271	0.4719738						
0.000000833	4904.8512902	5885821548.	37.7155284	0.0000314	-0.0000286		
0.1309366	0.9027586						
0.000001250	7338.6697976	5870935838.	37.1474346	0.0000464	-0.0000436		

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0.1926501	1.3335445						
0.000001667	9760.0365717	5856021943.	36.8634074	0.0000614	-0.0000586		
0.2538676	1.7643314						
0.000002083	12169.	5841096759.	36.6930061	0.0000764	-0.0000736		
0.3145890	2.1951191						
0.000002500	14565.	5826165929.	36.5794179	0.0000914	-0.0000886		
0.3748144	2.6259078						
0.000002917	16949.	5811231873.	36.4982945	0.0001065	-0.0001035		
0.4345439	3.0566974						
0.000003333	16949.	5084827889.	16.9742855	0.0000566	-0.0001834		
0.2314321	-5.2843525	C					
0.000003750	16949.	4519847013.	16.7508379	0.0000628	-0.0002072		
0.2564390	-5.9691964	C					
0.000004167	16949.	4067862311.	16.5706888	0.0000690	-0.0002310		
0.2813390	-6.6542084	C					
0.000004583	16949.	3698056647.	16.4240410	0.0000753	-0.0002547		
0.3061699	-7.3391212	C					
0.000005000	16949.	3389885259.	16.3025210	0.0000815	-0.0002785		
0.3309315	-8.0239344	C					
0.000005417	16949.	3129124855.	16.2003320	0.0000878	-0.0003022		
0.3556238	-8.7086478	C					
0.000005833	16949.	2905615937.	16.1087050	0.0000940	-0.0003260		
0.3801377	-9.3940441	C					
0.000006250	16949.	2711908208.	16.0298533	0.0001002	-0.0003498		
0.4045829	-10.0793391	C					
0.000006667	16949.	2542413945.	15.9613975	0.0001064	-0.0003736		
0.4289597	-10.7645298	C					
0.000007083	16949.	2392860183.	15.9015045	0.0001126	-0.0003974		
0.4532680	-11.4496159	C					
0.000007500	16949.	2259923506.	15.8487487	0.0001189	-0.0004211		
0.4775076	-12.1345971	C					
0.000007917	16949.	2140980164.	15.8020045	0.0001251	-0.0004449		
0.5016786	-12.8194731	C					
0.000008333	16949.	2033931156.	15.7603715	0.0001313	-0.0004687		
0.5257807	-13.5042435	C					
0.000008750	16949.	1937077291.	15.7231208	0.0001376	-0.0004924		
0.5498139	-14.1889081	C					
0.000009167	16949.	1849028323.	15.6896560	0.0001438	-0.0005162		
0.5737780	-14.8734664	C					
0.000009583	16949.	1768635788.	15.6594844	0.0001501	-0.0005399		
0.5976730	-15.5579183	C					
0.0000100	16949.	1694942630.	15.6321955	0.0001563	-0.0005637		
0.6214988	-16.2422633	C					
0.0000104	16949.	1627144925.	15.6074444	0.0001626	-0.0005874		
0.6452552	-16.9265011	C					
0.0000108	16949.	1564562427.	15.5849395	0.0001688	-0.0006112		
0.6689421	-17.6106315	C					
0.0000113	16949.	1506615671.	15.5644321	0.0001751	-0.0006349		
0.6925594	-18.2946540	C					
0.0000117	16949.	1452807968.	15.5457091	0.0001814	-0.0006586		
0.7161070	-18.9785687	C					
0.0000121	16949.	1402711142.	15.5285870	0.0001876	-0.0006824		
0.7395848	-19.6623745	C					
0.0000125	16949.	1355954104.	15.5129066	0.0001939	-0.0007061		
0.7629928	-20.3460716	C					
0.0000129	16949.	1312213649.	15.4985292	0.0002002	-0.0007298		
0.7863307	-21.0296595	C					
0.0000133	16949.	1271206972.	15.4853336	0.0002065	-0.0007535		
0.8095984	-21.7131378	C					
0.0000138	16949.	1232685549.	15.4728303	0.0002128	-0.0007772		
0.8327761	-22.3966589	C					
0.0000142	16949.	1196430092.	15.4610615	0.0002190	-0.0008010		
0.8558692	-23.0801807	C					

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0.0000146	16949.	1162246375.	15.4502399	0.0002253	-0.0008247
0.8788928	-23.7635862 C				
0.0000150	16949.	1129961753.	15.4402875	0.0002316	-0.0008484
0.9018468	-24.4468751 C				
0.0000154	16949.	1099422246.	15.4311346	0.0002379	-0.0008721
0.9247311	-25.1300470 C				
0.0000158	16949.	1070490082.	15.4227189	0.0002442	-0.0008958
0.9475456	-25.8131016 C				
0.0000163	16949.	1043041618.	15.4149847	0.0002505	-0.0009195
0.9702901	-26.4960385 C				
0.0000171	16949.	992161539.	15.4013643	0.0002631	-0.0009669
1.0155687	-27.8615577 C				
0.0000179	16949.	946014491.	15.3899264	0.0002757	-0.0010143
1.0605661	-29.2266009 C				
0.0000188	16949.	903969403.	15.3803861	0.0002884	-0.0010616
1.1052813	-30.5911652 C				
0.0000196	16949.	865502619.	15.3725068	0.0003010	-0.0011090
1.1497133	-31.9552473 C				
0.0000204	17218.	843313944.	15.3660908	0.0003137	-0.0011563
1.1938611	-33.3188438 C				
0.0000213	17892.	841967818.	15.3609713	0.0003264	-0.0012036
1.2377238	-34.6819515 C				
0.0000221	18565.	840698655.	15.3570068	0.0003391	-0.0012509
1.2813003	-36.0445669 C				
0.0000229	19238.	839497915.	15.3540766	0.0003519	-0.0012981
1.3245896	-37.4066865 C				
0.0000238	19911.	838358256.	15.3520768	0.0003646	-0.0013454
1.3675907	-38.7683070 C				
0.0000246	20583.	837273332.	15.3509178	0.0003774	-0.0013926
1.4103027	-40.1294248 C				
0.0000254	21254.	836237625.	15.3505217	0.0003902	-0.0014398
1.4527243	-41.4900362 C				
0.0000263	21925.	835246318.	15.3508206	0.0004030	-0.0014870
1.4948547	-42.8501378 C				
0.0000271	22595.	834295185.	15.3517549	0.0004158	-0.0015342
1.5366926	-44.2097257 C				
0.0000279	23265.	833380502.	15.3532725	0.0004286	-0.0015814
1.5782372	-45.5687964 C				
0.0000288	23934.	832498977.	15.3553270	0.0004415	-0.0016285
1.6194872	-46.9273460 C				
0.0000296	24603.	831647686.	15.3578776	0.0004543	-0.0016757
1.6604416	-48.2853708 C				
0.0000304	25271.	830824024.	15.3608879	0.0004672	-0.0017228
1.7010992	-49.6428668 C				
0.0000313	25938.	830025665.	15.3643253	0.0004801	-0.0017699
1.7414590	-50.9998302 C				
0.0000321	26605.	829250519.	15.3681609	0.0004931	-0.0018169
1.7815198	-52.3562570 C				
0.0000329	27271.	828496710.	15.3723686	0.0005060	-0.0018640
1.8212805	-53.7121432 C				
0.0000338	27937.	827762543.	15.3769250	0.0005190	-0.0019110
1.8607399	-55.0674847 C				
0.0000346	28602.	827046488.	15.3818090	0.0005320	-0.0019580
1.8998968	-56.4222774 C				
0.0000354	29266.	826347155.	15.3870017	0.0005450	-0.0020050
1.9387502	-57.7765172 C				
0.0000363	29930.	825663281.	15.3924856	0.0005580	-0.0020520
1.9772987	-59.1301996 C				
0.0000371	30594.	824993716.	15.3982453	0.0005710	-0.0020990
2.0155412	-60.0000000 CY				
0.0000379	31256.	824337409.	15.4042664	0.0005841	-0.0021459
2.0534764	-60.0000000 CY				
0.0000387	31918.	823693399.	15.4105360	0.0005972	-0.0021928

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2.0911032	-60.0000000	CY					
0.0000396			32515.	821435723.	15.4066459	0.0006098	-0.0022402
2.1272262	-60.0000000	CY					
0.0000404			33028.	817190771.	15.3899338	0.0006220	-0.0022880
2.1614957	-60.0000000	CY					
0.0000412			33481.	811671612.	15.3647388	0.0006338	-0.0023362
2.1943725	-60.0000000	CY					
0.0000421			33897.	805471235.	15.3347925	0.0006453	-0.0023847
2.2262694	-60.0000000	CY					
0.0000429			34286.	798905774.	15.3021671	0.0006567	-0.0024333
2.2574205	-60.0000000	CY					
0.0000437			34641.	791797666.	15.2654985	0.0006679	-0.0024821
2.2876540	-60.0000000	CY					
0.0000446			34982.	784653726.	15.2283295	0.0006789	-0.0025311
2.3173934	-60.0000000	CY					
0.0000454			35289.	777001370.	15.1871074	0.0006897	-0.0025803
2.3462015	-60.0000000	CY					
0.0000462			35589.	769492747.	15.1466551	0.0007005	-0.0026295
2.3746713	-60.0000000	CY					
0.0000471			35868.	761800025.	15.1044151	0.0007112	-0.0026788
2.4024876	-60.0000000	CY					
0.0000479			36129.	753996455.	15.0609424	0.0007217	-0.0027283
2.4297199	-60.0000000	CY					
0.0000487			36389.	746438119.	15.0190304	0.0007322	-0.0027778
2.4567276	-60.0000000	CY					
0.0000496			36626.	738671757.	14.9749671	0.0007425	-0.0028275
2.4830400	-60.0000000	CY					
0.0000529			37479.	708265164.	14.7995897	0.0007831	-0.0030269
2.5842917	-60.0000000	CY					
0.0000562			38202.	679143963.	14.6186900	0.0008223	-0.0032277
2.6784416	-60.0000000	CY					
0.0000596			38815.	651437663.	14.4397731	0.0008604	-0.0034296
2.7667917	-60.0000000	CY					
0.0000629			39340.	625271245.	14.2669625	0.0008976	-0.0036324
2.8502477	-60.0000000	CY					
0.0000662			39821.	601073936.	14.1061183	0.0009345	-0.0038355
2.9299919	-60.0000000	CY					
0.0000696			40228.	578129484.	13.9433780	0.0009702	-0.0040398
3.0043239	-60.0000000	CY					
0.0000729			40608.	556914882.	13.7879716	0.0010054	-0.0042446
3.0748586	-60.0000000	CY					
0.0000762			40931.	536794949.	13.6369374	0.0010398	-0.0044502
3.1414220	-60.0000000	CY					
0.0000796			41247.	518288108.	13.4991195	0.0010743	-0.0046557
3.2055855	-60.0000000	CY					
0.0000829			41514.	500676383.	13.3643834	0.0011081	-0.0048619
3.2660530	-60.0000000	CY					
0.0000862			41763.	484205323.	13.2315172	0.0011412	-0.0050688
3.3228419	-60.0000000	CY					
0.0000896			42003.	468873455.	13.1051160	0.0011740	-0.0052760
3.3768312	-60.0000000	CY					
0.0000929			42209.	454269143.	12.9817268	0.0012062	-0.0054838
3.4276754	-60.0000000	CY					
0.0000963			42399.	440510133.	12.8647706	0.0012382	-0.0056918
3.4760440	-60.0000000	CY					
0.0000996			42588.	427661459.	12.7566515	0.0012703	-0.0058997
3.5224246	-60.0000000	CY					
0.0001029			42774.	415615367.	12.6560907	0.0013025	-0.0061075
3.5667358	-60.0000000	CY					
0.0001063			42922.	403969421.	12.5509385	0.0013335	-0.0063165
3.6073524	-60.0000000	CY					
0.0001096			43061.	392947783.	12.4466791	0.0013639	-0.0065261
3.6452090	-60.0000000	CY					

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0.0001129	43198.	382569272.	12.3494099	0.0013945	-0.0067355
3.6812598	-60.0000000 CY				
0.0001163	43335.	372778472.	12.2585390	0.0014251	-0.0069449
3.7154875	-60.0000000 CY				
0.0001196	43462.	363444552.	12.1711415	0.0014555	-0.0071545
3.7475687	-60.0000000 CY				
0.0001229	43576.	354512556.	12.0863165	0.0014856	-0.0073644
3.7774649	-60.0000000 CY				
0.0001263	43678.	345966930.	12.0042941	0.0015155	-0.0075745
3.8052795	-60.0000000 CY				
0.0001296	43780.	337854863.	11.9272152	0.0015456	-0.0077844
3.8313195	-60.0000000 CY				
0.0001329	43880.	330130682.	11.8518556	0.0015753	-0.0079947
3.8552611	-60.0000000 CY				
0.0001363	43975.	322754874.	11.7757637	0.0016044	-0.0082056
3.8769236	-60.0000000 CY				
0.0001396	44068.	315713084.	11.7034664	0.0016336	-0.0084164
3.8968462	-60.0000000 CY				
0.0001429	44152.	308938259.	11.6329180	0.0016625	-0.0086275
3.9148675	-60.0000000 CY				
0.0001462	44224.	302388897.	11.5630293	0.0016911	-0.0088389
3.9309518	-60.0000000 CY				
0.0001496	44294.	296118736.	11.4965061	0.0017197	-0.0090503
3.9453722	-60.0000000 CY				
0.0001529	44363.	290112519.	11.4332607	0.0017483	-0.0092617
3.9581305	-60.0000000 CY				
0.0001562	44431.	284358370.	11.3733050	0.0017771	-0.0094729
3.9692289	-60.0000000 CY				
0.0001596	44498.	278840425.	11.3164398	0.0018059	-0.0096841
3.9786506	-60.0000000 CY				
0.0001629	44565.	273544120.	11.2624827	0.0018348	-0.0098952
3.9863784	-60.0000000 CY				
0.0001662	44631.	268456056.	11.2112657	0.0018639	-0.0101061
3.9923949	-60.0000000 CY				
0.0001696	44695.	263555308.	11.1622016	0.0018929	-0.0103171
3.9966733	-60.0000000 CY				
0.0001729	44744.	258760823.	11.1062747	0.0019205	-0.0105295
3.9991148	-60.0000000 CY				
0.0001762	44793.	254143573.	11.0527004	0.0019480	-0.0107420
3.9999968	-60.0000000 CY				
0.0001796	44838.	249675869.	11.0008743	0.0019756	-0.0109544
3.9922708	-60.0000000 CY				
0.0001829	44880.	245356976.	10.9507350	0.0020031	-0.0111669
3.9926696	-60.0000000 CY				
0.0002029	45122.	222366643.	10.6943366	0.0021701	-0.0124399
3.9925396	60.0000000 CY				
0.0002229	45318.	203294668.	10.4894118	0.0023383	-0.0137117
3.9864571	60.0000000 CY				
0.0002429	45454.	187116003.	10.2966679	0.0025012	-0.0149888
3.9991186	60.0000000 CY				
0.0002629	45575.	173344263.	10.1365976	0.0026651	-0.0162649
3.9940024	60.0000000 CY				
0.0002829	45676.	161448337.	10.0001509	0.0028292	-0.0175408
3.9917580	60.0000000 CY				
0.0003029	45753.	151042273.	9.8806187	0.0029930	-0.0188170
3.9903149	60.0000000 CY				
0.0003229	45816.	141882929.	9.7799459	0.0031581	-0.0200919
3.9999463	60.0000000 CYT				
0.0003429	45867.	133756817.	9.6958547	0.0033249	-0.0213651
3.9747145	60.0000000 CYT				
0.0003629	45910.	126503802.	9.6102763	0.0034877	-0.0226423
3.9894241	60.0000000 CYT				
0.0003829	45939.	119972122.	9.5456939	0.0036552	-0.0239148

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3.9993993 60.0000000 CYT
 0.0004029 45956. 114057448. 9.4907068 0.0038240 -0.0251860
 3.9836833 60.0000000 CYT

Axial Thrust Force = 40.619 kips

Bending Concrete Stress ksi	Max Curvature rad/in.	Bending Steel Stress ksi	Run Moment in-kip Msg	Bending Stiffness kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max
0.000000417	2458.3624690	5900069926.	41.4719070	0.0000173	-0.0000127			
0.0723212	0.4967689	0.000000833	4904.6298059	5885555767.	38.7448335	0.0000323	-0.0000277	
0.1345136	0.9276335	0.000001250	7338.4466187	5870757295.	37.8358705	0.0000473	-0.0000427	
0.1962100	1.3585003	0.000001667	9759.8118372	5855887102.	37.3814227	0.0000623	-0.0000577	
0.2574103	1.7893688	0.000002083	12169.	5840988155.	37.1087791	0.0000773	-0.0000727	
0.3181144	2.2202387	0.000002500	14565.	5826074824.	36.9270376	0.0000923	-0.0000877	
0.3783224	2.6511102	0.000002917	16949.	5811153262.	36.7972396	0.0001073	-0.0001027	
0.4380343	3.0819832	0.000003333	16949.	5084759104.	18.1443664	0.0000605	-0.0001795	
0.2474711	-5.1712446	0.000003750	16949.	4519785870.	17.8134642	0.0000668	-0.0002032	
0.2727709	-5.8536358	0.000004167	16949.	4067807283.	17.5451050	0.0000731	-0.0002269	
0.2979233	-6.5364665	0.000004583	16949.	3698006621.	17.3193287	0.0000794	-0.0002506	
0.3228749	-7.2201226	0.000005000	16949.	3389839403.	17.1318547	0.0000857	-0.0002743	
0.3477557	-7.9036811	0.000005417	16949.	3129082525.	16.9738458	0.0000919	-0.0002981	
0.3725656	-8.5871417	0.000005833	16949.	2905576631.	16.8348349	0.0000982	-0.0003218	
0.3972071	-9.2712071	0.000006250	16949.	2711871522.	16.7125244	0.0001045	-0.0003455	
0.4217186	-9.9556049	0.000006667	16949.	2542379552.	16.6060255	0.0001107	-0.0003693	
0.4461604	-10.6399017	0.000007083	16949.	2392827814.	16.5125494	0.0001170	-0.0003930	
0.4705324	-11.3240971	0.000007500	16949.	2259892935.	16.4299270	0.0001232	-0.0004168	
0.4948344	-12.0081909	0.000007917	16949.	2140951202.	16.3564456	0.0001295	-0.0004405	
0.5190663	-12.6921827	0.000008333	16949.	2033903642.	16.2907355	0.0001358	-0.0004642	
0.5432281	-13.3760722	0.000008750	16949.	1937051087.	16.2316876	0.0001420	-0.0004880	
0.5673197	-14.0598592	0.000009167	16949.	1849003311.	16.1772292	0.0001483	-0.0005117	
0.5912990	-14.7438532	0.000009583	16949.	1768611862.	16.1263328	0.0001545	-0.0005355	
0.6151505	-15.4281733	0.0000100	16949.	1694919701.	16.0800477	0.0001608	-0.0005592	
0.6389326	-16.1123861		C					

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0.0000104	16949.	1627122913.	16.0378218	0.0001671	-0.0005829
0.6626452	-16.7964913 C				
0.0000108	16949.	1564541263.	15.9991877	0.0001733	-0.0006067
0.6862882	-17.4804885 C				
0.0000113	16949.	1506595290.	15.9637474	0.0001796	-0.0006304
0.7098616	-18.1643774 C				
0.0000117	16949.	1452788315.	15.9311597	0.0001859	-0.0006541
0.7333652	-18.8481576 C				
0.0000121	16949.	1402692167.	15.9011303	0.0001921	-0.0006779
0.7567989	-19.5318289 C				
0.0000125	16949.	1355935761.	15.8734045	0.0001984	-0.0007016
0.7801625	-20.2153908 C				
0.0000129	16949.	1312195898.	15.8477602	0.0002047	-0.0007253
0.8034561	-20.8988431 C				
0.0000133	16949.	1271189776.	15.8240032	0.0002110	-0.0007490
0.8266794	-21.5821854 C				
0.0000138	16949.	1232668874.	15.8019627	0.0002173	-0.0007727
0.8498323	-22.2654174 C				
0.0000142	16949.	1196413907.	15.7814881	0.0002236	-0.0007964
0.8729148	-22.9485386 C				
0.0000146	16949.	1162230652.	15.7624460	0.0002299	-0.0008201
0.8959268	-23.6315488 C				
0.0000150	16949.	1129946468.	15.7447179	0.0002362	-0.0008438
0.9188680	-24.3144477 C				
0.0000154	16949.	1099407374.	15.7281981	0.0002425	-0.0008675
0.9417384	-24.9972352 C				
0.0000158	16949.	1070475601.	15.7127918	0.0002488	-0.0008912
0.9645379	-25.6799101 C				
0.0000163	16949.	1043027508.	15.6984142	0.0002551	-0.0009149
0.9872664	-26.3624726 C				
0.0000171	16949.	992148118.	15.6724469	0.0002677	-0.0009623
1.0325099	-27.7272586 C				
0.0000179	16949.	946001694.	15.6497692	0.0002804	-0.0010096
1.0774678	-29.0915907 C				
0.0000188	16949.	903957174.	15.6299479	0.0002931	-0.0010569
1.1221393	-30.4554658 C				
0.0000196	16949.	865490911.	15.6126236	0.0003057	-0.0011043
1.1665233	-31.8188808 C				
0.0000204	17534.	858802872.	15.5974955	0.0003184	-0.0011516
1.2106189	-33.1818328 C				
0.0000213	18208.	856835445.	15.5843103	0.0003312	-0.0011988
1.2544252	-34.5443192 C				
0.0000221	18881.	854991753.	15.5728528	0.0003439	-0.0012461
1.2979412	-35.9063359 C				
0.0000229	19554.	853258097.	15.5629391	0.0003567	-0.0012933
1.3411659	-37.2678803 C				
0.0000238	20226.	851622761.	15.5544113	0.0003694	-0.0013406
1.3840983	-38.6289494 C				
0.0000246	20898.	850075617.	15.5471330	0.0003822	-0.0013878
1.4267374	-39.9895399 C				
0.0000254	21569.	848607864.	15.5409857	0.0003950	-0.0014350
1.4690822	-41.3496485 C				
0.0000263	22239.	847211815.	15.5358659	0.0004078	-0.0014822
1.5111316	-42.7092721 C				
0.0000271	22909.	845880730.	15.5316830	0.0004206	-0.0015294
1.5528846	-44.0684073 C				
0.0000279	23579.	844608671.	15.5283571	0.0004335	-0.0015765
1.5943403	-45.4270508 C				
0.0000288	24247.	843390388.	15.5258180	0.0004464	-0.0016236
1.6354974	-46.7851992 C				
0.0000296	24916.	842221221.	15.5240030	0.0004593	-0.0016707
1.6763550	-48.1428490 C				
0.0000304	25583.	841097019.	15.5228566	0.0004722	-0.0017178

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1.7169120	-49.4999968	C					
	0.0000313		26250.	840014073.	15.5223293	0.0004851	-0.0017649
1.7571673	-50.8566390	C					
	0.0000321		26917.	838969057.	15.5223765	0.0004980	-0.0018120
1.7971199	-52.2127721	C					
	0.0000329		27583.	837958983.	15.5229584	0.0005110	-0.0018590
1.8367684	-53.5683925	C					
	0.0000338		28248.	836981153.	15.5240392	0.0005239	-0.0019061
1.8761120	-54.9234965	C					
	0.0000346		28913.	836033131.	15.5255866	0.0005369	-0.0019531
1.9151494	-56.2780804	C					
	0.0000354		29577.	835112709.	15.5275711	0.0005499	-0.0020001
1.9538795	-57.6321404	C					
	0.0000363		30240.	834217878.	15.5299663	0.0005630	-0.0020470
1.9923012	-58.9856728	C					
	0.0000371		30903.	833346811.	15.5327482	0.0005760	-0.0020940
2.0304133	-60.0000000	CY					
	0.0000379		31566.	832497840.	15.5358947	0.0005891	-0.0021409
2.0682145	-60.0000000	CY					
	0.0000387		32227.	831669437.	15.5393858	0.0006022	-0.0021878
2.1057038	-60.0000000	CY					
	0.0000396		32837.	829578368.	15.5354624	0.0006149	-0.0022351
2.1419943	-60.0000000	CY					
	0.0000404		33356.	825300223.	15.5182930	0.0006272	-0.0022828
2.1763823	-60.0000000	CY					
	0.0000412		33815.	819765199.	15.4932915	0.0006391	-0.0023309
2.2094513	-60.0000000	CY					
	0.0000421		34236.	813525616.	15.4627261	0.0006507	-0.0023793
2.2414421	-60.0000000	CY					
	0.0000429		34630.	806920241.	15.4287224	0.0006621	-0.0024279
2.2725914	-60.0000000	CY					
	0.0000437		34986.	799686530.	15.3901012	0.0006733	-0.0024767
2.3027478	-60.0000000	CY					
	0.0000446		35329.	792422119.	15.3510555	0.0006844	-0.0025256
2.3324105	-60.0000000	CY					
	0.0000454		35640.	784725797.	15.3085527	0.0006953	-0.0025747
2.3612088	-60.0000000	CY					
	0.0000462		35941.	777105905.	15.2663597	0.0007061	-0.0026239
2.3896043	-60.0000000	CY					
	0.0000471		36224.	769368982.	15.2229313	0.0007167	-0.0026733
2.4174089	-60.0000000	CY					
	0.0000479		36485.	761429867.	15.1775771	0.0007273	-0.0027227
2.4445359	-60.0000000	CY					
	0.0000487		36745.	753744455.	15.1338799	0.0007378	-0.0027722
2.4714420	-60.0000000	CY					
	0.0000496		36987.	745946469.	15.0888353	0.0007482	-0.0028218
2.4977504	-60.0000000	CY					
	0.0000529		37845.	715189931.	14.9079459	0.0007889	-0.0030211
2.5987221	-60.0000000	CY					
	0.0000562		38575.	685785138.	14.7292657	0.0008285	-0.0032215
2.6935609	-60.0000000	CY					
	0.0000596		39190.	657742157.	14.5451754	0.0008667	-0.0034233
2.7815367	-60.0000000	CY					
	0.0000629		39719.	631290689.	14.3679002	0.0009040	-0.0036260
2.8646426	-60.0000000	CY					
	0.0000662		40204.	606852997.	14.2032767	0.0009410	-0.0038290
2.9440647	-60.0000000	CY					
	0.0000696		40615.	583682845.	14.0434865	0.0009772	-0.0040328
3.0190092	-60.0000000	CY					
	0.0000729		40997.	562250438.	13.8847923	0.0010124	-0.0042376
3.0892023	-60.0000000	CY					
	0.0000762		41321.	541918898.	13.7303255	0.0010469	-0.0044431
3.1553569	-60.0000000	CY					

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0.0000796	41638.	523199095.	13.5890990	0.0010815	-0.0046485
3.2190625	-60.0000000 CY				
0.0000829	41909.	505434023.	13.4518988	0.0011154	-0.0048546
3.2791768	-60.0000000 CY				
0.0000862	42161.	488821692.	13.3231942	0.0011491	-0.0050609
3.3365697	-60.0000000 CY				
0.0000896	42404.	473341769.	13.1945614	0.0011820	-0.0052680
3.3901726	-60.0000000 CY				
0.0000929	42611.	458597895.	13.0688218	0.0012143	-0.0054757
3.4405844	-60.0000000 CY				
0.0000963	42801.	444684219.	12.9491664	0.0012464	-0.0056836
3.4884386	-60.0000000 CY				
0.0000996	42989.	431691181.	12.8385359	0.0012785	-0.0058915
3.5342997	-60.0000000 CY				
0.0001029	43175.	419512376.	12.7356848	0.0013107	-0.0060993
3.5780944	-60.0000000 CY				
0.0001063	43329.	407800066.	12.6335181	0.0013423	-0.0063077
3.6189249	-60.0000000 CY				
0.0001096	43470.	396680921.	12.5303922	0.0013731	-0.0065169
3.6567017	-60.0000000 CY				
0.0001129	43607.	386188354.	12.4309664	0.0014037	-0.0067263
3.6921898	-60.0000000 CY				
0.0001163	43744.	376289995.	12.3380696	0.0014343	-0.0069357
3.7258490	-60.0000000 CY				
0.0001196	43872.	366870136.	12.2492147	0.0014648	-0.0071452
3.7574179	-60.0000000 CY				
0.0001229	43987.	357862050.	12.1631814	0.0014951	-0.0073549
3.7868159	-60.0000000 CY				
0.0001263	44090.	349224598.	12.0794007	0.0015250	-0.0075650
3.8140514	-60.0000000 CY				
0.0001296	44191.	341025392.	12.0006603	0.0015551	-0.0077749
3.8395066	-60.0000000 CY				
0.0001329	44292.	333231364.	11.9265888	0.0015852	-0.0079848
3.8631640	-60.0000000 CY				
0.0001363	44390.	325800971.	11.8542043	0.0016151	-0.0081949
3.8847461	-60.0000000 CY				
0.0001396	44483.	318684652.	11.7804033	0.0016443	-0.0084057
3.9040308	-60.0000000 CY				
0.0001429	44570.	311862880.	11.7093951	0.0016735	-0.0086165
3.9214959	-60.0000000 CY				
0.0001462	44642.	305244024.	11.6380524	0.0017021	-0.0088279
3.9369304	-60.0000000 CY				
0.0001496	44712.	298910103.	11.5702582	0.0017307	-0.0090393
3.9507033	-60.0000000 CY				
0.0001529	44780.	292840279.	11.5056914	0.0017594	-0.0092506
3.9627985	-60.0000000 CY				
0.0001562	44848.	287025204.	11.4444775	0.0017882	-0.0094618
3.9732266	-60.0000000 CY				
0.0001596	44915.	281448846.	11.3864135	0.0018171	-0.0096729
3.9819703	-60.0000000 CY				
0.0001629	44981.	276096485.	11.3313134	0.0018461	-0.0098839
3.9890124	-60.0000000 CY				
0.0001662	45046.	270954578.	11.2790063	0.0018751	-0.0100949
3.9943350	-60.0000000 CY				
0.0001696	45111.	266010648.	11.2293349	0.0019043	-0.0103057
3.9979201	-60.0000000 CY				
0.0001729	45165.	261194879.	11.1791654	0.0019331	-0.0105169
3.9997314	-60.0000000 CY				
0.0001762	45215.	256536688.	11.1272402	0.0019612	-0.0107288
3.9964086	-60.0000000 CY				
0.0001796	45260.	252030001.	11.0748240	0.0019889	-0.0109411
3.9906151	-60.0000000 CY				
0.0001829	45302.	247666084.	11.0236422	0.0020164	-0.0111536

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3.9948910	-60.0000000	CY					
	0.0002029		45542.	224435153.	10.7619759	0.0021838	-0.0124262
3.9948418	60.0000000	CY					
	0.0002229		45738.	205179948.	10.5537756	0.0023526	-0.0136974
3.9897665	60.0000000	CY					
	0.0002429		45878.	188861888.	10.3681561	0.0025186	-0.0149714
3.9936740	60.0000000	CY					
	0.0002629		45998.	174952137.	10.2040260	0.0026828	-0.0162472
3.9965605	60.0000000	CY					
	0.0002829		46100.	162945547.	10.0657955	0.0028478	-0.0175222
3.9859352	60.0000000	CY					
	0.0003029		46177.	152441043.	9.9434836	0.0030120	-0.0187980
3.9938813	60.0000000	CYT					
	0.0003229		46237.	143185327.	9.8416569	0.0031780	-0.0200720
3.9959198	60.0000000	CYT					
	0.0003429		46289.	134984774.	9.7598316	0.0033468	-0.0213432
3.9765870	60.0000000	CYT					
	0.0003629		46333.	127669298.	9.6831618	0.0035142	-0.0226158
3.9944060	60.0000000	CYT					
	0.0003829		46358.	121066338.	9.6196854	0.0036835	-0.0238865
3.9983644	60.0000000	CYT					
	0.0004029		46377.	115102351.	9.5659758	0.0038543	-0.0251557
3.9741750	60.0000000	CYT					

 Summary of Results for Nominal (Unfactored) Moment Capacity for Section 1

Moment values interpolated at maximum compressive strain = 0.003
 or maximum developed moment if pile fails at smaller strains.

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
1	25.387	45755.897	0.00300000
2	40.619	46171.291	0.00300000

Note note that the values of moment capacity in the table above are not factored by a strength reduction factor (phi-factor).

In ACI 318-08, the value of the strength reduction factor depends on whether the transverse reinforcing steel bars are spirals or tied hoops.

The above values should be multiplied by the appropriate strength reduction factor to compute ultimate moment capacity according to ACI 318-08, Section 9.3.2.2 or the value required by the design standard being followed.

 Computed Values of Pile Loading and Deflection
 for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	=	52865.000 lbs
Applied moment at pile head	=	41611584.000 in-lbs
Axial thrust load on pile head	=	40619.000 lbs

Depth Deflect. Bending Shear Slope Total Bending Soil Res.

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Soil Spr. X Es*h inches lb/inch	Lat. y Load inches lb/inch	Moment in-lbs	Force lbs	S radians	Stress psi*	Stiffness lb-in^2	p lb/in
0.00	1.3302	41611584.	52865.	-0.0172	0.000	5.178E+11	0.000
0.000	0.000						
1.980	1.2963	41717636.	52865.	-0.0171	0.000	5.178E+11	0.000
0.000	0.000						
3.960	1.2626	41823676.	52865.	-0.0169	0.000	5.178E+11	0.000
0.000	0.000						
5.940	1.2293	41929702.	52865.	-0.0168	0.000	5.040E+11	0.000
0.000	0.000						
7.920	1.1963	42035716.	52788.	-0.0166	0.000	4.969E+11	-77.9070
128.9467	0.000						
9.900	1.1636	42141410.	52632.	-0.0164	0.000	4.901E+11	-79.1915
134.7534	0.000						
11.880	1.1313	42246781.	52474.	-0.0162	0.000	4.832E+11	-80.4327
140.7779	0.000						
13.860	1.0993	42351822.	52314.	-0.0161	0.000	4.765E+11	-81.6300
147.0319	0.000						
15.840	1.0676	42456529.	52151.	-0.0159	0.000	4.695E+11	-82.7829
153.5284	0.000						
17.820	1.0363	42560897.	51986.	-0.0157	0.000	4.621E+11	-83.8907
160.2808	0.000						
19.800	1.0054	42664921.	51819.	-0.0155	0.000	4.546E+11	-84.9530
167.3038	0.000						
21.780	0.9748	42768598.	51650.	-0.0153	0.000	4.470E+11	-85.9691
174.6130	0.000						
23.760	0.9446	42871922.	51479.	-0.0151	0.000	4.397E+11	-86.9385
182.2250	0.000						
25.740	0.9148	42974890.	51306.	-0.0150	0.000	4.327E+11	-87.8606
190.1577	0.000						
27.720	0.8854	43077497.	51131.	-0.0148	0.000	4.258E+11	-88.7349
198.4305	0.000						
29.700	0.8564	43179741.	50954.	-0.0146	0.000	4.191E+11	-89.5608
207.0639	0.000						
31.680	0.8278	43281617.	50776.	-0.0143	0.000	4.113E+11	-90.3378
216.0802	0.000						
33.660	0.7996	43383122.	50596.	-0.0141	0.000	4.034E+11	-91.0652
225.5032	0.000						
35.640	0.7718	43484253.	50415.	-0.0139	0.000	3.955E+11	-91.7426
235.3582	0.000						
37.620	0.7445	43585007.	50233.	-0.0137	0.000	3.878E+11	-92.3696
245.6726	0.000						
39.600	0.7175	43685380.	50050.	-0.0135	0.000	3.804E+11	-92.9456
256.4756	0.000						
41.580	0.6911	43785371.	49865.	-0.0132	0.000	3.732E+11	-93.4703
267.7987	0.000						
43.560	0.6651	43884977.	49376.	-0.0130	0.000	3.658E+11	-401.1505
1194.2537	0.000						
45.540	0.6396	43982992.	48471.	-0.0128	0.000	3.582E+11	-512.3837
1586.2937	0.000						
47.520	0.6145	44078977.	47356.	-0.0125	0.000	3.501E+11	-613.9881
1978.3337	0.000						
49.500	0.5900	44172536.	46049.	-0.0123	0.000	3.425E+11	-706.2643
2370.3737	0.000						
51.480	0.5659	44263306.	44568.	-0.0120	0.000	3.354E+11	-789.5222
2762.4137	0.000						
53.460	0.5424	44350959.	42931.	-0.0118	0.000	3.287E+11	-864.0810
3154.4537	0.000						

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55.440	0.5194	44435203.	41155.	-0.0115	0.000	3.223E+11	-930.2685
3546.4937	0.000						
57.420	0.4969	44515778.	39255.	-0.0112	0.000	3.161E+11	-988.4219
3938.5337	0.000						
59.400	0.4750	44592456.	37248.	-0.0109	0.000	3.099E+11	-1038.8876
4330.5737	0.000						
61.380	0.4536	44665038.	35148.	-0.0106	0.000	3.032E+11	-1082.0226
4722.6137	0.000						
63.360	0.4329	44733354.	32970.	-0.0103	0.000	2.971E+11	-1118.1964
5114.6537	0.000						
65.340	0.4127	44797263.	30727.	-0.0100	0.000	2.914E+11	-1147.7875
5506.6937	0.000						
67.320	0.3931	44856647.	28431.	-0.009732	0.000	2.864E+11	-1171.1833
5898.7337	0.000						
69.300	0.3742	44911415.	26095.	-0.009419	0.000	2.818E+11	-1188.7783
6290.7737	0.000						
71.280	0.3558	44961498.	23729.	-0.009101	0.000	2.777E+11	-1200.9733
6682.8137	0.000						
73.260	0.3381	45006846.	21344.	-0.008778	0.000	2.741E+11	-1208.1748
7074.8537	0.000						
75.240	0.3211	45047431.	18949.	-0.008451	0.000	2.709E+11	-1210.7938
7466.8937	0.000						
77.220	0.3047	45083243.	16553.	-0.008120	0.000	2.682E+11	-1209.2448
7858.9337	0.000						
79.200	0.2889	45114288.	6823.3767	-0.007785	0.000	2.658E+11	-8618.8796
59068.	0.000						
81.180	0.2738	45111516.	-10445.	-0.007449	0.000	2.660E+11	-8824.0667
63805.	0.000						
83.160	0.2594	45074124.	-28112.	-0.007116	0.000	2.689E+11	-9021.1965
68855.	0.000						
85.140	0.2457	45001337.	-46161.	-0.006787	0.000	2.745E+11	-9210.4846
74238.	0.000						
87.120	0.2325	44892416.	-64578.	-0.006468	0.000	2.833E+11	-9392.1163
79972.	0.000						
89.100	0.2200	44746649.	-83347.	-0.006162	0.000	2.959E+11	-9566.2265
86081.	0.000						
91.080	0.2081	44563355.	-102453.	-0.005871	0.000	3.124E+11	-9732.8754
92589.	0.000						
93.060	0.1968	44341881.	-121881.	-0.005596	0.000	3.294E+11	-9892.0339
99528.	0.000						
95.040	0.1860	44081605.	-141618.	-0.005338	0.000	3.499E+11	-10044.
106931.	0.000						
97.020	0.1757	43781933.	-161647.	-0.005097	0.000	3.734E+11	-10188.
114838.	0.000						
99.000	0.1658	43442303.	-181953.	-0.004873	0.000	3.988E+11	-10324.
123295.	0.000						
100.980	0.1564	43062183.	-202521.	-0.004666	0.000	4.268E+11	-10452.
132357.	0.000						
102.960	0.1473	42641073.	-223333.	-0.004473	0.000	4.563E+11	-10571.
142086.	0.000						
104.940	0.1386	42178503.	-244374.	-0.004295	0.000	4.877E+11	-10682.
152557.	0.000						
106.920	0.1303	41674043.	-265625.	-0.004130	0.000	5.207E+11	-10783.
163857.	0.000						
108.900	0.1223	41127294.	-287066.	-0.003978	0.000	5.539E+11	-10875.
176089.	0.000						
110.880	0.1146	40537900.	-308679.	-0.003836	0.000	5.878E+11	-10956.
189375.	0.000						
112.860	0.1071	39905542.	-330442.	-0.003704	0.000	6.216E+11	-11026.
203863.	0.000						
114.840	0.0999	39229946.	-352332.	-0.003581	0.000	6.557E+11	-11085.
219729.	0.000						
116.820	0.0929	38510885.	-374324.	-0.003467	0.000	6.882E+11	-11130.

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237190.	0.000						
118.800	0.0862	37748181.	-396392.	-0.003359	0.000	7.185E+11	-11162.
256510.	0.000						
120.780	0.0796	36941712.	-418509.	-0.003258	0.000	7.474E+11	-11178.
278020.	0.000						
122.760	0.0733	36091411.	-440641.	-0.003163	0.000	7.730E+11	-11178.
302138.	0.000						
124.740	0.0671	35197281.	-462756.	-0.003073	0.000	7.952E+11	-11160.
329398.	0.000						
126.720	0.0611	34259392.	-484815.	-0.002988	0.000	8.131E+11	-11122.
360497.	0.000						
128.700	0.0553	33277896.	-506775.	-0.002906	0.000	8.259E+11	-11060.
396362.	0.000						
130.680	0.0496	32253032.	-528588.	-0.002828	0.000	8.316E+11	-10973.
438259.	0.000						
132.660	0.0441	31185142.	-550200.	-0.002752	0.000	8.330E+11	-10857.
487957.	0.000						
134.640	0.0387	30074683.	-571547.	-0.002679	0.000	8.344E+11	-10705.
548027.	0.000						
136.620	0.0334	28922248.	-592552.	-0.002609	0.000	8.360E+11	-10512.
622375.	0.000						
138.600	0.0283	27728595.	-613125.	-0.002542	0.000	8.377E+11	-10268.
717262.	0.000						
140.580	0.0234	26494683.	-633148.	-0.002478	0.000	8.396E+11	-9957.8275
843470.	0.000						
142.560	0.0185	25221727.	-652470.	-0.002418	0.000	8.417E+11	-9559.1841
1021436.	0.000						
144.540	0.0138	23911290.	-670875.	-0.002360	0.000	8.440E+11	-9032.0899
1295723.	0.000						
146.520	0.009185	22565440.	-688029.	-0.002305	0.000	8.466E+11	-8294.7140
1788074.	0.000						
148.500	0.004673	21187066.	-703290.	-0.002254	0.000	8.494E+11	-7120.8159
3017418.	0.000						
150.480	0.000258	19780772.	-712003.	-0.002207	0.000	8.527E+11	-1679.6792
12892528.	0.000						
152.460	-0.004066	18367890.	-706636.	-0.002162	0.000	8.564E+11	7100.8917
3458105.	0.000						
154.440	-0.008305	16982842.	-691070.	-0.002137	0.000	4.357E+12	8622.6963
2055653.	0.000						
156.420	-0.0125	15631598.	-672926.	-0.002131	0.000	5.819E+12	9704.2182
1533505.	0.000						
158.400	-0.0167	14318398.	-652832.	-0.002126	0.000	5.827E+12	10593.
1252644.	0.000						
160.380	-0.0209	13046726.	-631088.	-0.002121	0.000	5.835E+12	11371.
1074817.	0.000						
162.360	-0.0251	11819633.	-607873.	-0.002117	0.000	5.843E+12	12078.
951155.	0.000						
164.340	-0.0293	10639891.	-583307.	-0.002113	0.000	5.850E+12	12736.
859729.	0.000						
166.320	-0.0335	9510077.	-557476.	-0.002110	0.000	5.857E+12	13356.
789150.	0.000						
168.300	-0.0377	8432624.	-530444.	-0.002107	0.000	5.863E+12	13949.
732881.	0.000						
170.280	-0.0419	7409855.	-502261.	-0.002104	0.000	5.870E+12	14519.
686890.	0.000						
172.260	-0.0460	6444009.	-472965.	-0.002102	0.000	5.875E+12	15073.
648546.	0.000						
174.240	-0.0502	5537254.	-442587.	-0.002100	0.000	5.880E+12	15612.
616055.	0.000						
176.220	-0.0543	4691701.	-411154.	-0.002098	0.000	5.886E+12	16139.
588149.	0.000						
178.200	-0.0585	3909420.	-378687.	-0.002096	0.000	5.889E+12	16656.
563908.	0.000						

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180.180	-0.0626	3192437.	-345204.	-0.002095	0.000	5.893E+12	17165.
542643.	0.000						
182.160	-0.0668	2542749.	-310719.	-0.002094	0.000	5.899E+12	17668.
523831.	0.000						
184.140	-0.0709	1962325.	-275246.	-0.002094	0.000	5.900E+12	18164.
507066.	0.000						
186.120	-0.0751	1453110.	-238796.	-0.002093	0.000	5.900E+12	18655.
492028.	0.000						
188.100	-0.0792	1017030.	-201377.	-0.002093	0.000	5.900E+12	19142.
478461.	0.000						
190.080	-0.0834	655995.	-162997.	-0.002092	0.000	5.900E+12	19625.
466158.	0.000						
192.060	-0.0875	371898.	-123664.	-0.002092	0.000	5.900E+12	20105.
454949.	0.000						
194.040	-0.0916	166621.	-83384.	-0.002092	0.000	5.900E+12	20582.
444695.	0.000						
196.020	-0.0958	42034.	-42161.	-0.002092	0.000	5.900E+12	21057.
435279.	0.000						
198.000	-0.0999	0.000	0.000	-0.002092	0.000	5.900E+12	21530.
213301.	0.000						

* This analysis makes computations of pile response using nonlinear moment-curvature relationships.
The above values of total stress are computed for combined axial and bending stress in elastic sections and do not equal actual stresses in concrete and steel in the range of nonlinear bending.

Output Verification: Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 1:

Pile-head deflection = 1.3302301 inches
Computed slope at pile head = -0.0172338 radians
Maximum bending moment = 45114288. inch-lbs
Maximum shear force = -712003. lbs
Depth of maximum bending moment = 79.200000 inches below pile head
Depth of maximum shear force = 150.480000 inches below pile head
Number of iterations = 106
Number of zero deflection points = 1

Computed values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 2

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 9701.000 lbs
Applied moment at pile head = 7585140.000 in-lbs
Axial thrust load on pile head = 25387.000 lbs

Depth	Deflect.	Bending	Shear	Slope	Total	Bending	Soil Res.
Soil Spr.	Distrib.	Moment	Force	S	Stress	Stiffness	p
X	y						
Es*h	Lat. Load						
inches	inches	in-lbs	lbs	radians	psi*	lb-in ²	lb/in
lb/inch	lb/inch						

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0.00	0.0135	7585140.	9701.0000	-0.000191	0.000	5.869E+12	0.000
0.000	0.000						
1.980	0.0132	7604358.	9701.0000	-0.000189	0.000	5.869E+12	0.000
0.000	0.000						
3.960	0.0128	7623575.	9701.0000	-0.000186	0.000	5.869E+12	0.000
0.000	0.000						
5.940	0.0124	7642792.	9701.0000	-0.000183	0.000	5.869E+12	0.000
0.000	0.000						
7.920	0.0121	7662009.	9684.3404	-0.000181	0.000	5.868E+12	-16.8279
2759.5539	0.000						
9.900	0.0117	7681160.	9650.7589	-0.000178	0.000	5.868E+12	-17.0928
2888.0028	0.000						
11.880	0.0114	7700244.	9616.6625	-0.000176	0.000	5.868E+12	-17.3480
3021.4454	0.000						
13.860	0.0110	7719260.	9582.0703	-0.000173	0.000	5.868E+12	-17.5936
3160.1515	0.000						
15.840	0.0107	7738207.	9547.0017	-0.000170	0.000	5.868E+12	-17.8293
3304.4101	0.000						
17.820	0.0103	7757083.	9511.4761	-0.000168	0.000	5.868E+12	-18.0551
3454.5303	0.000						
19.800	0.0100	7775889.	9475.5132	-0.000165	0.000	5.868E+12	-18.2710
3610.8438	0.000						
21.780	0.009694	7794623.	9439.1330	-0.000163	0.000	5.867E+12	-18.4767
3773.7065	0.000						
23.760	0.009375	7813284.	9402.3554	-0.000160	0.000	5.867E+12	-18.6723
3943.5008	0.000						
25.740	0.009061	7831872.	9365.2009	-0.000157	0.000	5.867E+12	-18.8575
4120.6380	0.000						
27.720	0.008752	7850386.	9327.6899	-0.000155	0.000	5.867E+12	-19.0324
4305.5609	0.000						
29.700	0.008449	7868825.	9289.8432	-0.000152	0.000	5.867E+12	-19.1967
4498.7472	0.000						
31.680	0.008151	7887189.	9251.6816	-0.000149	0.000	5.867E+12	-19.3504
4700.7123	0.000						
33.660	0.007858	7905477.	9213.2263	-0.000147	0.000	5.867E+12	-19.4933
4912.0133	0.000						
35.640	0.007570	7923688.	9174.4988	-0.000144	0.000	5.866E+12	-19.6254
5133.2534	0.000						
37.620	0.007287	7941823.	9135.5207	-0.000141	0.000	5.866E+12	-19.7465
5365.0860	0.000						
39.600	0.007010	7959879.	9096.3139	-0.000139	0.000	5.866E+12	-19.8564
5608.2203	0.000						
41.580	0.006739	7977858.	9056.9004	-0.000136	0.000	5.866E+12	-19.9551
5863.4271	0.000						
43.560	0.006472	7995758.	9033.2801	-0.000133	0.000	5.866E+12	-3.9037
1194.2537	0.000						
45.540	0.006211	8013643.	9024.4892	-0.000131	0.000	5.866E+12	-4.9760
1586.2937	0.000						
47.520	0.005955	8031508.	9013.6723	-0.000128	0.000	5.866E+12	-5.9502
1978.3337	0.000						
49.500	0.005705	8049350.	9001.0203	-0.000125	0.000	5.866E+12	-6.8296
2370.3737	0.000						
51.480	0.005460	8067165.	8986.7178	-0.000122	0.000	5.865E+12	-7.6173
2762.4137	0.000						
53.460	0.005220	8084950.	8970.9432	-0.000120	0.000	5.865E+12	-8.3166
3154.4537	0.000						
55.440	0.004986	8102702.	8953.8684	-0.000117	0.000	5.865E+12	-8.9307
3546.4937	0.000						
57.420	0.004757	8120419.	8935.6588	-0.000114	0.000	5.865E+12	-9.4628
3938.5337	0.000						
59.400	0.004534	8138099.	8916.4737	-0.000111	0.000	5.865E+12	-9.9162
4330.5737	0.000						

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61.380	0.004316	8155739.	8896.4656	-0.000109	0.000	5.865E+12	-10.2940
4722.6137	0.000						
63.360	0.004103	8173340.	8875.7808	-0.000106	0.000	5.865E+12	-10.5997
5114.6537	0.000						
65.340	0.003896	8190898.	8854.5590	-0.000103	0.000	5.865E+12	-10.8364
5506.6937	0.000						
67.320	0.003695	8208414.	8832.9336	-0.000100	0.000	5.865E+12	-11.0075
5898.7337	0.000						
69.300	0.003499	8225887.	8811.0312	-9.763E-05	0.000	5.864E+12	-11.1161
6290.7737	0.000						
71.280	0.003308	8243316.	8788.9722	-9.485E-05	0.000	5.864E+12	-11.1657
6682.8137	0.000						
73.260	0.003123	8260700.	8766.8702	-9.206E-05	0.000	5.864E+12	-11.1595
7074.8537	0.000						
75.240	0.002944	8278042.	8744.8323	-8.927E-05	0.000	5.864E+12	-11.1009
7466.8937	0.000						
77.220	0.002770	8295339.	8722.9592	-8.647E-05	0.000	5.864E+12	-10.9932
7858.9337	0.000						
79.200	0.002601	8312593.	6087.0266	-8.367E-05	0.000	5.864E+12	-2651.5650
2018338.	0.000						
81.180	0.002438	8319452.	781.9667	-8.086E-05	0.000	5.864E+12	-2707.0813
2198251.	0.000						
83.160	0.002281	8315698.	-4629.1738	-7.805E-05	0.000	5.864E+12	-2758.7172
2394692.	0.000						
85.140	0.002129	8301128.	-10139.	-7.525E-05	0.000	5.864E+12	-2806.3752
2609698.	0.000						
87.120	0.001983	8275557.	-15738.	-7.245E-05	0.000	5.864E+12	-2849.9508
2845632.	0.000						
89.100	0.001842	8238812.	-21420.	-6.966E-05	0.000	5.864E+12	-2889.3303
3105252.	0.000						
91.080	0.001707	8190739.	-27176.	-6.689E-05	0.000	5.865E+12	-2924.3897
3391796.	0.000						
93.060	0.001577	8131202.	-32996.	-6.413E-05	0.000	5.865E+12	-2954.9925
3709087.	0.000						
95.040	0.001453	8060080.	-38873.	-6.140E-05	0.000	5.866E+12	-2980.9865
4061678.	0.000						
97.020	0.001334	7977271.	-44796.	-5.869E-05	0.000	5.866E+12	-3002.2013
4455028.	0.000						
99.000	0.001221	7882692.	-50757.	-5.602E-05	0.000	5.867E+12	-3018.4430
4895748.	0.000						
100.980	0.001112	7776279.	-56744.	-5.337E-05	0.000	5.868E+12	-3029.4895
5391918.	0.000						
102.960	0.001009	7657990.	-62748.	-5.077E-05	0.000	5.868E+12	-3035.0824
5953533.	0.000						
104.940	0.000911	7527802.	-68758.	-4.821E-05	0.000	5.869E+12	-3034.9178
6593108.	0.000						
106.920	0.000818	7385715.	-74760.	-4.569E-05	0.000	5.871E+12	-3028.6327
7326551.	0.000						
108.900	0.000730	7231755.	-80744.	-4.323E-05	0.000	5.871E+12	-3015.7870
8174422.	0.000						
110.880	0.000647	7065971.	-86596.	-4.082E-05	0.000	5.872E+12	-2895.1973
8855968.	0.000						
112.860	0.000569	6888838.	-92039.	-3.847E-05	0.000	5.873E+12	-2602.2489
9057796.	0.000						
114.840	0.000495	6701502.	-96907.	-3.617E-05	0.000	5.874E+12	-2314.8106
9259624.	0.000						
116.820	0.000426	6505091.	-101212.	-3.395E-05	0.000	5.875E+12	-2033.6880
9461452.	0.000						
118.800	0.000361	6300707.	-104967.	-3.179E-05	0.000	5.876E+12	-1759.6054
9663280.	0.000						
120.780	0.000300	6089425.	-108187.	-2.970E-05	0.000	5.877E+12	-1493.2069
9865108.	0.000						
122.760	0.000243	5872288.	-110888.	-2.769E-05	0.000	5.878E+12	-1235.0570

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10066936.	0.000						
124.740	0.000190	5650310.	-113087.	-2.575E-05	0.000	5.880E+12	-985.6422
10268764.	0.000						
126.720	0.000141	5424467.	-114800.	-2.388E-05	0.000	5.881E+12	-745.3722
10470592.	0.000						
128.700	9.547E-05	5195702.	-116048.	-2.210E-05	0.000	5.883E+12	-514.5820
10672420.	0.000						
130.680	5.345E-05	4964920.	-116848.	-2.039E-05	0.000	5.885E+12	-293.5340
10874248.	0.000						
132.660	1.473E-05	4732987.	-117220.	-1.876E-05	0.000	5.886E+12	-82.4207
11076076.	0.000						
134.640	-2.083E-05	4500730.	-117184.	-1.720E-05	0.000	5.887E+12	118.6301
11277904.	0.000						
136.620	-5.339E-05	4268939.	-116760.	-1.573E-05	0.000	5.888E+12	309.5536
11479732.	0.000						
138.600	-8.311E-05	4038361.	-115968.	-1.433E-05	0.000	5.889E+12	490.3463
11681560.	0.000						
140.580	-0.000110	3809705.	-114829.	-1.301E-05	0.000	5.890E+12	661.0633
11883388.	0.000						
142.560	-0.000135	3583641.	-113360.	-1.177E-05	0.000	5.891E+12	821.8142
12085216.	0.000						
144.540	-0.000157	3360799.	-111584.	-1.060E-05	0.000	5.893E+12	972.7605
12287044.	0.000						
146.520	-0.000177	3141770.	-109518.	-9.511E-06	0.000	5.894E+12	1114.1114
12488872.	0.000						
148.500	-0.000194	2927109.	-107181.	-8.492E-06	0.000	5.896E+12	1246.1206
12690700.	0.000						
150.480	-0.000210	2717333.	-104592.	-7.544E-06	0.000	5.898E+12	1369.0824
12892528.	0.000						
152.460	-0.000224	2512925.	-101768.	-6.666E-06	0.000	5.900E+12	1483.3280
13094356.	0.000						
154.440	-0.000237	2314332.	-98726.	-5.856E-06	0.000	5.901E+12	1589.2216
13296184.	0.000						
156.420	-0.000247	2121969.	-95483.	-5.112E-06	0.000	5.901E+12	1687.1534
13498012.	0.000						
158.400	-0.000257	1936220.	-92053.	-4.431E-06	0.000	5.901E+12	1777.5375
13699840.	0.000						
160.380	-0.000265	1757440.	-88451.	-3.811E-06	0.000	5.901E+12	1860.8093
13901668.	0.000						
162.360	-0.000272	1585955.	-84691.	-3.251E-06	0.000	5.901E+12	1937.4214
14103496.	0.000						
164.340	-0.000278	1422066.	-80785.	-2.746E-06	0.000	5.901E+12	2007.8400
14305324.	0.000						
166.320	-0.000283	1266048.	-76745.	-2.295E-06	0.000	5.901E+12	2072.5407
14507152.	0.000						
168.300	-0.000287	1118155.	-72583.	-1.895E-06	0.000	5.901E+12	2132.0045
14708980.	0.000						
170.280	-0.000290	978620.	-68307.	-1.543E-06	0.000	5.901E+12	2186.7142
14910808.	0.000						
172.260	-0.000293	847659.	-63928.	-1.237E-06	0.000	5.901E+12	2237.1503
15112636.	0.000						
174.240	-0.000295	725467.	-59452.	-9.726E-07	0.000	5.901E+12	2283.7870
15314464.	0.000						
176.220	-0.000297	612230.	-54887.	-7.482E-07	0.000	5.901E+12	2327.0881
15516292.	0.000						
178.200	-0.000298	508115.	-50239.	-5.602E-07	0.000	5.901E+12	2367.5036
15718120.	0.000						
180.180	-0.000299	413282.	-45514.	-4.056E-07	0.000	5.901E+12	2405.4652
15919948.	0.000						
182.160	-0.000300	327879.	-40716.	-2.813E-07	0.000	5.901E+12	2441.3828
16121776.	0.000						
184.140	-0.000300	252047.	-35848.	-1.840E-07	0.000	5.901E+12	2475.6402
16323604.	0.000						

```

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186.120 -0.000301 185921. -30914. -1.105E-07 0.000 5.901E+12 2508.5913
16525432. 0.000
188.100 -0.000301 129629. -25915. -5.757E-08 0.000 5.901E+12 2540.5560
16727260. 0.000
190.080 -0.000301 83298. -20854. -2.185E-08 0.000 5.901E+12 2571.8163
16929088. 0.000
192.060 -0.000301 47049. -15731. 2.207E-11 0.000 5.901E+12 2602.6123
17130916. 0.000
194.040 -0.000301 21003. -10548. 1.144E-08 0.000 5.901E+12 2633.1378
17332744. 0.000
196.020 -0.000301 5280.5791 -5303.8599 1.585E-08 0.000 5.901E+12 2663.5365
17534572. 0.000
198.000 -0.000301 0.000 0.000 1.674E-08 0.000 5.901E+12 2693.8977
8868200. 0.000

```

* This analysis makes computations of pile response using nonlinear moment-curvature relationships.
The above values of total stress are computed for combined axial and bending stress in elastic sections and do not equal actual stresses in concrete and steel in the range of nonlinear bending.

Output Verification: Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 2:

```

Pile-head deflection           = 0.0135469 inches
Computed slope at pile head    = -0.0001911 radians
Maximum bending moment         = 8319452. inch-lbs
Maximum shear force            = -117220. lbs
Depth of maximum bending moment = 81.1800000 inches below pile head
Depth of maximum shear force   = 132.6600000 inches below pile head
Number of iterations           = 9
Number of zero deflection points = 1

```

Summary of Pile Response(s)

Definitions of Pile-head Loading Conditions:

```

Load Type 1: Load 1 = Shear, lbs, and Load 2 = Moment, in-lbs
Load Type 2: Load 1 = Shear, lbs, and Load 2 = Slope, radians
Load Type 3: Load 1 = Shear, lbs, and Load 2 = Rotational Stiffness, in-lbs/radian
Load Type 4: Load 1 = Top Deflection, inches, and Load 2 = Moment, in-lbs
Load Type 5: Load 1 = Top Deflection, inches, and Load 2 = Slope, radians

```

Load Case No.	Load Type	Load No.	Pile-head Condition 1 V(lbs) or Rotation y(inches) or radians	Pile-head Condition 2 in-lb, rad., or in-lb/rad.	Axial Loading lbs	Pile-head Deflection inches	Maximum Moment in-lbs
-----	-----	-----	-----	-----	-----	-----	-----

				345622.LPile.lp6o				
1	1	V =	52865.	M =	41611584.	40619.	1.33023010	45114288.
			-712003.					
			-0.01723375					
2	1	V =	9701.0000	M =	7585140.	25387.	0.01354686	8319452.
			-117220.					
			-0.00019108					

The analysis ended normally.

EXHIBIT D
COMPETING UTILITIES, CORPORATIONS, OR PERSONS LIST

KY Public Service Commission

Master Utility Search

- Search for the utility of interest by using any single or combination of criteria.
- Enter Partial names to return the closest match for Utility Name and Address/City/Contact entries.

Utility ID	Utility Name	Address/City/Contact	Utility Type	Status
				Active

[Search](#)

	Utility ID	Utility Name	Utility Type	Class	City	State
View	4107900	365 Wireless, LLC	Cellular	D	Atlanta	GA
View	4109300	Access Point, Inc.	Cellular	D	Cary	NC
View	4108300	Air Voice Wireless, LLC	Cellular	A	Bloomfield Hill	MI
View	4110650	Alliant Technologies of KY, L.L.C.	Cellular	C	Morristown	NJ
View	44451184	Alltel Communications, LLC	Cellular	A	Basking Ridge	NJ
View	4107800	American Broadband and Telecommunications Company	Cellular	C	Toledo	OH
View	4108650	AmeriMex Communications Corp.	Cellular	D	Dunedin	FL
View	4105100	AmeriVision Communications, Inc. d/b/a Affinity 4	Cellular	D	Norfolk	VA
View	4107400	Bandwidth.com, Inc.	Cellular	A	Raleigh	NC
View	4108600	BCN Telecom, Inc.	Cellular	D	Morristown	NJ
View	4110550	Blue Casa Mobile, LLC	Cellular	C	Santa Barbara	CA
View	4108750	Blue Jay Wireless, LLC	Cellular	C	Carrollton	TX
View	4202300	Bluegrass Wireless, LLC	Cellular	A	Elizabethtown	KY
View	4107600	Boomerang Wireless, LLC	Cellular	D	Hiawatha	IA
View	4105600	Budget PrePay, Inc. dba Budget Mobile	Cellular	A	Bossier City	LA
View	4105500	BullsEye Telecom, Inc.	Cellular	D	Southfield	MI
View	4110050	CampusTVs, Inc.	Cellular	D	Weston	MA
View	4100700	Cellco Partnership dba Verizon Wireless	Cellular	A	Basking Ridge	NJ

		UTILITY			STATE	
View	4106600	Cintex Wireless, LLC	Cellular	D	Rockville	MD
View	4101900	Consumer Cellular, Incorporated	Cellular	A	Portland	OR
View	4106400	Credo Mobile, Inc.	Cellular	A	San Francisco	CA
View	4108850	Cricket Wireless, LLC	Cellular	A	Alpharetta	GA
View	4001900	CTC Communications Corp. d/b/a EarthLink Business I	Cellular	D	Grand Rapids	MI
View	10640	Cumberland Cellular Partnership	Cellular	A	Elizabethtown	KY
View	4101000	East Kentucky Network, LLC dba Appalachian Wireless	Cellular	A	Ivel	KY
View	4002300	Easy Telephone Service Company dba Easy Wireless	Cellular	D	Ocala	FL
View	4109500	Enhanced Communications Group, LLC	Cellular	D	Bartlesville	OK
View	4110450	Excellus Communications, LLC	Cellular	C	Watertown	SD
View	4105900	Flash Wireless, LLC	Cellular	D	Concord	NC
View	4107100	Flatel Wireless, Inc dba Zing PCS	Cellular	D	Wellington	FL
View	4104800	France Telecom Corporate Solutions L.L.C.	Cellular	D	Oak Hill	VA
View	4109350	Global Connection Inc. of America	Cellular	D	Norcross	GA
View	4102200	Globalstar USA, LLC	Cellular	B	Covington	LA
View	4109600	Google North America Inc.	Cellular	D	Mountain View	CA
View	33350363	Granite Telecommunications, LLC	Cellular	D	Quincy	MA
View	4106000	GreatCall, Inc. d/b/a Jitterbug	Cellular	A	San Diego	CA
View	10630	GTE Wireless of the Midwest dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
View	4110600	Horizon River Technologies, LLC	Cellular	C	Atlanta	GA
View	4103100	i-Wireless, LLC	Cellular	A	Newport	KY
View	4109800	IM Telecom, LLC d/b/a Infiniti Mobile	Cellular	D	Tulsa	OK
View	22215360	KDDI America, Inc.	Cellular	D	New York	NY
View	10872	Kentucky RSA #1 Partnership	Cellular	A	Basking Ridge	NJ
View	10680	Kentucky RSA #3 Cellular General	Cellular	A	Elizabethtown	KY
View	10681	Kentucky RSA #4 Cellular General	Cellular	A	Elizabethtown	KY
View	4109750	Konatel, Inc. dba telecom.mobi	Cellular	D	Johnstown	PA
View	4107300	Lycamobile USA, Inc.	Cellular	D	Newark	NJ
View	4108800	MetroPCS Michigan, LLC	Cellular	A	Bellevue	WA
View	4109650	Mitel Cloud Services, Inc.	Cellular	D	Mesa	AZ
View	4202400	New Cingular Wireless PCS, LLC dba AT&T Mobility, PCS	Cellular	A	San Antonio	TX
View	10000	New Par dba Verizon Wireless	Cellular	A	Basking	NJ

VIEW	10900	NEW FBI DBA VERIZON WIRELESS	Cellular	A	Ridge	NY
View	4000800	Nextel West Corporation	Cellular	D	Overland Park	KS
View	4104500	Nexus Communications, Inc.	Cellular	D	Columbus	OH
View	4001300	NPCR, Inc. dba Nextel Partners	Cellular	A	Overland Park	KS
View	4001800	OnStar, LLC	Cellular	A	Detroit	MI
View	4109050	Patriot Mobile LLC	Cellular	D	Southlake	TX
View	4110250	Plintron Technologies USA LLC	Cellular	C	Bellevue	WA
View	33351182	PNG Telecommunications, Inc. dba PowerNet Global Communications	Cellular	D	Cincinnati	OH
View	4202100	Powertel/Memphis, Inc. dba T-Mobile	Cellular	A	Bellevue	WA
View	4107700	Puretalk Holdings, LLC	Cellular	A	Covington	GA
View	4106700	Q Link Wireless, LLC	Cellular	A	Dania	FL
View	4108700	Ready Wireless, LLC	Cellular	B	Hiawatha	IA
View	4110350	Regional Strategic Partners LLC	Cellular	C	Buford	GA
View	4110500	Republic Wireless, Inc.	Cellular	C	Raleigh	NC
View	4106200	Rural Cellular Corporation	Cellular	A	Basking Ridge	NJ
View	4108550	Sage Telecom Communications, LLC	Cellular	D	Dallas	TX
View	4109150	SelecTel, Inc. d/b/a SelecTel Wireless	Cellular	D	Freemont	NE
View	4106300	SI Wireless, LLC	Cellular	A	Carbondale	IL
View	4109100	Solavei, LLC	Cellular	D	Bellevue	WA
View	4110150	Spectrotel, Inc. d/b/a Touch Base Communications	Cellular	C	Neptune	NJ
View	4200100	Sprint Spectrum, L.P.	Cellular	A	Atlanta	GA
View	4200500	SprintCom, Inc.	Cellular	A	Atlanta	GA
View	4109550	Stream Communications, LLC	Cellular	D	Dallas	TX
View	4110200	T C Telephone LLC d/b/a Horizon Cellular	Cellular	D	Red Bluff	CA
View	4202200	T-Mobile Central, LLC dba T-Mobile	Cellular	A	Bellevue	WA
View	4002500	TAG Mobile, LLC	Cellular	D	Carrollton	TX
View	4109700	Telecom Management, Inc. dba Pioneer Telephone	Cellular	D	South Portland	ME
View	4107200	Telefonica USA, Inc.	Cellular	D	Miami	FL
View	4108900	Telrite Corporation dba Life Wireless	Cellular	D	Covington	GA
View	4108450	Tempo Telecom, LLC	Cellular	D	Kansas City	MO
View	4109950	The People's Operator USA, LLC	Cellular	D	New York	NY
View	4109000	Ting, Inc.	Cellular	A	Toronto	ON
View	4110400	Torch Wireless Corp.	Cellular	C	Jacksonville	FL
View	4103900	Total Call Mobile, Inc.	Cellular	D	Gardena	CA
View	4103300	Touchtone Communications, Inc.	Cellular	D	Whippany	NJ

View	4104200	TracFone Wireless, Inc.	Cellular	D	Miami	FL
View	4002000	Truphone, Inc.	Cellular	D	Durham	NC
View	4110300	UVNV, Inc.	Cellular	C	Costa Mesa	CA
View	4105700	Virgin Mobile USA, L.P.	Cellular	A	Atlanta	GA
View	4200600	West Virginia PCS Alliance, L.C.	Cellular	A	Waynesboro	VA
View	4106500	WiMacTel, Inc.	Cellular	D	Omaha	NE
View	4110100	Windward Wireless LLC	Cellular	C	Suwanee	GA
View	4109900	Wireless Telecom Cooperative, Inc. dba theWirelessFreeway	Cellular	D	Louisville	KY

EXHIBIT E
FAA



Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2016-ASO-6895-OE

Issued Date: 06/15/2016

Network Regulatory
 Rural Cellular Corporation
 1120 Sanctuary Pkwy
 #150 GASA5REG
 Alpharetta, GA 30009

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Antenna Tower Somerset
Location:	Somerset, KY
Latitude:	37-02-20.56N NAD 83
Longitude:	84-38-42.26W
Heights:	1111 feet site elevation (SE)
	105 feet above ground level (AGL)
	1216 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is marked/lighted in accordance with FAA Advisory circular 70/7460-1 L, Obstruction Marking and Lighting, a med-dual system - Chapters 4,8(M-Dual),&12.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

Any height exceeding 105 feet above ground level (1216 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

This determination expires on 12/15/2017 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before July 15, 2016. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted to the Manager, Airspace Policy & Regulation, Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591.

This determination becomes final on July 25, 2016 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. For any questions regarding your petition, please contact Airspace Regulations & ATC Procedures Group via telephone -- 202-267-8783 - or facsimile 202-267-9328.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

A copy of this determination will be forwarded to the Federal Communications Commission (FCC) because the structure is subject to their licensing authority.

If we can be of further assistance, please contact Kerryaine Yarber, at (202) 267-3215. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2016-ASO-6895-OE.

Signature Control No: 284510554-295802060

(DNH)

Mike Helvey

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Frequency Data

Map(s)

cc: FCC

Aeronautical Study Number 2016-ASO-6895-OE

Abbreviations

AGL - above ground level

MSL - mean sea level

RWY - runway

VFR - visual flight rules

IFR - instrument flight rules

nm - nautical mile

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Objects Affecting Navigable Airspace

1. LOCATION OF PROPOSED CONSTRUCTION

This proposal is for a 105-foot above ground level (AGL), 1,216 feet above mean sea level (MSL), antenna, to be located approximately 7,337 feet (1.21 nm) east of the RWY 05 end at Lake Cumberland Regional Airport (SME), in Somerset, KY. The SME airport elevation is 911 feet MSL.

2. OBSTRUCTION STANDARDS EXCEEDED

The structure is identified as an obstruction under the following Part 77 standard:

Section 77.19(a): The surface of a takeoff and landing area of an airport or any imaginary surface established under 77.17, 77.19, or 77.23. This proposed structure would exceed the SME horizontal surface by 139 feet.

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: The antenna structure would exceed the SME Part 77 conical surface by 31 feet.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: None.

c. The impact on all planned public-use airports and aeronautical facilities: Investigation complete, no comments were received.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: Investigation complete, no public comments received.

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on May 3. The public comment period ended on June 9 and no responses were received.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient use of navigable airspace by aircraft.

6. BASIS FOR DECISION

Part 77 establishes standards for determining obstructions to air navigation. A structure that exceeds one or more of these standards is presumed to be a hazard to air navigation unless the obstruction evaluation study determines otherwise. Just because a proposed structure exceeds a Part 77 surface does not automatically make it a hazard.

In this case, the proposed antenna would exceed the SME horizontal surface by 139 feet and penetrate the VFR conical traffic pattern airspace by 31 feet; however, there are no IFR effects. No comments were received objecting to the proposal. There is an existing 96 foot AGL (1,216 MSL) water tower at the same height AMSL, located in close proximity to the proposed structure, currently equipped with red lights and paint. The incorporation of obstruction marking and lighting will mitigate the Part 77 conical and horizontal surface penetrations by making the antenna visible to pilots.

7. CONDITIONS

This structure shall be marked and lighted as outlined in chapters 4, 8 (Medium Dual), and 12, of Advisory Circular AC 70/7460-1L. The advisory circular is electronically available online at the following link: http://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_70_7460-1L_.pdf.

The proponent is required to notify the Lake Cumberland Regional Airport Manager at telephone number, 606-679-7908, three business days prior to starting construction. Additionally, the proponent is required to file FAA form 7460-2, Part 2, Actual Construction Notification, using the OE/AAA website (<http://oeaaa.faa.gov>), within five days after the structure reaches its greatest height. The Actual Construction Notification will be the source document for the FAA, detailing the structure's height, site location and elevation, and construction completion date to map on aeronautical charts and update the national obstruction database.

Frequency Data for ASN 2016-ASO-6895-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
698	806	MHz	1000	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1850	1910	MHz	1640	W
1930	1990	MHz	1640	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W



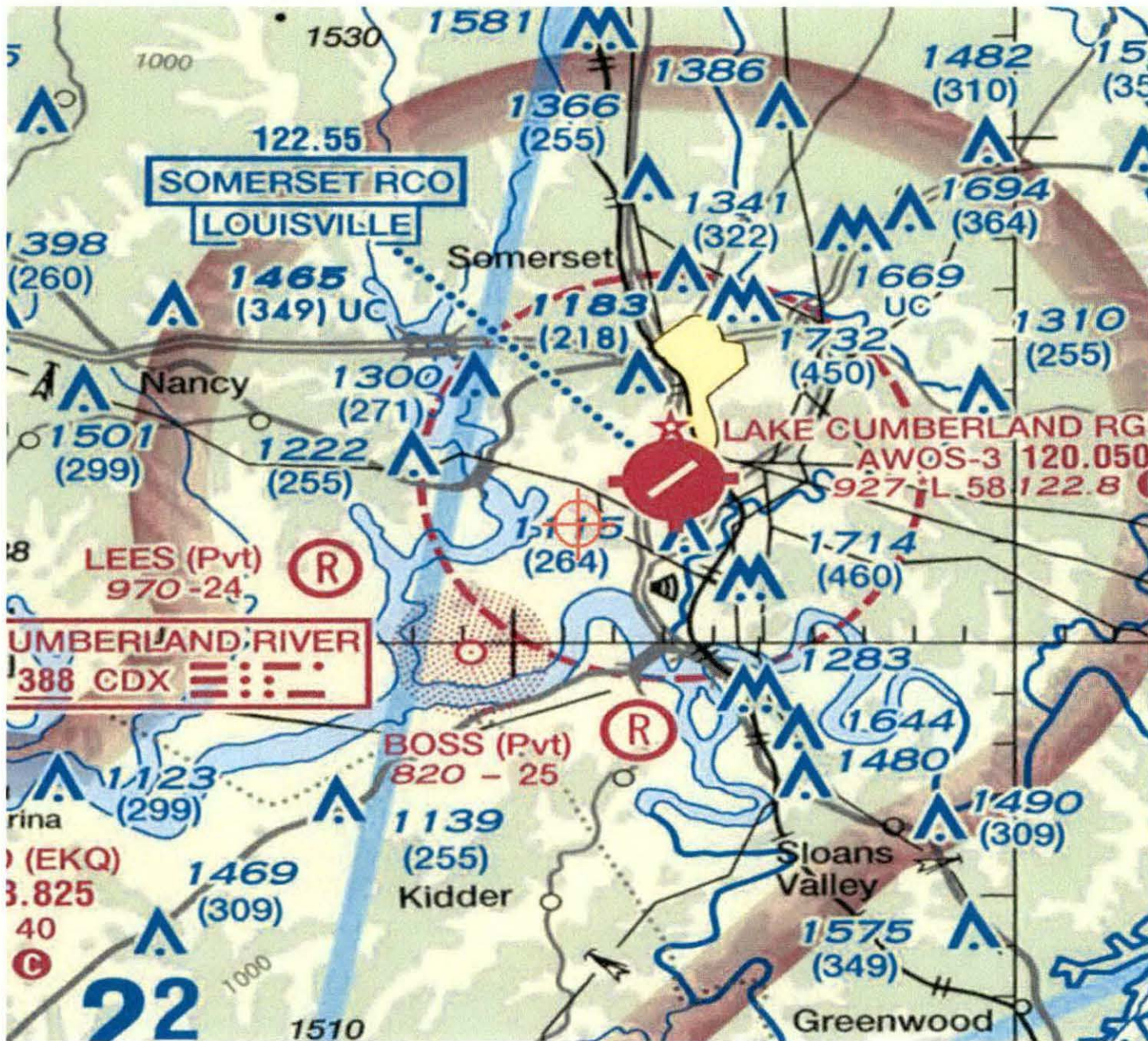


EXHIBIT F
KENTUCKY AIRPORT ZONING COMMISSION



KENTUCKY AIRPORT ZONING COMMISSION

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

APPLICANT (name) Rural Cellular Corporation		PHONE 7707971144	FAX	KY AERONAUTICAL STUDY #
ADDRESS (street) 5055 North Point Pkwy		CITY Alpharetta		STATE GA
ZIP 30005				
APPLICANT'S REPRESENTATIVE (name) Nate Peterson		PHONE 7707971144	FAX	
ADDRESS (street) 5055 North Point Pkwy		CITY Alpharetta		STATE GA
ZIP 30005				
APPLICATION FOR <input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing			WORK SCHEDULE	
DURATION <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary (months days)			Start End	
TYPE <input type="checkbox"/> Crane <input type="checkbox"/> Building		MARKING/PAINTING/LIGHTING PREFERRED		
<input checked="" type="checkbox"/> Antenna Tower		<input type="checkbox"/> Red Lights & Paint <input type="checkbox"/> White- medium intensity <input type="checkbox"/> White- high intensity		
<input type="checkbox"/> Power Line <input type="checkbox"/> Water Tank		<input checked="" type="checkbox"/> Dual- red & medium intensity white <input type="checkbox"/> Dual- red & high intensity white		
<input type="checkbox"/> Landfill <input type="checkbox"/> Other		<input type="checkbox"/> Other		
LATITUDE 37°02'20.56"		LONGITUDE 084°38'42.26"		DATUM <input checked="" type="checkbox"/> NAD83 <input type="checkbox"/> NAD27
		<input type="checkbox"/> Other		
NEAREST KENTUCKY City Somerset County Pulaski		NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT SME		
SITE ELEVATION (AMSL, feet) 1111		TOTAL STRUCTURE HEIGHT (AGL, feet) 105		CURRENT (FAA aeronautical study #) 2016-ASO-6895-OE
OVERALL HEIGHT (site elevation plus total structure height, feet) 1216				PREVIOUS (FAA aeronautical study #)
DISTANCE (from nearest Kentucky public use or Military airport to structure) 10090.38 feet				PREVIOUS (KY aeronautical study #)
DIRECTION (from nearest Kentucky public use or Military airport to structure) 238.26 degrees				
DESCRIPTION OF LOCATION (Attach USGS 7.5 minute quadrangle map or an airport layout drawing with the precise site marked and any certified survey.) FAA filing map and 1a survey attached				
DESCRIPTION OF PROPOSAL construction of a 105' communications tower				
FAA Form 7460-1 (Has the "Notice of Construction or Alteration" been filed with the Federal Aviation Administration?) <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes, when? 06/15/2016				
CERTIFICATION (I hereby certify that all the above entries, made by me, are true, complete, and correct to the best of my knowledge and belief.)				
PENALTIES (Persons failing to comply with KRS 183.861 to 183.990 and 602 KAR 050 are liable for fines and/or imprisonment as set forth in KRS 183.990(3). Noncompliance with FAA regulations may result in further penalties.)				
NAME Nate Peterson	TITLE RE/Regulatory	SIGNATURE	DATE 01/11/2017	
COMMISSION ACTION		<input type="checkbox"/> Chairperson, KAZC		
		<input type="checkbox"/> Administrator, KAZC		
<input type="checkbox"/> Approved	SIGNATURE	DATE		
<input type="checkbox"/> Disapproved				

EXHIBIT G
GEOTECHNICAL REPORT

GEOTECHNICAL REPORT

LV Somerset WT Relo

37° 02' 20.56" N

84° 38' 42.26" W

1170 Bourbon Rd,
Somerset, KY

Prepared For:



Prepared By:





June 30, 2016

Ms. Amy Harper
Verizon Wireless
2421 Holloway Road
Louisville, KY 40299

Re: Geotechnical Report – **PROPOSED 100' MONOPOLE TOWER w/ 5' LIGHTNING ARRESTOR**
Site Name: **LV Somerset WT Relo**
Site Address: 1170 Bourbon Road, Somerset, Pulaski County, Kentucky
Coordinates: N37° 02' 20.56" W84° 38' 42.26"
POD Project No. 16-7955

Dear Ms. Harper:

Attached is our geotechnical engineering report for the referenced project. This report contains our findings, an engineering interpretation of these findings with respect to the available project characteristics, and recommendations to aid design and construction of the tower, shelter or platform foundations.

We appreciate the opportunity to be of service to you on this project. If you have any questions regarding this report, please contact our office.

Cordially,

A handwritten signature in blue ink that reads "Mark Patterson".

Mark Patterson, P.E.
Project Engineer
License No.: KY 16300



Copies submitted: (3) Ms. Amy Harper

LETTER OF TRANSMITTAL

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APPENDIX

BORING LOCATION PLAN
BORING LOG
SOIL SAMPLE CLASSIFICATION

Geotechnical Report
PROPOSED 100' MONOPOLE TOWER w/ 5' LIGHTNING ARRESTOR
Site Name: LV Somerset WT Relo
1170 Bourbon Road, Somerset, Pulaski County, Kentucky
N37° 02' 20.56" W84° 38' 42.26"
POD Project No. 16-7955

1. PURPOSE AND SCOPE

The purpose of this study was to determine the general subsurface conditions at the site of the proposed tower by drilling two borings and to evaluate this data with respect to foundation concept and design for the proposed tower. Also included is an evaluation of the site with respect to potential construction problems and recommendations dealing with quality control during construction.

2. PROJECT CHARACTERISTICS

Verizon Wireless is proposing to construct a monopole tower and either an equipment shelter or platform at N37° 02' 20.56", W84° 38' 42.26", 1170 Bourbon Road, Somerset, Pulaski County, Kentucky. The site located on Watt Knob in the southwest Somerset near the Cumberland River. A water tower is located at the top of Watt Knob and the proposed lease area is adjacent to the east. The proposed lease area will be 10,000 square feet and will be accessed by an existing gavel road running east to Bourbon Road. The proposed tower elevation is about EL 1111 and there is about 10 feet change in elevation across the proposed lease area. Surface water will run off to the southeast. The area is suburban. The proposed tower location is shown on the Boring Location Plan in the Appendix.

3. SUBSURFACE CONDITIONS

The subsurface conditions were explored by drilling two test borings near the base of the proposed tower. The Geotechnical Soil Test Boring Logs, which are included in the Appendix, describes the materials and conditions encountered. A sheet defining the terms and symbols used on the boring logs is also included in the Appendix. The general subsurface conditions disclosed by the test boring are discussed in the following paragraphs.

The proposed lease area is located at the near the top of Watt Knob, one of the several in the Somerset area, named Pilots Knob, about 100 feet higher than the surrounding area. According to the Kentucky Geological Survey, Kentucky Geologic Map Information Services, the site is underlain by the Upper Mississippian age Kidder Limestone member. There is low karst potential for the Kidder member, however the site is surrounded by highly karst limestone formation with a number of sinkholes mapped within one-half mile of the site.

The borings encountered about 4 inches of topsoil at the existing ground surface. Below the topsoil, the borings

encountered clay (CH) of high plasticity to auger refusal between 5.6 and 6.5 feet. The SPT N-values in the clay were between 13 and 32 blows per foot (bpf) generally indicating a stiff to hard consistency. Auger refusal is defined as the depth at which the boring can no longer be advanced using the current drilling method.

The refusal material was cored in Boring 1 from 6.5 to 16.5 feet below the ground surface. Limestone that was continuous, hard, moderately weathered and light gray to weathered brown was encountered. The recovery of the rock core was 92 percent and the RQD value was 75 percent. These values generally represent excellent quality rock from a foundation support viewpoint.

Observations made at the completion of soil drilling operations indicated the boring to be dry. It must be noted, however, that short-term water readings in test borings are not necessarily a reliable indication of the actual groundwater level. Furthermore, it must be emphasized that the groundwater level is not stationary, but will fluctuate seasonally.

Based on the limited subsurface conditions encountered at the site and using Table 1615.1.1 of the 2013 Kentucky Building Code, the site class is considered "B". Seismic design requirements for telecommunication towers are given in section 1622 of the code. A detailed seismic study was beyond the scope of this report.

4. FOUNDATION DESIGN RECOMMENDATIONS

The following design recommendations are based on the previously described project information, the subsurface conditions encountered in our borings, the results of our laboratory testing, empirical correlations for the soil types encountered, our analyses, and our experience. If there is any change in the project criteria or structure location, you should retain us to review our recommendations so that we can determine if any modifications are required. The findings of such a review can then be presented in a supplemental report or addendum.

We recommend that the geotechnical engineer be retained to review the near-final project plans and specifications, pertaining to the geotechnical aspects of the project, prior to bidding and construction. We recommend this review to check that our assumptions and evaluations are appropriate based on the current project information provided to us, and to check that our foundation and earthwork recommendations were properly interpreted and implemented.

4.1. Proposed Tower

Our findings indicate that the proposed monopole tower can be supported on drilled piers or on a common mat foundation.

4.1.1. Drilled Piers

The following table summarizes the recommended values for use in analyzing lateral and frictional resistance for the various strata encountered at the test boring. It is important to note that these values are estimated based on the standard penetration test results and soil types, and were not directly measured. The all values provided are ultimate values and appropriate factors of safety should be used in conjunction with these values. If the piers will bear deeper than about 16 feet, a deeper boring should be drilled to determine the nature of the deeper material.

Depth Below Ground Surface, feet	0 - 3	3 - 6	38 - 40
Ultimate Bearing Pressure (psf)		14,000	110,500
c Undrained Shear Strength, psf	500	2500	20,000
ϕ Angle of Internal Friction degrees	0	0	0
Total Unit Weight, pcf	120	120	135
Soil Modulus Parameter k, pci	30	100	2000
Passive Soil Pressure, psf/one foot of depth		3000 + 40(D-3)	13,000 + 45(D-3)
Side Friction, psf		200	1000

Note: D = Depth below ground surface (in feet) to point at which the passive pressure is calculated.

It is important that the drilled piers be installed by an experienced, competent drilled pier contractor who will be responsible for properly installing the piers in accordance with industry standards and generally accepted methods, without causing deterioration of the subgrade. The recommendations contained herein relate only to the soil-pier interaction and do not account for the structural design of the piers.

4.1.2. Mat Foundation

The tower could be supported on a common mat foundation bearing on the silty clay about 4 feet can be designed using a ultimate bearing pressure of 14,000 pounds per square foot may be used. This value may be increased by 30 percent for the maximum edge pressure under transient loads. A friction value of 0.30 may be used between the concrete and the clay soil. The passive pressures given for the drilled pier foundation may be used to resist lateral forces.

It is important that the mat be designed with an adequate factor of safety with regard to overturning under the maximum design wind load.

4.2. Equipment Platform

An equipment platform may be supported on shallow piers bearing in the natural clay and designed for a net allowable soil pressure of 2,500 pounds per square foot. The piers should bear at a depth of at least 30 inches to minimize the effects of frost action. All existing topsoil or soft natural soil should be removed beneath footings.

4.3. Equipment Building

If an equipment building support on a slab is chosen in place of the equipment platform, it may be supported on shallow spread footings bearing in the natural clay soil and designed for a net allowable soil pressure of 3,000 pounds per square foot.

The footings should be at least ten inches wide. If the footings bear on soil they should bear at a depth of at least 36 inches to minimize the effects of frost action. All existing topsoil or soft natural soil should be removed beneath footings.

The floor slab for the new equipment building can be supported on firm natural soils or on new compacted structural fill. Existing fill may be left in place below the slab if the owner can accept the possibility of greater than normal settlement and cracking. This risk can be reduced if the underlying subgrade is properly proof-rolled and any unstable areas disclosed by the proof-roll are improved as necessary.

Floor slabs must be supported on at least 4-inch layer of relatively clean granular material such as gravel or crushed stone containing not more than 10 percent material that passes through a No. 4 sieve. This is to help

distribute concentrated loads and equalize moisture conditions beneath the slab. Provided that a minimum of 4 in. of granular material is placed below the slab, a modulus of subgrade reaction (k_{30}) of 110 lbs/cu.in. can be used for design of the floor slabs.

4.4. Drainage and Groundwater Considerations

Good site drainage must be provided. Surface run-off water should be drained away from the tower and platform and not allowed to pond. It is recommended that all foundation concrete be placed the same day the excavation is made.

At the time of this investigation, groundwater was not encountered. Therefore, no special provisions regarding groundwater control are considered necessary for shallow foundations. Any seepage should be able to be pumped with sumps.

5. GENERAL CONSTRUCTION PROCEDURES AND RECOMMENDATIONS

It is possible that variations in subsurface conditions will be encountered during construction. Although only minor variations that can be readily evaluated and adjusted for during construction are anticipated, it is recommended the geotechnical engineer or a qualified representative be retained to perform continuous inspection and review during construction of the soils-related phases of the work. This will permit correlation between the test boring data and the actual soil conditions encountered during construction.

5.1 Drilled Piers

The following recommendations are recommended for drilled pier construction:

- ❏ Clean the foundation bearing area so it is nearly level or suitably benched and is free of ponded water or loose material.
- ❏ Make provisions for ground water removal from the drilled shaft excavation. While groundwater was not encountered during the soil drilling, some significant seepage may be encountered. The drilled pier contractor should have pumps on hand to remove water from the drilled pier.
- ❏ Specify concrete slumps ranging from 4 to 7 inches for the drilled shaft construction. These slumps are recommended to fill irregularities along the sides and bottom of the drilled hole, displace water as it is placed, and permit placement of reinforcing cages into the fluid concrete.
- ❏ Retain the geotechnical engineer to observe foundation excavations after the bottom of the hole is leveled, cleaned of any mud or extraneous material, and dewatered.
- ❏ Install a temporary protective steel casing to prevent side wall collapse, prevent excessive mud

and water intrusion in the drilled shaft.

- ❏ The protective steel casing may be extracted as the concrete is placed provided a sufficient head of concrete is maintained inside the steel casing to prevent soil or water intrusion into the newly placed concrete.
- ❏ Direct the concrete placement into the drilled hole through a centering chute to reduce side flow or segregation.

5.2 Fill Compaction

All engineered fill placed adjacent to and above the tower foundation should be compacted to a dry density of at least 95 percent of the standard Proctor maximum dry density (ASTM D-698). This minimum compaction requirement should be increased to 98 percent for any fill placed below the tower foundation bearing elevation. Any fill placed beneath the tower foundation should be limited to well-graded sand and gravel or crushed stone. The compaction should be accomplished by placing the fill in about 8 inch (or less) loose lifts and mechanically compacting each lift to at least the specified minimum dry density. Field density tests should be performed on each lift as necessary to insure that adequate moisture conditioning and compaction is being achieved.

Compaction by flooding is not considered acceptable. This method will generally not achieve the desired compaction and the large quantities of water will tend to soften the foundation soils.

5.3 Construction Dewatering

If groundwater is encountered in the shallow foundations, it should be minor and can be handled by conventional dewatering methods such as pumping from sumps.

Most likely groundwater will be encountered in the drilled pier excavations deeper than 20 feet and it may be difficult to dewater since pumping directly from the excavations could cause a deterioration of the bottom of the excavation. If the pier excavations are not dewatered, concrete should be placed by the tremie method.

6 FIELD INVESTIGATION

Two soil test boring was drilled near the base of the proposed tower. Split-spoon samples were obtained by the Standard Penetration Test (SPT) procedure (ASTM D1586) in all test borings. Boring 1 and Boring 2 encountered auger refusal between 5.6 and 6.5 feet. A rock core of the refusal material was taken in Boring 1 from 6.5 to 16.5 feet. The

split-spoon samples were inspected and visually classified by a geotechnical engineer. Representative portions of the soil samples were sealed in glass jars and returned to our laboratory.

The boring log is included in the Appendix along with a sheet defining the terms and symbols used on the logs and an explanation of the Standard Penetration Test (SPT) procedure. The log present visual descriptions of the soil strata encountered, Unified System soil classifications, groundwater observations, sampling information, laboratory test results, and other pertinent field data and observations.

7 WARRANTY AND LIMITATIONS OF STUDY

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties, either express or implied. POD Group is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration and laboratory test data presented in this report.

A geotechnical study is inherently limited since the engineering recommendations are developed from information obtained from test borings, which depict subsurface conditions only at the specific locations, times and depths shown on the log. Soil conditions at other locations may differ from those encountered in the test borings, and the passage of time may cause the soil conditions to change from those described in this report.

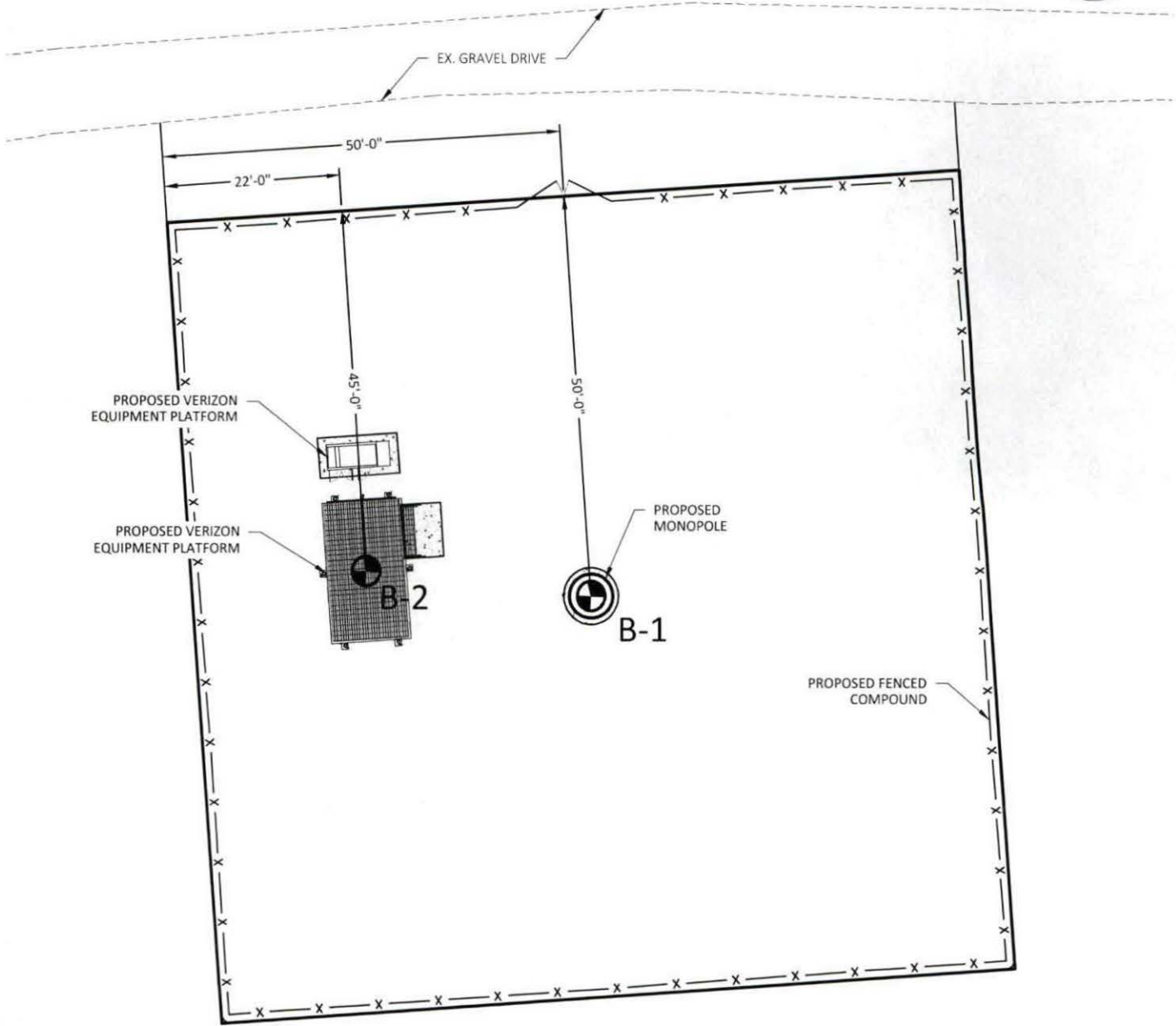
The nature and extent of variation and change in the subsurface conditions at the site may not become evident until the course of construction. Construction monitoring by the geotechnical engineer or a representative is therefore considered necessary to verify the subsurface conditions and to check that the soils connected construction phases are properly completed. If significant variations or changes are in evidence, it may then be necessary to reevaluate the recommendations of this report. Furthermore, if the project characteristics are altered significantly from those discussed in this report, if the project information contained in this report is incorrect, or if additional information becomes available, a review must be made by this office to determine if any modification in the recommendations will be required.

APPENDIX

BORING LOCATION PLAN

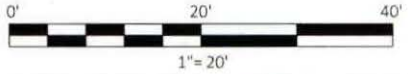
BORING LOG

SOIL SAMPLE CLASSIFICATION



LEGEND

B-1 BORING LOCATION



SHEET TITLE: BORING LOCATION PLAN	LATITUDE: 37° 02' 20.56" N LONGITUDE: 84° 38' 42.26" W	SITE INFORMATION: LV SOMERSET WT RELO 1170 BOURBON ROAD SOMERSET, KY 42503 PULASKI COUNTY	 11490 BLUEGRASS PKWY LOUISVILLE, KY 40299 502-437-5252
	PARCEL #: 050-0-0-19 DEED BOOK 755, PAGE 554		
SHEET NUMBER: 1	POD NUMBER: 16-7955 DRAWN BY: POD CHECKED BY: MEP DATE: 6.16.16	TOWER OWNER INFORMATION: RURAL CELLULAR CORPORATION D/B/A VERIZON WIRELESS 2421 HOLLOWAY ROAD LOUISVILLE, KY 40299	RURAL CELLULAR CORPORATION D/B/A



Boring Log

Boring: B-1

Page 1 of 1

Project: LV Somerset WT

City, State

Somerset, KY

Method: H.S.A.	Boring Date: 17-Jun-16	Location: Proposed Lease Area
Inside Diameter: 3 1/4"	Drill Rig Type: CME 55	Hammer Type: Auto
Groundwater: Dry		Weather:
Driller: Hoosier Drilling		
Note: About 4 inches of topsoil encountered at the ground surface		

From (ft)	To (ft)	Material Description	Sample Depth (ft)	Sample Type	Blows per 6-inch increment	Recovery (in)	SPT-N value	Rock Quality (RQD, %)	Atterberg Limits	Moisture Content (%)	% Fines (clay & silt)	Unconfined Compressive Strength, (ksf)
0.0	0.3	Topsoil										
0.3	5.5	CLAY (CH) - stiff, reddish brown	1-2.5	SS	5, 5, 8	18	13					4.50
	3.5	-hard	3.5-5	SS	7, 10, 22	18	32					6.00
	5.5	-highly weathered limestone										
6.5	16.5	LIMESTONE- hard, moderately weathered, light gray to weathered brown	6.5-16.5	RC		110		75%				
		Boring Terminated at 16.5 feet										



Boring Log

Boring: B-2

Page 1 of 1

Project: LV Somerset WT

City, State

Somerset, KY

Method: H.S.A.	Boring Date: 17-Jun-16	Location: Proposed Lease Area
Inside Diameter: 3 1/4"	Drill Rig Type: CME 55	Hammer Type: Auto
Groundwater: Dry		Weather:
Driller: Hoosier Drilling		
Note: About 4 inches of topsoil encountered at the ground surface		

From (ft)	To (ft)	Material Description	Sample Depth (ft)	Sample Type	Blows per 6-inch increment	Recovery (in)	SPT-N value	Rock Quality (RQD, %)	Atterberg Limits	Moisture Content (%)	% Fines (clay & silt)	Unconfined Compressive Strength, (ksf)
0.0	0.3	Topsoil										
0.3	5.5	CLAY (CH) - very stiff, reddish brown	1-2.5	SS	5, 7, 10	10	17					6.00
	3.5	-hard	3.5-5	SS	14, 14, 17	18	31					4.50
	5.5	-highly weathered limestone										
Boring Terminated at 5.6 feet												

SOIL SAMPLE CLASSIFICATION

FINE AND COARSE GRAINED SOIL INFORMATION

COARSE GRAINED SOILS (SANDS & GRAVELS)		FINE GRAINED SOILS (SILTS & CLAYS)			PARTICLE SIZE	
N	Relative Density	N	Consistency	Qu, KSF Estimated		
0-4	Very Loose	0-1	Very Soft	0-0.5	Boulders	Greater than 300 mm (12 in)
5-10	Loose	2-4	Soft	0.5-1	Cobbles	75 mm to 300 mm (3 to 12 in)
11-20	Firm	5-8	Firm	1-2	Gravel	4.74 mm to 75 mm (3/16 to 3 in)
21-30	Very Firm	9-15	Stiff	2-4	Coarse Sand	2 mm to 4.75 mm
31-50	Dense	16-30	Very Stiff	4-8	Medium Sand	0.425 mm to 2 mm
Over 50	Very Dense	Over 31	Hard	8+	Fine Sand	0.075 mm to 0.425 mm
					Sils & Clays	Less than 0.075 mm

The **STANDARD PENETRATION TEST** as defined by ASTM D 1586 is a method to obtain a disturbed soil sample for examination and testing and to obtain relative density and consistency information. A standard 1.4-inch I.D./2-inch O.D. split-barrel sampler is driven three 6-inch increments with a 140 lb. hammer falling 30 inches. The hammer can either be of a trip, free-fall design, or actuated by a rope and cathead. The blow counts required to drive the sampler the final two increments are added together and designate the N-value defined in the above tables.

ROCK PROPERTIES

ROCK QUALITY DESIGNATION (RQD)		ROCK HARDNESS	
Percent RQD	Quality		
0-25	Very Poor	Very Hard:	Rock can be broken by heavy hammer blows.
25-50	Poor	Hard:	Rock cannot be broken by thumb pressure, but can be broken by moderate hammer blows.
50-75	Fair	Moderately Hard:	Small pieces can be broken off along sharp edges by considerable hard thumb pressure; can be broken with light hammer blows.
75-90	Good	Soft:	Rock is coherent but breaks very easily with thumb pressure at sharp edges and crumbles with firm hand pressure.
90-100	Excellent	Very Soft:	Rock disintegrates or easily compresses when touched; can be hard to very hard soil.

Recovery =	$\frac{\text{Length of Rock Core Recovered}}{\text{Length of Core Run}} \times 100$		63 REC NQ 43 RQD	Core Diameter BQ NQ HQ	Inches 1-7/16 1-7/8 2-1/2
RQD =	$\frac{\text{Sum of 4 in. and longer Rock Pieces Recovered}}{\text{Length of Core Run}} \times 100$				

SYMBOLS

KEY TO MATERIAL TYPES

SOILS	
Group Symbols	Typical Names
GW	Well graded gravel - sand mixture, little or no fines
GP	Poorly graded gravels or gravel - sand mixture, little or no fines
GM	Silty gravels, gravel - sand silt mixtures
GC	Clayey gravels, gravel - sand - clay mixtures
SW	Well graded sands, gravelly sands, little or no fines
SP	Poorly graded sands or gravelly sands, little or no fines
SM	Silty sands, sand - silt mixtures
SC	Clayey sands, sand - clay mixtures
ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts
OL	Organic silts and organic silty clays of low plasticity
CL	Inorganic clays of low range plasticity, gravelly clays, sandy clays, silty clays, lean clays
MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
CH	Inorganic clays of high range plasticity, fat clays

ROCKS	
Symbols	Typical Names
	Limestone or Dolomite
	Shale
	Sandstone

SOIL PROPERTY SYMBOLS

- N: Standard Penetration, BPF
- M: Moisture Content, %
- LL: Liquid Limit, %
- PI: Plasticity Index, %
- Qp: Pocket Penetrometer Value, TSF
- Qu: Unconfined Compressive Strength Estimated Qu, TSF
- γ_D : Dry Unit Weight, PCF
- F: Fines Content

SAMPLING SYMBOLS

- SS Split Spoon Sample
- Relatively Undisturbed Sample
- Rock Core Sample

EXHIBIT H
DIRECTIONS TO WCF SITE

Driving Directions to Proposed Tower Site

1. Beginning at the Pulaski County Judge Executive's Office, located at 100 N. Main Street in Somerset, Kentucky, head south on N. Main Street and travel approximately 1.0 miles.
2. Continue onto KY-2292/Monticello St. and travel approximately 2.3 miles.
3. Continue onto W. Bourbon Road and travel approximately 1.5 miles. The site is located at 1170 Bourbon Road.
4. The site coordinates are
 - a. North $37^{\circ} 02' 20.56''$
 - b. West $84^{\circ} 38' 42.26''$



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EXHIBIT I
COPY OF REAL ESTATE AGREEMENT

SITE NAME: LV Somerset WT Relo
SITE NUMBER: 193765
ATTY/DATE: PLG 11-2-2016

LAND LEASE AGREEMENT

This Land Lease Agreement (the "Agreement") made this _____ day of _____, 20____, between S & C Land Company, LLC, a Kentucky limited liability company, with a mailing address at P.O. Box 983, Somerset, Kentucky 42502, hereinafter designated LESSOR and Rural Cellular Corporation d/b/a Verizon Wireless with its principal offices at One Verizon Way, Mail Stop 4AW100, Basking Ridge, New Jersey 07920 (telephone number 866-862-4404), hereinafter designated LESSEE. LESSOR and LESSEE are at times collectively referred to hereinafter as the "Parties" or individually as the "Party."

WITNESSETH

In consideration of the mutual covenants contained herein and intending to be legally bound hereby, the Parties hereto agree as follows:

1. **GRANT.** In accordance with this Agreement, LESSOR hereby grants to LESSEE the right to install, maintain and operate its communications equipment ("Use") upon the Premises (as hereinafter defined), which are a part of or all of that real property owned, leased or controlled by LESSOR at Bourbon Road, Somerset, Pulaski County Kentucky 42503 (the "Property"). The LESSOR's Property is legally described on Exhibit "A" attached hereto and made a part hereof. The leased Premises are part or all of the Property and are approximately 10,000 square feet (the "Lease Area") and a non-exclusive easement ("Easement", as defined herein) for access and utility services, as shown in detail on Exhibit "B" attached hereto and made a part hereof, and are legally described on Exhibit "C" attached hereto and made a part hereof. For the avoidance of doubt, "Property" refers to the LESSOR's interest in the Easement and the LESSOR's fee interest in the Lease Area, and "Premises" refers to the LESSEE's interest in the Easement and the LESSEE's leasehold interest in the Lease Area.

2. **INITIAL TERM.** This Agreement shall be effective as of the date of execution by both Parties ("Effective Date"). The initial term of the Agreement shall be for 5 years beginning on the first day of the month following the Commencement Date (as hereinafter defined). The "Commencement Date" shall be the earlier of (i) the first day of the month after LESSEE begins construction activity (excluding due diligence review and/or testing) or (ii) the first day of the month following the date which is one calendar year following execution of this Agreement by LESSOR.

3. **EXTENSIONS.** This Agreement shall automatically be extended for 4 additional 5 year terms unless LESSEE terminates it at the end of the then current term by giving LESSOR written notice of the intent to terminate at least 3 months prior to the end of the then current term. The initial term and all extensions shall be collectively referred to herein as the "Term".

4. **RENTAL.**

(a) Rental payments shall begin on the Commencement Date and be due at a total _____ paid in equal monthly installments on the first day of the month, in advance, to LESSOR at P.O. Box 983, Somerset, KY 42502 or to such other person, firm, or place as LESSOR may, from time to time, designate in writing at least 30 days in advance of any rental payment date by notice given in accordance with Paragraph 20 below. LESSOR and LESSEE acknowledge and agree that the initial rental payment shall not be delivered by LESSEE

until 60 days after the Commencement Date. Upon agreement of the Parties, LESSEE may pay rent by electronic funds transfer and in such event, LESSOR agrees to provide to LESSEE bank routing information for such purpose upon request of LESSEE.

Commencing on the fifth (5th) annual anniversary of the Commencement Date, and on each fifth (5th) annual anniversary thereafter during the Term, annual rental for each such additional five (5) year term shall be increased by an amount equal [REDACTED] of the annual rental payable with respect to the immediately preceding five (5) year term.

(b). For any party to whom rental payments are to be made, LESSOR or any successor in interest of LESSOR hereby agrees to provide to LESSEE (i) a completed, current version of Internal Revenue Service Form W-9, or equivalent; (ii) complete and fully executed state and local withholding forms if required; and (iii) other documentation to verify LESSOR's or such other party's right to receive rental as is reasonably requested by LESSEE. Rental shall accrue in accordance with this Agreement, but LESSEE shall have no obligation to deliver rental payments until the requested documentation has been received by LESSEE. Upon receipt of the requested documentation, LESSEE shall deliver the accrued rental payments as directed by LESSOR.

(c).

[REDACTED]

(d).

[REDACTED]

5. ACCESS. LESSEE shall have the non-exclusive right of ingress and egress from a public right-of-way, 7 days a week, 24 hours a day, over the Property to and from the Lease Area for the purpose of installation, operation and maintenance of LESSEE's communications equipment over or along a thirty (30) foot wide right-of-way ("Easement"), which is depicted on Exhibit "B". LESSEE may use the Easement for the installation, operation and maintenance of wires, cables, conduits and pipes for all necessary electrical, telephone, fiber and other similar support services. In the event that it is necessary, LESSOR agrees to grant LESSEE or the support services provider additional non-exclusive easements for the right to install such services on, through, over and/or under the Easement, provided

the location and terms of such easements and services shall be reasonably approved by LESSOR. All such additional easements must be located within the above referenced Easement. LESSOR shall have no responsibility for maintenance of the Easement.

6. **CONDITION OF PREMISES.** LESSOR shall deliver the Premises to LESSEE in a condition ready for LESSEE's Use and clean and free of debris. LESSOR represents and warrants to LESSEE that, to best of their knowledge and belief, as of the Effective Date, the Premises are (a) in compliance with all Laws; and (b) in compliance with all EH&S Laws (as defined in Paragraph 24)

7. **IMPROVEMENTS.** The communications equipment including, without limitation, one (1) one-hundred foot (100') tall monopole tower structure (but not to exceed an overall height of 110' above ground level), antennas, conduits, fencing and other screening shall be at LESSEE's expense and installation shall be at the discretion and option of LESSEE. LESSEE shall have the right to replace, repair, add or otherwise modify its communications equipment, tower structure, antennas, conduits, fencing and other screening or other improvements or any portion thereof and the frequencies over which the communications equipment operates, whether or not any of the communications equipment, antennas, conduits or other improvements are listed on any exhibit. Lighting on the tower must be limited to the minimum hazard marking requirements imposed by the Federal Aviation Administration (FAA) or any successor agency. Upon payment of Additional Rent as set forth in Paragraph 4(c), herein, and with written notice to LESSOR, LESSEE may collocate the communications equipment of carriers other than LESSEE or of other telecommunication users, on the tower. For the avoidance of doubt, it is expressly agreed that only one (1) monopole tower shall be permitted on the Lease Area of the Premises, and that the only type of tower permitted on Lease Area of the Premises shall be a monopole tower.

8. **GOVERNMENT APPROVALS.** LESSEE's Use is contingent upon LESSEE obtaining, at its sole expense, all of the certificates, permits and other approvals (collectively the "Government Approvals") that may be required by any Federal, State or Local authorities (collectively, the "Government Entities") as well as a satisfactory soil boring test, environmental studies, or any other due diligence LESSEE chooses that will permit LESSEE's Use, such due diligence all at LESSEE's sole expense. LESSOR shall cooperate with LESSEE in its effort to obtain such approvals and shall take no action which would adversely affect the status of the Premises with respect to LESSEE's Use.

9. **TERMINATION.** LESSEE may, unless otherwise stated, immediately terminate this Agreement upon written notice to LESSOR in the event that (i) any applications for such Government Approvals should be finally rejected; (ii) any Government Approval issued to LESSEE is canceled, expires, lapses or is otherwise withdrawn or terminated by any Government Entity; (iii) LESSEE determines that such Government Approvals may not be obtained in a timely manner; (iv) LESSEE determines any structural analysis is unsatisfactory; (v) LESSEE, in its sole discretion, determines the Use of the Premises is obsolete or unnecessary; (vi) with 3 months prior notice to LESSOR, upon the annual anniversary of the Commencement Date; or (vii) at any time before the Commencement Date for any reason or no reason in LESSEE's sole discretion.

10. **INDEMNIFICATION.** Subject to Paragraph 11, each Party shall indemnify and hold the other harmless against any claim of liability or loss (including reasonable attorneys' fees and other costs and expenses) from personal injury or property damage resulting from or arising out of the negligence or willful misconduct of the indemnifying Party, its employees, contractors or agents, except to the extent such claims or damages may be due to or caused by the negligence or willful misconduct of the other Party, or its employees, contractors or agents. The indemnified Party will provide the indemnifying

Party with prompt, written notice of any claim covered by this indemnification; provided that any failure of the Indemnified Party to provide any such notice, or to provide it promptly, shall not relieve the indemnifying Party from its Indemnification obligation in respect of such claim, except to the extent the indemnifying Party can establish actual prejudice and direct damages as a result thereof. The indemnified Party will cooperate appropriately with the indemnifying Party in connection with the indemnifying Party's defense of such claim. The indemnifying Party shall defend any indemnified Party, at the indemnified Party's request, against any claim with counsel reasonably satisfactory to the indemnified Party. The indemnifying Party shall not settle or compromise any such claim or consent to the entry of any judgment without the prior written consent of each indemnified Party and without an unconditional release of all claims by each claimant or plaintiff in favor of each Indemnified Party. In addition, LESSEE shall full indemnify, defend and hold LESSOR harmless against any other claims (including reasonable attorneys' fees and other costs and expenses) alleged to have resulted from or arising out of the use or occupancy of the Premises, Easement or Property by LESSEE, its employees, contractors or agents, all subject to the prompt notice, cooperation, defense, settlement and compromise provisions set forth above.

11. INSURANCE.

a) LESSEE shall maintain commercial general liability insurance with limits not less than \$2,000,000 for injury to or death of one or more persons in any one occurrence and \$2,000,000 for damage or destruction in any one occurrence. LESSEE shall include LESSOR as an additional insured. The Parties hereby waive and release any and all rights of action for negligence against the other Party which may hereafter arise on account of damage to the Premises or the Easement, resulting from any fire, or other casualty which is covered under "Causes of Loss – Special Form" property damage insurance or for the kind covered by standard fire insurance policies with extended coverage regardless of whether or not, or in what amounts, such insurance is now or hereafter carried by the Parties, even if any such fire or other casualty shall have been caused by the fault or negligence of the other Party. These waivers and releases shall apply between the Parties and they shall also apply to any claims under or through either Party as a result of any asserted right of subrogation. All such policies of insurance concerning the Premises or the Easement shall waive the insurer's right of subrogation against LESSOR.

b) INTENTIONALLY DELETED.

c) LESSOR agrees that LESSEE may self-insure against any loss or damage which could be covered by a commercial general liability insurance policy.

12. LIMITATION OF LIABILITY. Except for indemnification pursuant to Paragraphs 10 and 24, a violation of Paragraph 29, or a violation of law, neither Party shall be liable to the other, or any of their respective agents, representatives, or employees for any lost revenue, lost profits, loss of technology, rights or services, incidental, punitive, indirect, special or consequential damages, loss of data, or interruption or loss of use of service, even if advised of the possibility of such damages, whether under theory of contract, tort (including negligence), strict liability or otherwise.

13. INTERFERENCE.

(a). LESSEE agrees that LESSEE will not cause interference that is measurable in accordance with industry standards to LESSOR's equipment. LESSOR agrees that LESSOR and other occupants of the Property will not cause interference that is measurable in accordance

with industry standards to the then existing equipment of LESSEE. LESSEE shall indemnify LESSOR, pursuant to the provisions of Paragraph 10, for any radio frequency interference that is caused by the Use or by the use of collocated equipment of equipment located on other properties, including, without limitation, equipment located on the nearby water tower.

(b). Without limiting any other rights or remedies, if interference occurs and continues for a period in excess of 48 hours following notice to the interfering party via telephone to LESSEE'S Network Operations Center (at (800) 224-6620/(800) 621-2622) or to LESSOR at (606) 678-8887, the interfering party shall or shall require any other user to reduce power or cease operations of the interfering equipment until the interference is cured.

(c). The Parties acknowledge that there will not be an adequate remedy at law for noncompliance with the provisions of this Paragraph and therefore the Parties shall have the right to equitable remedies such as, without limitation, injunctive relief and specific performance.

14. **REMOVAL AT END OF TERM.** Upon expiration or within 90 days of earlier termination, LESSEE shall remove all communications equipment, including the tower (except footings), regardless of ownership, and restore the Premises to its original condition, reasonable wear and tear and casualty damage excepted. In restoring the Premises, LESSEE shall ensure that all footings are located below the finish grade of the Premises. LESSOR agrees and acknowledges that the communications equipment shall remain the personal property of LESSEE and LESSEE shall have the right to remove the same at any time during the Term, whether or not said items are considered fixtures and attachments to real property under applicable laws. If such time for removal causes LESSEE to remain on the Premises after expiration or earlier termination of the Agreement, LESSEE shall pay rent at the then existing monthly rate or on the existing monthly pro-rata basis if based upon a longer payment term, until the removal of the communications equipment is completed.

15. **HOLDOVER.** If upon expiration of the Term the Parties are negotiating, in good faith, a new lease or a lease extension, then this Agreement shall continue during such negotiations on a month to month basis at the rental in effect as of the date of the expiration of the Term. In the event that the Parties are not in the good-faith process of negotiating a new lease or lease extension and LESSEE holds over after the expiration or earlier termination of the Term, then LESSEE shall pay rent at the then existing monthly rate or on the existing monthly pro-rata basis if based upon a longer payment term, plus twenty-five percent (25%), until the removal of the communications equipment is completed.

16. **RIGHT OF FIRST REFUSAL.** If at any time after the Effective Date, LESSOR receives a bona fide written offer or letter of intent from any person or entity that is in the business of owning, managing or operating communications facilities or is in the business of acquiring landlord interests in agreements relating to communications facilities, to purchase fee title, an easement, a lease, a license, an ownership interest in Lessor, or any other interest in the Property or any portion thereof or to acquire any interest in this Agreement, or an option for any of the foregoing, LESSOR shall provide written notice to LESSEE of said offer ("LESSOR'S Notice"). LESSOR'S Notice shall include the prospective buyer's name, the purchase price being offered, any other consideration being offered, the other terms and conditions of the offer, a description of the portion of and Interest in the Property and/or this Agreement which will be conveyed in the proposed transaction, and a copy of any letters of intent or form agreements presented to LESSOR by the third party offeror. LESSEE shall have the right of first refusal to meet any bona fide offer of sale or transfer on the terms and conditions of such offer or by

effectuating a transaction with substantially equivalent financial terms. If LESSEE fails to provide written notice to LESSOR that LESSEE intends to meet such bona fide offer within thirty (30) days after receipt of LESSOR's Notice, LESSOR may proceed with the proposed transaction in accordance with the terms and conditions of such third party offer, in which event this Agreement shall continue in full force and effect and the right of first refusal described in this Paragraph shall survive any such conveyance to a third party. If LESSEE provides LESSOR with notice of LESSEE's intention to meet the third party offer within thirty (30) days after receipt of LESSOR's Notice, then if LESSOR's Notice describes a transaction involving greater space than the Property, LESSEE may elect to proceed with a transaction covering only the Property or the Premises and the purchase price shall be pro-rated on a square footage basis. Further, LESSOR acknowledges and agrees that if LESSEE exercises this right of first refusal, LESSEE may require a reasonable period of time to conduct due diligence and effectuate the closing of a transaction on substantially equivalent financial terms of the third party offer. LESSEE may elect to amend this Agreement to effectuate the proposed financial terms of the third party offer rather than acquiring fee simple title or an easement interest in the Property or Premises. For purposes of this Paragraph, any conveyance by direct conveyance to a person or entity that is not in the business of owning, managing or operating communications facilities or in the business of acquiring landlord interests in agreements relating to communications facilities, any conveyance to a family member of Stephen D. Merrick or Kimberly Merrick, and any conveyance to a trust for the benefit of family members of Stephen D. Merrick or Kimberly Merrick shall not be considered a sale for which LESSEE has any right of first refusal.

17. RIGHTS UPON SALE. Should LESSOR, at any time during the Term, decide (i) to sell or otherwise transfer all or any part of the Property or Premises, or (ii) to grant to a third party by easement or other legal instrument an interest in and to any portion of the Property or Premises, such sale, transfer, or grant of an easement or interest therein shall be under and subject to this Agreement and any such purchaser or transferee shall recognize LESSEE's rights hereunder. In the event that LESSOR completes any such sale, transfer, or grant described in this Paragraph without executing an assignment of the Agreement whereby the third party agrees in writing to assume all obligations of LESSOR under this Agreement, then LESSOR shall not be released from its obligations to LESSEE under this Agreement, and LESSEE shall have the right to look to LESSOR and the third party for the full performance of the Agreement.

18. LESSOR'S TITLE. LESSOR covenants that LESSEE, on paying the rent and performing the covenants herein, shall peaceably and quietly have, hold and enjoy the Premises.

19. ASSIGNMENT. Without any approval or consent of the other Party, this Agreement may be sold, assigned or transferred by either Party to (i) any entity in which the Party directly or indirectly holds a majority equity or similar interest; (ii) any entity which directly or indirectly holds a majority equity or similar interest in the Party; or (iii) any entity directly or indirectly under common control with the Party. LESSOR may assign this Agreement or cause its ownership interests to be conveyed or assigned to Stephen D. Merrick or Kimberly Merrick, to any of the children of Stephen D. Merrick and Kimberly Merrick, or to any entity in which Stephen D. Merrick, Kimberly Merrick and/or one of their family members directly or indirectly holds a majority equity or similar interest. LESSEE may assign this Agreement to any entity which acquires all or substantially all of LESSEE's assets in the market defined by the FCC in which the Premises is located by reason of a merger, acquisition or other business reorganization without approval or consent of LESSOR. As to other parties, this Agreement may not be sold, assigned or otherwise transferred without the written consent of the other Party, which such consent will not be unreasonably withheld, delayed or conditioned. LESSEE may sublet, sub-lease or sub-license the Premises in LESSEE's sole discretion conditioned upon the payment by LESSEE of Additional Rent as set

forth in Paragraph 4(c), above. No change of stock ownership, partnership interest or control, or transfer upon partnership or corporate dissolution of LESSEE shall constitute an assignment hereunder.

20. **NOTICES.** Except for notices permitted via telephone in accordance with Paragraph 13, all notices hereunder must be in writing and shall be deemed validly given if sent by certified mail, return receipt requested or by commercial courier, provided the courier's regular business is delivery service and provided further that it guarantees delivery to the addressee by the end of the next business day following the courier's receipt from the sender, addressed as follows (or any other address that the Party to be notified may have designated to the sender by like notice):

LESSOR: S & C Land Company, LLC
attn.: Stephen D. Merrick
P.O. Box 983
Somerset, KY 42502

LESSEE: Rural Cellular Corporation
d/b/a Verizon Wireless
180 Washington Valley Road
Bedminster, New Jersey 07921
Attention: Network Real Estate

Notice shall be effective upon actual receipt or refusal as shown on the receipt obtained pursuant to the foregoing.

21. **SUBORDINATION AND NON-DISTURBANCE.** Within 15 days of the Effective Date, LESSOR shall obtain a Non-Disturbance Agreement, as defined below, from its existing mortgagee(s), ground lessors and master lessors, if any, of the Property or Premises. At LESSOR's option, this Agreement shall be subordinate to any future master lease, ground lease, mortgage, deed of trust or other security interest (a "Mortgage") by LESSOR which from time to time may encumber all or part of the Property or Premises; provided, however, as a condition precedent to LESSEE being required to subordinate its interest in this Agreement to any future Mortgage covering the Property or Premises, LESSOR shall obtain for LESSEE's benefit a non-disturbance and attornment agreement for LESSEE's benefit in the form reasonably satisfactory to LESSEE, and containing the terms described below (the "Non-Disturbance Agreement"), and shall recognize LESSEE's rights under this Agreement. The Non-Disturbance Agreement shall include the encumbering party's ("Lender's") agreement that, if Lender or its successor-in-interest or any purchaser of Lender's or its successor's interest (a "Purchaser") acquires an ownership interest in the Property or Premises, Lender or such successor-in-interest or Purchaser will honor all of the terms of the Agreement. Such Non-Disturbance Agreement must be binding on all of Lender's participants in the subject loan (if any) and on all successors and assigns of Lender and/or its participants and on all Purchasers. In return for such Non-Disturbance Agreement, LESSEE will execute an agreement for Lender's benefit in which LESSEE (1) confirms that the Agreement is subordinate to the Mortgage or other real property interest in favor of Lender, (2) agrees to attorn to Lender, and to subsequent owners, if Lender becomes the owner of the Property or Premises and (3) agrees to accept a cure by Lender of any of LESSOR's defaults, provided such cure is completed within the deadline applicable to LESSOR. In the event LESSOR defaults in the payment and/or other performance of any mortgage or other real property interest encumbering the Property or Premises, LESSEE, may, at its sole option and without obligation, cure or correct LESSOR's default and upon doing so, LESSEE shall be subrogated to any and all rights, titles, liens and equities of the holders of such

mortgage or other real property interest and LESSEE shall be entitled to deduct and setoff against all rents that may otherwise become due under this Agreement the sums paid by LESSEE to cure or correct such defaults.

22. **DEFAULT.** It is a "Default" if (i) either Party fails to comply with this Agreement and does not remedy the failure within 30 days after written notice by the other Party or, if the failure cannot reasonably be remedied in such time, if the failing Party does not commence a remedy within the allotted 30 days and diligently pursue the cure to completion within 90 days after the initial written notice, or (ii) LESSOR fails to comply with this Agreement and the failure interferes with LESSEE's Use and LESSOR does not remedy the failure within 5 days after written notice from LESSEE or, if the failure cannot reasonably be remedied in such time, if LESSOR does not commence a remedy within the allotted 5 days and diligently pursue the cure to completion within 15 days after the initial written notice. The cure periods set forth in this Paragraph 22 do not extend the period of time in which either Party has to cure interference pursuant to Paragraph 13 of this Agreement.

23. **REMEDIES.** In the event of a Default, without limiting the non-defaulting Party in the exercise of any right or remedy which the non-defaulting Party may have by reason of such default, the non-defaulting Party may terminate this Agreement and/or pursue any remedy now or hereafter available to the non-defaulting Party under the Laws or judicial decisions of the state in which the Premises is located. Further, upon a Default, the non-defaulting Party may at its option (but without obligation to do so), perform the defaulting Party's duty or obligation. The costs and expenses of any such performance by the non-defaulting Party shall be due and payable by the defaulting Party upon invoice therefor. If LESSEE undertakes any such performance on LESSOR's behalf and LESSOR does not pay LESSEE the full undisputed amount within 30 days of its receipt of an invoice setting forth the amount due, LESSEE may offset the full undisputed amount due against all fees due and owing to LESSOR under this Agreement until the full undisputed amount is fully reimbursed to LESSEE.

24. **ENVIRONMENTAL.** LESSEE and all other tower users shall conduct their business in compliance with all applicable laws governing the protection of the environment or employee health and safety ("EH&S Laws"). LESSEE shall indemnify and hold harmless the LESSOR from all claims resulting from LESSEE's or any other tower user's violation of any applicable EH&S Laws or to the extent that LESSEE or other tower user causes a release of any regulated substance to the environment. LESSOR shall indemnify and hold harmless LESSEE from all claims resulting from the violation of any applicable EH&S Laws or a release of any regulated substance to the environment, except to the extent resulting from the activities of LESSEE. LESSEE shall not be responsible for any environmental condition or issue except to the extent resulting from LESSEE's or other tower user's specific activities and responsibilities. In the event that LESSEE encounters any hazardous substances that do not result from its activities or the activities of another tower user, LESSEE may relocate its facilities to avoid such hazardous substances to a mutually agreeable location or, if LESSEE desires to remove at its own cost all or some the hazardous substances or materials (such as soil) containing those hazardous substances, LESSOR agrees to sign any necessary waste manifest associated with the removal, transportation and/or disposal of such substances.

25. **INTENTIONALLY DELETED.**

26. **CONDEMNATION.** If a condemnation of any portion of the Premises impairs LESSEE's Use, LESSEE may terminate this Agreement. LESSEE may on its own behalf make a claim against the condemning authority in any condemnation proceeding involving the Premises for losses related to

LESSEE's communications equipment, relocation costs and, specifically excluding loss of LESSEE's leasehold interest, any other damages LESSEE may incur as a result of any such condemnation.

27. **APPLICABLE LAWS.** During the Term, LESSEE shall maintain the Premises and the Easement in compliance with all applicable laws, EH&S Laws, rules, regulations, ordinances, directives, covenants, easements, consent decrees, zoning and land use regulations, and restrictions of record, permits, building codes, and the requirements of any applicable fire insurance underwriter or rating bureau, now in effect or which may hereafter come into effect (including, without limitation, the Americans with Disabilities Act and laws regulating hazardous substances) (collectively "Laws"). For the avoidance of doubt, LESSEE shall, in respect to the condition of the Premises and the Easement, and at LESSEE's sole cost and expense, comply with (i) all Laws relating solely to LESSEE's specific and unique nature of use of the Premises; and (ii) all building codes requiring modifications to the Premises due to the improvements being made by LESSEE in the Premises. LESSEE shall not use blasting techniques before, during or after the Term, regardless of whether such blasting is permissible by law.

28. **TAXES.**

(a). LESSOR shall invoice and LESSEE shall pay any applicable transaction tax (including sales, use, gross receipts, or excise tax) imposed on the LESSEE and required to be collected by the LESSOR based on any service, rental space, or equipment provided by the LESSOR to the LESSEE. LESSEE shall pay all personal property taxes, fees, assessments, or other taxes and charges imposed by any Government Entity that are imposed on the LESSEE and required to be paid by the LESSEE that are directly attributable to the LESSEE's equipment or LESSEE's use and occupancy of the Premises. Payment shall be made by LESSEE within 60 days after presentation of a receipted bill and/or assessment notice which is the basis for such taxes or charges. LESSOR shall pay all ad valorem, personal property, real estate, sales and use taxes, fees, assessments or other taxes or charges that are attributable to LESSOR's Property or any portion thereof imposed by any Government Entity. LESSEE shall pay to LESSOR all increases in ad valorem, personal property, real estate, sales and use taxes, fees, assessments or other taxes or charges, with the exception of such taxes, fees, assessments or charges based on gross or net income of LESSOR, that are directly attributable to LESSEE's Use of the Premises and Easement (or any portion thereof) as may be imposed by any Government Entity. Payment shall be made by LESSEE to LESSOR within 60 days after presentation of a receipted bill and/or assessment notice which is the basis for any such increase.

(b). LESSEE shall have the right, at its sole option and at its sole cost and expense, to appeal, challenge or seek modification of any tax assessment or billing for which LESSEE is wholly or partly responsible for payment. LESSOR shall reasonably cooperate with LESSEE at LESSEE's expense in filing, prosecuting and perfecting any appeal or challenge to taxes as set forth in the preceding sentence, including but not limited to, executing any consent, appeal or other similar document. In the event that as a result of any appeal or challenge by LESSEE, there is a reduction, credit or repayment received by the LESSOR for any taxes previously paid by LESSEE, LESSOR agrees to promptly reimburse to LESSEE the amount of said reduction, credit or repayment. In the event that LESSEE does not have the standing rights to pursue a good faith and reasonable dispute of any taxes under this paragraph, LESSOR will pursue such dispute at LESSEE's sole cost and expense upon written request of LESSEE.

29. **NON-DISCLOSURE.** The Parties agree this Agreement and any information exchanged between the Parties regarding the Agreement are confidential. The Parties agree not to provide copies of this Agreement or any other confidential information to any third party without the prior written consent of the other or as required by law, unless otherwise allowed under this Agreement. If a disclosure is required by law, prior to disclosure, the Party shall notify the other Party and cooperate to take lawful steps to resist, narrow, or eliminate the need for that disclosure. Notwithstanding the foregoing, LESSOR may, without prior written consent of LESSEE, disclose this Agreement and its terms to any person or entity that is in the business of owning, managing or operating communications facilities or is in the business of acquiring landlord interests in agreements relating to communications facilities

30. **INTENTIONALLY DELETED.**

31. **MISCELLANEOUS.** This Agreement contains all agreements, promises and understandings between the LESSOR and the LESSEE regarding this transaction, and no oral agreement, promises or understandings shall be binding upon either the LESSOR or the LESSEE in any dispute, controversy or proceeding. This Agreement may not be amended or varied except in a writing signed by all Parties. This Agreement shall extend to and bind the heirs, personal representatives, successors and assigns hereto. The failure of either party to insist upon strict performance of any of the terms or conditions of this Agreement or to exercise any of its rights hereunder shall not waive such rights and such party shall have the right to enforce such rights at any time. The performance of this Agreement shall be governed, interpreted, construed and regulated by the laws of the state in which the Premises is located without reference to its choice of law rules. Except as expressly set forth in this Agreement, nothing in this Agreement shall grant, suggest or imply any authority for one Party to use the name, trademarks, service marks or trade names of the other for any purpose whatsoever. LESSOR agrees to execute a Memorandum of this Agreement, which LESSEE may record with the appropriate recording officer, at its sole expense. The provisions of the Agreement relating to indemnification from one Party to the other Party shall survive any termination or expiration of this Agreement.

[Signature page follows. The remainder of this page is intentionally blank.]

IN WITNESS WHEREOF, the Parties hereto have set their hands and affixed their respective seals the day and year first above written.

LESSOR:

S & C Land Company, LLC, a Kentucky limited liability company

By: Stephen D. Merrick

Stephen D. Merrick

Its: Managing Member

Date: 2/27/2017

Jennifer Tecaro Mullins
WITNESS
Jennifer Tecaro Mullins

LESSEE: Rural Cellular Corporation
d/b/a Verizon Wireless

By: _____

Dave Herndon

Its: Director Network Field Engineering

Date: _____

WITNESS

EXHIBIT "A"

DESCRIPTION OF PROPERTY

The Property is located near 1170 Bourbon Road, Somerset, Pulaski County, Kentucky 42503, as shown on the Tax Map of Pulaski County as Parcel Number [to be determined] and as further described in Deed Book 957, Page 59 as recorded in the Office of the Pulaski County Clerk.

Being a portion of the property conveyed to Stephen D. Merrick and Kimberly Merrick by deed dated February 15, 2005, and shown of record at Deed Book 755, Page 544, in the office aforesaid.

For clarification, the Property and the Premises refer to the same real property as described in Exhibit "C".

EXHIBIT "B"

SITE PLAN OF THE PROPERTY AND THE PREMISES

GENERAL NOTES

BASED ON 8 DAILY GPS OBSERVATIONS COMPLETED ON MARCH 1, 2016.

NO SEARCH OF PUBLIC RECORDS HAS BEEN COMPLETED BY POD GROUP TO DETERMINE ANY DEFECTS AND/OR ENCUMBRANCES IN THE TITLE OF THE PARENT PARCEL.

THIS SURVEY IS FOR THE PROPOSED LEASE AREA, THE PROPOSED ACCESS & UTILITY EASEMENT AND ONLY A PARTIAL BOUNDARY SURVEY OF THE PARENT TRACT HAS BEEN PERFORMED.

A PORTION OF THIS SURVEY WAS CONDUCTED BY METHOD OF RANDOM TRAVERSE WITH SIGHT SHOTS. UNADJUSTED CLOSURE FOR THIS TRACT EQUALS 0.00', FOR A PRECISION OF 1:46,333 AND HAS NOT BEEN ADJUSTED.

THIS PROPERTY IS SUBJECT TO ANY RECORDED EASEMENTS AND/OR RIGHTS OF WAY SHOWN HEREON OR NOT.

THE PROPOSED LEASE AREA, THE PROPOSED ACCESS & UTILITY EASEMENT AND PARENT PARCEL SHOWN HEREON ARE NOT LOCATED IN A 100-YEAR FLOOD PLAIN PER FLOOD HAZARD BOUNDARY MAP, COMMUNITY PANEL NUMBER 31190C0729 PC, DATED JULY 22, 2010. THE PROPOSED LEASE AREA IS LOCATED IN ZONE X.

THIS DRAWING IS NOT INTENDED FOR LAND TRANSFER.

FAA COORDINATE POINT

NAME: 63
 HAD 63
 LATITUDE: 37°02'20.56"
 LONGITUDE: 84°38'42.26"
 ELEVATION: 1111.1' AMSL
 NORTHING: 1229242.813
 EASTING: 196295.192

TEMPORARY BENCHMARK

MARKING: 1899331 100
 EASTING: 186019.837
 ELEVATION: 51.82'
 LOCATION: FOUND 1" OPEN PIPE
 164'± NW 45.3'± FROM THE
 NORTHWEST CORNER OF THE
 PROPOSED LEASE AREA.

LEGEND

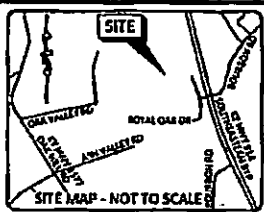
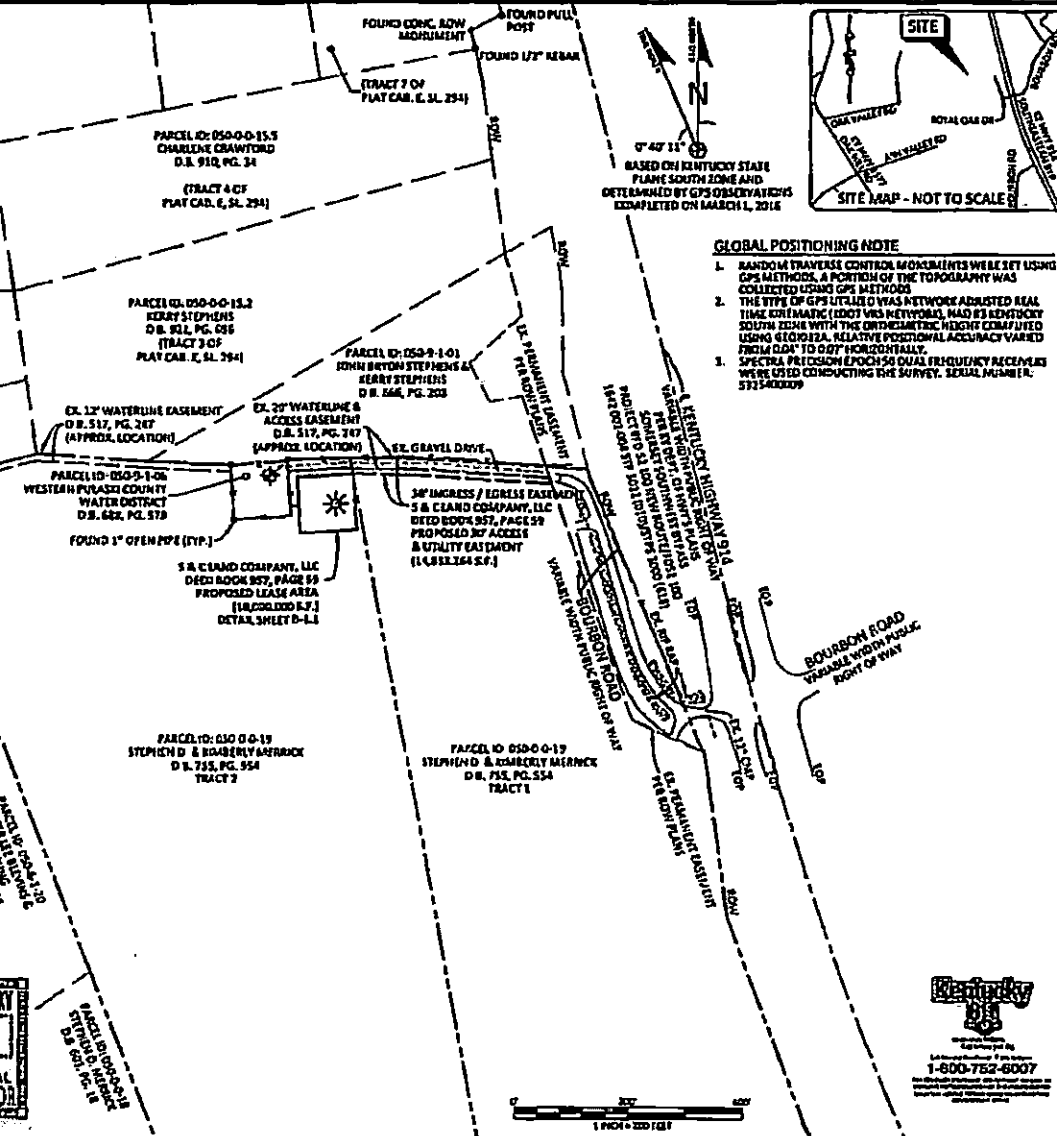
- UTILITY POLE
- GUT ANCHOR
- WATER VALVE
- EX. 12" WATERLINE EASEMENT
- EX. 20" WATERLINE & ACCESS EASEMENT
- EX. GRAVEL DRIVE
- 34" ACCESS / EGRESS EASEMENT
- EX. OVERHEAD ELECTRIC & 111E
- EX. FENCE
- FOUND MONUMENT AS NOTED
- PROPERTY LINE
- ADJACENT PROPERTY LINE

LAND SURVEYOR'S CERTIFICATE

I, MARK E. PATTERSON, HEREBY CERTIFY THAT I AM A LICENSED PROFESSIONAL LAND SURVEYOR LICENSED IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF KENTUCKY. I FURTHER CERTIFY THAT THIS PLAN AND THE SURVEY ON THE GROUND WERE PERFORMED BY PERSONS UNDER MY DIRECT SUPERVISION, AND THAT THE INSTRUMENTAL AND LINEAR MEASUREMENTS BEING WITNESSED BY MONUMENTS SHOWN HEREON ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. THE "URBAN" SURVEY, AND THE PLAN ON WHICH IT IS BASED, MEETS ALL SPECIFICATIONS AS STATED IN KAR 201.08.010.



MARK E. PATTERSON, PLS #3136 DATE



GLOBAL POSITIONING NOTE

1. RANDOM TRAVERSE CONTROL MEASUREMENTS WERE SET USING GPS METHODS. A PORTION OF THE TOPOGRAPHY WAS COLLECTED USING GPS METHODS.
2. THE TYPE OF GPS UTILITY WAS NETWORK ADJUSTED REAL TIME KINEMATIC (RTK) W/3 NETWORK, HAD 63 KENTUCKY SOUTH ZONE AHD WITH THE DYNAMIC HEIGHT COMPUTED USING GEOIDAL RELATIVE POSITIONAL ACCURACY VARIED FROM 0.04\"/>

POD
RURAL CELLULAR CORPORATION DATA

SURVEY

REV	DATE	DESCRIPTION
1	6.30.16	REVISED LEASE AREA
2	8.1.16	CLC COMMENTS
3	9.8.16	CLC COMMENTS
4	11.23.16	ADDRESS PER NEMA E DRYSD
5	2.8.17	LEASE AREA & EASY TITLE HOLDING INFO

SITE INFORMATION:

**LV SOMERSET
WT RELO**

1370 BOURBON ROAD
SOMERSET, KY 42503
PURASCI COUNTY
TAX PARCEL NUMBER:
PROPERTY OWNER:
S & CLAUD COMPANY, LLC
P.O. BOX 958
SOMERSET, KY 42503
SOURCE OF TITLE:
DEED BOOK 4157, PAGE 54

SITE NUMBER:

POD NUMBER: 16-7913
 DRAWN BY: DLP
 DATE: 8.16.16

SHEET TITLE:
SITE SURVEY

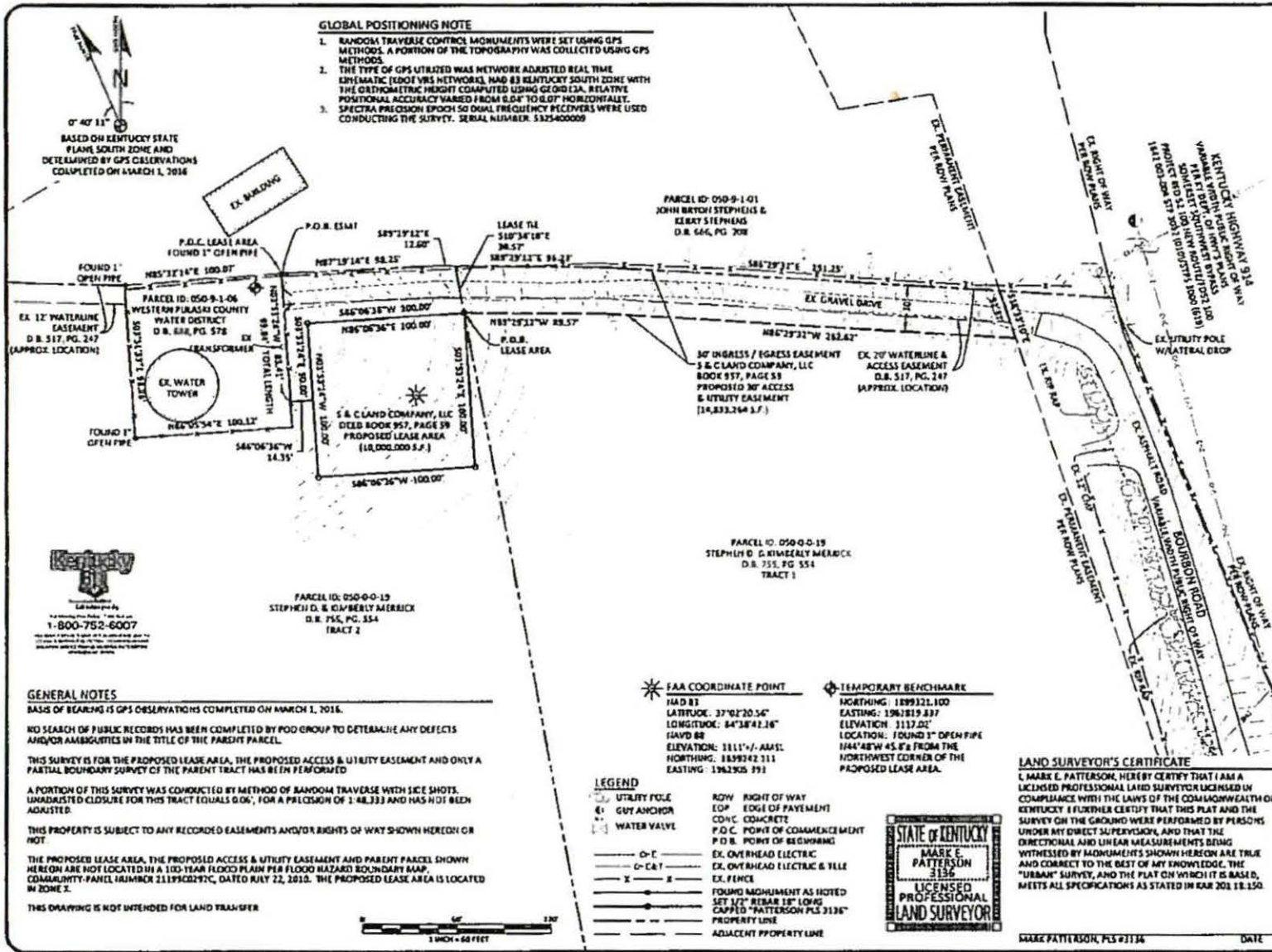
SHEET NUMBER:
B-1



BASED ON KENTUCKY STATE
PLANE SOUTH ZONE AND
DETERMINED BY GPS OBSERVATIONS
COMPLETED ON MARCH 1, 2016

GLOBAL POSITIONING NOTE

1. RANDOM TRAVERSE CONTROL MONUMENTS WERE SET USING GPS METHODS. A PORTION OF THE TOPOGRAPHY WAS COLLECTED USING GPS METHODS.
2. THE TYPE OF GPS UTILIZED WAS NETWORK ADJUSTED REAL TIME EPHEMERIS (KNOT VRS NETWORK), HAD 83 KENTUCKY SOUTH ZONE WITH THE ORTHOMETRIC HEIGHT COMPUTED USING GEOID (EA). RELATIVE POSITIONAL ACCURACY VARIED FROM 0.04" TO 0.07" HORIZONTALLY. SPECTRA PRECISION SPOCH 50 SERIAL FREQUENCY RECEIVERS WERE USED CONDUCTING THE SURVEY. SERIAL NUMBER: 5325400009



GENERAL NOTES

- 1. BASIS OF BEARING IS GPS OBSERVATIONS COMPLETED ON MARCH 1, 2016.
- 2. NO SEARCH OF PUBLIC RECORDS HAS BEEN COMPLETED BY POD GROUP TO DETERMINE ANY DEFECTS AND/OR AMBIGUITIES IN THE TITLE OF THE PARENT PARCEL.
- 3. THIS SURVEY IS FOR THE PROPOSED LEASE AREA, THE PROPOSED ACCESS & UTILITY EASEMENT AND ONLY A PARTIAL BOUNDARY SURVEY OF THE PARENT TRACT HAS BEEN PERFORMED.
- 4. A PORTION OF THIS SURVEY WAS CONDUCTED BY METHOD OF RANDOM TRAVERSE WITH SICE SHOTS. UNADJUSTED CLOSURE FOR THIS TRACT EQUALS 0.06", FOR A PRECISION OF 1:48,333 AND HAS NOT BEEN ADJUSTED.
- 5. THIS PROPERTY IS SUBJECT TO ANY RECORDED EASEMENTS AND/OR RIGHTS OF WAY SHOWN HEREON OR NOT.
- 6. THE PROPOSED LEASE AREA, THE PROPOSED ACCESS & UTILITY EASEMENT AND PARENT PARCEL SHOWN HEREON ARE NOT LOCATED IN A 100-YEAR FLOOD PLAIN PER FLOOD HAZARD BOUNDARY MAP, COMMUNITY PANEL NUMBER 21193C0297C, DATED JULY 22, 2010. THE PROPOSED LEASE AREA IS LOCATED IN ZONE X.
- 7. THIS DRAWING IS NOT INTENDED FOR LAND TRANSFER.



1179 BOURBON ROAD
SOMERSET, KY 42503

RURAL CELLULAR CORPORATION
D/B/A

SURVEY

REV	DATE	DESCRIPTION
1	6.30.16	REVISED LEASE AREA
2	8.1.16	CLC COMMENTS
3	9.8.16	CLC COMMENTS
4	11.24.16	ADDRESS PER MAPA REV. 2/17
5	2.6.17	LEASE AREA & EASEM TITLE NUMBER IMPD

SITE INFORMATION

**LV SOMERSET
WT RELO**

1179 BOURBON ROAD
SOMERSET, KY 42503
FURASKI COUNTY
TAX PARCEL NUMBER:

PROPERTY OWNER:
S & C LAND COMPANY, LLC
P.O. BOX 503
SOMERSET, KY 42503

SOURCE OF TITLE:
DEED BOOK 957, PAGE 59

SITE NUMBER:

POD NUMBER: 16-7552

DRAWN BY: DMP

CHECKED BY: MRP

DATE: 1.8.16

SHEET TITLE:

SITE SURVEY

SHEET NUMBER:
B-1.1

EXHIBIT "C"

METES AND BOUNDS DESCRIPTION OF PROPERTY and PREMISES

609684-2-LEXINGTON

VZW: Somerset WT Relo
Lease Area and Easement Descriptions

Exhibit "C"

PROPOSED LEASE AREA

THE FOLLOWING IS A DESCRIPTION OF THE PROPOSED LEASE AREA TO BE LEASED FROM TRACT 1 AND TRACT 2 OF THE PARCELS CONVEYED TO STEPHEN D. & KIMBERLY MERRICK AS RECORDED IN DEED BOOK 755, PAGE 554, PARCEL ID: 050-0-0-19, WHICH IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEARING DATUM USED HEREIN IS BASED UPON KENTUCKY STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83, FROM A REAL TIME KINEMATIC GLOBAL POSITIONING SYSTEM OBSERVATION USING THE KENTUCKY TRANSPORTATION CABINET REAL TIME GPS NETWORK COMPLETED ON FEBRUARY 15, 2016.

COMMENCING AT A FOUND 1" OPEN PIPE BEING COMMON CORNER TO STEPHEN D. & KIMBERLY MERRICK AS RECORDED IN DEED BOOK 755, PAGE 554, TRACT 2, PARCEL ID: 050-0-0-19 (PARENT PARCEL) ALSO CORNER TO WESTERN PULASKI COUNTY WATER DISTRICT AS RECORDED IN DEED BOOK 688, PAGE 578, PARCEL ID: 050-9-1-06 AND CORNER TO JOHN BRYON STEPHENS & KERRY STEPHENS AS RECORDED IN DEED BOOK 666, PAGE 208, SAID PIPE IS N85°32'14"E 100.07' FROM A FOUND 1" OPEN PIPE CORNER TO THE SAME; THENCE WITH THE LINE OF STEPHENS AND MERRICK, N87°19'14"E 98.25' TO A POINT; THENCE S89°29'12"E 12.60' TO THE COMMON CORNER TO STEPHENS TRACT 1 & 2; THENCE WITH SAID COMMON OF TRACT 1 & 2, S10°34'10"E 30.57' TO A SET 1/2" REBAR CAPPED "PATTERSON PLS 3136", HEREAFTER REFERRED TO AS A SET IPC AND BEING THE NORTHEAST CORNER OF THE PROPOSED LEASE AREA AND THE TRUE POINT OF BEGINNING; THENCE TRAVERSING THE LANDS OF STEPHENS S03°53'24"E 100.00' TO A SET IPC; THENCE S86°06'36"W 100.00' TO A SET IPC; THENCE N03°53'24"W 100.00' TO A SET IPC; THENCE N86°06'36"E 100.00' TO THE POINT OF BEGINNING CONTAINING 10,000.000 SQUARE FEET AS PER SURVEY BY MARK E. PATTERSON, PLS #3136 DATED MARCH 1, 2016.

PROPOSED 30' ACCESS & UTILITY EASEMENT

THE FOLLOWING IS A DESCRIPTION OF THE PROPOSED ACCESS & UTILITY EASEMENT TO BE GRANTED FROM TRACT 1 AND TRACT 2 OF THE PARCELS CONVEYED TO STEPHEN D. & KIMBERLY MERRICK AS RECORDED IN DEED BOOK 755, PAGE 554, PARCEL ID: 050-0-0-19, WHICH IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEARING DATUM USED HEREIN IS BASED UPON KENTUCKY STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83, FROM A REAL TIME KINEMATIC GLOBAL POSITIONING SYSTEM OBSERVATION USING THE KENTUCKY TRANSPORTATION CABINET REAL TIME GPS NETWORK COMPLETED ON FEBRUARY 15, 2016.

BEGINNING AT A FOUND 1" OPEN PIPE BEING COMMON CORNER TO STEPHEN D. & KIMBERLY MERRICK AS RECORDED IN DEED BOOK 755, PAGE 554, TRACT 2, PARCEL ID: 050-0-0-19 (PARENT PARCEL) ALSO CORNER TO WESTERN PULASKI COUNTY WATER DISTRICT AS RECORDED IN DEED BOOK 688, PAGE 578, PARCEL ID: 050-9-1-06 AND CORNER TO JOHN BRYON STEPHENS & KERRY STEPHENS AS RECORDED IN DEED BOOK 666, PAGE 208, SAID PIPE IS N85°32'14"E 100.07' FROM A FOUND 1" OPEN PIPE CORNER TO THE SAME; THENCE WITH THE LINE OF STEPHENS AND MERRICK, N87°19'14"E 98.25' TO A POINT; THENCE S89°29'12"E 12.60' TO A POINT IN STEPHENS TRACT 1 & 2; THENCE S89°29'12"E 96.23' TO A POINT; THENCE S86°29'32"E 251.25' TO A POINT IN THE EXISTING PERMANENT EASEMENT, PER KY DEPARTMENT OF HIGHWAYS PLANS, SOMERSET SOUTHWEST BYPASS, PROJECT #FD 52 100 NEW ROUTE/FD52 100 1642 003-004 STP 3012 (010)/STPS 3000 (618); THENCE LEAVING SAID COMMON LINE AND WITH THE LINE OF MERRICK AND STATE EASEMENT, S18°33'10"E 32.37' TO A POINT; THENCE TRAVERSING THE LANDS OF STEPHENS, TRACT 1, N86°29'32"W 262.62' TO A POINT; THENCE N89°29'12"W 89.57' TO A SET 1/2" REBAR CAPPED "PATTERSON PLS 3136", HEREAFTER REFERRED TO AS A SET IPC AND BEING THE NORTHEAST CORNER OF THE PROPOSED LEASE AREA; THENCE WITH SAID LEASE AREA, S86°06'36"W 100.00' TO A SET IPC; THENCE S03°53'24"E 50.00' TO A POINT; THENCE LEAVING SAID LEASE AREA, S86°06'36"W 14.35' TO A POINT IN THE COMMON LINE OF THE AFOREMENTIONED WATER DISTRICT AND MERRICK; THENCE WITH SAID COMMON LINE, N03°53'24"W 84.61' TO THE POINT OF BEGINNING CONTAINING 14,833.264 SQUARE FEET AS PER SURVEY BY MARK E. PATTERSON, PLS #3136 DATED MARCH 1, 2016.

Being the same property conveyed to S & C Land Company, LLC by deed dated Dec. 31, 2016, as shown of record at Deed Book 957, Page 59, and being a portion of property conveyed to Stephen D. Merrick and Kimberly Merrick as recorded in Deed Book 755, Page 554.

**EXHIBIT J
NOTIFICATION LISTING**

Somerset Water Tank Relo – Notice List

S & C Land Company, LLC
PO Box 983
Somerset, KY 42503

Stephen D. & Kimberly Merrick
5012 Ash Valley Rd
Somerset, KY 42503-9634

Stephen D. Merrick
5012 Ash Valley Rd
Somerset, KY 42503

Carter Lee & Jo Young Blevins
5071 Ash Valley Rd
Somerset, KY 42503

Randy & Frances M. Beaty
101 N. Starview Dr.
Somerset, KY 42503

Clifford Pierce & Mildr Jasper
103 N. Starview Dr.
Somerset, KY 42503

Bill & Rubi Vanhook
107 N. Starview Rd
Somerset, KY 42503

Billy & Rubi Vanhook
107 N. Starview Rd
Somerset, KY 42503

Charlene Crawford
1340 S. Hwy 27 Ste C
Somerset, KY 42501

Kerry Stephens
1399 W. Hwy 914
Somerset, KY 42503

John Bryon & Kerry Stephens
1399 W Hwy 914
Somerset, KY 42503

Western Pulaski Co Water Distr
1059 W Hwy 80
Somerset, KY 42503

Kevin E. & Amanda Haynes
1540 Antioch Rd
Burnside, KY 42519

Timothy D. Perry
1270 W. Bourbon Rd
Somerset, KY 42503

Frank & Sharon K. Hopson
PO Box 288
Wooton, KY 41776

Donnie & Lonnie & Glen Casada
c/o Donnie L. Casada
1325 W. Bourbon Rd
Somerset, KY 42503

John W. Tuttle III & Terri H. Tuttle
214 Bolton Dr
Somerset, KY 42503

Waitsboro Hills LLC
380 Waitsboro Dr
Somerset, KY 42503

Ed & Debbie Peterson
1002 South Fork Dr
Somerset, KY 42501

Buchanan Fam Irr Tr
c/o Calvin Buchanan
1001 South Fork Dr
Somerset, KY 42503

Harvey G. Maynard Jr. & Carol J. Maynard
43 Hidden Loop
Somerset, KY 42503

All Secure Holdings Inc
650 S Hwy 27 Ste 5201
Somerset, KY 42501

Sharda Property Inc
22 Hidden Creek Dr
Somerset, KY 42503-4115

All Secure Holdings Inc
650 S Hwy 27 Ste 5201
Somerset, KY 42501

George & Nona Rebuck
4254 Oak Hill Rd
Somerset, KY 42503

Christopher & Ami Higgins
4198 Oak Hill Rd
Somerset, KY 42503

Jonathan David Absher
4174 Oak Hill Rd
Somerset, KY 42503

Jeremy Johnson
2817 Hwy 196
Nancy, KY 42544

Troy Hall Jr. & Mary Alice Hall
4120 Oak Hill Rd
Somerset, KY 42503

Hall Family Rev Liv Trust
c/o Troy Hall Sr
4064 Oak Hill Rd
Somerset, KY 42503

Morris & Pearl & Dearl Dunbar
1100 Heartland Dr
Somerset, KY 42501

Jonathan Ruby & Karen Ranae
311 College St
Somerset, KY 42501-1311

Ruby B. Burns
311 Eula Nickell Way
Campton, KY 41301

Richard & Linda Whitaker
260 Whitaker Rd
Somerset, KY 42503-4641

John J. & Joan C. Robinette
300 Planters Way
Somerset, KY 42503

Franklin Lay & Brenda Nelson
3825 Oak Hill Rd
Somerset, KY 42503

Imants & Patricia Rizenberg
5004 Ash Valley Rd
Somerset, KY 42503

Nancy L Kuhnappel Rev Tr
5006 Ash Valley Rd
Somerset, KY 42503-6295

Orwin A. & Nancy Kuhnappel Tr
5006 Ash Valley Road
Somerset, KY 42503-6295

Alan J. & Shelley R. Gover
5008 Ash Valley Rd
Somerset, KY 42503

Charles Glenn & Sharon Yonts
5011 Ash Valley Dr
Somerset, KY 42503-9119

Stephen C. & Clarine Abbott
5013 Ash Valley Dr
Somerset, KY 42503

Nancy Lee Merrick
5015 Ash Valley Rd
Somerset, KY 42503

EXHIBIT K
COPY OF PROPERTY OWNER NOTIFICATION



1578 Highway 44 East, Suite 6
P.O. Box 369
Shepherdsville, KY 40165-0369
Phone (502) 955-4400 or (800) 516-4293
Fax (502) 543-4410 or (800) 541-4410

**Notice of Proposed Construction of
Wireless Communications Facility
Site Name: Somerset WT Relo**

Dear Landowner:

Rural Cellular Corporation d/b/a Verizon Wireless filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located on 1170 Bourbon Road, Somerset, KY 42503 (37° 02' 20.56" North latitude, 84° 38' 42.26" West longitude). The proposed facility will include a 100-foot tall antenna tower, plus a 5-foot lightning arrestor and related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

This notice is being sent to you because the Pulaski County Property Valuation Administrator's records indicate that you may own property that is within a 500' radius of the proposed tower site or contiguous to the property on which the tower is to be constructed. You have a right to submit testimony to the Kentucky Public Service Commission ("PSC"), either in writing or to request intervention in the PSC's proceedings on the application. You may contact the PSC for additional information concerning this matter at: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2017-00128 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. Verizon Wireless' radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the area. Please feel free to contact us toll free at (800) 516-4293 if you have any comments or questions about this proposal.

Sincerely,
David A. Pike
Attorney for Applicants

enclosure

Driving Directions to Proposed Tower Site

1. Beginning at the Pulaski County Judge Executive's Office, located at 100 N. Main Street in Somerset, Kentucky, head south on N. Main Street and travel approximately 1.0 miles.
2. Continue onto KY-2292/Monticello St. and travel approximately 2.3 miles.
3. Continue onto W. Bourbon Road and travel approximately 1.5 miles. The site is located at 1170 Bourbon Road.
4. The site coordinates are
 - a. North $37^{\circ} 02' 20.56''$
 - b. West $84^{\circ} 38' 42.26''$



Prepared by:
Aaron L. Roof
Pike Legal Group PLLC
1578 Highway 44 East, Suite 6
P.O. Box 369
Shepherdsville, KY 40165-3069
Telephone: 502-955-4400 or 800-516-4293

(A0) PARCEL ID: "TO BE DETERMINED"
S & C LAND COMPANY, LLC
PO BOX 983
SOMERSET, KY 42503

(A1) PARCEL ID: 050-0-0-19
STEPHEN D. & KIMBERLY MERRICK
5012 ASH VALLEY ROAD
SOMERSET, KY 42503-9634

(B1) PARCEL ID: 050-0-0-18.1
STEPHEN D. & KIMBERLY MERRICK
5012 ASH VALLEY ROAD
SOMERSET, KY 42503-9634

(C1) PARCEL ID: 050-0-0-18
STEPHEN D. MERRICK
5012 ASH VALLEY ROAD
SOMERSET, KY 42503

(D1) PARCEL ID: 050-6-1-20
CARTER LEE & JOYDING BLEVINS
5071 ASH VALLEY ROAD
SOMERSET, KY 42503

(E1) PARCEL ID: 050-6-1-19
RANDY & FRANCES M. BEATY
101 N. STARVIEW DRIVE
SOMERSET, KY 42503

(F1) PARCEL ID: 050-6-1-18
CLIFFORD PIERCE JASPER &
MILDRED JASPER
103 N. STARVIEW DRIVE
SOMERSET, KY 42503

(G1) PARCEL ID: 050-6-1-17
BILL & RUBI VANHOOK
107 N. STARVIEW ROAD
SOMERSET, KY 42503

(H1) PARCEL ID: 050-6-1-16
BILLY & RUBI VANHOOK
107 N. STARVIEW ROAD
SOMERSET, KY 42503

(I1) PARCEL ID: 050-0-0-15.5
CHARLENE CRAWFORD
1340 S. HIGHWAY 27, STE C
SOMERSET, KY 42501

(J1) PARCEL ID: 050-0-0-15.2
KERRY STEPHENS
1399 W. HIGHWAY 914
SOMERSET, KY 42503

(K1) PARCEL ID: 050-9-1-01
JOHN BRYON STEPHENS &
KERRY STEPHENS
1399 W. HIGHWAY 914
SOMERSET, KY 42503

GENERAL NOTE:

1. ALL INFORMATION SHOWN HEREON WAS OBTAINED FROM THE RECORDS OF THE PULASKI COUNTY KENTUCKY PROPERTY VALUATION ADMINISTRATION OFFICE ON MARCH 1, 2016 AND UPDATED FROM THE PVA WEB SITE ON AUGUST 5, 2016 AND FEBRUARY 28, 2017. THE PROPERTY VALUATION ADMINISTRATION RECORDS MAY NOT REFLECT THE CURRENT OWNERS AND ADDRESSES DUE TO THE INACCURACIES AND TIME LAPSE IN UPDATING FILES. POD AND THE COUNTY PROPERTY VALUATION ADMINISTRATION EXPRESSLY DISCLAIMS ANY WARRANTY FOR THE CONTENT AND ANY ERRORS CONTAINED IN THEIR FILES
2. THIS MAP IS FOR GENERAL INFORMATIONAL PURPOSES ONLY AND IS NOT A BOUNDARY SURVEY
3. NOT FOR RECORDING OR PROPERTY TRANSFER.

NOTE:
R = RESIDENCE
G = GARAGE
B = BUILDING

(L1) PARCEL ID: 050-9-1-06
WESTERN PULASKI COUNTY
WATER DISTRICT
1059 W. HIGHWAY 80
SOMERSET, KY 42503

(M1) PARCEL ID: 050-0-0-15.3
KEVIN E. & ANANDA HAYNES
1540 ANTOICHI ROAD
BURNSIDE, KY 42519

(N1) PARCEL ID: 050-9-1-01.1
JOHN BRYON STEPHENS &
KERRY STEPHENS
1399 W. HIGHWAY 914
SOMERSET, KY 42503

(O1) PARCEL ID: 050-9-1-05
TIMOTHY D. FERRY
1270 W. BOURBON ROAD
SOMERSET, KY 42503

(P1) PARCEL ID: 050-9-1-08
FRANK & SHARON K. HOPSON
P.O. BOX 288
WOOTON, KY 41776

(Q1) PARCEL ID: 050-9-1-07
DORINE & LOHNE & GLEN CASADA
C/O DONNIE L. CASADA
1325 W. BOURBON ROAD
SOMERSET, KY 42503

(R1) PARCEL ID: 050-0-0-19.3
JOHN W. TUTTLE III &
TERRI H. TUTTLE
214 BOLTON DRIVE
SOMERSET, KY 42503

(S1) PARCEL ID: 050-0-0-19.1
JOHN W. TUTTLE III &
TERRI H. TUTTLE
214 BOLTON DRIVE
SOMERSET, KY 42503

(T1) PARCEL ID: 051-7-1-01
WAITSBORO HILLS, LLC
380 WAITSBORO DRIVE
SOMERSET, KY 42503

(U1) PARCEL ID: 051-7-2-01
WAITSBORO HILLS, LLC
380 WAITSBORO DRIVE
SOMERSET, KY 42503

(V1) PARCEL ID: 050-0-0-19.2
JOHN W. TUTTLE III &
TERRI H. TUTTLE
214 BOLTON DRIVE
SOMERSET, KY 42503

CERTIFICATE

I HEREBY CERTIFY THAT THIS EXHIBIT PERTAINING TO THE ADJOINING PROPERTY OWNERS PER PVA RECORDS WAS PREPARED UNDER MY DIRECT SUPERVISION. NO BOUNDARY SURVEYING OF ANY KIND HAS BEEN PERFORMED FOR THIS EXHIBIT.

STATE OF KENTUCKY
MARK PATTERSON
3136
LICENSED
PROFESSIONAL
LAND SURVEYOR

Mark Patterson 3.8.17
MARK PATTERSON, LPLS 43136 DATE

POD
POWER OF DESIGN
11400 BLUEGRASS PARKWAY
LOUISVILLE, KY 40299
502-457-8252

RURAL CELLULAR CORPORATION
D/B/A
verizon

EXHIBIT

REV.	DATE	DESCRIPTION
A	8.5.16	ISSUED FOR REVIEW
B	11.14.16	UPDATED PER OLC COMMENTS
C	2.10.17	SURVEY REVISIONS
D	2.26.17	OLC COMMENTS
O	3.7.17	ISSUED AS FINAL

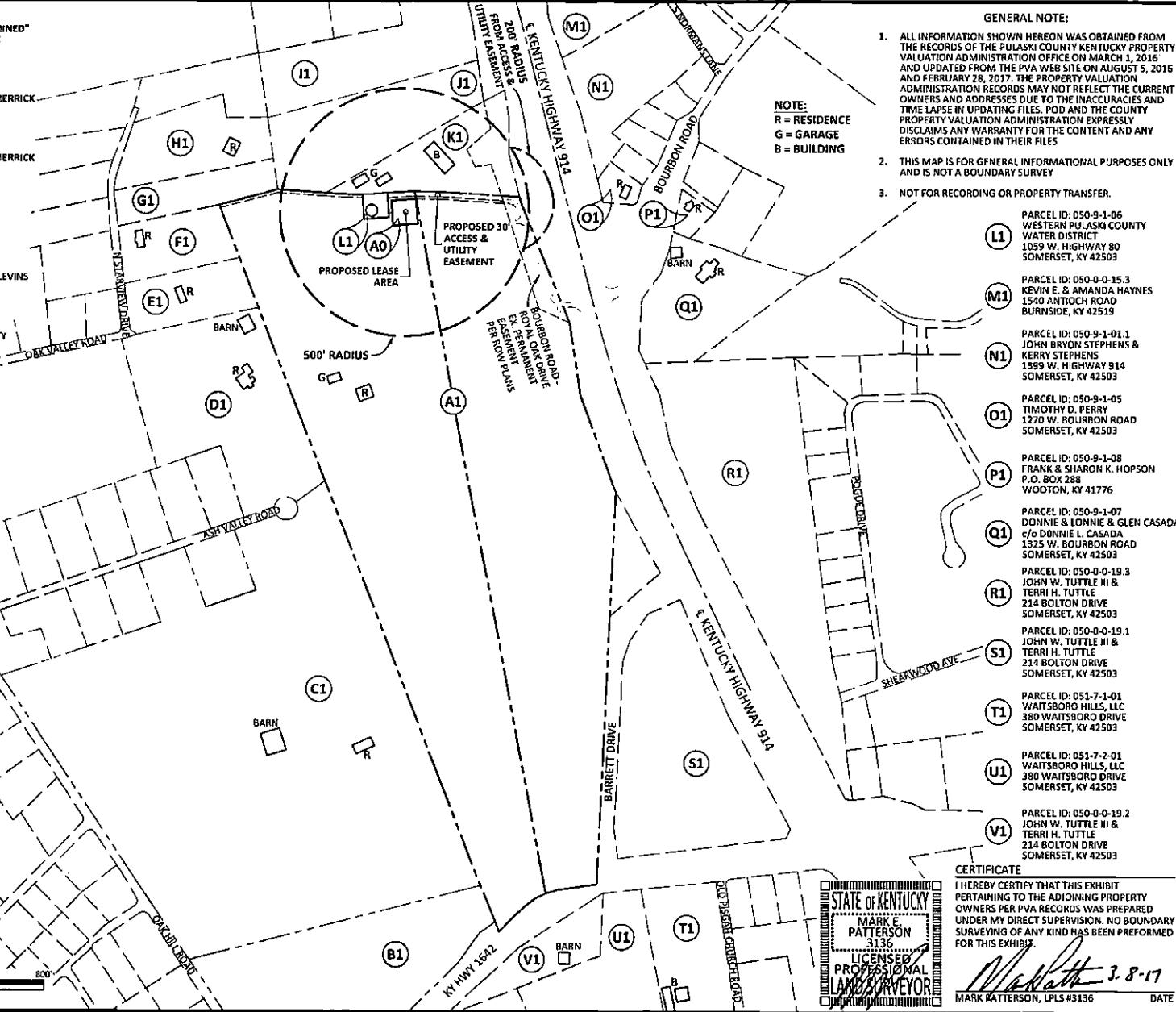
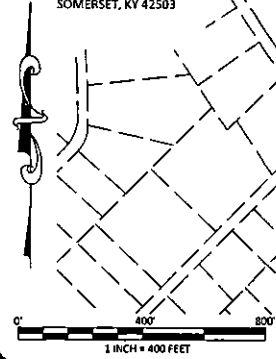
SITE INFORMATION:
LV SOMERSET WATER TANK RELO
1170 BOURBON ROAD
SOMERSET, KY 42503
PULASKI COUNTY
TAX PARCEL NUMBER:
"TO BE DETERMINED"
PROPERTY OWNER:
S & C LAND COMPANY, LLC
P.O. BOX 983
SOMERSET, KY 42503
SOURCE OF TITLE:
DEED BOOK 957, PAGE 59

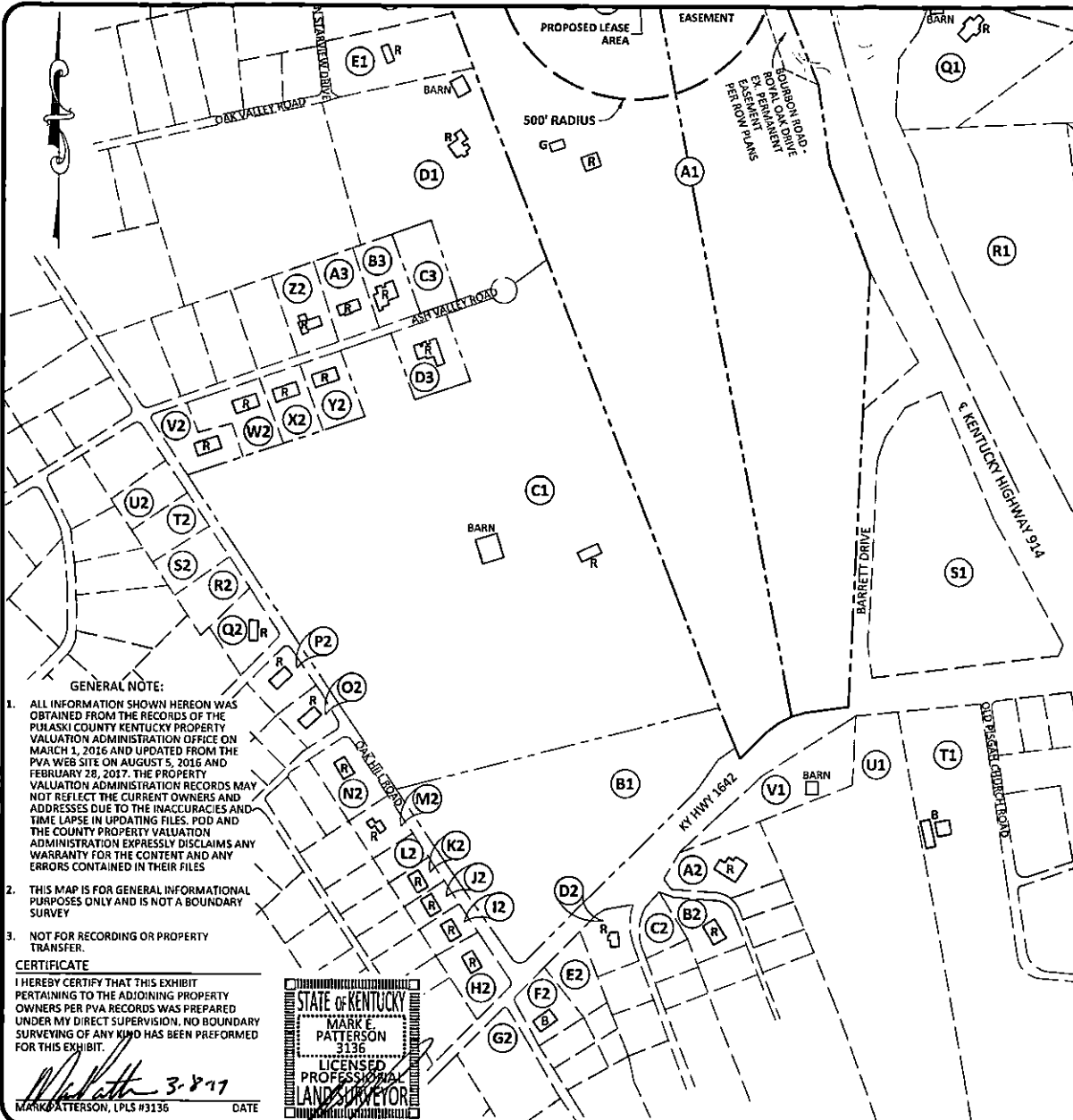
SITE NUMBER:

POD NUMBER: 16-10389
DRAWN BY: DAP
CHECKED BY: MEP
DATE: 3.8.16

SHEET TITLE:
500' RADIUS & ABUTTERS MAP

SHEET NUMBER:
B-2





**ADDITIONAL ABUTTER'S FOR B1 AND C1
(A1-V1 SEE SHEET B-2)**

- A2** PARCEL ID: 051-7-2-28 ED & DEBBIE PETERSON 1002 SOUTH FORK DRIVE SOMERSET, KY 42501
- B2** PARCEL ID: 051-7-2-02 BUCHANAN FAMILY IRR TR c/o CALVIN BUCHANAN 1001 SOUTH FORK DRIVE SOMERSET, KY 42503
- C2** PARCEL ID: 051-7-2-58 BUCHANAN FAMILY IRR TR c/o CALVIN BUCHANAN 1001 SOUTH FORK DRIVE SOMERSET, KY 42503
- D2** PARCEL ID: 051-7-2-29 HARVEY G. MAYNARD JR. & CAROL J. MAYNARD 43 HIDDEN LOOP SOMERSET, KY 42503
- E2** PARCEL ID: 051-7-2-59 ALL SECURE HOLDINGS, INC. 650 S. HIGHWAY 27, STE 5201 SOMERSET, KY 42501
- F2** PARCEL ID: 051-7-2-60 SHARDA PROPERTY, INC. 42 HIDDEN CREEK DRIVE SOMERSET, KY 42503-4115
- G2** PARCEL ID: 051-7-2-70.1 ALL SECURE HOLDINGS, INC. 650 S. HIGHWAY 27, STE 5201 SOMERSET, KY 42501
- H2** PARCEL ID: 051-4-4-56 GEORGE & NORA REBUCK 4254 OAK HILL ROAD SOMERSET, KY 42503
- I2** PARCEL ID: 051-4-4-55 CHRISTOPHER & AMI HIGGINS 4198 OAK HILL ROAD SOMERSET, KY 42503
- J2** PARCEL ID: 051-4-4-54 JONATHAN DAVID ABISHER 4174 OAK HILL ROAD SOMERSET, KY 42503
- K2** PARCEL ID: 051-4-4-53 JEREMY JOHNSON 2817 HIGHWAY 196 NANCY, KY 42544
- L2** PARCEL ID: 051-4-4-52 TROY HALL JR. & MARY ALICE HALL 4120 OAK HILL ROAD SOMERSET, KY 42503
- M2** PARCEL ID: 051-4-4-51 TROY HALL JR. & MARY ALICE HALL 4120 OAK HILL ROAD SOMERSET, KY 42503
- N2** PARCEL ID: 051-4-4-50 HALL FAMILY REVOCABLE LIVING TRUST c/o TROY HALL SR. 4064 OAK HILL ROAD SOMERSET, KY 42503
- O2** PARCEL ID: 050-6-1-48 MORRIS & PEARL & DEARL DUNBAR 1100 HEARTLAND DRIVE SOMERSET, KY 42501
- P2** PARCEL ID: 050-6-1-47 JONATHAN RUBY & KAREN RANAE 311 COLLEGE STREET SOMERSET, KY 42501-1311
- Q2** PARCEL ID: 050-6-1-41 RUBY B. BURNS 311 EULA NICKELL WAY CAMPTON, KY 41301
- R2** PARCEL ID: 050-6-1-40 RICHARD & LINDA WHITAKER 260 WHITAKER ROAD SOMERSET, KY 42503-4641
- S2** PARCEL ID: 050-6-1-39 RICHARD & LINDA WHITAKER 260 WHITAKER ROAD SOMERSET, KY 42503-4641
- T2** PARCEL ID: 050-6-1-38 JOHN J. & JOAN C. ROBINETTE 300 PLANTERS WAY SOMERSET, KY 42503
- U2** PARCEL ID: 050-6-1-37 JOHN J. & JOAN C. ROBINETTE 300 PLANTERS WAY SOMERSET, KY 42503
- V2** PARCEL ID: 050-6-1-36 FRANKLIN LAY NELSON & BRENDA NELSON 3825 OAK HILL ROAD SOMERSET, KY 42503
- W2** PARCEL ID: 050-6-1-35 IMAMTS & PATRICIA RIZENBERG 5004 ASH VALLEY ROAD SOMERSET, KY 42503
- X2** PARCEL ID: 050-6-1-34 ORWIN A. & NANCY KUHNAPPEL TR 5005 ASH VALLEY ROAD SOMERSET, KY 42503-6295
- Y2** PARCEL ID: 050-6-1-33 ALAN J. & SHELLEY R. GOVER 5008 ASH VALLEY ROAD SOMERSET, KY 42503
- Z2** PARCEL ID: 050-6-1-28 CHARLES GLEN YONTS & SHARON YONTS 5011 ASH VALLEY DRIVE SOMERSET, KY 42503-9119
- A3** PARCEL ID: 050-6-1-29 STEPHEN C. & CLARINE ABBOTT 5013 ASH VALLEY DRIVE SOMERSET, KY 42503
- B3** PARCEL ID: 050-6-1-30 NANCY LEE MERRICK 5015 ASH VALLEY ROAD SOMERSET, KY 42503
- C3** PARCEL ID: 050-6-1-31 STEPHEN D. & KIMBERLY MERRICK 5012 ASH VALLEY ROAD SOMERSET, KY 42503-9634
- D3** PARCEL ID: 050-6-1-32 STEPHEN D. & KIMBERLY MERRICK 5012 ASH VALLEY ROAD SOMERSET, KY 42503-9634

NOTE:
R = RESIDENCE
G = GARAGE
B = BUILDING



GENERAL NOTE:

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Mark E. Patterson 3-8-17
MARK PATTERSON, LPLS #3136 DATE



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1170 BOURBON ROAD SOMERSET, KY 42503
PULASKI COUNTY
TAX PARCEL NUMBER:
"TO BE DETERMINED"
PROPERTY OWNER:
S & C LAND COMPANY, LLC
P.O. BOX 983
SOMERSET, KY 42503
SOURCE OF TITLE:
DEED BOOK 957, PAGE 59

SITE NUMBER:

POD NUMBER: 16-10389
DRAWN BY: DAP
CHECKED BY: MFP
DATE: 3.8.16

SHEET TITLE:
500' RADIUS & ABUTTERS MAP

SHEET NUMBER:
B-2.1

EXHIBIT L
COPY OF COUNTY JUDGE/EXECUTIVE NOTICE



1578 Highway 44 East, Suite 6
P.O. Box 369
Shepherdsville, KY 40165-0369
Phone (502) 955-4400 or (800) 516-4293
Fax (502) 543-4410 or (800) 541-4410

VIA CERTIFIED MAIL

Hon. Steve Kelley
100 N. Main Street, Suite 202
Somerset, KY 42501

RE: Notice of Proposal to Construct Wireless Communications Facility
Kentucky Public Service Commission Docket No. 2017-00128
Site Name: Somerset WT Relo

Dear Judge Kelley:

Rural Cellular Corporation d/b/a Verizon Wireless filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at 1170 Bourbon Road, Somerset, KY 42503 (37° 02' 20.56" North latitude, 84° 38' 42.26" West longitude). The proposed facility will include a 100-foot tall antenna tower, plus a 5-foot lightning arrestor and related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

You have a right to submit comments to the PSC or to request intervention in the PSC's proceedings on the application. You may contact the PSC at: Executive Director, Public Service Commission, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2017-00128 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. Verizon Wireless' radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the area. Please feel free to contact us with any comments or questions you may have.

Sincerely,
David A. Pike
Attorney for Applicants
enclosure

Driving Directions to Proposed Tower Site

1. Beginning at the Pulaski County Judge Executive's Office, located at 100 N. Main Street in Somerset, Kentucky, head south on N. Main Street and travel approximately 1.0 miles.
2. Continue onto KY-2292/Monticello St. and travel approximately 2.3 miles.
3. Continue onto W. Bourbon Road and travel approximately 1.5 miles. The site is located at 1170 Bourbon Road.
4. The site coordinates are
 - a. North $37^{\circ} 02' 20.56''$
 - b. West $84^{\circ} 38' 42.26''$



Prepared by:
Aaron L. Roof
Pike Legal Group PLLC
1578 Highway 44 East, Suite 6
P.O. Box 369
Shepherdsville, KY 40165-3069
Telephone: 502-955-4400 or 800-516-4293

(A0) PARCEL ID: "TO BE DETERMINED"
S & C LAND COMPANY, LLC
PO BOX 983
SOMERSET, KY 42503

(A1) PARCEL ID: 050-0-0-19
STEPHEN D. & KIMBERLY MERRICK
5012 ASH VALLEY ROAD
SOMERSET, KY 42503-9634

(B1) PARCEL ID: 050-0-0-18.1
STEPHEN D. & KIMBERLY MERRICK
5012 ASH VALLEY ROAD
SOMERSET, KY 42503-9634

(C1) PARCEL ID: 050-0-0-18
STEPHEN D. MERRICK
5012 ASH VALLEY ROAD
SOMERSET, KY 42503

(D1) PARCEL ID: 050-6-1-20
CARTER LEE & JOY YOUNG BLEVINS
6071 ASH VALLEY ROAD
SOMERSET, KY 42503

(E1) PARCEL ID: 050-6-1-19
RANDY & FRANCES M. BEATY
101 N. STARVIEW DRIVE
SOMERSET, KY 42503

(F1) PARCEL ID: 050-6-1-18
CLIFFORD PIERCE JASPER &
MILDRED JASPER
103 N. STARVIEW DRIVE
SOMERSET, KY 42503

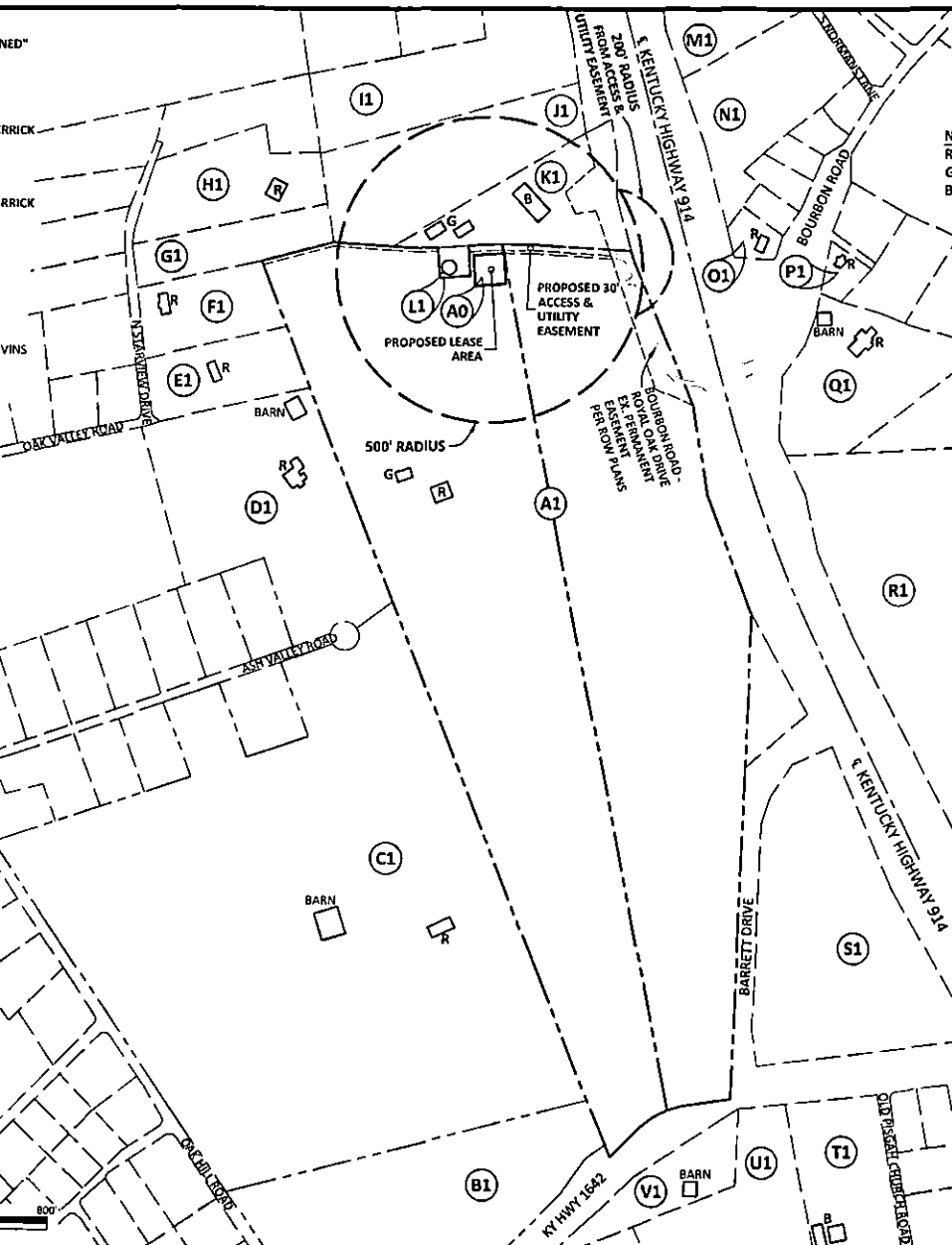
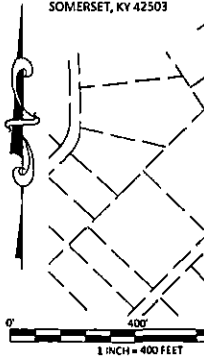
(G1) PARCEL ID: 050-6-1-17
BILL & RUBI VANHOOK
107 N. STARVIEW ROAD
SOMERSET, KY 42503

(H1) PARCEL ID: 050-6-1-16
BILLY & RUBI VANHOOK
107 N. STARVIEW ROAD
SOMERSET, KY 42503

(I1) PARCEL ID: 050-0-0-15.5
CHARLENE CRAWFORD
1340 S. HIGHWAY 27, STE C
SOMERSET, KY 42501

(J1) PARCEL ID: 050-0-0-15.2
KERRY STEPHENS
1399 W. HIGHWAY 914
SOMERSET, KY 42503

(K1) PARCEL ID: 050-9-1-01
JOHN BRYON STEPHENS &
KERRY STEPHENS
1399 W. HIGHWAY 914
SOMERSET, KY 42503



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G = GARAGE
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- (L1)** PARCEL ID: 050-9-1-06
WESTERN PULASKI COUNTY
WATER DISTRICT
1059 W. HIGHWAY 80
SOMERSET, KY 42503
- (M1)** PARCEL ID: 050-0-0-15.3
KEVIN E. & ANDRA HAYNES
1540 ANTIOCH ROAD
BURNSIDE, KY 42519
- (N1)** PARCEL ID: 050-9-1-01.1
JOHN BRYON STEPHENS &
KERRY STEPHENS
1399 W. HIGHWAY 914
SOMERSET, KY 42503
- (O1)** PARCEL ID: 050-9-1-05
TIMOTHY D. PERRY
1270 W. BOURBON ROAD
SOMERSET, KY 42503
- (P1)** PARCEL ID: 050-9-1-08
FRANK & SHARON K. HOPSON
P.O. BOX 288
WOOTON, KY 41776
- (Q1)** PARCEL ID: 050-9-1-07
DONNIE & LONNIE & GLEN CASADA
c/o DON E. CASADA
1325 W. BOURBON ROAD
SOMERSET, KY 42503
- (R1)** PARCEL ID: 050-0-0-19.3
JOHN W. TUTTLE III &
TERRI H. TUTTLE
214 BOLTON DRIVE
SOMERSET, KY 42503
- (S1)** PARCEL ID: 050-0-0-19.1
JOHN W. TUTTLE III &
TERRI H. TUTTLE
214 BOLTON DRIVE
SOMERSET, KY 42503
- (T1)** PARCEL ID: 051-7-1-01
WAITSBORO HILLS, LLC
380 WAITSBORO DRIVE
SOMERSET, KY 42503
- (U1)** PARCEL ID: 051-7-2-01
WAITSBORO HILLS, LLC
380 WAITSBORO DRIVE
SOMERSET, KY 42503
- (V1)** PARCEL ID: 050-0-0-19.2
JOHN W. TUTTLE III &
TERRI H. TUTTLE
214 BOLTON DRIVE
SOMERSET, KY 42503

STATE OF KENTUCKY
MARK E. PATTERSON
3156
LICENSED PROFESSIONAL
LAND SURVEYOR

CERTIFICATE
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MARK PATTERSON, LPLS #3136 DATE



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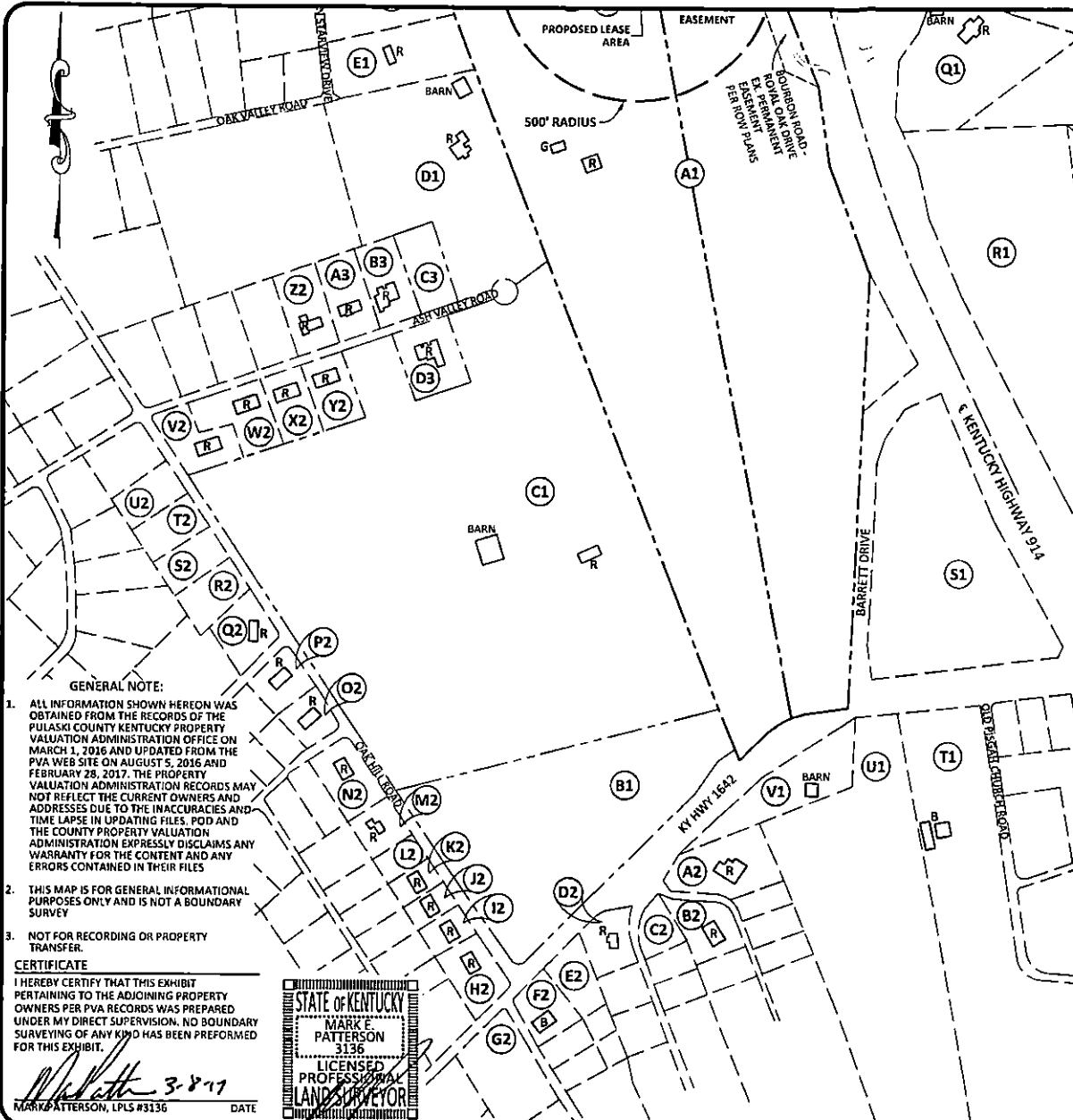
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SITE NUMBER:

POD NUMBER: 16-10389
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SHEET TITLE:
500' RADIUS & ABUTTERS MAP

SHEET NUMBER:
B-2



**ADDITIONAL ABUTTER'S FOR B1 AND C1
(A1-V1 SEE SHEET B-2)**

- A2** PARCEL ID: 051-7-2-28
ED & DEBBIE PETERSON
1002 SOUTH FORK DRIVE
SOMERSET, KY 42501
- B2** PARCEL ID: 051-7-2-02
BUCHANAN FAMILY IRR TR
c/o CALVIN BUCHANAN
1001 SOUTH FORK DRIVE
SOMERSET, KY 42503
- C2** PARCEL ID: 051-7-2-58
BUCHANAN FAMILY IRR TR
c/o CALVIN BUCHANAN
1001 SOUTH FORK DRIVE
SOMERSET, KY 42503
- D2** PARCEL ID: 051-7-2-29
HARVEY G. MAYNARD JR. &
CAROL J. MAYNARD
43 HIDDEN LOOP
SOMERSET, KY 42503
- E2** PARCEL ID: 051-7-2-59
ALL SECURE HOLDINGS, INC.
650 S. HIGHWAY 27, STE 5201
SOMERSET, KY 42501
- F2** PARCEL ID: 051-7-2-60
SHARDA PROPERTY, INC.
22 HIDDEN CREEK DRIVE
SOMERSET, KY 42503-4115
- G2** PARCEL ID: 051-7-2-70.1
ALL SECURE HOLDINGS, INC.
650 S. HIGHWAY 27, STE 5201
SOMERSET, KY 42501
- H2** PARCEL ID: 051-4-4-56
GEORGE & NONA REBUCK
4254 OAK HILL ROAD
SOMERSET, KY 42503
- I2** PARCEL ID: 051-4-4-55
CHRISTOPHER & AMI HIGGINS
4198 OAK HILL ROAD
SOMERSET, KY 42503
- J2** PARCEL ID: 051-4-4-54
JONATHAN DAVID ABBSHER
4174 OAK HILL ROAD
SOMERSET, KY 42503
- K2** PARCEL ID: 051-4-4-53
JEREMY JOHNSON
2817 HIGHWAY 196
NANCY, KY 42544
- L2** PARCEL ID: 051-4-4-52
TROY HALL JR. &
MARY ALICE HALL
4120 OAK HILL ROAD
SOMERSET, KY 42503
- M2** PARCEL ID: 051-4-4-51
TROY HALL JR. &
MARY ALICE HALL
4120 OAK HILL ROAD
SOMERSET, KY 42503
- N2** PARCEL ID: 051-4-4-50
HALL FAMILY REVOCABLE
LIVING TRUST
c/o TROY HALL SR.
4064 OAK HILL ROAD
SOMERSET, KY 42503
- O2** PARCEL ID: 050-6-1-48
MORRIS & PEARL &
DEARL DUNBAR
1100 HEARTLAND DRIVE
SOMERSET, KY 42501
- P2** PARCEL ID: 050-6-1-47
JONATHAN ROBY &
KAREN RANAE
311 COLLEGE STREET
SOMERSET, KY 42501-1311
- Q2** PARCEL ID: 050-6-1-41
RUBY B. BURNETT
311 EULA NICKELL WAY
CAMPTON, KY 41301
- R2** PARCEL ID: 050-6-1-40
RICHARD & LINDA WHITAKER
260 WHITAKER ROAD
SOMERSET, KY 42503-4641
- S2** PARCEL ID: 050-6-1-39
RICHARD & LINDA WHITAKER
260 WHITAKER ROAD
SOMERSET, KY 42503-4641
- T2** PARCEL ID: 050-6-1-38
JOHN J. & JOAN C. ROBINETTE
300 PLANTERS WAY
SOMERSET, KY 42503
- U2** PARCEL ID: 050-6-1-37
JOHN J. & JOAN C. ROBINETTE
300 PLANTERS WAY
SOMERSET, KY 42503
- V2** PARCEL ID: 050-6-1-36
FRANKLIN LAY NELSON &
BRENDA NELSON
3825 OAK HILL ROAD
SOMERSET, KY 42503
- W2** PARCEL ID: 050-6-1-35
IMANTS & PATRICIA RIZENBERG
5004 ASH VALLEY ROAD
SOMERSET, KY 42503
- X2** PARCEL ID: 050-6-1-34
DARWIN A. & NANCY KUHNAPFEL TR
5005 ASH VALLEY ROAD
SOMERSET, KY 42503-6295
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5008 ASH VALLEY ROAD
SOMERSET, KY 42503
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- B3** PARCEL ID: 050-6-1-30
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5015 ASH VALLEY ROAD
SOMERSET, KY 42503
- C3** PARCEL ID: 050-6-1-31
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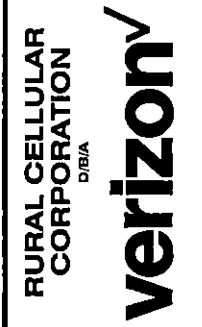
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MARK PATTERSON, LPLS #3136 DATE



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SOMERSET, KY 42503
SOURCE OF TITLE:
DEED BOOK 957, PAGE 59

SITE NUMBER:

POD NUMBER: 16-10389
DRAWN BY: DAP
CHECKED BY: MEF
DATE: 3.8.16

SHEET TITLE:
500' RADIUS & ABUTTERS MAP

SHEET NUMBER:
B-2.1

EXHIBIT M
COPY OF POSTED NOTICES

SITE NAME: SOMERSET WT RELO
NOTICE SIGNS

The signs are at least (2) feet by four (4) feet in size, of durable material, with the text printed in black letters at least one (1) inch in height against a white background, except for the word "**tower**," which is at least four (4) inches in height.

Rural Cellular Corporation d/b/a Verizon Wireless proposes to construct a telecommunications **tower** on this site. If you have questions, please contact Pike Legal Group, PLLC, P.O. Box 369, Shepherdsville, KY 40165, (800) 516-4293, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2017-00128 in your correspondence.

Rural Cellular Corporation d/b/a Verizon Wireless proposes to construct a telecommunications **tower** near this site. If you have questions, please contact Pike Legal Group, PLLC, P.O. Box 369, Shepherdsville, KY 40165, (800) 516-4293, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2017-00128 in your correspondence.



1578 Highway 44 East, Suite 6
P.O. Box 369
Shepherdsville, KY 40165-0369
Phone (502) 955-4400 or (800) 516-4293
Fax (502) 543-4410 or (800) 541-4410

VIA TELEPHONE: 606-678-8191
VIA TELEFAX: 606-679-9225

The Commonwealth Journal
Attn: Legal Notice Ad Department
110-112 East Mt. Vernon St.
Somerset, KY 42501

RE: Legal Notice Advertisement
Site Name: Somerset WT Relo

Dear Ad Department:

Please publish the following legal notice advertisement in the next edition of *The Commonwealth Journal*:

NOTICE

Rural Cellular Corporation d/b/a Verizon Wireless has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at 1170 Bourbon Road, Somerset, KY 42503 (37° 02' 20.56" North latitude, 84° 38' 42.26" West longitude). You may contact the PSC for additional information concerning this matter at: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2017-00128 in any correspondence sent in connection with this matter.

After this advertisement have been published, please forward a tearsheet copy, affidavit of publication, and invoice to Pike Legal Group, PLLC, P. O. Box 369, Shepherdsville, KY 40165. Please call me at (800) 516-4293 if you have any questions. Thank you for your assistance.

Sincerely,

Aaron L. Roof
Pike Legal Group, PLLC

EXHIBIT N
COPY OF RADIO FREQUENCY DESIGN SEARCH AREA



LV SOMERSET WT RELO – N e w Build SARF Map

EXHIBIT O
RADIO FREQUENCY REPORT



December 7, 2016

Kentucky Public Service Commission
P.O. Box 615
211 Sower Boulevard
Frankfort, KY 40602-0615

Re: Radio Frequency Need Report for New Communications Facility
Applicant: Rural Cellular Corporation d/b/a Verizon Wireless
Wireless Telecommunications Facility Uniform Application
Site location: 1170 Bourbon Road, Somerset, KY 42503

Verizon Wireless Site Name: Somerset Water Tank Relo

Dear Commissioners,

Verizon Wireless appreciates this opportunity to elaborate on the need for a wireless service facility in Pulaski County and explain why the proposed site was chosen to remedy a significant service coverage gap in this part of Pulaski County. The Verizon Wireless name given to this project is Somerset Water Tank Relo.

It should be noted that Verizon Wireless antennas are currently located on the water tank next to the proposed tower. The water tower's owner is not willing to extend the lease for antenna placement, so Verizon Wireless antennas must be relocated to the proposed new tower to eliminate the significant wireless network service gap that will be created in Pulaski County and would negatively affect substantial numbers of wireless users throughout the area. Verizon Wireless radio frequency engineers have worked hard to identify the optimum location and height at which antennas should be placed to connect with the existing network in order to provide mobile services, accommodate growing customer demand, avoid interference with other wireless communications sites, and close this growing service coverage gap. The objective is to provide coverage to Burnside Road, KY-80, KY 90, and a number of other roads in the area.

Before proposing this new tower site, Verizon Wireless first evaluated whether any existing towers or other tall structures might be technically feasible for coverage purposes, and suitable for collocation. There are no existing communication towers located within the area where a new wireless

service facility must be located to correct the service gap in this area of Pulaski County.

Applicant evaluated the parcels in the geographic area where a new wireless service facility is required and determined that a new tower at an overall height of 105' on Bourbon Road is the optimum location and height to provide wireless services, connect with the existing network in order to accommodate growing customer demand, avoid interference with other wireless communication sites, and close the growing service gap.

As a public utility, Verizon Wireless provides an essential service to individuals and businesses within Pulaski County, Kentucky, subject to the jurisdiction of the Federal Communications Commission (FCC). Verizon Wireless is licensed by the FCC to build and operate a wireless communications network in Pulaski County, Kentucky. Our licenses include, among others, the 700 MHz band, and the 2100 MHz or AWS band. The different performance characteristics of these two frequency bands are important to an understanding of what it is that Verizon Wireless is seeking to accomplish with this site, and are discussed below.

National statistics compiled by the FCC indicate that more than 70% of E-911 calls to police and fire departments are now made using wireless phones. That percentage grows each year. For many Americans, the ability to call E-911 for help in an emergency is one of the main reasons they own a wireless phone. Other wireless E-911 calls come from "Good Samaritans" reporting traffic accidents, crimes or other emergencies. The prompt delivery of wireless E-911 calls to public safety organizations benefits the public by promoting safety of life and property. The public relies on wireless communications for emergency access to law enforcement and public safety services. Many police departments also rely on wireless data services between patrol cars and law enforcement databases. Wireless data services help police departments utilize their limited resources more effectively to better protect the public. It is in the public's interest to ensure that robust and reliable emergency voice and data services remain available to everyone in our service areas. 700 and 2100 MHz frequencies right now are now data and VoLTE (Voice over LTE).

A U.S. Government Semi-Annual Report on Wireless Substitution shows that as of December 2015, 48.3% of all American homes have abandoned the older wireline service entirely, and instead rely exclusively on wireless phones to make emergency 911 and other calls. The report also shows that as of December 2015, 57.7% of all American children live in households without a landline phone. This empirically demonstrates that the Applicant provides essential mobile services to individuals and businesses within Pulaski County. The public requires reliable and state-of-the-art communications infrastructure to deliver expected service. Empirical data demonstrates that large numbers of people have "cut the cord" on traditional wireline service and

now rely exclusively on wireless services to connect to the national telephone system. The U.S. Government report confirms that wireless communication is the primary communications channel for more than one third of the general population. This dependence upon the availability of wireless service by a significant proportion of the population clearly demonstrates a public need for ensuring the availability of reliable wireless services, including travelers and residential areas of Pulaski County.

Background. The Verizon Wireless communication system, and indeed all carriers' wireless communications systems, rely on an overlapping and interconnected network of individual antenna sites. Individual sites, like the one under consideration here, consist of antennas mounted on a support structure. The radios and other electronic equipment that are needed to make wireless communications work are typically located at the base of the antenna support structure. These antenna sites transmit and receive wireless communications signals to and from mobile wireless handsets or similar devices.

Individually, these communications facilities have a limited coverage area. The extent of the coverage depends on several factors, including antenna height, local topography, proximity and height of other adjacent antenna installations, and localized customer usage demands. When linked electronically to form a network however, individual antenna sites operate to deliver a seamless wireless communications service to individuals, businesses, and government. The "seamless" part is important, even crucial, to understanding the need for this site. Without overlapping coverage, calls can't get through, or be completed. The locations of antenna sites are therefore carefully thought out, and selected to be located as far apart as is consistent with the number of customers in the service area, while still being close enough to "hand off" a motorist's call from one wireless service facility to the next, without dropping the call.

To be effective, any new wireless service facility must first be integrated into the existing network, so that it can transmit, receive, and offload calls to and from its siblings without interference. The requirement that any new site must be able to perform a call "handoff", as when a motorist drives from one coverage area into another, is absolutely essential. If a call cannot be handed off, the site is useless as a network component.

This brings us to consideration of the proposed Somerset Water Tank Relo site. This wireless service facility is intended to address two pressing service problems, problems that cannot be solved merely by re-engineering our existing antenna sites: the 700 and the 2100 AWS capacity and coverage problem

700 MHz Capacity and Coverage Problem. The first problem is one of capacity. Briefly put, although other existing antenna sites were able to serve this area in the past, they can no longer do so efficiently because the number of customers has grown enormously over the past few years. As problems go, a large and

growing customer base is a good one to have, but it also means that local demand for wireless services is starting to exceed the capacity of our existing sites in this area to handle. Customers from this area are now reporting that during peak use times they can't connect to the network, or reflexively that calls to customers within this service area are not getting through. This means that this geographic area is no longer being served effectively.

Call Blocking. When a wireless network reaches the maximum number of connections it can handle at one time, the service area is saturated, and new calls can't get through. This is known as "Call Blocking". Call blocking most often occurs during high demand periods, such as emergencies and social events, but as the customer base in a given area grows, call blocking starts to occur more often, even daily, especially during high-demand periods. The logical solution to cure call blocking is to add capacity by adding more carriers or call channels. In this case, the existing cells surrounding this area have already had the maximum number of radios added; however this has not kept up with demand. The demand for wireless service continues to increase, and adding more radios is no longer possible. Simply put, the cell sites surrounding this area have become saturated. Adding capacity to relieve call blocking in areas where the existing cell sites are at their maximum capacity requires more extensive measures, such as cell splitting, or band hopping.

Cell Split. A cell split does exactly what the phrase implies: it splits an existing coverage area in half, so that the network can redirect calls away from existing, overloaded sites, to the new cell site instead. By dividing the call volume among a larger number of sites, the call volume processed by each individual antenna site is reduced to a level that the equipment can effectively manage during peak call periods, thereby enabling everyone's calls to be completed, without blocking or interruption.

Band Hopping. The second capacity enhancement measure is band hopping. When a site reaches its capacity limit on an existing band (in this case 700MHz), it may be possible to redirect new calls to a different band, provided an alternate frequency band is available, and provided sufficient reserve capacity exists in that alternate frequency band. In this case, Verizon Wireless has another licensed frequency band available (this is the AWS band centered at 2100 MHz). Although this band is available in this area, the reserve capacity of this 2100 MHz band is limited, making "frequency hopping" of limited use to relieve the call blocking. (The 2100 MHz band is particularly limited in its ability to provide in-building penetration, and its effective range at any given power level is half that of the 700 MHz frequencies.)

700 and 2100 MHz AWS Coverage Problem. The huge increase in demand for wireless services, in particular the exponential increase in demand for mobile data services, requires the use of all of the applicant's licensed frequencies in

this area, which in this instance means both the 700 MHz and 2100 MHz frequency bands.

The problem is that the 2100 MHz or "AWS" band has less "propagation power" compared to the 700 MHz band. The 2100 MHz wavelength is physically shorter than the 700 MHz wavelength. In practice, shorter wavelength frequencies provide much less coverage (about 40%) than the older 700 MHz bands. In many cases, the 2100 MHz band is so limited in terms of propagation power that only persons who are in a direct line-of-sight to the antennas will be able to connect to the national telephone system. In order to create a network using the 2100 MHz frequency band, the antenna sites must therefore be physically closer to each other than sites in the 700 MHz network in order to perform call handoffs between cells. Because this frequency band has to be able to "see" its service area, the coverage area for each 2100 MHz cell must be physically smaller for the network to interconnect, and to provide the same level of reliability that lower frequency bands provide.

The 2100 MHz frequencies can have a performance disadvantage, in that these frequencies could have a limited ability to provide in-building penetration. Depending on building construction (whether wood, or brick, or steel), 2100 MHz frequencies typically experience more signal degradation compared to in-building penetration by 700 MHz frequencies. The in-building penetration problem is a critical design and performance issue.

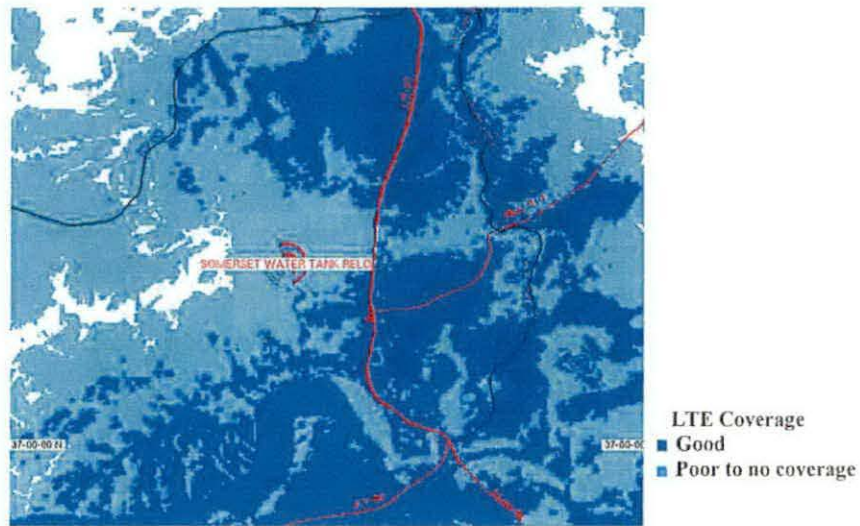
In the case, the existing Verizon Wireless network was originally designed for 700 MHz, and the cell sites in this area are therefore too far away from one another to implement an effective 2100 MHz network by just adding 2100 MHz antennas to these sites. In this case, overlaying 2100 MHz antennas to allow "band hopping" simply won't work.

Finally, one final – indeed critical – system performance limitation must be kept clearly in mind in any discussion of wireless service facility location. The relative coverage limits of signals sent by the cell sites in different frequency bands are important design criteria. However, these signals are only one side of the communications link. The thing that must be kept in mind is the extremely weak signals from cell phones and other mobile data devices, which provide the return link in the signal path. The power levels of these return signals are limited by federal law to a maximum of 0.6 watts for the older "feature" phones (i.e. – dumb phones), and to 0.25 watts of power for today's LTE smart phones. These weak return signals must also penetrate whatever materials a vehicle or buildings are made of, in order to communicate with the network. This as much as any other reason is why cell sites must be located within the area proposed to be served.

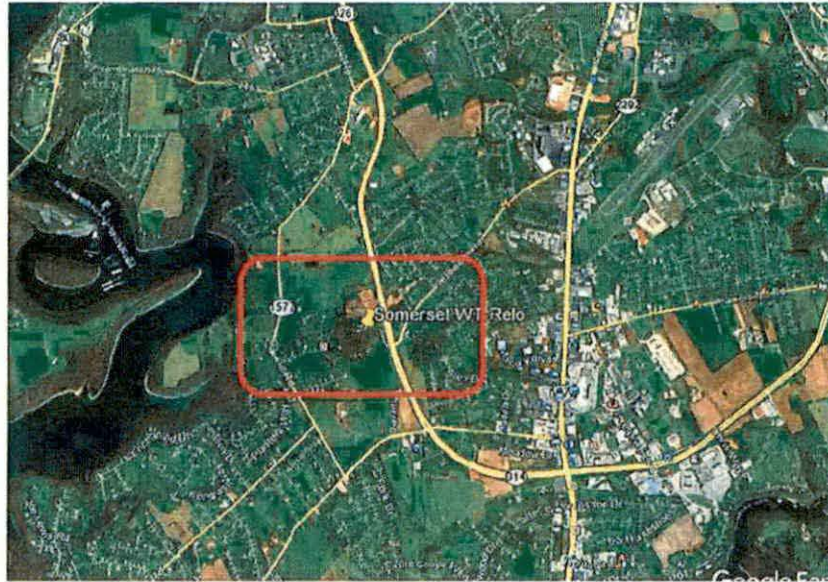
The inherent limitations in the physics of electromagnetic signal propagation and absorption in these frequency bands are unalterable facts. In the case of Somerset Water Tank Relo these limitations and the implementation of the

technical solutions discussed above will require construction of a new wireless service facility. To accomplish this, the Applicant is proposing the Somerset Water Tank Relo site. This new wireless service facility is critical to our efforts to relieve call blocking and dropping by closing the growing service capacity and coverage gap in this part of the county, and to restoring reliable wireless service to the people living, working, and traveling through this area.

The Proposed Somerset Water Tank Relo Site. A significant wireless network service gap exists in Pulaski County which negatively affects substantial numbers of wireless users throughout the area. Shown below is a coverage plot demonstrating the gap in coverage:



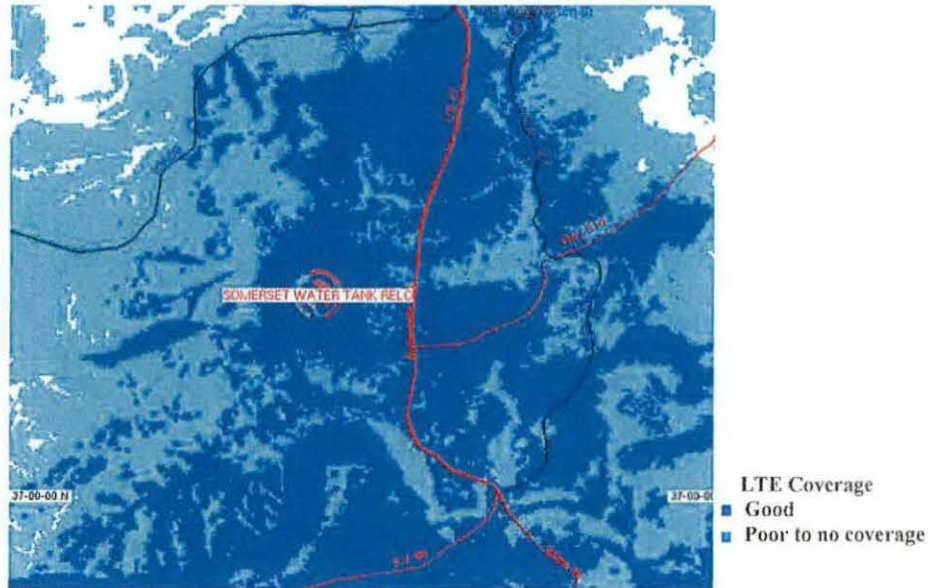
Verizon Wireless radio frequency engineers have worked hard to identify the optimum location and height at which antennas should be placed to connect with the existing network in order to provide mobile services, accommodate growing customer demand, avoid interference with other wireless communications sites, and close this growing service coverage and capacity gap. A map indicating where a new facility must be located to close this growing service coverage and capacity gap is shown below:



LV SOMERSET WT RELO – N e w Build SARF Map

The Search for Existing Tall Structures. Before proposing this new tower site, Verizon Wireless first evaluated whether any existing towers or other tall structures might be technically feasible for coverage purposes, and suitable for collocation. Verizon Wireless is committed to collocation and regularly locates its equipment on existing towers and buildings. Collocation on existing tall structures saves time and money compared to building a new tower. Reciprocally, Verizon Wireless encourages in-bound collocation on its towers by third-party applicants, offering tower space on a first come, first served basis, at competitive, non-discriminatory rents, so long as such shared use does not interfere with any other tower tenant's equipment or operations, and provided the applicant's equipment is installed in accordance with the requirements of the Kentucky Building Code, and maintained in accordance with the requirements of the Federal Communications Commission. There are no existing communication towers located within the area where a new wireless service facility must be located to correct the service gap in this area of Pulaski County. Antenna placement on any existing FCC-registered tower would not resolve the service gap.

Optimum Location The coverage plot shown below depicts the improvement in coverage that will result from a new wireless service facility at the proposed location:



This site is the optimum location to close the service coverage and capacity gap in this area. This location offers sufficient geographic separation from existing cellular towers for the effective handoff of wireless traffic to and from existing sites, and to close the service gap in the surrounding area. Changing the proposed site's location will alter the signal propagation path, and will materially compromise the coverage area needed to provide wireless services to the residences and motorists in the surrounding area, and to close the service coverage gap.

Confirmation of Continued Regulatory Compliance. The applicant affirms that the wireless service facility proposed at this site has been designed and will be constructed and operated in accordance with all federal, state and local regulations applicable to such facilities. Verizon Wireless affirms it and its licensed operating units will operate exclusively within the frequencies and service areas licensed to it by the Federal Communications Commission. Verizon Wireless further affirms that it will operate its wireless service facility in conformance with all applicable federal requirements for controlling public and worker exposure to radiofrequency energy.

The proposed wireless service facility is needed to provide an essential public service to wireless communication users in Pulaski County that cannot be established in any other manner. The construction and integration of this site into Verizon Wireless' existing network will provide or improve access to mobile voice and wireless data services previously degraded or unavailable, and support Homeland Security through enhanced 911 services. Finally, it will allow the service gap in this area to be closed.

Sincerely,

A handwritten signature in black ink, appearing to read "Jalil Arbabshirani". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Jalil Arbabshirani
Radio Frequency Engineer
Verizon Wireless