

RECEIVED

NOV 15 2013

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

**PUBLIC SERVICE
COMMISSION**

In the Matter of:

THE APPLICATION OF)
NEW CINGULAR WIRELESS PCS, LLC)
AND AMERICAN TOWERS LLC)
FOR ISSUANCE OF A CERTIFICATE OF PUBLIC) CASE NO.: 2013-00389
CONVENIENCE AND NECESSITY TO CONSTRUCT)
A WIRELESS COMMUNICATIONS FACILITY)
IN THE COMMONWEALTH OF KENTUCKY)
IN THE COUNTY OF HOPKINS)

SITE NAME: NORTONVILLE

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

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility ("AT&T Mobility"), and American Towers LLC, a Delaware limited liability company d/b/a Delaware American Towers LLC ("Applicants"), 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 AT&T Mobility with wireless communications services.

In support of this Application, Applicants respectfully provide and state the following information:

1. The complete name and address of the Applicants: New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility, having a local address of 601 West Chestnut Street, Louisville, Kentucky 40203; American Towers LLC, a Delaware limited liability company d/b/a Delaware American Towers LLC, having a mailing address of 116 Huntington Avenue, Boston, MA 02116.

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 Certificate of Authority filed with the Kentucky Secretary of State for AT&T Mobility was attached to a prior application and is part of the case record for PSC case number 2011-00473 and is hereby incorporated by reference. A certificate of formation for American Towers LLC is attached as part of **Exhibit A**.

4. AT&T Mobility operates on frequencies licensed by the Federal Communications Commission ("FCC") pursuant to applicable FCC requirements. A copy of the AT&T Mobility's 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. American Towers LLC will build, own and manage the tower and tower compound where AT&T Mobility will 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 AT&T Mobility's services to an area currently not served or not adequately served by increasing coverage and/or capacity and thereby enhancing the public's access to innovative and competitive wireless communications services. The WCF will provide a necessary link in the AT&T Mobility 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 AT&T Mobility's 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 460 Hickory Lane, Nortonville, KY 42442 (37°10'29.63" North latitude, 87°27'21.79" 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 Dorothy Brasher Knight pursuant to a Deed recorded at Deed Book 358, Page 472 in the office of the Hopkins County Clerk. The proposed WCF will consist of a 195-foot tall tower, with an approximately 4-foot tall lightning arrestor attached at the top, for a total height of 199-feet. The WCF will also include concrete foundations and a shelter or cabinets to accommodate the placement of AT&T Mobility's radio electronics equipment and appurtenant equipment. The WCF 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**, along with a map of suitable scale showing the location of the proposed new construction as well as the location of any like facilities located anywhere within the map area, along with a map key showing the owner of such other facilities.

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**.

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. Applicants have considered the likely effects of the installation of the proposed WCF on nearby land uses and values and have 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 the necessary antennas on an existing structure. When suitable towers or structures exist, AT&T Mobility attempts to co-locate on existing structures such as communications towers or other structures capable of supporting its facilities; however, no other suitable or available co-location site was found to be located in the vicinity of the site. A report detailing the site selection process for the subject site (including documentation as to why co-location is not possible for this site) is attached as **Exhibit E**.

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

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

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 H**. 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 I**. The name and telephone number of the preparer of **Exhibit I** 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 J**.

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 Construction Manager for the proposed facility is Ron Rohr, and the identity and qualifications of each person directly responsible for design and construction of the proposed tower are contained **Exhibits B & C**.

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 a scale of no less than 1 inch equals 200 feet 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 K** and **Exhibit L**, 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 M**.

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 N**. Notice of the location of the proposed facility has also 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 to be located is not zoned and is sparsely populated.

24. The process that was used by the AT&T Mobility 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. AT&T Mobility's 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 when searching for sites for antennas that would provide the coverage deemed necessary by AT&T Mobility. 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 O**.

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

26. 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: pikelegal@aol.com

Patrick W. Turner
General Attorney-Kentucky
AT&T Kentucky
1600 Williams Street
Suite 5200
Columbia, South Carolina 29201
Telephone: (803) 401-2900
Telefax: (803) 254-1731
Email: pt1285@att.com

Matthew Russell
Attorney
American Towers LLC
116 Huntington Avenue
Boston, MA 01226
Telephone: 781.926.7154
Email: matthew.russell@americantower.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: pikelegal@aol.com
Attorney for New Cingular Wireless PCS, LLC
d/b/a AT&T Mobility

and

Matthew Russell
116 Huntington Avenue
Boston, MA 01226
Telephone: 781.926.7154
Email: matthew.russell@americantower.com
Attorney for American Towers LLC d/b/a Delaware
American Towers LLC

LIST OF EXHIBITS

- A - FCC License Documentation
- 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 and Map of Like Facilities in Vicinity
- E - Co-location Report
- F - FAA
- G - Kentucky Airport Zoning Commission
- H - Geotechnical Report
- I - Directions to WCF Site
- J - Copy of Real Estate Agreement
- K - Notification Listing
- L - Copy of Property Owner Notification
- M - Copy of County Judge/Executive Notice
- N - Copy of Posted Notices
- O - Copy of Radio Frequency Design Search Area

EXHIBIT A
FCC LICENSE DOCUMENTATION

ULS License

PCS Broadband License - WPOK641 - NEW CINGULAR WIRELESS PCS, LLC

| | | | |
|-----------|---------|---------------|--------------------|
| Call Sign | WPOK641 | Radio Service | CW - PCS Broadband |
| Status | Active | Auth Type | Regular |

Market

| | | | |
|-----------|---------------------------|------------------------------|-----------------------------------------------------------------|
| Market | BTA273 - Madisonville, KY | Channel Block | C |
| Submarket | 0 | Associated Frequencies (MHz) | 001895.00000000-001910.00000000-001975.00000000-001990.00000000 |

Dates

| | | | |
|-----------|------------|--------------|------------|
| Grant | 11/17/2009 | Expiration | 09/29/2019 |
| Effective | 11/24/2012 | Cancellation | |

Buildout Deadlines

| | | | |
|-----|------------|-----|------------|
| 1st | 09/29/2004 | 2nd | 09/29/2009 |
|-----|------------|-----|------------|

Notification Dates

| | | | |
|-----|------------|-----|------------|
| 1st | 10/19/2001 | 2nd | 09/16/2009 |
|-----|------------|-----|------------|

Licensee

| | | | |
|-----|------------|------|---------------------------|
| FRN | 0003291192 | Type | Limited Liability Company |
|-----|------------|------|---------------------------|

Licensee

| | |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| NEW CINGULAR WIRELESS PCS, LLC 2200 N. Greenville Ave, 1W Richardson, TX 75082 ATTN Reginald Youngblood | P:(972)234-7003 F:(972)301-6893 E:FCCMW@att.com |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|

Contact

| | |
|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| AT&T MOBILITY LLC Michael P Goggin 1120 20th Street, NW - Suite 1000 Washington, DC 20036 ATTN Michael P. Goggin | P:(202)457-2055 F:(202)457-3073 E:michael.p.goggin@att.com |
|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|

Ownership and Qualifications

Radio Service Type Mobile
Regulatory Status Common Carrier Interconnected Yes

Alien Ownership

The Applicant answered "No" to each of the Alien Ownership questions.

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.

ULS License

PCS Broadband License - WPOI255 - NEW CINGULAR WIRELESS PCS, LLC

| | | | |
|-----------|---------|---------------|--------------------|
| Call Sign | WPOI255 | Radio Service | CW - PCS Broadband |
| Status | Active | Auth Type | Regular |

Market

| | | | |
|-----------|-----------------------------------------|------------------------------|-----------------------------------------------------------------|
| Market | MTA026 - Louisville-Lexington-Evansvill | Channel Block | A |
| Submarket | 19 | Associated Frequencies (MHz) | 001850.00000000-001865.00000000-001930.00000000-001945.00000000 |

Dates

| | | | |
|-----------|------------|--------------|------------|
| Grant | 07/07/2005 | Expiration | 06/23/2015 |
| Effective | 11/24/2012 | Cancellation | |

Buildout Deadlines

| | | | |
|-----|------------|-----|------------|
| 1st | 06/23/2000 | 2nd | 06/23/2005 |
|-----|------------|-----|------------|

Notification Dates

| | | | |
|-----|------------|-----|------------|
| 1st | 07/07/2000 | 2nd | 02/17/2005 |
|-----|------------|-----|------------|

Licensee

| | | | |
|-----|------------|------|---------------------------|
| FRN | 0003291192 | Type | Limited Liability Company |
|-----|------------|------|---------------------------|

Licensee

| | |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| NEW CINGULAR WIRELESS PCS, LLC 2200 N. Greenville Ave, 1W Richardson, TX 75082 ATTN Reginald Youngblood | P:(972)234-7003 F:(972)301-6893 E:FCCMW@att.com |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|

Contact

| | |
|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| AT&T MOBILITY LLC Michael P Goggin 1120 20th Street, NW - Suite 1000 Washington, DC 20036 ATTN Michael P. Goggin | P:(202)457-2055 F:(202)457-3073 E:michael.p.goggin@att.com |
|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|

Ownership and Qualifications

Radio Service Type Mobile
Regulatory Status Common Carrier Interconnected Yes

Alien Ownership

The Applicant answered "No" to each of the Alien Ownership questions.

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.

ULS License

Cellular License - KNKN674 - NEW CINGULAR WIRELESS PCS, LLC

PA This license has pending applications: 0005966754

| | | | |
|-----------|---------|---------------|---------------|
| Call Sign | KNKN674 | Radio Service | CL - Cellular |
| Status | Active | Auth Type | Regular |

Market

| | | | |
|-----------|-----------------------------|---------------|---|
| Market | CMA444 - Kentucky 2 - Union | Channel Block | A |
| Submarket | 0 | Phase | 2 |

Dates

| | | | |
|-----------|------------|--------------|------------|
| Grant | 08/30/2011 | Expiration | 10/01/2021 |
| Effective | 04/11/2013 | Cancellation | |

Five Year Buildout Date

12/05/1996

Control Points

1 1650 Lyndon Farms Court, LOUISVILLE, KY
P: (502)329-4700

Licensee

| | | | |
|-----|------------|------|---------------------------|
| FRN | 0003291192 | Type | Limited Liability Company |
|-----|------------|------|---------------------------|

Licensee

| | |
|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| NEW CINGULAR WIRELESS PCS, LLC 2200 N. Greenville Ave. Richardson, TX 75082 ATTN Reginald Youngblood | P:(972)301-6893 F:(972)234-7003 E:FCCMW@att.com |
|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|

Contact

| | |
|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| AT&T MOBILITY LLC Michael P Goggin 1120 20th Street, NW - Suite 1000 Washington, DC 20036 ATTN Michael P. Goggin | P:(202)457-2055 F:(202)457-3073 E:michael.p.goggin@att.com |
|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|

Ownership and Qualifications

Radio Service Type Mobile
Regulatory Status Common Carrier Interconnected Yes

Alien Ownership

The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications

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

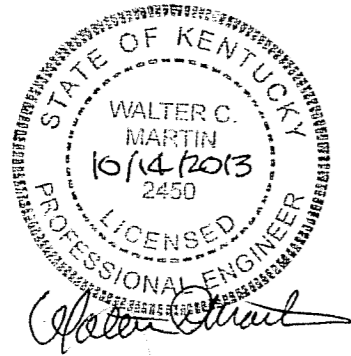
Demographics

Race
Ethnicity Gender

EXHIBIT B

SITE DEVELOPMENT PLAN:

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



| SITE INFORMATION | |
|----------------------------|-----------------------------------------------------------------------|
| SITE NAME: | NORTONVILLE |
| SITE NUMBER: | 143761 |
| SITE ADDRESS: | 460 HICKORY LANE NORTONVILLE, KENTUCKY 42442 |
| JURISDICTION: | HOPKINS COUNTY |
| TAX ACCOUNT ID: | 143761 |
| MAP/PARCEL: | NORT-3-5-16-3 |
| PARCEL SIZE/COMPOUND SIZE: | 100' X 100' |
| SITE COORDINATES: | 37° 10' 29.63" 87° 27' 21.79" |
| GROUND ELEVATION: | 484± |
| STRUCTURE TYPE: | MONOPOLE |
| STRUCTURE HEIGHT: | 195' |
| GROUND LANDLORD ADDRESS: | DOROTHY BRASHER KNIGHT 10630 PRINCETON ROAD CERULEAN, KY 42216 |
| LANDLORD NAME: | DOROTHY BRASHER KNIGHT |
| LANDLORD ADDRESS: | 10630 PRINCETON ROAD CERULEAN, KY 42216 |
| APPLICANT: | AMERICAN TOWER CORPORATION 116 HUNTINGTON AVE. BOSTON, MA 02116 |
| APPLICANT PHONE: | (617) 375-7500 |

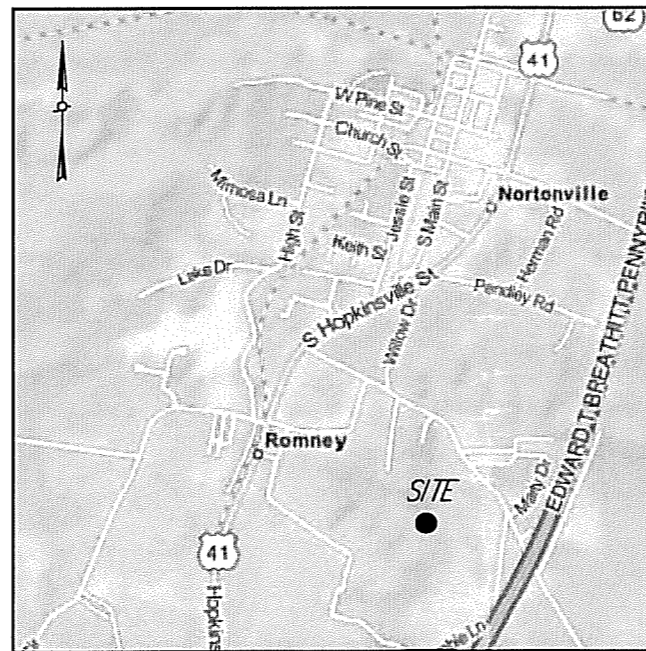
| CODE ANALYSIS | |
|--------------------|-------------------------------|
| BUILDING CODE: | IBC 2010 KY BLDG Code 2007 |
| ELECTRICAL CODE: | NEC 2005 |
| FIRE SAFETY CODE: | NFPA 101 |
| USE GROUP: | U (UTILITY) |
| CONSTRUCTION TYPE: | 11B |

| PROJECT DESCRIPTION | |
|---------------------|---------------------------------------------------------------------------------------|
| 1. | NEW 100' X 100' LEASED/ 80' x 80' FENCED TELECOMMUNICATIONS FACILITY TO BE INSTALLED. |
| 2. | NEW 195' MONOPOLE TO BE INSTALLED WITHIN FENCED TELECOMMUNICATIONS FACILITY. |
| 3. | NEW ELECTRICAL SERVICE TO BE INSTALLED. |
| 4. | NEW TELEPHONE SERVICE TO BE INSTALLED. |

SITE NAME:
NORTONVILLE

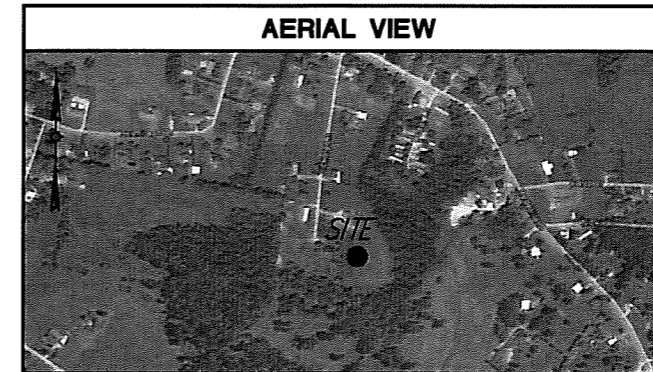
SITE NUMBER:
ATC #281319/ AT&T #143761

NEW 195' MONOPOLE TOWER W/ 4' LIGHTING ARRESTOR INSTALLED WITHIN NEW
80' X 80' FENCED TELECOMMUNICATIONS FACILITY



AREA MAP

| DIRECTIONS | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| HEADING FROM HOPKINS COUNTY COURT HOUSE, 412 N KENTUCKY AVE TURN LEFT ONTO E NORTH ST. PROCEED .3 MILES. TURN LEFT ONTO US-41 PROCEED .9 MILES. TURN LEFT ONTO US-41 PROCEED .9 MILES. TURN LEFT ONTO WILLOW DR. PROCEED .3 MILES. TURN LEFT ONTO RED HILL RD. PROCEED .04 MILES TAKE RIGHT ONTO HICKORY LN. | |



| SHEET INDEX | |
|---------------|-----------------------------|
| DRAWING SHEET | DRAWING TITLE |
| T-1 | TITLE SHEET |
| S-1 | 500' ADJOINERS AND ABUTTERS |
| S-2 | SITE SURVEY |
| C-1 | COMPOUND PLAN |
| C1-1 | DIM. TO PROPERTY LINES |
| C-2 | TOWER ELEVATION |
| | |
| | |

| AMERICAN TOWER REVIEW | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR MODIFICATIONS | |
| ATC R.F.: | DATE: |
| ATC ZONING: | DATE: |
| ATC S.A.: | DATE: |
| ATC P & T: | DATE: |
| ATC CONST.: | DATE: |
| ATC A&E MGR.: | DATE: |
| PROPERTY OWNER: | DATE: |

| | |
|-----------------|----------------------------------------------------------------------|
| PROPERTY OWNER: | DOROTHY BRASHER KNIGHT 10630 PRINCETON ROAD CERULEAN, KY 42216 |
| SITE ADDRESS: | 460 HICKORY LANE NORTONVILLE, KY 42442 |
| SITE NUMBER: | ATC #281319/ AT&T #143761 |

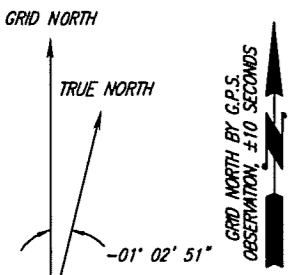
| REVISIONS | |
|-----------|------------------|
| 06-21-13 | REVISED DRAWINGS |
| 06-26-13 | REVISED DRAWINGS |
| | |
| | |

| | |
|----------------------------------|------------------------------------------------------|
| DATE COMPLETED: 08-21-13 | |
| SITE NAME: NORTONVILLE | TITLE SHEET |
| | DATE: 06-20-13 CHECKED BY: FS II DRAWN BY: SMF |

FS TAN PROJECT NO.:
13-8560

T-1

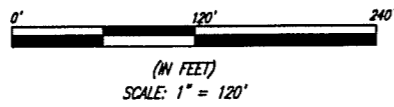
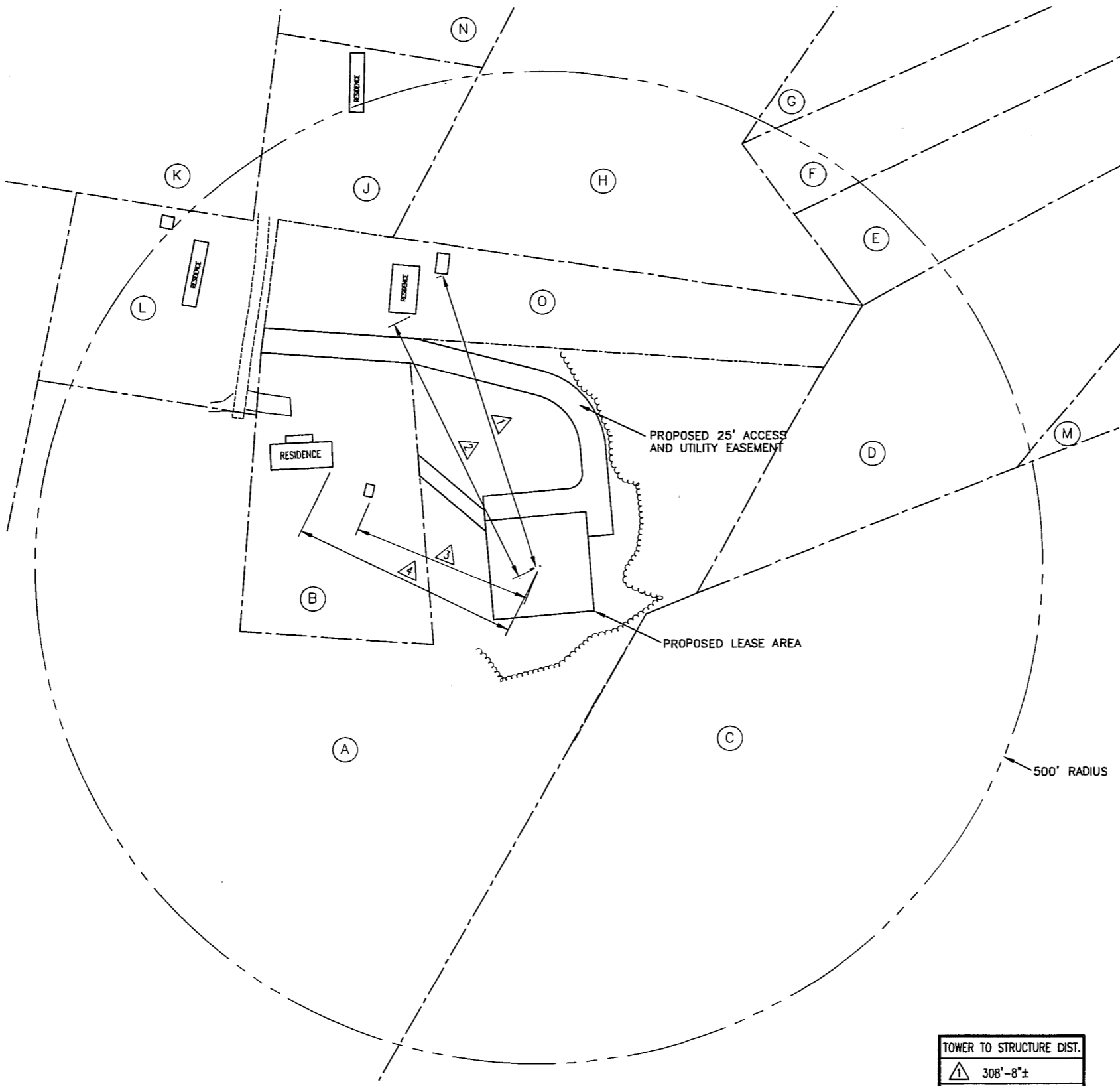
| | |
|---------|------------------------------------|
| SHEET 1 | |
| | - VICINITY AND 500' STRUCTURAL MAP |
| | - ABUTTING PROPERTY OWNERS |
| | - U.S.G.S. QUAD MAP |
| SHEET 2 | |
| | - LEASE AREA |
| | - LEGAL DESCRIPTIONS |
| | - FLOOD ZONE DATA |



NORTH IS BASED ON THE KENTUCKY STATE PLANE COORDINATE SYSTEM, SINGLE ZONE AND WAS DETERMINED BY COMPUTATION FROM G.P.S. OBSERVATION ON JUNE 10, 2013.



QUAD MAP
SCALE: 1"=2000'
U.S.G.S. 7 1/2 MINUTE QUAD MAP OF (QUAD MAP NAME)



* ADJOINING LAND OWNERS LISTED ARE BASED ON PROPERTY VALUATION ADMINISTRATION ("PVA") RECORDS ISSUED BY A REPRESENTATIVE FROM HOPKINS COUNTY, TO BE IN COMPLIANCE WITH ALL STATUTORY AND REGULATORY REQUIREMENTS BEFORE THE KENTUCKY PUBLIC SERVICE COMMISSION AND FOR TELECOMMUNICATION USE ONLY.

| TOWER TO STRUCTURE DIST. |
|--------------------------|
| 308'-8"± |
| 282'-9"± |
| 180'-7"± |
| 228'-4"± |



- (A) NORT 3-5-16.3 DOROTHY BRASHER KNIGHT 10630 PRINCETON ROAD CERULEAN, KY 42216 ZONED: NO ZONING
- (B) NORT 3-5-16B PROFFETT JAMES L & DEBRA L P.O. BOX 22 NORTONVILLE, KY 42442 ZONED: NO ZONING
- (C) NORT 3-5-11 DILLINGHAM MICHAEL 320 RED HILL RD. NORTONVILLE, KY 42442 ZONED: NO ZONING
- (D) NORT 3-5-9 FDE FORREST RETAL 210 RED HILL RD. NORTONVILLE, KY 42442 ZONED: NO ZONING
- (E) NORT 3-5-8A RODGERS JEFFERY O & KRISTAL 7465 WHITE PLAINS RD WHITE PLAINS KY, 42464 ZONED: NO ZONING
- (F) NORT 3-5-8 KIRKWOOD CRYSTAL O 1600 LEROY RD. HANSON KY 42413 ZONED: NO ZONING
- (G) NORT 3-5-7 MADDOX NANCY 190 RED HILL ROAD NORTONVILLE, KY 42442 ZONED: NO ZONING
- (H) NORT 3-5-6 THOMPSON ALFRED 405 S. HIGHLAND AVE. EARLINGTON KY 42410 ZONED: NO ZONING
- (J) NORT 3-5-5E HIGHT BRADLEY & TARA P.O. BOX 845 NORTONVILLE, KY 42442 ZONED: NO ZONING
- (K) NORT 3-5-3 SMITH WILLIAM M & JUDY P.O. BOX 331 NORTONVILLE, KY 42442 ZONED: NO ZONING
- (L) NORT 3-5-16A BRASHER JAMES ALLAN 459 HICKORY LANE NORTONVILLE, KY 42442 ZONED: NO ZONING
- (M) NORT 3-5-10 SOWELL FLORENCE PHYLLIS 224 RED HILL RD. NORTONVILLE, KY 42442 ZONED: NO ZONING
- (N) NORT 3-5-5D HIGHT BRADLEY & TARA MARTHA P.O. BOX 845 NORTONVILLE, KY 42442 ZONED: NO ZONING
- (D) NORT 3-5-16 HANCOCK JASON & SARAH E 458 HICKORY LN. NORTONVILLE, KY 42442 ZONED: NO ZONING



Formerly F.S. Land & T. Alan Neal Company
Land Surveyors and Consulting Engineers
428 E Wornock Street
Louisville, KY 40217
Phone: (502) 635-5886 (502) 636-5111
Fax: (502) 636-5283

SITE NUMBER:
ATC #281319/ AT&T #143761

SITE NAME:
NORTONVILLE

SITE ADDRESS:
460 HICKORY LANE
NORTONVILLE, KY 42442

LEASE AREA:
10,000 SQ.FT.

PROPERTY OWNER:
DOROTHY BRASHER KNIGHT
10630 PRINCETON ROAD
CERULEAN, KY 42216

MAP NUMBER:
NORT-3-5-16.3

PARCEL NUMBER:
16.3

SOURCE OF TITLE:
DEED 358, PAGE 472

| DWG BY: | CHKD BY: | DATE: |
|---------|----------|----------|
| JMH | FSSR | 06.13.13 |

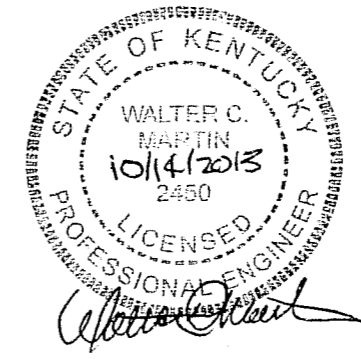
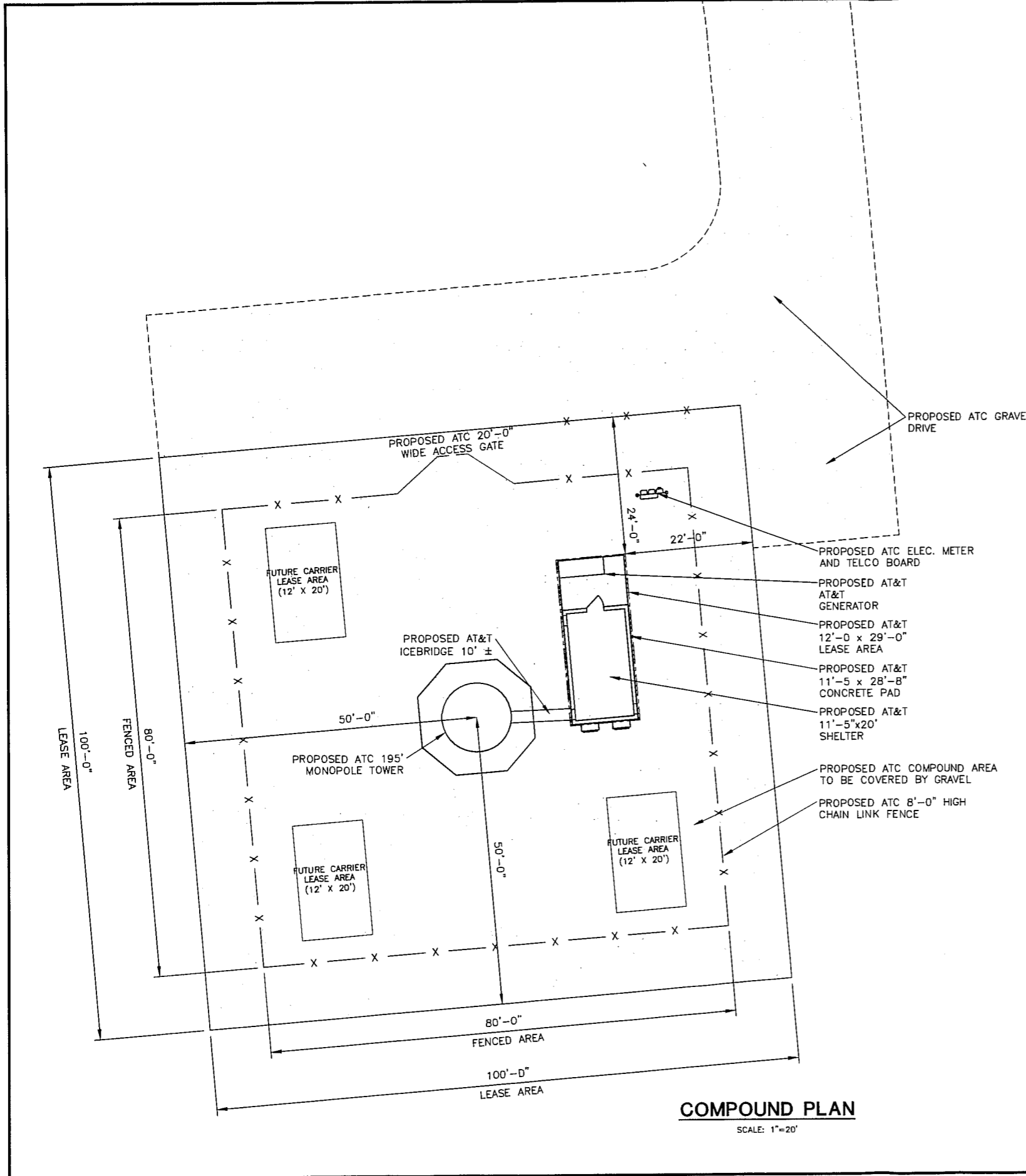
FSTAN PROJECT NO.:
13-8558

SHEET 1 OF 2

REVISIONS:




DATE COMPILED: 08-21-13

ABUTTERS MAP
NORTONVILLE
ATC #281319/ AT&T #143761
SITE ADDRESS: 460 HICKORY LANE
NORTONVILLE, KY 42442
OWNER ADDRESS: 10630 PRINCETON ROAD
CERULEAN, KY 42216



GENERAL NOTES

- 1.) THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANIES OR OTHER PUBLIC AUTHORITIES.
- 2.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
- 3.) THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID PROJECT IN ACCORDANCE WITH THE OVERALL INTENT OF THESE DRAWINGS.
- 4.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
- 5.) THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 6.) THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- 7.) THIS PLAN WAS PREPARED USING AN APPROVED PLAN ENTITLED SITE PLAN BY FSTAN DATED 06-13-13 AND SHOULD NOT BE CONSTRUED AS AN ACCURATE SURVEY.
- 8.) THE PROPOSED FACILITY WILL CAUSE ON A "DE MINIMUM" INCREASE IN STORMWATER RUNOFF. THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
- 9.) NO NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
- 10.) THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (THERE IS NO HANDICAP ACCESS REQUIRED)
- 11.) THE FACILITY IS UNMANNED AND DOES NOT REQUIRED POTABLE WATER OR SANITARY SERVICE.
- 12.) POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.
- 13.) CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
- 14.) MOUNTS AND ANTENNA ARE DESIGNED TO MEET EIA/TIA-222-G AS PER IBC 2009 REQUIREMENTS.
- 15.) ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
- 16.) CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
- 17.) IF ANY PIPING EXIST BENEATH THE SITE AREA, CONTRACTOR MUST LOCATE IT AND CONTACT OWNERS REPRESENTATIVE.
- 18.) CONSTRUCTION TO COMMENCE UPON COMPLETION OF A PASSING STRUCTURAL ANALYSIS. STRUCTURAL ANALYSIS TO BE PERFORMED BY OTHERS.

Formerly F.S. Land & T. Allen Neal Company
Land Surveyors and Consulting Engineers
428 E Warnock Street
Louisville, KY 40217
Phone: (502) 635-5866 (502) 636-5111
Fax: (502) 636-5253

PROPERTY OWNER:
DOROTHY BRASHER KNIGHT
10630 PRINCETON ROAD
CERULEAN, KY 42216

SITE ADDRESS:
460 HICKORY LANE
NORTONVILLE, KY 42442

SITE NUMBER:
ATC #281319/ AT&T #143761

| REVISIONS | DATE COMPILED: 08-21-13 |
|---------------------------|-------------------------|
| 08-21-13 REVISED DRAWINGS | |
| 08-26-13 REVISED DRAWINGS | |

SITE NAME: NORTONVILLE

COMPOUND PLAN

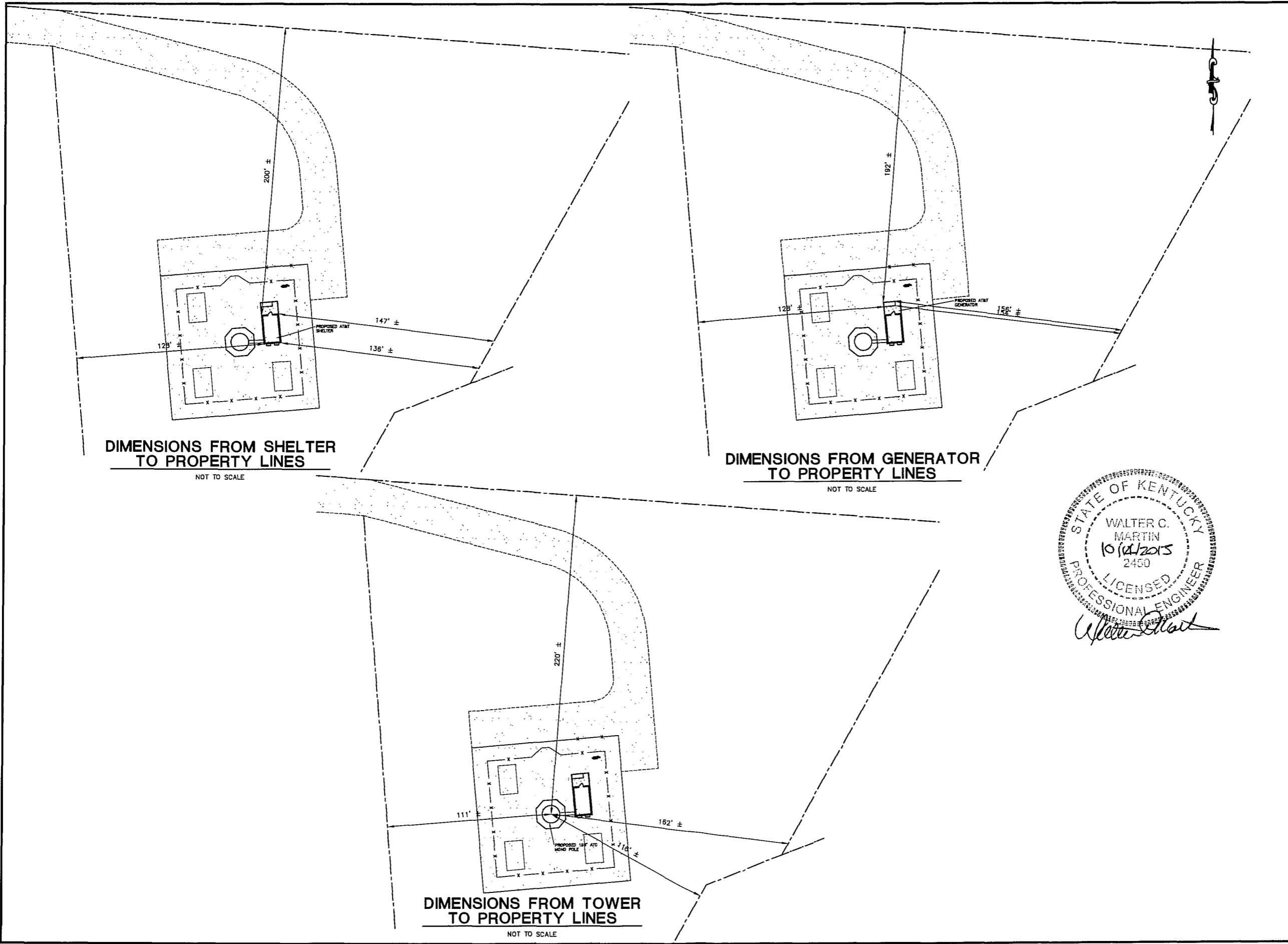
DATE: 06-20-13

DRAWN BY: SMF

CHECKED BY: FS II

FSTAN PROJECT NO.: 13-8560

C-1



DIMENSIONS FROM SHELTER TO PROPERTY LINES

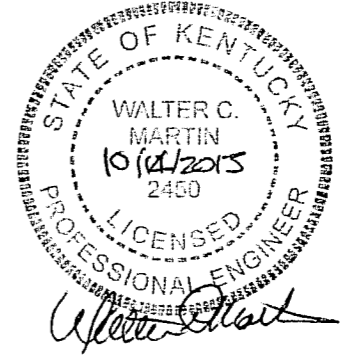
NOT TO SCALE

DIMENSIONS FROM GENERATOR TO PROPERTY LINES

NOT TO SCALE

DIMENSIONS FROM TOWER TO PROPERTY LINES

NOT TO SCALE



FSTAN
 Formerly F.S. Land & T. Alan Neal Company
 Land Surveyors and Consulting Engineers
 428 E. Warwick Street
 Louisville, KY 40217
 Phone: (502) 636-8888 (502) 636-0111
 Fax: (502) 636-8883

PROPERTY OWNER:
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 10630 PRINCETON ROAD
 CERULEAN, KY 42216

SITE ADDRESS:
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 NORTONVILLE, KY 42442

SITE NUMBER:
 ATC #281319/ AT&T #143761

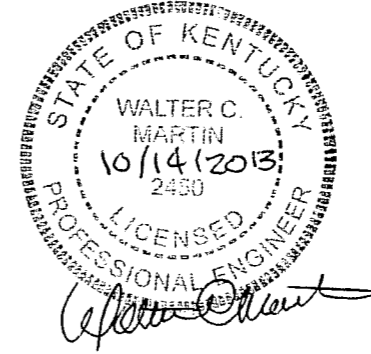
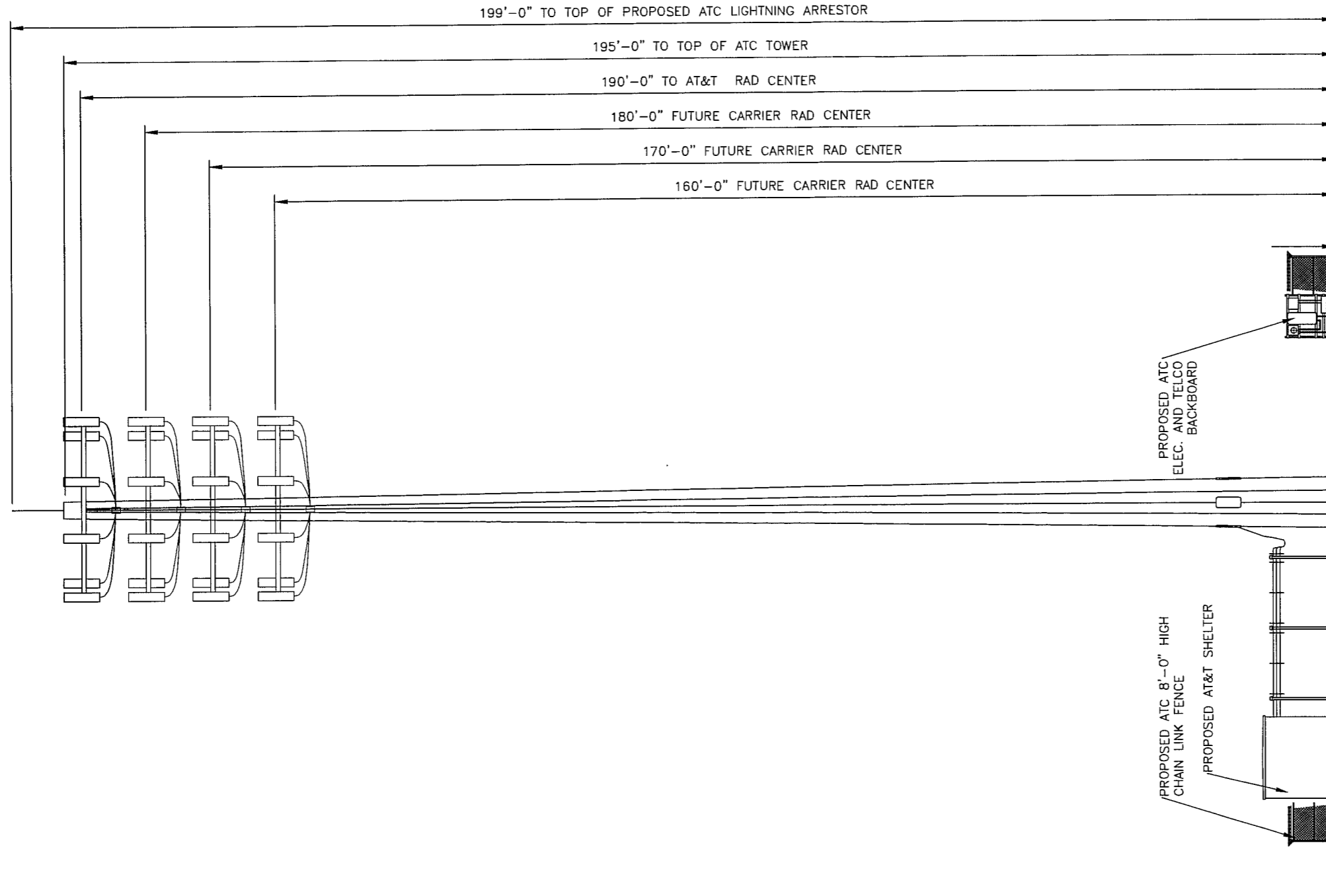
| REVISIONS |
|---------------------------|
| 08-21-13 REVISED DRAWINGS |
| 08-26-13 REVISED DRAWINGS |
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DATE COMPILED: 08-21-13

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|----------------------------------|-------------------------------------|------------------|----------------------|-------------------|
| SITE NAME: NORTONVILLE | DIMENSIONS TO PROPERTY LINES | DRAWN BY: SMF | CHECKED BY: FS II | DATE: 06-20-13 |
| | | | | |

FSTAN PROJECT NO.:
 13-8560

C1-1



NOTE: THE ELEVATIONS SHOWN ON THIS SHEET ARE FOR PICTORIAL PURPOSES ONLY. THIS DESIGN WAS PROVIDED BY OTHERS. REFER TO TOWER PLANS FOR TOWER DESIGN.

TOWER ELEVATION

NOT TO SCALE



FSTAN
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PROPERTY OWNER:
DOROTHY BRASHER KNIGHT
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CERULEAN, KY 42216

SITE ADDRESS:
460 HICKORY LANE
NORTONVILLE, KY 42442

SITE NUMBER:
ATC #281319/ AT&T #143761

| REVISIONS |
|---------------------------|
| 08-21-13 REVISED DRAWINGS |
| 08-26-13 REVISED DRAWINGS |
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DATE COMPILED: 08-21-13

| | | | |
|----------------------------------|------------------------|--|-------------------|
| SITE NAME: NORTONVILLE | TOWER ELEVATION | | DATE: 08-20-13 |
| | | | CHECKED BY: FS II |
| DRAWN BY: SMF | | | |

FSTAN PROJECT NO.:
13-8560

C-2

EXHIBIT C
TOWER AND FOUNDATION DESIGN



AMERICANTOWER™
CORPORATION

11/7/13

Dear Commissioners:

The construction manager for the proposed new communications facility will be Ron Rohr. His contact information is 740-438-9710. Ron Rohr has been involved in the construction of communications facilities for over 17 years, and general construction for over 20 years.

Some of the notable and most recent projects are:

2010 - Present

American Tower Corporation – Construction Manager

- Successfully led the construction team on the 140 site, Southern Ohio Launch while maintaining a respectful and professional demeanor under difficult circumstances.
- Played a key part in the collaborating efforts to build the scope of work, pricing matrix, and close out documentation on several projects.
- Have cultivated a pool of responsible, dependable and quality driven GC's to work on ATC projects throughout the Midwest and Northeast Region.

1990 – 2009

Superior Concepts – Owner

- Contract Project and Construction Manager to multiple wireless carriers. Work included, but not limited to, permitting all the way through to final construction close outs. Also managed several DAS projects in shopping malls and residential areas.
- Equipment operator, cell site super intendant, regional foreman, etc...
- Carpentry, Construction and Consulting

Accreditations and Licenses

OSHA Electrical Safety
Vallen Safety Knowledge Systems / Fall Protection
Builders Exchange of Central Ohio / Estimating & Bid Preparation
Amphenol Wireless Cable Connector Training
Commscope Connector Training
Andrew Connector Training
Current OSHA Safety Training
Current Haz Com Training
FAA/FCC Training

Thank you,

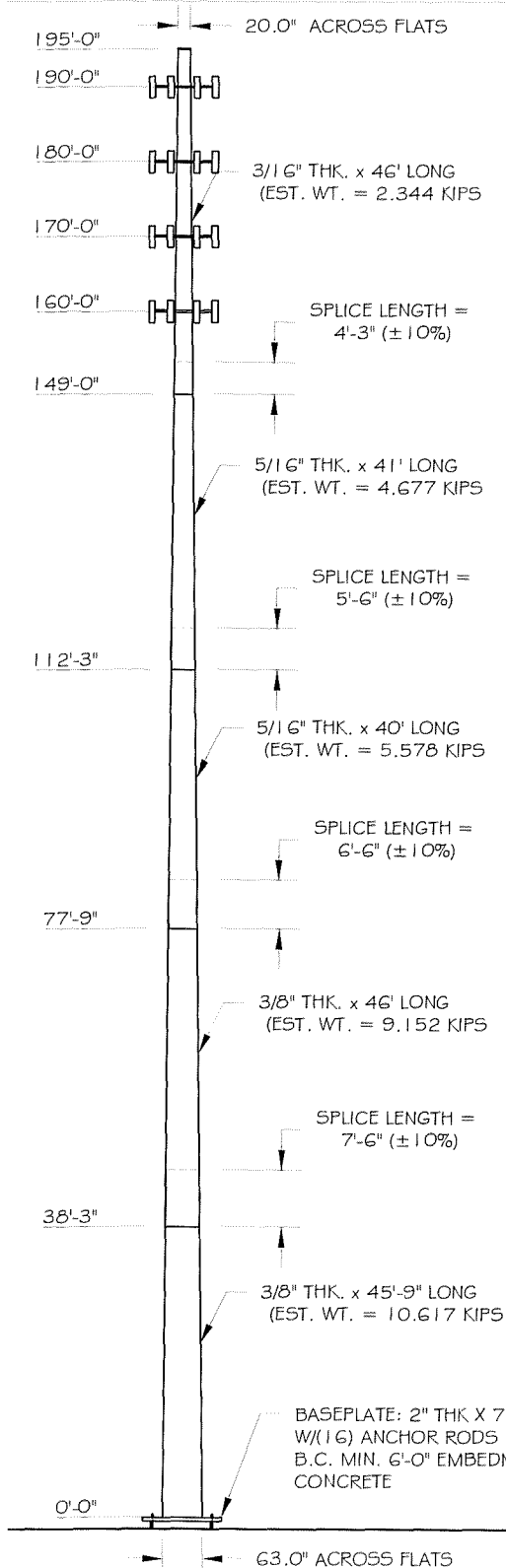
Ron Rohr
Construction Manager



TransAmerican Power Products, Inc.

2427 Kelly Lane
Houston, Texas 77066

PH: 281-444-8277 / FX: 281-444-7270



| | |
|-------------|------------------------|
| Page 1 of 1 | Job Number: 23513-0343 |
| Eng: MFP | Customer Ref: TP-11553 |
| | Date: 7/30/2013 |

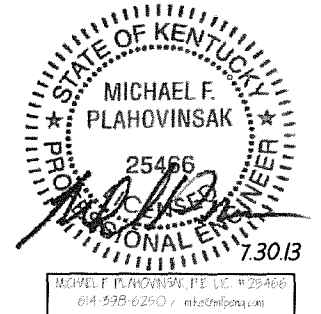
| |
|-------------------------------------------------------|
| Structure: 195-FT MONOPOLE |
| Site: 281319 NORTONVILLE |
| Location: HOPKINS CO., KY / 37°10'29.6", -87°27'21.8" |
| Owner: AMERICAN TOWER |
| Revision No.: Revision Date: |

| DESIGN | | | |
|------------------------|-----------------------------------------|-----------------|--------------|
| Building Code: | 2006+ INTERNATIONAL BUILDING CODE | | |
| Design Standard: | ANSI/TIA-222-G-2 | | |
| Wind Speed Load Cases: | 3-SEC. GUSTED WIND SPEED | | |
| Load Case #1: | 90 MPH Design Wind Speed | | |
| Load Case #2: | 30 MPH Wind with 0.75" Ice Accumulation | | |
| Load Case #3: | 60 MPH Service Wind Speed | | |
| Structure Class | Exposure Cat. | Topography Cat. | Crest Height |
| II | C | I | |

| EQUIPMENT LIST | |
|----------------|------------------------------------------------------|
| Elev. | Description |
| 190 | (12) PANEL ANTENNAS (105 FT ² / 1800 LBS) |
| 190 | T-ARM MOUNTS |
| 180 | (12) PANEL ANTENNAS (105 FT ² / 1800 LBS) |
| 180 | T-ARM MOUNTS |
| 170 | (12) PANEL ANTENNAS (105 FT ² / 1800 LBS) |
| 170 | T-ARM MOUNTS |
| 160 | (12) PANEL ANTENNAS (105 FT ² / 1800 LBS) |
| 160 | T-ARM MOUNTS |

ANTENNA FEED LINES ROUTED ON THE INSIDE OF THE POLE

| STRUCTURE PROPERTIES | | | | | |
|------------------------------------------------|-------------|----------------|----------------------------------|---------------|---------------|
| Cross-Section: 18-SIDED | | | Taper: 0.23269 in/ft | | |
| Shaft Steel: ASTM A572 GR 65 | | | Baseplate Steel: ASTM A572 GR 60 | | |
| Anchor Rods: 2.25 in. A615 GR. 75 X 7'-0" LONG | | | | | |
| Sect. | Length (ft) | Thickness (in) | Splice (ft) | Top Dia. (in) | Bot Dia. (in) |
| 1 | 46.00 | 0.1875 | 4.25 | 20.00 | 30.70 |
| 2 | 41.00 | 0.3125 | 5.50 | 29.34 | 38.88 |
| 3 | 40.00 | 0.3125 | 6.50 | 36.98 | 46.28 |
| 4 | 46.00 | 0.3750 | 7.50 | 44.15 | 54.85 |
| 5 | 45.75 | 0.3750 | | 52.35 | 63.00 |



BASE REACTIONS FOR FOUNDATION DESIGN

Moment: 5550 ft-kip
Shear: 40 kip
Axial: 62 kip

| | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|----------------------------------|
| tnxTower Michael F. Plahovinsak, P.E. 18301 State Route 161 W Plain City, OH 43064 Phone: 614-398-6250 FAX: mike@mfpeng.com | Job 195-ft Monopole - MFP #23513-343 | Page 1 of 6 |
| | Project 281319, Nortonville | Date 12:25:18 07/30/13 |
| | Client TAPP (TP-11553) | Designed by Mike |

Tower Input Data

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

Tower is located in Hopkins County, Kentucky.

Basic wind speed of 90 mph.

Structure Class II.

Exposure Category C.

Topographic Category 1.

Crest Height 0.00 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, feedline supports, and appurtenance mounts are not considered.

Tapered Pole Section Geometry

| Section | Elevation ft | Section Length ft | Splice Length ft | Number of Sides | Top Diameter in | Bottom Diameter in | Wall Thickness in | Bend Radius in | Pole Grade |
|---------|-----------------|-------------------------|------------------------|-----------------------|-----------------------|--------------------------|-------------------------|----------------------|---------------------|
| L1 | 195.00-149.00 | 46.00 | 4.25 | 18 | 20.0000 | 30.7000 | 0.1875 | 0.7500 | A572-65 (65 ksi) |
| L2 | 149.00-112.25 | 41.00 | 5.50 | 18 | 29.3364 | 38.8800 | 0.3125 | 1.2500 | A572-65 (65 ksi) |
| L3 | 112.25-77.75 | 40.00 | 6.50 | 18 | 36.9748 | 46.2800 | 0.3125 | 1.2500 | A572-65 (65 ksi) |
| L4 | 77.75-38.25 | 46.00 | 7.50 | 18 | 44.1429 | 54.8500 | 0.3750 | 1.5000 | A572-65 (65 ksi) |
| L5 | 38.25-0.00 | 45.75 | | 18 | 52.3543 | 63.0000 | 0.3750 | 1.5000 | A572-65 (65 ksi) |

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 ² | w in | w/t |
|---------|----------------|-------------------------|----------------------|---------|---------|------------------------|----------------------|------------------------|---------|--------|
| L1 | 20.3085 | 11.7909 | 584.7409 | 7.0334 | 10.1600 | 57.5532 | 1170.2512 | 5.8966 | 3.1900 | 17.013 |
| | 31.1736 | 18.1588 | 2135.8907 | 10.8319 | 15.5956 | 136.9547 | 4274.5918 | 9.0811 | 5.0732 | 27.057 |
| L2 | 30.7935 | 28.7881 | 3063.8132 | 10.3035 | 14.9029 | 205.5851 | 6131.6579 | 14.3968 | 4.6132 | 14.762 |
| | 39.4798 | 38.2541 | 7188.8407 | 13.6915 | 19.7510 | 363.9728 | 14387.1406 | 19.1307 | 6.2929 | 20.137 |
| L3 | 38.8444 | 36.3644 | 6175.2165 | 13.0151 | 18.7832 | 328.7631 | 12358.5586 | 18.1856 | 5.9576 | 19.064 |
| | 46.9939 | 45.5940 | 12171.5825 | 16.3185 | 23.5102 | 517.7141 | 24359.1808 | 22.8013 | 7.5953 | 24.305 |
| L4 | 46.3602 | 52.0947 | 12607.8995 | 15.5376 | 22.4246 | 562.2354 | 25232.3887 | 26.0523 | 7.1092 | 18.958 |
| | 55.6961 | 64.8389 | 24309.0147 | 19.3386 | 27.8638 | 872.4228 | 48650.0159 | 32.4256 | 8.9936 | 23.983 |
| L5 | 54.9340 | 61.8683 | 21118.6593 | 18.4526 | 26.5960 | 794.0548 | 42265.1071 | 30.9400 | 8.5544 | 22.812 |
| | 63.9719 | 74.5394 | 36933.3632 | 22.2319 | 32.0040 | 1154.0233 | 73915.3243 | 37.2768 | 10.4280 | 27.808 |

| | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|----------------------------------|
| tnxTower Michael F. Plahovinsak, P.E. 18301 State Route 161 W Plain City, OH 43064 Phone: 614-398-6250 FAX: mike@mfpeng.com | Job 195-ft Monopole - MFP #23513-343 | Page 2 of 6 |
| | Project 281319, Nortonville | Date 12:25:18 07/30/13 |
| | Client TAPP (TP-11553) | Designed by Mike |

Feed Line/Linear Appurtenances - Entered As Area

| Description | Face or Leg | Allow Shield | Component Type | Placement ft | Total Number | C _A A _A | | Weight plf |
|-------------|-------------|--------------|----------------|-----------------|--------------|-------------------------------|------|---------------|
| | | | | | | ft ² /ft | | |
| 1 5/8" | C | No | Inside Pole | 190.00 - 0.00 | 18 | No Ice | 0.00 | 0.92 |
| | | | | | | 1/2" Ice | 0.00 | 0.92 |
| | | | | | | 1" Ice | 0.00 | 0.92 |
| 1 5/8" | C | No | Inside Pole | 180.00 - 0.00 | 18 | No Ice | 0.00 | 0.92 |
| | | | | | | 1/2" Ice | 0.00 | 0.92 |
| | | | | | | 1" Ice | 0.00 | 0.92 |
| 1 5/8" | C | No | Inside Pole | 170.00 - 0.00 | 18 | No Ice | 0.00 | 0.92 |
| | | | | | | 1/2" Ice | 0.00 | 0.92 |
| | | | | | | 1" Ice | 0.00 | 0.92 |
| 1 5/8" | C | No | Inside Pole | 160.00 - 0.00 | 18 | No Ice | 0.00 | 0.92 |
| | | | | | | 1/2" Ice | 0.00 | 0.92 |
| | | | | | | 1" Ice | 0.00 | 0.92 |

Discrete Tower Loads

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment ° | Placement ft | C _A A _A | | Weight K |
|---------------------------------------------|-------------|-------------|-----------------------|------------|-------------------------|-----------------|-------------------------------|-------------------------|-------------|
| | | | Horz Lateral ft | Vert ft | | | Front ft ² | Side ft ² | |
| (12) Panel w/ mounting (105 ft2 / 1800 lbs) | C | None | 0.0000 | 190.00 | 0.0000 | No Ice | 105.00 | 105.00 | 1.80 |
| | | | | | | 1/2" Ice | 125.00 | 125.00 | 2.34 |
| | | | | | | 1" Ice | 145.00 | 145.00 | 2.88 |
| (12) Panel w/ mounting (105 ft2 / 1800 lbs) | C | None | 0.0000 | 180.00 | 0.0000 | No Ice | 105.00 | 105.00 | 1.80 |
| | | | | | | 1/2" Ice | 125.00 | 125.00 | 2.34 |
| | | | | | | 1" Ice | 145.00 | 145.00 | 2.88 |
| (12) Panel w/ mounting (105 ft2 / 1800 lbs) | C | None | 0.0000 | 170.00 | 0.0000 | No Ice | 105.00 | 105.00 | 1.80 |
| | | | | | | 1/2" Ice | 125.00 | 125.00 | 2.34 |
| | | | | | | 1" Ice | 145.00 | 145.00 | 2.88 |
| (12) Panel w/ mounting (105 ft2 / 1800 lbs) | C | None | 0.0000 | 160.00 | 0.0000 | No Ice | 105.00 | 105.00 | 1.80 |
| | | | | | | 1/2" Ice | 125.00 | 125.00 | 2.34 |
| | | | | | | 1" Ice | 145.00 | 145.00 | 2.88 |

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 90 deg - No Ice |
| 5 | 0.9 Dead+1.6 Wind 90 deg - No Ice |
| 6 | 1.2 Dead+1.6 Wind 180 deg - No Ice |
| 7 | 0.9 Dead+1.6 Wind 180 deg - No Ice |
| 8 | 1.2 Dead+1.0 Ice+1.0 Temp |
| 9 | 1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp |
| 10 | 1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp |
| 11 | 1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp |
| 12 | Dead+Wind 0 deg - Service |
| 13 | Dead+Wind 90 deg - Service |
| 14 | Dead+Wind 180 deg - Service |

| | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|----------------------------------|
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| | Project 281319, Nortonville | Date 12:25:18 07/30/13 |
| | Client TAPP (TP-11553) | Designed by Mike |

Maximum Member Forces

| Section No. | Elevation ft | Component Type | Condition | Gov. Load Comb. | Axial K | Major Axis Moment kip-ft | Minor Axis Moment kip-ft |
|-------------|----------------|----------------|------------------|-----------------|---------|--------------------------|--------------------------|
| L1 | 195 - 149 | Pole | Max Tension | 2 | 0.00 | 0.00 | -0.00 |
| | | | Max. Compression | 8 | -23.14 | 0.00 | 0.00 |
| | | | Max. Mx | 4 | -9.59 | -545.05 | 0.00 |
| | | | Max. My | 2 | -9.59 | 0.00 | 545.05 |
| | | | Max. Vy | 4 | 25.12 | -545.05 | 0.00 |
| | | | Max. Vx | 2 | -25.12 | 0.00 | 545.05 |
| L2 | 149 - 112.25 | Pole | Max Tension | 1 | 0.00 | 0.00 | 0.00 |
| | | | Max. Compression | 8 | -33.89 | 0.00 | 0.00 |
| | | | Max. Mx | 4 | -17.91 | -1498.37 | 0.00 |
| | | | Max. My | 2 | -17.91 | 0.00 | 1498.37 |
| | | | Max. Vy | 4 | 28.59 | -1498.37 | 0.00 |
| | | | Max. Vx | 2 | -28.59 | 0.00 | 1498.37 |
| L3 | 112.25 - 77.75 | Pole | Max Tension | 1 | 0.00 | 0.00 | 0.00 |
| | | | Max. Compression | 8 | -46.35 | 0.00 | 0.00 |
| | | | Max. Mx | 4 | -27.70 | -2512.27 | 0.00 |
| | | | Max. My | 2 | -27.70 | 0.00 | 2512.27 |
| | | | Max. Vy | 4 | 31.84 | -2512.27 | 0.00 |
| | | | Max. Vx | 2 | -31.84 | 0.00 | 2512.27 |
| L4 | 77.75 - 38.25 | Pole | Max Tension | 1 | 0.00 | 0.00 | 0.00 |
| | | | Max. Compression | 8 | -64.12 | 0.00 | 0.00 |
| | | | Max. Mx | 4 | -41.85 | -3810.90 | 0.00 |
| | | | Max. My | 2 | -41.85 | 0.00 | 3810.90 |
| | | | Max. Vy | 4 | 35.48 | -3810.90 | 0.00 |
| | | | Max. Vx | 2 | -35.48 | 0.00 | 3810.90 |
| L5 | 38.25 - 0 | Pole | Max Tension | 1 | 0.00 | 0.00 | 0.00 |
| | | | Max. Compression | 8 | -88.03 | 0.00 | 0.00 |
| | | | Max. Mx | 4 | -61.36 | -5516.65 | 0.00 |
| | | | Max. My | 2 | -61.36 | 0.00 | 5516.65 |
| | | | Max. Vy | 4 | 38.76 | -5516.65 | 0.00 |
| | | | Max. Vx | 2 | -38.76 | 0.00 | 5516.65 |

Maximum Tower Deflections - Service Wind

| Section No. | Elevation ft | Horz. Deflection in | Gov. Load Comb. | Tilt ° | Twist ° |
|-------------|-----------------|---------------------|-----------------|--------|---------|
| L1 | 195 - 149 | 49.102 | 13 | 2.3338 | 0.0000 |
| L2 | 153.25 - 112.25 | 29.628 | 13 | 1.9691 | 0.0000 |
| L3 | 117.75 - 77.75 | 16.763 | 13 | 1.4527 | 0.0000 |
| L4 | 84.25 - 38.25 | 8.243 | 13 | 0.9418 | 0.0000 |
| L5 | 45.75 - 0 | 2.416 | 13 | 0.4806 | 0.0000 |

| | | |
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| tnxTower Michael F. Plahovinsak, P.E. 18301 State Route 161 W Plain City, OH 43064 Phone: 614-398-6250 FAX: mike@nfpeng.com | Job 195-ft Monopole - MFP #23513-343 | Page 4 of 6 |
| | Project 281319, Nortonville | Date 12:25:18 07/30/13 |
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Critical Deflections and Radius of Curvature - Service Wind

| Elevation ft | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------------|---------------------------------------------------------|-----------------------|------------------|-----------|------------|------------------------------|
| 190.00 | (12) Panel w/ mounting (105 ft ² / 1800 lbs) | 13 | 46.656 | 2.2978 | 0.0000 | 30322 |
| 180.00 | (12) Panel w/ mounting (105 ft ² / 1800 lbs) | 13 | 41.804 | 2.2232 | 0.0000 | 10106 |
| 170.00 | (12) Panel w/ mounting (105 ft ² / 1800 lbs) | 13 | 37.071 | 2.1405 | 0.0000 | 6063 |
| 160.00 | (12) Panel w/ mounting (105 ft ² / 1800 lbs) | 13 | 32.537 | 2.0443 | 0.0000 | 4330 |

Maximum Tower Deflections - Design Wind

| Section No. | Elevation ft | Horz. Deflection in | Gov. Load Comb. | Tilt ° | Twist ° |
|----------------|-----------------|---------------------------|-----------------------|-----------|------------|
| L1 | 195 - 149 | 198.293 | 4 | 9.4403 | 0.0000 |
| L2 | 153.25 - 112.25 | 119.814 | 4 | 7.9696 | 0.0000 |
| L3 | 117.75 - 77.75 | 67.854 | 4 | 5.8835 | 0.0000 |
| L4 | 84.25 - 38.25 | 33.383 | 4 | 3.8158 | 0.0000 |
| L5 | 45.75 - 0 | 9.783 | 4 | 1.9468 | 0.0000 |

Critical Deflections and Radius of Curvature - Design Wind

| Elevation ft | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------------|---------------------------------------------------------|-----------------------|------------------|-----------|------------|------------------------------|
| 190.00 | (12) Panel w/ mounting (105 ft ² / 1800 lbs) | 4 | 188.441 | 9.2953 | 0.0000 | 7884 |
| 180.00 | (12) Panel w/ mounting (105 ft ² / 1800 lbs) | 4 | 168.895 | 8.9945 | 0.0000 | 2625 |
| 170.00 | (12) Panel w/ mounting (105 ft ² / 1800 lbs) | 4 | 149.824 | 8.6610 | 0.0000 | 1571 |
| 160.00 | (12) Panel w/ mounting (105 ft ² / 1800 lbs) | 4 | 131.545 | 8.2731 | 0.0000 | 1118 |

Pole Design Data

| Section No. | Elevation ft | Size | L ft | L _n ft | Kl/r | A in ² | P _n K | φP _n K | Ratio P _n φP _n |
|----------------|-----------------------|------------------------|---------|----------------------|------|----------------------|---------------------|----------------------|--------------------------------------------|
| L1 | 195 - 149 (1) | TP30.7x20x0.1875 | 46.00 | 0.00 | 0.0 | 17.5704 | -9.59 | 1117.50 | 0.009 |
| L2 | 149 - 112.25 (2) | TP38.88x29.3364x0.3125 | 41.00 | 0.00 | 0.0 | 36.9843 | -17.91 | 2615.06 | 0.007 |
| L3 | 112.25 - 77.75 (3) | TP46.28x36.9748x0.3125 | 40.00 | 0.00 | 0.0 | 44.0942 | -27.70 | 2929.35 | 0.009 |
| L4 | 77.75 - 38.25 (4) | TP54.85x44.1429x0.375 | 46.00 | 0.00 | 0.0 | 62.7610 | -41.85 | 4188.71 | 0.010 |
| L5 | 38.25 - 0 (5) | TP63x52.3543x0.375 | 45.75 | 0.00 | 0.0 | 74.5394 | -61.36 | 4608.35 | 0.013 |

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| tnxTower Michael F. Plahovinsak, P.E. 18301 State Route 161 W Plain City, OH 43064 Phone: 614-398-6250 FAX: mike@mfpeng.com | Job 195-ft Monopole - MFP #23513-343 | Page 5 of 6 |
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Pole Bending Design Data

| Section No. | Elevation ft | Size | M_{ux} | ϕM_{ux} | Ratio | M_{uy} | ϕM_{uy} | Ratio |
|-------------|-----------------------|------------------------|----------|---------------|------------------------------|----------|---------------|------------------------------|
| | | | kip-ft | kip-ft | $\frac{M_{ux}}{\phi M_{ux}}$ | kip-ft | kip-ft | $\frac{M_{uy}}{\phi M_{uy}}$ |
| L1 | 195 - 149 (1) | TP30.7x20x0.1875 | 545.05 | 679.46 | 0.802 | 0.00 | 679.46 | 0.000 |
| L2 | 149 - 112.25 (2) | TP38.88x29.3364x0.3125 | 1498.38 | 2004.06 | 0.748 | 0.00 | 2004.06 | 0.000 |
| L3 | 112.25 - 77.75 (3) | TP46.28x36.9748x0.3125 | 2512.28 | 2680.07 | 0.937 | 0.00 | 2680.07 | 0.000 |
| L4 | 77.75 - 38.25 (4) | TP54.85x44.1429x0.375 | 3810.90 | 4545.13 | 0.838 | 0.00 | 4545.13 | 0.000 |
| L5 | 38.25 - 0 (5) | TP63x52.3543x0.375 | 5516.65 | 5945.56 | 0.928 | 0.00 | 5945.56 | 0.000 |

Pole Shear Design Data

| Section No. | Elevation ft | Size | Actual | ϕV_n | Ratio | Actual | ϕT_n | Ratio |
|-------------|-----------------------|------------------------|------------|------------|------------------------|-----------------|------------|------------------------|
| | | | V_u K | K | $\frac{V_u}{\phi V_n}$ | T_u kip-ft | kip-ft | $\frac{T_u}{\phi T_n}$ |
| L1 | 195 - 149 (1) | TP30.7x20x0.1875 | 25.12 | 558.75 | 0.045 | 0.00 | 1360.59 | 0.000 |
| L2 | 149 - 112.25 (2) | TP38.88x29.3364x0.3125 | 28.59 | 1307.53 | 0.022 | 0.00 | 4013.02 | 0.000 |
| L3 | 112.25 - 77.75 (3) | TP46.28x36.9748x0.3125 | 31.84 | 1464.68 | 0.022 | 0.00 | 5366.70 | 0.000 |
| L4 | 77.75 - 38.25 (4) | TP54.85x44.1429x0.375 | 35.48 | 2094.35 | 0.017 | 0.00 | 9101.42 | 0.000 |
| L5 | 38.25 - 0 (5) | TP63x52.3543x0.375 | 38.76 | 2304.17 | 0.017 | 0.00 | 11905.67 | 0.000 |

Pole Interaction Design Data

| Section No. | Elevation ft | Ratio | Ratio | Ratio | Ratio | Ratio | Comb. Stress Ratio | Allow. Stress Ratio | Criteria |
|-------------|-----------------------|------------------------|------------------------------|------------------------------|------------------------|------------------------|--------------------|---------------------|----------|
| | | $\frac{P_u}{\phi P_n}$ | $\frac{M_{ux}}{\phi M_{ux}}$ | $\frac{M_{uy}}{\phi M_{uy}}$ | $\frac{V_u}{\phi V_n}$ | $\frac{T_u}{\phi T_n}$ | | | |
| L1 | 195 - 149 (1) | 0.009 | 0.802 | 0.000 | 0.045 | 0.000 | 0.813 | 1.000 | 4.8.2 ✓ |
| L2 | 149 - 112.25 (2) | 0.007 | 0.748 | 0.000 | 0.022 | 0.000 | 0.755 | 1.000 | 4.8.2 ✓ |
| L3 | 112.25 - 77.75 (3) | 0.009 | 0.937 | 0.000 | 0.022 | 0.000 | 0.947 | 1.000 | 4.8.2 ✓ |
| L4 | 77.75 - 38.25 (4) | 0.010 | 0.838 | 0.000 | 0.017 | 0.000 | 0.849 | 1.000 | 4.8.2 ✓ |
| L5 | 38.25 - 0 (5) | 0.013 | 0.928 | 0.000 | 0.017 | 0.000 | 0.941 | 1.000 | 4.8.2 ✓ |

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| | Client TAPP (TP-11553) | Designed by Mike |

Section Capacity Table

| Section No. | Elevation ft | Component Type | Size | Critical Element | P K | σP_{allow} K | % Capacity | Pass Fail | |
|-------------|----------------|----------------|------------------------|------------------|--------|----------------------|-----------------|-------------|-------------|
| L1 | 195 - 149 | Pole | TP30.7x20x0.1875 | 1 | -9.59 | 1117.50 | 81.3 | Pass | |
| L2 | 149 - 112.25 | Pole | TP38.88x29.3364x0.3125 | 2 | -17.91 | 2615.06 | 75.5 | Pass | |
| L3 | 112.25 - 77.75 | Pole | TP46.28x36.9748x0.3125 | 3 | -27.70 | 2929.35 | 94.7 | Pass | |
| L4 | 77.75 - 38.25 | Pole | TP54.85x44.1429x0.375 | 4 | -41.85 | 4188.71 | 84.9 | Pass | |
| L5 | 38.25 - 0 | Pole | TP63x52.3543x0.375 | 5 | -61.36 | 4608.35 | 94.1 | Pass | |
| | | | | | | | Summary | | |
| | | | | | | | Pole (L3) | 94.7 | Pass |
| | | | | | | | RATING = | 94.7 | Pass |

| | | |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------------|
| Michael F. Plahovinsak, P.E. 18301 State Route 161 W Plain City, OH 43064 Phone: 614-398-6250 email: mike@mfpeng.com | Job 195-ft monopole - MFP #23513-0343 | Page BP-G |
| | Project 281319, Nortonville | Date 07/30/2013 |
| | Client TAPP (TP-11553) | Designed by Mike |

Anchor Rod and Base Plate Calculation

ANSI/TIA-222-G-2

| Factored Base Reactions: | Pole Shape: | Anchor Rods: | Base Plate: |
|--------------------------|-----------------------------------|---------------------------|-------------------------|
| Moment: 5517 ft-kips | 18-Sided | (16) 2.25 in. A615 GR. 75 | 2 in. x 76 in. Round |
| Shear: 39 kips | Pole Dia. (D_f): | Anchor Rods Evenly Spaced | f _y = 60 ksi |
| Axial: 61 kips | 63.00 in | On a 70 in Bolt Circle | |

Anchor Rod Calculation According to TIA-222-G section 4.9.9

| | |
|---------------|-------------------------------------------|
| $\phi =$ | 0.80 TIA 4.9.9 |
| $I_{bolts} =$ | 9800.00 in ² Moment of Inertia |
| $P_u =$ | 236 kips Tension Force |
| $V_u =$ | 2 kips Shear Force |
| $R_{nt} =$ | 325.00 kips Nominal Tensile Strength |
| $\eta =$ | 0.50 for detail type (d) |

The following Interaction Equation Shall Be Satisfied:

$$\left(\frac{P_u + \frac{V_u}{\eta}}{\phi R_{nt}} \right) \leq 1.0$$

$$0.928 \leq 1$$

Base Plate Calculation According to TIA-222-G

| | |
|--------------|----------------------------------|
| $\phi =$ | 0.90 TIA 4.7 |
| $M_{PL} =$ | 570.6 in-kip Plate Moment |
| $L =$ | 12.4 in Section Length |
| $Z =$ | 12.4 Plastic Section Modulus |
| $M_p =$ | 742.2 in-kip Plastic Moment |
| $\phi M_n =$ | 668.0 in-kip Factored Resistance |

Calculated Moment vs Factored Resistance

$$570.61 \text{ in-kip} \leq 668 \text{ in-kip}$$

| | |
|--------------------------|-------------------------------------------|
| Anchor Rods Are Adequate | 92.8% <input checked="" type="checkbox"/> |
| Base Plate is Adequate | 85.4% <input checked="" type="checkbox"/> |

GENERAL

- ALL METHODS, MATERIALS AND WORKMANSHIP SHALL FOLLOW THE DICTATES OF GOOD CONSTRUCTION PRACTICE.
- ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TOWER AND FOUNDATION CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ANY INSTALLATION INTERFERENCES. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. DETAILS NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL FOLLOW SIMILAR DETAILS FOR THIS JOB.
- ANY SUBSTITUTIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- ANY MANUFACTURED DESIGN ELEMENTS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS AND SHOULD BE SIMILAR TO THOSE SHOWN. THESE DESIGN ELEMENTS MUST BE STAMPED BY AN ENGINEER PROFESSIONALLY REGISTERED IN THE STATE OF THE PROJECT, AND SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL CODES AND OSHA SAFETY REGULATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY, PER TIA-1019-A-2011, TO PROVIDE A COMPLETE AND STABLE STRUCTURE AS SHOWN ON THESE DRAWINGS.
- CONTRACTOR'S PROPOSED INSTALLATION SHALL NOT INTERFERE, NOR DENY ACCESS TO, ANY EXISTING OPERATIONAL AND SAFETY EQUIPMENT.

STRUCTURAL STEEL

- ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS, LATEST EDITION.
- ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
- ALL U-BOLTS SHALL BE ASTM A307 OR EQUIVALENT, WITH LOCKING DEVICE, UNLESS NOTED OTHERWISE.
- FIELD CUT EDGES, EXCEPT DRILLED HOLES, SHALL BE GROUND SMOOTH.
- ALL FIELD CUT SURFACES AND FIELD DRILLED HOLES SHALL BE REPAIRED WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.
- ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.

WELDING

- ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
- ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE (100% IF REJECTABLE DEFECTS ARE FOUND) TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
- INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
- ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
- MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
- PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING 1/2" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

BOLT TIGHTENING PROCEDURE

- STRUCTURAL CONNECTIONS TO BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC-2004 (SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS.)
- TIGHTEN FLANGE BOLTS BY AISC "TURN-OF-THE-NUT" METHOD, USING THE CHART BELOW:

BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS

| | | |
|--------|-------------------------------------------|-----------------------------|
| 1/2" | BOLTS UP TO AND INCLUDING 2.0 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |
| 5/8" | BOLTS UP TO AND INCLUDING 2.5 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |
| 3/4" | BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |
| 7/8" | BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |
| 1" | BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |
| 1-1/8" | BOLTS UP TO AND INCLUDING 4.5 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |
| 1-1/4" | BOLTS UP TO AND INCLUDING 5.0 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |
| 1-3/8" | BOLTS UP TO AND INCLUDING 5.5 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |
| 1-1/2" | BOLTS UP TO AND INCLUDING 6.0 INCH LENGTH | +1/3 TURN BEYOND SNUG TIGHT |

BOLT LENGTHS OVER FOUR DIAMETERS BUT NOT EXCEEDING EIGHT DIAMETERS

| | | |
|--------|--------------------------------|-----------------------------|
| 1/2" | BOLTS 2.25 TO 4.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 5/8" | BOLTS 2.75 TO 5.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 3/4" | BOLTS 3.25 TO 6.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 7/8" | BOLTS 3.75 TO 7.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 1" | BOLTS 4.25 TO 8.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 1-1/8" | BOLTS 4.75 TO 9.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 1-1/4" | BOLTS 5.25 TO 10.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 1-3/8" | BOLTS 5.75 TO 11.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |
| 1-1/2" | BOLTS 6.25 TO 12.0 INCH LENGTH | +1/2 TURN BEYOND SNUG TIGHT |

- SPLICE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8.2.1 OF THE AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS", LOCATED IN THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS PARAPHRASED AS FOLLOWS:

FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8.2.1 THROUGH 8.2.4.

8.2.1 TURN-OF-NUT PRETENSIONING
BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1, UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.

- ALL OTHER BOLTED CONNECTIONS SHALL BE BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1 OF THE SPECIFICATION.

ALL BOLT HOLES SHALL BE ALIGNED TO PERMIT INSERTION OF THE BOLTS WITHOUT UNDUE DAMAGE TO THE THREADS. BOLTS SHALL BE PLACED IN ALL HOLES WITH WASHERS POSITIONED AS REQUIRED AND NUTS THREADED TO COMPLETE THE ASSEMBLY. COMPACTING THE JOINT TO THE SNUG-TIGHT CONDITION SHALL PROGRESS SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT. THE SNUG-TIGHTENED CONDITION IS THE TIGHTNESS THAT IS ATTAINED WITH A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER USING AN ORDINARY SPUD WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.

PAINT

- AS REQUIRED, CLEAN AND PAINT PROPOSED STEEL ACCORDING TO FAA ADVISORY CIRCULAR AC 70/7460-1K.

APPLICABLE CODES AND STANDARDS

- ANSI/TIA: STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES, 222-G EDITION.
- 2006 INTERNATIONAL BUILDING CODE / 2007 KENTUCKY BUILDING CODE.
- ACI 318: AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, 318-02.
- CRSI: CONCRETE REINFORCING STEEL INSTITUTE, MANUAL OF STANDARD PRACTICE, LATEST EDITION.
- AISC: AMERICAN INSTITUTE OF STEEL CONSTRUCTION, MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.
- AWS: AMERICAN WELDING SOCIETY D1.1, STRUCTURAL WELDING CODE, LATEST EDITION.

SUMMARY OF SPECIAL INSPECTIONS

| VERIFICATION AND INSPECTION TASK | CONTINUOUS | PERIODIC |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|
| 1. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETERS, BELL DIAMETERS (IF APPLICABLE), LENGTHS, EMBEDMENT INTO BEDROCK (IF APPLICABLE) AND ADEQUATE END-BEARING STRATA CAPACITY. RECORD CONCRETE OR GROUT VOLUMES. | X | - |
| 2. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT. | - | X |
| 3. INSPECTION OF BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED. | X | - |
| 4. VERIFYING USE OF REQUIRED DESIGN MIX. | - | X |
| 5. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE. | X | - |

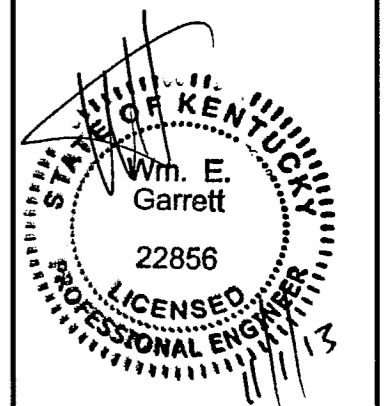


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| | |
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| APPROVED BY: | USA |
| DATE DRAWN: | 9/11/13 |
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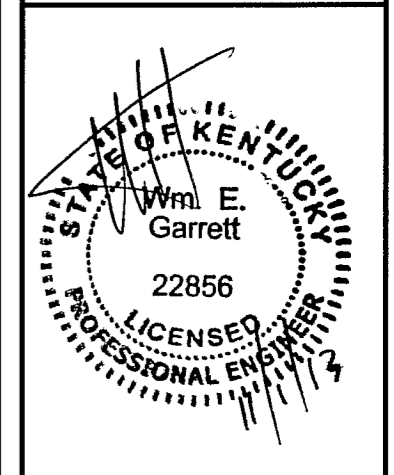
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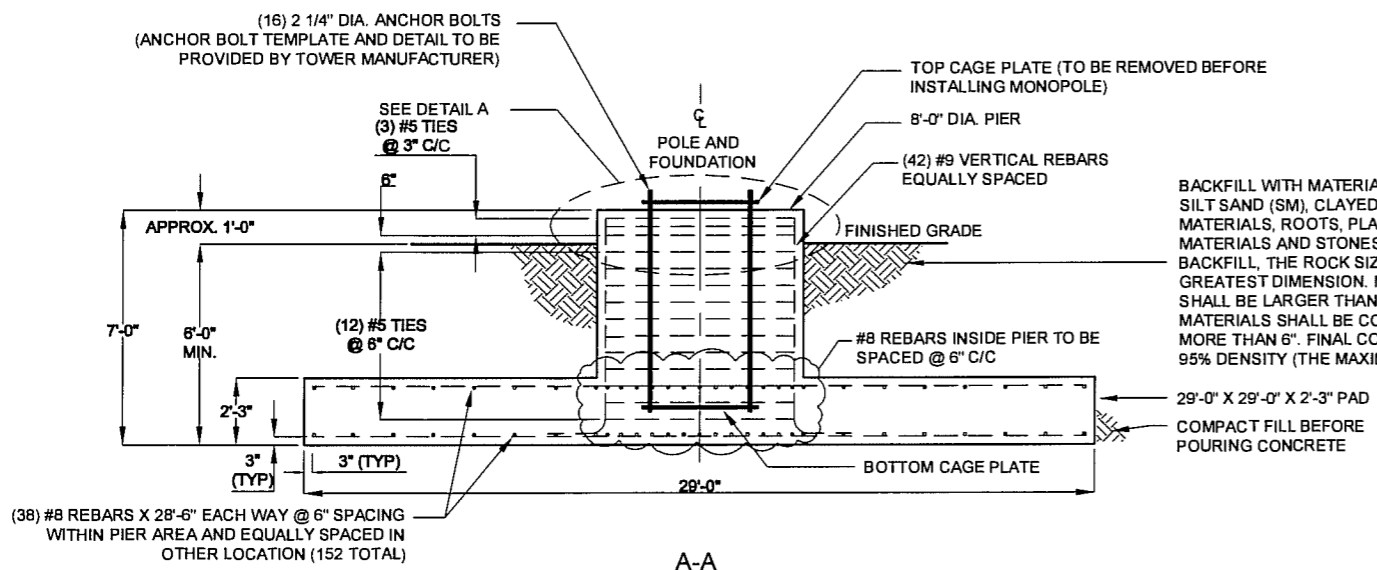
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|--------------|----------|
| DRAWN BY: | JL |
| APPROVED BY: | USA |
| DATE DRAWN: | 9/11/13 |
| JOB NO: | 54225072 |

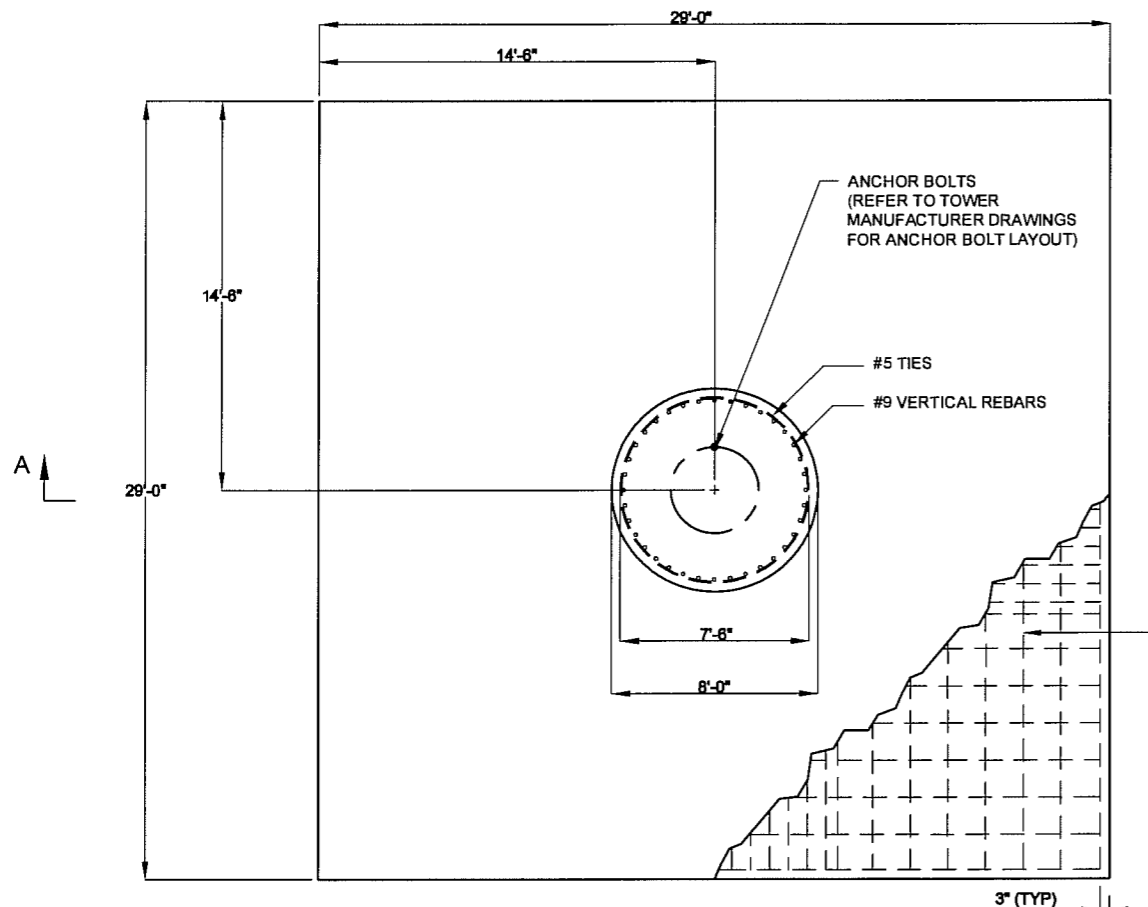
SHEET TITLE:
PIER AND PAD FOUNDATION DETAILS

| | |
|-----------------------------|--------------------|
| SHEET NUMBER: A-1 | REV. # 0 |
|-----------------------------|--------------------|



BACKFILL WITH MATERIAL THAT CONSISTS OF SANDY SILT (ML), SILT SAND (SM), CLAYED SAND (SC) CONTAINING NO ORGANIC MATERIALS, ROOTS, PLASTIC SILTS OR CLAYS, DELETERIOUS MATERIALS AND STONES. IF ROCK/SOIL MIXTURE IS USED AS BACKFILL, THE ROCK SIZE SHOULD BE LESS THAN 4" IN GREATEST DIMENSION. NO MORE THAN 15% BY WEIGHT SHALL BE LARGER THAN 2" IN GREATEST DIMENSION. FILL MATERIALS SHALL BE COMPACTED USING LAYERS OF NO MORE THAN 6". FINAL COMPACTION MUST BE A MINIMUM OF 95% DENSITY (THE MAXIMUM DRY UNIT OF WEIGHT).

A-A

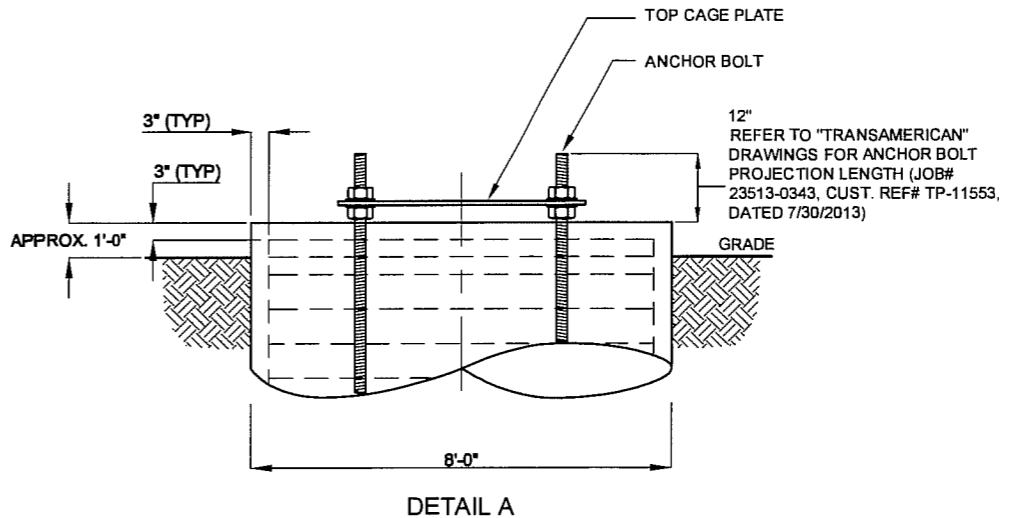


PLAN VIEW

MONOPOLE BASE REACTIONS

MOMENT = 5550 KIPS-FT
 SHEAR = 40 KIPS
 AXIAL = 62 KIPS
 CONCRETE VOLUME = 78.9 CUBIC YARDS

(38) #8 REBARS X 28'-6" EACH WAY ON TWO LEVELS @ 6" SPACING WITHIN PIER AREA AND EQUALLY SPACED IN OTHER LOCATION (152 TOTAL)



NOTES

1. PROPOSED NEW FOUNDATION DESIGN FOR A 195' "TRANSAMERICAN" MONOPOLE (JOB# 23513-0343, CUST. REF# TP-11553, DATED 7/30/2013). REFERENCE TOWER MANUFACTURER DRAWINGS FOR ANCHOR BOLT INSTALLATION REQUIREMENTS.
2. PROPOSED NEW FOUNDATION DESIGN REACTIONS WERE OBTAINED FROM TOWER MANUFACTURER DESIGN DRAWINGS (JOB# 23513-0343, CUST. REF# TP-11553, DATED 7/30/2013).
3. PROPOSED NEW FOUNDATION DESIGN WAS BASED ON SOIL REPORT PROVIDED BY "FSTAN LAND SURVEYORS & CONSULTING ENGINEERS" WITH REPORT# 13-8622, DATED 8/18/13. REFERENCE THE SOIL REPORT FOR ADDITIONAL CONSIDERATIONS AND REQUIREMENTS.
4. IF THE SOIL PARAMETERS ENCOUNTERED DURING CONSTRUCTION ARE SIGNIFICANTLY DIFFERENT FROM WHAT WERE INDICATED IN THE SOIL REPORT, PLEASE REPORT FINDINGS TO ATC ENGINEERING FOR FURTHER INSTRUCTION.
5. CONCRETE SLUMP: 2"-4"
6. DUE TO THE PRESENCE OF SAND STONE AT APPROX. 6 FT. BELOW THE GRADE SURFACE, THE USE OF HEAVY TOOLS, EQUIPMENT OR ROCK BITS MAY BE REQUIRED IN CONSTRUCTION.
7. FOUNDATION BASE SHOULD REST ON FIRM AND LEVELED SURFACE.



AMERICAN TOWER®
ATC TOWER SERVICES, INC
 8505 FREEPORT PARKWAY
 SUITE 135
 IRVING, TX 75063
 PHONE: (972) 999-8900
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 NYSE AMT

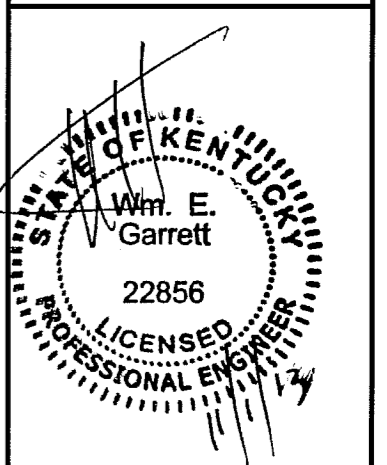
THESE DRAWINGS AND/OR THE ACCOMPANYING SPECIFICATION AS INSTRUMENTS OF SERVICE ARE THE EXCLUSIVE PROPERTY OF ATC TOWER SERVICES, INC. THEIR USE AND PUBLICATION SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO ATC TOWER SERVICES, INC OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. TITLE TO THESE DOCUMENTS SHALL REMAIN THE PROPERTY OF ATC TOWER SERVICES, INC WHETHER OR NOT THE PROJECT IS EXECUTED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE ATC TOWER SERVICES, INC OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION ON FILE WITH ATC TOWER SERVICES, INC.

| REV. | DESCRIPTION | BY | DATE |
|------|-------------|----|---------|
| 0 | FIRST ISSUE | JL | 9/11/13 |
| | | | |
| | | | |
| | | | |

ATC SITE NUMBER:
 281319

ATC SITE NAME:
 NORTONVILLE KY, KY

SITE ADDRESS:
 NORTONVILLE, KY 42442-9577



| | |
|--------------|----------|
| DRAWN BY: | JL |
| APPROVED BY: | USA |
| DATE DRAWN: | 9/11/13 |
| JOB NO.: | 54225072 |

SHEET TITLE:
 BAR LIST FOR
 REINFORCING
 STEEL AND
 GENERAL NOTES

| | |
|------------------------------|--------------------|
| SHEET NUMBER: A-RL | REV. # 0 |
|------------------------------|--------------------|

| QTY REQ'D | REBAR SIZE | LENGTH | TOTAL WEIGHT (LBS) | TYPE | BENDING DIAGRAM | | | | | |
|-----------|------------|-------------|--------------------|---------------------------|-----------------|-------------|---------|-------------|---------------|--|
| | | | | | A | B | C | D | INSIDE RADIUS | |
| 15 | #5 | 24' - 7" | 385 | ROUND TIE | 7' - 6" | 1' - 2" | | | | |
| 42 | #9 | 7' - 9 1/2" | 1113 | 90° BEND VERTICAL | 6' - 3" | 1' - 9 5/8" | 1' - 4" | 5' - 9 1/2" | 4-1/2" | |
| | | | | SQUARE OR RECTANGULAR TIE | A | B | C | INSIDE RAD. | | |
| | | | | U-SHAPE 90° BEND | A | B | C | D | INSIDE RADIUS | |
| 152 | #8 | 28' - 6" | 11566 | STRAIGHT | A | 28' - 6" | | | | |

GENERAL FOUNDATION CONSTRUCTION NOTES

- ALL REBAR (HORIZONTAL & VERTICAL) SHALL BE SECURELY WIRE TIED TO PREVENT DISPLACEMENT DURING POURING OF CONCRETE.
- CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI AT 28 DAYS AND A MAXIMUM WCM RATIO NOT EXCEEDING 0.45.
- REINFORCED CONCRETE CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH ACI STANDARDS 318.
- MINIMUM CONCRETE COVER OVER REBAR IS 3".
- BACKFILL SHALL BE SELECTED MATERIAL, WELL COMPACTED IN LAYERS NOT EXCEEDING 12".
- BACKFILL SHALL BE PLACED SO AS TO PREVENT ACCUMULATION OF WATER AROUND THE FOUNDATION.
- REINFORCING MATERIAL SHALL BE IN ACCORDANCE WITH ASTM SPECIFICATION A615-85.
- ALL REBAR TO BE GRADE 60 (UNLESS NOTED).

FOUNDATION AND ANCHOR TOLERANCES

- VERTICAL EMBEDMENTS OUT OF PLUMB: 1.0 DEGREE.
- DRILLED FOUNDATION OUT OF PLUMB: 1.0 DEGREE.
- DEPTH OF FOUNDATION: PLUS 3" (76mm) OR MINUS 0".
- PROJECTIONS OF EMBEDMENTS: PLUS OR MINUS 1/4" (6mm).
- CONCRETE DIMENSIONS: PLUS OR MINUS 1" (25mm).
- REINFORCING STEEL PLACEMENT: PLUS OR MINUS 1/2" INCLUDING CONCRETE COVER.
- FOLLOWING ARE THE MINIMUM OVERLAP LENGTHS OF REBARS IF REQUIRED:
 - #6 BARS = 2'-0"
 - #8 BARS = 2'-8"
 - #9 BARS = 3'-0"
 - #10 BARS = 3'-6"
 - #11 BARS = 4'-0"



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 195 ft Monopole
ATC Site Name : Nortonville KY, KY
ATC Site Number : 281319
Engineering Number : 542250E1
Proposed Carrier : Operations Structural
Carrier Site Name : N/A
Carrier Site Number : N/A
Site Location : TBD
NORTONVILLE, KY 42442-9577
37.178183,-87.458767
County : Hopkins
Date : August 23, 2013
Max Usage : 102%
Result : Pass

Uma S. Atluri, MS, E.I.
Project Engineer

Uma S. Atluri





Table of Contents

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| Structure Usages | 3 |
| Foundations | 3 |
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| Calculations | Attached |



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the proposed 195 ft monopole to reflect the current state of loading.

Supporting Documents

| | |
|-----------------------|-------------------------------------------|
| Tower Drawings | TAPP DWG #23513-0343, dated July 30, 2013 |
|-----------------------|-------------------------------------------|

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

| | |
|---------------------------------|---------------------------------------------------------|
| Basic Wind Speed: | 90 mph (3-Second Gust) |
| Basic Wind Speed w/ Ice: | 30 mph (3-Second Gust) w/ 3/4" radial ice concurrent |
| Code: | ANSI/TIA-222-G / 2006 IBC / 2007 Kentucky Building Code |
| Structure Class: | II |
| Exposure Category: | C |
| Topographic Category: | 1 |

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact me via email at uma.atluri@americantower.com or call 972-999-8905.



Proposed Equipment

| Elevation ¹ (ft) | | Qty. | Antenna/Mount Type | Coax (in) | Carrier |
|-----------------------------|-------|------|-------------------------------------------------------------------|------------|-----------------|
| Mount | RAD | | | | |
| 190.0 | 190.0 | 1 | 105 sq. ft. w/o ice & 10% increase per ¼" ice for icing condition | (18) 1 5/8 | Future Carriers |
| 180.0 | 180.0 | 1 | 105 sq. ft. w/o ice & 10% increase per ¼" ice for icing condition | (18) 1 5/8 | |
| 170.0 | 170.0 | 1 | 105 sq. ft. w/o ice & 10% increase per ¼" ice for icing condition | (18) 1 5/8 | |
| 160.0 | 160.0 | 1 | 105 sq. ft. w/o ice & 10% increase per ¼" ice for icing condition | (18) 1 5/8 | |

¹Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax inside the pole shaft.



Structure Usages

| Structural Component | Controlling Usage | Pass/Fail |
|----------------------|-------------------|-----------|
| Anchor Bolts | 96% | Pass |
| Shaft | 96% | Pass |
| Base Plate | 102% | Pass |

Foundations

| Reaction Component | Original Design Reactions | Analysis Reactions | % of Design |
|--------------------|---------------------------|--------------------|-------------|
| Moment (Kips-Ft) | 5,550.0 | 5578.6 | 101% |
| Shear (Kips) | 40.0 | 39.0 | 97% |

New foundations will be designed to support the proposed structure based on the site specific soil report.

Deflection and Sway*

| Antenna Elevation (ft) | Deflection (ft) | Sway (Rotation) (°) |
|------------------------|-----------------|---------------------|
| 190.0 | 4.557 | 2.704 |

*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G



Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to ATC Tower Services, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Tower Services, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

| Job Information | |
|-----------------|-----------------------|
| Pole : | 281319 |
| Description : | Monopole |
| Client : | Operations Structural |
| Location : | Nortonville KY, KY |
| Shape : | 18 Sides |
| Height : | 195.00 (ft) |
| Base Elev (ft): | 0.00 |
| Taper: | 0.23269/(in/ft) |
| Code: | ANSI/TIA-222 Rev G |
| Struct Class : | II |
| Exposure : | C |
| Topo : | 1 |

| Sections Properties | | | | | | | | |
|---------------------|-------------|---------------|--------|------------|------------|-------------|---------------|-------------------|
| Shaft Section | Length (ft) | Diameter (in) | | Thick (in) | Joint Type | Overlap | | Steel Grade (ksi) |
| | | Top | Bottom | | | Length (in) | Taper (in/ft) | |
| 1 | 45.750 | 52.35 | 63.00 | 0.375 | | 0.000 | 0.232692 | 65 |
| 2 | 46.000 | 44.14 | 54.84 | 0.375 | Slip Joint | 90.000 | 0.232692 | 65 |
| 3 | 40.000 | 36.97 | 46.28 | 0.313 | Slip Joint | 78.000 | 0.232692 | 65 |
| 4 | 41.000 | 29.34 | 38.88 | 0.313 | Slip Joint | 66.000 | 0.232692 | 65 |
| 5 | 46.000 | 20.00 | 30.70 | 0.188 | Slip Joint | 51.000 | 0.232692 | 65 |

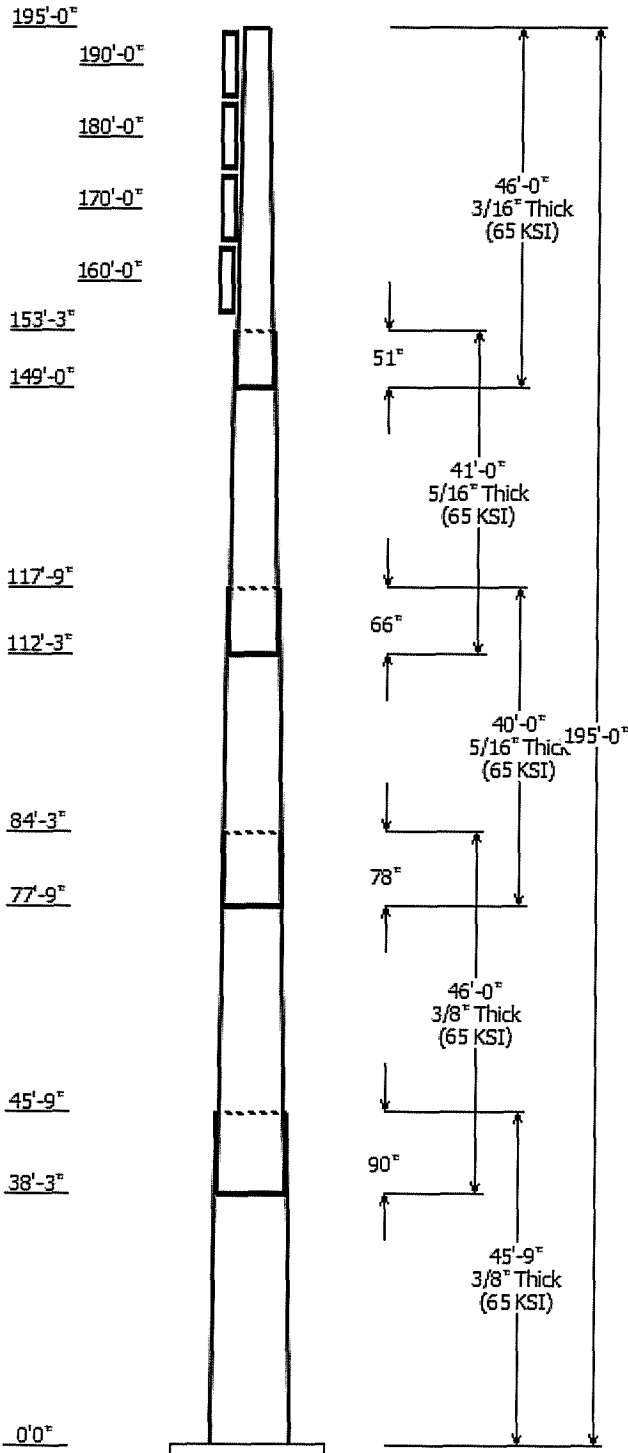
| Discrete Appurtenance | | | |
|-----------------------|-----------------|-----|-----------------------------|
| Attach Elev (ft) | Force Elev (ft) | Qty | Description |
| 190.000 | 190.000 | 1 | 105 Sq. Ft. and 125 Sq. Ft. |
| 180.000 | 180.000 | 1 | 105 Sq. Ft. and 125 Sq. Ft. |
| 170.000 | 170.000 | 1 | 105 Sq. Ft. and 125 Sq. Ft. |
| 160.000 | 160.000 | 1 | 105 Sq. Ft. and 125 Sq. Ft. |

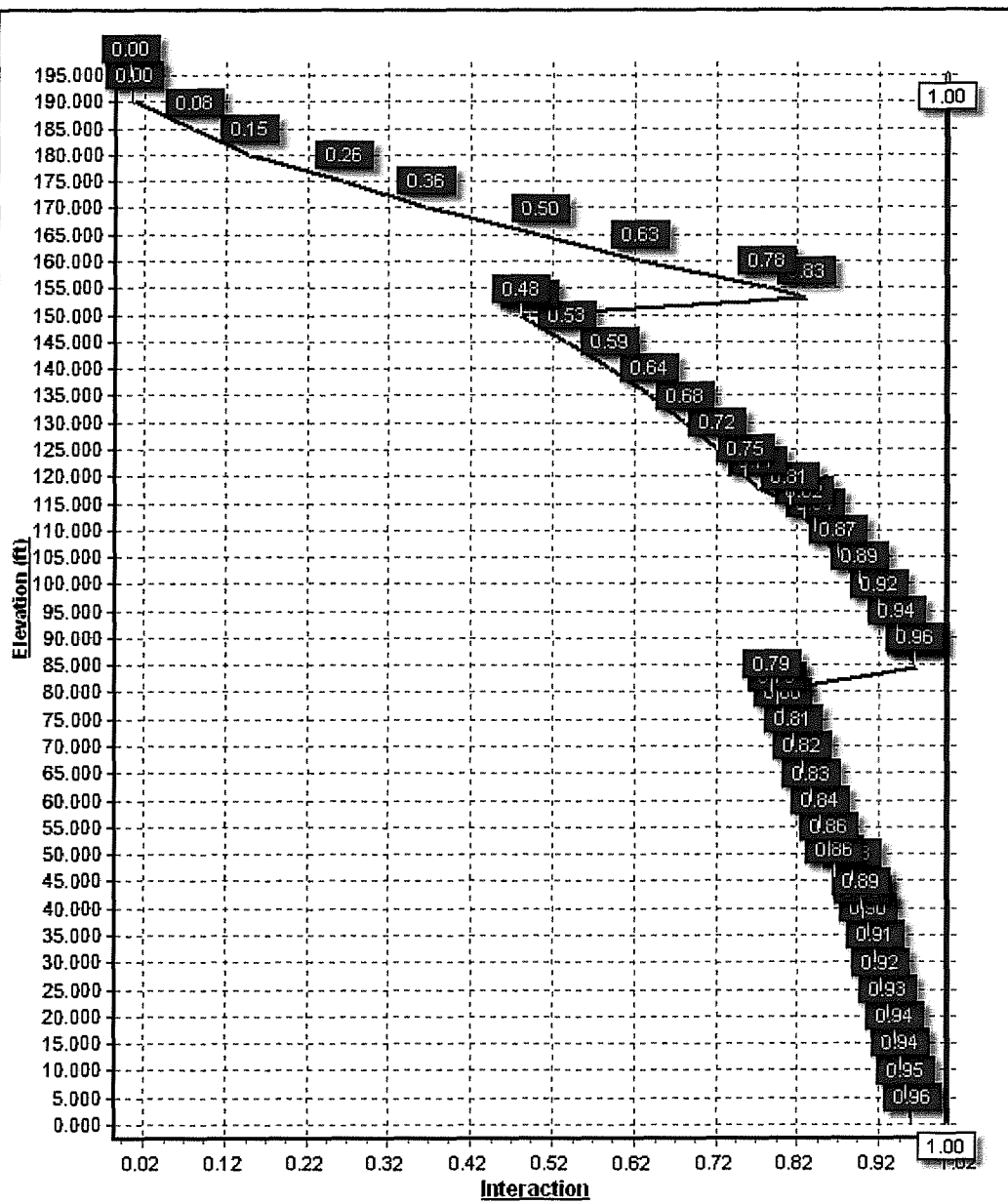
| Linear Appurtenance | | | |
|---------------------|-------|-------------|-----------------|
| Elev (ft) | | Description | Exposed To Wind |
| From | To | | |
| 0.000 | 160.0 | 1 5/8" Coax | No |
| 0.000 | 170.0 | 1 5/8" Coax | No |
| 0.000 | 180.0 | 1 5/8" Coax | No |
| 0.000 | 190.0 | 1 5/8" Coax | No |

| Load Cases | |
|----------------------|------------------------------------|
| 1.2D + 1.6W | 90.00 mph with No Ice |
| 0.9D + 1.6W | 90.00 mph with No Ice (Reduced DL) |
| 1.2D + 1.0Di + 1.0Wi | 30.00 mph with 0.75 in Radial Ice |
| 1.0D + 1.0W | 60.00 mph Serviceability |

| Reactions | | | |
|----------------------|-----------------|-------------|-------------|
| Load Case | Moment (kip-ft) | Shear (kip) | Axial (kip) |
| 1.2D + 1.6W | 5578.65 | 38.96 | 59.81 |
| 0.9D + 1.6W | 5497.50 | 38.93 | 44.84 |
| 1.2D + 1.0Di + 1.0Wi | 751.61 | 5.00 | 94.02 |
| 1.0D + 1.0W | 1540.01 | 10.82 | 49.89 |

| Dish Deflections | | | |
|------------------|------------------|-----------------|----------------|
| Load Case | Attach Elev (ft) | Deflection (in) | Rotation (deg) |
| | 0.00 | 0.000 | 0.000 |

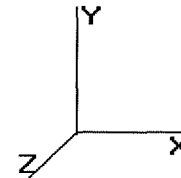




Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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 Page: 1



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Shaft Section Properties

| Sect Info | Length (ft) | Thick (in) | Fy (ksi) | Joint Type | Joint Len (in) | Weight (lb) | Bottom | | | | | | Top | | | | | | | |
|--------------|-------------|------------|----------|------------|----------------|-------------|----------|-----------|-------------|-----------|-----------|-----------|----------|-----------|-------------|-----------|-----------|-----------|---------------|--|
| | | | | | | | Dia (in) | Elev (ft) | Area (sqin) | Ix (in^4) | W/t Ratio | D/t Ratio | Dia (in) | Elev (ft) | Area (sqin) | Ix (in^4) | W/t Ratio | D/t Ratio | Taper (in/ft) | |
| 1-18 | 45.750 | 0.3750 | 65 | | 0.00 | 10,617 | 63.00 | 0.00 | 74.54 | 36933.4 | 28.21 | 168.00 | 52.35 | 45.75 | 61.87 | 21118.7 | 23.21 | 139.61 | 0.232692 | |
| 2-18 | 46.000 | 0.3750 | 65 | Slip | 90.00 | 9,152 | 54.84 | 38.25 | 64.84 | 24308.4 | 24.38 | 146.27 | 44.14 | 84.25 | 52.10 | 12610.3 | 19.35 | 117.72 | 0.232692 | |
| 3-18 | 40.000 | 0.3125 | 65 | Slip | 78.00 | 5,578 | 46.28 | 77.75 | 45.60 | 12174.1 | 24.70 | 148.11 | 36.97 | 117.75 | 36.36 | 6175.6 | 19.45 | 118.32 | 0.232692 | |
| 4-18 | 41.000 | 0.3125 | 65 | Slip | 66.00 | 4,677 | 38.88 | 112.25 | 38.25 | 7189.0 | 20.53 | 124.42 | 29.34 | 153.25 | 28.79 | 3064.9 | 15.14 | 93.89 | 0.232692 | |
| 5-18 | 46.000 | 0.1875 | 65 | Slip | 51.00 | 2,344 | 30.70 | 149.00 | 18.16 | 2136.7 | 27.46 | 163.75 | 20.00 | 195.00 | 11.79 | 584.7 | 17.40 | 106.67 | 0.232692 | |
| Shaft Weight | | | | | | 32,368 | | | | | | | | | | | | | | |

Discrete Appurtenance Properties

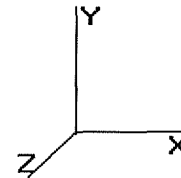
| Attach Elev (ft) | Description | Qty | Weight (lb) | No Ice CaAa (sf) | CaAa Factor | Weight (lb) | Ice CaAa (sf) | CaAa Factor | Distance From Face (ft) | Vert Ecc (ft) |
|------------------|-----------------------------|-----|-------------|------------------|-------------|-------------|---------------|-------------|-------------------------|---------------|
| 190.00 | 105 Sq. Ft. and 125 Sq. Ft. | 1 | 1800.00 | 105.00 | 1.00 | 4,373.22 | 180.052 | 1.00 | 0.000 | 0.000 |
| 180.00 | 105 Sq. Ft. and 125 Sq. Ft. | 1 | 1800.00 | 105.00 | 1.00 | 4,359.35 | 179.648 | 1.00 | 0.000 | 0.000 |
| 170.00 | 105 Sq. Ft. and 125 Sq. Ft. | 1 | 1800.00 | 105.00 | 1.00 | 4,344.76 | 179.222 | 1.00 | 0.000 | 0.000 |
| 160.00 | 105 Sq. Ft. and 125 Sq. Ft. | 1 | 1800.00 | 105.00 | 1.00 | 4,329.38 | 178.774 | 1.00 | 0.000 | 0.000 |
| Totals | | 4 | 7200.00 | | | 17,406.72 | | | Number of Loadings : | 4 |

Linear Appurtenance Properties

| Elev From (ft) | Elev To (ft) | Description | Exposed Width (in) | Exposed To Wind |
|----------------|--------------|------------------|--------------------|-----------------|
| 0.00 | 190.00 | (18) 1 5/8" Coax | 0.00 | N |
| 0.00 | 180.00 | (18) 1 5/8" Coax | 0.00 | N |
| 0.00 | 170.00 | (18) 1 5/8" Coax | 0.00 | N |
| 0.00 | 160.00 | (18) 1 5/8" Coax | 0.00 | N |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)



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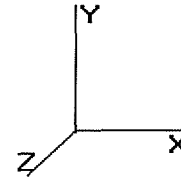
Segment Properties (Max Len : 5 ft)

| Seg Top Elev (ft) | Description | Thick (in) | Flat Dia (in) | Area (in^2) | Ix (in^4) | W/t Ratio | D/t Ratio | Fy (ksi) | S (in^3) | Weight (lb) |
|-------------------|-----------------|------------|---------------|-------------|-----------|-----------|-----------|----------|----------|-------------|
| 0.00 | | 0.3750 | 63.000 | 74.537 | 36,933.4 | 28.21 | 168.00 | 68.2 | 1154. | 0.0 |
| 5.00 | | 0.3750 | 61.837 | 73.152 | 34,912.9 | 27.67 | 164.90 | 68.9 | 1112. | 1,256.4 |
| 10.00 | | 0.3750 | 60.673 | 71.767 | 32,967.5 | 27.12 | 161.79 | 69.5 | 1070. | 1,232.8 |
| 15.00 | | 0.3750 | 59.510 | 70.382 | 31,095.7 | 26.57 | 158.69 | 70.1 | 1029. | 1,209.3 |
| 20.00 | | 0.3750 | 58.346 | 68.998 | 29,296.2 | 26.02 | 155.59 | 70.8 | 989.0 | 1,185.7 |
| 25.00 | | 0.3750 | 57.183 | 67.613 | 27,567.5 | 25.48 | 152.49 | 71.4 | 949.5 | 1,162.1 |
| 30.00 | | 0.3750 | 56.019 | 66.228 | 25,908.1 | 24.93 | 149.38 | 72.1 | 910.9 | 1,138.6 |
| 35.00 | | 0.3750 | 54.856 | 64.843 | 24,316.7 | 24.38 | 146.28 | 72.7 | 873.1 | 1,115.0 |
| 38.25 | Bot - Section 2 | 0.3750 | 54.100 | 63.943 | 23,318.1 | 24.03 | 144.27 | 73.1 | 848.9 | 712.1 |
| 40.00 | | 0.3750 | 53.692 | 63.459 | 22,791.9 | 23.84 | 143.18 | 73.4 | 836.1 | 764.0 |
| 45.00 | | 0.3750 | 52.529 | 62.074 | 21,332.2 | 23.29 | 140.08 | 74.0 | 799.9 | 2,151.0 |
| 45.75 | Top - Section 1 | 0.3750 | 53.104 | 62.759 | 22,046.1 | 23.56 | 141.61 | 73.7 | 817.7 | 318.6 |
| 50.00 | | 0.3750 | 52.115 | 61.582 | 20,828.8 | 23.09 | 138.97 | 74.2 | 787.2 | 899.1 |
| 55.00 | | 0.3750 | 50.952 | 60.197 | 19,455.1 | 22.55 | 135.87 | 74.9 | 752.1 | 1,036.0 |
| 60.00 | | 0.3750 | 49.788 | 58.812 | 18,143.1 | 22.00 | 132.77 | 75.5 | 717.7 | 1,012.4 |
| 65.00 | | 0.3750 | 48.625 | 57.427 | 16,891.5 | 21.45 | 129.67 | 76.2 | 684.2 | 988.8 |
| 70.00 | | 0.3750 | 47.462 | 56.043 | 15,698.8 | 20.91 | 126.56 | 76.8 | 651.5 | 965.3 |
| 75.00 | | 0.3750 | 46.298 | 54.658 | 14,563.6 | 20.36 | 123.46 | 77.5 | 619.6 | 941.7 |
| 77.75 | Bot - Section 3 | 0.3750 | 45.658 | 53.896 | 13,963.2 | 20.06 | 121.76 | 77.8 | 602.4 | 507.9 |
| 80.00 | | 0.3750 | 45.135 | 53.273 | 13,484.5 | 19.81 | 120.36 | 78.1 | 588.4 | 757.4 |
| 84.25 | Top - Section 2 | 0.3125 | 44.771 | 44.095 | 11,011.6 | 23.85 | 143.27 | 73.3 | 484.4 | 1,406.7 |
| 85.00 | | 0.3125 | 44.596 | 43.922 | 10,882.4 | 23.75 | 142.71 | 73.5 | 480.6 | 112.3 |
| 90.00 | | 0.3125 | 43.433 | 42.768 | 10,047.0 | 23.10 | 138.98 | 74.2 | 455.6 | 737.5 |
| 95.00 | | 0.3125 | 42.269 | 41.614 | 9,255.5 | 22.44 | 135.26 | 75.0 | 431.3 | 717.8 |
| 100.00 | | 0.3125 | 41.106 | 40.460 | 8,506.7 | 21.78 | 131.54 | 75.8 | 407.6 | 698.2 |
| 105.00 | | 0.3125 | 39.942 | 39.306 | 7,799.4 | 21.13 | 127.82 | 76.6 | 384.6 | 678.6 |
| 110.00 | | 0.3125 | 38.779 | 38.152 | 7,132.4 | 20.47 | 124.09 | 77.3 | 362.3 | 658.9 |
| 112.2 | Bot - Section 4 | 0.3125 | 38.255 | 37.633 | 6,845.1 | 20.17 | 122.42 | 77.7 | 352.4 | 290.1 |
| 115.00 | | 0.3125 | 37.615 | 36.998 | 6,504.6 | 19.81 | 120.37 | 78.1 | 340.6 | 704.2 |
| 117.7 | Top - Section 3 | 0.3125 | 37.600 | 36.984 | 6,496.8 | 19.81 | 120.32 | 78.1 | 340.3 | 692.3 |
| 120.00 | | 0.3125 | 37.077 | 36.464 | 6,227.0 | 19.51 | 118.65 | 78.5 | 330.8 | 281.2 |
| 125.00 | | 0.3125 | 35.913 | 35.310 | 5,654.3 | 18.85 | 114.92 | 79.2 | 310.1 | 610.6 |
| 130.00 | | 0.3125 | 34.750 | 34.156 | 5,117.9 | 18.20 | 111.20 | 80.0 | 290.1 | 591.0 |
| 135.00 | | 0.3125 | 33.587 | 33.002 | 4,616.5 | 17.54 | 107.48 | 80.8 | 270.7 | 571.3 |
| 140.00 | | 0.3125 | 32.423 | 31.849 | 4,149.0 | 16.88 | 103.75 | 81.5 | 252.0 | 551.7 |
| 145.00 | | 0.3125 | 31.260 | 30.695 | 3,714.1 | 16.23 | 100.03 | 82.3 | 234.0 | 532.1 |
| 149.00 | Bot - Section 5 | 0.3125 | 30.329 | 29.771 | 3,389.0 | 15.70 | 97.05 | 82.6 | 220.1 | 411.5 |
| 150.00 | | 0.3125 | 30.096 | 29.541 | 3,310.8 | 15.57 | 96.31 | 82.6 | 216.7 | 162.5 |
| 153.2 | Top - Section 4 | 0.1875 | 29.715 | 17.572 | 1,935.6 | 26.53 | 158.48 | 70.2 | 128.3 | 519.4 |
| 155.00 | | 0.1875 | 29.308 | 17.330 | 1,856.6 | 26.15 | 156.31 | 70.6 | 124.8 | 103.9 |
| 160.00 | | 0.1875 | 28.144 | 16.637 | 1,642.9 | 25.06 | 150.10 | 71.9 | 115.0 | 289.0 |
| 165.00 | | 0.1875 | 26.981 | 15.945 | 1,446.2 | 23.96 | 143.90 | 73.2 | 105.6 | 277.2 |
| 170.00 | | 0.1875 | 25.817 | 15.252 | 1,265.8 | 22.87 | 137.69 | 74.5 | 96.6 | 265.4 |
| 175.00 | | 0.1875 | 24.654 | 14.560 | 1,101.2 | 21.77 | 131.49 | 75.8 | 88.0 | 253.6 |
| 180.00 | | 0.1875 | 23.490 | 13.868 | 951.4 | 20.68 | 125.28 | 77.1 | 79.8 | 241.8 |
| 185.00 | | 0.1875 | 22.327 | 13.175 | 815.9 | 19.59 | 119.08 | 78.4 | 72.0 | 230.1 |
| 190.00 | | 0.1875 | 21.163 | 12.483 | 693.9 | 18.49 | 112.87 | 79.7 | 64.6 | 218.3 |
| 195.00 | | 0.1875 | 20.000 | 11.790 | 584.7 | 17.40 | 106.67 | 80.9 | 57.6 | 206.5 |
| | | | | | | | | | | 32,367.6 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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| | | |
|-------------------------------|------------------------------|-------------------------------|
| Load Case: 1.2D + 1.6W | 90.00 mph with No Ice | 27 Iterations |
| Gust Response Factor : 1.10 | | Wind Importance Factor : 1.00 |
| Dead Load Factor : 1.20 | | |
| Wind Load Factor : 1.60 | | |

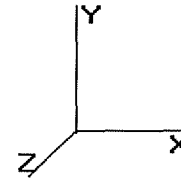
Shaft Segment Forces (Factored)

| Seg Top Elev (ft) | Description | Kzt | Kz | qz (psf) | qzGh (psf) | C (mph-ft) | Cf | Ice Thick (in) | Tributary (ft) | Aa (sf) | CFaa (sf) | Wind Force X (lb) | Dead Load (lb) | Tot Dead Load (lb) |
|-------------------|-----------------|------|------|----------|------------|------------|-------|----------------|----------------|---------|-----------|-------------------|----------------|--------------------|
| 0.00 | | 1.00 | 0.85 | 16.744 | 18.41 | 442.34 | 0.650 | 0.000 | 0.00 | 0.000 | 0.00 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 1.00 | 0.85 | 16.744 | 18.41 | 434.17 | 0.650 | 0.000 | 5.00 | 26.409 | 17.17 | 505.9 | 0.0 | 1,507.7 |
| 10.00 | | 1.00 | 0.85 | 16.744 | 18.41 | 426.00 | 0.650 | 0.000 | 5.00 | 25.917 | 16.85 | 496.4 | 0.0 | 1,479.4 |
| 15.00 | | 1.00 | 0.85 | 16.744 | 18.41 | 417.83 | 0.650 | 0.000 | 5.00 | 25.424 | 16.53 | 487.0 | 0.0 | 1,451.1 |
| 20.00 | | 1.00 | 0.90 | 17.766 | 19.54 | 421.98 | 0.650 | 0.000 | 5.00 | 24.932 | 16.21 | 506.7 | 0.0 | 1,422.8 |
| 25.00 | | 1.00 | 0.94 | 18.621 | 20.48 | 423.40 | 0.650 | 0.000 | 5.00 | 24.440 | 15.89 | 520.6 | 0.0 | 1,394.6 |
| 30.00 | | 1.00 | 0.98 | 19.350 | 21.28 | 422.82 | 0.650 | 0.000 | 5.00 | 23.948 | 15.57 | 530.1 | 0.0 | 1,366.3 |
| 35.00 | | 1.00 | 1.01 | 19.988 | 21.98 | 420.81 | 0.650 | 0.000 | 5.00 | 23.455 | 15.25 | 536.3 | 0.0 | 1,338.0 |
| 38.25 | Bot - Section 2 | 1.00 | 1.03 | 20.365 | 22.40 | 418.91 | 0.650 | 0.000 | 3.25 | 14.982 | 9.74 | 349.0 | 0.0 | 854.6 |
| 40.00 | | 1.00 | 1.04 | 20.558 | 22.61 | 417.72 | 0.650 | 0.000 | 1.75 | 8.092 | 5.26 | 190.3 | 0.0 | 916.8 |
| 45.00 | | 1.00 | 1.07 | 21.074 | 23.18 | 413.76 | 0.650 | 0.000 | 5.00 | 22.788 | 14.81 | 549.4 | 0.0 | 2,581.2 |
| 45.75 | Top - Section 1 | 1.00 | 1.07 | 21.147 | 23.26 | 413.11 | 0.650 | 0.000 | 0.75 | 3.376 | 2.19 | 81.7 | 0.0 | 382.3 |
| 50.00 | | 1.00 | 1.09 | 21.547 | 23.70 | 415.08 | 0.650 | 0.000 | 4.25 | 18.920 | 12.30 | 466.4 | 0.0 | 1,078.9 |
| 55.00 | | 1.00 | 1.11 | 21.983 | 24.18 | 409.91 | 0.650 | 0.000 | 5.00 | 21.804 | 14.17 | 548.3 | 0.0 | 1,243.2 |
| 60.00 | | 1.00 | 1.13 | 22.390 | 24.62 | 404.23 | 0.650 | 0.000 | 5.00 | 21.311 | 13.85 | 545.9 | 0.0 | 1,214.9 |
| 65.00 | | 1.00 | 1.15 | 22.770 | 25.04 | 398.13 | 0.650 | 0.000 | 5.00 | 20.819 | 13.53 | 542.3 | 0.0 | 1,186.6 |
| 70.00 | | 1.00 | 1.17 | 23.128 | 25.44 | 391.65 | 0.650 | 0.000 | 5.00 | 20.327 | 13.21 | 537.8 | 0.0 | 1,158.3 |
| 75.00 | | 1.00 | 1.19 | 23.467 | 25.81 | 384.83 | 0.650 | 0.000 | 5.00 | 19.835 | 12.89 | 532.5 | 0.0 | 1,130.1 |
| 77.75 | Bot - Section 3 | 1.00 | 1.20 | 23.645 | 26.01 | 380.95 | 0.650 | 0.000 | 2.75 | 10.699 | 6.95 | 289.4 | 0.0 | 609.5 |
| 80.00 | | 1.00 | 1.20 | 23.788 | 26.16 | 377.72 | 0.650 | 0.000 | 2.25 | 8.762 | 5.70 | 238.4 | 0.0 | 908.8 |
| 84.25 | Top - Section 2 | 1.00 | 1.22 | 24.048 | 26.45 | 371.46 | 0.650 | 0.000 | 4.25 | 16.279 | 10.58 | 447.8 | 0.0 | 1,688.0 |
| 85.00 | | 1.00 | 1.22 | 24.093 | 26.50 | 375.60 | 0.650 | 0.000 | 0.75 | 2.836 | 1.84 | 78.2 | 0.0 | 134.8 |
| 90.00 | | 1.00 | 1.23 | 24.385 | 26.82 | 368.01 | 0.650 | 0.000 | 5.00 | 18.622 | 12.10 | 519.5 | 0.0 | 885.0 |
| 95.00 | | 1.00 | 1.25 | 24.664 | 27.13 | 360.19 | 0.650 | 0.000 | 5.00 | 18.130 | 11.78 | 511.5 | 0.0 | 861.4 |
| 100.00 | | 1.00 | 1.26 | 24.932 | 27.42 | 352.18 | 0.650 | 0.000 | 5.00 | 17.638 | 11.46 | 503.1 | 0.0 | 837.8 |
| 105.00 | | 1.00 | 1.27 | 25.189 | 27.70 | 343.97 | 0.650 | 0.000 | 5.00 | 17.145 | 11.14 | 494.1 | 0.0 | 814.3 |
| 110.00 | | 1.00 | 1.29 | 25.437 | 27.98 | 335.59 | 0.650 | 0.000 | 5.00 | 16.653 | 10.82 | 484.6 | 0.0 | 790.7 |
| 112.2 | Bot - Section 4 | 1.00 | 1.29 | 25.546 | 28.10 | 331.76 | 0.650 | 0.000 | 2.25 | 7.333 | 4.77 | 214.3 | 0.0 | 348.1 |
| 115.00 | | 1.00 | 1.30 | 25.676 | 28.24 | 327.05 | 0.650 | 0.000 | 2.75 | 8.973 | 5.83 | 263.6 | 0.0 | 845.0 |
| 117.7 | Top - Section 3 | 1.00 | 1.31 | 25.804 | 28.38 | 322.28 | 0.650 | 0.000 | 2.75 | 8.824 | 5.74 | 260.5 | 0.0 | 830.8 |
| 120.00 | | 1.00 | 1.31 | 25.907 | 28.49 | 323.81 | 0.650 | 0.000 | 2.25 | 7.109 | 4.62 | 210.7 | 0.0 | 337.4 |
| 125.00 | | 1.00 | 1.32 | 26.131 | 28.74 | 315.00 | 0.650 | 0.000 | 5.00 | 15.441 | 10.04 | 461.6 | 0.0 | 732.7 |
| 130.00 | | 1.00 | 1.33 | 26.348 | 28.98 | 306.06 | 0.650 | 0.000 | 5.00 | 14.949 | 9.72 | 450.6 | 0.0 | 709.1 |
| 135.00 | | 1.00 | 1.34 | 26.558 | 29.21 | 296.99 | 0.650 | 0.000 | 5.00 | 14.456 | 9.40 | 439.2 | 0.0 | 685.6 |
| 140.00 | | 1.00 | 1.35 | 26.762 | 29.43 | 287.80 | 0.650 | 0.000 | 5.00 | 13.964 | 9.08 | 427.5 | 0.0 | 662.0 |
| 145.00 | | 1.00 | 1.36 | 26.960 | 29.65 | 278.50 | 0.650 | 0.000 | 5.00 | 13.472 | 8.76 | 415.5 | 0.0 | 638.5 |
| 149.0 | Bot - Section 5 | 1.00 | 1.37 | 27.115 | 29.82 | 270.98 | 0.650 | 0.000 | 4.00 | 10.423 | 6.78 | 323.3 | 0.0 | 493.8 |
| 150.00 | | 1.00 | 1.37 | 27.153 | 29.86 | 269.09 | 0.650 | 0.000 | 1.00 | 2.588 | 1.68 | 80.4 | 0.0 | 195.0 |
| 153.2 | Top - Section 4 | 1.00 | 1.38 | 27.276 | 30.00 | 262.92 | 0.650 | 0.000 | 3.25 | 8.276 | 5.38 | 258.2 | 0.0 | 623.2 |
| 155.00 | | 1.00 | 1.38 | 27.341 | 30.07 | 262.95 | 0.650 | 0.000 | 1.75 | 4.370 | 2.84 | 136.7 | 0.0 | 124.7 |
| 160.00 | Appertunance(s) | 1.00 | 1.39 | 27.525 | 30.27 | 253.35 | 0.650 | 0.000 | 5.00 | 12.154 | 7.90 | 382.7 | 0.0 | 346.7 |
| 165.00 | | 1.00 | 1.40 | 27.704 | 30.47 | 243.67 | 0.650 | 0.000 | 5.00 | 11.662 | 7.58 | 369.6 | 0.0 | 332.6 |
| 170.00 | Appertunance(s) | 1.00 | 1.41 | 27.878 | 30.66 | 233.90 | 0.650 | 0.000 | 5.00 | 11.169 | 7.26 | 356.2 | 0.0 | 318.5 |
| 175.00 | | 1.00 | 1.42 | 28.049 | 30.85 | 224.04 | 0.650 | 0.000 | 5.00 | 10.677 | 6.94 | 342.6 | 0.0 | 304.3 |
| 180.00 | Appertunance(s) | 1.00 | 1.43 | 28.216 | 31.03 | 214.10 | 0.650 | 0.000 | 5.00 | 10.185 | 6.62 | 328.8 | 0.0 | 290.2 |
| 185.00 | | 1.00 | 1.44 | 28.379 | 31.21 | 204.08 | 0.650 | 0.000 | 5.00 | 9.693 | 6.30 | 314.7 | 0.0 | 276.1 |
| 190.00 | Appertunance(s) | 1.00 | 1.44 | 28.539 | 31.39 | 193.99 | 0.650 | 0.000 | 5.00 | 9.200 | 5.98 | 300.4 | 0.0 | 261.9 |
| 195.00 | | 1.00 | 1.45 | 28.695 | 31.56 | 183.83 | 0.650 | 0.000 | 5.00 | 8.708 | 5.66 | 285.9 | 0.0 | 247.8 |
| Totals: | | | | | | | | | 195.00 | | | 18,116.3 | 0.0 | 38,841.1 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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Load Case: 1.2D + 1.6W 90.00 mph with No Ice 27 Iterations
Gust Response Factor : 1.10 **Wind Importance Factor :** 1.00
Dead Load Factor : 1.20
Wind Load Factor : 1.60

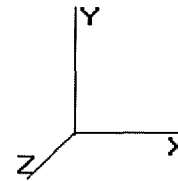
Discrete Appurtenance Segment Forces (Factored)

| Elev (ft) | Description | Qty | qz (psf) | qzGh (psf) | CaAa Factor | Ka | Total CaAa (sf) | Horiz Ecc (ft) | Vert Ecc (ft) | Wind FX (lb) | Mom Y (lb-ft) | Mom Z (lb-ft) | Dead Load (lb) |
|-----------|---------------------|-----|----------|------------|-------------|------|-----------------|----------------|---------------|--------------|---------------|---------------|----------------|
| 160.0 | 105 Sq. Ft. and 125 | 1 | 27.525 | 30.277 | 1.00 | 1.00 | 105.00 | 0.000 | 0.000 | 5,086.58 | 0.00 | 0.00 | 2,160.00 |
| 170.0 | 105 Sq. Ft. and 125 | 1 | 27.878 | 30.666 | 1.00 | 1.00 | 105.00 | 0.000 | 0.000 | 5,151.92 | 0.00 | 0.00 | 2,160.00 |
| 180.0 | 105 Sq. Ft. and 125 | 1 | 28.216 | 31.037 | 1.00 | 1.00 | 105.00 | 0.000 | 0.000 | 5,214.29 | 0.00 | 0.00 | 2,160.00 |
| 190.0 | 105 Sq. Ft. and 125 | 1 | 28.539 | 31.393 | 1.00 | 1.00 | 105.00 | 0.000 | 0.000 | 5,273.98 | 0.00 | 0.00 | 2,160.00 |
| | | | | | | | | | | 20,726.77 | | | 8,640.00 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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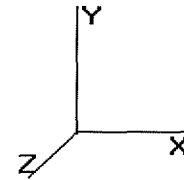
| | | |
|-------------------------------|-----------------------|-------------------------------|
| Load Case: 1.2D + 1.6W | 90.00 mph with No Ice | 27 Iterations |
| Gust Response Factor : 1.10 | | Wind Importance Factor : 1.00 |
| Dead Load Factor : 1.20 | | |
| Wind Load Factor : 1.60 | | |

Applied Segment Forces Summary

| Seg Elev (ft) | Lateral FX (-) (lb) | Axial FY (-) (lb) | Torsion MY (lb-ft) | Moment MZ (lb-ft) |
|----------------|---------------------|-------------------|--------------------|-------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5.00 | 505.87 | 1,861.90 | 0.00 | 0.00 |
| 10.00 | 496.44 | 1,833.62 | 0.00 | 0.00 |
| 15.00 | 487.02 | 1,805.35 | 0.00 | 0.00 |
| 20.00 | 506.74 | 1,777.08 | 0.00 | 0.00 |
| 25.00 | 520.63 | 1,748.81 | 0.00 | 0.00 |
| 30.00 | 530.10 | 1,720.53 | 0.00 | 0.00 |
| 35.00 | 536.33 | 1,692.26 | 0.00 | 0.00 |
| 38.25 | 349.04 | 1,084.81 | 0.00 | 0.00 |
| 40.00 | 190.31 | 1,040.76 | 0.00 | 0.00 |
| 45.00 | 549.39 | 2,935.42 | 0.00 | 0.00 |
| 45.75 | 81.67 | 435.44 | 0.00 | 0.00 |
| 50.00 | 466.37 | 1,380.02 | 0.00 | 0.00 |
| 55.00 | 548.33 | 1,597.40 | 0.00 | 0.00 |
| 60.00 | 545.86 | 1,569.13 | 0.00 | 0.00 |
| 65.00 | 542.32 | 1,540.85 | 0.00 | 0.00 |
| 70.00 | 537.82 | 1,512.58 | 0.00 | 0.00 |
| 75.00 | 532.47 | 1,484.31 | 0.00 | 0.00 |
| 77.75 | 289.41 | 804.32 | 0.00 | 0.00 |
| 80.00 | 238.44 | 1,068.24 | 0.00 | 0.00 |
| 84.25 | 447.85 | 1,989.15 | 0.00 | 0.00 |
| 85.00 | 78.16 | 187.91 | 0.00 | 0.00 |
| 90.00 | 519.49 | 1,239.21 | 0.00 | 0.00 |
| 95.00 | 511.55 | 1,215.65 | 0.00 | 0.00 |
| 100.0 | 503.06 | 1,192.09 | 0.00 | 0.00 |
| 105.0 | 494.07 | 1,168.53 | 0.00 | 0.00 |
| 110.0 | 484.61 | 1,144.97 | 0.00 | 0.00 |
| 112.2 | 214.31 | 507.55 | 0.00 | 0.00 |
| 115.0 | 263.57 | 1,039.84 | 0.00 | 0.00 |
| 117.7 | 260.49 | 1,025.59 | 0.00 | 0.00 |
| 120.0 | 210.70 | 496.81 | 0.00 | 0.00 |
| 125.0 | 461.59 | 1,086.94 | 0.00 | 0.00 |
| 130.0 | 450.58 | 1,063.38 | 0.00 | 0.00 |
| 135.0 | 439.21 | 1,039.82 | 0.00 | 0.00 |
| 140.0 | 427.52 | 1,016.26 | 0.00 | 0.00 |
| 145.0 | 415.51 | 992.70 | 0.00 | 0.00 |
| 149.0 | 323.32 | 777.20 | 0.00 | 0.00 |
| 150.0 | 80.40 | 265.82 | 0.00 | 0.00 |
| 153.2 | 258.24 | 853.49 | 0.00 | 0.00 |
| 155.0 | 136.69 | 248.68 | 0.00 | 0.00 |
| 160.0 | 5,469.29 | 2,860.98 | 0.00 | 0.00 |
| 165.0 | 369.59 | 598.29 | 0.00 | 0.00 |
| 170.0 | 5,508.14 | 2,744.15 | 0.00 | 0.00 |
| 175.0 | 342.61 | 481.45 | 0.00 | 0.00 |
| 180.0 | 5,543.04 | 2,627.32 | 0.00 | 0.00 |
| 185.0 | 314.67 | 364.62 | 0.00 | 0.00 |
| 190.0 | 5,574.35 | 2,510.49 | 0.00 | 0.00 |
| 195.0 | 285.86 | 247.79 | 0.00 | 0.00 |
| Totals: | 38,843.03 | 59,879.50 | 0.00 | 0.00 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)



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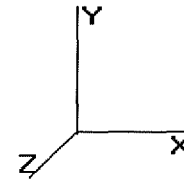
| | | |
|-------------------------------|------------------------------|-------------------------------|
| Load Case: 1.2D + 1.6W | 90.00 mph with No Ice | 27 Iterations |
| Gust Response Factor : 1.10 | | Wind Importance Factor : 1.00 |
| Dead Load Factor : 1.20 | | |
| Wind Load Factor : 1.60 | | |

Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00 | -59.81 | -38.96 | 0.00 | -5,578.65 | 0.00 | 5,578.65 | 4,576.28 | 2,288.14 | 11,797.9 | 5,907.74 | 0.00 | 0.00 | 0.958 |
| 5.00 | -57.80 | -38.66 | 0.00 | -5,383.88 | 0.00 | 5,383.88 | 4,533.62 | 2,266.81 | 11,469.5 | 5,743.29 | 0.11 | -0.21 | 0.950 |
| 10.00 | -55.83 | -38.37 | 0.00 | -5,190.58 | 0.00 | 5,190.58 | 4,489.36 | 2,244.68 | 11,141.2 | 5,578.90 | 0.45 | -0.43 | 0.943 |
| 15.00 | -53.88 | -38.07 | 0.00 | -4,998.75 | 0.00 | 4,998.75 | 4,443.50 | 2,221.75 | 10,813.3 | 5,414.70 | 1.01 | -0.65 | 0.936 |
| 20.00 | -51.96 | -37.75 | 0.00 | -4,808.39 | 0.00 | 4,808.39 | 4,396.03 | 2,198.01 | 10,486.0 | 5,250.80 | 1.81 | -0.87 | 0.928 |
| 25.00 | -50.07 | -37.40 | 0.00 | -4,619.66 | 0.00 | 4,619.66 | 4,346.96 | 2,173.48 | 10,159.5 | 5,087.31 | 2.85 | -1.10 | 0.920 |
| 30.00 | -48.21 | -37.03 | 0.00 | -4,432.66 | 0.00 | 4,432.66 | 4,296.28 | 2,148.14 | 9,834.08 | 4,924.35 | 4.12 | -1.33 | 0.912 |
| 35.00 | -46.40 | -36.61 | 0.00 | -4,247.51 | 0.00 | 4,247.51 | 4,244.00 | 2,122.00 | 9,509.93 | 4,762.03 | 5.65 | -1.57 | 0.903 |
| 38.25 | -45.25 | -36.33 | 0.00 | -4,128.52 | 0.00 | 4,128.52 | 4,209.15 | 2,104.58 | 9,300.04 | 4,656.93 | 6.77 | -1.73 | 0.898 |
| 40.00 | -44.11 | -36.24 | 0.00 | -4,064.94 | 0.00 | 4,064.94 | 4,190.11 | 2,095.06 | 9,187.31 | 4,600.48 | 7.42 | -1.82 | 0.894 |
| 45.00 | -41.11 | -35.69 | 0.00 | -3,883.76 | 0.00 | 3,883.76 | 4,134.63 | 2,067.31 | 8,866.44 | 4,439.81 | 9.46 | -2.07 | 0.885 |
| 45.75 | -40.59 | -35.69 | 0.00 | -3,856.99 | 0.00 | 3,856.99 | 4,162.27 | 2,081.14 | 9,024.92 | 4,519.17 | 9.79 | -2.10 | 0.864 |
| 50.00 | -39.09 | -35.32 | 0.00 | -3,705.33 | 0.00 | 3,705.33 | 4,114.52 | 2,057.26 | 8,752.88 | 4,382.94 | 11.76 | -2.32 | 0.855 |
| 55.00 | -37.37 | -34.87 | 0.00 | -3,528.71 | 0.00 | 3,528.71 | 4,056.86 | 2,028.43 | 8,434.75 | 4,223.64 | 14.32 | -2.57 | 0.845 |
| 60.00 | -35.67 | -34.41 | 0.00 | -3,354.36 | 0.00 | 3,354.36 | 3,997.59 | 1,998.80 | 8,118.92 | 4,065.50 | 17.15 | -2.82 | 0.834 |
| 65.00 | -34.01 | -33.94 | 0.00 | -3,182.31 | 0.00 | 3,182.31 | 3,936.72 | 1,968.36 | 7,805.63 | 3,908.62 | 20.24 | -3.08 | 0.823 |
| 70.00 | -32.38 | -33.47 | 0.00 | -3,012.60 | 0.00 | 3,012.60 | 3,874.25 | 1,937.12 | 7,495.10 | 3,753.12 | 23.60 | -3.34 | 0.811 |
| 75.00 | -30.81 | -32.96 | 0.00 | -2,845.25 | 0.00 | 2,845.25 | 3,810.17 | 1,905.09 | 7,187.57 | 3,599.12 | 27.23 | -3.60 | 0.799 |
| 77.75 | -29.94 | -32.69 | 0.00 | -2,754.61 | 0.00 | 2,754.61 | 3,774.25 | 1,887.12 | 7,019.78 | 3,515.11 | 29.35 | -3.75 | 0.792 |
| 80.00 | -28.79 | -32.47 | 0.00 | -2,681.05 | 0.00 | 2,681.05 | 3,744.49 | 1,872.25 | 6,883.26 | 3,446.74 | 31.15 | -3.88 | 0.786 |
| 84.25 | -26.76 | -31.95 | 0.00 | -2,543.04 | 0.00 | 2,543.04 | 2,910.86 | 1,455.43 | 5,321.93 | 2,664.92 | 34.70 | -4.11 | 0.964 |
| 85.00 | -26.48 | -31.95 | 0.00 | -2,519.07 | 0.00 | 2,519.07 | 2,904.01 | 1,452.01 | 5,288.42 | 2,648.14 | 35.35 | -4.15 | 0.961 |
| 90.00 | -25.11 | -31.48 | 0.00 | -2,359.34 | 0.00 | 2,359.34 | 2,857.44 | 1,428.72 | 5,065.93 | 2,536.73 | 39.87 | -4.47 | 0.939 |
| 95.00 | -23.76 | -31.00 | 0.00 | -2,201.97 | 0.00 | 2,201.97 | 2,809.25 | 1,404.63 | 4,845.16 | 2,426.18 | 44.72 | -4.80 | 0.917 |
| 100.00 | -22.44 | -30.53 | 0.00 | -2,046.95 | 0.00 | 2,046.95 | 2,759.47 | 1,379.74 | 4,626.35 | 2,316.61 | 49.92 | -5.12 | 0.892 |
| 105.00 | -21.15 | -30.05 | 0.00 | -1,894.32 | 0.00 | 1,894.32 | 2,708.08 | 1,354.04 | 4,409.72 | 2,208.14 | 55.45 | -5.45 | 0.866 |
| 110.00 | -19.94 | -29.54 | 0.00 | -1,744.06 | 0.00 | 1,744.06 | 2,655.09 | 1,327.54 | 4,195.51 | 2,100.87 | 61.33 | -5.78 | 0.838 |
| 112.25 | -19.36 | -29.33 | 0.00 | -1,677.60 | 0.00 | 1,677.60 | 2,630.72 | 1,315.36 | 4,099.96 | 2,053.03 | 64.09 | -5.94 | 0.825 |
| 115.00 | -18.26 | -29.02 | 0.00 | -1,596.93 | 0.00 | 1,596.93 | 2,600.49 | 1,300.25 | 3,983.95 | 1,994.93 | 67.56 | -6.12 | 0.808 |
| 117.75 | -17.19 | -28.70 | 0.00 | -1,517.13 | 0.00 | 1,517.13 | 2,599.78 | 1,299.89 | 3,981.25 | 1,993.59 | 71.14 | -6.31 | 0.768 |
| 120.00 | -16.60 | -28.51 | 0.00 | -1,452.55 | 0.00 | 1,452.55 | 2,574.68 | 1,287.34 | 3,886.99 | 1,946.39 | 74.14 | -6.47 | 0.753 |
| 125.00 | -15.42 | -28.01 | 0.00 | -1,310.01 | 0.00 | 1,310.01 | 2,517.74 | 1,258.87 | 3,679.73 | 1,842.60 | 81.07 | -6.78 | 0.718 |
| 130.00 | -14.27 | -27.51 | 0.00 | -1,169.97 | 0.00 | 1,169.97 | 2,459.20 | 1,229.60 | 3,475.68 | 1,740.42 | 88.32 | -7.09 | 0.679 |
| 135.00 | -13.15 | -27.01 | 0.00 | -1,032.43 | 0.00 | 1,032.43 | 2,399.05 | 1,199.52 | 3,275.08 | 1,639.98 | 95.90 | -7.40 | 0.636 |
| 140.00 | -12.07 | -26.52 | 0.00 | -897.37 | 0.00 | 897.37 | 2,337.29 | 1,168.65 | 3,078.17 | 1,541.38 | 103.79 | -7.70 | 0.588 |
| 145.00 | -11.03 | -26.02 | 0.00 | -764.79 | 0.00 | 764.79 | 2,273.93 | 1,136.97 | 2,885.18 | 1,444.73 | 111.98 | -7.98 | 0.535 |
| 149.00 | -10.24 | -25.61 | 0.00 | -660.72 | 0.00 | 660.72 | 2,211.87 | 1,105.93 | 2,721.18 | 1,362.61 | 118.74 | -8.20 | 0.490 |
| 150.00 | -9.94 | -25.51 | 0.00 | -635.10 | 0.00 | 635.10 | 2,194.72 | 1,097.36 | 2,678.93 | 1,341.46 | 120.46 | -8.25 | 0.479 |
| 153.25 | -9.08 | -25.15 | 0.00 | -552.18 | 0.00 | 552.18 | 1,110.07 | 555.04 | 1,348.86 | 675.43 | 126.12 | -8.42 | 0.828 |
| 155.00 | -8.76 | -25.02 | 0.00 | -508.16 | 0.00 | 508.16 | 1,101.79 | 550.89 | 1,320.21 | 661.09 | 129.21 | -8.51 | 0.779 |
| 160.00 | -6.65 | -19.22 | 0.00 | -383.08 | 0.00 | 383.08 | 1,077.04 | 538.52 | 1,238.66 | 620.25 | 138.27 | -8.85 | 0.625 |
| 165.00 | -6.03 | -18.78 | 0.00 | -287.00 | 0.00 | 287.00 | 1,050.68 | 525.34 | 1,157.73 | 579.72 | 147.66 | -9.14 | 0.502 |
| 170.00 | -4.16 | -12.92 | 0.00 | -193.08 | 0.00 | 193.08 | 1,022.72 | 511.36 | 1,077.64 | 539.62 | 157.33 | -9.37 | 0.363 |
| 175.00 | -3.71 | -12.51 | 0.00 | -128.47 | 0.00 | 128.47 | 993.16 | 496.58 | 998.64 | 500.06 | 167.20 | -9.55 | 0.261 |
| 180.00 | -2.04 | -6.61 | 0.00 | -65.90 | 0.00 | 65.90 | 961.99 | 481.00 | 920.96 | 461.16 | 177.24 | -9.68 | 0.145 |
| 185.00 | -1.72 | -6.24 | 0.00 | -32.84 | 0.00 | 32.84 | 929.22 | 464.61 | 844.81 | 423.03 | 187.37 | -9.75 | 0.080 |
| 190.00 | -0.20 | -0.32 | 0.00 | -1.62 | 0.00 | 1.62 | 894.85 | 447.42 | 770.45 | 385.80 | 197.56 | -9.78 | 0.004 |
| 195.00 | 0.00 | -0.29 | 0.00 | 0.00 | 0.00 | 0.00 | 858.87 | 429.43 | 698.09 | 349.57 | 207.76 | -9.79 | 0.000 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)



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| | | |
|-------------------------------|-------------------------------------------|-------------------------------|
| Load Case: 0.9D + 1.6W | 90.00 mph with No Ice (Reduced DL) | 27 Iterations |
| Gust Response Factor : 1.10 | | Wind Importance Factor : 1.00 |
| Dead Load Factor : 0.90 | | |
| Wind Load Factor : 1.60 | | |

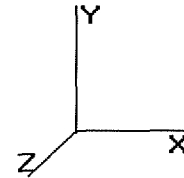
Shaft Segment Forces (Factored)

| Seg Top Elev (ft) | Description | Kzt | Kz | qz (psf) | qzGh (psf) | C (mph-ft) | Cf | Ice Thick (in) | Tributary (ft) | Aa (sf) | CfAa (sf) | Wind Force X (lb) | Dead Load Ice (lb) | Tot Dead Load (lb) |
|-------------------|-----------------|------|------|----------|------------|------------|-------|----------------|----------------|---------|-----------|-------------------|--------------------|--------------------|
| 0.00 | | 1.00 | 0.85 | 16.744 | 18.41 | 442.34 | 0.650 | 0.000 | 0.00 | 0.000 | 0.00 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 1.00 | 0.85 | 16.744 | 18.41 | 434.17 | 0.650 | 0.000 | 5.00 | 26.409 | 17.17 | 505.9 | 0.0 | 1,130.7 |
| 10.00 | | 1.00 | 0.85 | 16.744 | 18.41 | 426.00 | 0.650 | 0.000 | 5.00 | 25.917 | 16.85 | 496.4 | 0.0 | 1,109.5 |
| 15.00 | | 1.00 | 0.85 | 16.744 | 18.41 | 417.83 | 0.650 | 0.000 | 5.00 | 25.424 | 16.53 | 487.0 | 0.0 | 1,088.3 |
| 20.00 | | 1.00 | 0.90 | 17.766 | 19.54 | 421.98 | 0.650 | 0.000 | 5.00 | 24.932 | 16.21 | 506.7 | 0.0 | 1,067.1 |
| 25.00 | | 1.00 | 0.94 | 18.621 | 20.48 | 423.40 | 0.650 | 0.000 | 5.00 | 24.440 | 15.89 | 520.6 | 0.0 | 1,045.9 |
| 30.00 | | 1.00 | 0.98 | 19.350 | 21.28 | 422.82 | 0.650 | 0.000 | 5.00 | 23.948 | 15.57 | 530.1 | 0.0 | 1,024.7 |
| 35.00 | | 1.00 | 1.01 | 19.988 | 21.98 | 420.81 | 0.650 | 0.000 | 5.00 | 23.455 | 15.25 | 536.3 | 0.0 | 1,003.5 |
| 38.25 | Bot - Section 2 | 1.00 | 1.03 | 20.365 | 22.40 | 418.91 | 0.650 | 0.000 | 3.25 | 14.982 | 9.74 | 349.0 | 0.0 | 640.9 |
| 40.00 | | 1.00 | 1.04 | 20.558 | 22.61 | 417.72 | 0.650 | 0.000 | 1.75 | 8.092 | 5.26 | 190.3 | 0.0 | 687.6 |
| 45.00 | | 1.00 | 1.07 | 21.074 | 23.18 | 413.76 | 0.650 | 0.000 | 5.00 | 22.788 | 14.81 | 549.4 | 0.0 | 1,935.9 |
| 45.75 | Top - Section 1 | 1.00 | 1.07 | 21.147 | 23.26 | 413.11 | 0.650 | 0.000 | 0.75 | 3.376 | 2.19 | 81.7 | 0.0 | 286.7 |
| 50.00 | | 1.00 | 1.09 | 21.547 | 23.70 | 415.08 | 0.650 | 0.000 | 4.25 | 18.920 | 12.30 | 466.4 | 0.0 | 809.2 |
| 55.00 | | 1.00 | 1.11 | 21.983 | 24.18 | 409.91 | 0.650 | 0.000 | 5.00 | 21.804 | 14.17 | 548.3 | 0.0 | 932.4 |
| 60.00 | | 1.00 | 1.13 | 22.390 | 24.62 | 404.23 | 0.650 | 0.000 | 5.00 | 21.311 | 13.85 | 545.9 | 0.0 | 911.2 |
| 65.00 | | 1.00 | 1.15 | 22.770 | 25.04 | 398.13 | 0.650 | 0.000 | 5.00 | 20.819 | 13.53 | 542.3 | 0.0 | 890.0 |
| 70.00 | | 1.00 | 1.17 | 23.128 | 25.44 | 391.65 | 0.650 | 0.000 | 5.00 | 20.327 | 13.21 | 537.8 | 0.0 | 868.8 |
| 75.00 | | 1.00 | 1.19 | 23.467 | 25.81 | 384.83 | 0.650 | 0.000 | 5.00 | 19.835 | 12.89 | 532.5 | 0.0 | 847.6 |
| 77.75 | Bot - Section 3 | 1.00 | 1.20 | 23.645 | 26.01 | 380.95 | 0.650 | 0.000 | 2.75 | 10.699 | 6.95 | 289.4 | 0.0 | 457.1 |
| 80.00 | | 1.00 | 1.20 | 23.788 | 26.16 | 377.72 | 0.650 | 0.000 | 2.25 | 8.762 | 5.70 | 238.4 | 0.0 | 681.6 |
| 84.25 | Top - Section 2 | 1.00 | 1.22 | 24.048 | 26.45 | 371.46 | 0.650 | 0.000 | 4.25 | 16.279 | 10.58 | 447.8 | 0.0 | 1,266.0 |
| 85.00 | | 1.00 | 1.22 | 24.093 | 26.50 | 375.60 | 0.650 | 0.000 | 0.75 | 2.836 | 1.84 | 78.2 | 0.0 | 101.1 |
| 90.00 | | 1.00 | 1.23 | 24.385 | 26.82 | 368.01 | 0.650 | 0.000 | 5.00 | 18.622 | 12.10 | 519.5 | 0.0 | 663.7 |
| 95.00 | | 1.00 | 1.25 | 24.664 | 27.13 | 360.19 | 0.650 | 0.000 | 5.00 | 18.130 | 11.78 | 511.5 | 0.0 | 646.1 |
| 100.00 | | 1.00 | 1.26 | 24.932 | 27.42 | 352.18 | 0.650 | 0.000 | 5.00 | 17.638 | 11.46 | 503.1 | 0.0 | 628.4 |
| 105.00 | | 1.00 | 1.27 | 25.189 | 27.70 | 343.97 | 0.650 | 0.000 | 5.00 | 17.145 | 11.14 | 494.1 | 0.0 | 610.7 |
| 110.00 | | 1.00 | 1.29 | 25.437 | 27.98 | 335.59 | 0.650 | 0.000 | 5.00 | 16.653 | 10.82 | 484.6 | 0.0 | 593.0 |
| 112.2 | Bot - Section 4 | 1.00 | 1.29 | 25.546 | 28.10 | 331.76 | 0.650 | 0.000 | 2.25 | 7.333 | 4.77 | 214.3 | 0.0 | 261.1 |
| 115.00 | | 1.00 | 1.30 | 25.676 | 28.24 | 327.05 | 0.650 | 0.000 | 2.75 | 8.973 | 5.83 | 263.6 | 0.0 | 633.8 |
| 117.7 | Top - Section 3 | 1.00 | 1.31 | 25.804 | 28.38 | 322.28 | 0.650 | 0.000 | 2.75 | 8.824 | 5.74 | 260.5 | 0.0 | 623.1 |
| 120.00 | | 1.00 | 1.31 | 25.907 | 28.49 | 323.81 | 0.650 | 0.000 | 2.25 | 7.109 | 4.62 | 210.7 | 0.0 | 253.1 |
| 125.00 | | 1.00 | 1.32 | 26.131 | 28.74 | 315.00 | 0.650 | 0.000 | 5.00 | 15.441 | 10.04 | 461.6 | 0.0 | 549.5 |
| 130.00 | | 1.00 | 1.33 | 26.348 | 28.98 | 306.06 | 0.650 | 0.000 | 5.00 | 14.949 | 9.72 | 450.6 | 0.0 | 531.9 |
| 135.00 | | 1.00 | 1.34 | 26.558 | 29.21 | 296.99 | 0.650 | 0.000 | 5.00 | 14.456 | 9.40 | 439.2 | 0.0 | 514.2 |
| 140.00 | | 1.00 | 1.35 | 26.762 | 29.43 | 287.80 | 0.650 | 0.000 | 5.00 | 13.964 | 9.08 | 427.5 | 0.0 | 496.5 |
| 145.00 | | 1.00 | 1.36 | 26.960 | 29.65 | 278.50 | 0.650 | 0.000 | 5.00 | 13.472 | 8.76 | 415.5 | 0.0 | 478.8 |
| 149.0 | Bot - Section 5 | 1.00 | 1.37 | 27.115 | 29.82 | 270.98 | 0.650 | 0.000 | 4.00 | 10.423 | 6.78 | 323.3 | 0.0 | 370.4 |
| 150.00 | | 1.00 | 1.37 | 27.153 | 29.86 | 269.09 | 0.650 | 0.000 | 1.00 | 2.588 | 1.68 | 80.4 | 0.0 | 146.2 |
| 153.2 | Top - Section 4 | 1.00 | 1.38 | 27.276 | 30.00 | 262.92 | 0.650 | 0.000 | 3.25 | 8.276 | 5.38 | 258.2 | 0.0 | 467.4 |
| 155.00 | | 1.00 | 1.38 | 27.341 | 30.07 | 262.95 | 0.650 | 0.000 | 1.75 | 4.370 | 2.84 | 136.7 | 0.0 | 93.5 |
| 160.00 | Appertunance(s) | 1.00 | 1.39 | 27.525 | 30.27 | 253.35 | 0.650 | 0.000 | 5.00 | 12.154 | 7.90 | 382.7 | 0.0 | 260.1 |
| 165.00 | | 1.00 | 1.40 | 27.704 | 30.47 | 243.67 | 0.650 | 0.000 | 5.00 | 11.662 | 7.58 | 369.6 | 0.0 | 249.5 |
| 170.00 | Appertunance(s) | 1.00 | 1.41 | 27.878 | 30.66 | 233.90 | 0.650 | 0.000 | 5.00 | 11.169 | 7.26 | 356.2 | 0.0 | 238.9 |
| 175.00 | | 1.00 | 1.42 | 28.049 | 30.85 | 224.04 | 0.650 | 0.000 | 5.00 | 10.677 | 6.94 | 342.6 | 0.0 | 228.3 |
| 180.00 | Appertunance(s) | 1.00 | 1.43 | 28.216 | 31.03 | 214.10 | 0.650 | 0.000 | 5.00 | 10.185 | 6.62 | 328.8 | 0.0 | 217.6 |
| 185.00 | | 1.00 | 1.44 | 28.379 | 31.21 | 204.08 | 0.650 | 0.000 | 5.00 | 9.693 | 6.30 | 314.7 | 0.0 | 207.0 |
| 190.00 | Appertunance(s) | 1.00 | 1.44 | 28.539 | 31.39 | 193.99 | 0.650 | 0.000 | 5.00 | 9.200 | 5.98 | 300.4 | 0.0 | 196.4 |
| 195.00 | | 1.00 | 1.45 | 28.695 | 31.56 | 183.83 | 0.650 | 0.000 | 5.00 | 8.708 | 5.66 | 285.9 | 0.0 | 185.8 |
| Totals: | | | | | | | | | 195.00 | | | 18,116.3 | 0.0 | 29,130.8 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev: 0.000 (ft)

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| | | |
|-------------------------------|------------------------------------|-------------------------------|
| Load Case: 0.9D + 1.6W | 90.00 mph with No Ice (Reduced DL) | 27 Iterations |
| Gust Response Factor : 1.10 | | Wind Importance Factor : 1.00 |
| Dead Load Factor : 0.90 | | |
| Wind Load Factor : 1.60 | | |

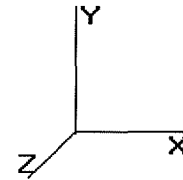
Discrete Appurtenance Segment Forces (Factored)

| Elev (ft) | Description | Qty | qz (psf) | qzGh (psf) | CaAa Factor | Ka | Total CAaA (sf) | Horiz Ecc (ft) | Vert Ecc (ft) | Wind FX (lb) | Mom Y (lb-ft) | Mom Z (lb-ft) | Dead Load (lb) |
|-----------|---------------------|-----|----------|------------|-------------|------|-----------------|----------------|---------------|--------------|---------------|---------------|----------------|
| 160.0 | 105 Sq. Ft. and 125 | 1 | 27.525 | 30.277 | 1.00 | 1.00 | 105.00 | 0.000 | 0.000 | 5,086.58 | 0.00 | 0.00 | 1,620.00 |
| 170.0 | 105 Sq. Ft. and 125 | 1 | 27.878 | 30.666 | 1.00 | 1.00 | 105.00 | 0.000 | 0.000 | 5,151.92 | 0.00 | 0.00 | 1,620.00 |
| 180.0 | 105 Sq. Ft. and 125 | 1 | 28.216 | 31.037 | 1.00 | 1.00 | 105.00 | 0.000 | 0.000 | 5,214.29 | 0.00 | 0.00 | 1,620.00 |
| 190.0 | 105 Sq. Ft. and 125 | 1 | 28.539 | 31.393 | 1.00 | 1.00 | 105.00 | 0.000 | 0.000 | 5,273.98 | 0.00 | 0.00 | 1,620.00 |
| | | | | | | | | | | 20,726.77 | | | 6,480.00 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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| | | |
|-------------------------------|------------------------------------|-------------------------------|
| Load Case: 0.9D + 1.6W | 90.00 mph with No Ice (Reduced DL) | 27 Iterations |
| Gust Response Factor : 1.10 | | Wind Importance Factor : 1.00 |
| Dead Load Factor : 0.90 | | |
| Wind Load Factor : 1.60 | | |

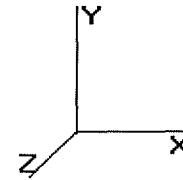
Applied Segment Forces Summary

| Seg Elev (ft) | Lateral FX (-) (lb) | Axial FY (-) (lb) | Torsion MY (lb-ft) | Moment MZ (lb-ft) |
|----------------|---------------------|-------------------|--------------------|-------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5.00 | 505.87 | 1,396.42 | 0.00 | 0.00 |
| 10.00 | 496.44 | 1,375.22 | 0.00 | 0.00 |
| 15.00 | 487.02 | 1,354.01 | 0.00 | 0.00 |
| 20.00 | 506.74 | 1,332.81 | 0.00 | 0.00 |
| 25.00 | 520.63 | 1,311.61 | 0.00 | 0.00 |
| 30.00 | 530.10 | 1,290.40 | 0.00 | 0.00 |
| 35.00 | 536.33 | 1,269.20 | 0.00 | 0.00 |
| 38.25 | 349.04 | 813.61 | 0.00 | 0.00 |
| 40.00 | 190.31 | 780.57 | 0.00 | 0.00 |
| 45.00 | 549.39 | 2,201.57 | 0.00 | 0.00 |
| 45.75 | 81.67 | 326.58 | 0.00 | 0.00 |
| 50.00 | 466.37 | 1,035.01 | 0.00 | 0.00 |
| 55.00 | 548.33 | 1,198.05 | 0.00 | 0.00 |
| 60.00 | 545.86 | 1,176.84 | 0.00 | 0.00 |
| 65.00 | 542.32 | 1,155.64 | 0.00 | 0.00 |
| 70.00 | 537.82 | 1,134.44 | 0.00 | 0.00 |
| 75.00 | 532.47 | 1,113.23 | 0.00 | 0.00 |
| 77.75 | 289.41 | 603.24 | 0.00 | 0.00 |
| 80.00 | 238.44 | 801.18 | 0.00 | 0.00 |
| 84.25 | 447.85 | 1,491.86 | 0.00 | 0.00 |
| 85.00 | 78.16 | 140.93 | 0.00 | 0.00 |
| 90.00 | 519.49 | 929.40 | 0.00 | 0.00 |
| 95.00 | 511.55 | 911.73 | 0.00 | 0.00 |
| 100.0 | 503.06 | 894.06 | 0.00 | 0.00 |
| 105.0 | 494.07 | 876.39 | 0.00 | 0.00 |
| 110.0 | 484.61 | 858.72 | 0.00 | 0.00 |
| 112.2 | 214.31 | 380.66 | 0.00 | 0.00 |
| 115.0 | 263.57 | 779.88 | 0.00 | 0.00 |
| 117.7 | 260.49 | 769.19 | 0.00 | 0.00 |
| 120.0 | 210.70 | 372.61 | 0.00 | 0.00 |
| 125.0 | 461.59 | 815.21 | 0.00 | 0.00 |
| 130.0 | 450.58 | 797.54 | 0.00 | 0.00 |
| 135.0 | 439.21 | 779.87 | 0.00 | 0.00 |
| 140.0 | 427.52 | 762.20 | 0.00 | 0.00 |
| 145.0 | 415.51 | 744.53 | 0.00 | 0.00 |
| 149.0 | 323.32 | 582.90 | 0.00 | 0.00 |
| 150.0 | 80.40 | 199.36 | 0.00 | 0.00 |
| 153.2 | 258.24 | 640.12 | 0.00 | 0.00 |
| 155.0 | 136.69 | 186.51 | 0.00 | 0.00 |
| 160.0 | 5,469.29 | 2,145.74 | 0.00 | 0.00 |
| 165.0 | 369.59 | 448.72 | 0.00 | 0.00 |
| 170.0 | 5,508.14 | 2,058.11 | 0.00 | 0.00 |
| 175.0 | 342.61 | 361.09 | 0.00 | 0.00 |
| 180.0 | 5,543.04 | 1,970.49 | 0.00 | 0.00 |
| 185.0 | 314.67 | 273.47 | 0.00 | 0.00 |
| 190.0 | 5,574.35 | 1,882.87 | 0.00 | 0.00 |
| 195.0 | 285.86 | 185.84 | 0.00 | 0.00 |
| Totals: | 38,843.03 | 44,909.62 | 0.00 | 0.00 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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| | | |
|-------------------------------|------------------------------------|-------------------------------|
| Load Case: 0.9D + 1.6W | 90.00 mph with No Ice (Reduced DL) | 27 Iterations |
| Gust Response Factor : 1.10 | | Wind Importance Factor : 1.00 |
| Dead Load Factor : 0.90 | | |
| Wind Load Factor : 1.60 | | |

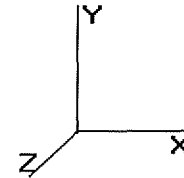
Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00 | -44.84 | -38.93 | 0.00 | -5,497.50 | 0.00 | 5,497.50 | 4,576.28 | 2,288.14 | 11,797.9 | 5,907.74 | 0.00 | 0.00 | 0.941 |
| 5.00 | -43.30 | -38.58 | 0.00 | -5,302.87 | 0.00 | 5,302.87 | 4,533.62 | 2,266.81 | 11,469.5 | 5,743.29 | 0.11 | -0.21 | 0.933 |
| 10.00 | -41.79 | -38.23 | 0.00 | -5,110.00 | 0.00 | 5,110.00 | 4,489.36 | 2,244.68 | 11,141.2 | 5,578.90 | 0.44 | -0.42 | 0.926 |
| 15.00 | -40.29 | -37.88 | 0.00 | -4,918.85 | 0.00 | 4,918.85 | 4,443.50 | 2,221.75 | 10,813.3 | 5,414.70 | 1.00 | -0.64 | 0.918 |
| 20.00 | -38.82 | -37.51 | 0.00 | -4,729.44 | 0.00 | 4,729.44 | 4,396.03 | 2,198.01 | 10,486.0 | 5,250.80 | 1.78 | -0.86 | 0.910 |
| 25.00 | -37.37 | -37.12 | 0.00 | -4,541.89 | 0.00 | 4,541.89 | 4,346.96 | 2,173.48 | 10,159.5 | 5,087.31 | 2.80 | -1.08 | 0.902 |
| 30.00 | -35.94 | -36.71 | 0.00 | -4,356.31 | 0.00 | 4,356.31 | 4,296.28 | 2,148.14 | 9,834.08 | 4,924.35 | 4.06 | -1.31 | 0.893 |
| 35.00 | -34.56 | -36.26 | 0.00 | -4,172.79 | 0.00 | 4,172.79 | 4,244.00 | 2,122.00 | 9,509.93 | 4,762.03 | 5.56 | -1.55 | 0.885 |
| 38.25 | -33.69 | -35.95 | 0.00 | -4,054.97 | 0.00 | 4,054.97 | 4,209.15 | 2,104.58 | 9,300.04 | 4,656.93 | 6.67 | -1.70 | 0.879 |
| 40.00 | -32.81 | -35.84 | 0.00 | -3,992.05 | 0.00 | 3,992.05 | 4,190.11 | 2,095.06 | 9,187.31 | 4,600.48 | 7.31 | -1.79 | 0.876 |
| 45.00 | -30.54 | -35.29 | 0.00 | -3,812.87 | 0.00 | 3,812.87 | 4,134.63 | 2,067.31 | 8,866.44 | 4,439.81 | 9.31 | -2.03 | 0.866 |
| 45.75 | -30.14 | -35.26 | 0.00 | -3,786.41 | 0.00 | 3,786.41 | 4,162.27 | 2,081.14 | 9,024.92 | 4,519.17 | 9.63 | -2.07 | 0.845 |
| 50.00 | -28.98 | -34.87 | 0.00 | -3,636.56 | 0.00 | 3,636.56 | 4,114.52 | 2,057.26 | 8,752.88 | 4,382.94 | 11.57 | -2.28 | 0.837 |
| 55.00 | -27.66 | -34.39 | 0.00 | -3,462.21 | 0.00 | 3,462.21 | 4,056.86 | 2,028.43 | 8,434.75 | 4,223.64 | 14.09 | -2.52 | 0.827 |
| 60.00 | -26.37 | -33.91 | 0.00 | -3,290.26 | 0.00 | 3,290.26 | 3,997.59 | 1,998.80 | 8,118.92 | 4,065.50 | 16.87 | -2.77 | 0.816 |
| 65.00 | -25.09 | -33.42 | 0.00 | -3,120.73 | 0.00 | 3,120.73 | 3,936.72 | 1,968.36 | 7,805.63 | 3,908.62 | 19.90 | -3.02 | 0.805 |
| 70.00 | -23.84 | -32.93 | 0.00 | -2,953.65 | 0.00 | 2,953.65 | 3,874.25 | 1,937.12 | 7,495.10 | 3,753.12 | 23.20 | -3.28 | 0.793 |
| 75.00 | -22.65 | -32.41 | 0.00 | -2,789.02 | 0.00 | 2,789.02 | 3,810.17 | 1,905.09 | 7,187.57 | 3,599.12 | 26.78 | -3.54 | 0.781 |
| 77.75 | -21.99 | -32.13 | 0.00 | -2,699.90 | 0.00 | 2,699.90 | 3,774.25 | 1,887.12 | 7,019.78 | 3,515.11 | 28.86 | -3.69 | 0.774 |
| 80.00 | -21.10 | -31.91 | 0.00 | -2,627.60 | 0.00 | 2,627.60 | 3,744.49 | 1,872.25 | 6,883.26 | 3,446.74 | 30.62 | -3.81 | 0.768 |
| 84.25 | -19.57 | -31.41 | 0.00 | -2,491.99 | 0.00 | 2,491.99 | 2,910.86 | 1,455.43 | 5,321.93 | 2,664.92 | 34.12 | -4.04 | 0.942 |
| 85.00 | -19.34 | -31.38 | 0.00 | -2,468.44 | 0.00 | 2,468.44 | 2,904.01 | 1,452.01 | 5,288.42 | 2,648.14 | 34.75 | -4.08 | 0.939 |
| 90.00 | -18.28 | -30.89 | 0.00 | -2,311.55 | 0.00 | 2,311.55 | 2,857.44 | 1,428.72 | 5,065.93 | 2,536.73 | 39.19 | -4.39 | 0.918 |
| 95.00 | -17.25 | -30.41 | 0.00 | -2,157.10 | 0.00 | 2,157.10 | 2,809.25 | 1,404.63 | 4,845.16 | 2,426.18 | 43.95 | -4.71 | 0.896 |
| 100.00 | -16.23 | -29.92 | 0.00 | -2,005.07 | 0.00 | 2,005.07 | 2,759.47 | 1,379.74 | 4,626.35 | 2,316.61 | 49.05 | -5.03 | 0.872 |
| 105.00 | -15.24 | -29.44 | 0.00 | -1,855.47 | 0.00 | 1,855.47 | 2,708.08 | 1,354.04 | 4,409.72 | 2,208.14 | 54.48 | -5.35 | 0.846 |
| 110.00 | -14.31 | -28.93 | 0.00 | -1,708.30 | 0.00 | 1,708.30 | 2,655.09 | 1,327.54 | 4,195.51 | 2,100.87 | 60.26 | -5.68 | 0.819 |
| 112.25 | -13.87 | -28.72 | 0.00 | -1,643.21 | 0.00 | 1,643.21 | 2,630.72 | 1,315.36 | 4,099.96 | 2,053.03 | 62.96 | -5.83 | 0.806 |
| 115.00 | -13.03 | -28.42 | 0.00 | -1,564.23 | 0.00 | 1,564.23 | 2,600.49 | 1,300.25 | 3,983.95 | 1,994.93 | 66.37 | -6.01 | 0.790 |
| 117.75 | -12.21 | -28.11 | 0.00 | -1,486.08 | 0.00 | 1,486.08 | 2,599.78 | 1,299.89 | 3,981.25 | 1,993.59 | 69.88 | -6.19 | 0.751 |
| 120.00 | -11.75 | -27.91 | 0.00 | -1,422.83 | 0.00 | 1,422.83 | 2,574.68 | 1,287.34 | 3,886.99 | 1,946.39 | 72.83 | -6.34 | 0.736 |
| 125.00 | -10.84 | -27.42 | 0.00 | -1,283.28 | 0.00 | 1,283.28 | 2,517.74 | 1,258.87 | 3,679.73 | 1,842.60 | 79.62 | -6.65 | 0.701 |
| 130.00 | -9.96 | -26.93 | 0.00 | -1,146.19 | 0.00 | 1,146.19 | 2,459.20 | 1,229.60 | 3,475.68 | 1,740.42 | 86.74 | -6.96 | 0.663 |
| 135.00 | -9.11 | -26.44 | 0.00 | -1,011.54 | 0.00 | 1,011.54 | 2,399.05 | 1,199.52 | 3,275.08 | 1,639.98 | 94.17 | -7.26 | 0.621 |
| 140.00 | -8.28 | -25.96 | 0.00 | -879.32 | 0.00 | 879.32 | 2,337.29 | 1,168.65 | 3,078.17 | 1,541.38 | 101.91 | -7.55 | 0.575 |
| 145.00 | -7.49 | -25.48 | 0.00 | -749.50 | 0.00 | 749.50 | 2,273.93 | 1,136.97 | 2,885.18 | 1,444.73 | 109.95 | -7.83 | 0.523 |
| 149.00 | -6.90 | -25.10 | 0.00 | -647.57 | 0.00 | 647.57 | 2,211.87 | 1,105.93 | 2,721.18 | 1,362.61 | 116.58 | -8.04 | 0.479 |
| 150.00 | -6.66 | -25.00 | 0.00 | -622.47 | 0.00 | 622.47 | 2,194.72 | 1,097.36 | 2,678.93 | 1,341.46 | 118.27 | -8.10 | 0.468 |
| 153.25 | -6.01 | -24.67 | 0.00 | -541.20 | 0.00 | 541.20 | 1,110.07 | 555.04 | 1,348.86 | 675.43 | 123.82 | -8.26 | 0.809 |
| 155.00 | -5.75 | -24.53 | 0.00 | -498.03 | 0.00 | 498.03 | 1,101.79 | 550.89 | 1,320.21 | 661.09 | 126.85 | -8.34 | 0.761 |
| 160.00 | -4.34 | -18.83 | 0.00 | -375.37 | 0.00 | 375.37 | 1,077.04 | 538.52 | 1,238.66 | 620.25 | 135.74 | -8.68 | 0.610 |
| 165.00 | -3.87 | -18.41 | 0.00 | -281.24 | 0.00 | 281.24 | 1,050.68 | 525.34 | 1,157.73 | 579.72 | 144.96 | -8.96 | 0.490 |
| 170.00 | -2.67 | -12.66 | 0.00 | -189.18 | 0.00 | 189.18 | 1,022.72 | 511.36 | 1,077.64 | 539.62 | 154.44 | -9.19 | 0.354 |
| 175.00 | -2.33 | -12.27 | 0.00 | -125.90 | 0.00 | 125.90 | 993.16 | 496.58 | 998.64 | 500.06 | 164.12 | -9.37 | 0.255 |
| 180.00 | -1.29 | -6.48 | 0.00 | -64.57 | 0.00 | 64.57 | 961.99 | 481.00 | 920.96 | 461.16 | 173.97 | -9.49 | 0.142 |
| 185.00 | -1.06 | -6.12 | 0.00 | -32.18 | 0.00 | 32.18 | 929.22 | 464.61 | 844.81 | 423.03 | 183.91 | -9.57 | 0.077 |
| 190.00 | -0.14 | -0.31 | 0.00 | -1.56 | 0.00 | 1.56 | 894.85 | 447.42 | 770.45 | 385.80 | 193.90 | -9.60 | 0.004 |
| 195.00 | 0.00 | -0.29 | 0.00 | 0.00 | 0.00 | 0.00 | 858.87 | 429.43 | 698.09 | 349.57 | 203.90 | -9.60 | 0.000 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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| | | |
|----------------------------------------|-----------------------------------|-------------------------------|
| Load Case: 1.2D + 1.0Di + 1.0Wi | 30.00 mph with 0.75 in Radial Ice | 26 Iterations |
| Gust Response Factor : 1.10 | Ice Dead Load Factor : 1.00 | Wind Importance Factor : 1.00 |
| Dead Load Factor : 1.20 | | Ice Importance Factor : 1.00 |
| Wind Load Factor : 1.00 | | |

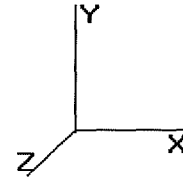
Shaft Segment Forces (Factored)

| Seg Top Elev (ft) | Description | Kzt | Kz | qz (psf) | qzGh (psf) | C (mph-ft) | Cf | Ice Thick (in) | Tributary (ft) | Aa (sf) | CfAa (sf) | Wind Force X (lb) | Dead Load Ice (lb) | Tot Dead Load (lb) |
|-------------------|-----------------|------|------|----------|------------|------------|-------|----------------|----------------|---------|-----------|-------------------|--------------------|--------------------|
| 0.00 | | 1.00 | 0.85 | 1.860 | 2.047 | 0.000 | 1.200 | 0.000 | 0.00 | 0.000 | 0.00 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 1.00 | 0.85 | 1.860 | 2.047 | 0.000 | 1.200 | 1.242 | 5.00 | 27.444 | 32.93 | 67.4 | 490.8 | 1,998.5 |
| 10.00 | | 1.00 | 0.85 | 1.860 | 2.047 | 0.000 | 1.200 | 1.331 | 5.00 | 27.026 | 32.43 | 66.4 | 517.1 | 1,996.5 |
| 15.00 | | 1.00 | 0.85 | 1.860 | 2.047 | 0.000 | 1.200 | 1.386 | 5.00 | 26.580 | 31.90 | 65.3 | 528.8 | 1,979.9 |
| 20.00 | | 1.00 | 0.90 | 1.974 | 2.171 | 0.000 | 1.200 | 1.427 | 5.00 | 26.121 | 31.35 | 68.1 | 534.2 | 1,957.1 |
| 25.00 | | 1.00 | 0.94 | 2.069 | 2.276 | 0.000 | 1.200 | 1.459 | 5.00 | 25.656 | 30.79 | 70.1 | 535.9 | 1,930.5 |
| 30.00 | | 1.00 | 0.98 | 2.150 | 2.365 | 0.000 | 1.200 | 1.486 | 5.00 | 25.186 | 30.22 | 71.5 | 535.2 | 1,901.5 |
| 35.00 | | 1.00 | 1.01 | 2.221 | 2.443 | 0.000 | 1.200 | 1.509 | 5.00 | 24.713 | 29.66 | 72.4 | 532.7 | 1,870.8 |
| 38.25 | Bot - Section 2 | 1.00 | 1.03 | 2.263 | 2.489 | 0.000 | 1.200 | 1.522 | 3.25 | 15.807 | 18.97 | 47.2 | 344.8 | 1,199.3 |
| 40.00 | | 1.00 | 1.04 | 2.284 | 2.513 | 0.000 | 1.200 | 1.529 | 1.75 | 8.538 | 10.25 | 25.7 | 187.6 | 1,104.4 |
| 45.00 | | 1.00 | 1.07 | 2.342 | 2.576 | 0.000 | 1.200 | 1.547 | 5.00 | 24.077 | 28.89 | 74.4 | 531.4 | 3,112.6 |
| 45.75 | Top - Section 1 | 1.00 | 1.07 | 2.350 | 2.585 | 0.000 | 1.200 | 1.550 | 0.75 | 3.569 | 4.28 | 11.1 | 79.6 | 461.9 |
| 50.00 | | 1.00 | 1.09 | 2.394 | 2.633 | 0.000 | 1.200 | 1.564 | 4.25 | 20.028 | 24.03 | 63.3 | 446.9 | 1,525.8 |
| 55.00 | | 1.00 | 1.11 | 2.443 | 2.687 | 0.000 | 1.200 | 1.579 | 5.00 | 23.119 | 27.74 | 74.5 | 519.4 | 1,762.6 |
| 60.00 | | 1.00 | 1.13 | 2.488 | 2.737 | 0.000 | 1.200 | 1.592 | 5.00 | 22.638 | 27.17 | 74.3 | 512.5 | 1,727.4 |
| 65.00 | | 1.00 | 1.15 | 2.530 | 2.783 | 0.000 | 1.200 | 1.605 | 5.00 | 22.157 | 26.59 | 74.0 | 505.0 | 1,691.6 |
| 70.00 | | 1.00 | 1.17 | 2.570 | 2.827 | 0.000 | 1.200 | 1.617 | 5.00 | 21.674 | 26.01 | 73.5 | 497.1 | 1,655.5 |
| 75.00 | | 1.00 | 1.19 | 2.607 | 2.868 | 0.000 | 1.200 | 1.628 | 5.00 | 21.192 | 25.43 | 72.9 | 488.8 | 1,618.9 |
| 77.75 | Bot - Section 3 | 1.00 | 1.20 | 2.627 | 2.890 | 0.000 | 1.200 | 1.634 | 2.75 | 11.448 | 13.74 | 39.7 | 266.2 | 875.7 |
| 80.00 | | 1.00 | 1.20 | 2.643 | 2.907 | 0.000 | 1.200 | 1.639 | 2.25 | 9.377 | 11.25 | 32.7 | 218.9 | 1,127.8 |
| 84.25 | Top - Section 2 | 1.00 | 1.22 | 2.672 | 2.939 | 0.000 | 1.200 | 1.647 | 4.25 | 17.446 | 20.93 | 61.5 | 407.1 | 2,095.2 |
| 85.00 | | 1.00 | 1.22 | 2.677 | 2.945 | 0.000 | 1.200 | 1.649 | 0.75 | 3.042 | 3.65 | 10.7 | 71.6 | 206.4 |
| 90.00 | | 1.00 | 1.23 | 2.709 | 2.980 | 0.000 | 1.200 | 1.658 | 5.00 | 20.004 | 24.01 | 71.5 | 468.3 | 1,353.3 |
| 95.00 | | 1.00 | 1.25 | 2.740 | 3.014 | 0.000 | 1.200 | 1.667 | 5.00 | 19.519 | 23.42 | 70.6 | 458.8 | 1,320.2 |
| 100.00 | | 1.00 | 1.26 | 2.770 | 3.047 | 0.000 | 1.200 | 1.676 | 5.00 | 19.034 | 22.84 | 69.6 | 449.0 | 1,286.9 |
| 105.00 | | 1.00 | 1.27 | 2.799 | 3.079 | 0.000 | 1.200 | 1.684 | 5.00 | 18.549 | 22.26 | 68.5 | 439.0 | 1,253.3 |
| 110.00 | | 1.00 | 1.29 | 2.826 | 3.109 | 0.000 | 1.200 | 1.692 | 5.00 | 18.063 | 21.68 | 67.4 | 428.8 | 1,219.6 |
| 112.2 | Bot - Section 4 | 1.00 | 1.29 | 2.838 | 3.122 | 0.000 | 1.200 | 1.695 | 2.25 | 7.969 | 9.56 | 29.9 | 190.9 | 539.0 |
| 115.00 | | 1.00 | 1.30 | 2.853 | 3.138 | 0.000 | 1.200 | 1.699 | 2.75 | 9.752 | 11.70 | 36.7 | 233.8 | 1,078.8 |
| 117.7 | Top - Section 3 | 1.00 | 1.31 | 2.867 | 3.154 | 0.000 | 1.200 | 1.703 | 2.75 | 9.605 | 11.53 | 36.4 | 230.6 | 1,061.4 |
| 120.00 | | 1.00 | 1.31 | 2.879 | 3.166 | 0.000 | 1.200 | 1.707 | 2.25 | 7.749 | 9.30 | 29.4 | 186.5 | 523.9 |
| 125.00 | | 1.00 | 1.32 | 2.903 | 3.194 | 0.000 | 1.200 | 1.714 | 5.00 | 16.869 | 20.24 | 64.7 | 403.8 | 1,136.5 |
| 130.00 | | 1.00 | 1.33 | 2.928 | 3.220 | 0.000 | 1.200 | 1.720 | 5.00 | 16.382 | 19.66 | 63.3 | 392.9 | 1,102.1 |
| 135.00 | | 1.00 | 1.34 | 2.951 | 3.246 | 0.000 | 1.200 | 1.727 | 5.00 | 15.896 | 19.07 | 61.9 | 381.9 | 1,067.5 |
| 140.00 | | 1.00 | 1.35 | 2.974 | 3.271 | 0.000 | 1.200 | 1.733 | 5.00 | 15.408 | 18.49 | 60.5 | 370.7 | 1,032.7 |
| 145.00 | | 1.00 | 1.36 | 2.996 | 3.295 | 0.000 | 1.200 | 1.739 | 5.00 | 14.921 | 17.91 | 59.0 | 359.4 | 997.8 |
| 149.0 | Bot - Section 5 | 1.00 | 1.37 | 3.013 | 3.314 | 0.000 | 1.200 | 1.744 | 4.00 | 11.586 | 13.90 | 46.1 | 280.2 | 774.0 |
| 150.00 | | 1.00 | 1.37 | 3.017 | 3.319 | 0.000 | 1.200 | 1.745 | 1.00 | 2.879 | 3.45 | 11.5 | 70.4 | 265.4 |
| 153.2 | Top - Section 4 | 1.00 | 1.38 | 3.031 | 3.334 | 0.000 | 1.200 | 1.749 | 3.25 | 9.223 | 11.07 | 36.9 | 224.0 | 847.2 |
| 155.00 | | 1.00 | 1.38 | 3.038 | 3.342 | 0.000 | 1.200 | 1.751 | 1.75 | 4.881 | 5.86 | 19.6 | 119.2 | 243.9 |
| 160.00 | Appertunance(s) | 1.00 | 1.39 | 3.058 | 3.364 | 0.000 | 1.200 | 1.757 | 5.00 | 13.618 | 16.34 | 55.0 | 328.8 | 675.6 |
| 165.00 | | 1.00 | 1.40 | 3.078 | 3.386 | 0.000 | 1.200 | 1.762 | 5.00 | 13.130 | 15.76 | 53.3 | 317.1 | 649.7 |
| 170.00 | Appertunance(s) | 1.00 | 1.41 | 3.098 | 3.407 | 0.000 | 1.200 | 1.767 | 5.00 | 12.642 | 15.17 | 51.7 | 305.2 | 623.7 |
| 175.00 | | 1.00 | 1.42 | 3.117 | 3.428 | 0.000 | 1.200 | 1.772 | 5.00 | 12.154 | 14.58 | 50.0 | 293.2 | 597.5 |
| 180.00 | Appertunance(s) | 1.00 | 1.43 | 3.135 | 3.449 | 0.000 | 1.200 | 1.777 | 5.00 | 11.666 | 14.00 | 48.3 | 281.1 | 571.3 |
| 185.00 | | 1.00 | 1.44 | 3.153 | 3.469 | 0.000 | 1.200 | 1.782 | 5.00 | 11.178 | 13.41 | 46.5 | 269.0 | 545.0 |
| 190.00 | Appertunance(s) | 1.00 | 1.44 | 3.171 | 3.488 | 0.000 | 1.200 | 1.787 | 5.00 | 10.689 | 12.83 | 44.7 | 256.7 | 518.6 |
| 195.00 | | 1.00 | 1.45 | 3.188 | 3.507 | 0.000 | 1.200 | 1.792 | 5.00 | 10.201 | 12.24 | 42.9 | 244.4 | 492.1 |
| Totals: | | | | | | | | 195.00 | | | | 2,512.8 | 16,735.6 | 55,576.7 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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| | | |
|----------------------------------------|-----------------------------------|-------------------------------|
| Load Case: 1.2D + 1.0Di + 1.0Wi | 30.00 mph with 0.75 in Radial Ice | 26 Iterations |
| Gust Response Factor : 1.10 | Ice Dead Load Factor : 1.00 | Wind Importance Factor : 1.00 |
| Dead Load Factor : 1.20 | | Ice Importance Factor : 1.00 |
| Wind Load Factor : 1.00 | | |

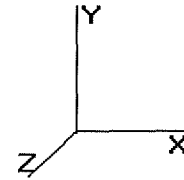
Discrete Appurtenance Segment Forces (Factored)

| Elev (ft) | Description | Qty | qz (psf) | qzGh (psf) | CaAa Factor | Ka | Total CaAa (sf) | Horiz Ecc (ft) | Vert Ecc (ft) | Wind FX (lb) | Mom Y (lb-ft) | Mom Z (lb-ft) | Dead Load (lb) |
|-----------|---------------------|-----|----------|------------|-------------|------|-----------------|----------------|---------------|--------------|---------------|---------------|----------------|
| 160.0 | 105 Sq. Ft. and 125 | 1 | 3.058 | 3.364 | 1.00 | 1.00 | 178.77 | 0.000 | 0.000 | 601.42 | 0.00 | 0.00 | 6,489.38 |
| 170.0 | 105 Sq. Ft. and 125 | 1 | 3.098 | 3.407 | 1.00 | 1.00 | 179.22 | 0.000 | 0.000 | 610.67 | 0.00 | 0.00 | 6,504.76 |
| 180.0 | 105 Sq. Ft. and 125 | 1 | 3.135 | 3.449 | 1.00 | 1.00 | 179.65 | 0.000 | 0.000 | 619.53 | 0.00 | 0.00 | 6,519.35 |
| 190.0 | 105 Sq. Ft. and 125 | 1 | 3.171 | 3.488 | 1.00 | 1.00 | 180.05 | 0.000 | 0.000 | 628.04 | 0.00 | 0.00 | 6,533.22 |
| | | | | | | | | | | 2,459.66 | | | 26,046.72 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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| | | |
|----------------------------------------|-----------------------------------|-------------------------------|
| Load Case: 1.2D + 1.0Di + 1.0Wi | 30.00 mph with 0.75 in Radial Ice | 26 Iterations |
| Gust Response Factor : 1.10 | Ice Dead Load Factor : 1.00 | Wind Importance Factor : 1.00 |
| Dead Load Factor : 1.20 | | Ice Importance Factor : 1.00 |
| Wind Load Factor : 1.00 | | |

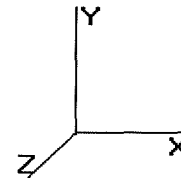
Applied Segment Forces Summary

| Seg Elev (ft) | Lateral FX (-) (lb) | Axial FY (-) (lb) | Torsion MY (lb-ft) | Moment MZ (lb-ft) |
|----------------|---------------------|-------------------|--------------------|-------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5.00 | 67.40 | 2,352.72 | 0.00 | 0.00 |
| 10.00 | 66.37 | 2,350.70 | 0.00 | 0.00 |
| 15.00 | 65.27 | 2,334.19 | 0.00 | 0.00 |
| 20.00 | 68.06 | 2,311.30 | 0.00 | 0.00 |
| 25.00 | 70.07 | 2,284.74 | 0.00 | 0.00 |
| 30.00 | 71.48 | 2,255.74 | 0.00 | 0.00 |
| 35.00 | 72.45 | 2,225.00 | 0.00 | 0.00 |
| 38.25 | 47.21 | 1,429.57 | 0.00 | 0.00 |
| 40.00 | 25.74 | 1,228.40 | 0.00 | 0.00 |
| 45.00 | 74.42 | 3,466.79 | 0.00 | 0.00 |
| 45.75 | 11.07 | 515.02 | 0.00 | 0.00 |
| 50.00 | 63.29 | 1,826.91 | 0.00 | 0.00 |
| 55.00 | 74.54 | 2,116.83 | 0.00 | 0.00 |
| 60.00 | 74.34 | 2,081.62 | 0.00 | 0.00 |
| 65.00 | 74.00 | 2,045.89 | 0.00 | 0.00 |
| 70.00 | 73.52 | 2,009.70 | 0.00 | 0.00 |
| 75.00 | 72.94 | 1,973.11 | 0.00 | 0.00 |
| 77.75 | 39.70 | 1,070.56 | 0.00 | 0.00 |
| 80.00 | 32.71 | 1,287.19 | 0.00 | 0.00 |
| 84.25 | 61.53 | 2,396.25 | 0.00 | 0.00 |
| 85.00 | 10.75 | 259.55 | 0.00 | 0.00 |
| 90.00 | 71.54 | 1,707.53 | 0.00 | 0.00 |
| 95.00 | 70.61 | 1,674.45 | 0.00 | 0.00 |
| 100.0 | 69.60 | 1,641.11 | 0.00 | 0.00 |
| 105.0 | 68.53 | 1,607.56 | 0.00 | 0.00 |
| 110.0 | 67.39 | 1,573.79 | 0.00 | 0.00 |
| 112.2 | 29.86 | 698.42 | 0.00 | 0.00 |
| 115.0 | 36.72 | 1,273.64 | 0.00 | 0.00 |
| 117.7 | 36.35 | 1,256.20 | 0.00 | 0.00 |
| 120.0 | 29.44 | 683.35 | 0.00 | 0.00 |
| 125.0 | 64.65 | 1,490.74 | 0.00 | 0.00 |
| 130.0 | 63.31 | 1,456.30 | 0.00 | 0.00 |
| 135.0 | 61.92 | 1,421.70 | 0.00 | 0.00 |
| 140.0 | 60.48 | 1,386.96 | 0.00 | 0.00 |
| 145.0 | 59.00 | 1,352.09 | 0.00 | 0.00 |
| 149.0 | 46.08 | 1,057.39 | 0.00 | 0.00 |
| 150.0 | 11.47 | 336.23 | 0.00 | 0.00 |
| 153.2 | 36.90 | 1,077.45 | 0.00 | 0.00 |
| 155.0 | 19.57 | 367.86 | 0.00 | 0.00 |
| 160.0 | 656.39 | 7,519.20 | 0.00 | 0.00 |
| 165.0 | 53.35 | 915.35 | 0.00 | 0.00 |
| 170.0 | 662.36 | 7,394.10 | 0.00 | 0.00 |
| 175.0 | 50.00 | 774.66 | 0.00 | 0.00 |
| 180.0 | 667.81 | 7,267.80 | 0.00 | 0.00 |
| 185.0 | 46.52 | 633.58 | 0.00 | 0.00 |
| 190.0 | 672.78 | 7,140.41 | 0.00 | 0.00 |
| 195.0 | 42.93 | 492.15 | 0.00 | 0.00 |
| Totals: | 4,972.43 | 94,021.80 | 0.00 | 0.00 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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| | | |
|----------------------------------------|-----------------------------------|-------------------------------|
| Load Case: 1.2D + 1.0Di + 1.0Wi | 30.00 mph with 0.75 in Radial Ice | 26 Iterations |
| Gust Response Factor : 1.10 | Ice Dead Load Factor : 1.00 | Wind Importance Factor : 1.00 |
| Dead Load Factor : 1.20 | | Ice Importance Factor : 1.00 |
| Wind Load Factor : 1.00 | | |

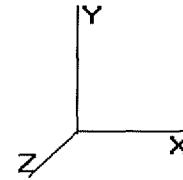
Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00 | -94.02 | -5.00 | 0.00 | -751.61 | 0.00 | 751.61 | 4,576.28 | 2,288.14 | 11,797.9 | 5,907.74 | 0.00 | 0.00 | 0.148 |
| 5.00 | -91.67 | -4.97 | 0.00 | -726.63 | 0.00 | 726.63 | 4,533.62 | 2,266.81 | 11,469.5 | 5,743.29 | 0.02 | -0.03 | 0.147 |
| 10.00 | -89.31 | -4.95 | 0.00 | -701.76 | 0.00 | 701.76 | 4,489.36 | 2,244.68 | 11,141.2 | 5,578.90 | 0.06 | -0.06 | 0.146 |
| 15.00 | -86.98 | -4.93 | 0.00 | -677.01 | 0.00 | 677.01 | 4,443.50 | 2,221.75 | 10,813.3 | 5,414.70 | 0.14 | -0.09 | 0.145 |
| 20.00 | -84.66 | -4.90 | 0.00 | -652.36 | 0.00 | 652.36 | 4,396.03 | 2,198.01 | 10,486.0 | 5,250.80 | 0.24 | -0.12 | 0.144 |
| 25.00 | -82.37 | -4.87 | 0.00 | -627.85 | 0.00 | 627.85 | 4,346.96 | 2,173.48 | 10,159.5 | 5,087.31 | 0.38 | -0.15 | 0.142 |
| 30.00 | -80.12 | -4.84 | 0.00 | -603.49 | 0.00 | 603.49 | 4,296.28 | 2,148.14 | 9,834.08 | 4,924.35 | 0.56 | -0.18 | 0.141 |
| 35.00 | -77.89 | -4.80 | 0.00 | -579.30 | 0.00 | 579.30 | 4,244.00 | 2,122.00 | 9,509.93 | 4,762.03 | 0.76 | -0.21 | 0.140 |
| 38.25 | -76.46 | -4.77 | 0.00 | -563.71 | 0.00 | 563.71 | 4,209.15 | 2,104.58 | 9,300.04 | 4,656.93 | 0.92 | -0.23 | 0.139 |
| 40.00 | -75.23 | -4.76 | 0.00 | -555.38 | 0.00 | 555.38 | 4,190.11 | 2,095.06 | 9,187.31 | 4,600.48 | 1.00 | -0.25 | 0.139 |
| 45.00 | -71.76 | -4.70 | 0.00 | -531.55 | 0.00 | 531.55 | 4,134.63 | 2,067.31 | 8,866.44 | 4,439.81 | 1.28 | -0.28 | 0.137 |
| 45.75 | -71.24 | -4.71 | 0.00 | -528.03 | 0.00 | 528.03 | 4,162.27 | 2,081.14 | 9,024.92 | 4,519.17 | 1.33 | -0.29 | 0.134 |
| 50.00 | -69.41 | -4.67 | 0.00 | -508.03 | 0.00 | 508.03 | 4,114.52 | 2,057.26 | 8,752.88 | 4,382.94 | 1.59 | -0.32 | 0.133 |
| 55.00 | -67.30 | -4.63 | 0.00 | -484.66 | 0.00 | 484.66 | 4,056.86 | 2,028.43 | 8,434.75 | 4,223.64 | 1.94 | -0.35 | 0.131 |
| 60.00 | -65.21 | -4.58 | 0.00 | -461.54 | 0.00 | 461.54 | 3,997.59 | 1,998.80 | 8,118.92 | 4,065.50 | 2.33 | -0.38 | 0.130 |
| 65.00 | -63.16 | -4.53 | 0.00 | -438.65 | 0.00 | 438.65 | 3,936.72 | 1,968.36 | 7,805.63 | 3,908.62 | 2.75 | -0.42 | 0.128 |
| 70.00 | -61.15 | -4.48 | 0.00 | -416.00 | 0.00 | 416.00 | 3,874.25 | 1,937.12 | 7,495.10 | 3,753.12 | 3.21 | -0.46 | 0.127 |
| 75.00 | -59.18 | -4.42 | 0.00 | -393.61 | 0.00 | 393.61 | 3,810.17 | 1,905.09 | 7,187.57 | 3,599.12 | 3.70 | -0.49 | 0.125 |
| 77.75 | -58.11 | -4.39 | 0.00 | -381.46 | 0.00 | 381.46 | 3,774.25 | 1,887.12 | 7,019.78 | 3,515.11 | 3.99 | -0.51 | 0.124 |
| 80.00 | -56.82 | -4.37 | 0.00 | -371.58 | 0.00 | 371.58 | 3,744.49 | 1,872.25 | 6,883.26 | 3,446.74 | 4.24 | -0.53 | 0.123 |
| 84.25 | -54.42 | -4.30 | 0.00 | -353.01 | 0.00 | 353.01 | 2,910.86 | 1,455.43 | 5,321.93 | 2,664.92 | 4.73 | -0.56 | 0.151 |
| 85.00 | -54.16 | -4.31 | 0.00 | -349.78 | 0.00 | 349.78 | 2,904.01 | 1,452.01 | 5,288.42 | 2,648.14 | 4.81 | -0.57 | 0.151 |
| 90.00 | -52.45 | -4.27 | 0.00 | -328.21 | 0.00 | 328.21 | 2,857.44 | 1,428.72 | 5,065.93 | 2,536.73 | 5.43 | -0.61 | 0.148 |
| 95.00 | -50.77 | -4.22 | 0.00 | -306.88 | 0.00 | 306.88 | 2,809.25 | 1,404.63 | 4,845.16 | 2,426.18 | 6.10 | -0.66 | 0.145 |
| 100.00 | -49.13 | -4.17 | 0.00 | -285.80 | 0.00 | 285.80 | 2,759.47 | 1,379.74 | 4,626.35 | 2,316.61 | 6.81 | -0.70 | 0.141 |
| 105.00 | -47.52 | -4.12 | 0.00 | -264.97 | 0.00 | 264.97 | 2,708.08 | 1,354.04 | 4,409.72 | 2,208.14 | 7.57 | -0.75 | 0.138 |
| 110.00 | -45.94 | -4.06 | 0.00 | -244.38 | 0.00 | 244.38 | 2,655.09 | 1,327.54 | 4,195.51 | 2,100.87 | 8.38 | -0.80 | 0.134 |
| 112.25 | -45.24 | -4.03 | 0.00 | -235.26 | 0.00 | 235.26 | 2,630.72 | 1,315.36 | 4,099.96 | 2,053.03 | 8.76 | -0.82 | 0.132 |
| 115.00 | -43.97 | -4.00 | 0.00 | -224.17 | 0.00 | 224.17 | 2,600.49 | 1,300.25 | 3,983.95 | 1,994.93 | 9.24 | -0.84 | 0.129 |
| 117.75 | -42.71 | -3.96 | 0.00 | -213.17 | 0.00 | 213.17 | 2,599.78 | 1,299.89 | 3,981.25 | 1,993.59 | 9.74 | -0.87 | 0.123 |
| 120.00 | -42.03 | -3.95 | 0.00 | -204.26 | 0.00 | 204.26 | 2,574.68 | 1,287.34 | 3,886.99 | 1,946.39 | 10.15 | -0.89 | 0.121 |
| 125.00 | -40.53 | -3.89 | 0.00 | -184.52 | 0.00 | 184.52 | 2,517.74 | 1,258.87 | 3,679.73 | 1,842.60 | 11.11 | -0.94 | 0.116 |
| 130.00 | -39.08 | -3.83 | 0.00 | -165.08 | 0.00 | 165.08 | 2,459.20 | 1,229.60 | 3,475.68 | 1,740.42 | 12.11 | -0.98 | 0.111 |
| 135.00 | -37.65 | -3.77 | 0.00 | -145.92 | 0.00 | 145.92 | 2,399.05 | 1,199.52 | 3,275.08 | 1,639.98 | 13.16 | -1.02 | 0.105 |
| 140.00 | -36.26 | -3.71 | 0.00 | -127.06 | 0.00 | 127.06 | 2,337.29 | 1,168.65 | 3,078.17 | 1,541.38 | 14.26 | -1.07 | 0.098 |
| 145.00 | -34.91 | -3.65 | 0.00 | -108.50 | 0.00 | 108.50 | 2,273.93 | 1,136.97 | 2,885.18 | 1,444.73 | 15.40 | -1.11 | 0.090 |
| 149.00 | -33.85 | -3.59 | 0.00 | -93.90 | 0.00 | 93.90 | 2,211.87 | 1,105.93 | 2,721.18 | 1,362.61 | 16.34 | -1.14 | 0.084 |
| 150.00 | -33.52 | -3.59 | 0.00 | -90.30 | 0.00 | 90.30 | 2,194.72 | 1,097.36 | 2,678.93 | 1,341.46 | 16.57 | -1.14 | 0.083 |
| 153.25 | -32.44 | -3.54 | 0.00 | -78.65 | 0.00 | 78.65 | 1,110.07 | 555.04 | 1,348.86 | 675.43 | 17.36 | -1.17 | 0.146 |
| 155.00 | -32.07 | -3.53 | 0.00 | -72.46 | 0.00 | 72.46 | 1,101.79 | 550.89 | 1,320.21 | 661.09 | 17.79 | -1.18 | 0.139 |
| 160.00 | -24.56 | -2.73 | 0.00 | -54.82 | 0.00 | 54.82 | 1,077.04 | 538.52 | 1,238.66 | 620.25 | 19.06 | -1.23 | 0.111 |
| 165.00 | -23.65 | -2.67 | 0.00 | -41.16 | 0.00 | 41.16 | 1,050.68 | 525.34 | 1,157.73 | 579.72 | 20.37 | -1.27 | 0.094 |
| 170.00 | -16.27 | -1.85 | 0.00 | -27.78 | 0.00 | 27.78 | 1,022.72 | 511.36 | 1,077.64 | 539.62 | 21.72 | -1.30 | 0.067 |
| 175.00 | -15.50 | -1.79 | 0.00 | -18.51 | 0.00 | 18.51 | 993.16 | 496.58 | 998.64 | 500.06 | 23.10 | -1.33 | 0.053 |
| 180.00 | -8.25 | -0.96 | 0.00 | -9.54 | 0.00 | 9.54 | 961.99 | 481.00 | 920.96 | 461.16 | 24.50 | -1.35 | 0.029 |
| 185.00 | -7.61 | -0.90 | 0.00 | -4.76 | 0.00 | 4.76 | 929.22 | 464.61 | 844.81 | 423.03 | 25.92 | -1.36 | 0.019 |
| 190.00 | -0.49 | -0.05 | 0.00 | -0.27 | 0.00 | 0.27 | 894.85 | 447.42 | 770.45 | 385.80 | 27.35 | -1.36 | 0.001 |
| 195.00 | 0.00 | -0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 858.87 | 429.43 | 698.09 | 349.57 | 28.77 | -1.36 | 0.000 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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| | | |
|-------------------------------|---------------------------------|-------------------------------|
| Load Case: 1.0D + 1.0W | 60.00 mph Serviceability | 26 Iterations |
| Gust Response Factor : 1.10 | | Wind Importance Factor : 1.00 |
| Dead Load Factor : 1.00 | | |
| Wind Load Factor : 1.00 | | |

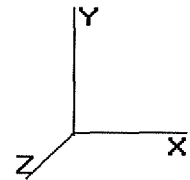
Shaft Segment Forces (Factored)

| Seg Top Elev (ft) | Description | Kzt | Kz | qz (psf) | qzGh (psf) | C (mph-ft) | Cf | Ice Thick (in) | Tributary (ft) | Aa (sf) | CfAa (sf) | Wind Force X (lb) | Dead Load (lb) | Tot Dead Load (lb) |
|-------------------|-----------------|------|------|----------|------------|------------|-------|----------------|----------------|---------|-----------|-------------------|----------------|--------------------|
| 0.00 | | 1.00 | 0.85 | 7.442 | 8.186 | 294.89 | 0.650 | 0.000 | 0.00 | 0.000 | 0.00 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 1.00 | 0.85 | 7.442 | 8.186 | 289.45 | 0.650 | 0.000 | 5.00 | 26.409 | 17.17 | 140.5 | 0.0 | 1,256.4 |
| 10.00 | | 1.00 | 0.85 | 7.442 | 8.186 | 284.00 | 0.650 | 0.000 | 5.00 | 25.917 | 16.85 | 137.9 | 0.0 | 1,232.8 |
| 15.00 | | 1.00 | 0.85 | 7.442 | 8.186 | 278.55 | 0.650 | 0.000 | 5.00 | 25.424 | 16.53 | 135.3 | 0.0 | 1,209.3 |
| 20.00 | | 1.00 | 0.90 | 7.896 | 8.686 | 281.32 | 0.650 | 0.000 | 5.00 | 24.932 | 16.21 | 140.8 | 0.0 | 1,185.7 |
| 25.00 | | 1.00 | 0.94 | 8.276 | 9.104 | 282.26 | 0.650 | 0.000 | 5.00 | 24.440 | 15.89 | 144.6 | 0.0 | 1,162.1 |
| 30.00 | | 1.00 | 0.98 | 8.600 | 9.460 | 281.88 | 0.650 | 0.000 | 5.00 | 23.948 | 15.57 | 147.3 | 0.0 | 1,138.6 |
| 35.00 | | 1.00 | 1.01 | 8.883 | 9.772 | 280.54 | 0.650 | 0.000 | 5.00 | 23.455 | 15.25 | 149.0 | 0.0 | 1,115.0 |
| 38.25 | Bot - Section 2 | 1.00 | 1.03 | 9.051 | 9.956 | 279.27 | 0.650 | 0.000 | 3.25 | 14.982 | 9.74 | 97.0 | 0.0 | 712.1 |
| 40.00 | | 1.00 | 1.04 | 9.137 | 10.05 | 278.48 | 0.650 | 0.000 | 1.75 | 8.092 | 5.26 | 52.9 | 0.0 | 764.0 |
| 45.00 | | 1.00 | 1.07 | 9.366 | 10.30 | 275.84 | 0.650 | 0.000 | 5.00 | 22.788 | 14.81 | 152.6 | 0.0 | 2,151.0 |
| 45.75 | Top - Section 1 | 1.00 | 1.07 | 9.399 | 10.33 | 275.40 | 0.650 | 0.000 | 0.75 | 3.376 | 2.19 | 22.7 | 0.0 | 318.6 |
| 50.00 | | 1.00 | 1.09 | 9.576 | 10.53 | 276.72 | 0.650 | 0.000 | 4.25 | 18.920 | 12.30 | 129.5 | 0.0 | 899.1 |
| 55.00 | | 1.00 | 1.11 | 9.770 | 10.74 | 273.27 | 0.650 | 0.000 | 5.00 | 21.804 | 14.17 | 152.3 | 0.0 | 1,036.0 |
| 60.00 | | 1.00 | 1.13 | 9.951 | 10.94 | 269.49 | 0.650 | 0.000 | 5.00 | 21.311 | 13.85 | 151.6 | 0.0 | 1,012.4 |
| 65.00 | | 1.00 | 1.15 | 10.120 | 11.13 | 265.42 | 0.650 | 0.000 | 5.00 | 20.819 | 13.53 | 150.6 | 0.0 | 988.8 |
| 70.00 | | 1.00 | 1.17 | 10.279 | 11.30 | 261.10 | 0.650 | 0.000 | 5.00 | 20.327 | 13.21 | 149.4 | 0.0 | 965.3 |
| 75.00 | | 1.00 | 1.19 | 10.430 | 11.47 | 256.55 | 0.650 | 0.000 | 5.00 | 19.835 | 12.89 | 147.9 | 0.0 | 941.7 |
| 77.75 | Bot - Section 3 | 1.00 | 1.20 | 10.509 | 11.56 | 253.97 | 0.650 | 0.000 | 2.75 | 10.699 | 6.95 | 80.4 | 0.0 | 507.9 |
| 80.00 | | 1.00 | 1.20 | 10.572 | 11.62 | 251.81 | 0.650 | 0.000 | 2.25 | 8.762 | 5.70 | 66.2 | 0.0 | 757.4 |
| 84.25 | Top - Section 2 | 1.00 | 1.22 | 10.688 | 11.75 | 247.64 | 0.650 | 0.000 | 4.25 | 16.279 | 10.58 | 124.4 | 0.0 | 1,406.7 |
| 85.00 | | 1.00 | 1.22 | 10.708 | 11.77 | 250.40 | 0.650 | 0.000 | 0.75 | 2.836 | 1.84 | 21.7 | 0.0 | 112.3 |
| 90.00 | | 1.00 | 1.23 | 10.838 | 11.92 | 245.34 | 0.650 | 0.000 | 5.00 | 18.622 | 12.10 | 144.3 | 0.0 | 737.5 |
| 95.00 | | 1.00 | 1.25 | 10.962 | 12.05 | 240.13 | 0.650 | 0.000 | 5.00 | 18.130 | 11.78 | 142.1 | 0.0 | 717.8 |
| 100.00 | | 1.00 | 1.26 | 11.081 | 12.18 | 234.78 | 0.650 | 0.000 | 5.00 | 17.638 | 11.46 | 139.7 | 0.0 | 698.2 |
| 105.00 | | 1.00 | 1.27 | 11.195 | 12.31 | 229.31 | 0.650 | 0.000 | 5.00 | 17.145 | 11.14 | 137.2 | 0.0 | 678.6 |
| 110.00 | | 1.00 | 1.29 | 11.305 | 12.43 | 223.72 | 0.650 | 0.000 | 5.00 | 16.653 | 10.82 | 134.6 | 0.0 | 658.9 |
| 112.2 | Bot - Section 4 | 1.00 | 1.29 | 11.354 | 12.48 | 221.17 | 0.650 | 0.000 | 2.25 | 7.333 | 4.77 | 59.5 | 0.0 | 290.1 |
| 115.00 | | 1.00 | 1.30 | 11.412 | 12.55 | 218.03 | 0.650 | 0.000 | 2.75 | 8.973 | 5.83 | 73.2 | 0.0 | 704.2 |
| 117.7 | Top - Section 3 | 1.00 | 1.31 | 11.469 | 12.61 | 214.85 | 0.650 | 0.000 | 2.75 | 8.824 | 5.74 | 72.4 | 0.0 | 692.3 |
| 120.00 | | 1.00 | 1.31 | 11.514 | 12.66 | 215.87 | 0.650 | 0.000 | 2.25 | 7.109 | 4.62 | 58.5 | 0.0 | 281.2 |
| 125.00 | | 1.00 | 1.32 | 11.614 | 12.77 | 210.00 | 0.650 | 0.000 | 5.00 | 15.441 | 10.04 | 128.2 | 0.0 | 610.6 |
| 130.00 | | 1.00 | 1.33 | 11.710 | 12.88 | 204.04 | 0.650 | 0.000 | 5.00 | 14.949 | 9.72 | 125.2 | 0.0 | 591.0 |
| 135.00 | | 1.00 | 1.34 | 11.803 | 12.98 | 197.99 | 0.650 | 0.000 | 5.00 | 14.456 | 9.40 | 122.0 | 0.0 | 571.3 |
| 140.00 | | 1.00 | 1.35 | 11.894 | 13.08 | 191.87 | 0.650 | 0.000 | 5.00 | 13.964 | 9.08 | 118.8 | 0.0 | 551.7 |
| 145.00 | | 1.00 | 1.36 | 11.982 | 13.18 | 185.66 | 0.650 | 0.000 | 5.00 | 13.472 | 8.76 | 115.4 | 0.0 | 532.1 |
| 149.0 | Bot - Section 5 | 1.00 | 1.37 | 12.051 | 13.25 | 180.65 | 0.650 | 0.000 | 4.00 | 10.423 | 6.78 | 89.8 | 0.0 | 411.5 |
| 150.00 | | 1.00 | 1.37 | 12.068 | 13.27 | 179.39 | 0.650 | 0.000 | 1.00 | 2.588 | 1.68 | 22.3 | 0.0 | 162.5 |
| 153.2 | Top - Section 4 | 1.00 | 1.38 | 12.123 | 13.33 | 175.28 | 0.650 | 0.000 | 3.25 | 8.276 | 5.38 | 71.7 | 0.0 | 519.4 |
| 155.00 | | 1.00 | 1.38 | 12.152 | 13.36 | 175.30 | 0.650 | 0.000 | 1.75 | 4.370 | 2.84 | 38.0 | 0.0 | 103.9 |
| 160.00 | Appertunance(s) | 1.00 | 1.39 | 12.233 | 13.45 | 168.90 | 0.650 | 0.000 | 5.00 | 12.154 | 7.90 | 106.3 | 0.0 | 289.0 |
| 165.00 | | 1.00 | 1.40 | 12.313 | 13.54 | 162.44 | 0.650 | 0.000 | 5.00 | 11.662 | 7.58 | 102.7 | 0.0 | 277.2 |
| 170.00 | Appertunance(s) | 1.00 | 1.41 | 12.390 | 13.62 | 155.93 | 0.650 | 0.000 | 5.00 | 11.169 | 7.26 | 99.0 | 0.0 | 265.4 |
| 175.00 | | 1.00 | 1.42 | 12.466 | 13.71 | 149.36 | 0.650 | 0.000 | 5.00 | 10.677 | 6.94 | 95.2 | 0.0 | 253.6 |
| 180.00 | Appertunance(s) | 1.00 | 1.43 | 12.540 | 13.79 | 142.73 | 0.650 | 0.000 | 5.00 | 10.185 | 6.62 | 91.3 | 0.0 | 241.8 |
| 185.00 | | 1.00 | 1.44 | 12.613 | 13.87 | 136.05 | 0.650 | 0.000 | 5.00 | 9.693 | 6.30 | 87.4 | 0.0 | 230.1 |
| 190.00 | Appertunance(s) | 1.00 | 1.44 | 12.684 | 13.95 | 129.33 | 0.650 | 0.000 | 5.00 | 9.200 | 5.98 | 83.4 | 0.0 | 218.3 |
| 195.00 | | 1.00 | 1.45 | 12.753 | 14.02 | 122.55 | 0.650 | 0.000 | 5.00 | 8.708 | 5.66 | 79.4 | 0.0 | 206.5 |
| Totals: | | | | | | | | | 195.00 | | | 5,032.3 | 0.0 | 32,367.6 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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| | | |
|-------------------------------|--------------------------|-------------------------------|
| Load Case: 1.0D + 1.0W | 60.00 mph Serviceability | 26 Iterations |
| Gust Response Factor : 1.10 | | Wind Importance Factor : 1.00 |
| Dead Load Factor : 1.00 | | |
| Wind Load Factor : 1.00 | | |

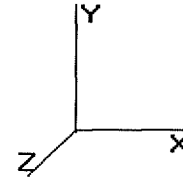
Discrete Appurtenance Segment Forces (Factored)

| Elev (ft) | Description | Qty | qz (psf) | qzGh (psf) | CaAa Factor | Ka | Total CaAa (sf) | Horiz Ecc (ft) | Vert Ecc (ft) | Wind FX (lb) | Mom Y (lb-ft) | Mom Z (lb-ft) | Dead Load (lb) |
|-----------|---------------------|-----|----------|------------|-------------|------|-----------------|----------------|---------------|--------------|---------------|---------------|----------------|
| 160.0 | 105 Sq. Ft. and 125 | 1 | 12.233 | 13.457 | 1.00 | 1.00 | 105.00 | 0.000 | 0.000 | 1,412.94 | 0.00 | 0.00 | 1,800.00 |
| 170.0 | 105 Sq. Ft. and 125 | 1 | 12.390 | 13.629 | 1.00 | 1.00 | 105.00 | 0.000 | 0.000 | 1,431.09 | 0.00 | 0.00 | 1,800.00 |
| 180.0 | 105 Sq. Ft. and 125 | 1 | 12.540 | 13.794 | 1.00 | 1.00 | 105.00 | 0.000 | 0.000 | 1,448.41 | 0.00 | 0.00 | 1,800.00 |
| 190.0 | 105 Sq. Ft. and 125 | 1 | 12.684 | 13.952 | 1.00 | 1.00 | 105.00 | 0.000 | 0.000 | 1,464.99 | 0.00 | 0.00 | 1,800.00 |
| | | | | | | | | | | 5,757.44 | | | 7,200.00 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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| | | |
|-------------------------------|---------------------------------|-------------------------------|
| Load Case: 1.0D + 1.0W | 60.00 mph Serviceability | 26 Iterations |
| Gust Response Factor : 1.10 | | Wind Importance Factor : 1.00 |
| Dead Load Factor : 1.00 | | |
| Wind Load Factor : 1.00 | | |

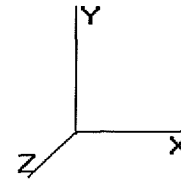
Applied Segment Forces Summary

| Seg Elev (ft) | Lateral FX (-) (lb) | Axial FY (-) (lb) | Torsion MY (lb-ft) | Moment MZ (lb-ft) |
|----------------|---------------------|-------------------|--------------------|-------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5.00 | 140.52 | 1,551.58 | 0.00 | 0.00 |
| 10.00 | 137.90 | 1,528.02 | 0.00 | 0.00 |
| 15.00 | 135.28 | 1,504.46 | 0.00 | 0.00 |
| 20.00 | 140.76 | 1,480.90 | 0.00 | 0.00 |
| 25.00 | 144.62 | 1,457.34 | 0.00 | 0.00 |
| 30.00 | 147.25 | 1,433.78 | 0.00 | 0.00 |
| 35.00 | 148.98 | 1,410.22 | 0.00 | 0.00 |
| 38.25 | 96.96 | 904.01 | 0.00 | 0.00 |
| 40.00 | 52.86 | 867.30 | 0.00 | 0.00 |
| 45.00 | 152.61 | 2,446.18 | 0.00 | 0.00 |
| 45.75 | 22.69 | 362.86 | 0.00 | 0.00 |
| 50.00 | 129.55 | 1,150.01 | 0.00 | 0.00 |
| 55.00 | 152.32 | 1,331.17 | 0.00 | 0.00 |
| 60.00 | 151.63 | 1,307.61 | 0.00 | 0.00 |
| 65.00 | 150.64 | 1,284.05 | 0.00 | 0.00 |
| 70.00 | 149.39 | 1,260.49 | 0.00 | 0.00 |
| 75.00 | 147.91 | 1,236.92 | 0.00 | 0.00 |
| 77.75 | 80.39 | 670.27 | 0.00 | 0.00 |
| 80.00 | 66.23 | 890.20 | 0.00 | 0.00 |
| 84.25 | 124.40 | 1,657.63 | 0.00 | 0.00 |
| 85.00 | 21.71 | 156.59 | 0.00 | 0.00 |
| 90.00 | 144.30 | 1,032.67 | 0.00 | 0.00 |
| 95.00 | 142.10 | 1,013.04 | 0.00 | 0.00 |
| 100.0 | 139.74 | 993.40 | 0.00 | 0.00 |
| 105.0 | 137.24 | 973.77 | 0.00 | 0.00 |
| 110.0 | 134.61 | 954.14 | 0.00 | 0.00 |
| 112.2 | 59.53 | 422.96 | 0.00 | 0.00 |
| 115.0 | 73.21 | 866.54 | 0.00 | 0.00 |
| 117.7 | 72.36 | 854.66 | 0.00 | 0.00 |
| 120.0 | 58.53 | 414.01 | 0.00 | 0.00 |
| 125.0 | 128.22 | 905.78 | 0.00 | 0.00 |
| 130.0 | 125.16 | 886.15 | 0.00 | 0.00 |
| 135.0 | 122.00 | 866.52 | 0.00 | 0.00 |
| 140.0 | 118.76 | 846.88 | 0.00 | 0.00 |
| 145.0 | 115.42 | 827.25 | 0.00 | 0.00 |
| 149.0 | 89.81 | 647.66 | 0.00 | 0.00 |
| 150.0 | 22.33 | 221.51 | 0.00 | 0.00 |
| 153.2 | 71.73 | 711.24 | 0.00 | 0.00 |
| 155.0 | 37.97 | 207.24 | 0.00 | 0.00 |
| 160.0 | 1,519.25 | 2,384.15 | 0.00 | 0.00 |
| 165.0 | 102.66 | 498.57 | 0.00 | 0.00 |
| 170.0 | 1,530.04 | 2,286.79 | 0.00 | 0.00 |
| 175.0 | 95.17 | 401.21 | 0.00 | 0.00 |
| 180.0 | 1,539.73 | 2,189.43 | 0.00 | 0.00 |
| 185.0 | 87.41 | 303.85 | 0.00 | 0.00 |
| 190.0 | 1,548.43 | 2,092.07 | 0.00 | 0.00 |
| 195.0 | 79.41 | 206.49 | 0.00 | 0.00 |
| Totals: | 10,789.73 | 49,899.58 | 0.00 | 0.00 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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| | | |
|-------------------------------|--------------------------|-------------------------------|
| Load Case: 1.0D + 1.0W | 60.00 mph Serviceability | 26 Iterations |
| Gust Response Factor : 1.10 | | Wind Importance Factor : 1.00 |
| Dead Load Factor : 1.00 | | |
| Wind Load Factor : 1.00 | | |

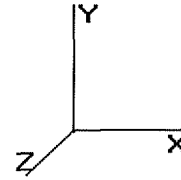
Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---------------|------------------|------------------|-----------------|-----------------|-----------------|----------------------------|---------------|---------------|------------------|------------------|--------------------|----------------|-------|
| 0.00 | -49.89 | -10.82 | 0.00 | -1,540.01 | 0.00 | 1,540.01 | 4,576.28 | 2,288.14 | 11,797.9 | 5,907.74 | 0.00 | 0.00 | 0.272 |
| 5.00 | -48.33 | -10.72 | 0.00 | -1,485.93 | 0.00 | 1,485.93 | 4,533.62 | 2,266.81 | 11,469.5 | 5,743.29 | 0.03 | -0.06 | 0.269 |
| 10.00 | -46.79 | -10.63 | 0.00 | -1,432.32 | 0.00 | 1,432.32 | 4,489.36 | 2,244.68 | 11,141.2 | 5,578.90 | 0.12 | -0.12 | 0.267 |
| 15.00 | -45.28 | -10.54 | 0.00 | -1,379.16 | 0.00 | 1,379.16 | 4,443.50 | 2,221.75 | 10,813.3 | 5,414.70 | 0.28 | -0.18 | 0.265 |
| 20.00 | -43.79 | -10.44 | 0.00 | -1,326.45 | 0.00 | 1,326.45 | 4,396.03 | 2,198.01 | 10,486.0 | 5,250.80 | 0.50 | -0.24 | 0.263 |
| 25.00 | -42.32 | -10.34 | 0.00 | -1,274.24 | 0.00 | 1,274.24 | 4,346.96 | 2,173.48 | 10,159.5 | 5,087.31 | 0.79 | -0.30 | 0.260 |
| 30.00 | -40.87 | -10.23 | 0.00 | -1,222.54 | 0.00 | 1,222.54 | 4,296.28 | 2,148.14 | 9,834.08 | 4,924.35 | 1.14 | -0.37 | 0.258 |
| 35.00 | -39.45 | -10.11 | 0.00 | -1,171.40 | 0.00 | 1,171.40 | 4,244.00 | 2,122.00 | 9,509.93 | 4,762.03 | 1.56 | -0.43 | 0.255 |
| 38.25 | -38.54 | -10.03 | 0.00 | -1,138.55 | 0.00 | 1,138.55 | 4,209.15 | 2,104.58 | 9,300.04 | 4,656.93 | 1.87 | -0.48 | 0.254 |
| 40.00 | -37.67 | -10.00 | 0.00 | -1,121.00 | 0.00 | 1,121.00 | 4,190.11 | 2,095.06 | 9,187.31 | 4,600.48 | 2.05 | -0.50 | 0.253 |
| 45.00 | -35.22 | -9.85 | 0.00 | -1,071.01 | 0.00 | 1,071.01 | 4,134.63 | 2,067.31 | 8,866.44 | 4,439.81 | 2.61 | -0.57 | 0.250 |
| 45.75 | -34.85 | -9.84 | 0.00 | -1,063.63 | 0.00 | 1,063.63 | 4,162.27 | 2,081.14 | 9,024.92 | 4,519.17 | 2.70 | -0.58 | 0.244 |
| 50.00 | -33.69 | -9.74 | 0.00 | -1,021.81 | 0.00 | 1,021.81 | 4,114.52 | 2,057.26 | 8,752.88 | 4,382.94 | 3.25 | -0.64 | 0.241 |
| 55.00 | -32.35 | -9.61 | 0.00 | -973.12 | 0.00 | 973.12 | 4,056.86 | 2,028.43 | 8,434.75 | 4,223.64 | 3.95 | -0.71 | 0.238 |
| 60.00 | -31.03 | -9.48 | 0.00 | -925.09 | 0.00 | 925.09 | 3,997.59 | 1,998.80 | 8,118.92 | 4,065.50 | 4.73 | -0.78 | 0.235 |
| 65.00 | -29.74 | -9.35 | 0.00 | -877.70 | 0.00 | 877.70 | 3,936.72 | 1,968.36 | 7,805.63 | 3,908.62 | 5.58 | -0.85 | 0.232 |
| 70.00 | -28.47 | -9.21 | 0.00 | -830.98 | 0.00 | 830.98 | 3,874.25 | 1,937.12 | 7,495.10 | 3,753.12 | 6.51 | -0.92 | 0.229 |
| 75.00 | -27.23 | -9.07 | 0.00 | -784.91 | 0.00 | 784.91 | 3,810.17 | 1,905.09 | 7,187.57 | 3,599.12 | 7.51 | -0.99 | 0.225 |
| 77.75 | -26.55 | -9.00 | 0.00 | -759.97 | 0.00 | 759.97 | 3,774.25 | 1,887.12 | 7,019.78 | 3,515.11 | 8.10 | -1.04 | 0.223 |
| 80.00 | -25.65 | -8.94 | 0.00 | -739.73 | 0.00 | 739.73 | 3,744.49 | 1,872.25 | 6,883.26 | 3,446.74 | 8.60 | -1.07 | 0.221 |
| 84.25 | -23.99 | -8.80 | 0.00 | -701.75 | 0.00 | 701.75 | 2,910.86 | 1,455.43 | 5,321.93 | 2,664.92 | 9.58 | -1.13 | 0.272 |
| 85.00 | -23.83 | -8.79 | 0.00 | -695.15 | 0.00 | 695.15 | 2,904.01 | 1,452.01 | 5,288.42 | 2,648.14 | 9.76 | -1.15 | 0.271 |
| 90.00 | -22.79 | -8.66 | 0.00 | -651.19 | 0.00 | 651.19 | 2,857.44 | 1,428.72 | 5,065.93 | 2,536.73 | 11.00 | -1.23 | 0.265 |
| 95.00 | -21.76 | -8.53 | 0.00 | -607.89 | 0.00 | 607.89 | 2,809.25 | 1,404.63 | 4,845.16 | 2,426.18 | 12.34 | -1.32 | 0.258 |
| 100.00 | -20.76 | -8.40 | 0.00 | -565.24 | 0.00 | 565.24 | 2,759.47 | 1,379.74 | 4,626.35 | 2,316.61 | 13.78 | -1.41 | 0.252 |
| 105.00 | -19.78 | -8.27 | 0.00 | -523.24 | 0.00 | 523.24 | 2,708.08 | 1,354.04 | 4,409.72 | 2,208.14 | 15.31 | -1.50 | 0.244 |
| 110.00 | -18.82 | -8.13 | 0.00 | -481.89 | 0.00 | 481.89 | 2,655.09 | 1,327.54 | 4,195.51 | 2,100.87 | 16.93 | -1.60 | 0.237 |
| 112.25 | -18.39 | -8.07 | 0.00 | -463.59 | 0.00 | 463.59 | 2,630.72 | 1,315.36 | 4,099.96 | 2,053.03 | 17.69 | -1.64 | 0.233 |
| 115.00 | -17.52 | -7.99 | 0.00 | -441.39 | 0.00 | 441.39 | 2,600.49 | 1,300.25 | 3,983.95 | 1,994.93 | 18.65 | -1.69 | 0.228 |
| 117.75 | -16.66 | -7.91 | 0.00 | -419.41 | 0.00 | 419.41 | 2,599.78 | 1,299.89 | 3,981.25 | 1,993.59 | 19.64 | -1.74 | 0.217 |
| 120.00 | -16.24 | -7.86 | 0.00 | -401.61 | 0.00 | 401.61 | 2,574.68 | 1,287.34 | 3,886.99 | 1,946.39 | 20.47 | -1.78 | 0.213 |
| 125.00 | -15.33 | -7.72 | 0.00 | -362.34 | 0.00 | 362.34 | 2,517.74 | 1,258.87 | 3,679.73 | 1,842.60 | 22.39 | -1.87 | 0.203 |
| 130.00 | -14.43 | -7.59 | 0.00 | -323.73 | 0.00 | 323.73 | 2,459.20 | 1,229.60 | 3,475.68 | 1,740.42 | 24.40 | -1.96 | 0.192 |
| 135.00 | -13.56 | -7.46 | 0.00 | -285.79 | 0.00 | 285.79 | 2,399.05 | 1,199.52 | 3,275.08 | 1,639.98 | 26.49 | -2.04 | 0.180 |
| 140.00 | -12.71 | -7.32 | 0.00 | -248.51 | 0.00 | 248.51 | 2,337.29 | 1,168.65 | 3,078.17 | 1,541.38 | 28.68 | -2.13 | 0.167 |
| 145.00 | -11.88 | -7.19 | 0.00 | -211.88 | 0.00 | 211.88 | 2,273.93 | 1,136.97 | 2,885.18 | 1,444.73 | 30.94 | -2.20 | 0.152 |
| 149.00 | -11.23 | -7.08 | 0.00 | -183.11 | 0.00 | 183.11 | 2,211.87 | 1,105.93 | 2,721.18 | 1,362.61 | 32.82 | -2.26 | 0.140 |
| 150.00 | -11.01 | -7.06 | 0.00 | -176.03 | 0.00 | 176.03 | 2,194.72 | 1,097.36 | 2,678.93 | 1,341.46 | 33.29 | -2.28 | 0.136 |
| 153.25 | -10.29 | -6.97 | 0.00 | -153.09 | 0.00 | 153.09 | 1,110.07 | 555.04 | 1,348.86 | 675.43 | 34.86 | -2.33 | 0.236 |
| 155.00 | -10.08 | -6.93 | 0.00 | -140.90 | 0.00 | 140.90 | 1,101.79 | 550.89 | 1,320.21 | 661.09 | 35.72 | -2.35 | 0.222 |
| 160.00 | -7.75 | -5.32 | 0.00 | -106.25 | 0.00 | 106.25 | 1,077.04 | 538.52 | 1,238.66 | 620.25 | 38.23 | -2.44 | 0.179 |
| 165.00 | -7.25 | -5.21 | 0.00 | -79.63 | 0.00 | 79.63 | 1,050.68 | 525.34 | 1,157.73 | 579.72 | 40.83 | -2.52 | 0.144 |
| 170.00 | -5.03 | -3.58 | 0.00 | -53.58 | 0.00 | 53.58 | 1,022.72 | 511.36 | 1,077.64 | 539.62 | 43.51 | -2.59 | 0.104 |
| 175.00 | -4.64 | -3.47 | 0.00 | -35.66 | 0.00 | 35.66 | 993.16 | 496.58 | 998.64 | 500.06 | 46.25 | -2.64 | 0.076 |
| 180.00 | -2.52 | -1.84 | 0.00 | -18.29 | 0.00 | 18.29 | 961.99 | 481.00 | 920.96 | 461.16 | 49.04 | -2.68 | 0.042 |
| 185.00 | -2.22 | -1.73 | 0.00 | -9.12 | 0.00 | 9.12 | 929.22 | 464.61 | 844.81 | 423.03 | 51.85 | -2.70 | 0.024 |
| 190.00 | -0.20 | -0.09 | 0.00 | -0.45 | 0.00 | 0.45 | 894.85 | 447.42 | 770.45 | 385.80 | 54.68 | -2.70 | 0.001 |
| 195.00 | 0.00 | -0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 858.87 | 429.43 | 698.09 | 349.57 | 57.51 | -2.70 | 0.000 |

Pole : 281319
 Location : Nortonville KY, KY
 Height : 195.0 (ft)
 Base Dia : 63.00 (in)
 Top Dia : 20.00 (in)
 Shape : 18 Sides
 Taper : 0.232692 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : C
 Topographic Category : 1
 Base Elev : 0.000 (ft)

8/23/2013 2:57:06 PM
 Page: 19



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Analysis Summary

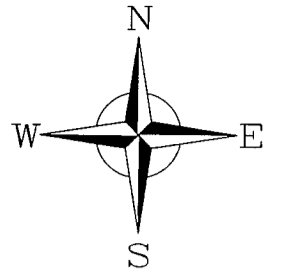
| Load Case | Reactions | | | | | | Max Usage | |
|----------------------|-----------------------|-----------------------|-----------------------|---------------------------|---------------------------|---------------------------|--------------|----------------------|
| | Shear FX (kips) | Shear FZ (kips) | Axial FY (kips) | Moment MX (ft-kips) | Moment MY (ft-kips) | Moment MZ (ft-kips) | Elev (ft) | Interaction Ratio |
| 1.2D + 1.6W | 38.96 | 0.00 | 59.81 | 0.00 | 0.00 | 5578.65 | 84.25 | 0.96 |
| 0.9D + 1.6W | 38.93 | 0.00 | 44.84 | 0.00 | 0.00 | 5497.50 | 84.25 | 0.94 |
| 1.2D + 1.0Di + 1.0Wi | 5.00 | 0.00 | 94.02 | 0.00 | 0.00 | 751.61 | 84.25 | 0.15 |
| 1.0D + 1.0W | 10.82 | 0.00 | 49.89 | 0.00 | 0.00 | 1540.01 | 84.25 | 0.27 |

EXHIBIT D
COMPETING UTILITIES, CORPORATIONS, OR PERSONS LIST
AND MAP OF LIKE FACILITIES IN VICINITY

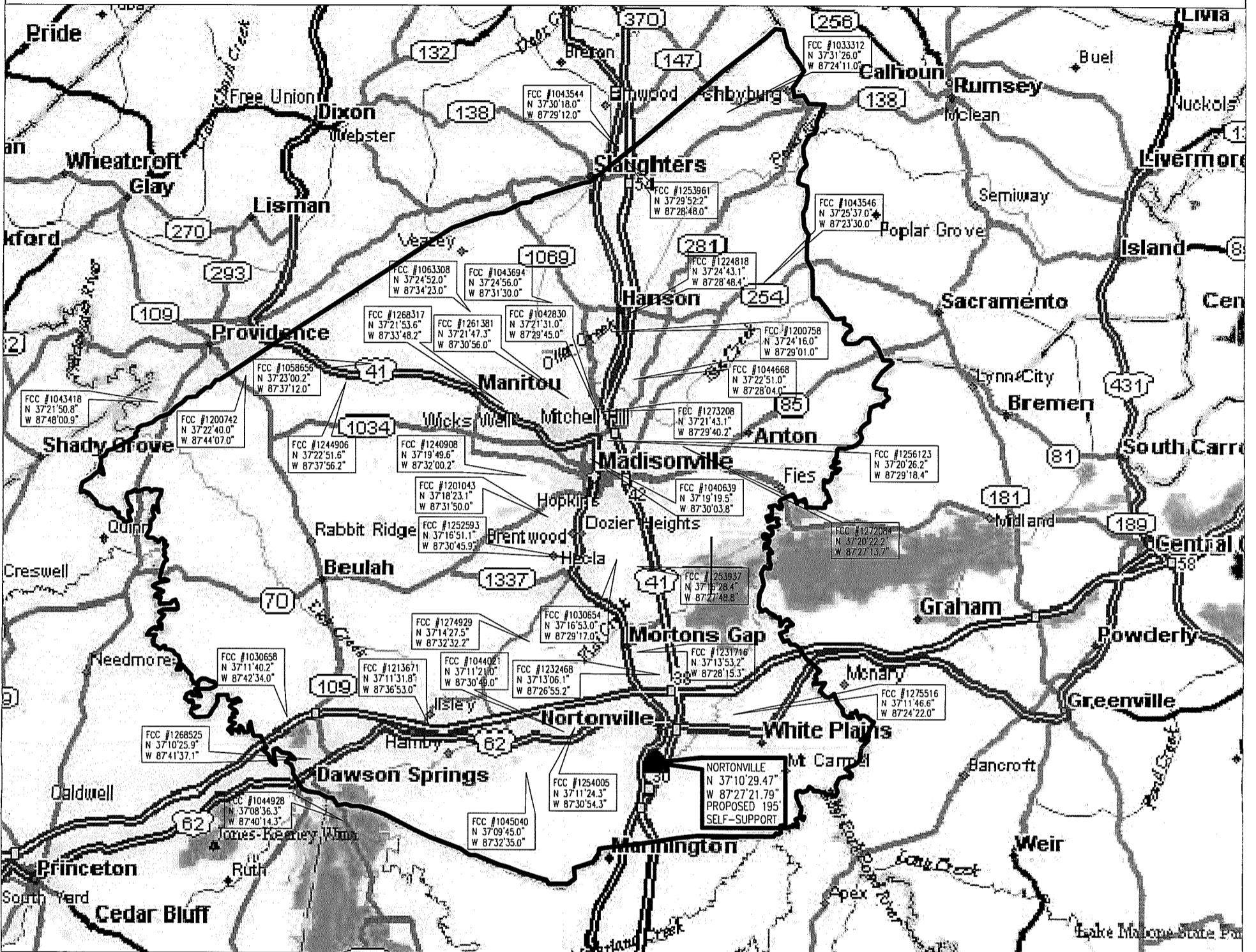
HOPKINS COUNTY, KENTUCKY

AT&T SITE NAME: NORTONVILLE

TOWER LOCATION EXHIBIT



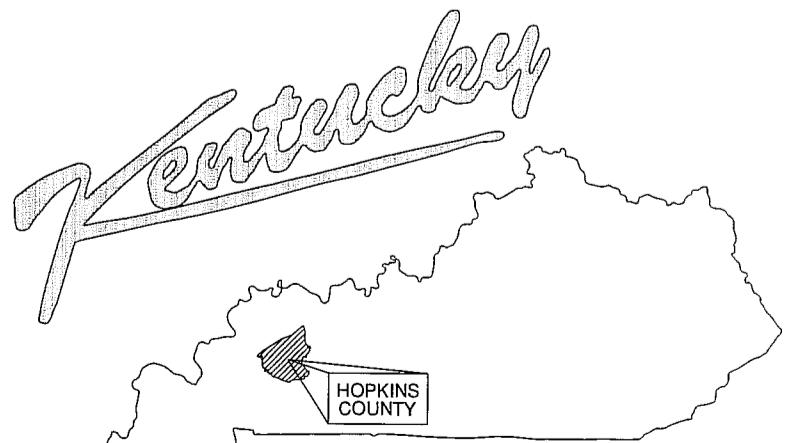
TOWERS DEPICTED ARE ALL KNOWN CONSTRUCTED TOWER SITES REGISTERED WITH THE FEDERAL COMMUNICATIONS COMMISSION IN HOPKINS COUNTY, KENTUCKY



7.5 MINUTE U.S.G.S. QUADRANGLE MAP (NOT TO SCALE)

| Registration # | Status | File # | Owner Name |
|----------------|-------------|----------|-------------------------------------------------------------------------|
| 1030654 | Constructed | A0775328 | CROWN CASTLE GT COMPANY LLC |
| 1030658 | Constructed | A0475358 | CROWN CASTLE GT COMPANY LLC |
| 1033312 | Constructed | A0039518 | SOUND BROADCASTERS, INC. |
| 1040639 | Constructed | A0627251 | Pinnacle Towers LLC |
| 1042830 | Constructed | A0050466 | SOUND BROADCASTERS, INC. |
| 1043546 | Constructed | A0326091 | Kenergy Corporation |
| 1043694 | Constructed | A0551990 | Roberts Tower Company II |
| 1044021 | Constructed | A0051776 | KENTUCKY AUTHORITY FOR EDUCATIONAL TELEVISION DBA = WKMA TV |
| 1044668 | Constructed | A0052702 | CONWAY M SMITH INC DBA = WPEZ |
| 1045040 | Constructed | A0053163 | TROVER CLINIC FOUNDATION INC DBA = MEDICAL CENTER AMBULANCE SERVICE INC |
| 1058656 | Constructed | A0579700 | ANR Pipeline Company |
| 1063308 | Constructed | A0073905 | COMMONWELATH BROADCASTING COPRPORATION DBA = CBC |
| 1200742 | Constructed | A0136715 | Big Rivers Electric Corporation |
| 1200758 | Constructed | A0136781 | Big Rivers Electric Corporation |
| 1201043 | Constructed | A0832311 | Global Tower, LLC |
| 1213671 | Constructed | A0290418 | CROWN CASTLE GT COMPANY LLC |
| 1224818 | Constructed | A0677353 | SBA Towers II LLC |
| 1231716 | Constructed | A0595800 | SBA Towers II LLC |
| 1232468 | Constructed | A0797818 | New Cingular Wireless PCS, LLC |
| 1240908 | Constructed | A0789329 | Time Warner Cable Midwest LLC |
| 1244906 | Constructed | A0798547 | New Cingular Wireless PCS, LLC |
| 1252593 | Constructed | A0519045 | Kentucky Utilities |
| 1253937 | Constructed | A0760504 | SBA Monarch Towers II, LLC |
| 1253961 | Constructed | A0825053 | T-Mobile USA Tower LLC |
| 1254005 | Constructed | A0759658 | SBA Monarch Towers I, LLC |
| 1256123 | Constructed | A0818993 | American Towers, LLC. |
| 1261381 | Constructed | A0788584 | Murray State University |
| 1268317 | Constructed | A0761908 | SBA Monarch Towers II, LLC |
| 1268525 | Constructed | A0644864 | Tower Development Corporation |
| 1272084 | Constructed | A0664968 | Tower Development Corporation |
| 1273208 | Constructed | A0814612 | SBA 2012 TC Assets, LLC |
| 1274929 | Constructed | A0819683 | American Towers, LLC. |
| 1275516 | Constructed | A0848951 | Cellco Partnership |
| 1043418 | Constructed | A0796246 | New Cingular Wireless PCS, LLC |
| 1043544 | Constructed | A0326089 | Kenergy Corporation |
| 1044928 | Constructed | A0837921 | Insight Communications Midwest, LLC |
| 1224461 | Constructed | A0677348 | SBA Towers II LLC |

AUGUST 26, 2013
FSTAN PROJECT NO. 13-8703



F.S. Land Company
T. Alan Neal Company
Land Surveyors and Consulting Engineers

P.O. Box 17546 2313/2315 Crittenden Drive, Louisville, KY. 40217
Phone: (502) 635-5866 (502) 636-5111 Fax: (502) 636-5263

EXHIBIT E
CO-LOCATION REPORT

281319 Nortonville

TAX INFO

Parcel # NORT-3-5-16-3

460 Hickory Lane

Nortonville, KY 42442

There are no FCC registered structures within the search area or within an additional one mile radius.
Search Ring Center: 37.178183 N, -87.458767 W

SUMMARY OF CHOSEN SITE

Within the search ring there are no existing structures to be noted. The search ring is comprised of mainly residential neighborhoods. The area chosen is at the top of the hillside and the furthest away from the existing houses in the area and has natural screening in all directions. This parcel was chosen as it had an existing access off of the road and was within the search ring. Power and telephone facilities are located nearby.

This site meets RF objectives. The landlord and her family own the closest 3 houses to the proposed location and want to have the site on her property. Below is a map of the search ring identifying Candidates A & B.

Brian Ramirez- Site Acquisition

SITE SKETCH

Brian K. Ramirez
10/19/13



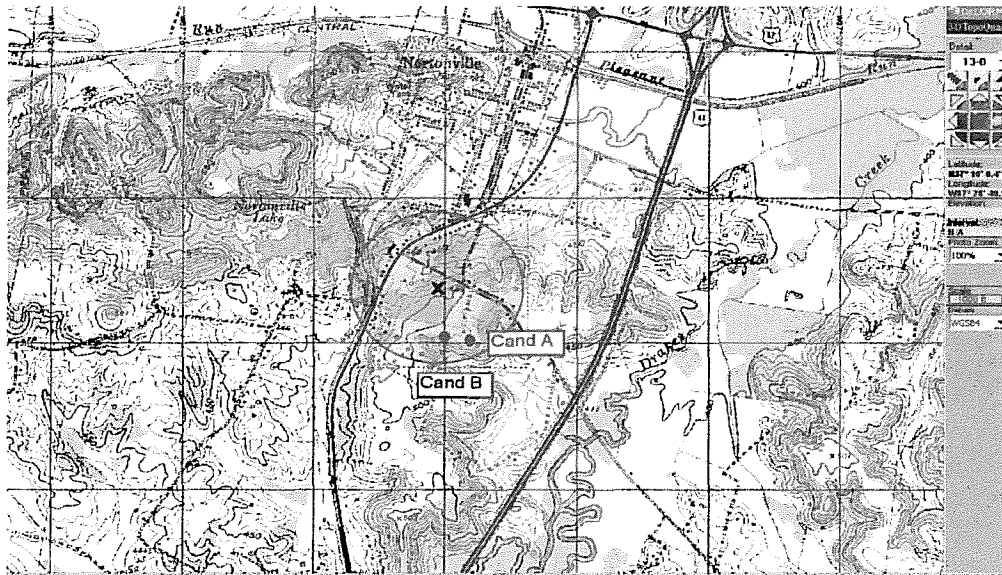
AERIAL SHOWING SURROUNDING AREA



AERIAL PLAT

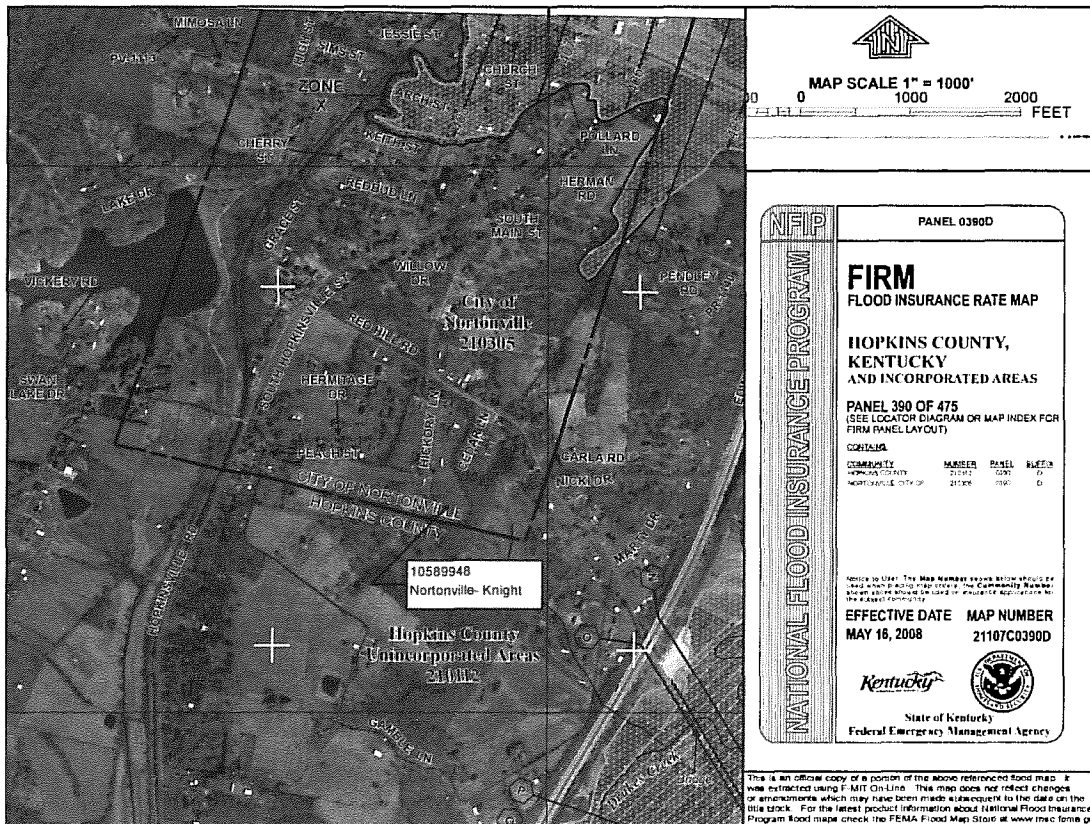


TOPO MAP



Nortonville 37.178183 -87.458767

FEMA MAP



This is an official copy of a portion of the above referenced flood map. It was extracted using FIRM On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.fema.gov

DEED (4 Pages)

BOOK 351 PAGE 472

PROPERTY TRANSFER
TAX COLLECTED

THIS DEED OF CONVEYANCE was and entered into by and between Pearlle Smith, widow of D. E. SMITH, Exe. S. Smith Estier and her husband, Woodrow Bailey, William M. Smith and his wife, Edith Smith, Thomas B. Smith and his wife, Jean Smith, Barbara Smith, single, Elizabeth A. Smith Thompson and her husband, Harold Thompson, Socrates Gail Smith Cotton and her husband, Curtis Paul Cotton, Brenda R. Smith Martine and David Martine, her husband, Robert E. Smith Wiley and her husband, Robert W. Wiley, Parties of the First Part, hereinafter called the Grantors, and James Brasher and his wife, Dorothy Stanker, or survivor, Nortonville, Kentucky, Parties of the Second Part, hereinafter called the Grantees.

WITNESSETH: That for and in consideration of the sum of FIVE THOUSAND (\$5,000.00) DOLLARS, cash in hand paid, the receipt of which is hereby acknowledged, the Grantors do hereby grant, sell and convey unto the Grantees, or the survivor of them, their heirs and assigns, the following described property, viz:

A certain tract of land near Nortonville, Hopkins County, Kentucky, excepting and reserving, however unto first parties, all of the coal and minerals, including oil and gas, belonging to said land and the right to dig, bore for, take, mine, pump and remove all of said coals, minerals, oil and gas and such other rights as are necessary for such purposes, said land is described as follows:

Beginning at a stone, corner of James Barnes and running north 41 East 470 1/2 feet to a stake; thence north 8. 2 5/8 feet to a stake in line of Norton Coal Mining Company; thence with its line S. 84 1/2 E. 700 feet to a stone; thence S. 25 1/2 W 131 1/2 feet to a stake in Barnes line; thence with same N 65 W, 550 feet to the beginning, containing 16.7 acres more or less.

473

Being the same property conveyed to L. E. Smith by Will Ford and wife, Jane Ford, by deed dated the 7th day of January, 1933, and recorded in Deed Book 132, page 144, Hopkins County Court Clerk's Office.

L. E. Smith died intestate July 7, 1946, and was survived by the Grantors as his heirs at law. See Affidavit of Inheritance recorded in Deed Book 352, page 477, Hopkins County Court Clerk's Office.

TO HAVE AND TO HOLD the above described real estate, with all of the appurtenances thereunto belonging, unto the Grantees, or the survivor of them, their heirs and assigns forever, with covenant of General Warranty of Title.

WITNESS our hands this the _____ day of July, 1973.

Fannie Smith
Fannie Smith

Exie B. Smith Butler
Exie B. Smith Butler

Woodrow Butler
Woodrow Butler

William M. Smith
William M. Smith

Judy Smith
Judy Smith

Thomas P. Smith
Thomas P. Smith

Jean Smith
Jean Smith

Delores Smith
Delores Smith

474

Elizabeth A. Smith Thompson
Elizabeth A. Smith Thompson

Harold Thompson
Harold Thompson

Shirley Gail Smith Cotton
Shirley Gail Smith Cotton

Derby Paul Cotton
Derby Paul Cotton

Brenda R. Smith Hartline
Brenda R. Smith Hartline

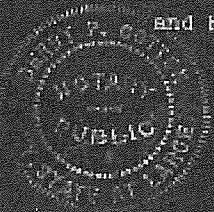
David Hartline
David Hartline

Bobbie C. Smith Utley
Bobbie C. Smith Utley

Robert W. Utley
ROBERT W. UTLEY

STATE OF KENTUCKY)
COUNTY OF HOPKINS) SGT.

The foregoing Deed of Conveyance was acknowledged before me this 26th day of July, 1973, by Exie B. Smith Butler and her husband, Woodrow Butler.

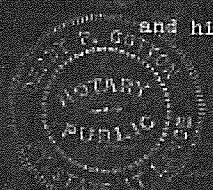


Derby P. Cotton
NOTARY PUBLIC

My commission expires: FEB. 18, 1975

STATE OF KENTUCKY)
COUNTY OF HOPKINS) SGT.

The foregoing Deed of Conveyance was acknowledged before me this 26th day of July, 1973, by William M. Smith



and his wife, Judy Smith.

475

Deley P. Cotton
NOTARY PUBLIC

My commission expires: FEB. 18, 1975

STATE OF MICHIGAN)
COUNTY OF Wayne) SCT.

The foregoing Deed of Conveyance was acknowledged before me this 16th day of July, 1973, by Thomas B. Smith and his wife, Jean Smith.

LILLIAN E. KEYS
Notary Public, Monroe County, Michigan
Active in Wayne County, Michigan
My Commission Expires: 4/15/75

Lillian E. Keys
NOTARY PUBLIC

My commission expires: May 15, 1975

STATE OF KENTUCKY)
COUNTY OF HOPKINS) SCT.

The foregoing Deed of Conveyance was acknowledged before me this 26th day of July, 1973, by Delores Smith, single, and Fannie Smith, a widow.

Deley P. Cotton
NOTARY PUBLIC

My commission expires: FEB. 18, 1975

STATE OF ILLINOIS)
COUNTY OF) SCT.

The foregoing Deed of Conveyance was acknowledged before me this 3 day of July, 1973, by Elizabeth A. Smith Thompson and her husband, Harold Thompson.

Edna Davis
NOTARY PUBLIC

My commission expires: Oct 6, 1975

PARCEL INFORMATION

Map **NORT-3-5-16-3**

PROPERTY CARD

Location HICKORY LN

Description
District 06-Nortonville Class Farm
Owner KNIGHT DOROTHY BRASHER
10630 PRINCETON RD
CERULEAN KY 42216-

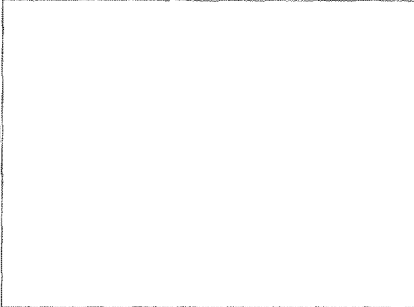
Printed 5/13/2013

Account 38110
Building 1
Year Const 0 EffectiveAge 0 BuildingValue 0

Subdivision
Block

Lot

| | | | |
|--------------------------------------|----------------------------------|--------------------------------------|-----------------------------------------|
| Date Checked | Checked By | Date Assessed | 1/1/2011 |
| Lot Size | Lot Size Sq Ft | Lot Est Actual | |
| Frontage | Depth | Plat Book | |
| Acres | Acres Est/Act | Source | |
| Neighborhood | Site Condition | Zoning | |
| Road | Driveway | Sidewalks | |
| Topography | Shape | Drainage | |
| Flood Hazard | | Land Value | 16,700 |
| Tenant Houses | Barns | Silos | Grain Bins |
| | | | Fencing |
| <input type="checkbox"/> Electricity | <input type="checkbox"/> Gas | <input type="checkbox"/> Water | <input type="checkbox"/> Sewer |
| | | Stalls | Bents |
| No Stories | Avg Height | Date Assessed | 1/1/2011 |
| Date Checked | Checked By | Com2 | |
| Residence Type | Commercial | Model | |
| Mobile Home Type | Manufacturer | Size | |
| Garage/Carport | Type | Area | |
| Width | Length | Area | |
| Neighborhood | Site Cond | Bldg Cond | |
| Structure | Exterior | Foundation | |
| Const. Type | Const. Quality | Roof Pitch | |
| Roof Type | Roof Cover | Basement Finish | |
| Basement Type | Basement Size | Supplemental | |
| Heat Type | Heat Source | Air Cond Type | |
| <input type="checkbox"/> Heat | <input type="checkbox"/> Cooling | <input type="checkbox"/> Electricity | <input type="checkbox"/> Gas |
| | | <input type="checkbox"/> Water | <input type="checkbox"/> Sewer |
| | | <input type="checkbox"/> Sprinklers | <input type="checkbox"/> Fire Alarm |
| | | | <input type="checkbox"/> Special Imprmt |



| | | |
|---------------|------------|---------------|
| Farm | Living | Sq Feet |
| Skirting | Dining | Living |
| Exterior | Family | Basement |
| Driveway | Kitchen | Garage |
| Sidewalks | BedRm | Porch |
| Patio/Deck | Full Bath | Deck |
| Tennis Court | Half Bath | Office |
| Pool | Other Rm | Manufacturing |
| Pool Size | Total | Asphalt |
| Air Cond Type | Fireplaces | Concrete |

| Year | Net Taxable | Exemption | Total Taxable | Land | Improvements | Ag Improvements | Land FCY | Imprmnts FCY | Ag Imprmnts FCY | Total FCY |
|------|-------------|-----------|---------------|------|--------------|-----------------|----------|--------------|-----------------|-----------|
| 2013 | 700 | 0 | 700 | 700 | 0 | 0 | 13,700 | 0 | 0 | 13,700 |
| 2012 | 700 | 0 | 700 | 700 | 0 | 0 | 13,700 | 0 | 0 | 13,700 |
| 2011 | 700 | 0 | 700 | 700 | 0 | 0 | 13,700 | 0 | 0 | 13,700 |

Soil Capability Classification And Valuation

NORT-3-5-16-3

CHAIN OF OWNERSHIP

Permits List

Notes
ASSESSMENT IS FOR PORTION OF PARCEL WITHIN CITY LIMITS OF NORTONVILLE
2010 ADD ON BILL

PICTURES



Looking at Site from the North



Looking at Site from the South



Looking at Site from the East



Looking at from the West



Looking North from the Site



Looking South from the Site



Looking East from Site



Looking West from Site



Proposed Access Road



View of Lease Area



Power and Telco, and Proposed Access Entrance

EXHIBIT F
FAA



Obstruction Evaluation
Version 2013/2/3

Notice of Proposed Construction or Alteration - Off Airport

Print this page

- Home
- FAA OE/AAA Offices
- View Determined Cases
- View Interim Cases
- View Proposed Cases
- View Supplemental Notices (Form 7460-2)
- View Circularized Cases
- Search Archives
- Download Archives
- Circle Search for Cases
- Circle Search for Airports
- General FAQs
- Wind Turbine FAQs
- Discretionary Review FAQs
- Notice Criteria Tool
- DoD Preliminary Screening Tool
- Wind Turbine Build Out
- Distance Calculation Tool

Project Name: AMERI-000249007-13 **Sponsor:** American Towers, LLC

Details for Case : NORTONVILLE KY (281319)

Show Project Summary

Case Status

ASN: 2013-ASO-7494-OE **Date Accepted:** 08/27/2013
Status: Accepted **Date Determined:**
Letters: None
Documents: 08/27/2013 281319_TOC_061313...
Public Comments: None **Project Documents:** None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
if Temporary : Months: Days:
Work Schedule - Start:
Work Schedule - End:
**For temporary cranes-Does the permanent structure require separate notice to the FAA?
 To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
 If it is not filed, please state the reason in the Description of Proposal.*
State Filing:

Structure Summary

Structure Type: Antenna Tower
Structure Name: NORTONVILLE KY (281319)
NOTAM Number:
FCC Number:
Prior ASN:

- OE/AAA Account
- Portal Page
- My Cases (Off Airport)
- My Cases (On Airport)
- My Sponsors
- My Circ Comments
- Add New Case (Off Airport)
- Add New Case (On Airport)
- Add Supplemental Notice (7460-2 Form)
- My Case Transfer History
- Update User Account
- What's New
- Change Password
- Logout

Structure Details

Latitude: 37° 10' 29.63" N
Longitude: 87° 27' 21.79" W
Horizontal Datum: NAD83
Site Elevation (SE): 481 (nearest foot)
Structure Height (AGL): 199 (nearest foot)
Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*
Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*
Requested Marking/Lighting: None

Common Frequency Bands

| Low Freq | High Freq | Freq 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 |

Other :
Recommended Marking/Lighting:
Current Marking/Lighting: N/A Proposed Structure
Other :

Specific Frequencies

Nearest City: NORTONVILLE
Nearest State: Kentucky
Description of Location: Please see attached survey
On the Project Summary page upload any certified survey.
Description of Proposal: Proposed tower

- Information Resources
- FAA Acronyms
- Forms
- Regulatory Policy
- Relevant Advisory Circulars
- Survey Accuracy
- Light Outage Reporting
- Useful Links
- State Aviation Contacts
- On Airport Contacts
- Off Airport Contacts

ATC

1A Letter

Date: June 13, 2013
FSTAN Project No: 13-8558

Site Name: Nortonville
Site ID: 143761

For Aeronautical Study No.

Location: City Nortonville, KY.
County Hopkins

U.S.G.S. Quadrangle: Nortonville, KY.

(NAD 27) LATITUDE 37° 10' 29.47"
LONGITUDE 87° 27' 21.79"

(NAD 83) LATITUDE 37° 10' 29.63"
LONGITUDE 87° 27' 21.79"

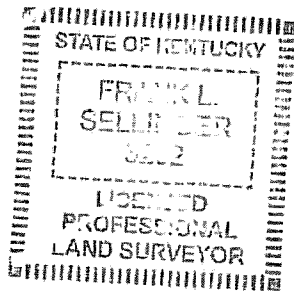
SITE ELEVATION (NAVD 88) 481' ± AMSL

I Certify, to the best of my knowledge and belief, that the horizontal and vertical datum as established from the referenced U.S.G.S. Quadrangle, is accurate to 1A Reporting requirements of ± 20 feet horizontally and ± 3 vertically.

The horizontal datum (coordinates) are in terms of the North American Datum of 1927 (NAD 27) and 1983 (NAD 83) and expressed as degrees, minutes and seconds.

The vertical datum (heights) are in terms of the National Geodetic Vertical Datum of 1988 and are determined to the nearest foot.

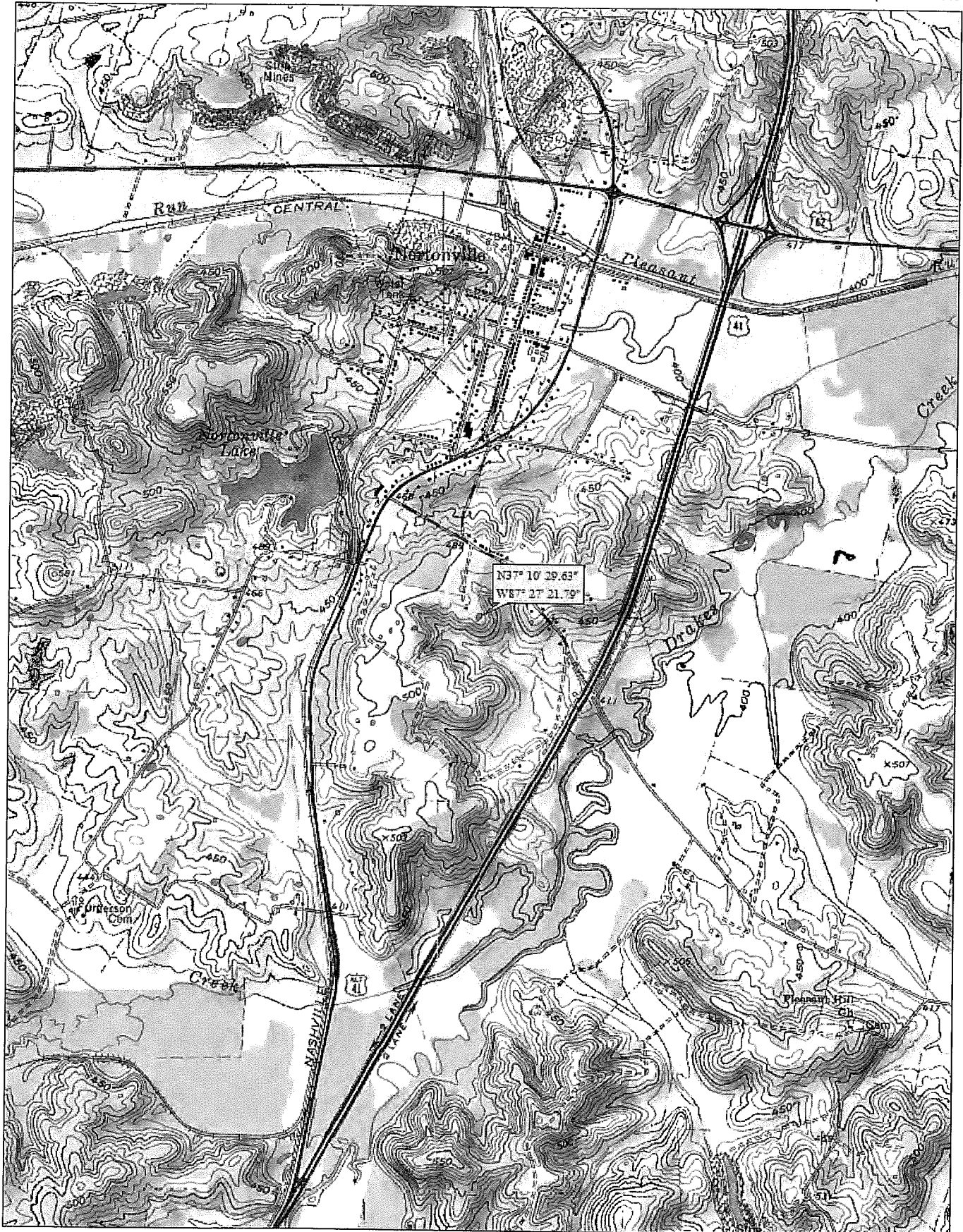
Kentucky State Plane Coordinates (Single Zone) were established with Trimble Global Positioning Systems (GPS) receivers. This site has ties to the National Geodetic Reference System established by the National Geodetic Survey, formerly the U.S. Coast & Geodetic Survey by measurements to PID Station "DK3316", designated as "KY HWY DIST 2 CORS ARP".



CONSULTANT

A handwritten signature in black ink, appearing to read "Frank L. Sellinger II".

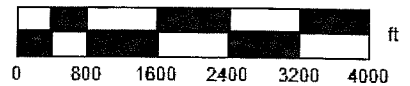
Frank L. Sellinger II, P.L.S. No. 3282
FSTAN Land Surveyors and Consulting Engineers
426 E Warnock St, Louisville, KY 40217
Phone: 502-635-5866 Fax: 502-636-5263



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www.delorme.com



Data Zoom 13-0

EXHIBIT G
KENTUCKY AIRPORT ZONING COMMISSION

From: Houlihan, John (KYTC) [mailto:John.Houlihan@ky.gov]
Sent: Tuesday, October 15, 2013 10:59 AM
To: Katie Miller
Subject: RE: ATC Proposed Tower # 281319 OoJ

The above subject does not require a permit from the Kentucky Airport Zoning Commission. The antenna does not exceed any of the following criteria:
602 KAR 50:030. Jurisdiction of the Kentucky Airport Zoning Commission.

RELATES TO: KRS 183.861, 183.865, 183.867, 183.870
STATUTORY AUTHORITY: KRS 183.861

NECESSITY, FUNCTION, AND CONFORMITY: KRS 183.867 specifies that the commission has jurisdiction over zoning for all public use and military airports. This administrative regulation defines the areas over which the Kentucky Airport Zoning Commission has jurisdiction for the purpose of zoning in accordance with KRS Chapter 183 and specifics when the owner or person who has control over a structure which encroaches on the jurisdiction of the Kentucky Airport Zoning Commission shall apply for a permit.

Section 1. The commission has zoning jurisdiction over that airspace over and around the public use and military airports within the Commonwealth which lies above the Imaginary surface that extends outward and upward at one (1) of the following slopes:

- (1) 100 to one (1) for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each public use and military airport with at least one (1) runway 3,200 feet or more in length; or
- (2) Fifty (50) to one (1) for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each public use and military airport with its longest runway less than 3,200 feet in actual length.

Section 2. The commission has zoning jurisdiction over the use of land and structures within public use airports within the state.

Section 3. The commission has jurisdiction from the ground upward within the limits of the primary and approach surfaces of each public use and military airport as depicted on Airport Zoning Maps approved by the Kentucky Airport Zoning Commission.

Section 4. The commission has jurisdiction over the airspace of the Commonwealth that exceeds 200 feet in height above ground level.

Section 5. The owner or person who has control over a structure which penetrates or will penetrate the airspace over which the commission has jurisdiction shall apply for a permit from the commission in accordance with 602 KAR 50:090. (KAV-9-1; 1 Ky.R. 807; eff. 5-14-75; Am. 2 Ky.R. 306; eff. 3-10-76; 5 Ky.R. 599; eff. 3-7-79; 10 Ky.R. 445; eff. 1-4-84; 14 Ky.R. 267; eff. 9-10-87; 19 Ky.R. 800; eff. 11-4-92; 27 Ky.R. 2228; 2774; eff. 4-9-2001.)

Please keep this email for your records. Thank you.

Kentucky Airport Zoning Commission (KAZC)
John Houlihan, Administrator
90 Airport Road, Building 400
Frankfort, KY 40601
Direct Line 502-564-0310, Cell 502-330-3955, Office 502-564-4480, Fax 502-564-7953

KAZC webpage: <http://transportation.ky.gov/Aviation/Pages/Zoning-Commission.aspx>

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From: Katie Miller [mailto:Katie.Miller@AmericanTower.com]
Sent: Tuesday, October 15, 2013 9:39 AM

To: Houlihan, John (KYTC)

Subject: ATC Proposed Tower # 281319 OOJ

Please see attached KAZC Application, copy of FAA 7460-1, and map for ATC proposed tower # 281319.

Thank you,

Katie Miller

Regulatory Compliance Coordinator – FAA/FCC

American Tower Corporation

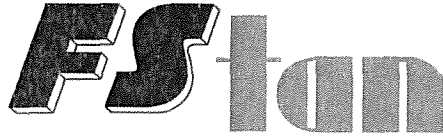
10 Presidential Way

Woburn, MA 01801

office: 781.926.7126

katie.miller@americantower.com

EXHIBIT H
GEOTECHNICAL REPORT



Land Surveyors & Consulting Engineers

GEOTECHNICAL FOUNDATION DESIGN STUDY

Proposed Nortonville Tower
N37° 10' 29.63" W87° 27' 21.79"
460 Hickory Lane,
Nortonville, Hopkins County, Kentucky
FStan Project No. 13-8622; AT&T NSB No. 143761; ATC No. 281319

**FStan Land Surveyors &
Consulting Engineers
426 East Warnock Street
Louisville, KY 40217
Phone: (502) 636-5111
Fax: (502) 636-5263**

Prepared For:

**Ms. Melissa Brofford
American Tower Corporation
10 Presidential Way
Woburn, MA 01801**

Date: August 18, 2013



Land Surveyors and Consulting Engineers
Formerly F.S. Land & T. Alan Neal Companies

August 18, 2013

Ms. Melissa Brofford
American Tower Corporation
10 Presidential Way
Woburn, MA 01801

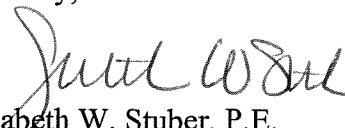
Re: Geotechnical Engineering Study
Proposed 195-foot Monopole Tower with 4 foot Lighting Arrestor
American Tower Corporation Site Name: Nortonville
N37° 10' 29.63" W87° 27' 21.79"
460 Hickory Lane, Nortonville, Hopkins County, Kentucky
FStan Project No. 13-8622; AT&T NSB No. 143761; ATC No. 281319

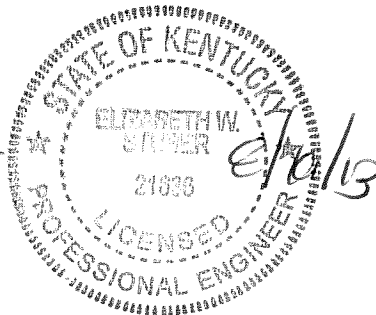
Dear Ms. Brofford:

Transmitted herewith is our geotechnical engineering report for the referenced project. This report contains recommendations to aid design and construction of the tower foundations based on our report of the soil conditions given under the cover of FStan 12-8621.

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,


Elizabeth W. Stuber, P.E.
Geotechnical Engineer
Kentucky License No.: 21636



Copies submitted: (3) Ms. Melissa Brofford

LETTER OF TRANSMITTAL

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APPENDIX

BORING LOCATION PLAN
GEOTECHNICAL BORING LOG
SOIL SAMPLE CLASSIFICATION

GEOTECHNICAL ENGINEERING INVESTIGATION
Proposed 195-foot Monopole Tower with 4 foot Lighting Arrestor
American Tower Corporation Site Name: Nortonville
N37° 10' 29.63" W87° 27' 21.79"
460 Hickory Lane, Nortonville, Hopkins County, Kentucky
FStan Project No. 13-8622; AT&T NSB No. 142761; ATC No. 281319

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 soil test 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

American Tower Corporation is proposing to construct a 195 feet tall monopole communications tower with a 4 foot lighting arrestor on property owned by Dorothy Knight located at N37° 10' 29.63" W87° 27' 21.79", 460 Hickory Lane, Nortonville, Hopkins County, Kentucky. The proposed lease area will be 100 feet x 100 feet with an access road from the site north and west to Hickory Lane. The site is located in an undeveloped field in a rural area south of Nortonville. The topographical site relief within the lease area is less than 5 feet. The elevation of the site is approximately 481 feet msl. Surface water runoff is directed by the topography toward the southeast. A detailed evaluation of long-term slope stability was beyond the scope of this study. The proposed tower location is shown on the Boring Location Plan in the Appendix.

Preliminary information provided us indicates that this project will consist of constructing a monopole communications tower 195 feet tall with a 4 foot lightning arrestor. We have assumed the following structural information:

- Compression = 400 kips
- Uplift = 300 kips
- Total shear = 40 kips

The development will also include a small equipment shelter near the base of the tower. The wall and floor loads for the shelter are assumed to be less than 4 kip/ln.ft. and 200 lbs/sq.ft., respectively.

Site Geology

The Nortonville, Kentucky Geologic Quadrangle map indicates that the Upper Pennsylvanian aged Madisonville Limestone Formations underlay the site. These formations consist of sandstone, siltstone, shale, limestone and coal. The Madisonville formation is also known to be karst with sinkhole, joints and an uneven bedrock surface. Numerous sinkholes were noted on the 7.5-minute topographic map within one-half mile of the site. No sinkholes were noted on the project site. The site is also located in the Western Kentucky Coal Fields and strip mining was noted very near the site. Oil and gas wells and cave formations are numerous Hopkins County.

3. 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 FStan 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.

3.1 Tower

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

3.1.1. Drilled Piers

Drilled piers that bear in the weathered shale or siltstone bedrock below a depth of about 10 feet can be designed for a net allowable end bearing pressure of 20,000 pounds per square foot (psf). However, this value should be reduced to 10,000 psf below a depth of 20 feet. 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 values provided for undrained shear strength and total unit weight are ultimate values and appropriate factors of safety should be used in conjunction with these values. If the piers will bear deeper than about 40 feet, a deeper boring should be drilled to determine the nature of the deeper material.

| Depth Below Ground Surface, feet | Undrained Shear Strength, psf | Angle of Internal Friction, Ø, degrees | Total Unit Weight, pcf | Allowable Passive Soil Pressure, psf/one foot of depth | Allowable Side Friction, psf |
|----------------------------------|-------------------------------|----------------------------------------|------------------------|--------------------------------------------------------|------------------------------|
| 0 – 6 | 1,000 | 0 | 120 | 750 + 40D | 200 |
| 6 – 20 | 10,000 | 0 | 135 | 7,500 + 45(D-6) | 2500 |
| 20 - 40 | 5,000 | 0 | 135 | 3,500 + 45(D-20) | 1200 |

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.

3.1.2. Mat Foundation

As an alternative, the tower could be supported on a common mat foundation bearing at a depth of at least 3.5 feet in the highly weathered shale. A net allowable bearing pressure of up to 2,000 pounds per square foot may be used. If the mat bears in the highly weathered sandstone, the net allowable bearing pressure can be increased to 4,000 psf. These values 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 underlying clay soil. The friction value can be increased to 0.45 between the concrete and sandstone bedrock. 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.

3.2. Equipment Building

The equipment building may be supported on shallow spread footings bearing in the shallow weathered shale or silty clay and designed for a net allowable soil pressure of 1,500 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 may be subgrade supported on a properly prepared subgrade. The slab should be designed and adequately reinforced to resist the loads proposed. The exposed subgrade should be carefully inspected by probing and testing as needed. Any organic material still in place, frozen or excessively soft soil and other undesirable materials should be removed.

Once the subgrade has been properly prepared and evaluated, fill may be placed to attain the desired final grade. Any non-organic, naturally occurring, non-expansive soils can be used for

structural fill, including those encountered on this site, pending evaluation by the geotechnical engineer.

All engineered fill should be compacted to a dry density of at least 98 percent of the standard Proctor maximum dry density (ASTM D698). The compaction should be accomplished by placing the fill in about eight inch loose lifts and mechanically compacting each lift to at least the specified density. Field tests should be performed on each lift as necessary to insure that adequate compaction is being achieved.

3.3. Drainage and Groundwater Considerations

Good site drainage must be provided. Surface run-off water should be drained away from the shelter building 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 the proposed structures.

4. 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.

4.1 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 the borings were dry prior to rock coring and significant seepage is not anticipated, the drilled pier contractor should have pumps on hand to remove water in the event seepage into the drilled pier is encountered.
- 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 sidewall collapse, prevent excessive mud and water intrusion, and to allow workers to safely enter, clean and inspect the drilled shaft.
- Clean the socket "face" prior to concrete placements. Cleaning will require hand cleaning or washing if a mud smear forms on the face of the rock. The geotechnical engineer should approve the rock socket surface prior to concrete placement.
- 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.

4.2 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.

4.3 Construction Dewatering

Groundwater may be encountered during drilled pier excavation. It is anticipated that any such seepage can be handled by conventional dewatering methods such as pumping from sumps. Dewatering of drilled pier excavations that extend below the groundwater level may be more difficult 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.

5. 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. FStan 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
GEOTECHNICAL BORING LOG
SOIL SAMPLE CLASSIFICATION



F.S. Tan Land Consulting Engineers
 P.O. Box 17546
 Louisville, KY 40217
 502-636-5111
 502-636-5263

Geotechnical Boring Log

Boring No: **B-1**

| | |
|---------------------------------------------|---------------------------------|
| Client: American Tower Corporation | Project Number: 13-8621 |
| Project: Proposed Nortonville Tower | Drilling Firm: Hoosier Drilling |
| Location: N37° 10' 29.63" / W87° 27' 21.79" | Project Manager: Beth Stuber |
| Date Started: 8/13/2013 | Total Depth of Boring: 40 ft |
| Date Completed: 8/13/2013 | NA on rods |
| Boring Method: HSA-Manual Hammer | DRY at completion |
| Surface Elevation: NA | NA NA hours after completion |

| Layer Depth ft | Legend | Material Description | Depth Scale ft | Sample Data | | | | | | Remarks |
|----------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------|------|----------------|------------|--------|-----|------------------------------------------|
| | | | | No. | Type | Blows | Rec. % | PP tsf | W % | |
| 0.0 - 6.0 | | SILTY CLAY (CL) - soft, moist, brown-light gray mottled - medium stiff, trace sandstone fragments | 0 1 2 3 4 5 | 1 2 | SS | 2-2-3 3-4-5 | 100 100 | | | |
| 6.0 - 10.0 | | highly weathered, orange-brown SANDSTONE | 6 7 8 9 10 | 3 4 | SS | 4-6-29 50 | 67 6 | | | |
| 10.0 - 20.0 | | SANDSTONE - hard, slightly weathered, orange brown - soft, rock sample washed out of the barrell, driller noted shale and coal -NO VOIDS noted by the drillers | 10 11 12 13 14 15 16 17 18 19 20 | 5 6 | RC | | 88 30 | | | RQD = 68 percent RQD = 12 percent |
| 20.0 - 30.0 | | | 20 21 22 23 24 25 26 27 28 29 30 | | | | | | | |
| 30.0 - 35.0 | | | 30 31 32 33 34 35 | 7 | RC | | 20 | | | RQD = 0 percent |
| 35.0 - 40.0 | | | 35 36 37 38 39 40 | | | | | | | |
| 40.0 | | Bottom of Boring at 40 ft | 40 | | | | | | | |

GEOTECHNICAL BORING LOG 13-8621.GPJ FSTAN.GDT 8/18/13



F.S. Tan Land Consulting Engineers
 P.O. Box 17546
 Louisville, KY 40217
 502-636-5111
 502-636-5263

Geotechnical Boring Log

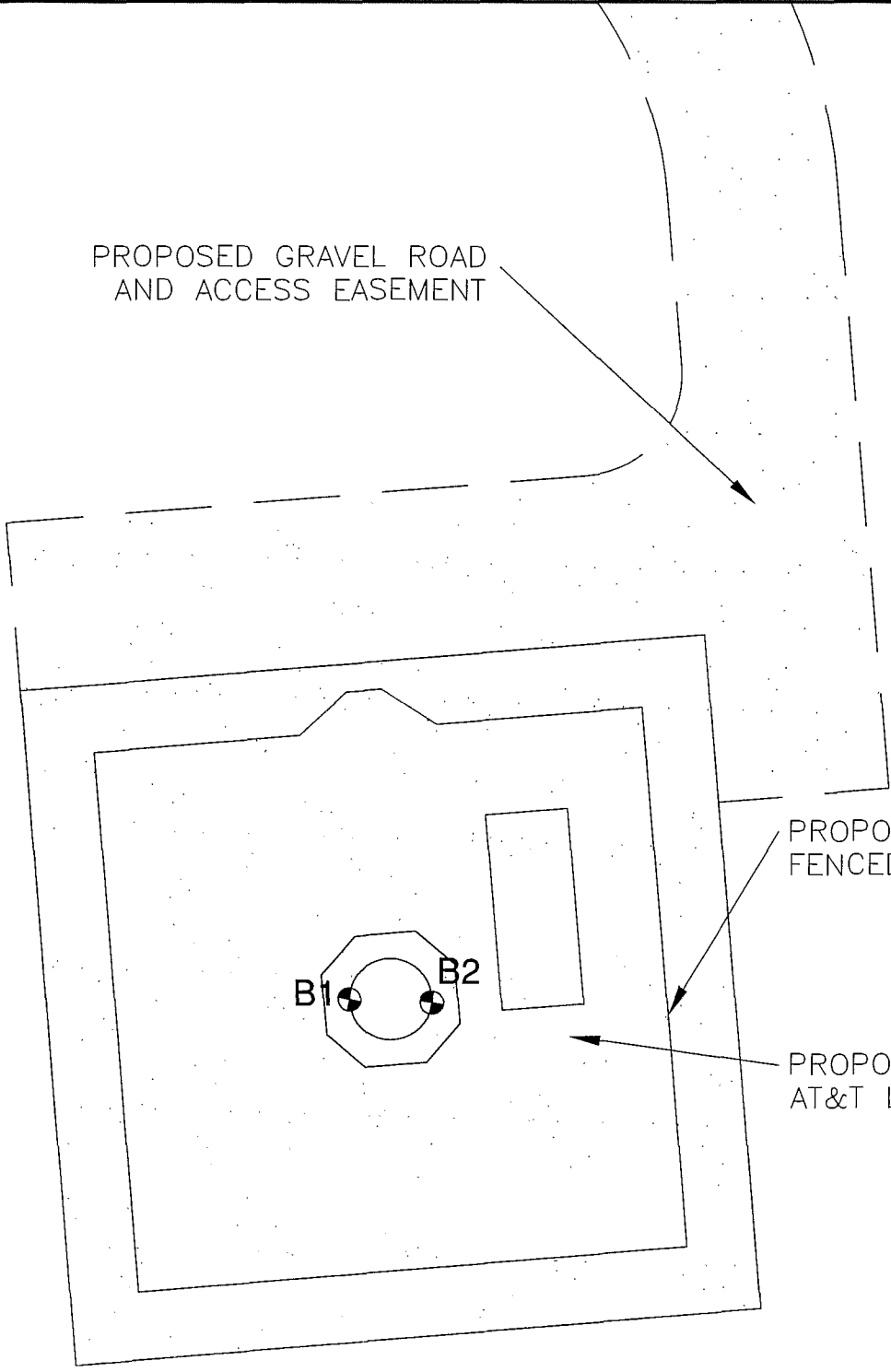
Boring No: **B-2**

| | |
|---------------------------------------------|---------------------------------|
| Client: American Tower Corporation | Project Number: 13-8621 |
| Project: Proposed Nortonville Tower | Drilling Firm: Hoosier Drilling |
| Location: N37° 10' 29.63" / W87° 27' 21.79" | Project Manager: Beth Stuber |
| Date Started: 8/13/2013 | Total Depth of Boring: 10 ft |
| Date Completed: 8/13/2013 | NA on rods |
| Boring Method: HSA-Manual Hammer | DRY at completion |
| Surface Elevation: NA | NA NA hours after completion |

| Layer Depth ft | Legend | Material Description | Depth Scale ft | Sample Data | | | | | | Remarks |
|----------------|---------------------|--------------------------------------------------------------|----------------|-------------|--------|-------|--------|--------|-----|---------|
| | | | | No. | Type | Blows | Rec. % | PP tsf | W % | |
| | [Diagonal Hatching] | SILTY CLAY (CL) - soft, very moist, brown-light gray mottled | | | | | | | | |
| | | - medium stiff, moist | | | | | | | | |
| 7.0 | [Dotted Pattern] | highly weathered SANDSTONE | | | | | | | | |
| 10.0 | | Bottom of Boring at 10 ft | | | | | | | | |
| | | | 1 | SS | 3-2-3 | 100 | | | | |
| | | | 2 | SS | 4-3-4 | 100 | | | | |
| | | | 3 | SS | 5-8-23 | 72 | | | | |
| | | | 4 | SS | 50 | 0 | | | | |



PROPOSED GRAVEL ROAD
AND ACCESS EASEMENT



PROPOSED 80' X 80'
FENCED AREA

PROPOSED 12' X 29'
AT&T LEASE AREA

● BORING LOCATION

BORING LOCATION PLAN

SITE NAME: NORTONVILLE
PROPOSED 195' MONOPOLE TOWER
WITH 4' LIGHTING ARRESTOR

NOT TO SCALE

FSTAN PROJECT #:
13-8622

DATE:
08-18-13

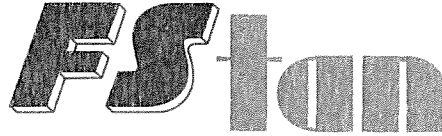


Formerly F.S. Land &
T. Alan Neal Company
Land Surveyors and Consulting Engineers
2540 Ridgeman Court, Suite 102
Louisville, KY 40299
Phone: (502) 635-5866 (502) 636-5111
Fax: (502) 636-5263

SOIL CLASSIFICATION CHART

| MAJOR DIVISIONS | | | SYMBOLS | | TYPICAL DESCRIPTIONS | |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| | | | GRAPH | LETTER | | |
| COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE | GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE | CLEAN GRAVELS (LITTLE OR NO FINES) | | GW | WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES | |
| | | GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES) | | GP | POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES | |
| | | GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES) | | GM | SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES | |
| | | GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES) | | GC | CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES | |
| | SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE | CLEAN SANDS (LITTLE OR NO FINES) | | SW | WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES | |
| | | CLEAN SANDS (LITTLE OR NO FINES) | | SP | POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES | |
| | | SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES) | | SM | SILTY SANDS, SAND - SILT MIXTURES | |
| | | SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES) | | SC | CLAYEY SANDS, SAND - CLAY MIXTURES | |
| | | FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE | SILTS AND CLAYS LIQUID LIMIT LESS THAN 50 | | ML | INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY |
| | | | | | CL | INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS |
| | OL | | | ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY | | |
| SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50 | | | MH | INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS | | |
| | | | CH | INORGANIC CLAYS OF HIGH PLASTICITY | | |
| | OH | ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS | | | | |
| HIGHLY ORGANIC SOILS | | | | PT | PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS | |

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS



Land Surveyors & Consulting Engineers

GEOTECHNICAL SOIL ANALYSIS STUDY

Proposed Nortonville Tower
N37° 10' 29.63" W87° 27' 21.79"
460 Hickory Lane,
Nortonville, Hopkins County, Kentucky
FStan Project No. 13-8621; AT&T NSB No. 143761; ATC No. 281319

**FStan Land Surveyors &
Consulting Engineers
426 East Warnock Street
Louisville, KY 40217
Phone: (502) 636-5111
Fax: (502) 636-5263**

Prepared For:

**Ms. Melissa Brofford
American Tower Corporation
10 Presidential Way
Woburn, MA 01801**

Date: August 18, 2013



Land Surveyors and Consulting Engineers
Formerly F.S. Land & T. Alan Neal Companies

August 18, 2013

Ms. Melissa Brofford
American Tower Corporation
10 Presidential Way
Woburn, MA 01801

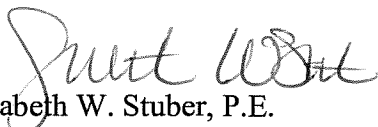
Re: Geotechnical Engineering Study
Proposed 195-foot Monopole Tower with 4 foot Lighting Arrestor
American Tower Corporation Site Name: Nortonville
N37° 10' 29.63" W87° 27' 21.79"
460 Hickory Lane, Nortonville, Hopkins County, Kentucky
FStan Project No. 13-8621; AT&T NSB No. 143761; ATC No. 281319

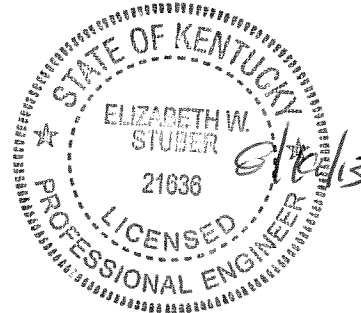
Dear Ms. Brofford:

Transmitted herewith is our geotechnical engineering report for the referenced project. This report contains our findings and an engineering interpretation of these findings.

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,


Elizabeth W. Stuber, P.E.
Geotechnical Engineer
Kentucky License No.: 21636



Copies submitted: (3) Ms. Melissa Brofford

LETTER OF TRANSMITTAL

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| 2. PROJECT CHARACTERISTICS | 1 |
| 3. SUBSURFACE CONDITIONS | 1 |
| 4. WARRANTY AND LIMITATIONS OF STUDY | 3 |

APPENDIX

BORING LOCATION PLAN
GEOTECHNICAL BORING LOG
SOIL SAMPLE CLASSIFICATION

GEOTECHNICAL ENGINEERING INVESTIGATION
Proposed 195-foot Monopole Tower with 4 foot Lighting Arrestor
American Tower Corporation Site Name: Nortonville
N37° 10' 29.63" W87° 27' 21.79"
460 Hickory Lane, Nortonville, Hopkins County, Kentucky
FStan Project No. 13-8621; AT&T NSB No. 143761; ATC No. 281319

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 soil test borings and analyzing the samples taken.

2. PROJECT CHARACTERISTICS

American Tower Corporation is proposing to construct a 195 feet tall monopole communications tower with a 4 foot lighting arrestor on property owned by Dorothy Knight located at N37° 10' 29.63" W87° 27' 21.79", 460 Hickory Lane, Nortonville, Hopkins County, Kentucky.

Site Geology

The Nortonville, Kentucky Geologic Quadrangle map indicates that the Upper Pennsylvanian aged Madisonville Limestone Formations underlay the site. These formations consist of sandstone, siltstone, shale, limestone and coal. The Madisonville formation is also known to be karst with sinkholes, joints and an uneven bedrock surface. Numerous sinkholes were noted on the 7.5-minute topographic map within one-half mile of the site. No sinkholes were noted on the project site. The site is also located in the Western Kentucky Coal Fields and strip mining was noted very near the site. Oil and gas wells and cave formations are numerous in Hopkins County.

3. SUBSURFACE CONDITIONS

The subsurface conditions were explored by drilling two test borings at the base of the proposed tower that was staked in the field by the project surveyor. Split-spoon samples were obtained by the Standard Penetration Test (SPT) procedure (ASTM D1586) in the test boring. 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 logs are 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 logs 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. The general subsurface conditions disclosed by the test borings are discussed in the following paragraphs.

Only a thin veneer of topsoil was encountered at the existing ground surface. Below the topsoil, the borings encountered silty clay (CL) of low plasticity. The SPT N-values in the clayey soils ranged from 5 to 9 blows per foot indicating a soft to medium stiff consistency. Between 6 and 7 feet, the boring encountered highly weathered sandstone shale to the auger refusal of 10 feet. 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 from 10 to 40 feet below the ground surface in Boring 1. Sandstone that was hard, slightly weathered was encountered. At about 20 feet, siltstone became soft and interbedded with shale and coal that washed out the core barrel during drilling operations. The recoveries of the rock cores were 20 to 88 percent and the RQD values ranged from 0 to 68 percent. These values generally represent poor to fair quality rock from a foundation support viewpoint.

Observations made at the completion of soil drilling operations indicated the borings 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 2002 Kentucky Building Code, the site class is considered "C". 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. 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. FStan 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.

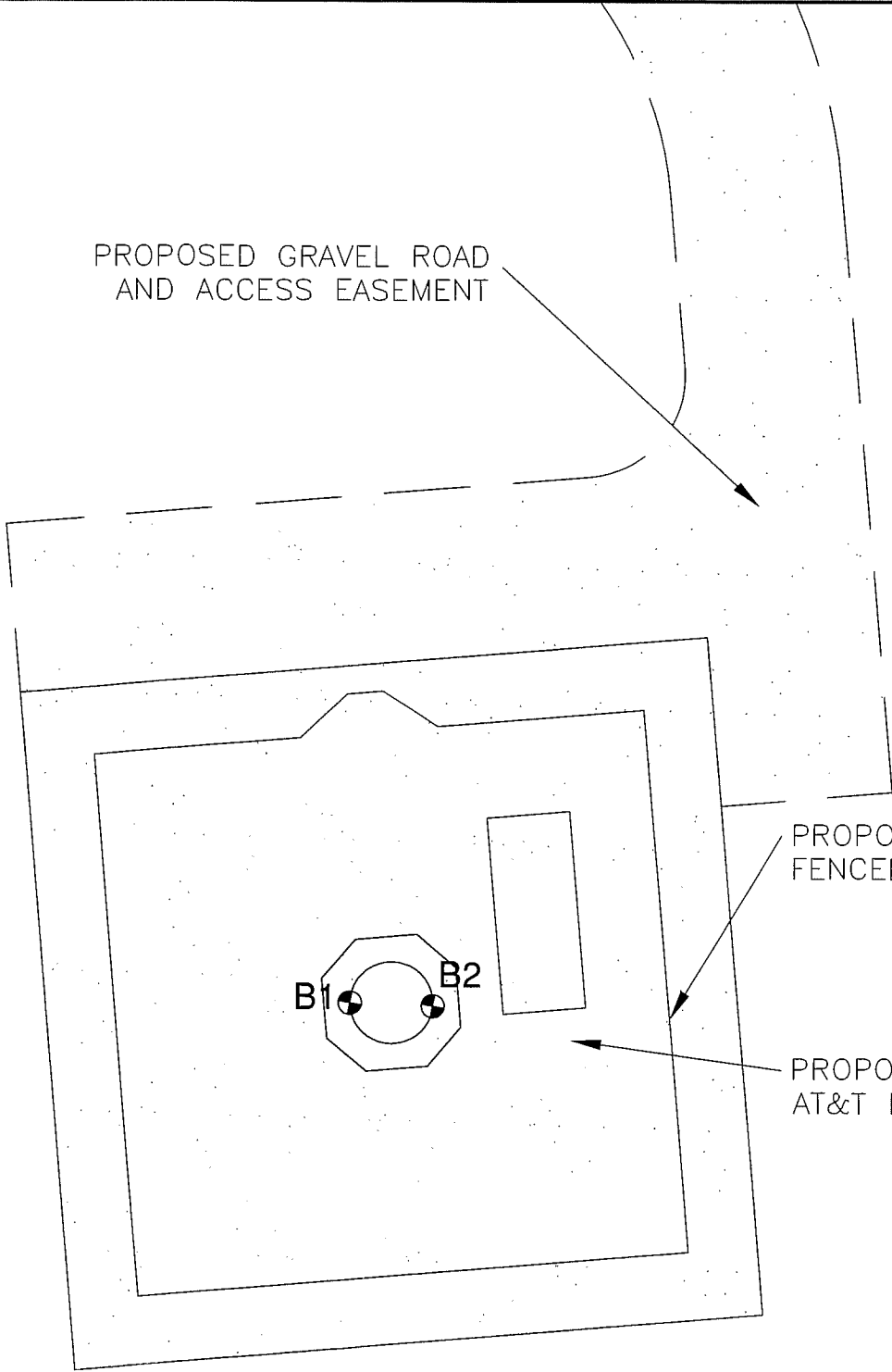
The nature and extent of variation and change in the subsurface conditions at the site may not become evident until the course of construction. Construction monitoring by the geotechnical engineer or a representative is therefore considered necessary to verify the subsurface conditions and to check that 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
GEOTECHNICAL BORING LOG
SOIL SAMPLE CLASSIFICATION



PROPOSED GRAVEL ROAD
AND ACCESS EASEMENT



PROPOSED 80' X 80'
FENCED AREA

PROPOSED 12' X 29'
AT&T LEASE AREA

• BORING LOCATION

BORING LOCATION PLAN

SITE NAME: NORTONVILLE
PROPOSED 195' MONOPOLE TOWER
WITH 4' LIGHTING ARRESTOR

NOT TO SCALE

FSTAN PROJECT #:

13-8621

DATE:

08-18-13



Formerly F.S. Land &
T. Alan Neal Company

Land Surveyors and Consulting Engineers
2540 Ridgemoor Court, Suite 102
Louisville, KY 40299

Phone: (502) 635-5866 (502) 636-5111
Fax: (502) 636-5263



F.S. Tan Land Consulting Engineers
 P.O. Box 17546
 Louisville, KY 40217
 502-636-5111
 502-636-5263

Geotechnical Boring Log

Boring No: **B-1**

| | |
|---------------------------------------------|---------------------------------|
| Client: American Tower Corporation | Project Number: 13-8621 |
| Project: Proposed Nortonville Tower | Drilling Firm: Hoosier Drilling |
| Location: N37° 10' 29.63" / W87° 27' 21.79" | Project Manager: Beth Stuber |
| Date Started: 8/13/2013 | Total Depth of Boring: 40 ft |
| Date Completed: 8/13/2013 | NA on rods |
| Boring Method: HSA-Manual Hammer | DRY at completion |
| Surface Elevation: NA | NA NA hours after completion |

| Layer Depth ft | Legend | Material Description | Depth Scale ft | Sample Data | | | | | | Remarks |
|----------------|---------------------|-------------------------------------------------------------------------------------------------------------|----------------|-------------|--------|-------|--------|--------|------------------|---------|
| | | | | No. | Type | Blows | Rec. % | PP tsf | W % | |
| 6.0 | [Diagonal Hatching] | SILTY CLAY (CL) - soft, moist, brown-light gray mottled | 1 | SS | 2-2-3 | 100 | | | | |
| | | - medium stiff, trace sandstone fragments | 2 | SS | 3-4-5 | 100 | | | | |
| 10.0 | [Dotted Pattern] | highly weathered, orange-brown SANDSTONE | 3 | SS | 4-6-29 | 67 | | | | |
| | | SANDSTONE - hard, slightly weathered, orange brown | 4 | SS | 50 | 6 | | | | |
| | [Dotted Pattern] | - soft, rock sample washed out of the barrell, driller noted shale and coal -NO VOIDS noted by the drillers | 5 | RC | | 88 | | | RQD = 68 percent | |
| | | | 6 | RC | | 30 | | | RQD = 12 percent | |
| 40.0 | [Dotted Pattern] | Bottom of Boring at 40 ft | 7 | RC | | 20 | | | RQD = 0 percent | |

GEO TECHNICAL BORING LOG 13-8621.GPJ_FSTAN.GDT 8/18/13



F.S. Tan Land Consulting Engineers
 P.O. Box 17546
 Louisville, KY 40217
 502-636-5111
 502-636-5263

Geotechnical Boring Log

Boring No: **B-2**

| | |
|---------------------------------------------|---------------------------------|
| Client: American Tower Corporation | Project Number: 13-8621 |
| Project: Proposed Nortonville Tower | Drilling Firm: Hoosier Drilling |
| Location: N37° 10' 29.63" / W87° 27' 21.79" | Project Manager: Beth Stuber |
| Date Started: 8/13/2013 | Total Depth of Boring: 10 ft |
| Date Completed: 8/13/2013 | NA on rods |
| Boring Method: HSA-Manual Hammer | DRY at completion |
| Surface Elevation: NA | NA NA hours after completion |

| Layer Depth ft | Legend | Material Description | Depth Scale ft | Sample Data | | | | | | Remarks |
|----------------|---------------------|-------------------------------------------------------------------------------------------|----------------|-------------|------|--------|--------|--------|-----|---------|
| | | | | No. | Type | Blows | Rec. % | PP tsf | W % | |
| 7.0 | [Diagonal Hatching] | SILTY CLAY (CL) - soft, very moist, brown-light gray mottled - medium stiff, moist | 5 | 1 | SS | 3-2-3 | 100 | | | |
| | | | | 2 | SS | 4-3-4 | 100 | | | |
| | | | | 3 | SS | 5-8-23 | 72 | | | |
| | | | | 4 | SS | 50 | 0 | | | |
| 10.0 | [Dotted Pattern] | highly weathered SANDSTONE | 10 | | | | | | | |
| | | Bottom of Boring at 10 ft | | | | | | | | |

GEOTECHNICAL BORING LOG 13-8621.GPJ_FSTAN.GDT 8/18/13

SOIL CLASSIFICATION CHART

| MAJOR DIVISIONS | | | SYMBOLS | | TYPICAL DESCRIPTIONS | |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| | | | GRAPH | LETTER | | |
| <p>COARSE GRAINED SOILS</p> <p>MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE</p> | <p>GRAVEL AND GRAVELLY SOILS</p> <p>MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE</p> | <p>CLEAN GRAVELS</p> <p>(LITTLE OR NO FINES)</p> | | GW | WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES | |
| | | <p>GRAVELS WITH FINES</p> <p>(APPRECIABLE AMOUNT OF FINES)</p> | | GP | POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES | |
| | | <p>GRAVELS WITH FINES</p> <p>(APPRECIABLE AMOUNT OF FINES)</p> | | GM | SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES | |
| | | <p>GRAVELS WITH FINES</p> <p>(APPRECIABLE AMOUNT OF FINES)</p> | | GC | CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES | |
| | <p>SAND AND SANDY SOILS</p> <p>MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE</p> | <p>CLEAN SANDS</p> <p>(LITTLE OR NO FINES)</p> | | SW | WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES | |
| | | <p>CLEAN SANDS</p> <p>(LITTLE OR NO FINES)</p> | | SP | POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES | |
| | | <p>SANDS WITH FINES</p> <p>(APPRECIABLE AMOUNT OF FINES)</p> | | SM | SILTY SANDS, SAND - SILT MIXTURES | |
| | | <p>SANDS WITH FINES</p> <p>(APPRECIABLE AMOUNT OF FINES)</p> | | SC | CLAYEY SANDS, SAND - CLAY MIXTURES | |
| | | <p>FINE GRAINED SOILS</p> <p>MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE</p> | <p>SILTS AND CLAYS</p> <p>LIQUID LIMIT LESS THAN 50</p> | | ML | INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY |
| | | | | | CL | INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS |
| | OL | | | ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY | | |
| <p>SILTS AND CLAYS</p> <p>LIQUID LIMIT GREATER THAN 50</p> | | | MH | INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS | | |
| | | | CH | INORGANIC CLAYS OF HIGH PLASTICITY | | |
| | OH | ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS | | | | |
| <p>HIGHLY ORGANIC SOILS</p> | | | | PT | PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS | |

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

EXHIBIT I
DIRECTIONS TO WCF SITE

Driving Directions to Proposed Tower Site:

1. Beginning at the Hopkins County seat located at 56 North Main Street, Madisonville, KY 42431
2. head south on N Main St toward E Center St
3. turn left onto E Center St
4. turn right onto KY 9004 South
5. take exit 33 toward Nortonville
6. turn right onto US-62 W/Greenville Road
7. turn left onto Hopkinsville Road
8. turn left onto Willow Drive
9. turn left onto Red Hill Road
10. turn right onto Hickory Lane
11. destination is on the right, 460 Hickory Lane
12. site coordinates are
 - a. 37 deg 10 min 29.63 sec N
 - b. 87 deg 27 min 21.79 sec W



Prepared by:
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Pike Legal Group PLLC
1578 Highway 44 East, Suite 6
PO Box 369
Shepherdsville, KY 40165-0369
Telephone: 502-955-4400 or 800-516-4293

EXHIBIT J
COPY OF REAL ESTATE AGREEMENT

Site Name: Nortonville
Site Number: 281319

LEASE AGREEMENT

THIS LEASE AGREEMENT ("*Agreement*") is made effective as of the date of the latter signature hereof (the "*Execution Date*") and is by and between Landlord and American Tower.

RECITALS

- A. WHEREAS, Landlord is the owner of that certain parcel of land (the "*Property*") located in the County of Hopkins, State of Kentucky, as more particularly described on Exhibit A;
- B. WHEREAS, Landlord desires to grant to American Tower an option to lease from Landlord a portion of the Property (the "*Compound*"), together with easements for ingress and egress and the installation and maintenance of utilities (the "*Easement*") and together with the Compound, the "*Site*") both being approximately located as shown on Exhibit B; and

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained, and other good and valuable consideration, the receipt, adequacy and sufficiency of all of which are hereby acknowledged, the parties hereto hereby agree as follows:

1. **Business and Defined Terms.** For the purposes of this Agreement, the following capitalized terms have the meanings set forth in this paragraph 1.

(a) ***American Tower:*** American Towers LLC, a Delaware limited liability company d/b/a Delaware American Towers LLC

(b) ***Notice Address of American Tower:*** American Towers LLC
c/o American Tower Corporation
10 Presidential Way
Woburn, MA 01810
Attn: Land Management

with a copy to: American Towers LLC
c/o American Tower Corporation
116 Huntington Ave.
Boston, MA 02116
Attn: Law Department

(c) ***Landlord:*** Dorothy C. Knight (Formerly Dorothy Brasher),
and her husband Rufus W. Knight

(d) ***Notice Address of Landlord:*** Dorothy & Wayne Knight
10630 Princeton Road
Cerulean, KY 42216

(e) ***Initial Option Period:*** One (1) year

(f) ***Renewal Option Period(s):*** One (1) period of One (1) year each.

Site Name: Nortonville
Site Number: 281319

- (g) **Option Period:** The Initial Option Period and any Renewal Option Period(s)
- (h) **Option Consideration (Initial Option Period):** [REDACTED]
- (i) **Option Extension Consideration (Renewal Option Period(s)):** [REDACTED]
- (j) **Commencement Date:** The date specified in the written notice by American Tower to Landlord exercising the Option constitutes the Commencement Date of the Term.
- (k) **Initial Term:** Five years, commencing on the Commencement Date and continuing until midnight of the day immediately prior to the fifth anniversary of the Commencement Date.
- (l) **Renewal Terms:** Each of the Five (5) successive periods of five years each, with the first Renewal Term commencing upon the expiration of the Initial Term and each subsequent Renewal Term commencing upon the expiration of the immediately preceding Renewal Term.
- (m) **Term:** The Initial Term with any and all Renewal Terms
- (n) **Rent:** The monthly amount of [REDACTED]
- (o) **Increase Amount:** Rent will increase at the commencement of each Renewal Term by an amount equal to [REDACTED] for the previous five year period.
- (p) **Increase Date:** The first date of each Renewal Term.

2. Option to Lease.

- (a) **Grant of Option.** Landlord hereby gives and grants to American Tower and its assigns, an exclusive and irrevocable option to lease the Site during the Initial Option Period (the "**Option**").
- (b) **Extension of Option.** The Initial Option Period will automatically be extended for each Renewal Option Period unless American Tower provides Landlord written notice of its intent not to extend the Option.
- (c) **Consideration for Option.** Option Consideration is due and payable in full within 30 days of the Execution Date and American Tower will pay Landlord any Option Extension Consideration within 30 days of the commencement of any Renewal Option Period.
- (d) **Option Period Inspections and Investigations.**
 - (i) During the Option Period, Landlord will provide American Tower with any keys or access codes necessary for access to the Property.
 - (ii) During the Option Period, American Tower and its officers, agents, employees and independent contractors may enter upon the Property to perform or cause to be performed test borings of the soil, environmental audits, engineering studies and to conduct a metes and bounds survey of the Site and/or the Property (the "**Survey**"), provided that American Tower will not unreasonably interfere with Landlord's use of the Property in conducting these activities. At American Tower's discretion, the legal description of the Site as shown on the Survey may replace Exhibit B of this Agreement and be added as Exhibit B of the Memorandum of Lease.
 - (iii) American Tower may not begin any construction activities on the Site during the Option Period other than those activities described in, or related to, this paragraph 2(d).

Site Name: Nortonville
Site Number: 281319

(e) Exercise of Option. American Tower may, in its sole discretion, exercise the Option by delivery of written notice to Landlord at any time during the Option Period. If American Tower exercises the Option then Landlord will lease the Site to American Tower subject to the terms and conditions of this Agreement. If American Tower does not exercise the Option, this Agreement will terminate.

3. Term.

(a) Initial Term. The Initial Term is as provided in paragraph 1(k).

(b) Renewal Terms. American Tower will have the right to extend this Agreement for each of the Renewal Terms. Each Renewal Term will be on the same terms and conditions provided in this Agreement except that Rent will escalate as provided in paragraph 4(b). This Agreement will automatically be renewed for each successive Renewal Term unless American Tower notifies Landlord in writing of American Tower's intention not to renew the Agreement at any time prior to the expiration of the Initial Term or the Renewal Term which is then in effect.

4. Consideration.

(a) American Tower will pay its first installment of Rent within thirty (30) days of the Commencement Date. Thereafter, Rent is due and payable in advance on the first day of each calendar month to Landlord at Landlord's Notice Address. Rent will be prorated for any partial months, including, the month in which the Commencement Date occurs.

(b) On the Increase Date, the Rent will increase by the Increase Amount.

(c) In the event American Tower makes an overpayment of Rent or any other fees or charges to Landlord during the Term of this Agreement, American Tower may, but will not be required, to treat any such overpayment amount as prepaid Rent and apply such amount as a credit against future Rent due to Landlord.

(d) American Tower will not be required to remit the payment of Rent to more than two recipients at any given time.

5. Use.

(a) American Tower will be permitted to use the Site for the purpose of constructing, maintaining, removing, replacing, securing and operating a communications facility, including, but not limited to, the construction or installation and maintenance of a telecommunications tower (the "*Tower*"), structural tower base(s), guy anchors, guy wires, communications equipment, one or more buildings or equipment cabinets, radio transmitting and receiving antennas, personal property and related improvements and facilities on the Compound (collectively, the "*Tower Facilities*"), to facilitate the use of the Site as a site for the transmission and receipt of communication signals including, but not limited to, voice, data and internet transmissions and for any other uses which are incidental to the transmission and receipt of communication signals (the "*Intended Use*").

(b) American Tower, at its sole discretion, will have the right, without prior notice or the consent of Landlord, to license or sublease all or a portion of the Site or the Tower Facilities to other parties (each, a "*Collocator*" and collectively, the "*Collocators*"). The Collocators will be entitled to modify the Tower Facilities and to erect additional improvements on the Compound including but not limited to antennas, dishes, cabling, additional buildings or shelters ancillary to the Intended Use. The Collocators will be entitled to all rights of ingress and egress to the Site and the right to install utilities on the Site that American Tower has under this Agreement.

Site Name: Nortonville
Site Number: 281319

6. Tower Facilities.

(a) American Tower will have the right, at American Tower's sole cost and expense, to erect the Tower Facilities which will be the exclusive property of American Tower throughout the Term as well as upon the expiration or termination of this Agreement.

(b) Landlord grants American Tower a non-exclusive easement in, over, across and through the Property and other real property owned by Landlord contiguous to the Site as may be reasonably required for construction, installation, maintenance, and operation of the Tower Facilities including: (i) access to the Site for construction machinery and equipment, (ii) storage of construction materials and equipment during construction of the Tower Facilities, and (iii) use of a staging area for construction, installation and removal of equipment.

(c) American Tower may, at its sole expense, use any and all appropriate means of restricting access to the Compound or the Tower Facilities, including, without limitation, construction of a fence and may install and maintain identifying signs or other signs required by any governmental authority on or about the Site, including any access road to the Site.

(d) American Tower will maintain the Compound, including the Tower Facilities, in a reasonable condition throughout the Term. American Tower is not responsible for reasonable wear and tear or damage from casualty and condemnation. Landlord grants American Tower the right to clear all trees, undergrowth, or other obstructions and to trim, cut, and keep trimmed all tree limbs which may interfere with or fall upon the Tower Facilities or the Site.

(e) American Tower will remove all of the above-ground portions of the Tower Facilities within 180 days following the expiration or termination of this Agreement.

(f) If the Tower is a guyed tower, Landlord grants American Tower an easement in, over, across and through the Property or any other real property owned by Landlord as may be necessary to American Tower during the Term of this Agreement for the installation, maintenance, alteration, removal, relocation and replacement of and access to guy wires and guy wire anchors which may be required by American Tower at its sole discretion and located outside of the Site.

7. Utilities.

(a) American Tower will have the right to install utilities, at American Tower's expense, and to improve present utilities on the Property and the Site. American Tower will have the right to permanently place utilities on (or to bring utilities across or under) the Site to service the Compound and the Tower Facilities.

(b) If utilities necessary to serve the equipment of American Tower or the equipment of any Collocator cannot be located within the Site, Landlord agrees to allow the installation of utilities on the Property or other real property owned by Landlord without requiring additional compensation from American Tower or any Collocator. Landlord will, upon American Tower's request, execute a separate recordable written easement or lease to the utility company providing such service evidencing this right.

(c) American Tower and the Collocators each may install backup generator(s).

8. Access

Site Name: Nortonville
Site Number: 281319

(a) In the event that the Site loses access to a public right of way during the Term, Landlord and American Tower will amend this Agreement, at no imposed cost to either party, to provide access to a public way by: (i) amending the location of the Easement; or (ii) granting an additional easement to American Tower.

(b) To the extent damage (including wear and tear caused by normal usage) to the Easement or any other route contemplated hereunder intended to provide American Tower with access to the Site and the Tower Facilities is caused by Landlord or Landlord's tenants, licensees, invitees or agents, Landlord will repair the damage at its own expense.

(c) Landlord will maintain access to the Compound from a public way in a free and open condition so that no interference is caused to American Tower by Landlord or lessees, licensees, invitees or agents of Landlord. In the event that American Tower's or any Collocator's access to the Compound is impeded or denied by Landlord or Landlord's lessees, licensees, invitees or agents, without waiving any other rights that it may have at law or in equity, American Tower may at its sole discretion deduct from Rent due under this Agreement an amount equal to [REDACTED] for each day that such access is impeded or denied.

9. **Representations and Warranties of Landlord.** Landlord represents and warrants to American Tower and American Tower's successors and assigns:

(a) Landlord has the full right, power, and authority to execute this Agreement;

(b) There are no pending or threatened administrative actions, including bankruptcy or insolvency proceedings under state or federal law, suits, claims or causes of action against Landlord or which may otherwise affect the Property;

(c) The Property is not presently subject to an option, lease or other contract which may adversely affect Landlord's ability to fulfill its obligations under this Agreement, and the execution of this Agreement by Landlord will not cause a breach or an event of default of any other agreement to which Landlord is a party. Landlord agrees that it will not grant an option or enter into any contract or agreement which will have any adverse effect on the Intended Use or American Tower's rights under this Agreement;

(d) No licenses, rights of use, covenants, restrictions, easements, servitudes, subdivision rules or regulations, or any other encumbrances relating to the Property prohibit or will interfere with the Intended Use;

(e) Landlord has good and marketable fee simple title to the Site, the Property and any other property across which Landlord may grant an easement to American Tower or any Collocator, free and clear of all liens and encumbrances. Landlord covenants that American Tower will have the quiet enjoyment of the Compound during the term of this Agreement. If Landlord fails to keep the Site free and clear of any liens and encumbrances, American Tower will have the right, but not the obligation, to satisfy any such lien or encumbrance and to deduct the full amount paid by American Tower on Landlord's behalf from future installments of Rent;

(f) American Tower will at all times during this Agreement enjoy ingress, egress, and access from the Site 24 hours a day, 7 days a week, to an open and improved public road which is adequate to service the Site and the Tower Facilities; and

(g) These representations and warranties of Landlord survive the termination or expiration of this Agreement.

Site Name: Nortonville
Site Number: 281319

10. **Interference.** Landlord will not use, nor will Landlord permit its tenants, licensees, invitees or agents to use any portion of the Property in any way which interferes with the Intended Use, including, but not limited to, any use on the Property or surrounding property that causes electronic or physical obstruction or degradation of the communications signals from the Tower Facilities ("**Interference**"). Interference will be deemed a material breach of this Agreement by Landlord and Landlord will have the responsibility to terminate Interference immediately upon written notice from American Tower. Notwithstanding anything in this Agreement to the contrary, if the Interference does not cease or is not rectified as soon as possible, but in no event longer than 24 hours after American Tower's written notice to Landlord, Landlord acknowledges that continuing Interference will cause irreparable injury to American Tower, and American Tower will have the right, in addition to any other rights that it may have at law or in equity, to bring action to enjoin the Interference.

11. **Termination.** This Agreement may be terminated, without any penalty or further liability upon written notice as follows:

(a) By either party upon a default of any covenant or term of this Agreement by the other party which is not cured within 60 days of receipt of written notice of default (without, however, limiting any other rights available to the parties in law or equity); provided, that if the defaulting party commences efforts to cure the default within such period and diligently pursues such cure, the non-defaulting party may not terminate this Agreement as a result of that default.

(b) Upon 30 days' written notice by American Tower to Landlord if American Tower is unable to obtain, maintain, renew or reinstate any agreement, easement, permit, certificates, license, variance, zoning approval, or any other approval which may be required from any federal, state or local authority necessary to the construction and operation of the Tower Facilities or to the Intended Use (collectively, the "**Approvals**"); or

(c) Upon 30 days' written notice from American Tower to Landlord if the Site is or becomes unsuitable, in American Tower's sole, but reasonable judgment for use as a wireless communications facility by American Tower or by American Tower's licensee(s) or sublessee(s).

(d) In the event of termination by American Tower or Landlord pursuant to this provision, American Tower shall be relieved of all further liability hereunder.

12. **Taxes.**

(a) American Tower will pay any personal property taxes assessed on or attributable to the Tower Facilities. American Tower will reimburse Landlord for any increase to Landlord's real property taxes that are directly attributable to American Tower's Site and/or Tower Facilities upon receipt of the following: (1) a copy of Landlord's tax bill; (2) proof of payment; and (3) written documentation from the assessor of the amount attributable to American Tower. American Tower shall have no obligation to reimburse Landlord for any taxes paid by Landlord unless Landlord requests reimbursement within 12 months of the date said taxes were originally due. Additionally, as a condition precedent to Landlord having the right to receive reimbursement, Landlord shall, within 3 days of receipt of any notice from the taxing authority of any assessment or reassessment, provide American Tower with a copy of said notice. American Tower shall have the right to appeal any assessment or reassessment relating to the Site or Tower Facilities and Landlord shall either (i) designate American Tower as its attorney-in-fact as required to effect standing with the taxing authority, or (ii) join American Tower in its appeal.

Site Name: Nortonville
Site Number: 281319

(b) Landlord will pay when due all real property taxes and all other fees and assessments attributable to the Property, Compound and Easement. If Landlord fails to pay when due any taxes affecting the Property or the Site, American Tower will have the right, but not the obligation, to pay such taxes and either: (i) deduct the full amount of the taxes paid by American Tower on Landlord's behalf from future installments of Rent, or (ii) collect such taxes by any lawful means.

13. **Environmental Compliance.**

(a) Landlord represents and warrants that:

(i) No Hazardous Materials have been used, generated, stored or disposed of, on, under or about the Property in violation of any applicable law, regulation or administrative order (collectively, "*Environmental Laws*") by either Landlord or to Landlord's knowledge, any third party; and

(ii) To Landlord's knowledge, no third party been permitted to use, generate, store or dispose of any Hazardous Materials on, under, about or within the Property in violation of any Environmental Laws.

(b) Landlord will not, and will not permit any third party to use, generate, store or dispose of any Hazardous Materials on, under, about or within the Property in violation of any Environmental Laws.

(c) American Tower agrees that it will not use, generate, store or dispose of any Hazardous Material on, under, about or within the Site in violation of any applicable laws, regulations or administrative orders.

(d) The term "*Hazardous Materials*" means any: contaminants, oils, asbestos, PCBs, hazardous substances or wastes as defined by federal, state or local environmental laws, regulations or administrative orders or other materials the removal of which is required or the maintenance of which is prohibited or regulated by any federal, state or local government authority having jurisdiction over the Property.

14. **Indemnification.**

(a) **General.**

(i) Landlord, its heirs, grantees, successors, and assigns will exonerate, hold harmless, indemnify, and defend American Tower from any claims, obligations, liabilities, costs, demands, damages, expenses, suits or causes of action, including costs and reasonable attorney's fees, which may arise out of: (A) any injury to or death of any person; (B) any damage to property, if such injury, death or damage arises out of or is attributable to or results from the acts or omissions of Landlord, or Landlord's principals, employees, invitees, agents or independent contractors; or (C) any breach of any representation or warranty made by Landlord in this Agreement.

(ii) American Tower, its grantees, successors, and assigns will exonerate, hold harmless, indemnify, and defend Landlord from any claims, obligations, liabilities, costs, demands, damages, expenses, suits or causes of action, including costs and reasonable attorney's fees, which may arise out of: (A) any injury to or death of any person; (B) any damage to property, if such injury, death or damage arises out of or is attributable to or results from the negligent acts or omissions of American Tower, or American Tower's employees, agents or

Site Name: Nortonville
Site Number: 281319

independent contractors; or (C) any breach of any representation or warranty made by American Tower in this Agreement.

(b) Environmental Matters.

(i) Landlord, its heirs, grantees, successors, and assigns will indemnify, defend, reimburse and hold harmless American Tower from and against any and all damages arising from the presence of Hazardous Materials upon, about or beneath the Property or migrating to or from the Property or arising in any manner whatsoever out of the violation of any Environmental Laws, which conditions exist or existed prior to or at the time of the execution of this Agreement or which may occur at any time in the future through no fault of American Tower. Notwithstanding the obligation of Landlord to indemnify American Tower pursuant to this Agreement, Landlord will, upon demand of American Tower, and at Landlord's sole cost and expense, promptly take all actions to remediate the Property which are required by any federal, state or local governmental agency or political subdivision or which are reasonably necessary to mitigate environmental damages or to allow full economic use of the Site, which remediation is necessitated from the presence upon, about or beneath the Property of a Hazardous Material. Such actions include but not be limited to the investigation of the environmental condition of the Property, the preparation of any feasibility studies, reports or remedial plans, and the performance of any cleanup, remediation, containment, operation, maintenance, monitoring or actions necessary to restore the Property to the condition existing prior to the introduction of such Hazardous Material upon, about or beneath the Property notwithstanding any lesser standard of remediation allowable under applicable law or governmental policies.

(ii) American Tower, its grantees, successors, and assigns will indemnify, defend, reimburse and hold harmless Landlord from and against environmental damages caused by the presence of Hazardous Materials on the Compound in violation of any Environmental Laws and arising solely as the result of American Tower's activities after the execution of this Agreement.

15. Right of First Refusal: Sale of Property.

(a) During the Term, prior to selling the Site or any portion of or interest in the Property or the Site, including but not limited to a leasehold interest or easement, or otherwise transfer Landlord's interest in Rent, and prior to assigning the Rent or any portion of Rent to a third party, Landlord shall notify American Tower in writing of the sale price and terms offered by a third party (the "Offer"), together with a copy of the Offer. American Tower will have the right of first refusal to purchase the real property interest or Rent or portion of Rent being sold by Landlord to such third party on the same financial terms of the Offer. American Tower will exercise its right of first refusal within 30 days of receipt of Landlord's notice and if American Tower does not provide notice within 30 days, American Tower will be deemed to have not exercised its right of first refusal. If American Tower does not exercise its right of first refusal, section 15(b) of this Agreement will control the terms of the sale.

(b) Landlord may sell the Property or a portion thereof to a third party, provided: (i) the sale is made subject to the terms of this Agreement; and (ii) if the sale does not include the assignment of Landlord's full interest in this Agreement the purchaser must agree to perform, without requiring compensation from American Tower or any Collocator, any obligation of the Landlord under this Agreement, including Landlord's obligation to cooperate with American Tower as provided hereunder, which obligation Landlord would no longer have the legal right or ability to perform following the sale without requiring compensation from American Tower or any Collocator to be paid to such purchaser.

16. Assignment.

Site Name: Nortonville
Site Number: 281319

(a) Any sublease, license or assignment of this Agreement that is entered into by Landlord or American Tower is subject to the provisions of this Agreement.

(b) Landlord may assign this Agreement in its entirety to any third party in conjunction with a sale of the Property in accordance with Paragraph 15 of this Agreement. Landlord will not otherwise assign less than Landlord's full interest in this Agreement without the prior written consent of American Tower.

(c) American Tower may assign this Agreement without prior notice to or the consent of Landlord. Upon assignment, American Tower shall be relieved of all liabilities and obligations hereunder and Landlord shall look solely to the assignee for performance under this Agreement and all obligations hereunder.

(d) American Tower may mortgage or grant a security interest in this Agreement and the Tower Facilities, and may assign this Agreement and the Tower Facilities to any such mortgagees or holders of security interests including their successors and assigns (collectively, "*Secured Parties*"). If requested by American Tower, Landlord will execute such consent to such financing as may reasonably be required by Secured Parties. In addition, if requested by American Tower, Landlord agrees to notify American Tower and American Tower's Secured Parties simultaneously of any default by American Tower and to give Secured Parties the same right to cure any default as American Tower. If a termination, disaffirmance or rejection of the Agreement by American Tower pursuant to any laws (including any bankruptcy or insolvency laws) occurs, or if Landlord will terminate this Agreement for any reason, Landlord will give to Secured Parties prompt notice thereof and Secured Parties will have the right to enter upon the Compound during a 30-day period commencing upon Secured Parties' receipt of such notice for the purpose of removing any Tower Facilities. Landlord acknowledges that Secured Parties are third-party beneficiaries of this Agreement.

17. Condemnation. If a condemning authority takes all of the Site, or a portion sufficient in American Tower's sole judgment, to render the Site unsuitable for the Intended Use, this Agreement will terminate as of the date the title vests in the condemning authority. Landlord and American Tower will share in the condemnation proceeds in proportion to the values of their respective interests in the Site (which for American Tower includes, where applicable, the value of the Tower Facilities, moving expenses, prepaid rent and business dislocation expenses). If a condemning authority takes less than the entire Site such that the Site remains suitable for American Tower's Intended Use, the Rent payable under this Agreement will be reduced automatically by such percentage as the area so condemned bears to the Site as of the date the title vests in the condemning authority. A sale of all or part of the Site to a purchaser with the power of eminent domain in the face of the exercise of eminent domain power will be treated as a taking by condemnation for the purposes of this paragraph.

18. Insurance. American Tower will purchase and maintain in full force and effect throughout the Option Period and the Term such general liability and property damage policies as American Tower may deem necessary. Said policy of general liability insurance will at a minimum provide a combined single limit of \$1,000,000.

19. Waiver of Damages.

(a) In the event that American Tower does not exercise its Option: (i) Landlord's sole compensation and damages will be fixed and liquidated to the sums paid by American Tower to Landlord as consideration for the Option; and (ii) Landlord expressly waives any other remedies it may have for a breach of this Agreement including specific performance and damages for breach of contract.

Site Name: Nortonville
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(b) Neither Landlord nor American Tower will be responsible or liable to the other party for any loss or damage arising from any claim to the extent attributable to any acts of omissions of other licensees or tower users occupying the Tower Facilities or vandalism or for any structural or power failures or destruction or damage to the Tower Facilities except to the extent caused by the negligence or willful misconduct of such party.

(c) EXCEPT AS SPECIFICALLY PROVIDED IN THIS AGREEMENT, IN NO EVENT WILL LANDLORD OR AMERICAN TOWER BE LIABLE TO THE OTHER FOR, AND AMERICAN TOWER AND LANDLORD EACH HEREBY WAIVE THE RIGHT TO RECOVER INCIDENTAL, CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, LOSS OF USE OR LOSS OF BUSINESS OPPORTUNITY), PUNITIVE, EXEMPLARY AND SIMILAR DAMAGES.

20. Confidentiality. Landlord will not disclose to any third party the Rent payable by American Tower under this Agreement and will treat such information as confidential, except that Landlord may disclose such information to prospective buyers, prospective or existing lenders, Landlord's affiliates and attorneys, or as may be required by law or as may be necessary for the enforcement of Landlord's rights under the Agreement.

21. Subordination Agreements.

(a) If the Site is encumbered by a mortgage or deed of trust, within 30 days of receipt of a written request from American Tower, Landlord agrees to execute and obtain the execution by its lender of a non-disturbance and attornment agreement in the form provided by American Tower, to the effect that American Tower and American Tower's sublessees and licensees will not be disturbed in their occupancy and use of the Site by any foreclosure or to provide information regarding the mortgage to American Tower.

(b) Should a subordination, non-disturbance and attornment agreement be requested by Landlord or a lender working with Landlord on a loan to be secured by the Property and entered into subsequent to the Execution Date, American Tower will use good faith efforts to provide Landlord or Landlord's lender with American Tower's form subordination, non-disturbance and attornment agreement executed by American Tower within 30 days of such request.

22. Notices. All notices or demands by or from American Tower to Landlord, or Landlord to American Tower, required under this Agreement will be in writing and sent (United States mail postage pre-paid, certified with return receipt requested or by reputable national overnight carrier service, transmit prepaid) to the other party at the addresses set forth in paragraph 1 of this Agreement or to such other addresses as the parties may, from time to time, designate consistent with this paragraph 22, with such new notice address being effective 30 days after receipt by the other party. Notices will be deemed to have been given upon either receipt or rejection.

23. Further Acts.

(a) Within 15 days after receipt of a written request from American Tower, Landlord will execute any document necessary or useful to protect American Tower's rights under this Agreement or to facilitate the Intended Use including documents related to title, zoning and other Approvals, and will otherwise cooperate with American Tower in its exercise of its rights under this Agreement.

(b) American Tower will be entitled to liquidated damages for the revenue lost by American Tower as a result of any delay caused by Landlord's unwillingness to execute a document or to take any other action deemed necessary by American Tower to protect American Tower's leasehold rights or to

Site Name: Nortonville
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facilitate the Intended Use. As the actual amount of such lost revenue is difficult to determine, the parties agree that American Tower may deduct the amount of [REDACTED] future installments of Rent for any delay to American Tower caused by Landlord's failure or unwillingness to act, such amount being an estimate of American Tower's lost revenue. American Tower's right to collect such liquidated damages will in no way affect American Tower's right to pursue any and all other legal and equitable rights and remedies permitted under applicable laws.

24. Memorandum of Lease. Simultaneously with the execution of this Agreement, the parties will enter into the Memorandum of Lease attached to this Agreement as Exhibit C which American Tower may record in the public records of the county of the Property. Landlord acknowledges and agrees that after Landlord signs the Memorandum of Lease but before American Tower records it, American Tower may add both: (a) a reference to the recording granting Landlord its interest in the Property; and (b) a legal description of the Site as Exhibit B. Landlord agrees to execute and return to American Tower a recordable Amended Memorandum of Lease in form supplied by American Tower if: (i) the information included in the Memorandum of Lease changes, or (ii) if it becomes clear that such information is incorrect or incomplete or if this Agreement is amended.

25. Miscellaneous.

(a) This Agreement runs with the Property and is binding upon and will inure to the benefit of the parties, their respective heirs, successors, personal representatives and assigns.

(b) American Tower may at American Tower's sole cost and expense procure an abstract of title or a commitment to issue a policy of title insurance (collectively "Title") on the Property.

(c) Landlord hereby waives any and all lien rights it may have, statutory or otherwise, in and to the Tower Facilities or any portion thereof, regardless of whether or not same is deemed real or personal property under applicable laws.

(d) The substantially prevailing party in any litigation arising hereunder is entitled to its reasonable attorney's fees and court costs, including appeals, if any.

(e) Each party agrees to furnish to the other, within 30 days after request, such estoppel information as the other may reasonably request.

(f) This Agreement constitutes the entire agreement and understanding of Landlord and American Tower with respect to the subject matter of this Agreement, and supersedes all offers, negotiations and other agreements. There are no representations or understandings of any kind not stated in this Agreement. Any amendments to this Agreement must be in writing and executed and delivered by Landlord and American Tower.

(g) If either Landlord or American Tower is represented by a real estate broker in this transaction, that party is fully responsible for any fees due such broker and will hold the other party harmless from any claims for commission by such broker.

(h) The Agreement will be construed in accordance with the laws of the state in which the Site is situated.

(i) If any term of the Agreement is found to be void or invalid, the remainder of this Agreement will continue in full force and effect.

Site Name: Nortonville
Site Number: 2813 19

(j) American Tower may obtain title insurance on its interest in the Site, and Landlord will cooperate by executing any documentation required by the title insurance company.

(k) This Agreement may be executed in two or more counterparts, all of which are considered one and the same agreement and become effective when one or more counterparts have been signed by each of the parties, it being understood that all parties need not sign the same counterpart.

(l) Landlord will not, during the Option Period or the Term, enter into any other lease, license, or other agreement for the same or similar purpose as the Intended Use, on or adjacent to the Property.

(m) Failure or delay on the part of either party to exercise any right, power or privilege hereunder will not operate as a waiver thereof and waiver of breach of any provision hereof under any circumstances will not constitute a waiver of any subsequent breach.

(n) The parties agree that irreparable damage would occur if any of the provisions of this Agreement were not performed in accordance with their specified terms or were otherwise breached. Therefore, the parties agree the parties will be entitled to an injunction(s) in any court in the state in which the Site is located to prevent breaches of the provisions of this Agreement and to enforce specifically the terms and provisions of the Agreement, this being in addition to any other remedy to which the parties are entitled at law or in equity.

(o) Each party executing this Agreement acknowledges that it has full power and authority to do so and that the person executing on its behalf has the authority to bind the party.

(p) The parties agree that a scanned or electronically reproduced copy or image of this Agreement will be deemed an original and may be introduced or submitted in any action or proceeding as competent evidence of the execution, terms and existence hereof notwithstanding the failure or inability to produce or tender an original, executed counterpart of this Agreement and without the requirement that the unavailability of such original, executed counterpart of this Agreement first be proven.

[SIGNATURES APPEAR ON NEXT PAGE]

Site Name: Nortonville
Site Number: 281319

IN WITNESS WHEREOF, Landlord and American Tower have each executed this Agreement as of the respective dates written below.

LANDLORD: Dorothy C. Knight (Formerly Dorothy Brasher), and her husband Rufus W. Knight

Dorothy C. Knight
Name: Dorothy C. Knight

Date: 7-8-13

Rufus W. Knight
Name: Rufus W. Knight

Date: 7-8-13

Site Name: Nortonville
Site Number: 281319

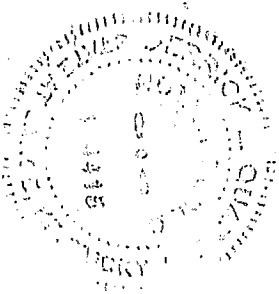
Acknowledgements

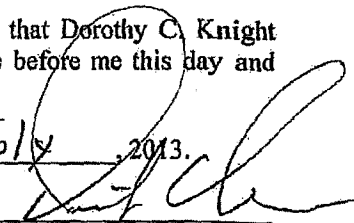
STATE OF KENTUCKY
COUNTY OF HOPKINS

I, a Notary Public of the County and State aforesaid, certify that Dorothy C. Knight (Formerly Dorothy Brasher), and her husband Rufus W. Knight came before me this day and acknowledged the execution of the foregoing instrument.

Witness my hand and official stamp or seal, this 8TH day of July, 2013.

[Affix Notary Seal]





Notary Public
My commission expires:

2-28-17

Site Name: Nortonville
Site Number: 281319

The following exhibits are attached to this Agreement and incorporated into this Agreement:

| | |
|-----------|--------------------------------------|
| Exhibit A | Description or Depiction of Property |
| Exhibit B | Description or Depiction of Site |
| Exhibit C | Memorandum of Lease |

Site Name: Nortonville
Site Number: 281319

EXHIBIT A

DESCRIPTION OR DEPICTION OF PROPERTY

The Property is described and/or depicted as follows:

SITE: Nortonville
DATE: 07.01.13

This is a description for American Tower Corp., of a lease area to be located on the property of Dorothy Brasher Knight, which is further described as follows:

LEASE AREA

Beginning at an existing iron rod located at the South East Corner of the property conveyed to James & Debra Profitt in Deed Book 556, Page 17, recorded in the Office of the Clerk, of Hopkins County Court, Hopkinsville, Kentucky; said point also being corner to the property conveyed to Dorothy Brasher Knight in Deed Book 358, Page 472 in the aforesaid Clerk's Office; thence traversing said property N67°50'52"E-65.16' to a set #5 iron rod and cap stamped #3282 and TRUE POINT OF BEGINNING of the Proposed Lease Area; thence N04°50'36"W-100.00' to a set #5 iron rod and cap stamped #3282; thence N85°09'24"E-100.00' to a set #5 iron rod and cap stamped #3282; thence S04°50'36"E-100.00' to a set #5 iron rod and cap stamped #3282; thence S85°09'24"W-100.00' to the point of beginning, containing 10,000 square feet as per survey by Frank L Sellinger, II with FStan Land Surveyors and Consulting Engineers dated June 13, 2013.

25' WIDE ACCESS & UTILITY EASEMENT

Beginning at an existing iron rod located at the South East Corner of the property conveyed to James & Debra Profitt in Deed Book 556, Page 17, recorded in the Office of the Clerk, of Hopkins County Court, Hopkinsville, Kentucky; said point also being corner to the property conveyed to Dorothy Brasher Knight in Deed Book 358, Page 472 in the aforesaid Clerk's Office; thence traversing said property N67°50'52"E-65.16', N85°09'24"E-100.00' and N04°50'36"W-75.00' to a set #5 iron rod and cap stamped #3282 and TRUE POINT OF BEGINNING of the Proposed 25' Wide Access & Utility Easement; thence N85°09'24"E-25.00' to a set #5 iron rod and cap stamped #3282; thence N04°50'36"W-90.65' to a set #5 iron rod and cap stamped #3282; thence following a curve to the left having a radius of 85.00', arc length of 104.25 and a chord of N39°58'39"W-97.83' to a set #5 iron rod and cap stamped #3282; thence N75°06'42"W-130.62' to a set #5 iron rod and cap stamped #3282; thence N85°36'50"W-149.32' to a set #5 iron rod and cap stamped #3282 in the East Margin of Hickory Lane; thence following said margin S07°24'22"W-25.03' to a found iron rod; thence leaving said margin and following the north line of said Profitt's Parcel S85°36'50"E-148.34' to a set #5 iron rod and cap stamped #3282; thence S75°06'42"E-128.33' to a set #5 iron rod and cap stamped #3282; thence following a curve to the right having a radius of 60.00', arc length of 73.58' and a chord of S39°58'39"E-69.06' to a set #5 iron rod and cap stamped #3282; thence S04°50'36"E-25.65' to a set #5 iron rod and cap stamped #3282; thence following a curve to the right having a radius of 15.00', arc length of 23.56' and a chord of S40°09'24"W-

Site Name: Nortonville
Site Number: 281319

21.21' to a set #5 iron rod and cap stamped #3282; thence S85°09'24"W-85.00' to a set #5 iron rod and cap stamped #3282; thence S04°50'36"E-25.00' to a set #5 iron rod and cap stamped #3282; thence following the northern line of the Lease Area N85°09'24"E-100.00' to a set #5 iron rod and cap stamped #3282; thence S04°50'36"E-25.00' to the point of beginning, containing 6272.3 square feet as per survey by Frank L Sellinger, II with FStan Land Surveyors and Consulting Engineers dated June 13, 2013.

15' UTILITY EASEMENT

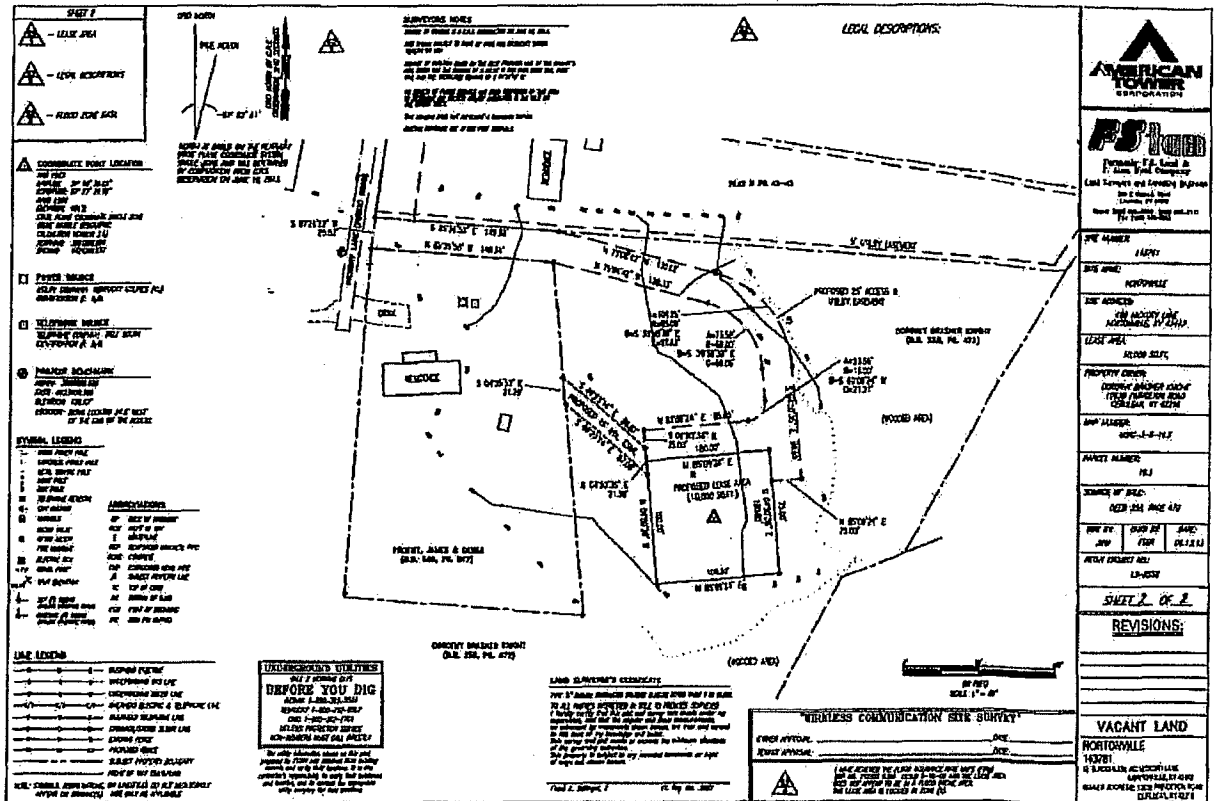
Beginning at an existing iron rod located at the South East Corner of the property conveyed to James & Debra Profitt in Deed Book 556, Page 17, recorded in the Office of the Clerk, of Hopkins County Court, Hopkinsville, Kentucky; said point also being corner to the property conveyed to Dorothy Brasher Knight in Deed Book 358, Page 472 in the aforesaid Clerk's Office; thence traversing said property N67°50'52"E-65.16', N04°50'36"W-100.00' to a set #5 iron rod and cap stamped #3282 and TRUE POINT OF BEGINNING of the Proposed 15' Wide Utility Easement; thence N49°23'14"W-87.00' to a set #5 iron rod and cap stamped #3282 in the East line of said Profitt's Line; thence following said line N04°35'50"W-21.29' to a set #5 iron rod and cap stamped #3282; thence leaving said line and traversing said Knight Property S49°23'14"E-86.87' to a set #5 iron rod and cap stamped #3282; thence S04°50'36"E-21.38' to the point of beginning, containing 1304.0 square feet as per survey by Frank L Sellinger, II with FStan Land Surveyors and Consulting Engineers dated June 13, 2013.

Site Name: Nortonville
 Site Number: 281319

EXHIBIT B

DESCRIPTION OR DEPICTION OF SITE

Locations are approximate. American Tower may, at its option, replace this exhibit with a copy of the survey of the Site.



Site Name: Nortonville
Site Number: 281319

EXHIBIT C
MEMORANDUM OF LEASE
[see following pages]

**EXHIBIT K
NOTIFICATION LISTING**

Nortonville Landowner Notice Listing

Jason & Sarah E. Hancock
458 Hickory Lane
Nortonville, KY 42442

Bradley C. & Tara Martina Hight
PO Box 845
Nortonville, KY 42442

Florence Phyllis Sowell
224 Red Hill Rd.
Nortonville, KY 42442

James Allan Brasher
459 Hickory Lane
Nortonville, KY 42442

William M. & Judy Smith
PO Box 331
Nortonville, KY 42442

Alfred Thompson
405 S. Highland Ave.
Earlington, KY 42410

Nancy Maddox
190 Red Hill Road
Nortonville, KY 42442

Crystal D. Kirkwood
1600 Leroy Rd.
Hanson, KY 42413

Jeffrey D. & Kristal Rodgers
7465 White Plains Rd.
White Plains, KY 42464

Forrest R. Foe et al
755 McLeod Ln.
Madisonville, KY 42431

Michael Dillingham
320 Red Hill Rd.
Nortonville, KY 42442

James L. & Debra L. Proffitt
PO Box 22
Nortonville, KY 42442-0283

Dorothy Brasher Knight
10630 Princeton Rd.
Cerulean, KY 42216

EXHIBIT L
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: Nortonville**

Dear Landowner:

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at 460 Hickory Lane, Nortonville, KY 42442 (37°10'29.63" North latitude, 87°27'21.79" West longitude). The proposed facility will include a 195-foot tall antenna tower, plus a 4-foot lightning arrester 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 Hopkins 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 2013-00389 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. AT&T Mobility's 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 AT&T Mobility

enclosure

Driving Directions to Proposed Tower Site:

1. Beginning at the Hopkins County seat located at 56 North Main Street, Madisonville, KY 42431
2. head south on N Main St toward E Center St
3. turn left onto E Center St
4. turn right onto KY 9004 South
5. take exit 33 toward Nortonville
6. turn right onto US-62 W/Greenville Road
7. turn left onto Hopkinsville Road
8. turn left onto Willow Drive
9. turn left onto Red Hill Road
10. turn right onto Hickory Lane
11. destination is on the right, 460 Hickory Lane
12. site coordinates are
 - a. 37 deg 10 min 29.63 sec N
 - b. 87 deg 27 min 21.79 sec W



Prepared by:
Robert W. Grant
Pike Legal Group PLLC
1578 Highway 44 East, Suite 6
PO Box 369
Shepherdsville, KY 40165-0369
Telephone: 502-955-4400 or 800-516-4293

EXHIBIT M
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. Donald E. Carroll
Hopkins County Judge Executive
Hopkins County Government Center
56 North Main Street
Madisonville, KY 42431

RE: Notice of Proposal to Construct Wireless Communications Facility
Kentucky Public Service Commission Docket No. 2013-00389
Site Name: Nortonville

Dear Judge Carroll:

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at 460 Hickory Lane, Nortonville, KY 42442 (37°10'29.63" North latitude, 87°27'21.79" West longitude). The proposed facility will include a 195-foot tall antenna tower, plus a 4-foot lightning arrester 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 2013-00389 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. AT&T Mobility's 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 AT&T Mobility
enclosure

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2. head south on N Main St toward E Center St
3. turn left onto E Center St
4. turn right onto KY 9004 South
5. take exit 33 toward Nortonville
6. turn right onto US-62 W/Greenville Road
7. turn left onto Hopkinsville Road
8. turn left onto Willow Drive
9. turn left onto Red Hill Road
10. turn right onto Hickory Lane
11. destination is on the right, 460 Hickory Lane
12. site coordinates are
 - a. 37 deg 10 min 29.63 sec N
 - b. 87 deg 27 min 21.79 sec W



Prepared by:
Robert W. Grant
Pike Legal Group PLLC
1578 Highway 44 East, Suite 6
PO Box 369
Shepherdsville, KY 40165-0369
Telephone: 502-955-4400 or 800-516-4293

EXHIBIT N
COPY OF POSTED NOTICES

SITE NAME: NORTONVILLE
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.

New Cingular Wireless PCS, LLC d/b/a AT&T Mobility 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 Case No. 2013-00389 in your correspondence.

New Cingular Wireless PCS, LLC d/b/a AT&T Mobility 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 Case No. 2013-00389 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 TELEFAX: 270.821.6855

The Messenger
Attn: Debbie Littlepage
Advertising Director
221 S. Main St.
P.O. Box 526
Madisonville, KY, 42431

RE: Legal Notice Advertisement
Site Name: Nortonville

Dear Ms. Littlepaige

Please publish the following legal notice advertisement in the next edition of the *Messenger*:

NOTICE

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at 460 Hickory Lane, Nortonville, KY 42442 (37°10'29.63" North latitude, 87°27'21.79" 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 2013-00389 in any correspondence sent in connection with this matter.

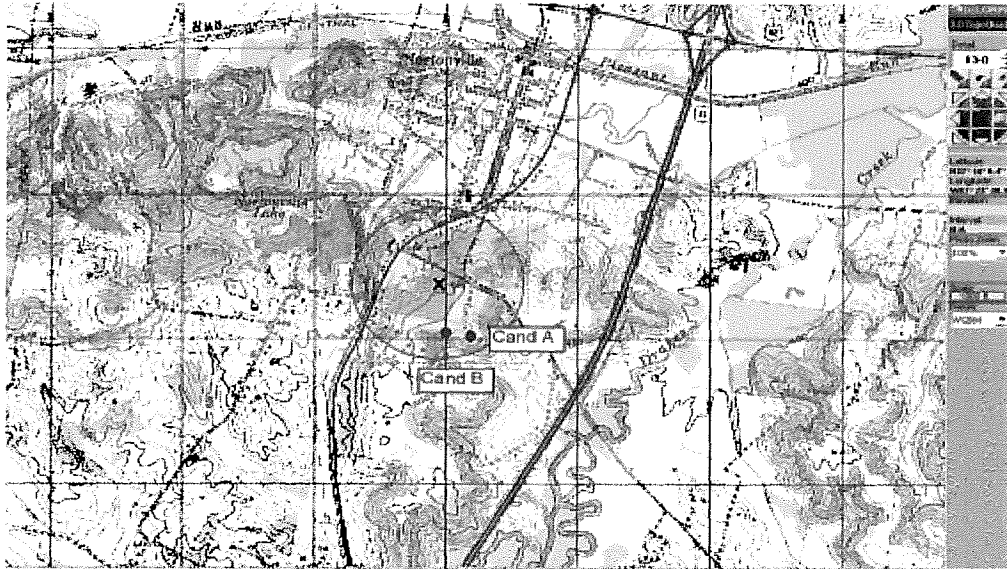
After this advertisement have been published, please forward a tearsheet copy, affidavit of publication, and invoice to Pike Legal Group, PLLC, P. O. Box 369, Shepherdsville, KY 40165. Please call me at (800) 516-4293 if you have any questions. Thank you for your assistance.

Sincerely,

Keith Riggs

EXHIBIT O
COPY OF RADIO FREQUENCY DESIGN SEARCH AREA

TOPOGRAPHICAL MAP WITH SEARCH RING AND CANDIDATES



Nortonville 37.178183 -87.458767