

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

In the Matter of:

THE APPLICATION OF)
CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS)
AND VERTICAL BRIDGE REIT, LLC D/B/A)
VERTICALBRIDGE FOR ISSUANCE OF A)
CERTIFICATE OF PUBLIC) CASE NO. 2022-0016
CONVENIENCE AND NECESSITY TO CONSTRUCT)
A WIRELESS COMMUNICATIONS FACILITY)
IN THE COMMONWEALTH OF KENTUCKY)
IN THE COUNTY OF BALLARD)

SITE NAME: BARLOW

* * * * *

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

Cellco Partnership, d/b/a Verizon Wireless and Vertical Bridge REIT, LLC d/b/a Verticalbridge (“Co-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 submits 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 the Applicant with wireless communications services.

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

1. The complete name and address of the Co-Applicants:

- a. Cellco Partnership, d/b/a Verizon Wireless, having a local address of 2421 Holloway Road, Louisville, KY 40299.
- b. Vertical Bridge REIT, LLC d/b/a Verticalbridge, 750 Park of Commerce Drive, having and address of Suite 200, Boca Raton, FL 33487

2. Co- Applicants

- a. Cellco Partnership, d/b/a Verizon Wireless is a Delaware general partnership and a copy of the Amended Certificate of Assumed Name is on file with the Secretary of State of Commonwealth of Kentucky is included as part of **Exhibit A**.
- b. b. Vertical Bridge REIT, LLC d/b/a Verticalbridge is a Delaware general partnership and a copy of the Amended Certificate of Assumed Name is on file with the Secretary of State of Commonwealth of Kentucky is included as part of Exhibit A.

3. Co-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 Co-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.

4. The Co-Applicant, Cellco Partnership, d/b/a Verizon Wireless operates on frequencies licensed by the Federal Communications Commission ("FCC") pursuant to applicable FCC requirements. A copy of the Applicant's FCC licenses to provide wireless services are attached to this Application or described as part of **Exhibit B**, and the facility will be constructed and operated in accordance with applicable FCC regulations.

5. The public convenience and necessity require the construction of the proposed WCF. The construction of the WCF will bring or improve the Co-Applicants' services to an area currently not served or not adequately served by the Co-Applicants by increasing coverage or capacity and thereby enhancing the public's access to innovative and competitive wireless communications services. A statement from Co-Applicant, Cellco Partnership, d/b/a Verizon Wireless RF Design Engineer outlining said need is attached as **Exhibit Q** along with Propagation Maps attached as **Exhibit Qa**. The WCF is an integral link in the Co-Applicant's network design that must be in place to provide adequate coverage to the service area.

6. To address the above-described service needs, Co-Applicants propose to construct a WCF at 2244 Steve Denton Road, Barlow KY 42024 (37° 06' 42.15" North latitude, 89° 02' 44.58" 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 Myatt Family Trust pursuant to a Deed recorded at Deed Book 93, Page 150 in the office of the County Clerk. The proposed WCF will consist of a 280-foot tall tower, with an approximately 10-foot tall lightning arrestor attached at the top, for a total height of 290-feet. The WCF will also include concrete foundations and a shelter or cabinets to accommodate the placement of the Applicant's radio electronics equipment and appurtenant equipment. The Co-Applicant's 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 C** and **Exhibit D**.

7. A list of utilities, corporations, or persons with whom the proposed WCF is likely to compete along with a map showing the proposed location as well as the identified like facilities is attached as **Exhibit E**.

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 of the Applicant has also been included as part of **Exhibit C**.

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 D**.

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

11. A copy of the Determination of No Hazard to Air Navigation issued by the Federal Aviation Administration ("FAA") is attached as **Exhibit 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 report was performed at the WCF site by Alt & Witzig Engineering, Inc. Indianapolis, IN, dated August 30, 2018, and is attached as **Exhibit H**. The name and address of the geotechnical engineering firm and the professional engineer registered in Kentucky who prepared the report are included as part of **Exhibit H**.

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. Co-Applicant, pursuant to a written agreement, has 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 D** 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 Vince Caprino and the identity and qualifications of each person directly responsible for design and construction of the proposed tower are contained in **Exhibit R**.

18. As noted on the Survey attached as part of **Exhibit C**, the surveyor has determined that the tower site and access easement are not within any flood hazard area per Flood Hazard Boundary Map, Community Panel Number 21007C0085C, Dated July 7, 2014. Also find a letter from the surveyor regarding the Flood Data, attached as **Exhibit Ca**.

19. **Exhibit C** includes a map drawn to an appropriate scale that shows the location of the proposed tower and identifies every owner of real estate within 500 feet of the proposed tower (according to the records maintained by the County Property Valuation Administrator). Every structure and every easement within 500 feet of the proposed tower or within 200 feet of the access road including intersection with the public street system is illustrated in **Exhibit C**.

20. Co-Applicants has 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 PSC docket number for this application, the address of the PSC, and will be 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 to be sent by certified mail to each landowner are attached as **Exhibit K** and **Exhibit L**, respectively.

21. Co-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**. A legal notice advertisement regarding the location of the proposed facility has been published in a

newspaper of general circulation in the county in which the WCF is proposed to be located. A copy of the newspaper legal notice advertisement is attached as **Exhibit O**.

23. The general area where the proposed facility is to be located is undeveloped and removed a significant distance from any residential structures. The nearest residential structure is 284.38 feet from the proposed tower site.

24. The process that was used by the Co-Applicant Cellco Partnership, d/b/a Verizon Wireless radio frequency engineers in selecting the site for the proposed WCF was consistent with the general process used for selecting all other existing and proposed WCF facilities within the proposed network design area. Co-Applicant'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 by the Co-Applicant when searching for sites for its antennas that would provide the coverage deemed necessary by the Co-Applicant. 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 P**.

25. The tower must be located at the proposed location and proposed height to provide necessary service to wireless communications users in the subject area, as set out and documented in the RF Design Engineers' Statement of Need and Propagation Maps attached as **Exhibit Q**. The proposed tower will expand and improve voice and data service for Verizon Wireless customers.

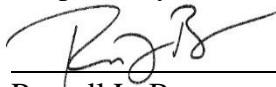
26. All Exhibits to this Application are hereby incorporated by reference as if fully set out as part of the Application.

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

Russell L. Brown
Clark, Quinn, Moses, Scott & Grahn, LLP
320 North Meridian Street, Suite 1100
Indianapolis, IN 46204
Phone: (317) 637-1321
FAX: (317) 687-2344
Email: rbrown@clarkquinnlaw.com

WHEREFORE, Applicant 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,



Russell L. Brown
Clark, Quinn, Moses, Scott & Grahn, LLP
320 North Meridian Street, Suite 1100
Indianapolis, IN 46204
Phone: (317) 637-1321 / FAX: (317) 687-2344
Email: rbrown@clarkquinnlaw.com
Attorney for Cellco Partnership d/b/a Verizon Wireless

LIST OF EXHIBITS

- A Applicant Entity
- B FCC License Documentation
- Site Development Plan:
- C 500' Vicinity Map Legal Descriptions
Flood Plain Certification Site Plan
Vertical Tower Profile
- Ca Letter from Surveyor regarding Flood Data
- D Tower and Foundation Design
- E Competing Utilities, Corporations, or Persons List
And Map of Like Facilities in Vicinity
- F FAA
- G KAZC Approval
- 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 Newspaper Legal Notice Advertisement
- P Copy of Radio Frequency Design Search Area
- Q Copy of RF Design Engineer Statement of Need
- Qa Propagation Maps
- R List of Qualified Professionals

EXHIBIT A

A

COMMONWEALTH OF KENTUCKY
TREY GRAYSON
SECRETARY OF STATE



Secretary of State
Received and Filed
08/27/2008 12:05:00 PM
Fee Receipt: \$20.00

CERTIFICATE OF ASSUMED NAME

This certifies that the assumed name of
Verizon Wireless

has been adopted by See Addendum

which is the "real name" of (YOU MUST CHECK ONE)

- | | |
|--|---|
| <input type="checkbox"/> a Domestic General Partnership | <input checked="" type="checkbox"/> a Foreign General Partnership |
| <input type="checkbox"/> a Domestic Registered Limited Liability Partnership | <input type="checkbox"/> a Foreign Registered Limited Liability Partnership |
| <input type="checkbox"/> a Domestic Limited Partnership | <input type="checkbox"/> a Foreign Limited Partnership |
| <input type="checkbox"/> a Domestic Business Trust | <input type="checkbox"/> a Foreign Business Trust |
| <input type="checkbox"/> a Domestic Corporation | <input type="checkbox"/> a Foreign Corporation |
| <input type="checkbox"/> a Domestic Limited Liability Company | <input type="checkbox"/> a Foreign Limited Liability Company |
| <input type="checkbox"/> a Joint Venture | |

organized and existing in the state or country of Delaware, and whose address is
One Verizon Way Masking Ridge NJ 07920

The certificate of assumed name is executed by

NYNEX PCS Inc.

[Signature]
Jason A. Scheper-Hughes
Secretary
June 18, 2008

0641227.07 dcornish
 AMD
 Allison Lundergan Grimes
 Kentucky Secretary of State
 Received and Filed
 1/22/2013 1:43 PM
 Fee Receipt: \$20.00



COMMONWEALTH OF KENTUCKY
 ELAINE N. WALKER, SECRETARY OF STATE

Division of Business Filings Business Filings PO Box 716 Frankfort, KY 40602 (502) 564-3400 www.sos.ky.gov	Amended Certificate of Assumed Name (Domestic or Foreign Business Entity)	AAN
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Pursuant to the provisions of KRS 365, the undersigned applies to amend the certificate of assumed name and, for that purpose, submits the following statement:

- The assumed name is Verizon Wireless
(The name must be identical to the name on record with the Secretary of State.)
- The certificate of assumed name was filed with the Secretary of State on: 6/21/2006
- The current principal office address (if any) is:
One Verizon Way Basking Ridge NJ 07920
Street Address or Post Office Box Number City State Zip
- The principal office address is hereby changed to:
Street Address or Post Office Box Number City State Zip
- This application will be effective upon filing, unless a delayed effective date and/or time is provided. The effective date or the delayed effective date cannot be prior to the date the application is filed. The date and/or time is: _____
(Delayed effective date and/or time)
- The changes in the identity of the partners are as follows: See Addendum for current partners

I declare under penalty of perjury under the laws of Kentucky that the foregoing is true and correct.
 GTE Wireless Incorporated

Jane A. Schapker Jane A. Schapker Assistant Secretary 1/21/2012
Signature of Applicant Printed Name Title Date

Addendum

The full name of the Partnership is Celco Partnership, a Delaware general partnership composed of the following partners:

<i>General Partners of Celco Partnership</i>	<i>Address</i>
Bell Atlantic Mobile Systems LLC	One Verizon Way Basking Ridge, NJ 07920
GTE Wireless Incorporated	One Verizon Way Basking Ridge, NJ 07920
PCS Nucleus, L.P.	Denver Place South Tower 999-18 th Street, Suite 1750 Denver, CO 80202
IV PartnerCo, LLC	Denver Place South Tower 999-18 th Street, Suite 1750 Denver, CO 80202

1139963.06 vmiller
ADD
Michael G. Adams
Kentucky Secretary of State
Received and Filed:
3/19/2021 4:03 PM
Fee Receipt: \$90.00



COMMONWEALTH OF KENTUCKY
MICHAEL G. ADAMS, SECRETARY OF STATE

Division of Business Filings P.O. Box 718 Frankfort, KY 40602 (502) 564-3493 www.sos.ky.gov	Certificate of Authority (Foreign Business Entity)	FBE
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Pursuant to the provisions of KRS 14A - 035 the undersigned hereby applies for authority to transact business in Kentucky on behalf of the entity named below and, for that purpose, submits the following statements.

1. The entity is a:

<input type="checkbox"/> profit corporation	<input type="checkbox"/> nonprofit corporation	<input type="checkbox"/> professional limited liability company
<input type="checkbox"/> business trust	<input checked="" type="checkbox"/> limited liability company	<input type="checkbox"/> statutory trust
<input type="checkbox"/> limited partnership	<input type="checkbox"/> ltd cooperative association	<input type="checkbox"/> other
<input type="checkbox"/> non-profit tic	<input type="checkbox"/> professional service corporation	

2. The name of the entity is Eco-Site, LLC
(The name must be identical to the name on record with the Secretary of State.)

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

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

5. The date of organization is 11/01/2012 and the period of duration is perpetual
(If left blank, duration is considered perpetual.)

6. The mailing address of the entity's principal office is
750 Park of Commerce Drive, Ste. 200 Boca Raton FL 33487
 Street Address City State Zip Code

7. The street address of the entity's registered office in Kentucky is
828 Lane Allen Road, Suite 219 Lexington KY 40504
 Street Address (No P.O. Box Numbers) City State Zip Code

and the name of the registered agent at that office is COGENCY GLOBAL INC

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

Name	Street or P.O. Box	City	State	Zip Code
<u>Alex Geiman</u>	<u>750 Park of Commerce Dr., Ste. 200</u>	<u>Boca Raton</u>	<u>FL</u>	<u>33487</u>
<u>Daniel Marinberg</u>	<u>750 Park of Commerce Dr., Ste. 200</u>	<u>Boca Raton</u>	<u>FL</u>	<u>33487</u>
<u>Michael Romaniw</u>	<u>750 Park of Commerce Dr., Ste. 200</u>	<u>Boca Raton</u>	<u>FL</u>	<u>33487</u>

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

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

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

12. If a limited liability company, check box if manager-managed:

13. This application will be effective upon filing.

Signature of Authorized Representative: Daniel Marinberg 3/2/2021
 Printed Name & Title Date

COGENCY GLOBAL INC consent to serve as the registered agent on behalf of the business entity.
 Typed/Print Name of Registered Agent

Eric B. Hood ERIC HOOD ASSISTANT SECRETARY 3/19/2021
 Signature of Registered Agent Printed Name Title Date

Delaware

The First State

Page 1

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THAT THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF CONVERSION OF A DELAWARE CORPORATION UNDER THE NAME OF "ECO-SITE, INC." TO A DELAWARE LIMITED LIABILITY COMPANY, CHANGING ITS NAME FROM "ECO-SITE, INC." TO "ECO-SITE, LLC", FILED IN THIS OFFICE ON THE TWENTY-NINTH DAY OF MARCH, A.D. 2017, AT 1:37 O`CLOCK P.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE EFFECTIVE DATE OF THE AFORESAID CERTIFICATE OF CONVERSION IS THE FIRST DAY OF APRIL, A.D. 2017.



Jeffrey W. Bullock, Secretary of State

5235566 8100V
SR# 20172106135

Authentication: 202300262
Date: 03-30-17

You may verify this certificate online at corp.delaware.gov/authver.shtml

**STATE OF DELAWARE
CERTIFICATE OF CONVERSION
FROM A CORPORATION TO
A LIMITED LIABILITY COMPANY PURSUANT TO
SECTION 18-214 OF THE LIMITED LIABILITY ACT**

1. The jurisdiction where the corporation first formed is the State of Delaware.
2. The jurisdiction immediately prior to filing this Certificate is the State of Delaware.
3. The date the corporation was first formed is November 1, 2012.
4. The name of the corporation immediately prior to filing this Certificate is Eco-Site, Inc.
5. The name of the Limited Liability Company as set forth in the Certificate of Formation is Eco-Site, LLC.
6. This Certificate shall be effective as of April 1, 2017.

IN WITNESS HEREOF, the undersigned has executed and delivered this Certificate as of March 29, 2017.

ECO-SITE, INC.

By: _____


Dale Carey
Chief Executive Officer

Delaware

The First State

Page 1

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE DO HEREBY CERTIFY THAT THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "ECO-SITE, LLC" FILED IN THIS OFFICE ON THE TWENTY-NINTH DAY OF MARCH, A.D. 2017, AT 1:37 O`CLOCK P.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE EFFECTIVE DATE OF THE AFORESAID CERTIFICATE OF FORMATION IS THE FIRST DAY OF APRIL, A.D. 2017.




Jeffrey W. Bullock, Secretary of State

5235566 8100V
SR# 20172106135

Authentication: 202300262
Date: 03-30-17

You may verify this certificate online at corp.delaware.gov/authver.shtml

CERTIFICATE OF FORMATION

OF

ECO-SITE, LLC

This Certificate of Formation of Eco-Site, LLC, dated as of March 29, 2017, is being duly executed and filed by Dale Carey, as an authorized person, to form a limited liability company under the Delaware Limited Liability Company Act (6 Del. C. Section 18-101, et seq.).

FIRST: The name of the limited liability company formed hereby is Eco-Site, LLC (the "Company").

SECOND: The address of its registered office in the State of Delaware is 2711 Centerville Road, Suite 400, Wilmington, New Castle County, Delaware 19808-1645. The name of its registered agent at such address is Corporation Service Company.

THIRD: This Certificate of Formation shall be effective as of April 1, 2017.

IN WITNESS WHEREOF, the undersigned has executed this Certificate of Formation as of the date first above written.



Dale Carey, Authorized Person

EXHIBIT B

REFERENCE COPY

This is not an official FCC license. It is a record of public information contained in the FCC's licensing database on the date that this reference copy was generated. In cases where FCC rules require the presentation, posting, or display of an FCC license, this document may not be used in place of an official FCC license.



**Federal Communications Commission
Wireless Telecommunications Bureau**

RADIO STATION AUTHORIZATION

LICENSEE: KENTUCKY RSA NO. 1 PARTNERSHIP

ATTN: REGULATORY
KENTUCKY RSA NO. 1 PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign KNKQ306	File Number
Radio Service CL - Cellular	
Market Numer CMA443	Channel Block B
Sub-Market Designator 0	

FCC Registration Number (FRN): 0001836709

Market Name Kentucky 1 - Fulton

Grant Date 08-30-2011	Effective Date 11-02-2016	Expiration Date 10-01-2021	Five Yr Build-Out Date	Print Date
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Site Information:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
-----------------	-----------------	------------------	----------------------------------	--------------------------------------	---

1 36-20-59.2 N 089-22-12.3 W 98.0

Address: 0.68 MILE SOUTH OF LASSITER CORNER & REEL FOOT LAKE

City: LASSITER CORNER **County:** LAKE **State:** TN **Construction Deadline:**

Antenna: 1

Maximum Transmitting ERP in Watts: 135.800

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	148.000	117.000	107.000	117.000	121.000	147.000	149.000	146.000
Transmitting ERP (watts)	133.300	103.500	36.500	4.500	1.500	3.900	38.800	109.600

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

Call Sign: KNKQ306

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
2	36-45-58.0 N	088-38-50.0 W	143.0	147.8	1043917

Address: 416 Jintown Road

City: MAYFIELD County: GRAVES State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	124.300	120.000	100.800	92.100	88.300	103.100	108.600	100.800
Transmitting ERP (watts)	91.200	87.100	85.110	85.110	89.130	87.100	89.130	89.130

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
4	36-54-35.5 N	089-04-01.6 W	110.3	121.0	1030662

Address: (Wickliffe) 353 CR 1307

City: Bardwell County: CARLISLE State: KY Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.500	98.100	119.800	96.700	86.900	133.300	130.900	130.400
Transmitting ERP (watts)	189.230	48.640	1.690	0.930	0.930	0.930	1.810	52.120

Antenna: 5

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.500	98.100	119.800	96.700	86.900	133.300	130.900	130.400
Transmitting ERP (watts)	1.710	64.860	368.980	174.580	8.750	0.930	0.930	0.930

Antenna: 6

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.800	98.100	119.800	96.700	86.900	133.300	130.900	130.400
Transmitting ERP (watts)	0.350	0.350	1.230	35.330	112.440	35.270	1.000	0.350

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
6	36-31-12.4 N	088-50-41.5 W	144.2	122.2	1030665

Address: (Fulton) 550 Powell Road

City: Fulton County: HICKMAN State: KY Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	128.200	122.800	123.200	135.200	147.500	157.200	143.900	141.700
Transmitting ERP (watts)	110.570	412.100	98.560	4.220	1.510	0.920	0.920	6.530

Antenna: 5

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	128.200	122.800	123.200	135.200	147.500	157.200	143.900	141.700
Transmitting ERP (watts)	0.550	0.550	0.550	0.550	1.480	16.430	11.480	0.700

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

Call Sign: KNKQ306

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
6	36-31-12.4 N	088-50-41.5 W	144.2	122.2	1030665

Address: (Fulton) 550 Powell Road

City: Fulton County: HICKMAN State: KY Construction Deadline:

Antenna: 6

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	128.200	122.800	123.200	135.200	147.500	157.200	143.900	141.700
Transmitting ERP (watts)	135.480	5.650	2.230	0.920	1.320	5.450	78.640	402.820

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
7	36-38-26.2 N	088-16-00.1 W	165.8	90.8	1030663

Address: (Murray) 1431 Van Cleave Road

City: Murray County: CALLOWAY State: KY Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	106.900	107.100	115.000	106.900	87.400	91.300	86.200	97.500
Transmitting ERP (watts)	124.240	6.420	0.560	0.560	0.560	0.830	39.630	251.940

Antenna: 5

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	106.900	107.100	115.000	106.900	87.400	91.300	86.200	97.500
Transmitting ERP (watts)	3.450	96.460	263.070	57.230	1.700	0.560	0.560	0.560

Antenna: 6

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	106.900	107.100	115.000	106.900	87.400	91.300	86.200	97.500
Transmitting ERP (watts)	0.370	0.370	0.370	12.730	121.110	104.340	9.310	0.370

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
8	37-03-51.4 N	088-57-23.6 W	116.4	92.4	1030664

Address: (La Center) 220 RICHARDSON LN

City: LA CENTER County: BALLARD State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	85.600	78.400	71.900	66.000	65.300	67.000	87.700	96.100
Transmitting ERP (watts)	2.110	71.430	167.460	63.670	0.330	0.640	0.330	0.330

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	85.600	78.400	71.900	66.000	65.300	67.000	87.700	96.100
Transmitting ERP (watts)	1.230	1.000	1.380	23.440	338.840	457.090	66.070	2.240

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

Call Sign: KKNQ306

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
8	37-03-51.4 N	088-57-23.6 W	116.4	92.4	1030664

Address: (La Center) 220 RICHARDSON LN

City: LA CENTER County: BALLARD State: KY Construction Deadline:

Antenna: 4

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	85.600	78.400	71.900	66.000	65.300	67.000	87.700	96.100
Transmitting ERP (watts)	165.960	6.610	0.910	0.500	0.500	0.890	45.710	223.870

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
10	36-44-07.9 N	088-58-29.2 W	131.9	92.9	1030723

Address: 3975 State Route 2206

City: CLINTON County: HICKMAN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	100.500	101.900	98.900	84.700	107.900	118.900	119.900	100.400
Transmitting ERP (watts)	96.610	96.610	96.610	96.610	96.610	96.610	96.610	96.610

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
11	37-02-00.0 N	088-22-10.0 W	105.5	106.7	1040303

Address: (Calvert City) 641 Jary Johnson Rd.

City: Calvert City County: MARSHALL State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	78.900	77.600	88.100	83.000	68.600	85.300	97.900	93.100
Transmitting ERP (watts)	23.380	330.300	378.360	36.130	0.970	0.970	0.970	0.970

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	78.900	77.600	88.100	83.000	68.600	85.300	97.900	93.100
Transmitting ERP (watts)	0.970	0.970	0.970	14.730	240.930	357.480	49.940	1.230

Antenna: 4

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	78.900	77.600	88.100	83.000	68.600	85.300	97.900	93.100
Transmitting ERP (watts)	63.740	2.060	0.660	0.660	0.660	4.020	107.530	274.970

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

Call Sign: KKNQ306

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
12	36-34-49.2 N	088-31-45.2 W	155.5	91.4	1202399

Address: 12201 SR 97

City: TriCity County: GRAVES State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	75.100	73.400	74.100	70.100	102.600	100.900	74.700	81.300
Transmitting ERP (watts)	0.280	4.680	67.610	91.200	13.180	0.450	0.250	0.200

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	75.100	73.400	74.100	70.100	102.600	100.900	74.700	81.300
Transmitting ERP (watts)	0.360	0.200	0.200	0.350	18.200	89.130	66.070	2.630

Antenna: 4

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	75.100	73.400	74.100	70.100	102.600	100.900	74.700	81.300
Transmitting ERP (watts)	100.000	38.020	0.200	0.380	0.200	0.200	1.260	42.660

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
14	37-05-47.2 N	088-42-35.2 W	104.2	63.4	1200593

Address: (Paducah West) 4415 Merredith Rd.

City: Paducah County: MCCRACKEN State: KY Construction Deadline: 07-08-2014

Antenna: 4

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	59.900	55.900	65.200	50.700	38.200	34.700	42.800	64.600
Transmitting ERP (watts)	24.580	50.820	50.310	19.100	0.840	0.330	0.330	1.370

Antenna: 5

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	59.900	55.900	65.200	50.700	38.200	34.700	42.800	64.600
Transmitting ERP (watts)	0.440	0.440	12.210	76.570	112.800	57.980	5.460	0.440

Antenna: 6

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	59.900	55.900	65.200	50.700	38.200	34.700	42.800	64.600
Transmitting ERP (watts)	20.830	0.780	0.440	0.440	2.790	42.940	108.040	89.900

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

Call Sign: KKNQ306

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
15	36-46-54.2 N	088-03-28.1 W	199.0	126.5	1205551

Address: 14664 Canton Road

City: Golden Pond County: TRIGG State: KY Construction Deadline: 05-19-2006

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	165.000	178.000	160.400	174.500	170.600	167.000	177.000	183.900
Transmitting ERP (watts)	96.610	96.610	96.610	96.610	96.610	96.610	96.610	96.610

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
16	36-34-03.0 N	089-10-30.9 W	109.4	91.4	1282534

Address: (Hickman site) Holley Street

City: Hickman County: FULTON State: KY Construction Deadline: 05-28-2014

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	105.500	102.800	96.700	89.300	75.700	68.400	107.900	107.300
Transmitting ERP (watts)	141.700	118.910	1.140	0.580	0.580	0.580	0.580	4.050

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	105.500	102.800	96.700	89.300	75.700	68.400	107.900	107.300
Transmitting ERP (watts)	0.580	4.050	141.730	118.910	1.140	0.580	0.580	0.580

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	105.500	102.800	96.700	89.300	75.700	68.400	107.900	107.300
Transmitting ERP (watts)	0.460	0.460	0.460	0.460	0.460	7.710	45.610	24.600

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
17	37-10-55.4 N	088-56-43.7 W	102.7	99.1	1252613

Address: (Monkey's Eyebrow) 4625 Odgen Colvin Circle

City: Kevil County: BALLARD State: KY Construction Deadline: 10-24-2014

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	85.900	83.500	90.600	69.600	74.300	84.600	86.500	83.200
Transmitting ERP (watts)	7.080	125.890	478.630	112.200	4.570	1.580	1.000	1.000

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	85.900	83.500	90.600	69.600	74.300	84.600	86.500	83.200
Transmitting ERP (watts)	1.000	1.410	12.020	213.800	446.680	64.570	2.820	1.000

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

Call Sign: KKNQ306

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
17	37-10-55.4 N	088-56-43.7 W	102.7	99.1	1252613

Address: (Monkey's Eyebrow) 4625 Odgen Colvin Circle

City: Kevil County: BALLARD State: KY Construction Deadline: 10-24-2014

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	85.900	83.500	90.600	69.600	74.300	84.600	86.500	83.200
Transmitting ERP (watts)	2.000	2.000	2.000	2.000	2.000	398.110	549.540	4.900

Control Points:

Control Pt. No. 3

Address: 500 W. Dove Rd.

City: Southlake County: TARRANT State: TX Telephone Number: (800)264-6620

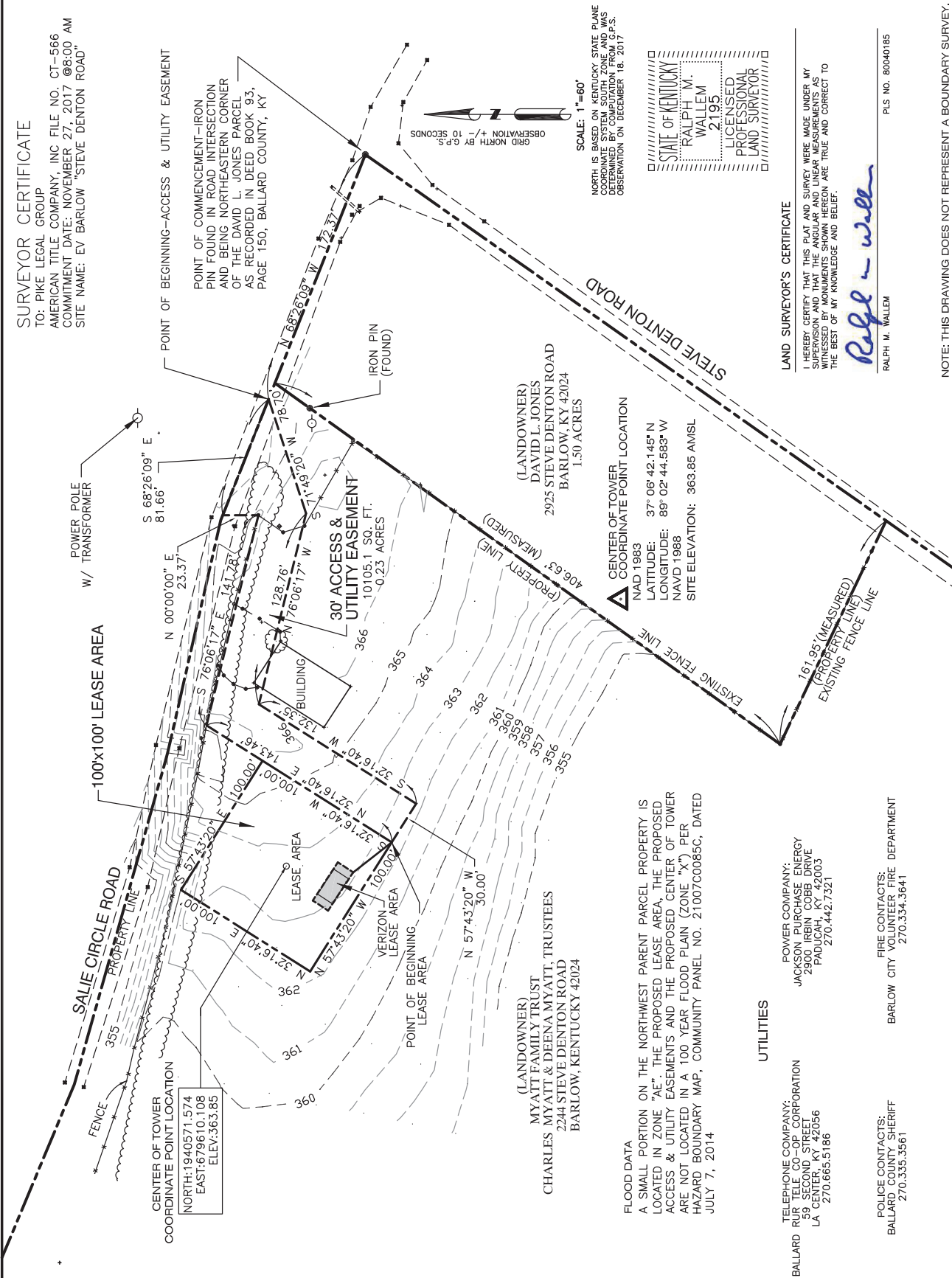
Waivers/Conditions:

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

EXHIBIT C

SURVEYOR CERTIFICATE

TO: PIKE LEGAL GROUP
 AMERICAN TITLE COMPANY, INC FILE NO. CT-566
 COMMITMENT DATE: NOVEMBER 27, 2017 @8:00 AM
 SITE NAME: EV BARLOW "STEVE DENTON ROAD"



1961 NORTHPOINT BLVD.
 SUITE 130
 HIXSON, TN 37343



PROJECT NUMBER:
 20161506655

SITE NAME:
 EV BARLOW

SITE ADDRESS:
 2557 STEVE DENTON RD
 BARLOW, KY 42024

LEASE AREA:
 10000 SQ. FT.

PROPERTY OWNER:
 MYATT FAMILY TRUST
 CHARLES MYATT & DEENA MYATT, TRUSTEES
 2244 STEVE DENTON ROAD
 BARLOW, KENTUCKY 42024

TAX PARCEL ID:
 24-30

COUNTY:
 BALLARD COUNTY

SOURCE OF TITLE:
 DEED BK 112, PG 227

LATITUDE: 37° 06' 42.145" N
LONGITUDE: 89° 02' 44.583" W

DWG BY: GVM
CHKD BY: RMMW
DATE: 12.22.17

NO. REVISION/ISSUE:
DATE:

1. ADD TITLE BLOCK AND PARCEL
 8.28.18
 2. REUSE FLOOD ZONE NOTE
 1.15.19

TITLE:
 SURVEY PLAN

SHEET:
 1 OF 3

LAND SURVEYOR'S CERTIFICATE
 I HEREBY CERTIFY THAT THIS PLAT AND SURVEY WERE MADE UNDER MY SUPERVISION AND THAT THE ANGULAR AND LINEAR MEASUREMENTS AS SHOWN ON THIS PLAT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.
Ralph M. Wallem
 RALPH M. WALLEM
 PLS NO. 80040185

NOTE: THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.

FLOOD DATA
 A SMALL PORTION ON THE NORTHWEST PARENT PARCEL PROPERTY IS LOCATED IN ZONE "AE", THE PROPOSED LEASE AREA, THE PROPOSED ACCESS & UTILITY EASEMENTS AND THE PROPOSED CENTER OF TOWER ARE NOT LOCATED IN A 100 YEAR FLOOD PLAIN (ZONE "X") PER HAZARD BOUNDARY MAP, COMMUNITY PANEL NO. 21007C0085C, DATED JULY 7, 2014

UTILITIES
 TELEPHONE COMPANY:
 BALLARD RUR TELE CO-OP CORPORATION
 59 SECOND STREET
 LA CENTER, KY 42056
 270.665.5186
 POWER COMPANY:
 JACKSON PURCHASE ENERGY
 2900 IRBIN COBB DRIVE
 PADUCAH, KY 42003
 270.442.7321

POLICE CONTACTS:
 BALLARD COUNTY SHERIFF
 270.335.5166
FIRE CONTACTS:
 BARLOW CITY VOLUNTEER FIRE DEPARTMENT
 270.334.3641

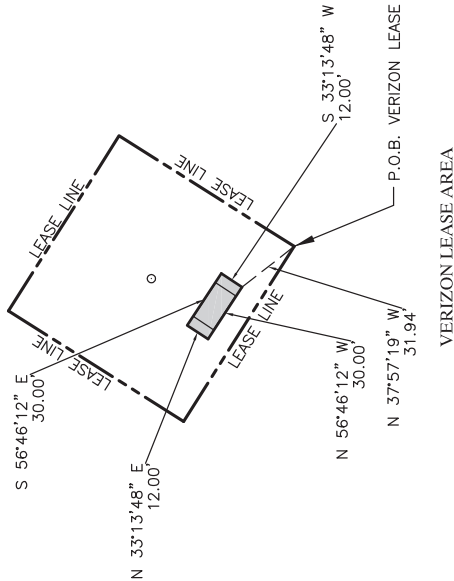
SURVEYOR CERTIFICATE

TO: PIKE LEGAL GROUP
 AMERICAN TITLE COMPANY, INC FILE NO. CT-566
 COMMITMENT DATE: NOVEMBER 27, 2017 @8:00 AM
 SITE NAME: EV BARLOW "STEVE DENTON ROAD"
 GRANTEE: THE MYATT FAMILY TRUST
 DATE: NOVEMBER 16, 2016
 GRANTOR: CHARLES MYATT AND DEENA MYATT, HUSBAND & WIFE, AND CHARLES MYATT AS EXECUTOR OF THE ESTATE OF JIMMY MYATT
 BOOK/PAGE: 112, 227

SCHEDULE B-SECTION II
 I CERTIFY THAT THIS PLAT AND SURVEY WERE MADE UNDER MY SUPERVISION, AND THAT THE ANGULAR AND LINEAR MEASUREMENTS, AS WHITNESSED BY MONUMENTS SHOWN HEREON, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.
 THIS SURVEY AND PLAT MEETS OR EXCEEDS THE MINIMUM STANDARDS OF THE GOVERNING AUTHORITIES.
 SURVEYOR STATEMENT-MY COMMENTS ARE BASED SOLELY ON THE TITLE DOCUMENT THAT HAVE BEEN SUPPLIED TO ME BY THE TITLE COMPANY. SINCE THE TITLE DOCUMENTS ARE FURNISHED FOR THE PARENT TRACT, OUR TOPOGRAPHIC SURVEY IS OF A PORTION OF THAT TRACT. MY COMMENTS ARE RESTRICTED TO EXCLUSIONS THAT I CAN DETERMINE AFFECT ONLY OUR PORTION OF THE PARENT TRACT. NO BOUNDARY SURVEY WAS PERFORMED ON THE PARENT TRACT, THUS IT IS NOT POSSIBLE TO DETERMINE WITH CERTAINTY EXCLUSIONS REFERRING TO THE PARENT TRACT.

SCHEDULE "B" SECTION II EXCEPTIONS
 ITEM 1 -NOT A SURVEYOR RELATED ITEM
 ITEM 2 -NOT A SURVEYOR RELATED ITEM
 ITEM 3 -NOT A SURVEYOR RELATED ITEM

Ralph M. Wallem
 END OF SCHEDULE B-II
 RALPH M. WALLEM INDIANA LAND SURVEYOR
 EFFECTIVE DATE: NOVEMBER 10, 2015



LEASE AREA DESCRIPTION

A PART OF A 69 ACRE PARCEL OF LAND OWNED BY THE MYATT FAMILY TRUST AS RECORDED IN DEED BOOK 112, PAGE 227, AND LYING SOUTHWEST OF THE INTERSECTION OF SALIE CIRCLE ROAD AND STEVE DENTON ROAD, BALLARD COUNTY, KENTUCKY.

COMMENCING AT AN IRON PIN FOUND AT THE INTERSECTION OF SAID SALIE CIRCLE ROAD AND STEVE DENTON ROAD, SAID POINT ALSO BEING THE NORTHEAST CORNER OF A PARCEL OF LAND OWNED BY DAVID L. JONES AS RECORDED IN DEED BOOK 93, PAGE 150, THENCE ALONG THE CENTERLINE OF SAID CIRCLE ROAD NORTH 68 DEGREES 26 MINUTES 09 SECONDS WEST 172.37 FEET; THENCE SOUTH 71 DEGREES 49 MINUTES 20 SECONDS WEST 78.70 FEET; THENCE NORTH 76 DEGREES 06 MINUTES 17 SECONDS WEST 128.76 FEET; THENCE SOUTH 32 DEGREES 16 MINUTES 40 SECONDS WEST 132.35 FEET; THENCE NORTH 57 DEGREES 43 MINUTES 20 SECONDS WEST 30.00 FEET TO THE SOUTHERNMOST LEASE CORNER AND BEING THE TRUE PLACE OF BEGINNING OF THIS LEASE AREA DESCRIPTION; THENCE NORTH 57 DEGREES 43 MINUTES 20 SECONDS WEST 100.00 FEET; THENCE NORTH 32 DEGREES 16 MINUTES 40 SECONDS EAST 100.00 FEET; THENCE SOUTH 57 DEGREES 43 MINUTE 20 SECONDS EAST 100.00 FEET; THENCE SOUTH 32 DEGREES 16 MINUTES 40 SECONDS WEST 100.00 FEET TO THE TRUE PLACE OF BEGINNING AND CONTAINING 10,000 SQUARE FEET, (0.23 ACRES), MORE OR LESS.

30' ACCESS & UTILITY EASEMENT DESCRIPTION

A PART OF A 69 ACRE PARCEL OF LAND OWNED BY THE MYATT FAMILY TRUST AS RECORDED IN DEED BOOK 112, PAGE 227, AND LYING SOUTHWEST OF THE INTERSECTION OF SALIE CIRCLE ROAD AND STEVE DENTON ROAD, BALLARD COUNTY, KENTUCKY.

COMMENCING AT AN IRON PIN FOUND AT THE INTERSECTION OF SAID SALIE CIRCLE ROAD AND STEVE DENTON ROAD, SAID POINT ALSO BEING THE NORTHEAST CORNER OF A PARCEL OF LAND OWNED BY DAVID L. JONES AS RECORDED IN DEED BOOK 93, PAGE 150, THENCE ALONG THE CENTERLINE OF SAID CIRCLE ROAD NORTH 68 DEGREES 26 MINUTES 09 SECONDS WEST 172.37 FEET TO THE TRUE PLACE OF BEGINNING OF THIS ACCESS AND EASEMENT DESCRIPTION; THENCE SOUTH 71 DEGREES 49 MINUTES 20 SECONDS WEST 78.70 FEET; THENCE NORTH 76 DEGREES 06 MINUTES 17 SECONDS WEST 128.76 FEET; THENCE SOUTH 32 DEGREES 16 MINUTES 40 SECONDS WEST 132.35 FEET; THENCE NORTH 57 DEGREES 43 MINUTES 20 SECONDS WEST 30.00 FEET TO THE SOUTHERNMOST LEASE CORNER; THENCE NORTH 32 DEGREES 16 MINUTES 40 SECONDS EAST 143.46 FEET; THENCE SOUTH 76 DEGREES 06 MINUTES 17 SECONDS EAST 141.78 FEET; THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS EAST 23.37 FEET; THENCE SOUTH 88 DEGREES 26 MINUTES 09 SECONDS EAST 81.66 FEET TO THE TRUE PLACE OF BEGINNING AND CONTAINING 10,105.1 SQUARE FEET, (0.23 ACRES), MORE OR LESS.

VERIZON LEASE AREA DESCRIPTION

A PART OF A 69 ACRE PARCEL OF LAND OWNED BY THE MYATT FAMILY TRUST AS RECORDED IN DEED BOOK 112, PAGE 227, AND LYING SOUTHWEST OF THE INTERSECTION OF SALIE CIRCLE ROAD AND STEVE DENTON ROAD, BALLARD COUNTY, KENTUCKY.

COMMENCING AT AN IRON PIN FOUND AT THE INTERSECTION OF SAID SALIE CIRCLE ROAD AND STEVE DENTON ROAD, SAID POINT ALSO BEING THE NORTHEAST CORNER OF A PARCEL OF LAND OWNED BY DAVID L. JONES AS RECORDED IN DEED BOOK 93, PAGE 150, THENCE ALONG THE CENTERLINE OF SAID CIRCLE ROAD NORTH 68 DEGREES 26 MINUTES 09 SECONDS WEST 172.37 FEET; THENCE SOUTH 71 DEGREES 49 MINUTES 20 SECONDS WEST 78.70 FEET; THENCE NORTH 76 DEGREES 06 MINUTES 17 SECONDS WEST 128.76 FEET; THENCE SOUTH 32 DEGREES 16 MINUTES 40 SECONDS WEST 132.35 FEET; THENCE NORTH 57 DEGREES 43 MINUTES 20 SECONDS WEST 30.00 FEET TO THE SOUTHERNMOST LEASE CORNER; THENCE NORTH 37 DEGREES 57 MINUTES 19 SECONDS WEST 31.94 FEET TO THE TRUE PLACE OF BEGINNING OF THIS VERIZON LEASE AREA; THENCE NORTH 56 DEGREES 46 MINUTES 12 SECONDS WEST 30.00 FEET; THENCE NORTH 33 DEGREES 13 MINUTES 48 SECONDS EAST 30.00 FEET; THENCE SOUTH 56 DEGREES 46 MINUTES 12 SECONDS EAST 30.00 FEET; THENCE SOUTH 33 DEGREES 13 MINUTES 48 SECONDS WEST 12.00 FEET AND CONTAINING 360 SQUARE FEET.

NOTE: THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.



1961 NORTHPOINT BLVD.
 SUITE 130
 HIXSON, TN 37343



PROJECT NUMBER:
 20161506655

SITE NAME:
 EV BARLOW

SITE ADDRESS:
 2557 STEVE DENTON RD
 BARLOW, KY 42024

LEASE AREA:
 10000 SQ. FT.

PROPERTY OWNER:
 MYATT FAMILY TRUST
 CHARLES MYATT & DEENA MYATT, TRUSTEES
 2244 STEVE DENTON ROAD
 BARLOW, KENTUCKY 42024
 TAX PARCEL ID:
 24-30

COUNTY:
 BALLARD COUNTY

SOURCE OF TITLE:
 DEED BK 112, PG 227

LATITUDE: 37° 06' 42.145" N
 LONGITUDE: 89° 02' 44.583" W

DWG BY: GVM
 CHKD BY: RHM
 DATE: 12.22.17

NO. REVISION/ISSUE
 1. ADD TITLE, LEASE, AND EASEMENT PARSE
 DATE: 8.28.18

2. REUSE FLOOD ZONE NOTE
 DATE: 1.15.19

TITLE:

SURVEY PLAN

SHEET:

2 OF 3

PARENT PARCEL DESCRIPTION

TRACT NO. 1: BEGINNING AT A STAKE IN THE CORNER OF THE HULDA CRICE TRACT WITH DOUBLE WHITE OAK, SOUTH 41 DEG. WEST 13 LINKS, BLACK OAK NORTH 18½ DEG. EAST 30 LINKS; THENCE NORTH 71 DEG. WEST 58 POLES TO A STAKE IN TERRELL'S LINE; THENCE NORTH 18½ DEG. EAST WITH TERRELL LINE 127 POLES TO A STAKE IN THE CENTER OF THE TERRELL LANDING ROAD, SASSAFRAS SOUTH 46 DEG. WEST 1 POLE AND LARGE WHITE OAK NORTH 18 DEG. EAST 2 POLES AND 87 LINKS; THENCE SOUTH 84 DEG. EAST WITH THE CENTER OF SAID ROAD 84 POLES TO A STAKE IN HULDA CRICE'S LINE; THENCE SOUTH 28 DEG. WEST 134 POLES TO THE BEGINNING, CONTAINING 56 ACRES AND 34 POLES, MORE OR LESS. SUBJECT TO LEGAL HIGHWAYS.

EXCEPTION NO. 1: LESS AND EXCEPT HOWEVER, A ONE ACRE TRACT OF LAND CONVEYED BY WILLIAM B. WATSON TO JIMMIE MYATT BY DEED DATED JANUARY 27, 1960, DEED BOOK 64, PAGE 250 AND DESCRIBED AS FOLLOWS; BEGINNING AT A STAKE AT THE SOUTHEAST CORNER OF A 56 ACRE TRACT OF LAND, SAID STAKE BEING THE CENTER OF AND AT A TURN OF A COUNTY GRAVEL ROAD KNOWN AS STEVE DENTON ROAD; THENCE NORTH 71 DEG. WEST 210 FEET TO A STAKE IN THE CENTER OF SAID ROAD; THENCE NORTH 18½ DEG. WEST 210 FEET WITH THE CENTER OF STEVE DENTON ROAD TO THE POINT OF BEGINNING, CONTAINING ONE (1) ACRE, AND BEING ONE ACRE OUT OF THE SOUTHEAST CORNER OF THE 56 ACRE TRACT.

EXCEPTION NO. 2: LESS AND EXCEPT HOWEVER, A ONE AND ONE-HALF ACRE TRACT OF LAND CONVEYED BY BILLIE EVELYN EWING AND HUSBAND, BILL N. EWING TO DAVID JONES BY DEED DATED APRIL 19, 1984 OF RECORD IN MICROFILM CABINET 1, DRAWER 9, CARD NO. _____ AND DESCRIBED AS FOLLOWS: BEGINNING AT A POINT IN THE CENTER OF THE TERRELL LANDING COUNTY ROAD, SAID POINT BEING THE CENTER OF THE DENTON COUNTY ROAD SOUTH 30 DEG. WEST 413 FEET TO A NEW CORNER IN THE HENRY ADAMS TRACT OF LAND; THENCE ON A NEW LINE WITH THE ADAMS LAND NORTH 80 DEG. WEST 160 FEET; THENCE NORTH 30 DEG. EAST 413 FEET TO A POINT IN THE CENTER OF TERRELL LANDING COUNTY GRAVEL ROAD; THENCE WITH THE CENTER OF SAID ROAD SOUTH 80 DEG. EAST 160 FEET TO THE POINT OF BEGINNING AND CONTAINING ONE AND ONE HALF ACRES, MORE OR LESS, ACCORDING TO A SURVEY MADE APRIL 13, 1983 BY B. ALLIE, SURVEYOR, WICKLIFFE, KENTUCKY.

TRACT NO. 2: BEGINNING AT A BLACK OAK ON THE BANK OF A RAVINE, IN TERRELL'S LINE; THENCE NORTH 18 DEG. EAST 5½ POLES TO A STAKE IN THE CENTER OF TERRELL LANDING ROAD, SASSAFRAS AND WHITE OAK POINTERS; THENCE NORTH 65 DEG. WEST 33 POLES TO A STAKE IN THE RAVINE; THENCE SOUTH 82 DEG. WEST 20 POLES TO THE INTERSECTION OF THE TERRELL LINE; THENCE WITH TERRELL'S LINE IN A SOUTHERN DIRECTION TO THE BEGINNING AND CONTAINING 2½ ACRES, MORE OR LESS, SUBJECT TO LEGAL HIGHWAYS.

TRACT NO. 3: BEGINNING AT A STAKE IN THE NORTHEAST CORNER OF THE ORIGINAL 191½ ACRE TRACT OF LAND OWNED BY J.H. CRICE; THENCE SOUTH 20 DEG. WEST 132½ POLES; THENCE NORTH 71 DEG. WEST 27.17 POLES TO A STAKE, A NEW CORNER; THENCE NORTH 20 DEG. EAST 132½ POLES TO A STAKE IN THE NORTH LINE OF THE ORIGINAL J.H. CRICE TRACT OF LAND; THENCE SOUTH 72 DEG. EAST 27.17 POLES TO THE BEGINNING, CONTAINING 22½ ACRES, MORE OR LESS, BY ACTUAL SURVEY MADE BY D.W. JUDD, MCCrackEN COUNTY SURVEYOR, IN YEAR 1938, BUT SUBJECT TO ALL LEGAL HIGHWAYS.

LESS AND EXCEPT HOWEVER, A TWO ACRE TRACT OF LAND CONVEYED BY JESSIE C. HOWLE AND HUSBAND, A.K. HOWLE TO JESSIE ROSS BY DEED DATED MAY 7, 1945, DEED BOOK 51, PAGE 212, AND DESCRIBED AS FOLLOWS: BEGINNING AT A STAKE IN THE ROAD AT THE SOUTHEAST CORNER OF THE 22½ ACRE TRACT; THENCE NORTH 71 DEG. WEST 450 FEET TO THE SOUTHWEST CORNER OF THE 22½ ACRE TRACT; THENCE NORTH 20 DEG. EAST APPROXIMATELY 195 FEET TO A STAKE, A NEW CORNER, THENCE SOUTH 71 DEG. EAST 450 FEET TO A STAKE, THE SOUTHWEST CORNER OF THE 56 ACRE TRACT; THENCE SOUTH 20 DEG. WEST APPROXIMATELY 195 FEET TO THE PLACE OF BEGINNING, CONTAINING TWO (2) ACRES, MORE OR LESS, SUBJECT TO ALL LEGAL HIGHWAYS.

BEING IN ALL RESPECTS THE SAME PROPERTY CONVEYED TO JIMMIE MYATT AND WIFE, ETHEL MYATT, S ONE-HALF (½) INTEREST, AND CHARLES MYATT AND WIFE, DEENA MYATT, A ONE-HALF (½) INTEREST, BY DEED DATED APRIL 19, 1984, RECORDED IN CABINET 1, DRAWER 9, CARD 16, 1128 BALLARD COUNTY CLERK'S OFFICE. ETHEL MYATT, PREDECEASED JIMMIE MYATT, UPON HER DEATH THIER ONE-HALF (½) IN THE PROPERTY FULLY VESTED IN JIMMIE MYATT PURSUANT TO THE SURVIVORSHIP CLAUSE STATED IN THE AFORESAID DEED. JIMMIE MYATT IS NOW DECEASED. PURSUANT TO THE TERMS OF THE LAST WILL AND TESTAMENT OF JIMMIE MYATT RECORDED IN WILL BOOK 6, PAGE 71, CHARLES MYATT IS APPOINTED AS EXECUTOR WITH THE POWER TO TRANSFER REAL ESTATE.

TO HAVE AND TO HOLD THE ABOVE PREMISES, TOGETHER WITH ALL APPURTENANCES THEREUNTO BELONGING, TO THE GRANTEE, ITS SUCCESSORS AND ASSIGNS FOREVER.

PARENT PARCEL DEED DESCRIPTION FURNISHED TO BENCHMARK SERVICES, INC. NO BOUNDARY SURVEY WAS PERFORMED TO CREATE THIS LEASE/ACCESS AREA.



1961 NORTHPOINT BLVD.
SUITE 130
HIXSON, TN 37343



PROJECT NUMBER:
20161506655

SITE NAME:
EV BARLOW

SITE ADDRESS:
2557 STEVE DENTON RD
BARLOW, KY 42024

LEASE AREA:
10000 SQ. FT.

PROPERTY OWNER:
MYATT FAMILY TRUST
CHARLES MYATT & DEENA MYATT, TRUSTEES
2244 STEVE DENTON ROAD
BARLOW, KENTUCKY 42024

TAX PARCEL ID:
24-30

COUNTY:
BALLARD COUNTY

SOURCE OF TITLE:
DEED BK 112, PG 227

LATITUDE: 37° 06' 42.145" N
LONGITUDE: 89° 02' 44.583" W

DWG BY: GVVW
CHKD BY: RIVWV
DATE: 12.22.17

NO. REF/ISSUE
DATE:

1. ADD TITLE FOR MAIN USE AND PERMIT FASE
8.28.18

2. REUSE FLOOD ZONE NOTE
1.15.19

TITLE:

SURVEY PLAN

SHEET:
3 OF 3

NOTE: THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.

REVISION LOG

REV.	MMDDYY	SHEET NUMBER & NAME
A	03/31/18	ISSUED FOR REVIEW
B	01/22/19	ADDED DISTANCE TO HOUSE
C	07/26/19	REMOVED DISTANCE TO HOUSE
0	03/08/19	REVISED TITLE OF SHEET C-1B TO "TOWER DISTANCE TO PROPERTY LINES AND RESIDENTIAL STRUCTURES"
1	02/18/19	REVISED SHEET INDEX TO REFLECT SHEET C-1B TITLE CHANGE
2	01/25/22	REMOVED DISTANCE TO HOUSE



159 PARK OF COMMERCE DRIVE, SUITE 200
 BOCA RATON, FL 33487
 561.222.1033
 561.222.1111

DESCRIPTION
 REVIEWED FOR 50% REVIEW
 REVISIONS
 CHECKS
 28760
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 01/28/2022

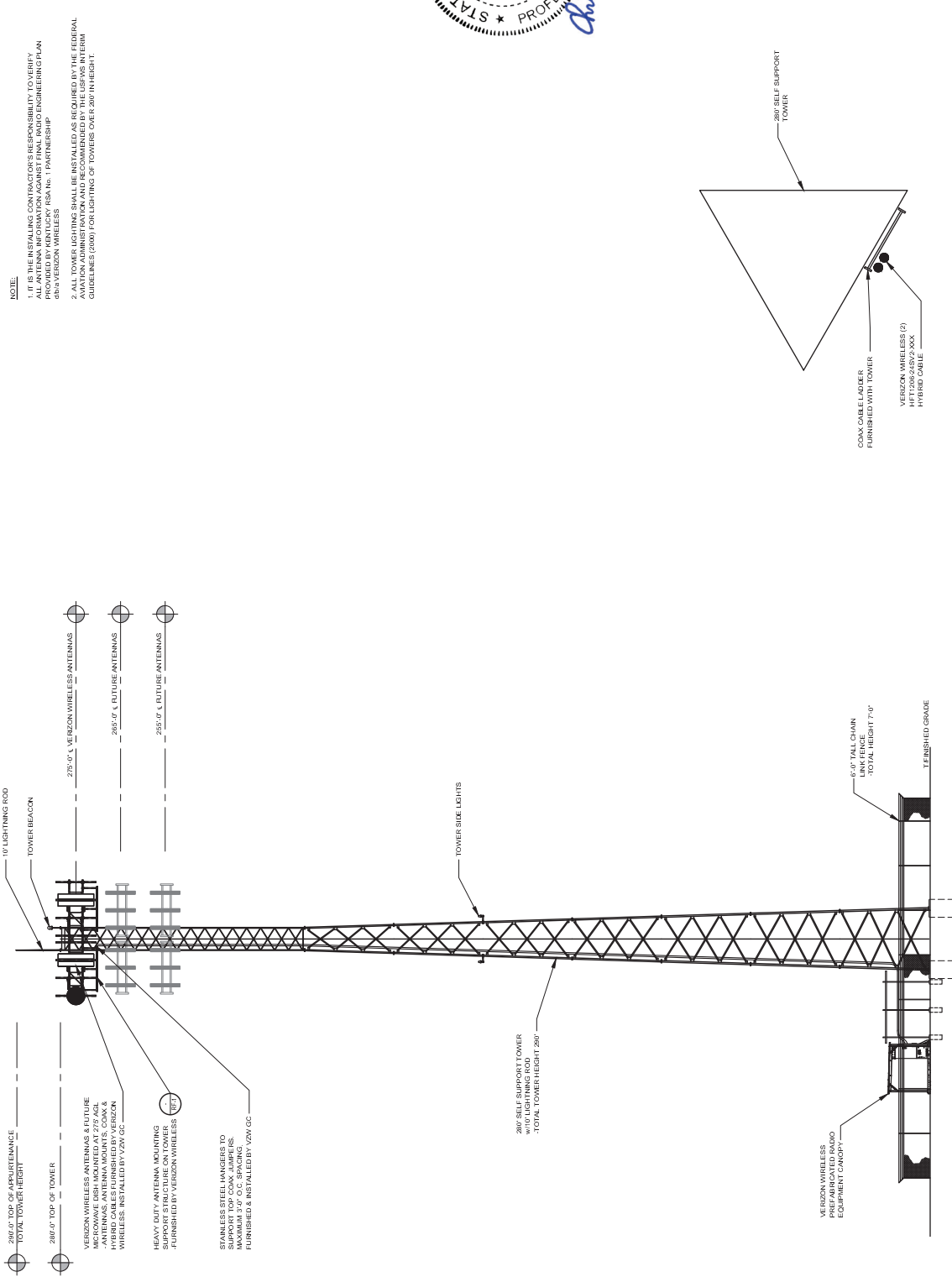
EV BARLOW
 2657 STEVE DENTON ROAD
 BARLOW, KY 42024
 REVISION LOG

ISSUED FOR:	DATE
REVIEW	---
PERMIT	---
CONSTRUCTION	---
RECORD	---

PROJECT NUMBER: 2017770.39
 TYP: DTC

JOHNSON
 2017770.39
 R-1

1 2 3 4 5



NOTE:
 1. IT IS THE INSTALLING CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL ANTENNA INFORMATION AGAINST FINAL RADIO ENGINEERING PLAN PROVIDED BY KENTUCKY RSA No. 1 PARTNERSHIP
 2. ALL TOWER LIGHTING SHALL BE INSTALLED AS REQUIRED BY THE FEDERAL COMMUNICATIONS COMMISSION (FCC) PART 175.307 AND THE FEDERAL GUIDELINES (2008) FOR LIGHTING OF TOWERS OVER 200' IN HEIGHT.



759 PARK OF COMMERCE DRIVE, SUITE 200
 BOCA RATON, FL 33487
 verticalbridge

NO.	DESCRIPTION
1	ISSUED FOR...
2	REVIEW...
3	PERMIT...
4	CONSTRUCTION...
5	RECORD...
6	PROJECT FINISH...
7	DISBURS...
8	DTC...

EV BARLOW
 2557 STEVE DENTON ROAD
 BARLOW, KY 42024
 TOWER ELEVATION

ISSUED FOR:	...
REVIEW:	...
PERMIT:	...
CONSTRUCTION:	...
RECORD:	...
PROJECT FINISH:	...
DISBURS:	...
DTC:	...

JOHN
 2017770.39
 TE-1

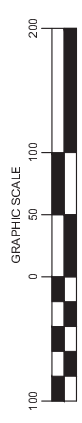


COAX PLAN
 SCALE: N.T.S.

1
 TE-1
 TOWER ELEVATION
 SCALE: N.T.S.



OVERALL SITE PLAN
 W/AERIAL OVERLAY
 SCALE: 1" = 100'



Kentucky 811
 Call before you dig
 1-800-752-6007
 PER KENTUCKY STATE LAW, IF BY AGREEMENT THE USER
 UNDERSTANDS AND AGREES TO WAIVE ALL RIGHTS TO
 RECOVER DAMAGES FOR NEGLIGENCE OR OTHER TORTIOUS
 ACTS, INCLUDING ATTORNEY'S FEES, IN CONNECTION WITH
 THIS SERVICE.



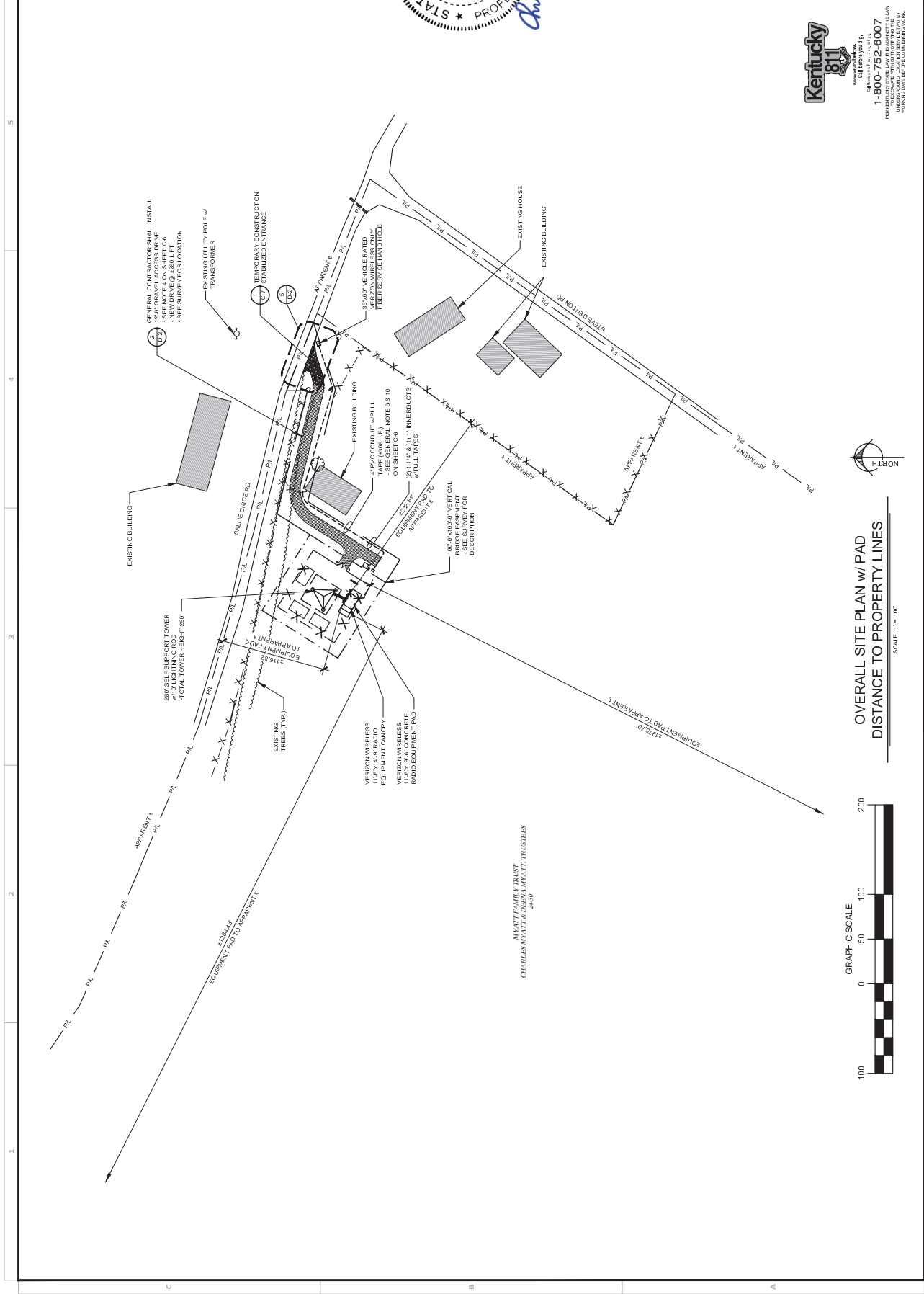
759 PARK OF COMMERCE DRIVE, SUITE 200
BOCA RATON, FL 33487
verticalbridge

ISSUED FOR:	ISSUED DATE:
REVISION	
PERMIT	
CONSTRUCTION	
RECORD	
PROJECT NUMBER	DISPATCH
TPP	DTC

EV BARLOW
2557 STEVE DENTON ROAD
BARLOW, KY 42024
PAD DISTANCE TO
PROPERTY LINES

ISSUED FOR:	ISSUED DATE:
REVISION	
PERMIT	
CONSTRUCTION	
RECORD	
PROJECT NUMBER	DISPATCH
TPP	DTC

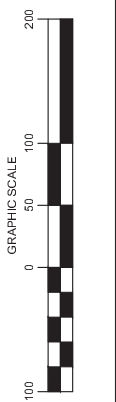
JOHN
2017770.39
C-1A



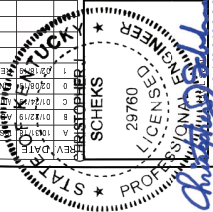
Kentucky 811
KENTUCKY CALL BEFORE YOU DIG
1-800-752-6007
FOR A LIST OF PARTICIPATING UTILITIES, VISIT
WWW.KY811.COM OR CALL 1-800-752-6007.
WORKING TOGETHER FOR THE COMMONWEALTH OF KENTUCKY.

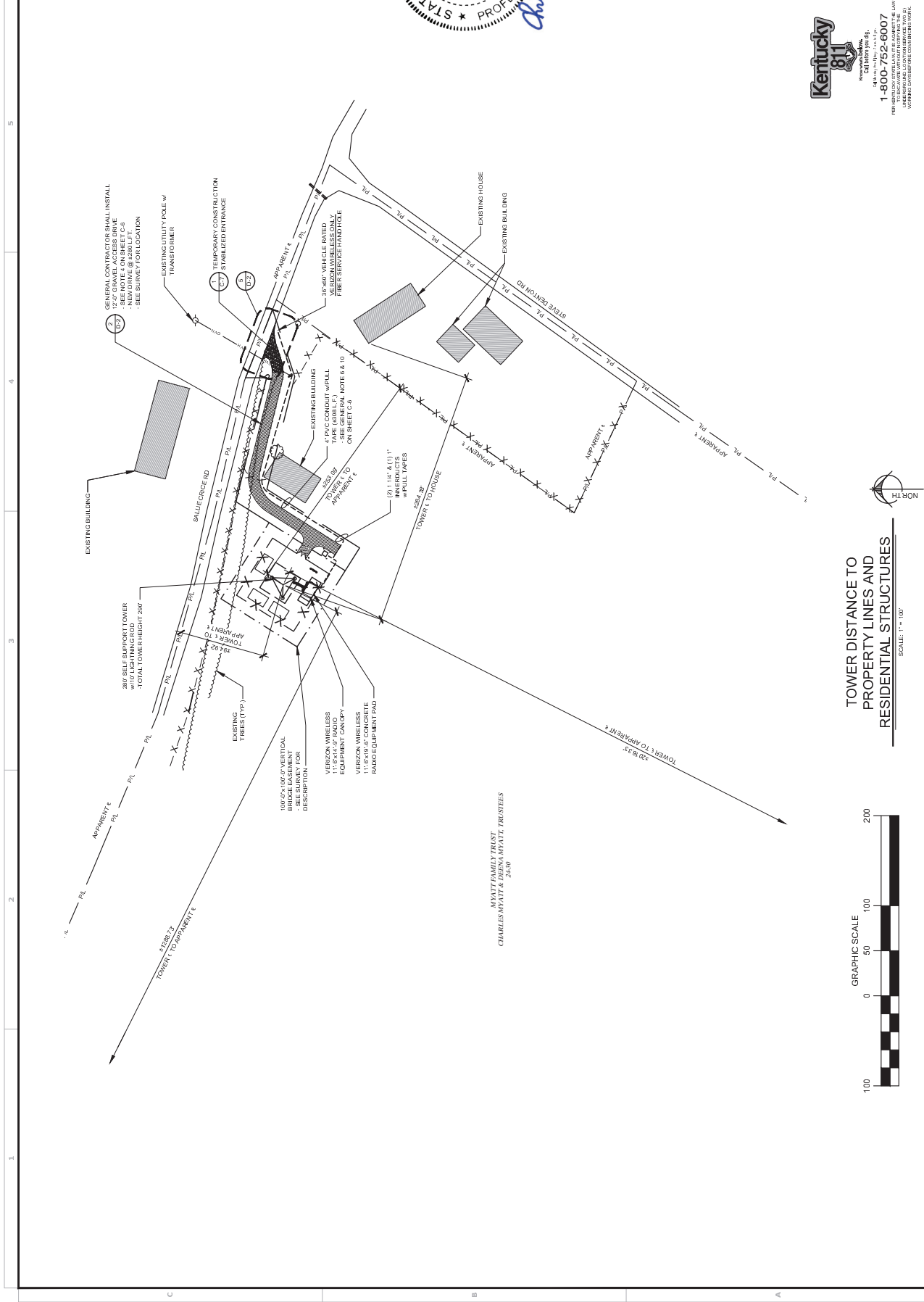


OVERALL SITE PLAN w/ PAD
DISTANCE TO PROPERTY LINES
SCALE: 1" = 100'



MYATT FAMILY TRUST
CHARLES MYATT & BENA MYATT, TRUSTEES
26-00





TOWER DISTANCE TO PROPERTY LINES AND RESIDENTIAL STRUCTURES
SCALE: 1" = 100'



Kentucky 811
Call before you dig.
1-800-752-6007
FOR MORE INFORMATION VISIT OUR WEBSITE AT WWW.KY811.COM
WORKING TOGETHER TO KEEP YOU SAFE.

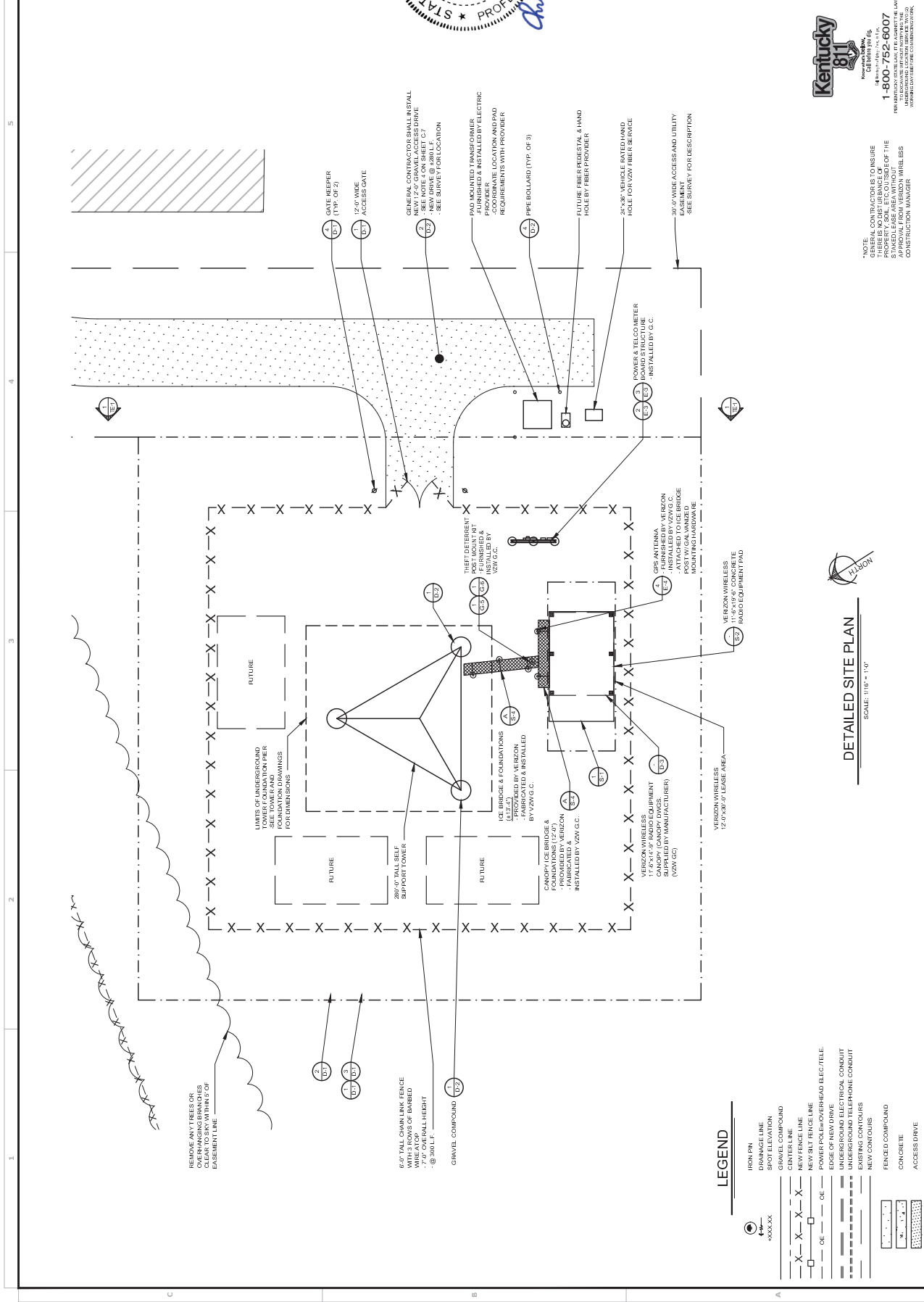
ISSUED FOR:	...
REVIEW:	...
PERMIT:	...
CONSTRUCTION:	...
RECORD:	...
PROJECT NUMBER:	2017770.39
DATE:	10/12/2022

EV BARLOW
2657 STEVE DENTON ROAD
BARLOW, KY 42024
TOWER DISTANCE TO PROPERTY LINES AND RESIDENTIAL STRUCTURE

REGISTERED PROFESSIONAL ENGINEER
29780
SCHEKS
STATE OF KENTUCKY
10/12/2022

NO.	DATE	DESCRIPTION
1	10/12/2022	ISSUED FOR 50% REVIEW
2	10/12/2022	FOR PERMIT
3	10/12/2022	FOR CONSTRUCTION
4	10/12/2022	FOR RECORD

GPD GROUP, INC.
159 PARK OF COMMERCE DRIVE, SUITE 200
BOCA RATON, FL 33487
954-992-2222
www.gpdgroup.com



LEGEND

- IRON PIN
- DRAINAGE LINE
- SPOT ELEVATION
- GRAVEL COMPOUND
- CENTERLINE
- NEW FENCE LINE
- POWER POLE/OVERHEAD ELEC. TELE.
- EDGE OF NEW DRIVE
- UNDERGROUND ELECTRICAL CONDUIT
- UNDERGROUND TELEPHONE CONDUIT
- EXISTING CONTOURS
- NEW CONTOURS
- FENCE D COMPOUND
- CONCRETE
- ACCESS DRIVE

DETAILED SITE PLAN
SCALE: 1/8" = 1'-0"



Kentucky 811
 1-800-752-6007
 PERMITS AND UTILITIES
 1500 COMMONWEALTH CENTER DRIVE, SUITE 200
 COVINGTON, KY 40303

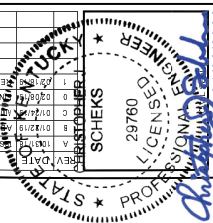
*NOTE:
 GENERAL CONTRACTORS TO INSURE
 PROPERTY, SOIL, ETC. OUTSIDE OF THE
 PROPERTY LINE. APPROVAL FROM VERIZON WIRELESS
 CONSTRUCTION MANAGER

ISSUED FOR:	...
REVISION:	...
PERMIT:	...
CONSTRUCTION:	...
RECORD:	...
PROJECT NUMBER:	DISPERS
DTC:	...

JOB NO.
2017770.39

C-3

EV BARLOW
 2577 STEVE DENTON ROAD
 BARLOW, KY 42024
 10/12/2022



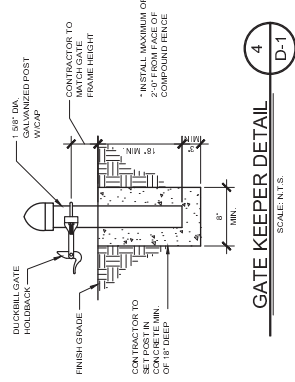
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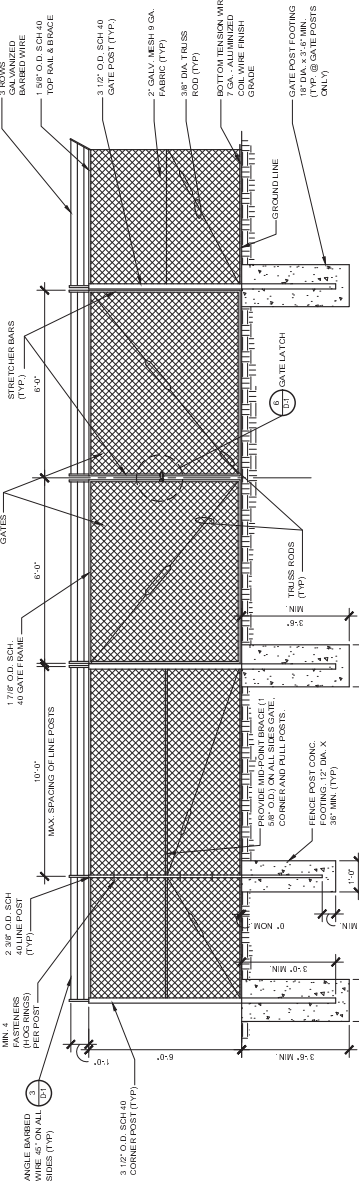
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REVISION:	...
PERMIT:	...
CONSTRUCTION:	...
RECORD:	...
PROJECT NUMBER:	2017770.39
DRAWN:	...
DATE:	...

CHAIN LINK FENCING NOTES

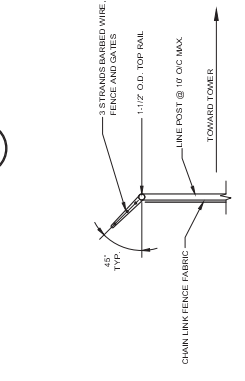
1. ALL FENCE AND FABRIC SHALL BE HOT DIPPER GALVANIZED WITH A MINIMUM OF 2.0Z PER SQUARE FOOT. 30 GAUGE WIRE (MIN. BREAKING STRENGTH OF 1,200 LBS) WITH 2" MESH. ALL BARBED WIRE SHALL BE ALUMINUM OR COATED PER NOTE #4.
2. BOTTOM EDGE OF FENCE FABRIC SHALL EXTEND TO UNFINISHED GRADE.
3. 1" DIA. GALV. BRACE ROD SHALL BE INSTALLED AT 6' ON CENTER. BRACE RODS SHALL BE 1" DIA. GALV. BRACE RODS WITH 1/2" DIA. GALV. BRACE RODS AT CORNERS AND ALL SIDES OF GATE.
4. BARBED WIRE SHALL BEET ASTM A 121, CLASS 3 GALV. OR ASTM A 952, TYPE 1, CLASS 2 COATING NOT LESS THAN 0.8 OZ. PER SQ. FT. AND SHALL BE THREE STAND 1.5 GAUGE W4 POINT BARBS AT 2' O.C.
5. BOTTOM EDGE OF CONCRETE FENCE SHALL BE SET BELOW FINISH GRADE (SEE LOCAL CODE). WHERE POST FOUNDATION DIAMETERS BY 4". PROVIDE CONCRETE WITH A 3500 PSI STRENGTH OF 2000 PSI (MIN.).
6. PROVIDE ALONGSIDE BRACE ROD AND TURN BRICKLE ON BOTH GATE LEAFS.
7. ALL PILES AND BRACES SHALL BE SCHEDULE 40 STEEL PIPE, AND ALL FENCE POSTS SHALL BE 4" DIA. GALV. BRACE RODS WITH 1/2" DIA. GALV. BRACE RODS AT CORNERS AND ALL SIDES OF GATE.
8. CONTRACTOR SHALL ENSURE ALL POSTS ARE PLUMB.
9. ALL FENCE SHALL BE FABRICATED AND INSTALLED PER ASTM F2811-15, ASTM F907-14 AND CHAIN LINK FENCE MANUFACTURER'S INSTITUTE, CLAIM #M2445.
10. CONTRACTOR SHALL FURNISH AND INSTALL ONE (1) MASTER LOCK LONG SHANK #175H COMBINATION PADLOCK. COMBINATION TO BE SET AT 7011.



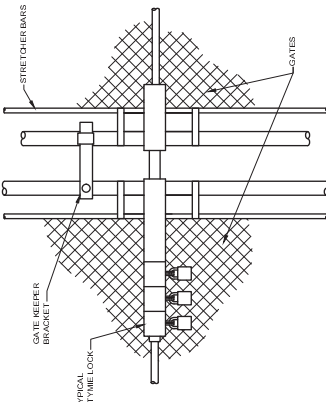
GATE KEEPER DETAIL
SCALE: N.T.S.



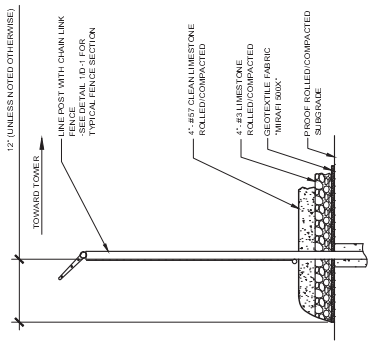
CHAIN LINK FENCE & POST DETAIL
SCALE: N.T.S.



TYPICAL BARBED WIRE DETAIL
SCALE: N.T.S.



GATE LATCH DETAIL
SCALE: N.T.S.



SITE AREA SURFACING
SCALE: N.T.S.

STANDARD COMBINATION LOCK SPEC
 ALL LOCKS SHOULD BE MARINE GRADE BRASS BRASS BODY PROVIDES STRENGTH AND CORROSION RESISTANCE. RESIST HACKS, WEAR, BENT CUTTERS, AND CORROSIVE WEATHER CONDITIONS. COMBINATION SHOULD BE A PROGRAMMABLE COMBINATION LOCK THAT IS STRONG, DURABLE AND HIGHLY WEATHER RESISTANT. THE FOLLOWING IS APPROVED BY VERTICAL BRIDGE FOR THIS PROJECT. THE COMBINATION IS NOT LIMITED TO THE ONLY MAKE OF THIS TYPE OF LOCK.
PART NUMBERS:
 ABUS 1000S WITH 2-1/4" MARINE GRADE BRASS 100 COMBINATION 1" MARINE GRADE WITH 4 DIALS.
 CONTRACTOR SHALL FURNISH AND INSTALL (1) VERTICAL BRIDGE COMBINATION PADLOCK COMBINATION SET TO "9911".
NOTE:
 ALL FENCE FABRIC SHALL BE APPROVED BY THE OWNER. CONSTRUCTION TO BE APPROVED BY THE OWNER. CONSTRUCTION MANAGER.

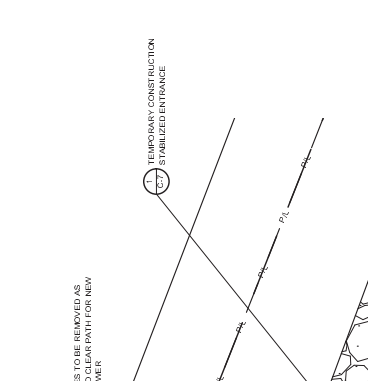
1 2 3 4 5



1

PARTIAL COMPOUND SECTION

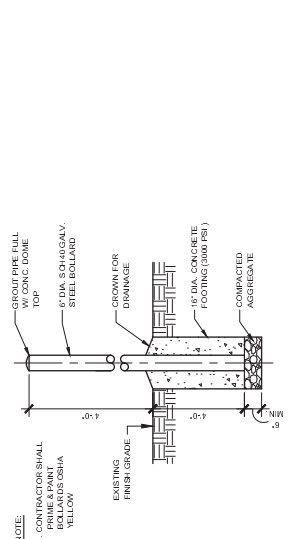
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2

ACCESS DRIVE TYPICAL SECTION

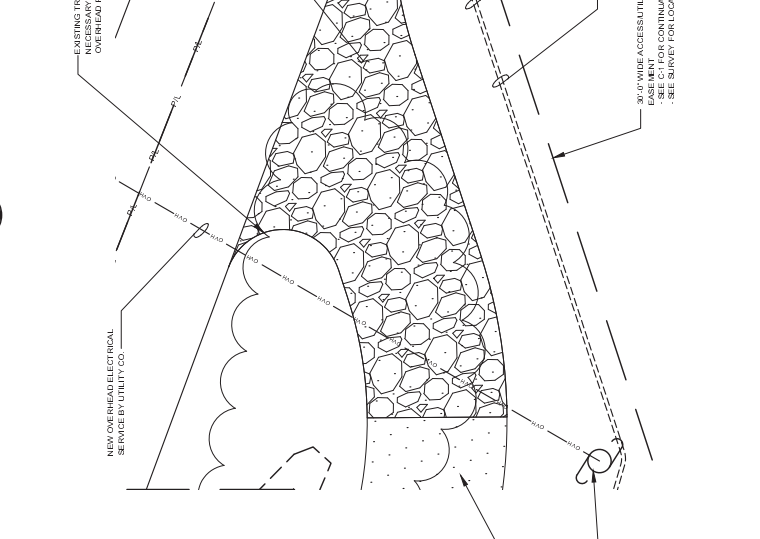
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3

BOLLARD DETAIL

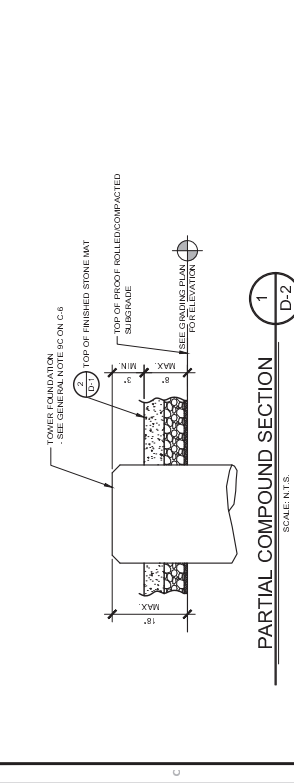
 SCALE: 1/2" = 1'-0"



4

ENLARGED FIBER HAND HOLE PLAN AT R.O.W.

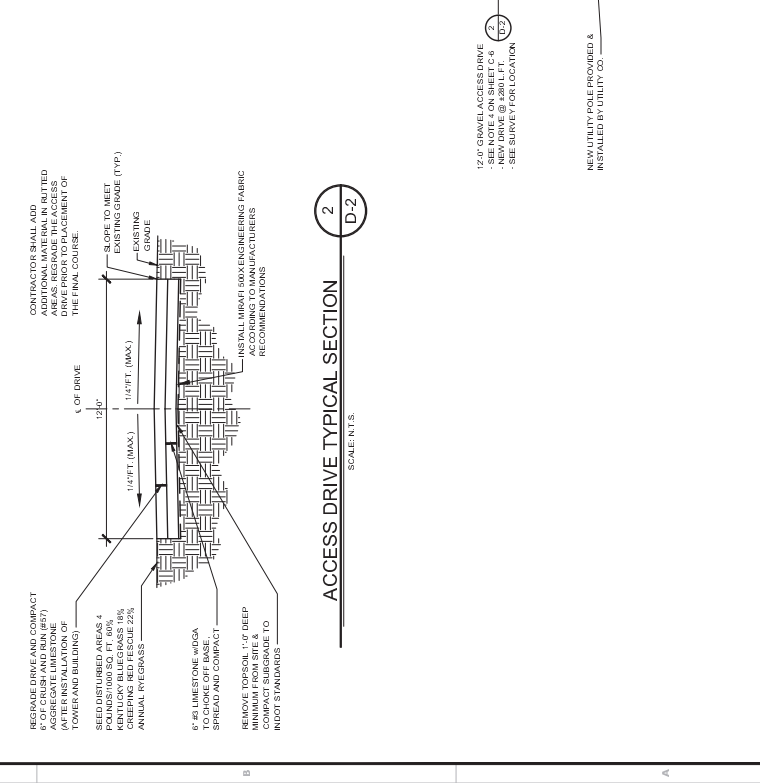
 SCALE: 3/32" = 1'-0"



5

BOLLARD DETAIL

 SCALE: 1/2" = 1'-0"



6

ENLARGED FIBER HAND HOLE PLAN AT R.O.W.

 SCALE: 3/32" = 1'-0"

STATE OF KENTUCKY

 REGISTERED PROFESSIONAL ENGINEER

 28760

 01/28/2022

ISSUED FOR:	---
DESIGN:	---
PERMIT:	---
CONSTRUCTION:	---
RECORD:	---

PROJECT NUMBER:	DISBURS:
TPP:	DTC:

2017770.39

NORTH

5

 D-2

ENLARGED FIBER HAND HOLE PLAN AT R.O.W.

 SCALE: 3/32" = 1'-0"

REV.	DATE	DESCRIPTION
1	02/19/19	ISSUED FOR 50% REVIEW
2	02/19/19	ADDED DIM TRACE TO HOUSE
3	02/19/19	ADDED DIM TRACE TO HOUSE
4	02/19/19	ADDED DIM TRACE TO HOUSE
5	02/19/19	ADDED DIM TRACE TO HOUSE
6	02/19/19	ADDED DIM TRACE TO HOUSE
7	02/19/19	ADDED DIM TRACE TO HOUSE
8	02/19/19	ADDED DIM TRACE TO HOUSE
9	02/19/19	ADDED DIM TRACE TO HOUSE
10	02/19/19	ADDED DIM TRACE TO HOUSE
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49	02/19/19	ADDED DIM TRACE TO HOUSE
50	02/19/19	ADDED DIM TRACE TO HOUSE

REFERENCE ONLY

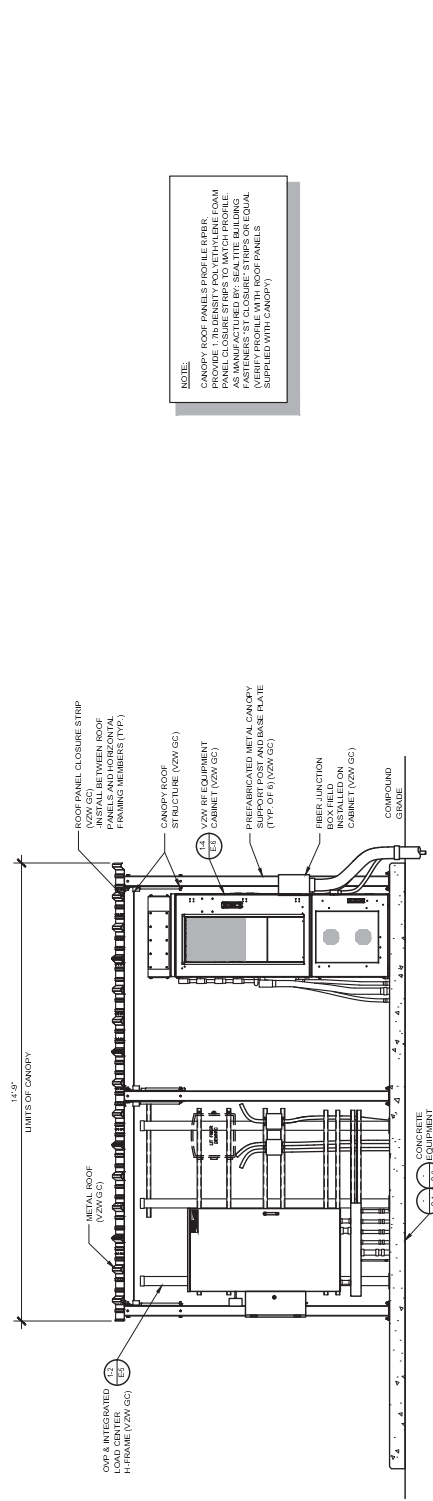
EV BARLOW
 2557 STEVE DENTON ROAD
 BARLOW, KY 42024

ISSUED FOR:	DATE:
DESIGN	...
PERMIT	...
CONSTRUCTION	...
RECORD	...

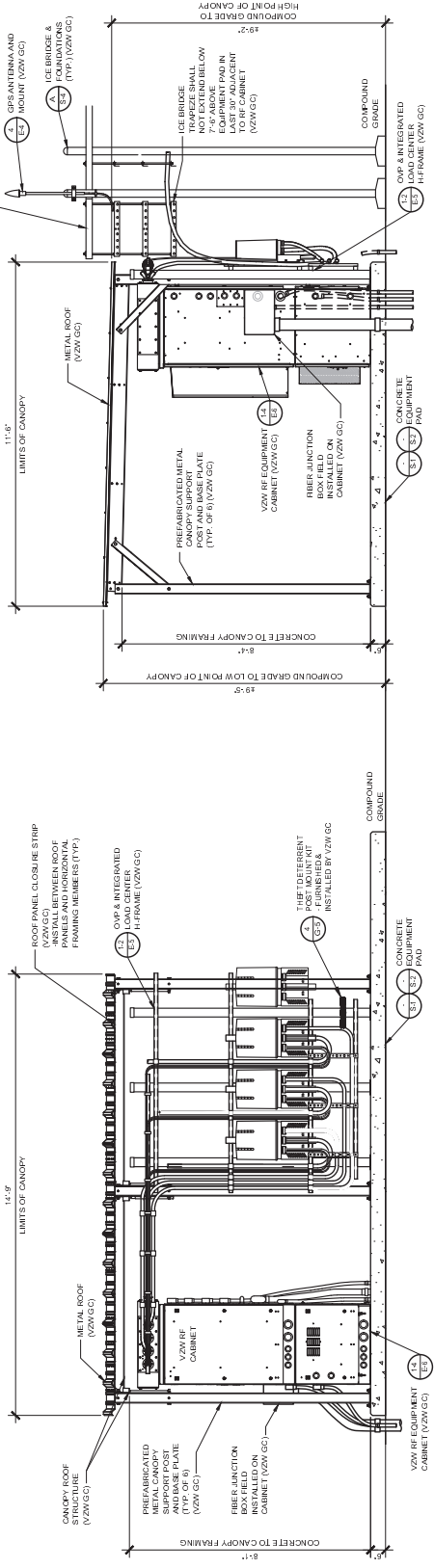
JOB NO
2017770.39

D-3

1 2 3 4 5

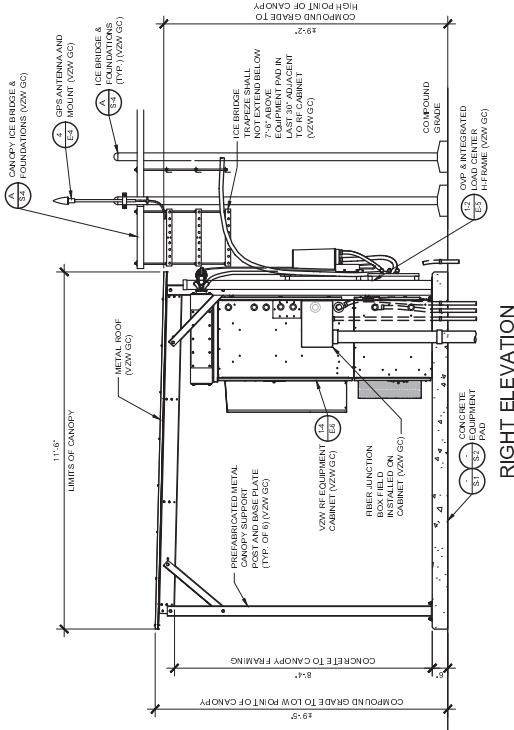


FRONT ELEVATION
 SCALE: 1/8" = 1'-0"



REAR ELEVATION
 SCALE: 1/8" = 1'-0"

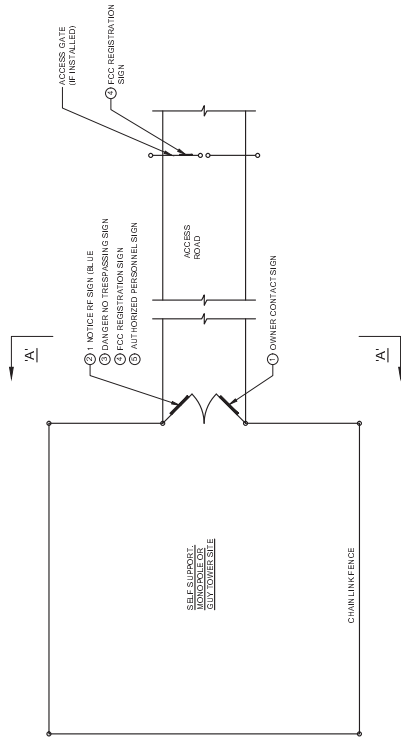
NOTE:
 CANOPY ROOF PANELS PROFILE ERPRK PROVIDE THE BEST POLYETHYLENE FOAM INSULATION AVAILABLE. THE PANELS ARE MANUFACTURED BY SEAL-TITE BUILDING PRODUCTS. THE PANELS ARE EQUAL TO THE PANELS SUPPLIED WITH CANOPY.



RIGHT ELEVATION
 SCALE: 1/8" = 1'-0"

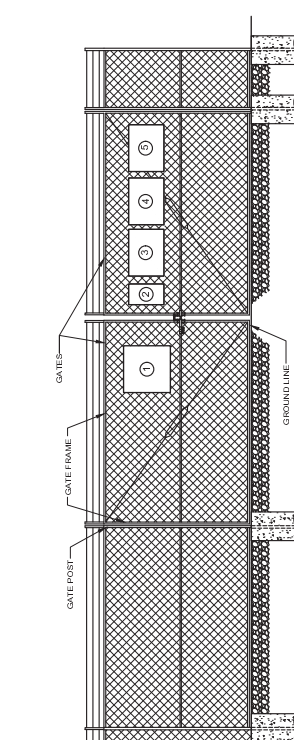
NOTES:

VERTICON WIRELESS, SITE ID SIGN, RF E SIGN, NOC INFORMATION SIGN AND ALL OTHER SIGNAGE NOTICES BEING SHOWN IN THIS DRAWING WILL BE FURNISHED AND INSTALLED BY VERTICON WIRELESS. VERTICON WIRELESS SHALL BE RESPONSIBLE FOR THE SIGNAGE & DEMARCATION POLICY.



TYPICAL SITE FENCE SIGNAGE PLAN

SCALE: 1" = 10'



ELEVATION "A-A"

SCALE: 1" = 10'

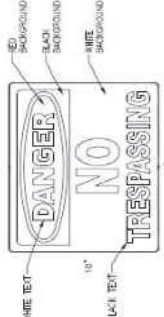
1 2 3 4 5



1 OWNER CONTACT SIGN
WHITE BACKGROUND, BLACK LETTERING
MOUNTING LOCATION: GATE
QUANTITY: 2



2 1 NOTICE RF SIGN (BLUE)
WHITE BACKGROUND, WHITE LETTERING
MOUNTING LOCATION: GATE & CENTERLINE OF FENCING AROUND SITE (QTY: 4)
WHERE ACCESS GATE INSTALLED (QTY: 5)



3 DANGER NO TRESPASSING SIGN
WHITE BACKGROUND, BLACK/WHITE LETTERING
MOUNTING LOCATION: GATE & BASE OF TOWER
WHERE ACCESS GATE INSTALLED (QTY: 2)



4 FCC REGISTRATION SIGN
WHITE BACKGROUND, WHITE/BLACK LETTERING
MOUNTING LOCATION: GATE & BASE OF TOWER
QUANTITY: 2



5 AUTHORIZED PERSONNEL SIGN
WHITE BACKGROUND, WHITE/BLACK LETTERING
MOUNTING LOCATION: GATE & BASE OF TOWER
WHERE ACCESS GATE INSTALLED (QTY: 2)

vertical bridge
150 PARK OF COMMERCE DRIVE, SUITE 200
BOCA RATON, FL 33487
954.222.0888
www.verticalbridge.com

REV.	DATE	DESCRIPTION
1	02/19/15	ISSUED FOR 50% REVIEW
2	02/19/15	ADDED DIM. TO HOUSE
3	02/19/15	ADDED DIM. TO HOUSE
4	02/19/15	ADDED DIM. TO HOUSE
5	02/19/15	ADDED DIM. TO HOUSE
6	02/19/15	ADDED DIM. TO HOUSE
7	02/19/15	ADDED DIM. TO HOUSE
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9	02/19/15	ADDED DIM. TO HOUSE
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81	02/19/15	ADDED DIM. TO HOUSE
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85	02/19/15	ADDED DIM. TO HOUSE
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91	02/19/15	ADDED DIM. TO HOUSE
92	02/19/15	ADDED DIM. TO HOUSE
93	02/19/15	ADDED DIM. TO HOUSE
94	02/19/15	ADDED DIM. TO HOUSE
95	02/19/15	ADDED DIM. TO HOUSE
96	02/19/15	ADDED DIM. TO HOUSE
97	02/19/15	ADDED DIM. TO HOUSE
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100	02/19/15	ADDED DIM. TO HOUSE

REFERENCE ONLY

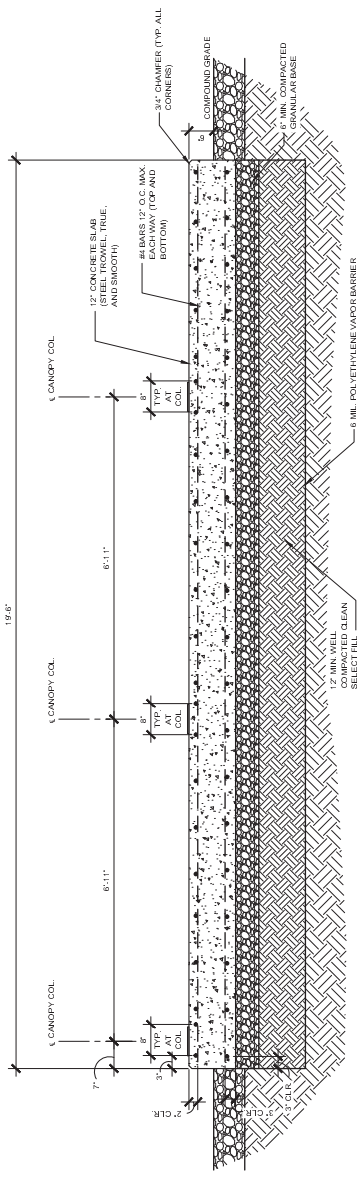
EV BARLOW
2657 STEVE DENTON ROAD
BARLOW, KY 42024
SITE FENCE SIGNAGE
(REFERENCE ONLY)

ISSUED FOR:	DATE:
REVISION	---
PERMIT	---
CONSTRUCTION	---
RECORD	---
PROJECT MANAGER	DISBURS
TP	DTC

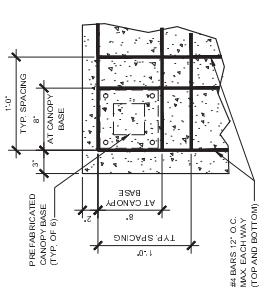
JOB NO.
2017770.39

D-4

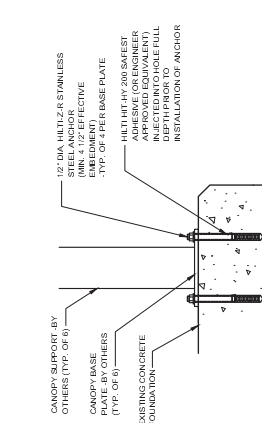
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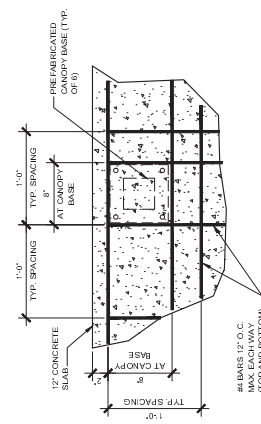
1
CONCRETE PAD SECTION
SCALE: N.T.S.



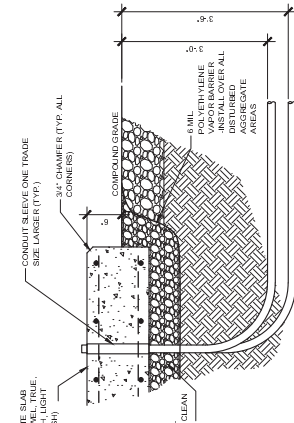
2
CORNER PAD REINFORCEMENT DETAIL
SCALE: N.T.S. (TYP. OF 2)



4
CANOPY BASE PLATE ANCHOR DETAIL
SCALE: N.T.S. (20X/5X)



3
INTERMEDIATE PAD REINFORCEMENT DETAIL
SCALE: N.T.S. (TYP. OF 4)



5
CONDUIT PENETRATION DETAIL
SCALE: N.T.S.

GPD GROUP, INC.
159 PARK OF COMMERCE DRIVE, SUITE 200
BOCA RATON, FL 33487
561-992-2222
www.gpdgroup.com

DESCRIPTION
DATE
BY
CHECKED
APPROVED
SCALE
PROJECT
NO. 101728/2022

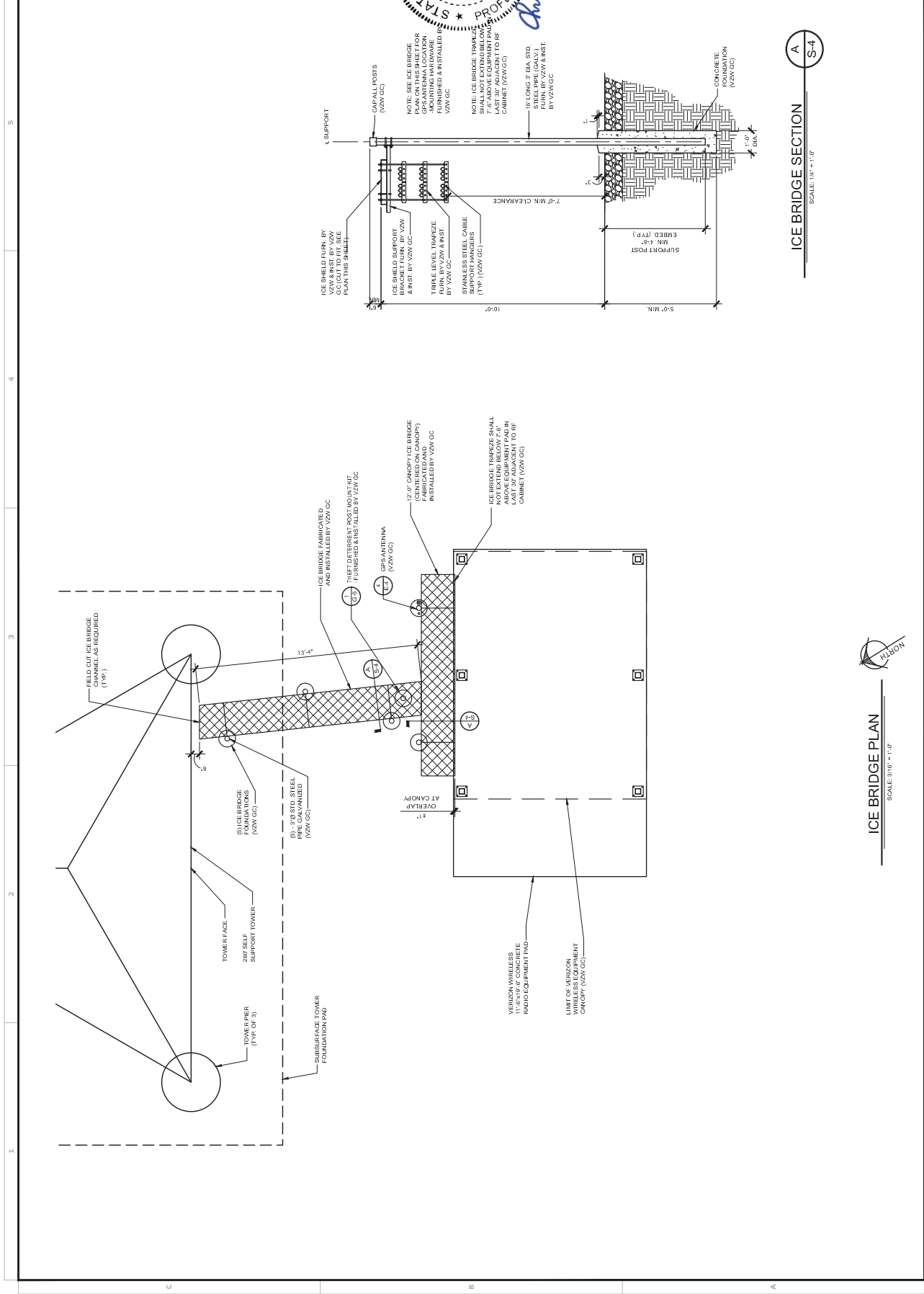
FOUNDATION DETAILS
EV BARLOW
2657 STEVE DENTON ROAD
BARLOW, KY 42024

ISSUED FOR:	...
REVIEW:	...
PERMIT:	...
CONSTRUCTION:	...
RECORD:	...
PROJECT NUMBER:	...
DRAWN:	...
DTC:	...

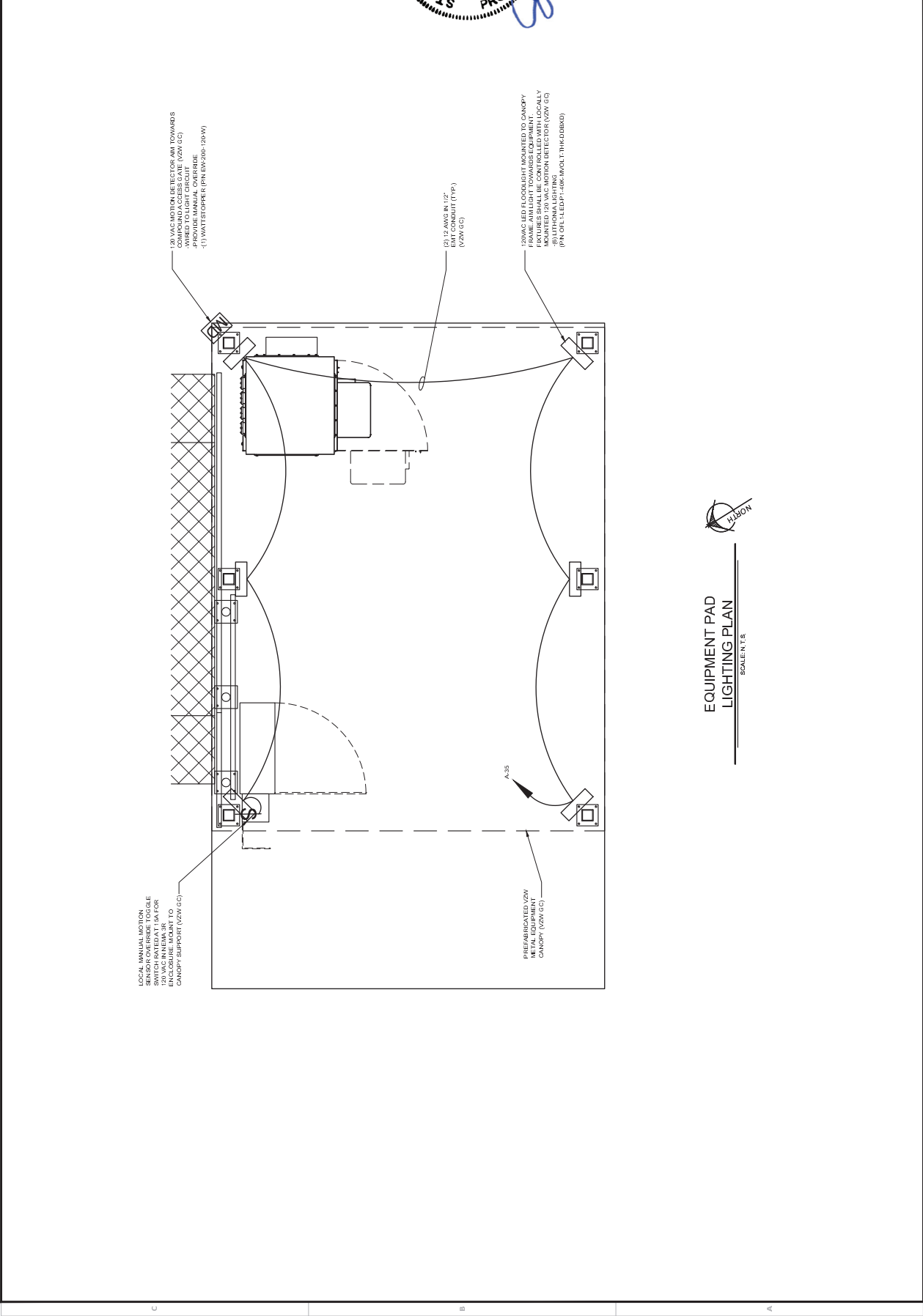
JOB NO.
2017770.39

S-2

ISSUED FOR:	---
REVIEW:	---
PERMIT:	---
CONSTRUCTION:	---
RECORD:	---
PROJECT NUMBER:	2017770.39
DRAWN:	---
DATE:	---



1 2 3 4 5



**EQUIPMENT PAD
LIGHTING PLAN**

SCALE: 1/8\"/>

verticalbridge
 150 PARK OF COMMERCE DRIVE, SUITE 200
 BOCA RATON, FL 33467
 561.993.4444
 561.993.4444

GPD GROUP, INC.

DESCRIPTION
 ISSUED FOR 50% REVIEW
 ADDED DIS TRACE TO HOUSE
 REVISIONS OUTLINE IN RED
 FINAL CONSTRUCTION DRAWINGS
 REMOVED GENERATOR

DATE: 11/28/2022
 DRAWN BY: STEVEN P. SCHAUB
 PROJECT NO: 2017770.39

STATE OF KENTUCKY
 REGISTERED ELECTRICAL ENGINEER
 28000

10/12/28/2022

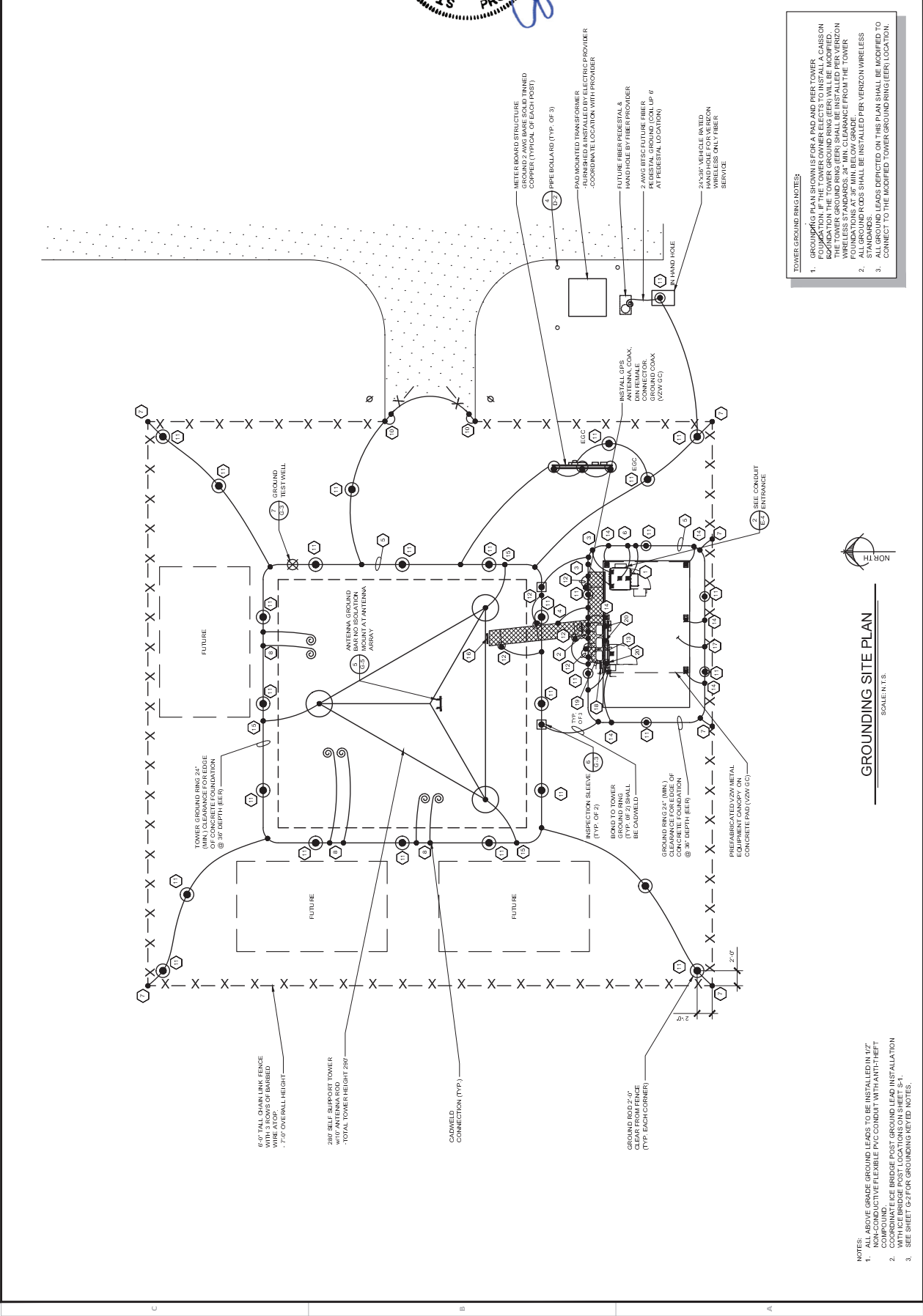
EQUIPMENT PAD
 257 STEVE DENTON ROAD
 BARLOW, KY 42024

ISSUED FOR:	...
REVIEW:	...
PERMIT:	...
CONSTRUCTION:	...
RECORD:	...
PROJECT NUMBER:	2017770.39
DATE:	11/28/2022

JOHN
 2017770.39

E-7

1 2 3 4 5



TOWER GROUND RING NOTES:

1. FOUNDATION PLAN SHOWS FOR A PAD AND PIER TOWER FOUNDATION. IF THE TOWER OWNER ELECTS TO INSTALL A CASSON FOUNDATION THE TOWER GROUND RING LEADS WILL BE MODIFIED TO ACCOMMODATE THE CASSON FOUNDATION. FOUNDATION WIRELESS STANDARDS: 3" MIN. CLEARANCE FROM THE TOWER FOUNDATIONS AT 3" MIN. BELOW GRADE.
2. ALL WIRELESS STANDARDS SHALL BE INSTALLED PER VERIZON WIRELESS STANDARDS.
3. ALL GROUND LEADS DEPICTED ON THIS PLAN SHALL BE MODIFIED TO CONNECT TO THE MODIFIED TOWER GROUND RING LEAD LOCATION.

GROUNDING SITE PLAN
SCALE: N.T.S.

NOTES:

1. ALL ABOVE GRADE GROUND LEADS TO BE INSTALLED IN 1/2" NON-CONDUCTIVE FLEXIBLE PVC CONDUIT WITH ANTI-THEFT COORDINATE ICE BRIDGE POST GROUND LEAD INSTALLATION.
2. WITH ICE BRIDGE POST GROUND LEAD INSTALLATION.
3. SEE SHEET G2 FOR GROUNDING DETAIL NOTES.

GPD GROUP, INC.
 759 PARK OF COMMERCE DRIVE, SUITE 200
 BOCA RATON, FL 33467
 (561) 992-2222
 (561) 992-2222
 (561) 992-2222

NO.	DESCRIPTION	DATE
1	ISSUED FOR 5% REVIEW	
2	ADDED DIMENSIONS TO HOUSE	
3	REVISIONS TO HOUSE	
4	FINAL CONSTRUCTION DRAWINGS	
5	REMOVED DIMENSIONS	

EV BARLOW
 2575 STEVE DENTON ROAD
 BARLOW, KY 42024

PROCESSED
 28000
 10/18/2022

STEVEN P. SCHAUB
 LICENSED PROFESSIONAL ENGINEER
 KY 0000000000

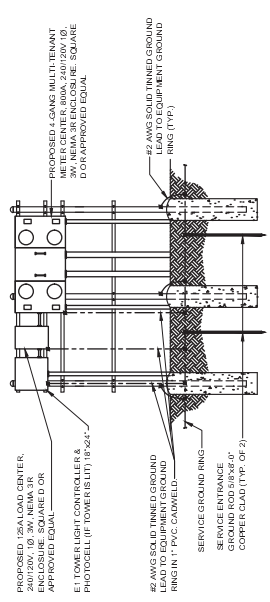
GROUNDING SITE PLAN

ISSUED FOR:
REVIEW:
PERMIT:
CONSTRUCTION:
RECORD:

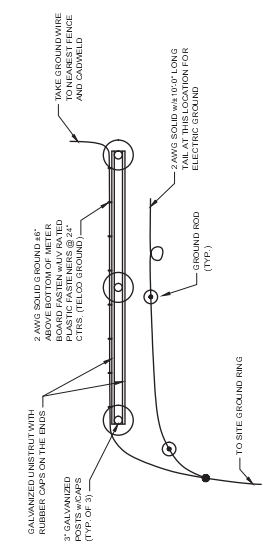
PROJECT NUMBER:	DISBURS:
TP:	DTC:

JOHN
 2017770.39

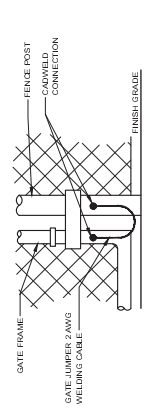
G-1



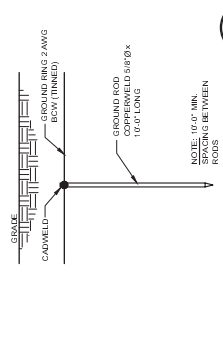
1
G-4
METER BOARD STRUCTURE GROUNDING
SCALE: 1/4" = 1'-0"



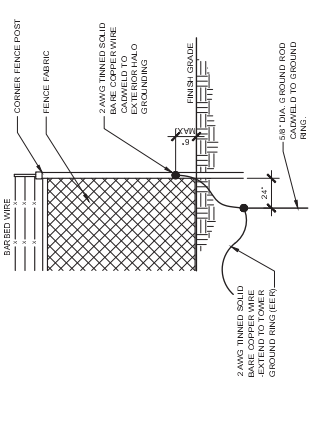
2
G-4
METER BOARD STRUCTURE GROUND PLAN
SCALE: N.T.S.



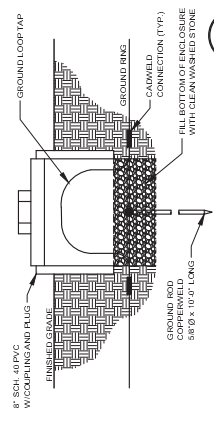
4
G-4
GATE GROUNDING DETAIL
SCALE: N.T.S.



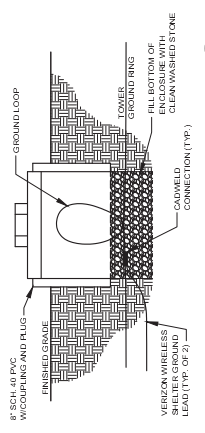
5
G-4
GROUND ROD DETAIL
SCALE: N.T.S.
(TYP. FOR CONTAINER AND GCO)



3
G-4
FENCE GROUNDING DETAIL
SCALE: N.T.S.



7
G-4
GROUND TEST WELL DETAIL
SCALE: N.T.S.



6
G-4
INSPECTION SLEEVE DETAIL
SCALE: N.T.S.

GPD GROUP, INC.
175 PARK OF COMMERCE DRIVE, SUITE 200
BOCA RATON, FL 33487
1532221033 (FL) 561.971.1111
1532221033 (VA) 561.971.1111

verticalbridge

DESCRIPTION: EV BARLOW 257 STEVE DENTON ROAD BARLOW, KY 42024

ISSUED FOR 5% REVIEW
REVISIONS OUTLINE REVISIONS
FINAL CONSTRUCTION DRAWINGS
REVISED GENERATOR

STATE OF KENTUCKY
PROFESSIONAL ENGINEER
STEVEN P. SCHAUB
29008
LICENSED PROFESSIONAL ENGINEER
0688/2022

ISSUED FOR:
REVIEW:
PERMIT:
CONSTRUCTION:
RECORD:
PROJECT NUMBER:
SHEET:
TYP:
DTC:

JOHN
2017770.39

G-4

1 2 3 4 5



VERIZON WIRELESS
 SITE NAME: EV BARLOW - B
 SITE ADDRESS: XXXX STEVE DENTON RD
 BARLOW, KY 42024
 SITE EIM/S#: 616190973
 SITE COORDINATES: 37°06'42.15" N, 89°02'44.58" W



VERIZON WIRELESS TIER II SITE MAP
SCALE: N.T.S.

GPD GROUP, INC.
 150 PARK OF COMMERCE DRIVE, SUITE 200
 BOCA RATON, FL 33487
 561.992.2111

REV.	DATE	DESCRIPTION
1	02/18/19	ISSUED FOR 50% REVIEW
2	01/22/19	ADDED DISTANCE TO HOUSE
3	01/22/19	ADJUSTED CULVERT LENGTH AND WIDTH
4	02/01/19	FINAL CONSTRUCTION DRAWINGS
5	02/18/19	REMOVED GENERATOR

REFERENCE ONLY

EV BARLOW
 2657 STEVE DENTON ROAD
 BARLOW, KY 42024
 EMERGENCY RESPONSE
 TIER II SITE MAP
 (REFERENCE ONLY)

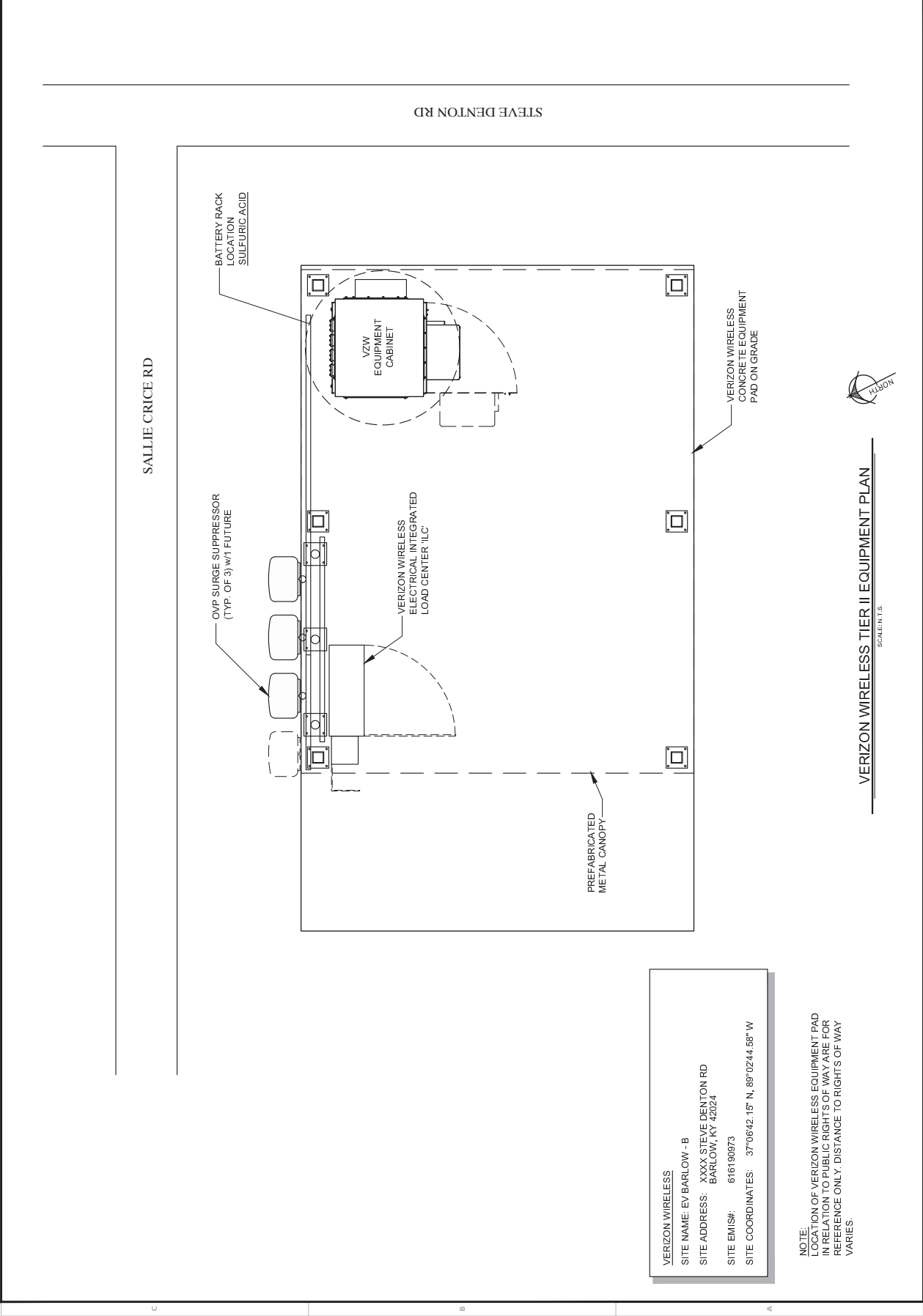
ISSUED FOR:	REVIEW:	PERMIT:	CONSTRUCTION:	RECORD:

PROJECT MANAGER:	DESIGNER:	TPP:	DTC:

JOB NO.
 2017770.39

ER-1

1 2 3 4 5



VERIZON WIRELESS TIER II EQUIPMENT PLAN
SCALE: N.T.S.

VERIZON WIRELESS
 SITE NAME: EV BARLOW - B
 SITE ADDRESS: XXXX STEVE DENTON RD
 BARLOW, KY 42024
 SITE EMIS#: 61610073
 SITE COORDINATES: 37°06'42.15" N, 89°02'44.58" W

NOTE:
 LOCATION OF VERIZON WIRELESS EQUIPMENT PAD
 IN RELATION TO PUBLIC RIGHTS OF WAY ARE FOR
 REFERENCE ONLY. DISTANCE TO RIGHTS OF WAY
 VARIES.

verticalbridge
 750 PARK OF COMMERCE DRIVE, SUITE 200
 BOCA RATON, FL 33467
 561.992.2222
 1530 N.W. 22ND AVENUE, SUITE 201
 BOCA RATON, FL 33431
 561.992.2222

GPD GROUP, INC.

REV.	DATE	DESCRIPTION
1	02/18/19	ISSUED FOR 50% REVIEW
2	01/22/19	ADDED DIS. TRACE TO HOUSE
3	01/22/19	REVISIONS TO LAMP AND DIS. MOUNTING
4	02/01/19	FINAL CONSTRUCTION DRAWINGS
5	02/18/19	REMOVED GENERATOR

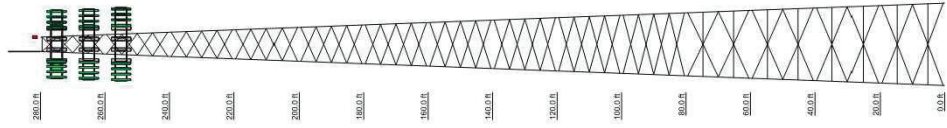
REFERENCE ONLY

EV BARLOW
 2557 STEVE DENTON ROAD
 BARLOW, KY 42024
EMERGENCY RESPONSE TIER II
VERIZON WIRELESS EQUIPMENT PLAN
 (REFERENCE ONLY)

ISSUED FOR:	DESIGNED:	CHECKED:	DATE:
REVIEW:	PERMIT:	CONSTRUCTION:	
RECORD:			

JOB NO.
2017770.39

ER-2



Section	Leg Grade	Diagonal	Top Chord	Horizontal	Face Bracing	Face Width (ft)	# Panels @ (ft)	Weight (K)
1	SR 1 3/4						4	4.2
2	SR 2 1/4						6	6.0
3	SR 3						8	8.0
4	SR 3 1/2						10	10.0
5	SR 3 3/4						12	12.0
6	SR 4						14	14.0
7	SR 4 1/2						16	16.0
8	SR 4 3/4						18	18.0
9	SR 5						20	20.0
10	SR 5 1/2						22	22.0
11	SR 5 3/4						24	24.0
12	SR 6						26	26.0
13	SR 6 1/2						28	28.0
14	SR 6 3/4						30	30.0
15	SR 7						32	32.0
16	SR 7 1/2						34	34.0
17	SR 7 3/4						36	36.0
18	SR 8						38	38.0
19	SR 8 1/2						40	40.0
20	SR 8 3/4						42	42.0
21	SR 9						44	44.0
22	SR 9 1/2						46	46.0
23	SR 9 3/4						48	48.0
24	SR 10						50	50.0
25	SR 10 1/2						52	52.0
26	SR 10 3/4						54	54.0
27	SR 11						56	56.0
28	SR 11 1/2						58	58.0
29	SR 11 3/4						60	60.0
30	SR 12						62	62.0
31	SR 12 1/2						64	64.0
32	SR 12 3/4						66	66.0
33	SR 13						68	68.0
34	SR 13 1/2						70	70.0
35	SR 13 3/4						72	72.0
36	SR 14						74	74.0
37	SR 14 1/2						76	76.0
38	SR 14 3/4						78	78.0
39	SR 15						80	80.0
40	SR 15 1/2						82	82.0
41	SR 15 3/4						84	84.0
42	SR 16						86	86.0
43	SR 16 1/2						88	88.0
44	SR 16 3/4						90	90.0
45	SR 17						92	92.0
46	SR 17 1/2						94	94.0
47	SR 17 3/4						96	96.0
48	SR 18						98	98.0
49	SR 18 1/2						100	100.0
50	SR 18 3/4						102	102.0
51	SR 19						104	104.0
52	SR 19 1/2						106	106.0
53	SR 19 3/4						108	108.0
54	SR 20						110	110.0
55	SR 20 1/2						112	112.0
56	SR 20 3/4						114	114.0
57	SR 21						116	116.0
58	SR 21 1/2						118	118.0
59	SR 21 3/4						120	120.0
60	SR 22						122	122.0
61	SR 22 1/2						124	124.0
62	SR 22 3/4						126	126.0
63	SR 23						128	128.0
64	SR 23 1/2						130	130.0
65	SR 23 3/4						132	132.0
66	SR 24						134	134.0
67	SR 24 1/2						136	136.0
68	SR 24 3/4						138	138.0
69	SR 25						140	140.0
70	SR 25 1/2						142	142.0
71	SR 25 3/4						144	144.0
72	SR 26						146	146.0
73	SR 26 1/2						148	148.0
74	SR 26 3/4						150	150.0
75	SR 27						152	152.0
76	SR 27 1/2						154	154.0
77	SR 27 3/4						156	156.0
78	SR 28						158	158.0
79	SR 28 1/2						160	160.0
80	SR 28 3/4						162	162.0
81	SR 29						164	164.0
82	SR 29 1/2						166	166.0
83	SR 29 3/4						168	168.0
84	SR 30						170	170.0
85	SR 30 1/2						172	172.0
86	SR 30 3/4						174	174.0
87	SR 31						176	176.0
88	SR 31 1/2						178	178.0
89	SR 31 3/4						180	180.0
90	SR 32						182	182.0
91	SR 32 1/2						184	184.0
92	SR 32 3/4						186	186.0
93	SR 33						188	188.0
94	SR 33 1/2						190	190.0
95	SR 33 3/4						192	192.0
96	SR 34						194	194.0
97	SR 34 1/2						196	196.0
98	SR 34 3/4						198	198.0
99	SR 35						200	200.0
100	SR 35 1/2						202	202.0
101	SR 35 3/4						204	204.0
102	SR 36						206	206.0
103	SR 36 1/2						208	208.0
104	SR 36 3/4						210	210.0
105	SR 37						212	212.0
106	SR 37 1/2						214	214.0
107	SR 37 3/4						216	216.0
108	SR 38						218	218.0
109	SR 38 1/2						220	220.0
110	SR 38 3/4						222	222.0
111	SR 39						224	224.0
112	SR 39 1/2						226	226.0
113	SR 39 3/4						228	228.0
114	SR 40						230	230.0
115	SR 40 1/2						232	232.0
116	SR 40 3/4						234	234.0
117	SR 41						236	236.0
118	SR 41 1/2						238	238.0
119	SR 41 3/4						240	240.0
120	SR 42						242	242.0
121	SR 42 1/2						244	244.0
122	SR 42 3/4						246	246.0
123	SR 43						248	248.0
124	SR 43 1/2						250	250.0
125	SR 43 3/4						252	252.0
126	SR 44						254	254.0
127	SR 44 1/2						256	256.0
128	SR 44 3/4						258	258.0
129	SR 45						260	260.0
130	SR 45 1/2						262	262.0
131	SR 45 3/4						264	264.0
132	SR 46						266	266.0
133	SR 46 1/2						268	268.0
134	SR 46 3/4						270	270.0
135	SR 47						272	272.0
136	SR 47 1/2						274	274.0
137	SR 47 3/4						276	276.0
138	SR 48						278	278.0
139	SR 48 1/2						280	280.0
140	SR 48 3/4						282	282.0
141	SR 49						284	284.0
142	SR 49 1/2						286	286.0
143	SR 49 3/4						288	288.0
144	SR 50						290	290.0
145	SR 50 1/2						292	292.0
146	SR 50 3/4						294	294.0
147	SR 51						296	296.0
148	SR 51 1/2						298	298.0
149	SR 51 3/4						300	300.0
150	SR 52						302	302.0
151	SR 52 1/2						304	304.0
152	SR 52 3/4						306	306.0
153	SR 53						308	308.0
154	SR 53 1/2						310	310.0
155	SR 53 3/4						312	312.0
156	SR 54						314	314.0
157	SR 54 1/2						316	316.0
158	SR 54 3/4						318	318.0
159	SR 55						320	320.0
160	SR 55 1/2						322	322.0
161	SR 55 3/4						324	324.0
162	SR 56						326	326.0
163	SR 56 1/2						328	328.0
164	SR 56 3/4						330	330.0
165	SR 57						332	332.0
166	SR 57 1/2						334	334.0
167	SR 57 3/4						336	336.0
168	SR 58						338	338.0

EXHIBIT Ca

BENCHMARK SERVICES, INC.
Consulting Engineers & Land Surveyors
318 NORTH MAIN STREET
HUNTINGBURG, INDIANA 47542
(812) 683-3049

January 15, 2019

TO: Whom it may concern,

**RE: Verizon Site Name: EV Barlow
Flood Data Ballard County, KY**

Parcel Owner: Myatt Family Trust
Charles Myatt & Deena Myatt, Trustees
2557 Steve Denton Road
Barlow, KY 42024

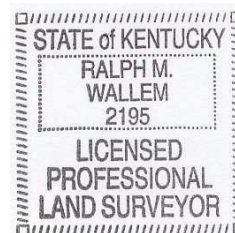
Proposed Center of Tower: Latitude 37° 06' 42.145" and the Longitude of 89° 02' 44.583"
and a ground elevation of 363.85' AMSL.

A small portion on the Northwest Parent Parcel Property is located in Zone "AE",
The proposed Lease Area, the proposed Access & Utility Easements and the proposed
Center of Tower are not located in a 100-year flood plain (Zone X) per Flood Hazard
Boundary Map, Community Panel No 21007C0085C, dated of July, 7, 2014.

Please see the attached Map 21007C0085C.



RALPH M. WALLEM
BENCHMARK SERVICES, INC.
Consulting Engineers & Land Surveyors
DATE: 1.15.2019
PROFESSIONAL LAND SURVEYOR NO. 2195



National Flood Hazard Layer FIRMette



37°6'56.47"N



USGS The National Map: Orthoimagery, Data refreshed October, 2017.

37°6'27.77"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levees. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/15/2019 at 12:38:07 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

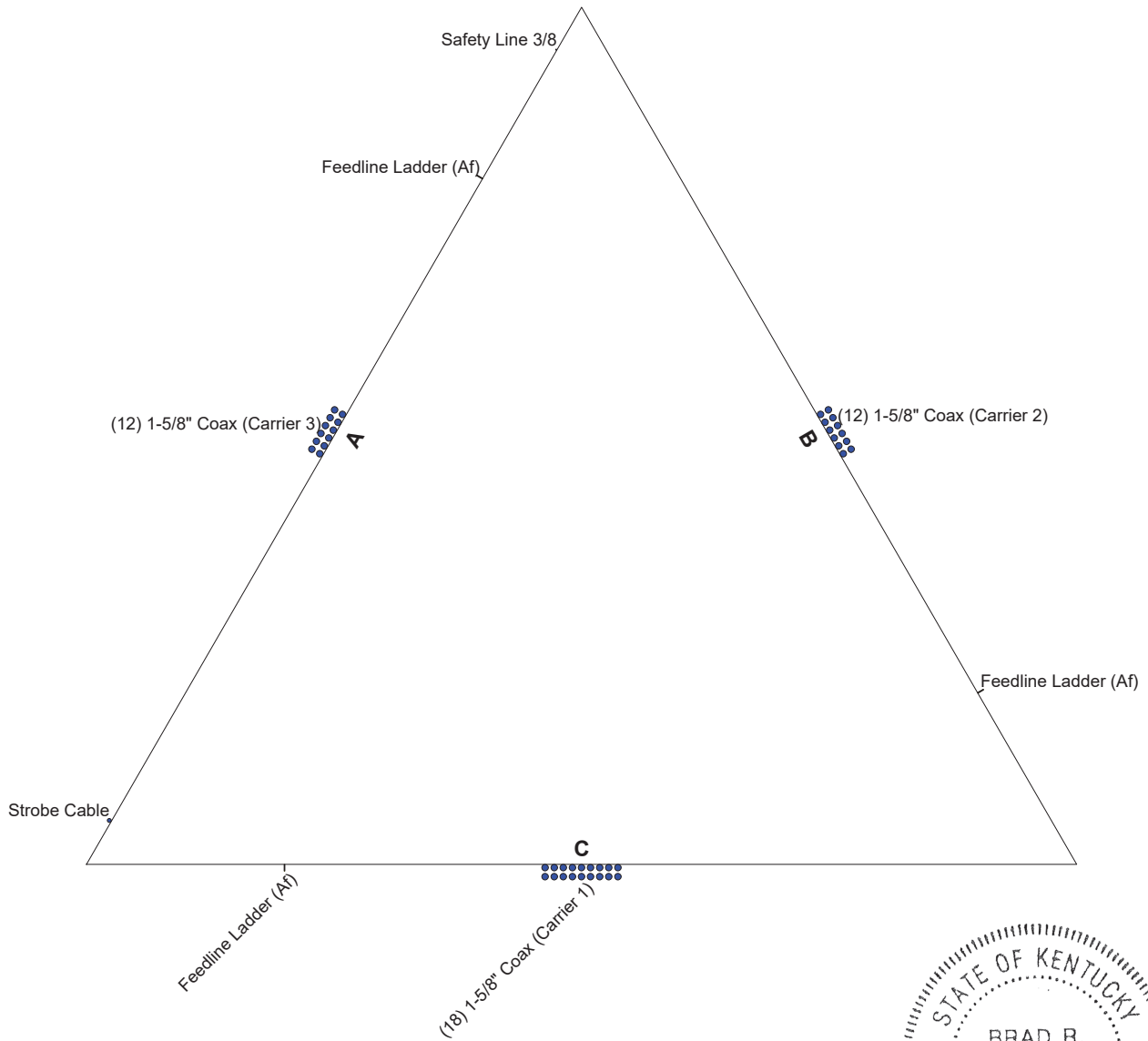
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

89°33.28'W

89°27.83'W

EXHIBIT D

Feed Line Plan



BRAD R. MILANOWSKI
 9/3/21



B+T Group
 1717 S Boulder Ave, Suite 300
 Tulsa, OK 74119
 Phone: (918) 587-4630
 FAX: (918) 295-0265

Job: ATS# 9094 - EV Barlow (Site# US-KY-5119)		
Project: 280' SST/37.11170694, -89.045718		
Client: Vertical Bridge	Drawn by: cbethell	App'd:
Code: TIA-222-H	Date: 09/02/21	Scale: NTS
Path:		Dwg No: E-7

REV	DATE	DESCRIPTION
0	09/03/21	ISSUED FOR CONSTRUCTION

COA-4011

EXPIRES: 12/31/2021



IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTIONS OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT

PROJECT INFORMATION:

PROJECT NO: 155165.001.01
SITE NAME: EV BARLOW
SITE NO: 9094
CLIENT NAME: ARCOSA TELECOM STRUCTURES
DRAWN BY: CAROLAN BETHELL II
CHECKED BY: BRANDON SEVER, P.E.

SHEET TITLE:

DRILLED PIER FOUNDATION

SHEET NUMBER: **SST-DPF**
REVISION: **0**

- NOTES:**
- REINFORCEMENT STEEL SHALL CONFIRM TO THE REQUIREMENT OF ASTM A-615 (GRADE 60) EXCEPT THAT TIES MAY BE ASTM-615 (GRADE 40) WITH 3" MINIMUM CLEAR COVER.
 - REINFORCEMENT STEEL SHALL BE DETAILED, FABRICATED, BENT, AND PLACED IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE AND THE ACI 315 (LATEST EDITION).
 - THE CONTRACTOR SHALL THOROUGHLY REVIEW THE GEOTECH REPORT FOR THIS PROJECT AND FOLLOW THE RECOMMENDATIONS IN THAT REPORT WHEN CONSTRUCTING THE FOUNDATION. CONTACT WITZIG ENGINEERING INC. FOR ANY CLARIFICATIONS.
 - PROJECT NUMBER: 155165.001.01
DATE: AUGUST 30, 2018
 - THIS FOUNDATION HAS BEEN DESIGNED IN ACCORDANCE WITH THE TIA 222-H STANDARD, SPECIFICALLY FOR THE TOWER AND SOIL CONDITION REFERENCED ABOVE. IF ANYTHING DIFFERS THIS DESIGN SHALL BE CONSIDERED INVALID AND MUST BE REDESIGNED PRIOR TO CONSTRUCTION.
 - TOTAL CONCRETE VOLUME FOR ALL (3) PIERS IN CUBIC YARDS: 102.1
 - ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
 - ALL CONCRETE TESTING SHALL MEET DURABILITY REQUIREMENTS OF CHAPTER 19 OF THE ACI 318-14
 - ALL CONCRETE TESTING SHALL BE IN ACCORDANCE WITH ACI 318-14, A MINIMUM OF (2) 6"x12" OR (3) 4"x8" CONCRETE CYLINDERS PER INDIVIDUAL FOUNDATION AND A MINIMUM OF (6) 6"x12" OR (6) 4"x8" CYLINDERS PER BATCH REQUIRED.
 - SHALL BE ADDED TO THE CONCRETE MIXTURE. THE MINIMUM CONCRETE CUMULATIVE SLUMP SHALL BE 4 INCHES (6") UNLESS ADMIXTURES ARE USED. ADMIXTURES SHALL BE IN ACCORDANCE WITH ASTM C494. ADMIXTURES SHALL BE APPROVED BY THE ENGINEER BEFORE SUPER PLASTICIZER USE. DO NOT USE CHLORIDE CONTAINING ADMIXTURES. AIR ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C750.
 - BACKFILL MATERIAL SHALL BE COMPACTED TO A MINIMUM UNIT WEIGHT APPROPRIATE UNLESS GEOTECH SPECIFIES OTHER COMPACTION REQUIREMENTS. VERIFY ALL DIMENSIONS AGAINST MANUFACTURER'S DRAWINGS.
 - STIPULATION FOR REUSE:
1. THIS DRAWING WAS SPECIFICALLY DESIGNED FOR USE BY THE CUSTOMER ON THIS DRAWING AT THE SPECIFIED LOCATION. USE OF THIS DRAWING FOR REFERENCE OR EXAMPLE ON ANOTHER PROJECT REQUIRES THE SERVICES OF A PROPERLY LICENSED ENGINEER.

DIMENSIONING SCHEDULE

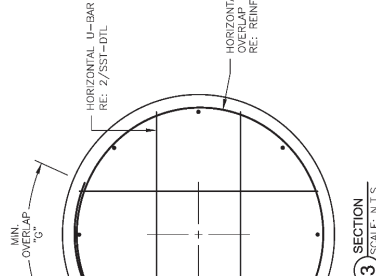
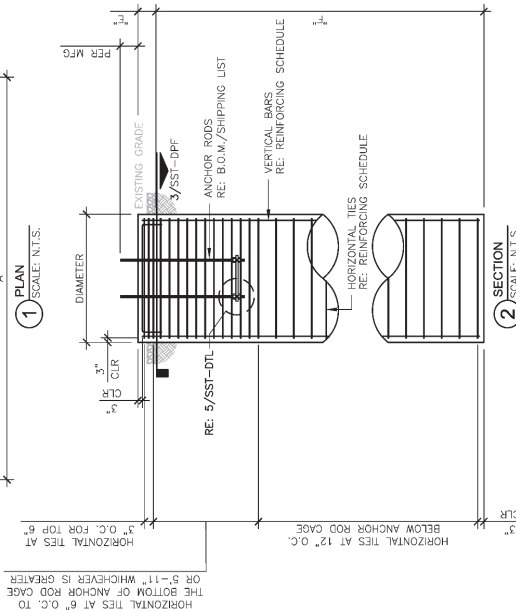
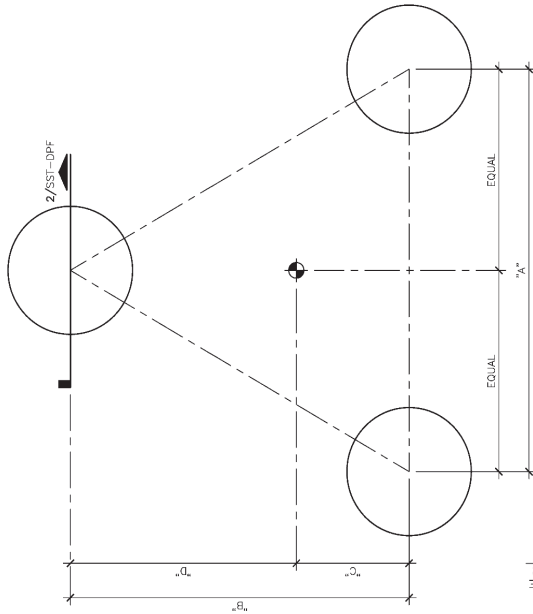
A	23' 6"
B	22' 1"
C	7' 4" - 57.16"
D	14' 8.11716"
E	0' 8"
F	37' 0"
MIN. OVERLAP "G"	6' 0"
DIAMETER	6' 0"

REINFORCING SCHEDULE

REINFORCING SCHEDULE	SIZE	TOTAL QTY
VERTICAL BARS	#8	78
HORIZONTAL TIES	#4	120
U-BAR/HORIZONTAL	#4	12

BASE REACTIONS: (FACTORED LOADS)

GLOBAL REACTIONS	
MOMENT	1.050 KIP-FT
AXIAL	84 KIPS
SHEAR	68 KIPS
REACTIONS PER LEG	
COMPRESSION AXIAL	529 KIPS
COMPRESSION AXIAL	84 KIPS
UP/LIFT SHEAR	36 KIPS



SECTION 3
SCALE: N.T.S.



1717 S BOULDER AVE # 300, TULSA, OK 74119
(918) 587-4630



4020 TULL AVE, MUSKOGEE, OK 74403

REV	DATE	DESCRIPTION
0	09/03/21	ISSUED FOR CONSTRUCTION

COA-4011

EXPIRES: 12/31/2021



IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTIONS OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT

PROJECT INFORMATION:

PROJECT NO: 155165.001.01
SITE NAME: EV BARLOW
SITE NO: 9094

CLIENT NAME: ARCOSA TELECOM STRUCTURES

DRAWN BY: CARLON BETHELL II
CHECKED BY: BRANDON SEVIER, P.E.

SHEET TITLE:

UNIT BASE FOUNDATION

SHEET NUMBER: 0

REVISION: SST-UBF

- NOTES:**
- REINFORCEMENT STEEL SHALL CONFORM TO THE REQUIREMENT OF ASTM A-615 (GRADE 60) EXCEPT THAT TIES MAY BE ASTM-615 (GRADE 40) WITH 3" MINIMUM CLEAR COVER.
 - REINFORCEMENT STEEL SHALL BE DETAILED, FABRICATED, BENT, AND PLACED IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE AND THE ACI 315 (LATEST EDITION).
 - THE CONTRACTOR SHALL THOROUGHLY REVIEW THE GEOTECH REPORT FOR THIS PROJECT AND FOLLOW THE RECOMMENDATIONS IN THAT REPORT WHEN CONSTRUCTING THE FOUNDATION.
 - PROJECT NUMBER: 155165.001.01
DATE: AUGUST 30, 2018
THIS FOUNDATION HAS BEEN DESIGNED IN ACCORDANCE WITH THE TIA 222-H STANDARD, SPECIFICALLY FOR THE TOWER AND SOIL CONDITION REFERENCED ABOVE. IF ANYTHING DIFFERS THIS DESIGN SHALL BE CONSIDERED INVALID AND MUST BE REDESIGNED PRIOR TO CONSTRUCTION.
 - CONCRETE VOLUME IN CUBIC YARDS: 105.11
 - ALL CONCRETES SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
 - CONCRETE MIXTURES SHALL MEET DURABILITY REQUIREMENTS OF CHAPTER 19 OF THE ACI 318-14. A MINIMUM OF (2) 6" X 12" OR (3) 4" X 8" CONCRETE CYLINDERS PER FOUNDATION AND A MINIMUM OF (6) 6" X 12" OR (9) 4" X 8" CONCRETE PER BASE SHALL BE REQUIRED.
 - CONCRETE SHALL BE PLACED IN LIFTS. MAXIMUM LIFT SHALL BE 4 FEET. MAXIMUM SPACING BETWEEN LIFTS SHALL BE 4 INCHES (41") UNLESS OTHERWISE SPECIFIED. CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ASTM C944 STANDARD TYPES A, B, C, D OR E. THE ENGINEER SHALL PRE-APPROVE SUPER PLASTICIZER USE. DO NOT USE CHLORIDE-CONTAINING ADMIXTURES. AIR ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C260.
 - BACKFILL MATERIAL SHALL BE COMPACTED TO A MINIMUM UNIT WEIGHT SPECIFIED IN GEOTECH REPORT. THE SOIL SHALL BE INSTALLED IN 6" TO 8" LIFTS AND COMPACTED THOROUGHLY TO ACHIEVE APPROPRIATE UNIT WEIGHT UNLESS GEOTECH SPECIFIES OTHER COMPACTION REQUIREMENTS.
 - VERIFY ALL DIMENSIONS AGAINST MANUFACTURER'S DRAWINGS.

STIPULATION FOR REUSE:
THIS DRAWING WAS SPECIFICALLY DESIGNED FOR USE BY THE CUSTOMER ON THIS DRAWING AT THE SPECIFIED LOCATION. USE OF THIS DRAWING FOR REFERENCE OR EXAMPLE ON ANOTHER PROJECT REQUIRES THE SERVICES OF A PROPERLY LICENSED ENGINEER.

BASE REACTIONS: (FACTORED LOADS)	
GLOBAL REACTIONS	
MOMENT	11060 KIP-FT
AXIAL	68 KIPS
REACTIONS PER LEG	
COMPRESSION AXIAL	52.9 KIPS
COMPRESSION AXIAL	45.3 KIPS
UPLIFT SHEAR	36 KIPS

REINFORCING SCHEDULE	SIZE	TOTAL QTY
VERTICAL BARS WITH 90° BEND	# 10	30
HORIZONTAL TIES	# 4	42
HORIZONTAL U-BAR (PEDestal)	# 4	12
TOP HORIZONTAL BARS	# 8	72
BOTTOM HORIZONTAL BARS	# 8	72
CORNER BARS	# 4	8
VERTICAL U-BARS (PAD)	# 4	72

DIMENSIONING SCHEDULE	SIZE
A	33'0"
B	3'9"
C	25'6"
D	5'5 1/2"
E	22'1"
F	3'8 3/16"
G	6'0"
H	2'3"
I	3'6"
J	3'6"
K	3'6"
L	2'6"
M	2'6"
N	2'6"
O	2'6"
P	2'6"
Q	2'6"
R	2'6"
S	2'6"
T	2'6"
U	2'6"
V	2'6"
W	2'6"
X	2'6"
Y	2'6"
Z	2'6"
AA	2'6"
AB	2'6"
AC	2'6"
AD	2'6"
AE	2'6"
AF	2'6"
AG	2'6"
AH	2'6"
AI	2'6"
AJ	2'6"
AK	2'6"
AL	2'6"
AM	2'6"
AN	2'6"
AO	2'6"
AP	2'6"
AQ	2'6"
AR	2'6"
AS	2'6"
AT	2'6"
AU	2'6"
AV	2'6"
AW	2'6"
AX	2'6"
AY	2'6"
AZ	2'6"
BA	2'6"
BB	2'6"
BC	2'6"
BD	2'6"
BE	2'6"
BF	2'6"
BG	2'6"
BH	2'6"
BI	2'6"
BJ	2'6"
BK	2'6"
BL	2'6"
BM	2'6"
BN	2'6"
BO	2'6"
BP	2'6"
BQ	2'6"
BR	2'6"
BS	2'6"
BT	2'6"
BU	2'6"
BV	2'6"
BW	2'6"
BX	2'6"
BY	2'6"
BZ	2'6"
CA	2'6"
CB	2'6"
CC	2'6"
CD	2'6"
CE	2'6"
CF	2'6"
CG	2'6"
CH	2'6"
CI	2'6"
CJ	2'6"
CK	2'6"
CL	2'6"
CM	2'6"
CN	2'6"
CO	2'6"
CP	2'6"
CQ	2'6"
CR	2'6"
CS	2'6"
CT	2'6"
CU	2'6"
CV	2'6"
CW	2'6"
CX	2'6"
CY	2'6"
CZ	2'6"
DA	2'6"
DB	2'6"
DC	2'6"
DD	2'6"
DE	2'6"
DF	2'6"
DG	2'6"
DH	2'6"
DI	2'6"
DJ	2'6"
DK	2'6"
DL	2'6"
DM	2'6"
DN	2'6"
DO	2'6"
DP	2'6"
DQ	2'6"
DR	2'6"
DS	2'6"
DT	2'6"
DU	2'6"
DV	2'6"
DW	2'6"
DX	2'6"
DY	2'6"
DZ	2'6"
EA	2'6"
EB	2'6"
EC	2'6"
ED	2'6"
EE	2'6"
EF	2'6"
EG	2'6"
EH	2'6"
EI	2'6"
EJ	2'6"
EK	2'6"
EL	2'6"
EM	2'6"
EN	2'6"
EO	2'6"
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FC	2'6"
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FE	2'6"
FF	2'6"
FG	2'6"
FH	2'6"
FI	2'6"
FJ	2'6"
FK	2'6"
FL	2'6"
FM	2'6"
FN	2'6"
FO	2'6"
FP	2'6"
FQ	2'6"
FR	2'6"
FS	2'6"
FT	2'6"
FU	2'6"
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FW	2'6"
FX	2'6"
FY	2'6"
FZ	2'6"
GA	2'6"
GB	2'6"
GC	2'6"
GD	2'6"
GE	2'6"
GF	2'6"
GG	2'6"
GH	2'6"
GI	2'6"
GJ	2'6"
GK	2'6"
GL	2'6"
GM	2'6"
GN	2'6"
GO	2'6"
GP	2'6"
GQ	2'6"
GR	2'6"
GS	2'6"
GT	2'6"
GU	2'6"
GV	2'6"
GW	2'6"
GX	2'6"
GY	2'6"
GZ	2'6"
HA	2'6"
HB	2'6"
HC	2'6"
HD	2'6"
HE	2'6"
HF	2'6"
HG	2'6"
HH	2'6"
HI	2'6"
HJ	2'6"
HK	2'6"
HL	2'6"
HM	2'6"
HN	2'6"
HO	2'6"
HP	2'6"
HQ	2'6"
HR	2'6"
HS	2'6"
HT	2'6"
HU	2'6"
HV	2'6"
HW	2'6"
HX	2'6"
HY	2'6"
HZ	2'6"
IA	2'6"
IB	2'6"
IC	2'6"
ID	2'6"
IE	2'6"
IF	2'6"
IG	2'6"
IH	2'6"
II	2'6"
IJ	2'6"
IK	2'6"
IL	2'6"
IM	2'6"
IN	2'6"
IO	2'6"
IP	2'6"
IQ	2'6"
IR	2'6"
IS	2'6"
IT	2'6"
IU	2'6"
IV	2'6"
IW	2'6"
IX	2'6"
IY	2'6"
IZ	2'6"
JA	2'6"
JB	2'6"
JC	2'6"
JD	2'6"
JE	2'6"
JF	2'6"
JG	2'6"
JH	2'6"
JI	2'6"
JJ	2'6"
JK	2'6"
JL	2'6"
JM	2'6"
JN	2'6"
JO	2'6"
JP	2'6"
JQ	2'6"
JR	2'6"
JS	2'6"
JT	2'6"
JU	2'6"
JV	2'6"
JW	2'6"
JX	2'6"
JY	2'6"
JZ	2'6"
KA	2'6"
KB	2'6"
KC	2'6"
KD	2'6"
KE	2'6"
KF	2'6"
KG	2'6"
KH	2'6"
KI	2'6"
KJ	2'6"
KL	2'6"
KM	2'6"
KN	2'6"
KO	2'6"
KP	2'6"
KQ	2'6"
KR	2'6"
KS	2'6"
KT	2'6"
KU	2'6"
KV	2'6"
KW	2'6"
KX	2'6"
KY	2'6"
KZ	2'6"
LA	2'6"
LB	2'6"
LC	2'6"
LD	2'6"
LE	2'6"
LF	2'6"
LG	2'6"
LH	2'6"
LI	2'6"
LJ	2'6"
LK	2'6"
LL	2'6"
LM	2'6"
LN	2'6"
LO	2'6"
LP	2'6"
LQ	2'6"
LR	2'6"
LS	2'6"
LT	2'6"
LU	2'6"
LV	2'6"
LW	2'6"
LX	2'6"
LY	2'6"
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MA	2'6"
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NB	2'6"
NC	2'6"
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NP	2'6"
NQ	2'6"
NR	2'6"
NS	2'6"
NT	2'6"
NU	2'6"
NV	2'6"
NW	2'6"
NX	2'6"
NY	2'6"
NZ	2'6"
OA	2'6"
OB	2'6"
OC	2'6"
OD	2'6"
OE	2'6"
OF	2'6"
OG	2'6"
OH	2'6"
OI	2'6"
OJ	2'6"
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OL	2'6"
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ON	2'6"
OO	2'6"
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OR	2'6"
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OT	2'6"
OU	2'6"
OV	2'6"
OW	2'6"
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OZ	2'6"
PA	2'6"
PB	2'6"
PC	2'6"
PD	2'6"
PE	2'6"
PF	2'6"
PG	2'6"
PH	2'6"
PI	2'6"
PJ	2'6"
PK	2'6"
PL	2'6"
PM	2'6"
PN	2'6"
PO	2'6"
PP	2'6"
PQ	2'6"
PR	2'6"



1717 S BOULDER AVE # 300, TULSA, OK 74119
(918) 587-4630

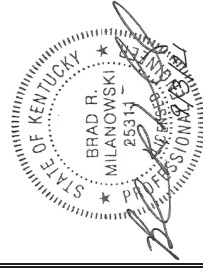
ARCOSA
TELECOM STRUCTURES

4020 TULL AVE, MUSKOGEE, OK 74403

REV	DATE	DESCRIPTION
0	09/03/21	ISSUED FOR CONSTRUCTION

COA: 4011

EXPIRES: 12/31/2021



IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTIONS OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT

PROJECT INFORMATION:

PROJECT NO: 155165.001.01
SITE NAME: EV BARLOW
SITE NO: 9094
CLIENT NAME: ARCOSA TELECOM STRUCTURES
DRAWN BY: CARLON BETHELL III
CHECKED BY: BRANDON SEVIER, P.E.

SHEET TITLE:

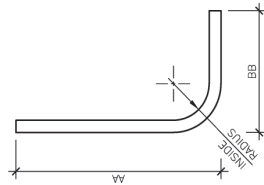
DIMENSIONING DETAIL

SHEET NUMBER: **SST-DTL**

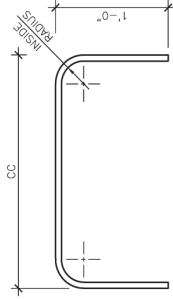
REVISION: **0**

DIMENSIONING SCHEDULE	
AA*	31.0"
BB*	31.0"
CC*	VARIABLES
DD*	27.0"
EE	37.0"

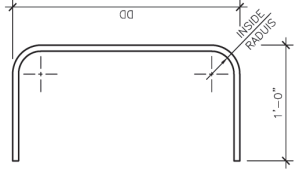
*NOTE: CONTRACTOR TO VERIFY DIMENSIONS PRIOR TO FABRICATION



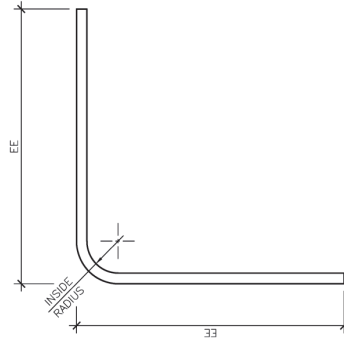
① L-BAR
SCALE: N.T.S.



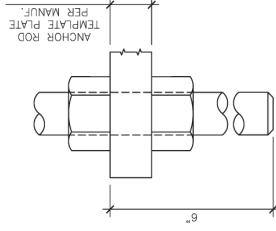
② HORIZONTAL U-BAR
SCALE: N.T.S.



③ VERTICAL U-BAR
SCALE: N.T.S.



④ CORNER BAR
SCALE: N.T.S.



⑤ ANCHOR ROD DETAIL
SCALE: N.T.S.

SST Unit Base Foundation

Project #:	155165.001.01
Site Name:	Ev Barlow
Site #:	9094

TIA-222 Revision:

Top & Bot. Pad Rein. Different?:	<input type="checkbox"/>
Tower Centroid Offset?:	<input checked="" type="checkbox"/>
Block Foundation?:	<input type="checkbox"/>
Rectangular Pad?:	<input type="checkbox"/>

Superstructure Analysis Reactions		
Global Moment, M:	11060	ft-kips
Global Axial, P:	84	kips
Global Shear, V:	68	kips
Leg Compression, P_{comp}:	529	kips
Leg Comp. Shear, V_{u,comp}:	40	kips
Leg Uplift, P_{uplift}:	451	kips
Leg Uplift. Shear, V_{u,uplift}:	36	kips
Tower Height, H:	280	ft
Base Face Width, BW:	25.5	ft
BP Dist. Above Fdn, bp_{dist}:	3	in

Foundation Analysis Checks				
	Capacity	Demand	Rating	Check
<i>Lateral (Sliding) (kips)</i>	1858.73	68.00	3.7%	Pass
<i>Bearing Pressure (ksf)</i>	6.75	6.02	89.2%	Pass
<i>Overturning (kip*ft)</i>	11987.36	11808.25	98.5%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	1404.52	160.00	11.4%	Pass
<i>Pier Flexure (Tension) (kip*ft)</i>	415.39	144.00	34.7%	Pass
<i>Pier Compression (kip)</i>	6123.66	535.93	8.8%	Pass
<i>Pad Flexure (kip*ft)</i>	3182.39	2620.37	82.3%	Pass
<i>Pad Shear - 1-way (kips)</i>	957.98	337.14	35.2%	Pass
<i>Pad Shear - Comp 2-way (ksi)</i>	0.190	0.101	53.3%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	1432.04	96.00	6.7%	Pass
<i>Pad Shear - Tension 2-way (ksi)</i>	0.190	0.100	52.5%	Pass
<i>Flexural 2-way (Tension) (kip*ft)</i>	1432.04	86.40	6.0%	Pass

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, dpier:	3.5	ft
Ext. Above Grade, E:	0.50	ft
Pier Rebar Size, Sc:	10	
Pier Rebar Quantity, mc:	10	
Pier Tie/Spiral Size, St:	4	
Pier Tie/Spiral Quantity, mt:	14	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Structural Rating:	82.3%
Soil Rating:	98.5%

Pad Properties		
Depth, D:	6.00	ft
Pad Width, W_p:	33.00	ft
Pad Thickness, T:	2.50	ft
Pad Rebar Size (Bottom dir. 2), Sp₂:	8	
Pad Rebar Quantity (Bottom dir. 2), mp₂:	36	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, Fy:	60	ksi
Concrete Compressive Strength, F'c:	4	ksi
Dry Concrete Density, δc:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	110	pcf
Ultimate Gross Bearing, Qult:	9.000	ksf
Cohesion, Cu:	2.000	ksf
Friction Angle, Φ:		degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:		
Neglected Depth, N:	4.0	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw:	N/A	ft

<-- Toggle between Gross and Net

Drilled Pier Foundation

155165.001.01
Ev Barlow
9094
H
Self Support

Applied Loads		Uplift
Comp.		
Moment (kip-ft)	529	451
Axial Force (kips)	40	36

Material Properties	
Concrete Strength, fc:	4 ksi
Rebar Strength, Fy:	60 ksi
Tie Yield Strength, Fy:	40 ksi

Pier Design Data	
Depth	32 ft
Ext. Above Grade	0.5 ft
Pier Section 1	
<i>From 0.5' above grade to 32' below grade</i>	
Pier Diameter	6 ft
Rebar Quantity	26
Rebar Size	8
Clear Cover to Ties	3 in
Tie Size	4
Tie Spacing	12 in

Rebar & Pier Options

Embedded Pole Inputs

Bolted Pier Inputs

Check Limitation	
Apply TIA-222-H Section 15.5:	<input type="checkbox"/>
	N/A
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	<input type="checkbox"/>
Shear Design Options	
Check Shear along Depth of Pier:	<input checked="" type="checkbox"/>
Utilize Shear-Friction Methodology:	<input type="checkbox"/>
Override Critical Depth:	<input type="checkbox"/>

[Go to Soil Calculations](#)

Analysis Results		
Soil Lateral Check		
D _{u=0} (ft from TOC)	Compression	Uplift
Soil Safety Factor	14.69	14.69
Max Moment (kip-ft)	26.86	29.84
Rating	364.02	327.62
	5.0%	4.5%
Soil Vertical Check		
Skin Friction (kips)	Compression	Uplift
End Bearing (kips)	480.66	480.66
Weight of Concrete (kips)	254.47	-
Total Capacity (kips)	165.40	124.05
Axial (kips)	735.13	604.72
Rating	694.40	451.00
	94.5%	74.6%
Reinforced Concrete Flexure		
Critical Depth (ft from TOC)	Compression	Uplift
Critical Moment (kip-ft)	15.32	13.02
Critical Moment Capacity	363.29	323.15
Rating	3726.57	2154.54
	9.7%	15.0%
Reinforced Concrete Shear		
Critical Depth (ft from TOC)	Compression	Uplift
Critical Shear (kip)	0.00	0.00
Critical Shear Capacity	40.00	36.00
Rating	708.28	315.47
	5.6%	11.4%

Structural Foundation Rating	15.0%
Soil Interaction Rating	94.5%

Min. Steel is assumed

Soil Profile

of Layers 5

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	V _{soil} (pcf)	V _{concrete} (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3	3	120	150			0.000	0.000	0.00	0.00			Cohesionless
2	3	6	3	120	150	2	2	1.100	1.100	0.00	0.00			Cohesive
3	6	23.5	17.5	130	150	2	2	1.100	1.100	1.20	1.20			Cohesive
4	23.5	28.5	5	130	150	2	2	1.100	1.100	1.20	1.20			Cohesive
5	28.5	32	3.5	130	150		28	0.000	0.000	2.00	2.00	12		Cohesionless

Groundwater Depth N/A

<p>tnxTower</p> <p>B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job ATS# 9094 - EV Barlow (Site# US-KY-5119)	Page 1 of 33
	Project 280' SST/37.11170694, -89.045718	Date 10:27:59 09/02/21
	Client Vertical Bridge	Designed by cbethell

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 280.000 ft above the ground line.

The base of the tower is set at an elevation of 0.000 ft above the ground line.

The face width of the tower is 4.500 ft at the top and 25.500 ft at the base.

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

The following design criteria apply:

Tower is located in Ballard County, Kentucky.

Tower base elevation above sea level: 361.000 ft.

Basic wind speed of 107 mph.

Risk Category II.

Exposure Category C.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0.000 ft.

Nominal ice thickness of 1.500 in.

Ice thickness is considered to increase with height.

Ice density of 56.000 pcf.

A wind speed of 30 mph is used in combination with ice.

Temperature drop of 50.000 °F.

Deflections calculated using a wind speed of 60 mph.

Please see feedline plan for proper feedline placement. Deviation from plan may reduce tower capacity..

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

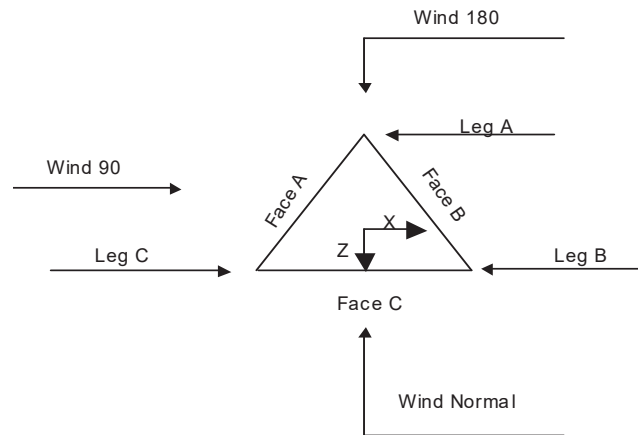
Stress ratio used in tower member design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile √ Include Bolts In Member Capacity √ Leg Bolts Are At Top Of Section √ Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination √ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs | <ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules √ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA √ SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque √ Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <li style="text-align: center;">Poles Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known |
|--|---|---|

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job ATS# 9094 - EV Barlow (Site# US-KY-5119)	Page 2 of 33
	Project 280' SST/37.11170694, -89.045718	Date 10:27:59 09/02/21
	Client Vertical Bridge	Designed by cbethell



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	280.000-260.000			4.500	1	20.000
T2	260.000-240.000			6.000	1	20.000
T3	240.000-220.000			7.500	1	20.000
T4	220.000-200.000			9.000	1	20.000
T5	200.000-180.000			10.500	1	20.000
T6	180.000-160.000			12.000	1	20.000
T7	160.000-140.000			13.500	1	20.000
T8	140.000-120.000			15.000	1	20.000
T9	120.000-100.000			16.500	1	20.000
T10	100.000-80.000			18.000	1	20.000
T11	80.000-60.000			19.500	1	20.000
T12	60.000-40.000			21.000	1	20.000
T13	40.000-20.000			22.500	1	20.000
T14	20.000-0.000			24.000	1	20.000

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	280.000-260.000	4.750	X Brace	No	No	6.000	6.000

<p>tnxTower</p> <p>B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job	Page
	Project	Date
	Client	Designed by
	ATS# 9094 - EV Barlow (Site# US-KY-5119)	3 of 33
	280' SST/37.11170694, -89.045718	10:27:59 09/02/21
	Vertical Bridge	cbethell

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T2	260.000-240.000	4.750	X Brace	No	No	6.000	6.000
T3	240.000-220.000	4.750	X Brace	No	No	6.000	6.000
T4	220.000-200.000	4.750	X Brace	No	No	6.000	6.000
T5	200.000-180.000	4.750	X Brace	No	No	6.000	6.000
T6	180.000-160.000	4.750	X Brace	No	No	6.000	6.000
T7	160.000-140.000	4.750	X Brace	No	No	6.000	6.000
T8	140.000-120.000	4.750	X Brace	No	No	6.000	6.000
T9	120.000-100.000	4.750	X Brace	No	No	6.000	6.000
T10	100.000-80.000	4.750	X Brace	No	No	6.000	6.000
T11	80.000-60.000	4.750	Double K	No	Yes	6.000	6.000
T12	60.000-40.000	4.750	Double K	No	Yes	6.000	6.000
T13	40.000-20.000	4.750	Double K	No	Yes	6.000	6.000
T14	20.000-0.000	4.750	Double K	No	Yes	6.000	6.000

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
280.000-260.000	T1 Solid Round	1 3/4	A529-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
260.000-240.000	T2 Solid Round	2 1/4	A529-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
240.000-220.000	T3 Solid Round	2 1/2	A529-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
220.000-200.000	T4 Solid Round	2 3/4	A529-50 (50 ksi)	Equal Angle	L2x2x3/16	A36M-50 (50 ksi)
200.000-180.000	T5 Solid Round	3	A529-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36M-50 (50 ksi)
180.000-160.000	T6 Solid Round	3 1/4	A529-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36M-50 (50 ksi)
160.000-140.000	T7 Solid Round	3 1/2	A529-50 (50 ksi)	Equal Angle	L3x3x3/16	A36M-50 (50 ksi)
140.000-120.000	T8 Solid Round	3 1/2	A529-50 (50 ksi)	Equal Angle	L3x3x3/16	A36M-50 (50 ksi)
120.000-100.000	T9 Solid Round	3 3/4	A529-50 (50 ksi)	Equal Angle	L3x3x1/4	A36M-50 (50 ksi)
100.000-80.000	T10 Solid Round	3 3/4	A529-50 (50 ksi)	Equal Angle	L3x3x1/4	A36M-50 (50 ksi)
80.000-60.000	T11 Solid Round	4	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
60.000-40.000	T12 Solid Round	4 1/4	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
40.000-20.000	T13 Solid Round	4 1/4	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T14 20.000-0.000	T14 Solid Round	4 1/2	A529-50 (50 ksi)	Double Angle	2L3x3x3/16x3/8	A36M-50 (50 ksi)

Tower Section Geometry (cont'd)

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job ATS# 9094 - EV Barlow (Site# US-KY-5119)	Page 4 of 33
	Project 280' SST/37.11170694, -89.045718	Date 10:27:59 09/02/21
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Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 280.000-260.000	Equal Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)	Solid Round		A529-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T11 80.000-60.000	None	Flat Bar		A36 (36 ksi)	Double Angle	2L2x2x3/16x3/8	A36M-50 (50 ksi)
T12 60.000-40.000	None	Flat Bar		A36 (36 ksi)	Double Angle	2L2x2x3/16x3/8	A36M-50 (50 ksi)
T13 40.000-20.000	None	Flat Bar		A36 (36 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T14 20.000-0.000	None	Flat Bar		A36 (36 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T11 80.000-60.000	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T12 60.000-40.000	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T13 40.000-20.000	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T14 20.000-0.000	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 280.000-260.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T2 260.000-240.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T3	0.000	0.375	A36M-50	1	1	1	36.000	36.000	36.000

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	ATS# 9094 - EV Barlow (Site# US-KY-5119)	Page	5 of 33
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	Client	Vertical Bridge	Designed by	cbethell

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
240.000-220.000			(50 ksi)						
T4	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
220.000-200.000			(50 ksi)						
T5	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
200.000-180.000			(50 ksi)						
T6	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
180.000-160.000			(50 ksi)						
T7	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
160.000-140.000			(50 ksi)						
T8	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
140.000-120.000			(50 ksi)						
T9	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
120.000-100.000			(50 ksi)						
T10	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
100.000-80.000			(50 ksi)						
T11	0.000	0.375	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.000
80.000-60.000			(50 ksi)						
T12	0.000	0.375	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.000
60.000-40.000			(50 ksi)						
T13	0.000	0.375	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.000
40.000-20.000			(50 ksi)						
T14	0.000	0.375	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.000
20.000-0.000			(50 ksi)						

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors ¹						
				X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
ft				Y	Y	Y	Y	Y	Y	Y
T1	No	No	1	1	1	1	1	1	1	1
280.000-260.000				1	1	1	1	1	1	1
T2	No	No	1	1	1	1	1	1	1	1
260.000-240.000				1	1	1	1	1	1	1
T3	No	No	1	1	1	1	1	1	1	1
240.000-220.000				1	1	1	1	1	1	1
T4	No	No	1	1	1	1	1	1	1	1
220.000-200.000				1	1	1	1	1	1	1
T5	No	No	1	1	1	1	1	1	1	1
200.000-180.000				1	1	1	1	1	1	1

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Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T10 100.000-80.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T11 80.000-60.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T12 60.000-40.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T13 40.000-20.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T14 20.000-0.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 280.000-260.000	Flange	0.000 A325N	0	0.625 A325X	1	0.625 A325X	1	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T2 260.000-240.000	Flange	0.750 A325N	6	0.625 A325X	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T3 240.000-220.000	Flange	0.750 A325N	6	0.625 A325X	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T4 220.000-200.000	Flange	0.750 A325N	6	0.625 A325X	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T5 200.000-180.000	Flange	1.000 A325N	6	0.625 A325X	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T6 180.000-160.000	Flange	1.000 A325N	6	0.625 A325X	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T7 160.000-140.000	Flange	1.000 A325N	6	0.625 A325X	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T8 140.000-120.000	Flange	1.000 A325N	6	0.625 A325X	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T9 120.000-100.000	Flange	1.250 A325N	6	0.625 A325X	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T10 100.000-80.000	Flange	1.250 A325N	6	0.625 A325X	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T11 80.000-60.000	Flange	1.250 A325N	6	0.625 A325X	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.625 A325X	1	0.625 A325N	0

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job ATS# 9094 - EV Barlow (Site# US-KY-5119)	Page 9 of 33
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	Client Vertical Bridge	Designed by cbethell

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
60.000-40.000	Flange	1.250	6	0.625	1	0.000	0	0.000	0	0.625	0	0.625	1	0.625	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
40.000-20.000	Flange	1.250	6	0.625	1	0.000	0	0.000	0	0.625	0	0.625	1	0.625	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
20.000-0.000	Flange	1.500	6	0.625	1	0.000	0	0.000	0	0.625	0	0.625	1	0.625	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
1-5/8" Coax (Carrier 1) **	C	No	No	Ar (CaAa)	275.000 - 10.000	0.000	0	18	9	0.750	1.980		0.001
1-5/8" Coax (Carrier 2) **	B	No	No	Ar (CaAa)	265.000 - 10.000	0.000	0	12	6	0.750	1.980		0.001
1-5/8" Coax (Carrier 3) **	A	No	No	Ar (CaAa)	255.000 - 10.000	0.000	0	12	6	0.750	1.980		0.001
Safety Line 3/8	A	No	No	Ar (CaAa)	280.000 - 10.000	0.000	0.45	1	1	0.375	0.375		0.000
Strobe Cable **	A	No	No	Ar (CaAa)	280.000 - 10.000	0.000	-0.45	1	1	1.250	1.250		0.001
Feedline Ladder (Af) **	C	No	No	Af (CaAa)	275.000 - 10.000	0.000	0.3	1	1	3.000	0.250		0.008
Feedline Ladder (Af) **	B	No	No	Af (CaAa)	265.000 - 10.000	0.000	0.3	1	1	3.000	0.250		0.008
Feedline Ladder (Af) **	A	No	No	Af (CaAa)	255.000 - 10.000	0.000	0.3	1	1	3.000	0.250		0.008

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight klf
**								

Feed Line/Linear Appurtenances Section Areas

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	<p>Client</p> <p>Vertical Bridge</p>	<p>Designed by</p> <p>cbethell</p>

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight K
T1	280.000-260.000	A	0.000	0.000	3.250	0.000	0.018
		B	0.000	0.000	12.088	0.000	0.085
		C	0.000	0.000	54.085	0.000	0.320
T2	260.000-240.000	A	0.000	0.000	39.515	0.000	0.274
		B	0.000	0.000	48.353	0.000	0.341
		C	0.000	0.000	72.113	0.000	0.427
T3	240.000-220.000	A	0.000	0.000	51.603	0.000	0.359
		B	0.000	0.000	48.353	0.000	0.341
		C	0.000	0.000	72.113	0.000	0.427
T4	220.000-200.000	A	0.000	0.000	51.603	0.000	0.359
		B	0.000	0.000	48.353	0.000	0.341
		C	0.000	0.000	72.113	0.000	0.427
T5	200.000-180.000	A	0.000	0.000	51.603	0.000	0.359
		B	0.000	0.000	48.353	0.000	0.341
		C	0.000	0.000	72.113	0.000	0.427
T6	180.000-160.000	A	0.000	0.000	51.603	0.000	0.359
		B	0.000	0.000	48.353	0.000	0.341
		C	0.000	0.000	72.113	0.000	0.427
T7	160.000-140.000	A	0.000	0.000	51.603	0.000	0.359
		B	0.000	0.000	48.353	0.000	0.341
		C	0.000	0.000	72.113	0.000	0.427
T8	140.000-120.000	A	0.000	0.000	51.603	0.000	0.359
		B	0.000	0.000	48.353	0.000	0.341
		C	0.000	0.000	72.113	0.000	0.427
T9	120.000-100.000	A	0.000	0.000	51.603	0.000	0.359
		B	0.000	0.000	48.353	0.000	0.341
		C	0.000	0.000	72.113	0.000	0.427
T10	100.000-80.000	A	0.000	0.000	51.603	0.000	0.359
		B	0.000	0.000	48.353	0.000	0.341
		C	0.000	0.000	72.113	0.000	0.427
T11	80.000-60.000	A	0.000	0.000	51.603	0.000	0.359
		B	0.000	0.000	48.353	0.000	0.341
		C	0.000	0.000	72.113	0.000	0.427
T12	60.000-40.000	A	0.000	0.000	51.603	0.000	0.359
		B	0.000	0.000	48.353	0.000	0.341
		C	0.000	0.000	72.113	0.000	0.427
T13	40.000-20.000	A	0.000	0.000	51.603	0.000	0.359
		B	0.000	0.000	48.353	0.000	0.341
		C	0.000	0.000	72.113	0.000	0.427
T14	20.000-0.000	A	0.000	0.000	25.802	0.000	0.180
		B	0.000	0.000	24.177	0.000	0.170
		C	0.000	0.000	36.057	0.000	0.214

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight K
T1	280.000-260.000	A	1.851	0.000	0.000	18.057	0.000	0.259
		B		0.000	0.000	15.236	0.000	0.357
		C		0.000	0.000	60.137	0.000	1.431
T2	260.000-240.000	A	1.837	0.000	0.000	63.538	0.000	1.323
		B		0.000	0.000	60.793	0.000	1.422
		C		0.000	0.000	80.038	0.000	1.899
T3	240.000-220.000	A	1.821	0.000	0.000	78.453	0.000	1.667
		B		0.000	0.000	60.632	0.000	1.414
		C		0.000	0.000	79.882	0.000	1.889
T4	220.000-200.000	A	1.805	0.000	0.000	78.147	0.000	1.655

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	<p>Client</p> <p>Vertical Bridge</p>	<p>Designed by</p> <p>cbethell</p>

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
		B		0.000	0.000	60.457	0.000	1.405
		C		0.000	0.000	79.713	0.000	1.878
T5	200.000-180.000	A	1.787	0.000	0.000	77.813	0.000	1.641
		B		0.000	0.000	60.267	0.000	1.396
		C		0.000	0.000	79.529	0.000	1.866
T6	180.000-160.000	A	1.767	0.000	0.000	77.446	0.000	1.627
		B		0.000	0.000	60.058	0.000	1.385
		C		0.000	0.000	79.327	0.000	1.853
T7	160.000-140.000	A	1.745	0.000	0.000	77.038	0.000	1.610
		B		0.000	0.000	59.826	0.000	1.374
		C		0.000	0.000	79.102	0.000	1.839
T8	140.000-120.000	A	1.720	0.000	0.000	76.577	0.000	1.592
		B		0.000	0.000	59.564	0.000	1.361
		C		0.000	0.000	78.848	0.000	1.823
T9	120.000-100.000	A	1.692	0.000	0.000	76.048	0.000	1.571
		B		0.000	0.000	59.263	0.000	1.346
		C		0.000	0.000	78.557	0.000	1.804
T10	100.000-80.000	A	1.658	0.000	0.000	75.425	0.000	1.547
		B		0.000	0.000	58.908	0.000	1.328
		C		0.000	0.000	78.214	0.000	1.782
T11	80.000-60.000	A	1.617	0.000	0.000	74.661	0.000	1.518
		B		0.000	0.000	58.474	0.000	1.307
		C		0.000	0.000	77.793	0.000	1.756
T12	60.000-40.000	A	1.564	0.000	0.000	73.669	0.000	1.480
		B		0.000	0.000	57.910	0.000	1.280
		C		0.000	0.000	77.247	0.000	1.722
T13	40.000-20.000	A	1.486	0.000	0.000	72.226	0.000	1.426
		B		0.000	0.000	57.089	0.000	1.241
		C		0.000	0.000	76.454	0.000	1.673
T14	20.000-0.000	A	1.331	0.000	0.000	34.681	0.000	0.661
		B		0.000	0.000	27.732	0.000	0.583
		C		0.000	0.000	37.441	0.000	0.789

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
T1	280.000-260.000	0.090	1.724	-1.242	1.459
T2	260.000-240.000	0.021	-3.086	-0.862	-1.986
T3	240.000-220.000	-0.646	-4.100	-1.593	-2.956
T4	220.000-200.000	-0.692	-4.337	-1.742	-3.222
T5	200.000-180.000	-0.697	-4.326	-1.826	-3.383
T6	180.000-160.000	-0.744	-4.578	-1.948	-3.612
T7	160.000-140.000	-0.728	-4.453	-1.976	-3.684
T8	140.000-120.000	-0.763	-4.651	-2.066	-3.868
T9	120.000-100.000	-0.791	-4.799	-2.136	-4.023
T10	100.000-80.000	-0.820	-4.960	-2.199	-4.178
T11	80.000-60.000	-1.057	-6.360	-2.629	-5.026
T12	60.000-40.000	-1.091	-6.546	-2.685	-5.212
T13	40.000-20.000	-1.097	-6.567	-2.677	-5.337
T14	20.000-0.000	-0.619	-3.656	-1.494	-3.131

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Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	1	1-5/8" Coax	260.00 - 275.00	0.6000	0.6000
T1	3	1-5/8" Coax	260.00 - 265.00	0.6000	0.6000
T1	7	Safety Line 3/8	260.00 - 280.00	0.6000	0.6000
T1	8	Strobe Cable	260.00 - 280.00	0.6000	0.6000
T1	10	Feedline Ladder (Af)	260.00 - 275.00	0.6000	0.6000
T1	11	Feedline Ladder (Af)	260.00 - 265.00	0.6000	0.6000
T2	1	1-5/8" Coax	240.00 - 260.00	0.6000	0.6000
T2	3	1-5/8" Coax	240.00 - 260.00	0.6000	0.6000
T2	5	1-5/8" Coax	240.00 - 255.00	0.6000	0.6000
T2	7	Safety Line 3/8	240.00 - 260.00	0.6000	0.6000
T2	8	Strobe Cable	240.00 - 260.00	0.6000	0.6000
T2	10	Feedline Ladder (Af)	240.00 - 260.00	0.6000	0.6000
T2	11	Feedline Ladder (Af)	240.00 - 260.00	0.6000	0.6000
T2	12	Feedline Ladder (Af)	240.00 - 255.00	0.6000	0.6000
T3	1	1-5/8" Coax	220.00 - 240.00	0.6000	0.6000
T3	3	1-5/8" Coax	220.00 - 240.00	0.6000	0.6000
T3	5	1-5/8" Coax	220.00 - 240.00	0.6000	0.6000
T3	7	Safety Line 3/8	220.00 - 240.00	0.6000	0.6000
T3	8	Strobe Cable	220.00 - 240.00	0.6000	0.6000
T3	10	Feedline Ladder (Af)	220.00 - 240.00	0.6000	0.6000
T3	11	Feedline Ladder (Af)	220.00 - 240.00	0.6000	0.6000
T3	12	Feedline Ladder (Af)	220.00 - 240.00	0.6000	0.6000
T4	1	1-5/8" Coax	200.00 - 220.00	0.6000	0.6000
T4	3	1-5/8" Coax	200.00 - 220.00	0.6000	0.6000
T4	5	1-5/8" Coax	200.00 - 220.00	0.6000	0.6000
T4	7	Safety Line 3/8	200.00 - 220.00	0.6000	0.6000
T4	8	Strobe Cable	200.00 - 220.00	0.6000	0.6000
T4	10	Feedline Ladder (Af)	200.00 - 220.00	0.6000	0.6000
T4	11	Feedline Ladder (Af)	200.00 - 220.00	0.6000	0.6000

tnxTower

B+T Group
 1717 S Boulder Ave, Suite 300
 Tulsa, OK 74119
 Phone: (918) 587-4630
 FAX: (918) 295-0265

Job

ATS# 9094 - EV Barlow (Site# US-KY-5119)

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Project

280' SST/37.11170694, -89.045718

Date

10:27:59 09/02/21

Client

Vertical Bridge

Designed by

cbethell

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			220.00		
T4	12	Feedline Ladder (Af)	200.00 -	0.6000	0.6000
			220.00		
T5	1	1-5/8" Coax	180.00 -	0.6000	0.6000
			200.00		
T5	3	1-5/8" Coax	180.00 -	0.6000	0.6000
			200.00		
T5	5	1-5/8" Coax	180.00 -	0.6000	0.6000
			200.00		
T5	7	Safety Line 3/8	180.00 -	0.6000	0.6000
			200.00		
T5	8	Strobe Cable	180.00 -	0.6000	0.6000
			200.00		
T5	10	Feedline Ladder (Af)	180.00 -	0.6000	0.6000
			200.00		
T5	11	Feedline Ladder (Af)	180.00 -	0.6000	0.6000
			200.00		
T5	12	Feedline Ladder (Af)	180.00 -	0.6000	0.6000
			200.00		
T6	1	1-5/8" Coax	160.00 -	0.6000	0.6000
			180.00		
T6	3	1-5/8" Coax	160.00 -	0.6000	0.6000
			180.00		
T6	5	1-5/8" Coax	160.00 -	0.6000	0.6000
			180.00		
T6	7	Safety Line 3/8	160.00 -	0.6000	0.6000
			180.00		
T6	8	Strobe Cable	160.00 -	0.6000	0.6000
			180.00		
T6	10	Feedline Ladder (Af)	160.00 -	0.6000	0.6000
			180.00		
T6	11	Feedline Ladder (Af)	160.00 -	0.6000	0.6000
			180.00		
T6	12	Feedline Ladder (Af)	160.00 -	0.6000	0.6000
			180.00		
T7	1	1-5/8" Coax	140.00 -	0.6000	0.6000
			160.00		
T7	3	1-5/8" Coax	140.00 -	0.6000	0.6000
			160.00		
T7	5	1-5/8" Coax	140.00 -	0.6000	0.6000
			160.00		
T7	7	Safety Line 3/8	140.00 -	0.6000	0.6000
			160.00		
T7	8	Strobe Cable	140.00 -	0.6000	0.6000
			160.00		
T7	10	Feedline Ladder (Af)	140.00 -	0.6000	0.6000
			160.00		
T7	11	Feedline Ladder (Af)	140.00 -	0.6000	0.6000
			160.00		
T7	12	Feedline Ladder (Af)	140.00 -	0.6000	0.6000
			160.00		
T8	1	1-5/8" Coax	120.00 -	0.6000	0.6000
			140.00		
T8	3	1-5/8" Coax	120.00 -	0.6000	0.6000
			140.00		
T8	5	1-5/8" Coax	120.00 -	0.6000	0.6000
			140.00		
T8	7	Safety Line 3/8	120.00 -	0.6000	0.6000
			140.00		
T8	8	Strobe Cable	120.00 -	0.6000	0.6000
			140.00		
T8	10	Feedline Ladder (Af)	120.00 -	0.6000	0.6000

tnxTower

B+T Group
1717 S Boulder Ave, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
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Job
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Project
280' SST/37.11170694, -89.045718

Date
10:27:59 09/02/21

Client
Vertical Bridge

Designed by
cbethell

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T8	11	Feedline Ladder (Af)	140.00 - 120.00	0.6000	0.6000
T8	12	Feedline Ladder (Af)	140.00 - 120.00	0.6000	0.6000
T9	1	1-5/8" Coax	100.00 - 120.00	0.6000	0.6000
T9	3	1-5/8" Coax	100.00 - 120.00	0.6000	0.6000
T9	5	1-5/8" Coax	100.00 - 120.00	0.6000	0.6000
T9	7	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T9	8	Strobe Cable	100.00 - 120.00	0.6000	0.6000
T9	10	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T9	11	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T9	12	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T10	1	1-5/8" Coax	80.00 - 100.00	0.6000	0.6000
T10	3	1-5/8" Coax	80.00 - 100.00	0.6000	0.6000
T10	5	1-5/8" Coax	80.00 - 100.00	0.6000	0.6000
T10	7	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T10	8	Strobe Cable	80.00 - 100.00	0.6000	0.6000
T10	10	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T10	11	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T10	12	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T11	1	1-5/8" Coax	60.00 - 80.00	0.6000	0.6000
T11	3	1-5/8" Coax	60.00 - 80.00	0.6000	0.6000
T11	5	1-5/8" Coax	60.00 - 80.00	0.6000	0.6000
T11	7	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T11	8	Strobe Cable	60.00 - 80.00	0.6000	0.6000
T11	10	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T11	11	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T11	12	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T12	1	1-5/8" Coax	40.00 - 60.00	0.6000	0.6000
T12	3	1-5/8" Coax	40.00 - 60.00	0.6000	0.6000
T12	5	1-5/8" Coax	40.00 - 60.00	0.6000	0.6000
T12	7	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T12	8	Strobe Cable	40.00 - 60.00	0.6000	0.6000
T12	10	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T12	11	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T12	12	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T13	1	1-5/8" Coax	20.00 - 40.00	0.6000	0.6000
T13	3	1-5/8" Coax	20.00 - 40.00	0.6000	0.6000
T13	5	1-5/8" Coax	20.00 - 40.00	0.6000	0.6000
T13	7	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T13	8	Strobe Cable	20.00 - 40.00	0.6000	0.6000
T13	10	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T13	11	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T13	12	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T14	1	1-5/8" Coax	10.00 - 20.00	0.6000	0.6000
T14	3	1-5/8" Coax	10.00 - 20.00	0.6000	0.6000
T14	5	1-5/8" Coax	10.00 - 20.00	0.6000	0.6000
T14	7	Safety Line 3/8	10.00 - 20.00	0.6000	0.6000
T14	8	Strobe Cable	10.00 - 20.00	0.6000	0.6000
T14	10	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T14	11	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T14	12	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	ATS# 9094 - EV Barlow (Site# US-KY-5119)	Page	15 of 33
	Project	280' SST/37.11170694, -89.045718	Date	10:27:59 09/02/21
	Client	Vertical Bridge	Designed by	cbethell

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _A Front	C _A A _A Side	Weight
			Horz Lateral	Vert					
Lightning Rod 1"x10'	C	From Leg	0.000	0.000	280.000	No Ice	1.000	1.000	0.040
			0.000			1/2" Ice	2.017	2.017	0.049
			5.000			1" Ice	3.050	3.050	0.065
						2" Ice	5.148	5.148	0.116
Top Beacon	B	From Leg	0.000	0.000	280.000	No Ice	2.700	2.700	0.050
			0.000			1/2" Ice	3.100	3.100	0.070
			1.000			1" Ice	3.500	3.500	0.090
						2" Ice	4.300	4.300	0.130
**									
Sector1(CaAa=10000 Sq.in)No Ice (Carrier 1)	A	From Leg	4.000	0.000	275.000	No Ice	69.440	46.525	0.700
			0.000			1/2" Ice	86.800	58.156	1.400
			0.000			1" Ice	104.160	69.787	2.100
						2" Ice	138.880	93.050	3.500
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 1)	B	From Leg	4.000	0.000	275.000	No Ice	69.440	46.525	0.700
			0.000			1/2" Ice	86.800	58.156	1.400
			0.000			1" Ice	104.160	69.787	2.100
						2" Ice	138.880	93.050	3.500
Sector3(CaAa=10000 Sq.in)No Ice (Carrier 1)	C	From Leg	4.000	0.000	275.000	No Ice	69.440	46.525	0.700
			0.000			1/2" Ice	86.800	58.156	1.400
			0.000			1" Ice	104.160	69.787	2.100
						2" Ice	138.880	93.050	3.500
Pipe Mount (Carrier 1)	C	From Leg	4.000	0.000	275.000	No Ice	1.853	1.853	0.057
			0.000			1/2" Ice	2.207	2.207	0.074
			0.000			1" Ice	2.543	2.543	0.094
						2" Ice	3.241	3.241	0.148
**									
Sector1(CaAa=10000 Sq.in)No Ice (Carrier 2)	A	From Leg	4.000	0.000	265.000	No Ice	69.440	46.525	0.700
			0.000			1/2" Ice	86.800	58.156	1.400
			0.000			1" Ice	104.160	69.787	2.100
						2" Ice	138.880	93.050	3.500
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 2)	B	From Leg	4.000	0.000	265.000	No Ice	69.440	46.525	0.700
			0.000			1/2" Ice	86.800	58.156	1.400
			0.000			1" Ice	104.160	69.787	2.100
						2" Ice	138.880	93.050	3.500
Sector3(CaAa=10000 Sq.in)No Ice (Carrier 2)	C	From Leg	4.000	0.000	265.000	No Ice	69.440	46.525	0.700
			0.000			1/2" Ice	86.800	58.156	1.400
			0.000			1" Ice	104.160	69.787	2.100
						2" Ice	138.880	93.050	3.500
**									
Sector1(CaAa=10000 Sq.in)No Ice (Carrier 3)	A	From Leg	4.000	0.000	255.000	No Ice	69.440	46.525	0.700
			0.000			1/2" Ice	86.800	58.156	1.400
			0.000			1" Ice	104.160	69.787	2.100
						2" Ice	138.880	93.050	3.500
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 3)	B	From Leg	4.000	0.000	255.000	No Ice	69.440	46.525	0.700
			0.000			1/2" Ice	86.800	58.156	1.400
			0.000			1" Ice	104.160	69.787	2.100
						2" Ice	138.880	93.050	3.500

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	ATS# 9094 - EV Barlow (Site# US-KY-5119)	Page	16 of 33
	Project	280' SST/37.11170694, -89.045718	Date	10:27:59 09/02/21
	Client	Vertical Bridge	Designed by	cbethell

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _A Front	C _A A _A Side	Weight
			Horz Lateral	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
Sector3(CaAa=10000 Sq.in)No Ice (Carrier 3)	C	From Leg	4.000	0.000	0.000	255.000	No Ice 69.440	46.525	0.700
			0.000				1/2" Ice 86.800	58.156	1.400
			0.000				1" Ice 104.160	69.787	2.100
							2" Ice 138.880	93.050	3.500
**									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight
				Horz Lateral	Vert						
			ft	ft	°	°	ft	ft	ft ²	K	
VHLP3-11WA MW Dish (Carrier 1)	C	Paraboloid w/Shroud (HP)	From Leg	4.000	0.000	0.000		275.000	3.000	No Ice 7.069	0.062
										1/2" Ice 7.467	0.100
										1" Ice 7.865	0.139
										2" Ice 8.661	0.215

Load Combinations

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

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Project	280' SST/37.11170694, -89.045718	Date	10:27:59 09/02/21
Client	Vertical Bridge	Designed by	cbethell

Comb. No.	Description
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	280 - 260	Leg	Max Tension	15	21.190	1.280	0.030
			Max. Compression	2	-24.720	0.983	0.024
			Max. Mx	2	-24.719	-1.496	-0.036
			Max. My	24	-2.619	-0.038	0.802
			Max. Vy	2	-4.956	0.983	0.024
			Max. Vx	24	-2.389	-0.038	0.802
		Diagonal	Max Tension	4	4.846	0.000	0.000
			Max. Compression	4	-4.425	0.000	0.000
			Max. Mx	2	-0.606	0.061	0.003
			Max. My	4	-4.419	-0.008	0.056
			Max. Vy	37	0.024	0.026	0.002
			Max. Vx	4	-0.015	0.000	0.000
		Top Girt	Max Tension	14	2.185	0.000	0.000
			Max. Compression	2	-1.962	0.000	0.000
			Max. Mx	27	-0.214	-0.032	0.000
			Max. My	32	0.121	0.000	0.001
Max. Vy	27		0.028	0.000	0.000		
Max. Vx	32		0.001	0.000	0.000		
T2	260 - 240	Leg	Max Tension	15	66.406	2.532	0.031
			Max. Compression	2	-73.756	0.664	0.009
			Max. Mx	2	-24.737	3.437	0.082
			Max. My	24	-2.633	-0.070	1.997
			Max. Vy	2	-7.838	0.664	0.009
			Max. Vx	24	-3.216	-0.039	0.470
		Diagonal	Max Tension	4	6.670	0.000	0.000
			Max. Compression	4	-6.053	0.000	0.000
			Max. Mx	2	-0.756	0.031	0.002
			Max. My	4	-5.970	-0.009	0.024
			Max. Vy	34	0.028	0.025	-0.002

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	ATS# 9094 - EV Barlow (Site# US-KY-5119)	Page	18 of 33
	Project	280' SST/37.11170694, -89.045718	Date	10:27:59 09/02/21
	Client	Vertical Bridge	Designed by	cbethell

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T3	240 - 220	Leg	Max. Vx	4	-0.006	0.000	0.000
			Max Tension	15	107.240	2.546	0.030
			Max. Compression	2	-117.640	0.730	0.009
			Max. Mx	2	-73.770	4.564	0.059
			Max. My	24	-4.505	-0.052	2.081
			Max. Vy	2	-8.235	0.730	0.009
		Diagonal	Max. Vx	24	-3.421	-0.025	0.383
			Max Tension	4	6.441	0.000	0.000
			Max. Compression	4	-6.893	0.000	0.000
			Max. Mx	32	0.336	0.035	0.004
			Max. My	2	-6.770	-0.005	0.011
			Max. Vy	32	0.034	0.035	0.004
			Max. Vx	2	-0.002	0.000	0.000
			Max. Vy	2	-8.899	0.775	0.009
T4	220 - 200	Leg	Max Tension	15	143.336	2.766	0.029
			Max. Compression	2	-157.189	0.775	0.009
			Max. Mx	2	-117.656	4.823	0.058
			Max. My	24	-5.660	-0.054	2.096
			Max. Vy	2	-8.899	0.775	0.009
			Max. Vx	24	-3.603	-0.015	0.399
		Diagonal	Max Tension	2	6.538	0.000	0.000
			Max. Compression	2	-6.784	0.000	0.000
			Max. Mx	32	0.345	0.050	0.005
			Max. My	2	-6.777	-0.008	0.011
			Max. Vy	32	0.043	0.050	0.005
			Max. Vx	2	-0.002	0.000	0.000
			Max. Vy	2	-8.899	0.775	0.009
			Max. Vx	24	-3.603	-0.015	0.399
T5	200 - 180	Leg	Max Tension	15	176.936	3.147	0.031
			Max. Compression	2	-194.832	0.789	0.007
			Max. Mx	2	-157.206	5.200	0.057
			Max. My	24	-6.922	-0.047	2.204
			Max. Vy	2	-9.865	0.789	0.007
			Max. Vx	24	-3.845	-0.007	0.357
		Diagonal	Max Tension	2	6.955	0.000	0.000
			Max. Compression	2	-7.027	0.000	0.000
			Max. Mx	32	0.355	0.074	0.007
			Max. My	2	-7.018	-0.013	0.012
			Max. Vy	32	0.057	0.074	0.007
			Max. Vx	32	0.002	0.000	0.000
			Max. Vy	2	-8.899	0.775	0.009
			Max. Vx	24	-3.603	-0.015	0.399
T6	180 - 160	Leg	Max Tension	15	209.217	3.502	0.031
			Max. Compression	2	-231.667	0.875	0.009
			Max. Mx	2	-194.851	5.700	0.056
			Max. My	24	-8.357	-0.031	2.283
			Max. Vy	2	-10.904	0.875	0.009
			Max. Vx	24	-4.128	-0.006	0.459
		Diagonal	Max Tension	2	7.416	0.000	0.000
			Max. Compression	2	-7.422	0.000	0.000
			Max. Mx	32	0.359	0.091	0.009
			Max. My	2	-7.413	-0.004	0.010
			Max. Vy	32	0.064	0.091	0.009
			Max. Vx	32	-0.003	0.000	0.000
			Max. Vy	2	-8.899	0.775	0.009
			Max. Vx	24	-3.603	-0.015	0.399
T7	160 - 140	Leg	Max Tension	15	240.986	4.530	0.038
			Max. Compression	2	-268.695	0.148	0.001
			Max. Mx	2	-231.688	6.306	0.057
			Max. My	24	-9.910	-0.018	2.526
			Max. Vy	2	-12.263	0.148	0.001
			Max. Vx	24	-4.540	-0.002	0.148
		Diagonal	Max Tension	2	8.313	0.000	0.000
			Max. Compression	2	-8.020	0.000	0.000
			Max. Mx	32	0.364	0.125	0.012
			Max. My	32	-0.376	0.119	-0.013
			Max. Vy	32	0.080	0.125	0.012
			Max. Vx	32	-0.003	0.000	0.000
			Max. Vy	2	-8.899	0.775	0.009
			Max. Vx	24	-3.603	-0.015	0.399

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	Project	280' SST/37.11170694, -89.045718	Date	10:27:59 09/02/21
	Client	Vertical Bridge	Designed by	cbethell

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft			
T8	140 - 120	Leg	Max Tension	15	272.437	4.293	0.033			
			Max. Compression	2	-305.779	1.091	0.010			
			Max. Mx	2	-268.715	6.281	0.052			
			Max. My	24	-11.682	-0.005	2.422			
			Max. Vy	2	-13.674	1.091	0.010			
			Max. Vx	24	-4.967	-0.001	0.596			
		Diagonal	Max Tension	2	8.936	0.000	0.000			
			Max. Compression	2	-8.679	0.000	0.000			
			Max. Mx	32	0.354	0.147	0.014			
			Max. My	32	-0.353	0.141	-0.015			
			Max. Vy	32	0.087	0.147	0.014			
			Max. Vx	32	-0.003	0.000	0.000			
			T9	120 - 100	Leg	Max Tension	15	303.882	5.470	0.041
						Max. Compression	2	-343.806	0.183	0.001
Max. Mx	2	-305.804				7.901	0.062			
Max. My	24	-13.499				0.007	3.083			
Max. Vy	2	-15.065				0.183	0.001			
Max. Vx	24	-5.420				-0.001	0.186			
Diagonal	Max Tension	2			10.009	0.000	0.000			
	Max. Compression	2			-9.723	0.000	0.000			
	Max. Mx	32			0.378	0.185	0.017			
	Max. My	32			-0.278	0.178	-0.018			
	Max. Vy	32			0.101	0.185	0.017			
	Max. Vx	32			-0.004	0.000	0.000			
	T10	100 - 80			Leg	Max Tension	15	335.084	5.189	0.033
						Max. Compression	2	-381.901	0.994	0.015
Max. Mx			2	-343.828		7.716	0.055			
Max. My			24	-15.677		0.024	2.900			
Max. Vy			2	-16.190		0.994	0.015			
Max. Vx			24	-6.163		-0.019	1.069			
Diagonal			Max Tension	2	10.744	0.000	0.000			
			Max. Compression	2	-10.411	0.000	0.000			
			Max. Mx	34	0.462	0.213	0.019			
			Max. My	31	-0.580	0.211	-0.020			
			Max. Vy	34	0.107	0.204	-0.019			
			Max. Vx	31	-0.004	0.000	0.000			
			T11	80 - 60	Leg	Max Tension	15	365.919	6.174	0.039
						Max. Compression	2	-420.056	0.339	0.009
Max. Mx	2	-381.929				9.070	0.070			
Max. My	24	-17.929				0.033	4.153			
Max. Vy	2	-16.816				0.339	0.009			
Max. Vx	24	-6.295				-0.011	0.720			
Diagonal	Max Tension	3			11.795	0.000	0.000			
	Max. Compression	2			-12.412	0.000	0.000			
	Max. Mx	34			1.426	0.319	0.000			
	Max. My	27			-0.148	0.000	0.008			
	Max. Vy	34			-0.111	0.000	0.000			
	Max. Vx	27			-0.003	0.000	0.000			
	Horizontal	Max Tension			2	1.647	-0.079	0.001		
		Max. Compression			4	-1.792	0.000	0.000		
Max. Mx		33	0.168	-0.230	0.004					
Max. My		14	0.640	-0.066	0.006					
Max. Vy		33	0.113	-0.230	0.004					
Max. Vx		27	-0.003	-0.230	0.005					
Inner Bracing		Max Tension	1	0.000	0.000	0.000				
		Max. Compression	33	-0.011	0.000	0.000				
		Max. Mx	26	-0.010	-0.141	0.000				
		Max. My	2	-0.005	0.000	-0.000				
	Max. Vy	26	0.055	0.000	0.000					
	Max. Vx	2	0.000	0.000	0.000					
	T12	60 - 40	Leg	Max Tension	15	395.789	7.175	0.043		

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	Project	280' SST/37.11170694, -89.045718	Date	10:27:59 09/02/21
	Client	Vertical Bridge	Designed by	cbethell

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T13	40 - 20	Diagonal	Max. Compression	2	-457.518	-0.526	0.004
			Max. Mx	2	-457.490	-9.435	-0.053
			Max. My	24	-20.365	0.031	3.871
			Max. Vy	2	-17.805	-0.526	0.004
			Max. Vx	24	-6.409	-0.008	0.469
			Max Tension	3	12.140	0.000	0.000
			Max. Compression	3	-12.493	0.000	0.000
			Max. Mx	34	1.555	0.353	0.000
			Max. My	27	-0.032	0.000	0.008
			Max. Vy	34	-0.116	0.000	0.000
			Max. Vx	27	0.003	0.000	0.000
			Max Tension	2	1.953	-0.089	0.001
			Max. Compression	15	-1.753	-0.067	0.003
			Max. Mx	27	0.019	-0.255	0.005
			Max. My	33	0.108	-0.250	0.006
			Max. Vy	27	-0.118	-0.255	0.005
			Max. Vx	27	-0.003	-0.255	0.006
			Max Tension	1	0.000	0.000	0.000
		Max. Compression	33	-0.011	0.000	0.000	
		Max. Mx	26	-0.011	-0.157	0.000	
		Max. My	2	-0.005	0.000	-0.000	
		Max. Vy	26	-0.057	0.000	0.000	
		Max. Vx	2	0.000	0.000	0.000	
		Max Tension	15	424.570	6.742	0.039	
		Max. Compression	2	-494.088	0.452	0.010	
		Max. Mx	2	-494.059	-8.921	-0.047	
		Max. My	24	-22.977	0.049	3.677	
		Max. Vy	2	-18.731	0.452	0.010	
		Max. Vx	24	-6.477	-0.005	0.799	
		Max Tension	3	12.216	0.000	0.000	
		Max. Compression	3	-12.631	0.000	0.000	
		Max. Mx	34	1.765	0.382	0.000	
		Max. My	27	0.219	0.000	0.009	
		Max. Vy	34	0.119	0.000	0.000	
		Max. Vx	27	-0.003	0.000	0.000	
		Max Tension	2	1.843	-0.129	0.002	
		Max. Compression	15	-1.703	-0.095	0.003	
		Max. Mx	27	-0.056	-0.341	0.007	
		Max. My	33	0.105	-0.340	0.008	
		Max. Vy	27	-0.144	-0.321	0.006	
		Max. Vx	33	0.003	-0.340	0.008	
		Max Tension	1	0.000	0.000	0.000	
Max. Compression	33	-0.012	0.000	0.000			
Max. Mx	31	-0.011	-0.169	0.000			
Max. My	2	-0.006	0.000	-0.000			
Max. Vy	31	0.057	0.000	0.000			
Max. Vx	2	0.000	0.000	0.000			
Max Tension	15	452.269	7.407	0.045			
Max. Compression	2	-529.890	0.000	0.000			
Max. Mx	2	-494.120	9.824	0.066			
Max. My	24	-25.718	0.059	4.041			
Max. Vy	2	-19.431	0.000	0.000			
Max. Vx	24	-6.481	0.059	4.041			
Max Tension	3	12.369	0.000	0.000			
Max. Compression	3	-12.917	0.000	0.000			
Max. Mx	27	2.317	0.464	0.000			
Max. My	27	0.893	0.000	0.011			
Max. Vy	27	-0.136	0.000	0.000			
Max. Vx	27	-0.003	0.000	0.000			
Max Tension	2	2.048	-0.148	0.002			
Max. Compression	15	-1.820	-0.106	0.004			
T14	20 - 0	Leg	Max. Compression	2	-529.890	0.000	0.000
			Max. Mx	2	-494.120	9.824	0.066
			Max. My	24	-25.718	0.059	4.041
			Max. Vy	2	-19.431	0.000	0.000
			Max. Vx	24	-6.481	0.059	4.041
			Max Tension	3	12.369	0.000	0.000
			Max. Compression	3	-12.917	0.000	0.000
			Max. Mx	27	2.317	0.464	0.000
			Max. My	27	0.893	0.000	0.011
		Max. Vy	27	-0.136	0.000	0.000	
		Max. Vx	27	-0.003	0.000	0.000	
		Max Tension	2	2.048	-0.148	0.002	
		Max. Compression	15	-1.820	-0.106	0.004	
		Diagonal	Max. Compression	2	-457.518	-0.526	0.004
			Max. Mx	2	-457.490	-9.435	-0.053
			Max. My	24	-20.365	0.031	3.871
			Max. Vy	2	-17.805	-0.526	0.004
			Max. Vx	24	-6.409	-0.008	0.469
Max Tension	3		12.140	0.000	0.000		
Max. Compression	3		-12.493	0.000	0.000		
Max. Mx	34		1.555	0.353	0.000		
Max. My	27		-0.032	0.000	0.008		
Horizontal	Max. Vy	34	-0.116	0.000	0.000		
	Max. Vx	27	0.003	0.000	0.000		
	Max Tension	2	1.953	-0.089	0.001		
	Max. Compression	15	-1.753	-0.067	0.003		
	Max. Mx	27	0.019	-0.255	0.005		
	Max. My	33	0.108	-0.250	0.006		
	Max. Vy	27	-0.118	-0.255	0.005		
	Max. Vx	27	-0.003	-0.255	0.006		
	Max Tension	1	0.000	0.000	0.000		

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	Project	280' SST/37.11170694, -89.045718	Date	10:27:59 09/02/21
	Client	Vertical Bridge	Designed by	cbethell

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Inner Bracing	Max. Mx	27	-0.125	-0.367	0.008
			Max. My	33	0.060	-0.365	0.009
			Max. Vy	27	0.141	-0.367	0.008
			Max. Vx	33	0.003	-0.365	0.009
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	29	-0.012	0.000	0.000
			Max. Mx	35	-0.012	-0.172	0.000
			Max. My	35	-0.012	0.000	-0.000
			Max. Vy	35	0.055	0.000	0.000
			Max. Vx	35	0.000	0.000	0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	504.034	33.086	-19.014
	Max. H _x	18	504.034	33.086	-19.014
	Max. H _z	5	-388.638	-25.708	17.561
	Min. Vert	7	-426.209	-29.336	16.845
	Min. H _x	7	-426.209	-29.336	16.845
	Min. H _z	18	504.034	33.086	-19.014
Leg B	Max. Vert	10	500.854	-33.003	-18.847
	Max. H _x	23	-422.484	29.214	16.639
	Max. H _z	25	-384.953	25.619	17.292
	Min. Vert	23	-422.484	29.214	16.639
	Min. H _x	10	500.854	-33.003	-18.847
	Min. H _z	10	500.854	-33.003	-18.847
Leg A	Max. Vert	2	528.729	-0.090	40.095
	Max. H _x	21	19.741	5.511	0.901
	Max. H _z	2	528.729	-0.090	40.095
	Min. Vert	15	-451.062	0.104	-35.878
	Min. H _x	9	21.857	-5.513	1.010
	Min. H _z	15	-451.062	0.104	-35.878

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overtuning Moment, M _x kip-ft	Overtuning Moment, M _z kip-ft	Torque kip-ft
Dead Only	69.823	-0.000	0.000	6.424	1.955	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	83.788	0.147	-67.856	-11059.473	-38.410	-4.114
0.9 Dead+1.0 Wind 0 deg - No Ice	62.841	0.147	-67.853	-11038.287	-38.899	-4.105
1.2 Dead+1.0 Wind 30 deg - No Ice	83.788	31.615	-54.572	-9034.875	-5248.437	22.979
0.9 Dead+1.0 Wind 30 deg - No Ice	62.841	31.614	-54.570	-9017.766	-5238.011	22.976
1.2 Dead+1.0 Wind 60 deg - No Ice	83.788	51.388	-29.669	-4942.279	-8571.441	3.467
0.9 Dead+1.0 Wind 60 deg - No Ice	62.841	51.387	-29.668	-4933.791	-8553.943	3.451

Job	ATS# 9094 - EV Barlow (Site# US-KY-5119)	Page	22 of 33
Project	280' SST/37.11170694, -89.045718	Date	10:27:59 09/02/21
Client	Vertical Bridge	Designed by	cbethell

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 90 deg - No Ice	83.788	59.304	-0.093	-18.162	-9827.918	-16.663
0.9 Dead+1.0 Wind 90 deg - No Ice	62.841	59.302	-0.093	-20.105	-9807.782	-16.686
1.2 Dead+1.0 Wind 120 deg - No Ice	83.788	55.582	31.920	5193.520	-9061.111	8.146
0.9 Dead+1.0 Wind 120 deg - No Ice	62.841	55.580	31.919	5180.729	-9042.730	8.122
1.2 Dead+1.0 Wind 150 deg - No Ice	83.788	31.350	54.351	8991.769	-5176.186	30.830
0.9 Dead+1.0 Wind 150 deg - No Ice	62.841	31.349	54.350	8970.952	-5165.849	30.812
1.2 Dead+1.0 Wind 180 deg - No Ice	83.788	-0.092	62.779	10447.600	27.942	4.302
0.9 Dead+1.0 Wind 180 deg - No Ice	62.841	-0.092	62.778	10423.689	27.274	4.294
1.2 Dead+1.0 Wind 210 deg - No Ice	83.788	-31.570	54.531	9039.134	5240.722	-22.993
0.9 Dead+1.0 Wind 210 deg - No Ice	62.841	-31.569	54.530	9018.197	5229.030	-22.990
1.2 Dead+1.0 Wind 240 deg - No Ice	83.788	-55.724	32.172	5261.890	9102.706	-3.467
0.9 Dead+1.0 Wind 240 deg - No Ice	62.841	-55.722	32.171	5248.918	9083.034	-3.451
1.2 Dead+1.0 Wind 270 deg - No Ice	83.788	-59.246	0.075	28.696	9816.644	16.676
0.9 Dead+1.0 Wind 270 deg - No Ice	62.841	-59.244	0.075	26.625	9795.354	16.700
1.2 Dead+1.0 Wind 300 deg - No Ice	83.788	-51.158	-29.430	-4877.367	8514.888	-8.331
0.9 Dead+1.0 Wind 300 deg - No Ice	62.841	-51.157	-29.429	-4869.052	8496.351	-8.308
1.2 Dead+1.0 Wind 330 deg - No Ice	83.788	-31.394	-54.326	-8968.968	5193.470	-30.831
0.9 Dead+1.0 Wind 330 deg - No Ice	62.841	-31.394	-54.324	-8952.031	5182.005	-30.813
1.2 Dead+1.0 Ice+1.0 Temp	222.006	0.001	-0.002	28.923	14.537	0.001
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	222.006	0.014	-8.724	-1488.589	11.040	-1.220
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	222.006	4.205	-7.266	-1247.606	-725.459	0.870
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	222.006	7.034	-4.061	-687.628	-1227.761	-0.462
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	222.006	8.099	-0.009	27.369	-1411.425	-1.671
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	222.006	7.306	4.202	760.616	-1258.599	0.758
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	222.006	4.182	7.248	1302.418	-718.895	3.020
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	222.006	-0.009	8.391	1507.560	17.498	1.237
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	222.006	-4.201	7.262	1306.271	754.297	-0.870
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	222.006	-7.317	4.224	766.861	1291.490	0.461
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	222.006	-8.094	0.007	31.935	1439.891	1.672
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	222.006	-7.015	-4.040	-681.725	1252.537	-0.775
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	222.006	-4.186	-7.245	-1241.956	750.107	-3.021

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	Project	280' SST/37.11170694, -89.045718	Date	10:27:59 09/02/21
	Client	Vertical Bridge	Designed by	cbethell

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead+Wind 0 deg - Service	69.823	0.046	-21.336	-3468.829	-10.840	-1.292
Dead+Wind 30 deg - Service	69.823	9.941	-17.159	-2833.040	-1646.819	7.247
Dead+Wind 60 deg - Service	69.823	16.158	-9.329	-1547.890	-2690.270	1.087
Dead+Wind 90 deg - Service	69.823	18.647	-0.029	-1.657	-3084.828	-5.263
Dead+Wind 120 deg - Service	69.823	17.477	10.037	1634.860	-2844.096	2.556
Dead+Wind 150 deg - Service	69.823	9.858	17.090	2827.531	-1624.198	9.710
Dead+Wind 180 deg - Service	69.823	-0.029	19.740	3284.695	9.986	1.351
Dead+Wind 210 deg - Service	69.823	-9.927	17.146	2842.417	1646.896	-7.252
Dead+Wind 240 deg - Service	69.823	-17.521	10.116	1656.333	2859.609	-1.087
Dead+Wind 270 deg - Service	69.823	-18.629	0.024	13.051	3083.745	5.267
Dead+Wind 300 deg - Service	69.823	-16.086	-9.254	-1527.522	2674.965	-2.615
Dead+Wind 330 deg - Service	69.823	-9.871	-17.082	-2812.357	1631.998	-9.710

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-69.823	0.000	0.000	69.823	-0.000	0.000%
2	0.147	-83.788	-67.859	-0.147	83.788	67.856	0.003%
3	0.147	-62.841	-67.859	-0.147	62.841	67.853	0.006%
4	31.616	-83.788	-54.575	-31.615	83.788	54.572	0.003%
5	31.616	-62.841	-54.575	-31.614	62.841	54.570	0.006%
6	51.390	-83.788	-29.670	-51.388	83.788	29.669	0.003%
7	51.390	-62.841	-29.670	-51.387	62.841	29.668	0.005%
8	59.307	-83.788	-0.093	-59.304	83.788	0.093	0.003%
9	59.307	-62.841	-0.093	-59.302	62.841	0.093	0.005%
10	55.585	-83.788	31.922	-55.582	83.788	-31.920	0.003%
11	55.585	-62.841	31.922	-55.580	62.841	-31.919	0.006%
12	31.352	-83.788	54.354	-31.350	83.788	-54.351	0.003%
13	31.352	-62.841	54.354	-31.349	62.841	-54.350	0.006%
14	-0.092	-83.788	62.782	0.092	83.788	-62.779	0.003%
15	-0.092	-62.841	62.782	0.092	62.841	-62.778	0.005%
16	-31.572	-83.788	54.534	31.570	83.788	-54.531	0.003%
17	-31.572	-62.841	54.534	31.569	62.841	-54.530	0.006%
18	-55.726	-83.788	32.174	55.724	83.788	-32.172	0.003%
19	-55.726	-62.841	32.174	55.722	62.841	-32.171	0.006%
20	-59.249	-83.788	0.075	59.246	83.788	-0.075	0.003%
21	-59.249	-62.841	0.075	59.244	62.841	-0.075	0.005%
22	-51.160	-83.788	-29.431	51.158	83.788	29.430	0.003%
23	-51.160	-62.841	-29.431	51.157	62.841	29.429	0.005%
24	-31.396	-83.788	-54.328	31.394	83.788	54.326	0.003%
25	-31.396	-62.841	-54.328	31.394	62.841	54.324	0.006%
26	0.000	-222.006	0.000	-0.001	222.006	0.002	0.001%
27	0.014	-222.006	-8.725	-0.014	222.006	8.724	0.000%
28	4.206	-222.006	-7.267	-4.205	222.006	7.266	0.000%
29	7.035	-222.006	-4.061	-7.034	222.006	4.061	0.000%
30	8.100	-222.006	-0.009	-8.099	222.006	0.009	0.000%
31	7.307	-222.006	4.202	-7.306	222.006	-4.202	0.000%
32	4.182	-222.006	7.248	-4.182	222.006	-7.248	0.000%
33	-0.009	-222.006	8.391	0.009	222.006	-8.391	0.000%
34	-4.201	-222.006	7.263	4.201	222.006	-7.262	0.000%
35	-7.317	-222.006	4.225	7.317	222.006	-4.224	0.000%
36	-8.094	-222.006	0.007	8.094	222.006	-0.007	0.000%
37	-7.015	-222.006	-4.040	7.015	222.006	4.040	0.000%
38	-4.186	-222.006	-7.246	4.186	222.006	7.245	0.000%
39	0.046	-69.823	-21.338	-0.046	69.823	21.336	0.003%
40	9.942	-69.823	-17.161	-9.941	69.823	17.159	0.002%

<p>tnxTower</p> <p>B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job	ATS# 9094 - EV Barlow (Site# US-KY-5119)	Page	24 of 33
	Project	280' SST/37.11170694, -89.045718	Date	10:27:59 09/02/21
	Client	Vertical Bridge	Designed by	cbethell

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
41	16.160	-69.823	-9.330	-16.158	69.823	9.329	0.002%
42	18.649	-69.823	-0.029	-18.647	69.823	0.029	0.002%
43	17.478	-69.823	10.038	-17.477	69.823	-10.037	0.002%
44	9.858	-69.823	17.091	-9.858	69.823	-17.090	0.002%
45	-0.029	-69.823	19.742	0.029	69.823	-19.740	0.002%
46	-9.928	-69.823	17.148	9.927	69.823	-17.146	0.002%
47	-17.523	-69.823	10.117	17.521	69.823	-10.116	0.002%
48	-18.631	-69.823	0.024	18.629	69.823	-0.024	0.002%
49	-16.087	-69.823	-9.255	16.086	69.823	9.254	0.002%
50	-9.872	-69.823	-17.083	9.871	69.823	17.082	0.002%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	14	0.00004211	0.00008613
3	Yes	13	0.00006620	0.00013124
4	Yes	14	0.00003955	0.00008122
5	Yes	13	0.00006115	0.00012171
6	Yes	14	0.00003709	0.00007644
7	Yes	13	0.00005626	0.00011236
8	Yes	14	0.00003950	0.00008114
9	Yes	13	0.00006104	0.00012155
10	Yes	14	0.00004191	0.00008574
11	Yes	13	0.00006579	0.00013049
12	Yes	14	0.00003953	0.00008115
13	Yes	13	0.00006113	0.00012161
14	Yes	14	0.00003699	0.00007617
15	Yes	13	0.00005607	0.00011189
16	Yes	14	0.00003959	0.00008130
17	Yes	13	0.00006124	0.00012187
18	Yes	14	0.00004195	0.00008587
19	Yes	13	0.00006588	0.00013071
20	Yes	14	0.00003954	0.00008122
21	Yes	13	0.00006112	0.00012170
22	Yes	14	0.00003710	0.00007641
23	Yes	13	0.00005627	0.00011234
24	Yes	14	0.00003953	0.00008114
25	Yes	13	0.00006112	0.00012160
26	Yes	6	0.00000001	0.00005796
27	Yes	15	0.00000001	0.00008883
28	Yes	15	0.00000001	0.00008725
29	Yes	15	0.00000001	0.00008585
30	Yes	15	0.00000001	0.00008636
31	Yes	15	0.00000001	0.00008874
32	Yes	15	0.00000001	0.00008967
33	Yes	15	0.00000001	0.00009047
34	Yes	15	0.00000001	0.00009078
35	Yes	15	0.00000001	0.00009038
36	Yes	15	0.00000001	0.00008794
37	Yes	15	0.00000001	0.00008690
38	Yes	15	0.00000001	0.00008766
39	Yes	13	0.00000001	0.00013376
40	Yes	13	0.00000001	0.00013106
41	Yes	13	0.00000001	0.00012831

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42	Yes	13	0.00000001	0.00013089
43	Yes	13	0.00000001	0.00013344
44	Yes	13	0.00000001	0.00013098
45	Yes	13	0.00000001	0.00012824
46	Yes	13	0.00000001	0.00013116
47	Yes	13	0.00000001	0.00013363
48	Yes	13	0.00000001	0.00013095
49	Yes	13	0.00000001	0.00012821
50	Yes	13	0.00000001	0.00013093

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	280 - 260	14.536	39	0.461	0.077
T2	260 - 240	12.552	39	0.453	0.071
T3	240 - 220	10.591	39	0.424	0.060
T4	220 - 200	8.794	39	0.380	0.052
T5	200 - 180	7.201	39	0.335	0.044
T6	180 - 160	5.806	39	0.292	0.037
T7	160 - 140	4.578	39	0.253	0.031
T8	140 - 120	3.510	39	0.217	0.025
T9	120 - 100	2.581	39	0.181	0.020
T10	100 - 80	1.808	39	0.147	0.015
T11	80 - 60	1.164	39	0.113	0.010
T12	60 - 40	0.693	39	0.082	0.007
T13	40 - 20	0.344	39	0.054	0.005
T14	20 - 0	0.112	39	0.026	0.002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
280.000	Lightning Rod 1"x10'	39	14.536	0.461	0.077	Inf
275.000	VHLP3-11WA MW Dish	39	14.041	0.460	0.076	Inf
265.000	Sector1(CaAa=10000 Sq.in)No Ice	39	13.049	0.457	0.073	447963
255.000	Sector1(CaAa=10000 Sq.in)No Ice	39	12.055	0.448	0.068	101424

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	280 - 260	46.438	2	1.477	0.246
T2	260 - 240	40.087	2	1.449	0.225
T3	240 - 220	33.817	2	1.354	0.192
T4	220 - 200	28.074	2	1.215	0.164
T5	200 - 180	22.984	2	1.069	0.139
T6	180 - 160	18.529	2	0.932	0.119

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T7	160 - 140	14.610	2	0.807	0.099
T8	140 - 120	11.200	2	0.694	0.081
T9	120 - 100	8.237	2	0.576	0.062
T10	100 - 80	5.768	2	0.470	0.047
T11	80 - 60	3.715	2	0.361	0.032
T12	60 - 40	2.210	2	0.262	0.023
T13	40 - 20	1.099	2	0.172	0.015
T14	20 - 0	0.356	2	0.082	0.007

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
280.000	Lightning Rod 1"x10'	2	46.438	1.477	0.246	522632
275.000	VHLP3-11WA MW Dish	2	44.851	1.473	0.242	522632
265.000	Sector1(CaAa=10000 Sq.in)No Ice	2	41.676	1.461	0.231	174211
255.000	Sector1(CaAa=10000 Sq.in)No Ice	2	38.496	1.432	0.217	33845

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria	
T1	280	Diagonal	A325X	0.625	1	4.846	9.598	0.505	✓	1	Member Block Shear
		Top Girt	A325X	0.625	1	2.185	9.598	0.228	✓	1	Member Block Shear
T2	260	Leg	A325N	0.750	6	3.530	30.101	0.117	✓	1	Bolt Tension
		Diagonal	A325X	0.625	1	6.670	9.598	0.695	✓	1	Member Block Shear
T3	240	Leg	A325N	0.750	6	11.066	30.101	0.368	✓	1	Bolt Tension
		Diagonal	A325X	0.625	1	6.441	9.598	0.671	✓	1	Member Block Shear
T4	220	Leg	A325N	0.750	6	17.872	30.101	0.594	✓	1	Bolt Tension
		Diagonal	A325X	0.625	1	6.538	10.740	0.609	✓	1	Member Block Shear
T5	200	Leg	A325N	1.000	6	23.888	54.517	0.438	✓	1	Bolt Tension
		Diagonal	A325X	0.625	1	6.955	13.025	0.534	✓	1	Member Block Shear
T6	180	Leg	A325N	1.000	6	29.487	54.517	0.541	✓	1	Bolt Tension
		Diagonal	A325X	0.625	1	7.416	13.025	0.569	✓	1	Member Block Shear
T7	160	Leg	A325N	1.000	6	34.867	54.517	0.640	✓	1	Bolt Tension
		Diagonal	A325X	0.625	1	8.313	14.168	0.587	✓	1	Member Block Shear
T8	140	Leg	A325N	1.000	6	40.162	54.517	0.737	✓	1	Bolt Tension

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T9	120	Diagonal	A325X	0.625	1	8.936	14.168	0.631 ✓	1	Member Block Shear
		Leg	A325N	1.250	6	45.404	87.220	0.521 ✓	1	Bolt Tension
T10	100	Diagonal	A325X	0.625	1	10.009	17.257	0.580 ✓	1	Bolt Shear
		Leg	A325N	1.250	6	50.644	87.220	0.581 ✓	1	Bolt Tension
T11	80	Diagonal	A325X	0.625	1	10.744	17.257	0.623 ✓	1	Bolt Shear
		Leg	A325N	1.250	6	55.844	87.220	0.640 ✓	1	Bolt Tension
		Diagonal	A325X	0.625	1	11.795	26.051	0.453 ✓	1	Member Block Shear
T12	60	Horizontal	A325X	0.625	1	7.281	21.480	0.339 ✓	1	Member Block Shear
		Leg	A325N	1.250	6	60.983	87.220	0.699 ✓	1	Bolt Tension
		Diagonal	A325X	0.625	1	12.140	26.051	0.466 ✓	1	Member Block Shear
T13	40	Horizontal	A325X	0.625	1	7.930	21.480	0.369 ✓	1	Member Block Shear
		Leg	A325N	1.250	6	65.961	87.220	0.756 ✓	1	Bolt Tension
		Diagonal	A325X	0.625	1	12.217	26.051	0.469 ✓	1	Member Block Shear
T14	20	Horizontal	A325X	0.625	1	8.564	26.051	0.329 ✓	1	Member Block Shear
		Leg	A325N	1.500	6	70.758	126.472	0.559 ✓	1	Bolt Tension
		Diagonal	A325X	0.625	1	12.917	29.250	0.442 ✓	1	Gusset Bearing
		Horizontal	A325X	0.625	1	9.184	26.051	0.353 ✓	1	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 260	1 3/4	20.019	4.754	130.4 K=1.00	2.405	-20.030	31.952	0.627 ¹ ✓
T2	260 - 240	2 1/4	20.019	4.754	101.4 K=1.00	3.976	-67.952	84.331	0.806 ¹ ✓
T3	240 - 220	2 1/2	20.019	4.754	91.3 K=1.00	4.909	-112.586	120.108	0.937 ¹ ✓
T4	220 - 200	2 3/4	20.019	4.754	83.0 K=1.00	5.940	-152.379	161.540	0.943 ¹ ✓
T5	200 - 180	3	20.019	4.754	76.1 K=1.00	7.069	-190.013	208.347	0.912 ¹ ✓
T6	180 - 160	3 1/4	20.019	4.754	70.2 K=1.00	8.296	-226.779	260.312	0.871 ¹ ✓
T7	160 - 140	3 1/2	20.019	4.754	65.2	9.621	-263.617	317.273	0.831 ¹ ✓

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	<p>Client</p> <p>Vertical Bridge</p>	<p>Designed by</p> <p>cbethell</p>

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T8	140 - 120	3 1/2	20.019	4.754	K=1.00 65.2	9.621	-300.666	317.273	0.948 ¹
T9	120 - 100	3 3/4	20.019	4.754	K=1.00 60.9	11.045	-338.487	379.106	0.893 ¹
T10	100 - 80	3 3/4	20.019	4.754	K=1.00 60.9	11.045	-376.639	379.106	0.993 ¹
T11	80 - 60	4	20.019	4.754	K=1.00 57.1	12.566	-410.156	445.717	0.920 ¹
T12	60 - 40	4 1/4	20.019	4.754	K=1.00 53.7	14.186	-447.500	517.034	0.866 ¹
T13	40 - 20	4 1/4	20.019	4.754	K=1.00 53.7	14.186	-484.233	517.034	0.937 ¹
T14	20 - 0	4 1/2	20.019	4.754	K=1.00 50.7	15.904	-520.056	593.004	0.877 ¹

¹ P_u / φP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 260	L1 3/4x1 3/4x3/16	7.485	3.764	K=1.00 131.5	0.621	-4.425	10.280	0.430 ¹
T2	260 - 240	L1 3/4x1 3/4x3/16	8.697	4.343	K=1.00 151.7	0.621	-5.976	7.721	0.774 ¹
T3	240 - 220	L1 3/4x1 3/4x3/16	9.987	4.976	K=1.00 173.9	0.621	-5.820	5.880	0.990 ¹
T4	220 - 200	L2x2x3/16	11.329	5.636	K=1.00 171.7	0.715	-6.019	6.945	0.867 ¹
T5	200 - 180	L2 1/2x2 1/2x3/16	12.706	6.314	K=1.00 153.1	0.902	-6.477	11.018	0.588 ¹
T6	180 - 160	L2 1/2x2 1/2x3/16	14.108	7.005	K=1.00 169.8	0.902	-7.048	8.952	0.787 ¹
T7	160 - 140	L3x3x3/16	15.529	7.705	K=1.00 155.1	1.090	-7.859	12.964	0.606 ¹
T8	140 - 120	L3x3x3/16	16.963	8.422	K=1.00 169.6	1.090	-8.487	10.849	0.782 ¹
T9	120 - 100	L3x3x1/4	18.408	9.134	K=1.00 185.2	1.440	-9.412	12.022	0.783 ¹
T10	100 - 80	L3x3x1/4	19.861	9.861	K=1.00 199.9	1.440	-10.074	10.315	0.977 ¹
T11	80 - 60	2L2 1/2x2 1/2x3/16x3/8	11.508	11.325	K=1.00 179.2	1.800	-11.371	15.610	0.728 ¹
T12	60 - 40	2L 'a' > 64.848 in - 284 2L2 1/2x2 1/2x3/16x3/8	12.195	12.003	K=1.00 189.9	1.800	-11.973	13.944	0.859 ¹
T13	40 - 20	2L 'a' > 68.729 in - 323 2L2 1/2x2 1/2x3/16x3/8	12.889	12.698	K=1.00 200.9	1.800	-12.242	12.493	0.980 ¹

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	Project	280' SST/37.11170694, -89.045718	Date	10:27:59 09/02/21
	Client	Vertical Bridge	Designed by	cbethell

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
					K=1.00				✓
T14	20 - 0	2L 'a' > 72.714 in - 362 2L3x3x3/16x3/8	13.589	13.389	178.1	2.180	-12.749	18.834	0.677 ¹
		2L 'a' > 76.483 in - 401			K=1.00				✓

¹ P_u / φP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T11	80 - 60	2L2x2x3/16x3/8	20.606	10.136	198.3 K=1.00	1.430	-7.281	10.268	0.709 ¹
		2L 'a' > 58.256 in - 280							✓
T12	60 - 40	2L2x2x3/16x3/8	22.106	10.876	212.8 K=1.00	1.430	-7.930	8.936	0.887 ¹
		2L 'a' > 62.506 in - 319							✓
T13	40 - 20	2L2 1/2x2 1/2x3/16x3/8	23.606	11.626	183.9 K=1.00	1.800	-8.564	14.835	0.577 ¹
		2L 'a' > 66.573 in - 358							✓
T14	20 - 0	2L2 1/2x2 1/2x3/16x3/8	25.106	12.366	195.7 K=1.00	1.800	-9.184	13.158	0.698 ¹
		2L 'a' > 70.808 in - 397							✓

¹ P_u / φP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 260	L1 3/4x1 3/4x3/16	4.538	4.392	153.4 K=1.00	0.621	-1.962	7.550	0.260 ¹
									✓

¹ P_u / φP_n controls

Inner Bracing Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T11	80 - 60	L1 3/4x1 3/4x3/16	10.303	10.303	360.0	0.621	-0.011	1.372	0.008 ¹

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job ATS# 9094 - EV Barlow (Site# US-KY-5119)	Page 30 of 33
	Project 280' SST/37.11170694, -89.045718	Date 10:27:59 09/02/21
	Client Vertical Bridge	Designed by cbethell

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
					K=1.00				✓
T12	60 - 40	KL/R > 250 (C) - 287 L1 3/4x1 3/4x3/16	11.053	11.053	386.2 K=1.00	0.621	-0.011	1.192	0.009 ¹
T13	40 - 20	KL/R > 250 (C) - 326 L1 3/4x1 3/4x3/16	11.803	11.803	412.4 K=1.00	0.621	-0.012	1.045	0.011 ¹
T14	20 - 0	KL/R > 250 (C) - 365 L1 3/4x1 3/4x3/16	12.553	12.553	438.6 K=1.00	0.621	-0.012	0.924	0.013 ¹
		KL/R > 250 (C) - 405							✓

¹ P_u / φP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 260	1 3/4	20.019	0.500	13.7	2.405	21.190	108.238	0.196 ¹
T2	260 - 240	2 1/4	20.019	0.500	10.7	3.976	66.406	178.924	0.371 ¹
T3	240 - 220	2 1/2	20.019	0.500	9.6	4.909	107.240	220.893	0.485 ¹
T4	220 - 200	2 3/4	20.019	0.500	8.7	5.940	143.336	267.281	0.536 ¹
T5	200 - 180	3	20.019	0.500	8.0	7.069	176.936	318.086	0.556 ¹
T6	180 - 160	3 1/4	20.019	0.500	7.4	8.296	209.217	373.310	0.560 ¹
T7	160 - 140	3 1/2	20.019	0.500	6.9	9.621	240.986	432.951	0.557 ¹
T8	140 - 120	3 1/2	20.019	0.500	6.9	9.621	272.438	432.951	0.629 ¹
T9	120 - 100	3 3/4	20.019	0.500	6.4	11.045	303.882	497.010	0.611 ¹
T10	100 - 80	3 3/4	20.019	0.500	6.4	11.045	335.084	497.010	0.674 ¹
T11	80 - 60	4	20.019	0.500	6.0	12.566	365.919	565.487	0.647 ¹
T12	60 - 40	4 1/4	20.019	0.500	5.7	14.186	395.789	638.381	0.620 ¹
T13	40 - 20	4 1/4	20.019	0.500	5.7	14.186	424.570	638.381	0.665 ¹
T14	20 - 0	4 1/2	20.019	0.500	5.3	15.904	452.269	715.694	0.632 ¹

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job ATS# 9094 - EV Barlow (Site# US-KY-5119)	Page 31 of 33
	Project 280' SST/37.11170694, -89.045718	Date 10:27:59 09/02/21
	Client Vertical Bridge	Designed by cbethell

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
									✓

¹ P_u / φP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 260	L1 3/4x1 3/4x3/16	7.485	3.764	84.1	0.360	4.846	17.567	0.276 ¹ ✓
T2	260 - 240	L1 3/4x1 3/4x3/16	8.697	4.343	97.1	0.360	6.670	17.567	0.380 ¹ ✓
T3	240 - 220	L1 3/4x1 3/4x3/16	9.987	4.976	111.2	0.360	6.441	17.567	0.367 ¹ ✓
T4	220 - 200	L2x2x3/16	11.329	5.636	109.6	0.431	6.538	21.001	0.311 ¹ ✓
T5	200 - 180	L2 1/2x2 1/2x3/16	12.706	6.314	97.4	0.571	6.955	27.838	0.250 ¹ ✓
T6	180 - 160	L2 1/2x2 1/2x3/16	14.108	7.005	108.0	0.571	7.416	27.838	0.266 ¹ ✓
T7	160 - 140	L3x3x3/16	15.529	7.705	98.5	0.712	8.313	34.712	0.239 ¹ ✓
T8	140 - 120	L3x3x3/16	16.963	8.422	107.6	0.712	8.936	34.712	0.257 ¹ ✓
T9	120 - 100	L3x3x1/4	18.408	9.134	117.9	0.939	10.009	45.794	0.219 ¹ ✓
T10	100 - 80	L3x3x1/4	19.861	9.861	127.2	0.939	10.744	45.794	0.235 ¹ ✓
T11	80 - 60	2L2 1/2x2 1/2x3/16x3/8	11.508	11.325	174.7	1.139	11.795	55.529	0.212 ¹ ✓
T12	60 - 40	2L 'a' > 64.848 in - 285 2L2 1/2x2 1/2x3/16x3/8	12.195	12.003	185.1	1.139	12.140	55.529	0.219 ¹ ✓
T13	40 - 20	2L 'a' > 68.729 in - 324 2L2 1/2x2 1/2x3/16x3/8	12.889	12.698	195.9	1.139	12.217	55.529	0.220 ¹ ✓
T14	20 - 0	2L 'a' > 72.714 in - 363 2L3x3x3/16x3/8 2L 'a' > 76.483 in - 402	13.589	13.389	171.1	1.424	12.369	69.423	0.178 ¹ ✓

¹ P_u / φP_n controls

Horizontal Design Data (Tension)

tnxTower B+T Group 1717 S Boulder Ave, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	ATS# 9094 - EV Barlow (Site# US-KY-5119)	Page	32 of 33
	Project	280' SST/37.11170694, -89.045718	Date	10:27:59 09/02/21
	Client	Vertical Bridge	Designed by	cbethell

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T11	80 - 60	2L2x2x3/16x3/8	20.606	10.136	197.1	0.862	7.281	42.001	0.173 ¹ ✓
T12	60 - 40	2L 'a' > 58.256 in - 280 2L2x2x3/16x3/8	22.106	10.876	211.5	0.862	7.930	42.001	0.189 ¹ ✓
T13	40 - 20	2L 'a' > 62.506 in - 319 2L2 1/2x2 1/2x3/16x3/8	22.894	11.270	173.8	1.139	8.564	55.529	0.154 ¹ ✓
T14	20 - 0	2L 'a' > 64.533 in - 376 2L2 1/2x2 1/2x3/16x3/8 2L 'a' > 70.808 in - 397	25.106	12.366	190.7	1.139	9.184	55.529	0.165 ¹ ✓

¹ P_u / φP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 260	L1 3/4x1 3/4x3/16	4.538	4.392	98.1	0.360	2.185	17.567	0.124 ¹ ✓

¹ P_u / φP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	φP _{allow} K	% Capacity	Pass Fail
T1	280 - 260	Leg	1 3/4	3	-20.030	31.952	62.7	Pass
T2	260 - 240	Leg	2 1/4	33	-67.952	84.331	80.6	Pass
T3	240 - 220	Leg	2 1/2	60	-112.586	120.108	93.7	Pass
T4	220 - 200	Leg	2 3/4	87	-152.379	161.540	94.3	Pass
T5	200 - 180	Leg	3	114	-190.013	208.347	91.2	Pass
T6	180 - 160	Leg	3 1/4	141	-226.779	260.312	87.1	Pass
T7	160 - 140	Leg	3 1/2	168	-263.617	317.273	83.1	Pass
T8	140 - 120	Leg	3 1/2	195	-300.666	317.273	94.8	Pass
T9	120 - 100	Leg	3 3/4	222	-338.487	379.106	89.3	Pass
T10	100 - 80	Leg	3 3/4	249	-376.639	379.106	99.3	Pass
T11	80 - 60	Leg	4	276	-410.156	445.717	92.0	Pass
T12	60 - 40	Leg	4 1/4	315	-447.500	517.034	86.6	Pass
T13	40 - 20	Leg	4 1/4	354	-484.233	517.034	93.7	Pass
T14	20 - 0	Leg	4 1/2	393	-520.056	593.004	87.7	Pass
T1	280 - 260	Diagonal	L1 3/4x1 3/4x3/16	11	-4.425	10.280	43.0	Pass
							50.5 (b)	
T2	260 - 240	Diagonal	L1 3/4x1 3/4x3/16	38	-5.976	7.721	77.4	Pass
T3	240 - 220	Diagonal	L1 3/4x1 3/4x3/16	65	-5.820	5.880	99.0	Pass
T4	220 - 200	Diagonal	L2x2x3/16	92	-6.019	6.945	86.7	Pass
T5	200 - 180	Diagonal	L2 1/2x2 1/2x3/16	119	-6.477	11.018	58.8	Pass
T6	180 - 160	Diagonal	L2 1/2x2 1/2x3/16	146	-7.048	8.952	78.7	Pass

Job	ATS# 9094 - EV Barlow (Site# US-KY-5119)	Page	33 of 33
Project	280' SST/37.11170694, -89.045718	Date	10:27:59 09/02/21
Client	Vertical Bridge	Designed by	cbethell

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
T7	160 - 140	Diagonal	L3x3x3/16	173	-7.859	12.964	60.6	Pass	
T8	140 - 120	Diagonal	L3x3x3/16	200	-8.487	10.849	78.2	Pass	
T9	120 - 100	Diagonal	L3x3x1/4	227	-9.412	12.022	78.3	Pass	
T10	100 - 80	Diagonal	L3x3x1/4	254	-10.074	10.315	97.7	Pass	
T11	80 - 60	Diagonal	2L2 1/2x2 1/2x3/16x3/8	284	-11.371	15.610	72.8	Pass	
T12	60 - 40	Diagonal	2L2 1/2x2 1/2x3/16x3/8	323	-11.973	13.944	85.9	Pass	
T13	40 - 20	Diagonal	2L2 1/2x2 1/2x3/16x3/8	362	-12.242	12.493	98.0	Pass	
T14	20 - 0	Diagonal	2L3x3x3/16x3/8	401	-12.749	18.834	67.7	Pass	
T11	80 - 60	Horizontal	2L2x2x3/16x3/8	280	-7.281	10.268	70.9	Pass	
T12	60 - 40	Horizontal	2L2x2x3/16x3/8	319	-7.930	8.936	88.7	Pass	
T13	40 - 20	Horizontal	2L2 1/2x2 1/2x3/16x3/8	358	-8.564	14.835	57.7	Pass	
T14	20 - 0	Horizontal	2L2 1/2x2 1/2x3/16x3/8	397	-9.184	13.158	69.8	Pass	
T1	280 - 260	Top Girt	L1 3/4x1 3/4x3/16	4	-1.962	7.550	26.0	Pass	
T11	80 - 60	Inner Bracing	L1 3/4x1 3/4x3/16	287	-0.011	1.372	0.8	Pass	
T12	60 - 40	Inner Bracing	L1 3/4x1 3/4x3/16	326	-0.011	1.192	0.9	Pass	
T13	40 - 20	Inner Bracing	L1 3/4x1 3/4x3/16	365	-0.012	1.045	1.1	Pass	
T14	20 - 0	Inner Bracing	L1 3/4x1 3/4x3/16	405	-0.012	0.924	1.3	Pass	
							Summary		
							Leg (T10)	99.3	Pass
							Diagonal (T3)	99.0	Pass
							Horizontal (T12)	88.7	Pass
							Top Girt (T1)	26.0	Pass
							Inner Bracing (T14)	1.3	Pass
							Bolt Checks	75.6	Pass
							RATING =	99.3	Pass

EXHIBIT E

KENTUCKY RSA No. 1
PARTNERSHIP d/b/a



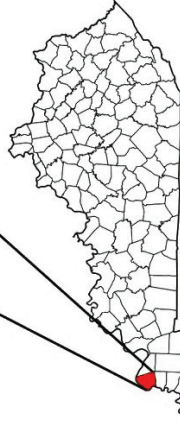
GPD GROUP, INC.



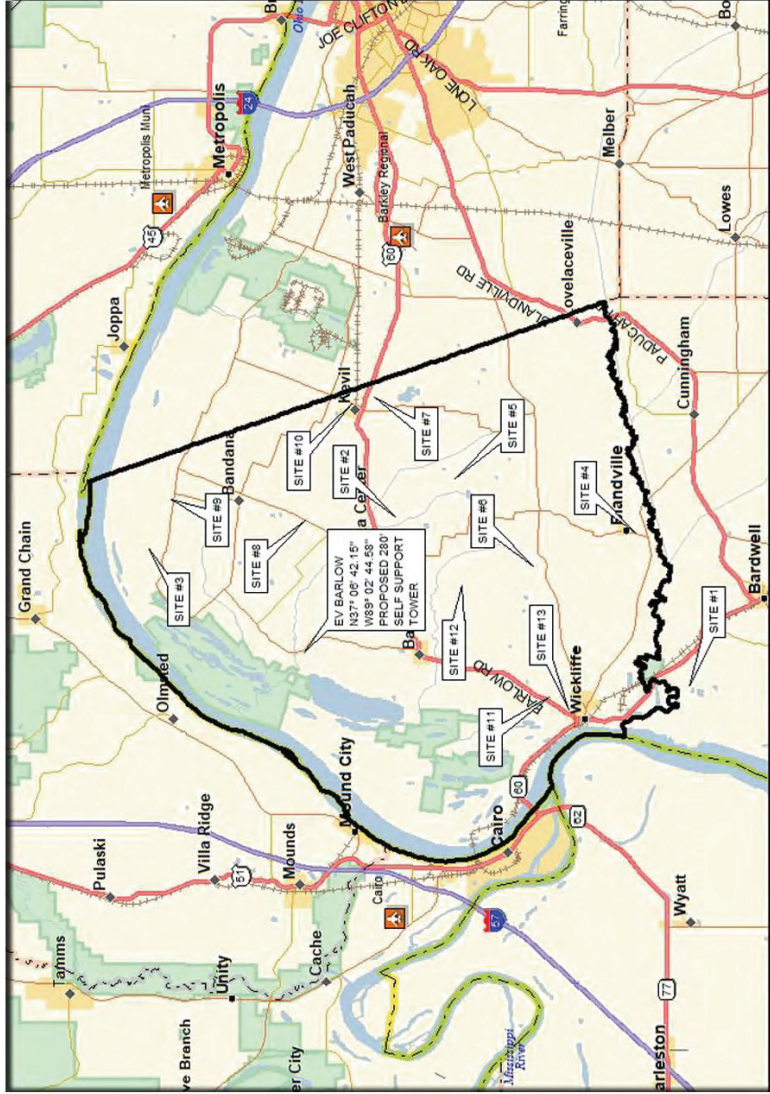
BALLARD COUNTY, KENTUCKY
VERIZON WIRELESS TOWER SITE EV BARLOW
TOWER LOCATION EXHIBIT

BROADCAST AND TRANSMIT STRUCTURE LOCATIONS
DEPICTED ARE ALL KNOWN STRUCTURE SITES THAT
HAVE BEEN REGISTERED WITH THE FEDERAL
COMMUNICATIONS COMMISSION WITHIN 1/2 MILE
OF THE LIMITS OF BALLARD COUNTY ON OR BEFORE
JANUARY 31, 2022

BALLARD
COUNTY



Kentucky



MAP NOT TO SCALE

- SITE #1: FCC# 1030662 CROWN CASTLE GT COMPANY, LLC N36°54'35.5", W89°04'01.6"
- SITE #2: FCC# 1030664 CROWN CASTLE GT COMPANY, LLC N37°03'51.4", W88°57'23.6"
- SITE #3: FCC# 1044387 AMERICAN FAMILY ASSOCIATION N37°11'36.0", W88°58'40.0"
- SITE #4: FCC# 1044596 WITHERS BROADCASTING COMPANY OF PADUCAH, LLC N36°56'17.0", W88°58'01.0"
- SITE #5: FCC# 1061534 SBA PROPERTIES, LLC N37°01'59.6", W88°55'53.8"
- SITE #6: FCC# 1222068 AMERICAN FAMILY ASSOCIATION N36°59'32.1", W88°59'19.2"
- SITE #7: FCC# 1229412 TOWERS III, LLC N37°04'30.1", W88°52'42.7"
- SITE #8: FCC# 1244919 CCATT, LLC N37°06'39.7", W88°57'32.4"
- SITE #9: FCC# 1252613 KENTUCKY RSA NO. 1 PARTNERSHIP N37°10'55.4", W88°56'43.7"
- SITE #10: FCC# 1265272 TV6 HOLDINGS, LLC N37°05'12.6", W88°52'56.7"
- SITE #11: FCC# 1265530 KENTUCKY RSA NO. 1 PARTNERSHIP N36°59'01.1", W89°04'29.2"
- SITE #12: FCC# 1313667 KENTUCKY RSA NO. 1 PARTNERSHIP N37°01'45.6", W89°00'07.6"
- SITE #13: FCC# 1318625 KENTUCKY STATE POLICE N36°58'24.9", W89°04'58.4"

EXHIBIT F



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

Aeronautical Study No.
 2018-ASO-17808-OE

Issued Date: 10/01/2018

Network Regulatory
 Kentucky RSA No. 1 Partnership
 5055 North Point Pkwy
 Alpharetta, GA 30005

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

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

Structure: Antenna Tower EV Barlow - B (2580839)
 Location: Barlow, KY
 Latitude: 37-06-42.14N NAD 83
 Longitude: 89-02-44.58W
 Heights: 364 feet site elevation (SE)
 285 feet above ground level (AGL)
 649 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, a med-dual system - Chapters 4,8(M-Dual),&12.

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

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

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

This determination expires on 04/01/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.

- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

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

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

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

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

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

If we can be of further assistance, please contact our office at (718) 553-2611, or angelique.eersteling@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-ASO-17808-OE.

Signature Control No: 381530823-386435140
Angelique Eersteling
Technician

(DNE)

Attachment(s)
Frequency Data
Map(s)

cc: FCC

Frequency Data for ASN 2018-ASO-17808-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
806	901	MHz	500	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
929	932	MHz	3500	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
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W

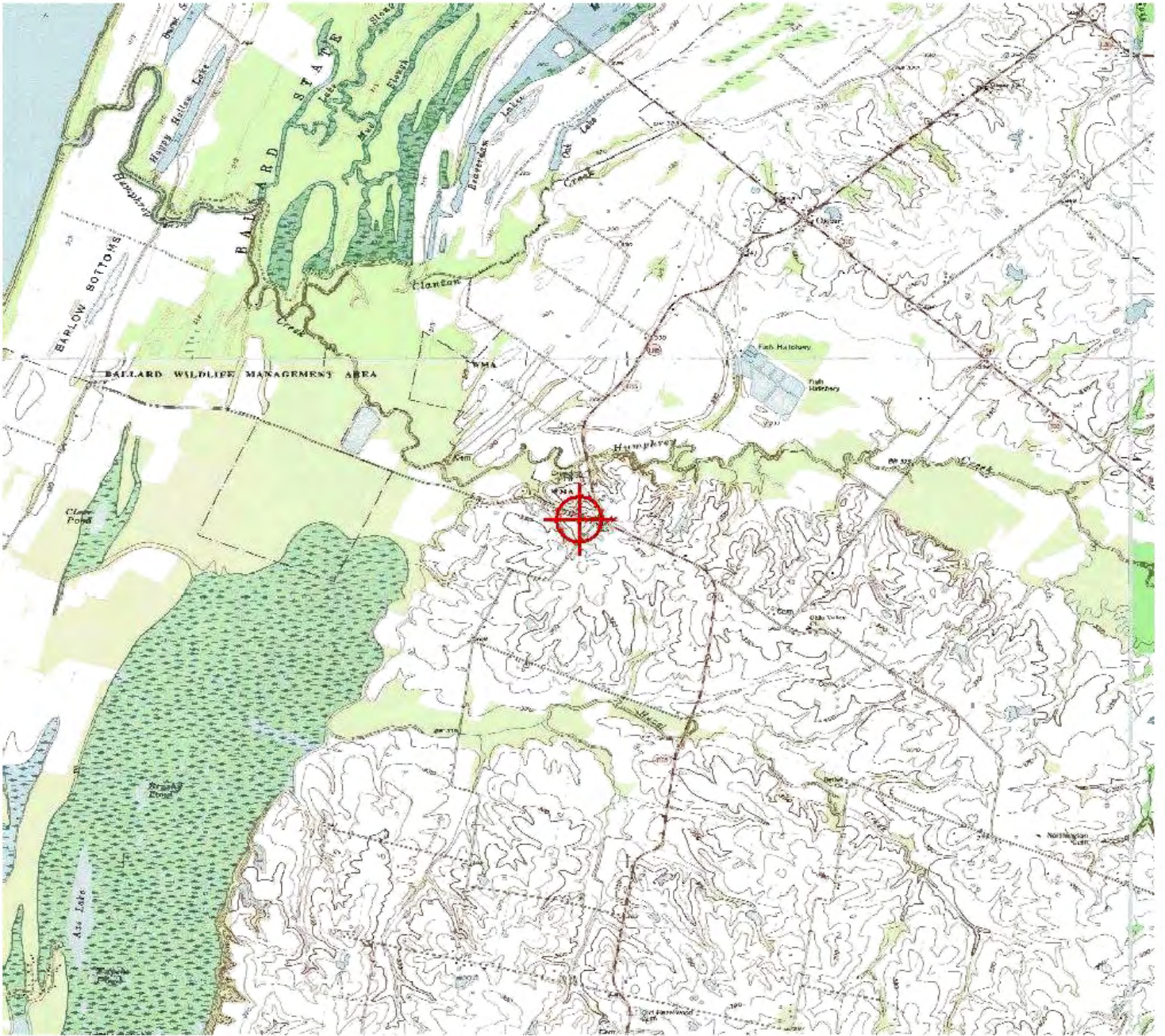


EXHIBIT G



KENTUCKY AIRPORT ZONING COMMISSION

MATTHEW BEVIN
Governor

421 Buttermilk Pike
Covington, KY 41017
www.transportation.ky.gov
859-341-2700

CONSTRUCTION/ALTERATION STATUS REPORT

December 21, 2018

AERONAUTICAL STUDY NUMBER: AS-004-PAH-2018-092

Verizon Wireless Tennessee
Verizon Wireless Tennessee
5055 North Point Pkwy, NP2NE
Alpharetta, GA 30022

This concerns the permit which was issued to you by the Kentucky Airport Zoning Commission on December 21, 2018. This permit is valid for a period of 18 Month(s) from its date of issuance. If construction is not completed within the said 18-Month period, this permit shall lapse and be void, and no work shall be performed without the issuance of a new permit. When appropriate, please indicate the status of the project in the place below and return this letter to John Houlihan, Administrator, Kentucky Airport Zoning Commission, 421 Buttermilk Pike, Covington, KY, 41017. 859-341-2700.

STRUCTURE: Antenna Tower
LOCATION: Barlow, KY
COORDINATES: 37° 6' 42.14" N / 89° 2' 44.58" W
HEIGHT: 285' AGL /649' AMSL

CONSTRUCTION/ALTERATION STATUS

1. The project () is abandoned. () is not abandoned.

2. Construction status is as follows:

Structure reached its greatest height of _____ ft. AGL
_____ ft. AMSL on _____ (date).

Date construction was completed. _____

Type of obstruction marking/painting. _____

Type of obstruction lighting. _____

As built coordinates. _____

Miscellaneous Information. _____

DATE _____

SIGNATURE/TITLE _____



EXHIBIT H

Geotechnical Report and Resistivity

Verizon Wireless EV Barlow

2244 Steve Denton Road
Barlow, Kentucky

August 30, 2018

Prepared For:



Verizon Wireless
250 East 96th Street
Suite 175
Indianapolis, Indiana

Prepared By:



**SUBSURFACE INVESTIGATION &
GEOTECHNICAL RECOMMENDATIONS**

**EV BARLOW – CELL TOWER
2244 STEVE DENTON ROAD
BARLOW, KENTUCKY
A&W PROJECT NO: 18IN0510**

**PREPARED FOR:
GPD GROUP
INDIANAPOLIS, INDIANA**

**PREPARED BY:
ALT & WITZIG ENGINEERING, INC.
GEOTECHNICAL DIVISION**

AUGUST 30, 2018



Alt & Witzig Engineering, Inc.

4105 West 99th Street • Indianapolis • Indiana • 46032
Ph (317) 875-7000 • Fax (317) 876-3705

August 30, 2018

GPD Group
8275 Allison Pointe Trail, Suite 220
Indianapolis, Indiana 46250
ATTN: Ms. Traci Preble

Report of Subsurface Investigation & Geotechnical Recommendations

RE: EV Barlow – Cell Tower
2244 Steve Denton Road
Barlow, Kentucky
Alt & Witzig File: **18IN0510**

Dear Ms. Preble:

In compliance with your request, we have completed a subsurface investigation and geotechnical evaluation for the above referenced project. It is our pleasure to transmit herewith one (1) electronic copy of our report.

The purpose of this subsurface investigation was to determine the various soils profile components and the engineering characteristics of the materials encountered in order to provide information to be used for preparing a foundation for the proposed cellular tower and equipment building.

Project Description

It is anticipated that a new 285-foot tall self-support cell tower will be constructed at this site. A prefabricated equipment building will also be constructed at this site

The site is located west of State Road 1105 and approximately one-hundred (100) feet south of Sallie Crice Road near Barlow, Kentucky (Exhibit 1). The site may be located using the Barlow Quadrangle, Kentucky-Illinois 7½ minute topographic map.

Based upon the project plans provided by GPD to Alt & Witzig Engineering, the ground surface elevation at the tower center is taken to be 348.0' AMSL. All depths referred to in this report and on the Boring Logs are referenced from the existing ground surface.

Offices:

Cincinnati • Columbus • Dayton, Ohio
Evansville • Ft. Wayne • Indianapolis • Lafayette • Merrillville/South Bend, Indiana

***Subsurface Investigation and Foundation Engineering
Construction Materials Testing and Inspection
Environmental Services***

Exhibit 1: 2017 Aerial Photograph with Overlay



Field Methods

The field investigation included a reconnaissance of the project site, performing one (1) soil boring (B-1) for the proposed tower and one (1) soil boring for the equipment building (B-2), performing standard penetration tests, and obtaining soil samples retained in the standard split-spoon sampler. The apparent groundwater level at the boring location was also determined.

The soil boring was performed with an all terrain vehicle-mounted drilling rig equipped with a rotary head. Conventional hollow-stem augers were used to advance the holes. The advancement of the borings was temporarily stopped at regular intervals in order to perform standard penetration tests in accordance with ASTM Procedure D-1586. The standard penetration test involves driving a split spoon soil sampler into the ground by dropping a 140-pound hammer, thirty (30) inches. The number of hammer drops required to advance the split-spoon sampler one (1) foot into the soil is defined as the standard penetration value. The soil samples retained in the split-spoon sampling device as a result of the penetration tests were obtained, classified, and labeled for further laboratory investigation.



Laboratory Investigation

A laboratory investigation was conducted to ascertain additional pertinent engineering characteristics of the subsurface materials at the site of the proposed tower. The laboratory testing program included:

- Visual classification of soils.
- Moisture content determination in accordance with ASTM D-2216.
- Samples of the cohesive soil were frequently tested in unconfined compression by use of a calibrated spring testing machine.
- A pocket penetrometer was used as an aid in determining the strength of the soil.

The values of the unconfined compressive strength as determined on soil samples from the split-spoon sampling must be considered approximate recognizing the manner in which they were obtained since the split-spoon sampling techniques provide a representative but somewhat disturbed soil sample.

Site Specific Subsurface Conditions

At the ground surface, the borings encountered approximately six (6) inches of topsoil. Beneath the topsoil, the borings encountered very soft to stiff silty clays with varying amounts of sand and gravel extending to depths of twenty-three and one-half (23½) feet (Elev. 319.5 feet) in boring B-1 and ten (10) feet (Elev. 338.0 feet) in boring B-2. In boring B-1, these soils transitioned into a hard consistency that extended to a depth of twenty-eight and one-half (28½) feet. At this depth, dry, very dense, clayey sand was encountered to the termination depth of the boring at thirty-seven (37) feet, where auger refusal was encountered. Detailed soil descriptions at the boring location have been included on the *Boring Logs* in the Appendix of this report.

Bedrock

The site is located along the Mississippi Embayment of the Mississippi Alluvial Plain within the Jackson Purchase Region of Kentucky. This part of Kentucky is relatively flat-lying, with numerous lakes, ponds, sloughs, and swamps. Geologic maps published by the US Geological Service indicate the Mississippi Embayment is the northward continuation of the fluvial sediments of the Mississippi River Delta. The current sedimentary area was formed in the Cretaceous and early Cenozoic periods by the filling with sediment of an existing basin. The soils in this region consists primarily of loess. The underlying bedrock in this region consists primarily of limestone formed in the Ordovician period.



Groundwater

Water level observations made during and upon completion of drilling operations yielded dry boreholes. These measurements are noted on the *Boring Logs* presented herewith. The exact location at which water is encountered should be anticipated to fluctuate somewhat depending upon normal seasonal variations in precipitation and surface runoff.

It should be noted that the groundwater level measurement recorded on the individual *Boring Logs* in the Appendix of this report is accurate for the specific date on which the measurements was performed. It must be understood that the groundwater level will fluctuate throughout the year. The *Boring Logs* do not indicate these fluctuations.

Seismic Parameters

An evaluation of the seismic site class has been performed for this site. The State of Kentucky has integrated the 2015 International Building Code into the Indiana Building Code (IBC). The seismic site class is determined by averaging soil conditions within the top 100 feet with respect to the shear wave velocity in accordance with ASCE 7. Our evaluation is based on data obtained for borings performed to depths of 33 feet at this site and information provided by the Indiana Geological Survey for a depth of 100 feet. A detailed report generated by the USGS Earthquake Hazard program (<http://earthquake.usgs.gov/designmaps/us/application.php>) has been attached to this letter. Following are the summarized requested seismic parameters.

Seismic Parameters

Site Soil Classification	Site Class D
MCE Spectral Response Accelerations	$S_s = 2.506$ $S_1 = 0.951$
Site Coefficients	$F_a = 1.0$ $F_v = 1.5$

Geotechnical Recommendations

Information provided by GPD Group indicates that the proposed 285-foot self-support cell tower will be constructed in the general vicinity of soil boring B-1; and an equipment building will be constructed in the general vicinity of boring B-2. Our experience with this type of structure indicates that the structural loads of the tower will be supported by an extended mat foundation or a caisson system and the buildings will be supported by conventional spread footings and continuous wall footings. It is recommended that a representative of Alt & Witzig Engineering, Inc. be on-site to monitor the excavation and inspect the base of the foundations.



Tower Foundation Recommendations

Extended Footing or Extended Mat Foundation

If spread footings are desired, they should be founded at a minimum depth of four (4) feet below existing grade. The soil parameters presented in *Table 1* may be utilized for the design of a shallow foundation.

Table 1: Shallow Foundation Soil Parameters

Soil Description	Depth Below Existing Grade (feet)	Allowable Bearing Pressure (psf) FS=3	Unit Weight (pcf)	C (psf)/ Φ (°)	Adhesion (psf)
Silty Clay	4-9	3,000	120	2,000	1250

It is anticipated that lateral wind loads and overturning moments will act on the spread footing. To help resist the overturning moment, it may be necessary to place a larger footing than necessary for bearing capacity. Also, any soil placed above the footing may be considered to help resist overturning moments if compacted to a minimum of 98 percent of the maximum dry density as determined from ASTM D-698 (Standard Proctor).

Depending upon the time of the year that the excavations are made, seepage from surface runoff may occur. Since these foundation materials tend to soften/loosen when exposed to free water, every effort should be made to keep the excavations dry should water be encountered. It is also recommended that concrete for footings be poured as soon as possible after the excavations are complete. A mud mat may be placed to provide the contractors a firm working surface and protect the exposed subgrade soils from softening.

Caissons/Drilled Piers

A caisson type foundation is advantageous to use when it is necessary to resist large overturning moments such as those caused by wind loads against the proposed structure. As an alternative to a shallow foundation system, a caisson type foundation system may be considered to support this tower structure. A straight shaft caisson/drilled pier may be considered. If a caisson or drilled shaft is used to support the structure, it should be designed using the soil parameters provided in *Table 2*.



Table 2: Deep Foundation Soil Parameters

Soil Type	Depth Below Grade (Feet)	Allowable Skin Friction for Gravity Loads SF=2	Design End Bearing Pressure SF=3	Effective Unit Weight (pcf)	C (psf) / Φ (°)
Silty Clay	6 – 23.5	600 psf	NA	120 pcf	2000 psf
Hard Silty Clay	23.5 – 28.5	600 psf	4,000 psf	130 pcf	2000 psf
Clayey Sand	28.5+	1000 psf	4,000 psf	130 pcf	28°

*Skin friction may be utilized in shaft compression and tension. The top one-shaft diameter should be neglected.

Equipment Building Foundation Recommendations

A net allowable bearing pressure of **2,000 psf** is recommended for dimensioning continuous wall footings at this site. The above-suggested bearing pressure is provided assuming the footings will be founded on medium stiff natural soils or properly compacted fill materials at a minimum depth of three (3) feet below grade.

Equipment Building Slab Recommendations

This structure will be a slab-on-grade supported by natural soils and/or compacted fill materials. In those areas where the existing grade is lower than the design floor elevation, a well-compacted structural fill will be necessary to raise the site to the desired grade. The fill material shall consist of INDOT No. 53 Stone.

After the building areas have been raised to the proper elevation, a granular fill should be placed immediately beneath the floor slab. It is recommended that all material placed in the floor slab areas be compacted to a density of 100 percent of maximum dry density in accordance with ASTM D-698. Recommendations for proper filling procedures are presented later in the Appendix of this report.

Statement of Limitations

Our subsurface investigation was conducted in accordance with guidelines set forth in the scope of services and applicable industry standards.

An inherent limitation of any geotechnical engineering study is that conclusions must be drawn on the basis of data collected at a limited number of discrete locations. The geotechnical parameters provided in this report were developed from the information obtained from the test borings that depict subsurface conditions only at these specific locations and on the particular date indicated on the boring logs. Soil conditions at other locations may differ from conditions encountered at these



boring locations and groundwater levels shall be expected to vary with time. The nature and extent of variations between the borings may not become evident until the course of construction.

Often, because of design and construction details that occur on a project, questions rise concerning the soil conditions. If we can give further service in these matters, please contact us at your convenience.

Very truly yours,

Alt & Witzig Engineering, Inc.

A handwritten signature in black ink, appearing to read 'D. M. Shumate', written over a horizontal line.

David M. Shumate
Staff Geologist

A handwritten signature in black ink, appearing to read 'David C. Harness', written in a cursive style.

David C. Harness, P.E.



APPENDIX

Recommended Specifications for Compacted Fills and Backfills

Site Location Map

Boring Location Plan

Boring Logs

General Notes

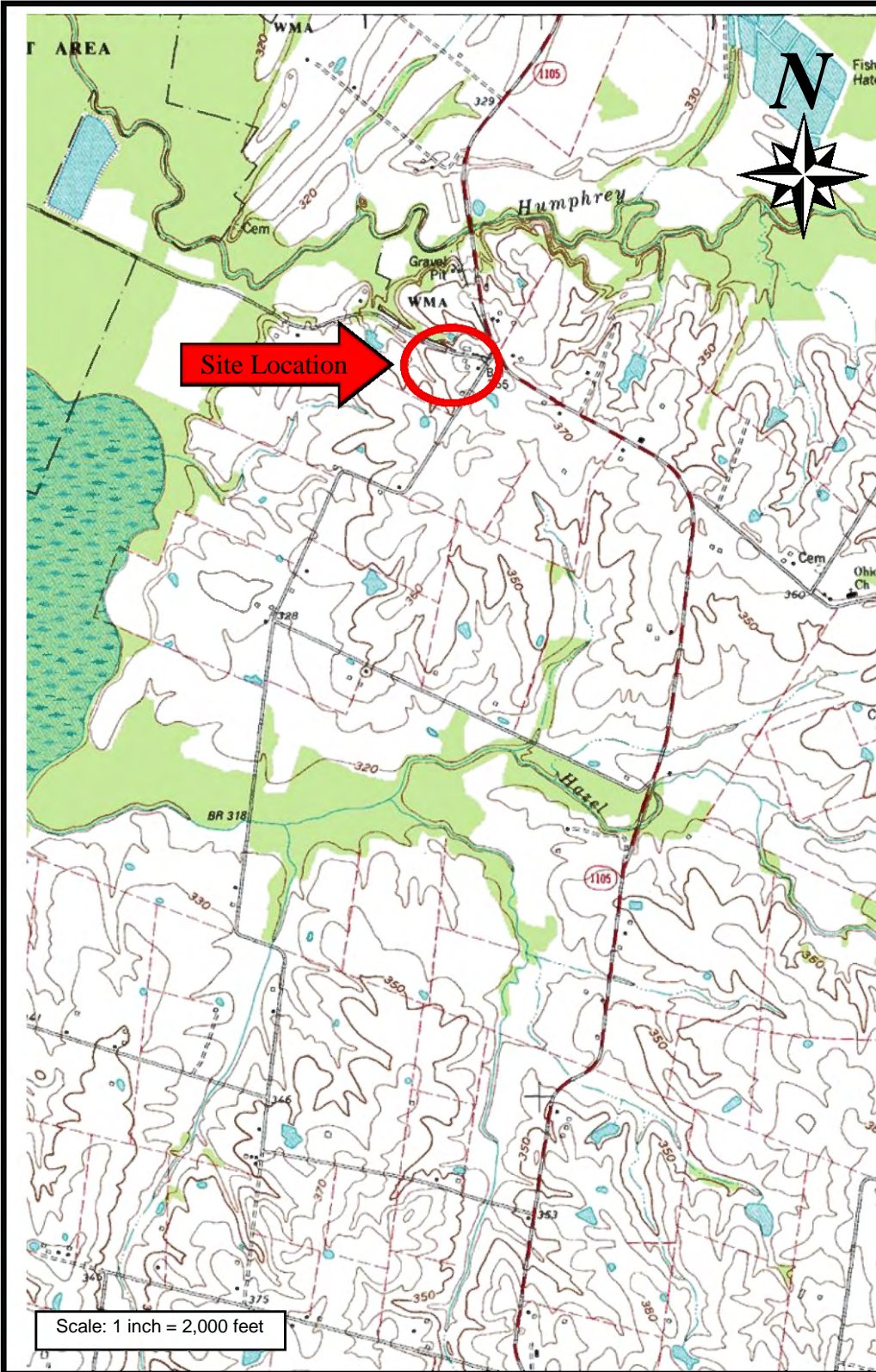
USGS Design Maps Summary

Custom Soil Resource Report for Ballard and McCracken Counties, Kentucky

RECOMMENDED SPECIFICATIONS FOR COMPACTED FILLS AND BACKFILLS

All fill shall be formed from material free of vegetable matter, rubbish, large rock, and other deleterious material. Prior to placement of fill, a sample of the proposed fill material should be submitted to the soils engineer for his approval. The fill material should be placed in layers not to exceed eight (8) inches in loose thickness and should be sprinkled with water as required to secure specified compactions. Each layer should be uniformly compacted by means of suitable equipment of the type required by the materials composing the fill. Under no circumstances should a bulldozer or similar tracked vehicles be used as compacting equipment. Material containing an excess of water so the specified compaction limits cannot be attained should be spread and dried to a moisture content which will permit proper compaction. All fill should be compacted to the specified percent of the maximum density obtained in accordance with ASTM density Test D-698 (100 percent of maximum dry density below and above the base of footing elevation). Should the results of the in-place density tests indicate that the specified compaction limits are not obtained; the areas represented by such tests should be reworked and retested as required until the specified limits are reached.

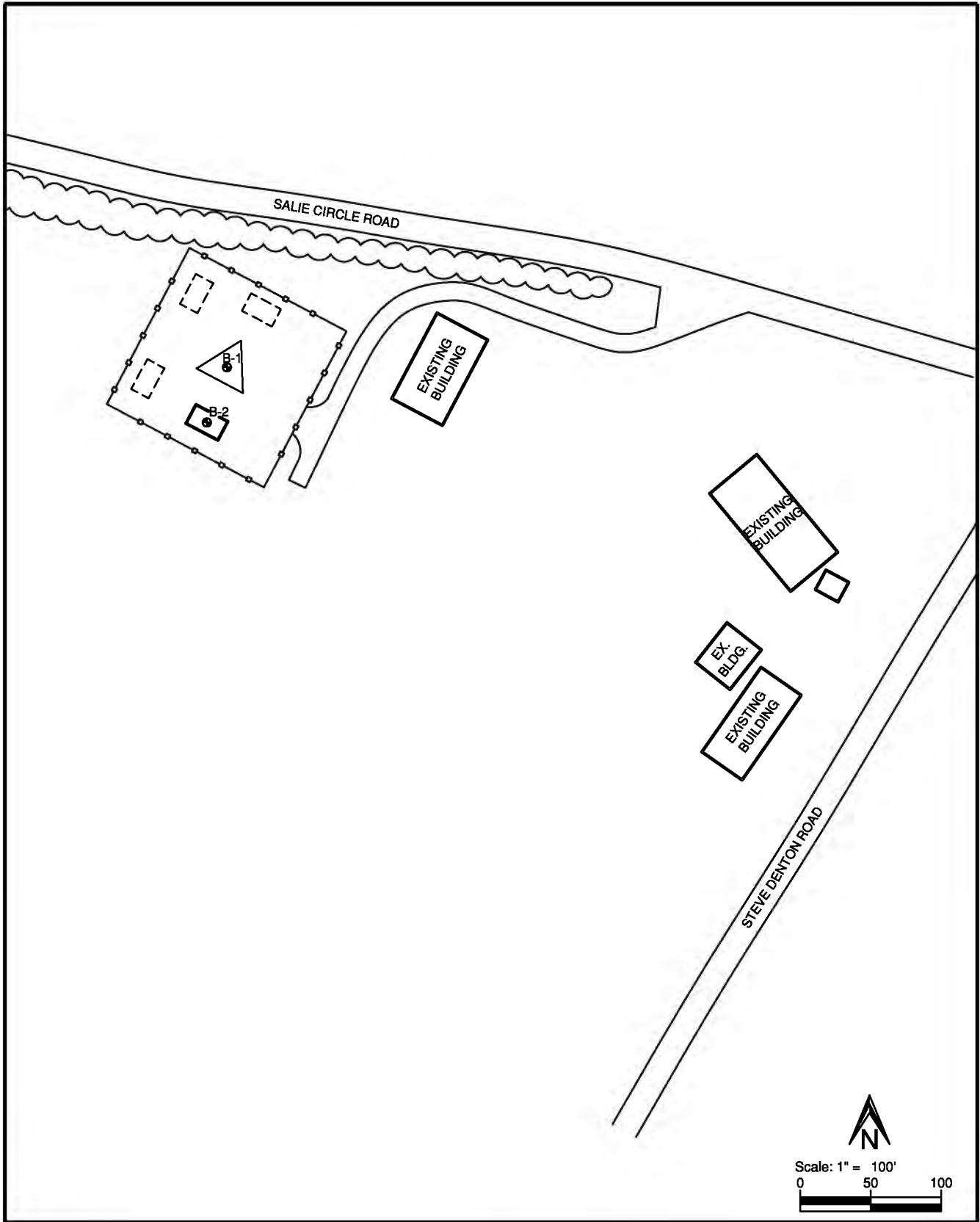
SITE LOCATION MAP



USGS Topographic Map:
Barlow Quadrangle

PROJECT: EV Barlow-Cell Tower
LOCATION: 2244 Steve Denton Road
CLIENT: GPD Group
A&W File No.: 18IN0510

A
W Alt & Witzig Engineering Inc.
4105 W. 99th Street · Carmel, IN 46032
TEL (317)875-7000 · FAX (317) 876-3705
www.altwitzig.com



BORING LOCATION PLAN

PROJECT NAME: EV Barlow-Cell Tower
 LOCATION: 2244 Steve Denton Road
 PREPARED FOR: GPD Group
 PROJECT NO: 18IN0510

Project Manager: DS
 Checked By: DH
 Drawn By: JT
 Date: 08/18

AW Alt & Witzig Engineering, Inc.
 4105 West 99th Street • Carmel, IN 46032
 Telephone: (317) 875-7000 • Fax (317) 876-3705



BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT GPD Group
 PROJECT NAME EV Barlow Cell Tower
 PROJECT LOCATION Barlow, Kentucky

BORING # B-1
 ALT & WITZIG FILE # 18IN0510
 Latitude 37.11175 Longitude -89.045767

DRILLING and SAMPLING INFORMATION

Date Started 8/7/18 Hammer Wt. 140 lbs.
 Date Completed 8/7/18 Hammer Drop 30 in.
 Boring Method HSA Spoon Sampler OD 2 in.
 Driller S. Champion Rig Type D-50 Track ATV

TEST DATA

STRATA ELEV.	SOIL CLASSIFICATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	Remarks
347.5	TOPSOIL	0.5		1	SS			9		4.5	17.6	
				2	SS			10		4.0	14.0	
				3	SS			8		3.0	22.6	
			5	4	SS			9		2.5	24.8	
				5	SS			3		1.0	26.5	
	Brown Silty CLAY		10									
				6	SS			7		0.5	26.3	
			15									
				8	SS			13	2.3	2.5	28.5	
			20									
324.5	Brownish Red Silty CLAY with Sand and Gravel	23.5		9	SS			74		2.0	19.2	
			25									
319.5	Brownish Red Clayey SAND with Gravel	28.5		10	SS			86				
			30									
				11	SS			71				
			35									
311.0	End of Boring at 35 feet	37.0										

Sample Type
 SS - Driven Split Spoon
 ST - Pressed Shelby Tube
 CA - Continuous Flight Auger
 RC - Rock Core
 CU - Cuttings
 CT - Continuous Tube

Groundwater
 ○ During Drilling Dry ft.
 ▼ At Completion Dry ft.

Boring Method
 HSA - Hollow Stem Augers
 CFA - Continuous Flight Augers
 DC - Driving Casing
 MD - Mud Drilling



BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT GPD Group
 PROJECT NAME EV Barlow Cell Tower
 PROJECT LOCATION Barlow, Kentucky

BORING # B-2
 ALT & WITZIG FILE # 18IN0510
 Latitude 37.11167 Longitude -89.045823

DRILLING and SAMPLING INFORMATION

Date Started 8/7/18 Hammer Wt. 140 lbs.
 Date Completed 8/7/18 Hammer Drop 30 in.
 Boring Method HSA Spoon Sampler OD 2 in.
 Driller S. Champion Rig Type D-50 Track ATV

TEST DATA

STRATA ELEV.	SOIL CLASSIFICATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	Remarks
347.5	TOPSOIL	0.5		1	SS			11		4.5	15.8	
				2	SS			11		3.0	23.0	
				3	SS			9	1.2	2.5	24.8	
	Brown Silty CLAY		5	4	SS			8		2.0	26.5	
				5	SS			3			29.5	
338.0	End of Boring at 10 feet	10.0	10									

Sample Type
 SS - Driven Split Spoon
 ST - Pressed Shelby Tube
 CA - Continuous Flight Auger
 RC - Rock Core
 CU - Cuttings
 CT - Continuous Tube

Groundwater
 ○ During Drilling Dry ft.
 √ At Completion Dry ft.

Boring Method
 HSA - Hollow Stem Augers
 CFA - Continuous Flight Augers
 DC - Driving Casing
 MD - Mud Drilling

MATERIAL GRAPHICS LEGEND



CL-ML: USCS Low Plasticity Silty Clay



SC: USCS Clayey Sand



TOPSOIL

SOIL PROPERTY SYMBOLS

N: Standard "N" penetration value. Blows per foot of a 140-lb hammer falling 30" on a 2" O.D. split-spoon.

Qu: Unconfined Compressive Strength, tsf

PP: Pocket Penetrometer, tsf

LL: Liquid Limit, %

PL: Plastic Limit, %

PI: Plasticity Index, %

DRILLING AND SAMPLING SYMBOLS

GROUNDWATER SYMBOLS

- Apparent water level noted while drilling.
- ∇ Apparent water level noted upon completion.
- ▼ Apparent water level noted upon delayed time.

SAMPLER SYMBOLS

⊗ SS: Split Spoon

**RELATIVE DENSITY & CONSISTANCY CLASSIFICATION
(NON-COHESIVE SOILS)**

<u>TERM</u>	<u>BLOWS PER FOOT</u>
Very Loose	0 - 5
Loose	6 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	>51

**RELATIVE DENSITY & CONSISTANCY CLASSIFICATION
(COHESIVE SOILS)**

<u>TERM</u>	<u>BLOWS PER FOOT</u>
Very Soft	0 - 3
Soft	4 - 5
Medium Stiff	6 - 10
Stiff	11 - 15
Very Stiff	16 - 30
Hard	>31

GENERAL NOTES - PROJECT SPECIFIC - 18IN0510 GINT.GPJ US EVAL.GDT 8/30/18



Alt & Witzig Engineering, Inc.
4105 West 99th St.
Carmel, IN 46032
Telephone: 317-875-7000
Fax:

GENERAL NOTES

Project: EV Barlow Cell Tower
Location: Barlow, Kentucky
Number: 18IN0510

USGS Design Maps Summary Report

User-Specified Input

Report Title 18IN0510
Wed August 15, 2018 15:23:27 UTC

Building Code Reference Document 2012/2015 International Building Code
(which utilizes USGS hazard data available in 2009)

Site Coordinates 37.11175°N, 89.04577°W

Site Soil Classification Site Class D – "Stiff Soil"

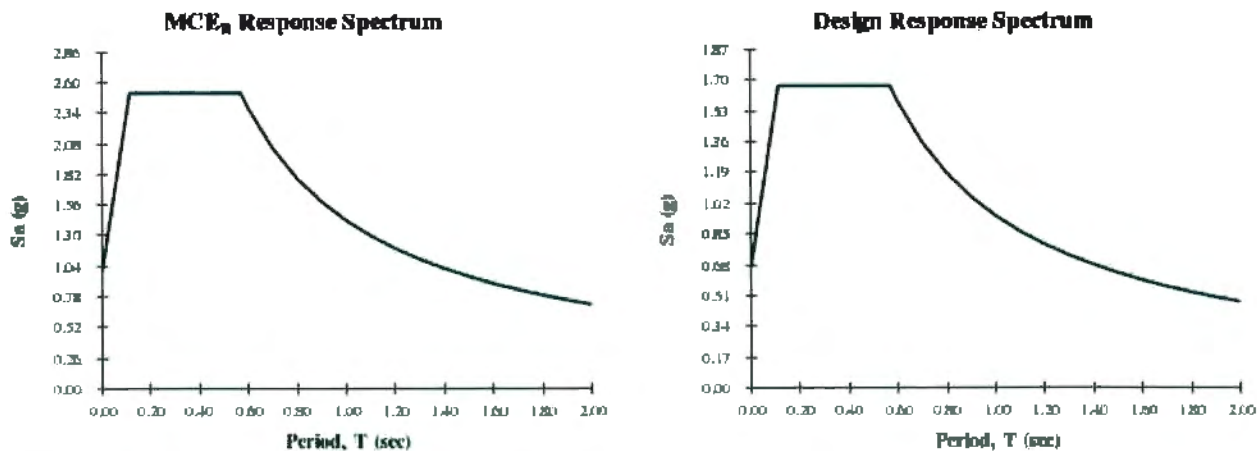
Risk Category I/II/III



USGS-Provided Output

$S_S = 2.506 \text{ g}$	$S_{MS} = 2.506 \text{ g}$	$S_{DS} = 1.671 \text{ g}$
$S_1 = 0.951 \text{ g}$	$S_{M1} = 1.426 \text{ g}$	$S_{D1} = 0.951 \text{ g}$

For information on how the S_S and S_1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.



Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the accuracy of the data contained therein. This tool is not a substitute for technical subject-matter knowledge.


Design Maps Detailed Report

2012/2015 International Building Code (37.11175°N, 89.04577°W)

Site Class D – “Stiff Soil”, Risk Category I/II/III

Section 1613.3.1 — Mapped acceleration parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain S_5) and 1.3 (to obtain S_1). Maps in the 2012/2015 International Building Code are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 1613.3.3.

From [Figure 1613.3.1\(1\)](#) ^[1] $S_5 = 2.506 \text{ g}$ **From [Figure 1613.3.1\(2\)](#) ^[2]** $S_1 = 0.951 \text{ g}$ **Section 1613.3.2 — Site class definitions**

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class D, based on the site soil properties in accordance with Section 1613.

2010 ASCE-7 Standard – Table 20.3-1
SITE CLASS DEFINITIONS

Site Class	\bar{v}_s	\bar{N} or \bar{N}_{ch}	\bar{s}_u
A. Hard Rock	>5,000 ft/s	N/A	N/A
B. Rock	2,500 to 5,000 ft/s	N/A	N/A
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
E. Soft clay soil	<600 ft/s	<15	<1,000 psf
Any profile with more than 10 ft of soil having the characteristics:			
<ul style="list-style-type: none"> • Plasticity index $PI > 20$, • Moisture content $w \geq 40\%$, and • Undrained shear strength $\bar{s}_u < 500 \text{ psf}$ 			
F. Soils requiring site response analysis in accordance with Section 21.1	See Section 20.3.1		

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

Section 1613.3.3 — Site coefficients and adjusted maximum considered earthquake spectral response acceleration parameters

TABLE 1613.3.3(1)
VALUES OF SITE COEFFICIENT F_s

Site Class	Mapped Spectral Response Acceleration at Short Period				
	$S_s \leq 0.25$	$S_s = 0.50$	$S_s = 0.75$	$S_s = 1.00$	$S_s \geq 1.25$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight-line interpolation for intermediate values of S_s

For Site Class = D and $S_s = 2.506$ g, $F_s = 1.000$

TABLE 1613.3.3(2)
VALUES OF SITE COEFFICIENT F_v

Site Class	Mapped Spectral Response Acceleration at 1-s Period				
	$S_1 \leq 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_1 \geq 0.50$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F	See Section 11.4.7 of ASCE 7				

Note: Use straight-line interpolation for intermediate values of S_1

For Site Class = D and $S_1 = 0.951$ g, $F_v = 1.500$

Equation (16-37): $S_{MS} = F_a S_s = 1.000 \times 2.506 = 2.506 \text{ g}$

Equation (16-38): $S_{M1} = F_v S_1 = 1.500 \times 0.951 = 1.426 \text{ g}$

Section 1613.3.4 — Design spectral response acceleration parameters

Equation (16-39): $S_{DS} = \frac{2}{3} S_{MS} = \frac{2}{3} \times 2.506 = 1.671 \text{ g}$

Equation (16-40): $S_{D1} = \frac{2}{3} S_{M1} = \frac{2}{3} \times 1.426 = 0.951 \text{ g}$

Section 1613.3.5 — Determination of seismic design category

TABLE 1613.3.5(1)

SEISMIC DESIGN CATEGORY BASED ON SHORT-PERIOD (0.2 second) RESPONSE ACCELERATION

VALUE OF S_{DS}	RISK CATEGORY		
	I or II	III	IV
$S_{DS} < 0.167g$	A	A	A
$0.167g \leq S_{DS} < 0.33g$	B	B	C
$0.33g \leq S_{DS} < 0.50g$	C	C	D
$0.50g \leq S_{DS}$	D	D	D

For Risk Category = I and $S_{DS} = 1.671 g$, Seismic Design Category = D

TABLE 1613.3.5(2)

SEISMIC DESIGN CATEGORY BASED ON 1-SECOND PERIOD RESPONSE ACCELERATION

VALUE OF S_{D1}	RISK CATEGORY		
	I or II	III	IV
$S_{D1} < 0.067g$	A	A	A
$0.067g \leq S_{D1} < 0.133g$	B	B	C
$0.133g \leq S_{D1} < 0.20g$	C	C	D
$0.20g \leq S_{D1}$	D	D	D

For Risk Category = I and $S_{D1} = 0.951 g$, Seismic Design Category = D

Note: When S_1 is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category \equiv "the more severe design category in accordance with Table 1613.3.5(1) or 1613.3.5(2)" = E

Note: See Section 1613.3.5.1 for alternative approaches to calculating Seismic Design Category.

References

1. Figure 1613.3.1(1): [https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1\(1\).pdf](https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(1).pdf)
2. Figure 1613.3.1(2): [https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1\(2\).pdf](https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(2).pdf)



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Ballard and McCracken Counties, Kentucky**

18IN0510



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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Soil Map


The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map





MAP LEGEND


Area of Interest (AOI)

 Area of Interest (AOI)




















Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ballard and McCracken Counties, Kentucky
 Survey Area Data: Version 11, Oct 3, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 13, 2011—Oct 7, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GrB2	Grenada silt loam, 2 to 6 percent slopes, eroded	0.2	21.8%
GrC3	Grenada silt loam, 6 to 12 percent slopes, severely eroded	0.9	78.2%
Totals for Area of Interest		1.1	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the

Custom Soil Resource Report

development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Ballard and McCracken Counties, Kentucky

GrB2—Grenada silt loam, 2 to 6 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2wn5t
Elevation: 310 to 640 feet
Mean annual precipitation: 52 to 62 inches
Mean annual air temperature: 48 to 69 degrees F
Frost-free period: 175 to 244 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Grenada, eroded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grenada, Eroded

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Fine-silty noncalcareous loess

Typical profile

Ap - 0 to 5 inches: silt loam
Bw - 5 to 21 inches: silt loam
E - 21 to 28 inches: silt loam
Btx/E - 28 to 38 inches: silt loam
Btx - 38 to 80 inches: silt loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 17 to 36 inches to fragipan
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: Northern Loess Fragipan Upland - PROVISIONAL (F134XY012AL)
Hydric soil rating: No

Minor Components

Calloway

Percent of map unit: 6 percent
Landform: Flats
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Collins

Percent of map unit: 4 percent
Landform: Flood-plain steps
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

GrC3—Grenada silt loam, 6 to 12 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 1qls1
Elevation: 320 to 500 feet
Mean annual precipitation: 40 to 56 inches
Mean annual air temperature: 46 to 69 degrees F
Frost-free period: 177 to 222 days
Farmland classification: Not prime farmland

Map Unit Composition

Grenada, severely eroded, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grenada, Severely Eroded

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Thick fine-silty noncalcareous loess

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 18 inches: silt loam
H3 - 18 to 22 inches: silt loam
H4 - 22 to 32 inches: silt loam
H5 - 32 to 80 inches: silt loam

Custom Soil Resource Report

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: 18 to 23 inches to fragipan
Natural drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Purchase, severely eroded

Percent of map unit: 7 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Calloway

Percent of map unit: 4 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Falaya

Percent of map unit: 2 percent
Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Collins

Percent of map unit: 2 percent
Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No



Alt & Witzig Engineering, Inc.

4105 West 99th Street • Indianapolis • Indiana • 46032
Ph (317) 875-7000 • Fax (317) 876-3705

August 30, 2018

GPD Group
8275 Allison Pointe Trail, Suite 220
Indianapolis, Indiana 46250
ATTN: Ms. Traci Preble

Resistivity Results

RE: EV Barlow – Cell Tower
2244 Steve Denton Road
Barlow, Kentucky
Alt & Witzig File: **18IN0510**

Dear Ms. Preble:

To aid in the design of the grounding equipment for the referenced project, soil resistivity tests were performed at the site. The resistivity testing was performed using an AEMC Model 6472 Soil Resistance Meter per ASTM G-57 (The Wenner Vertical Profiling Method). A qualified technician familiar with this equipment and testing procedure performed the appropriate test to obtain the resistivity values at multiple depths. Alt & Witzig Engineering, Inc. was able to gather the necessary resistivity information in all four (4) directions.

The Wenner Vertical Profiling Method was used by centering the potential electrodes on a traverse line between the current electrodes and maintaining an equal “a” spacing between the electrodes. The depths of interests or “a” spacing of 2½ feet, 5 feet, 12½ feet, 20 feet and 50 feet.

The resistivity test was performed on August 28, 2018. The weather during data collection was between 80 and 92 degrees and sunny. The measurements were taken in general vicinity of the proposed tower location and approximately one-hundred (100) feet south of Sallie Crice Road. The layouts of the arrays are shown below in *Exhibit 1*.

Offices:

Cincinnati • Columbus • Dayton, Ohio
Evansville • Ft. Wayne • Indianapolis • Lafayette • Merrillville/South Bend, Indiana

***Subsurface Investigation and Foundation Engineering
Construction Materials Testing and Inspection
Environmental Services***



Exhibit 1: Aerial Photograph of Site Showing the Layout of the Resistivity Array.



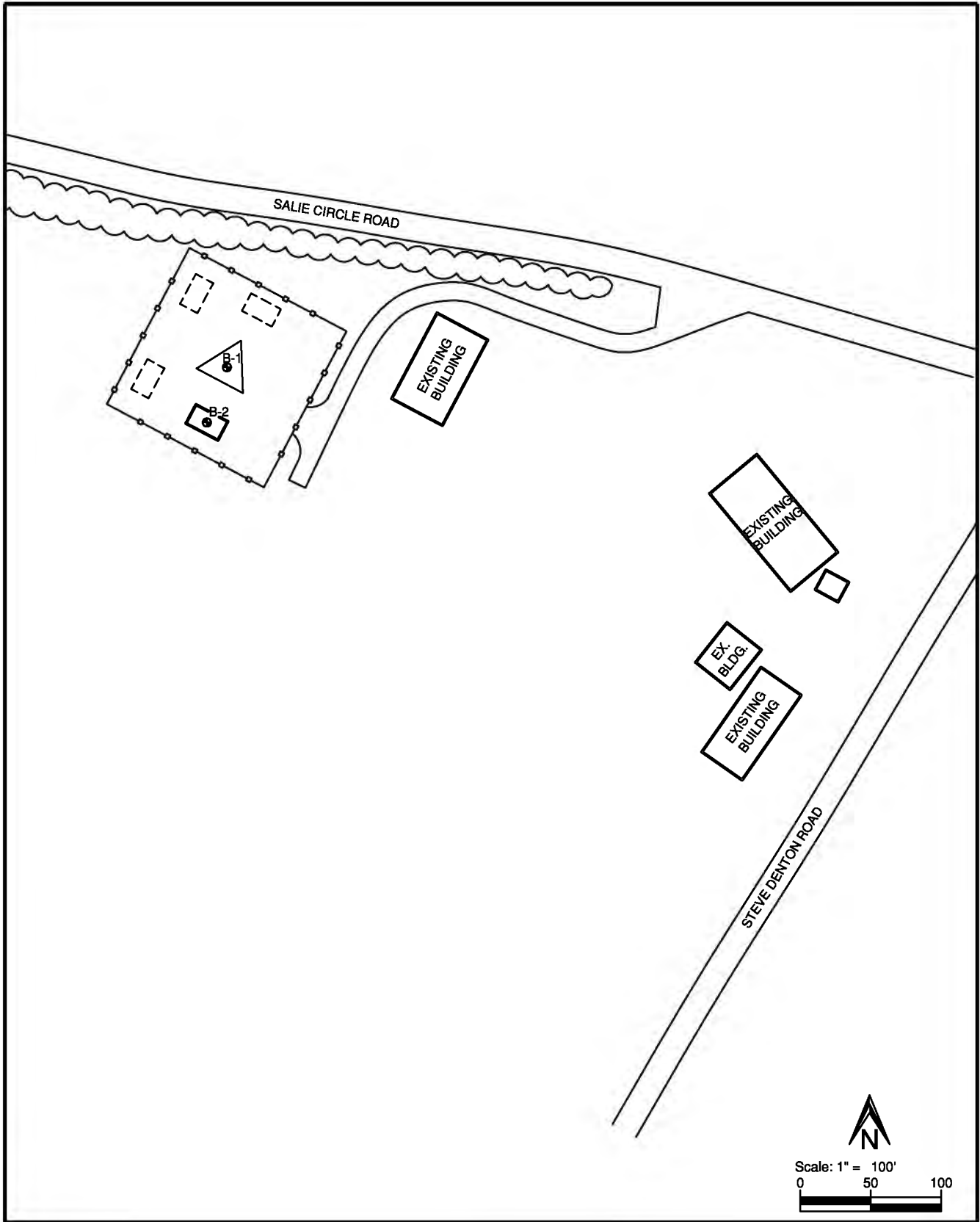
We appreciate the opportunity to be of service to you on this project. If we can give further service in these matters, please contact us at your convenience.

Very truly yours,
Alt & Witzig Engineering, Inc.

David M. Shumate
Geologist

David C. Harness, P.E.
Sr. Geotechnical Engineer

Attachments:
Boring Location Plan
Resistivity Testing Results



BORING LOCATION PLAN

PROJECT NAME: EV Barlow-Cell Tower
 LOCATION: 2244 Steve Denton Road
 PREPARED FOR: GPD Group
 PROJECT NO: 18IN0510

Project Manager: DS
 Checked By: DH
 Drawn By: JT
 Date: 08/18

AW Alt & Witzig Engineering, Inc.
 4105 West 99th Street • Carmel, IN 46032
 Telephone: (317) 875-7000 • Fax (317) 876-3705



Alt & Witzig Engineering, Inc
 4105 West 99th Street
 Carmel, IN 46032
 (317) 875-7000
 www.altwitzig.com

RESISTIVITY TESTING
WENNER 4-ELECTRODE METHOD
ASTM G57

A&W Project ID: 18IN0510

Site Location: EV Barlow

A&W Field Technician:	L. Folz	Engineer:	D. Harness
Weather Conditions	Sunny	Meter Used	AEMC 6472
Air Temperature:	80 - 92	Ground Condition:	Corn Field
Start Date	8/28/2018	Start Time	10:30am
End Date	8/28/2018	End Time	2:30pm

Where, ρ = resistivity in $\Omega \cdot cm$
 a = electrode separation, ft
 R = resistance, Ω

$$\rho, \Omega \cdot cm = 191.5aR$$

Important notes:

- (1) large, nonconductive bodies shall not be included in the survey. Nonconductive bodies include: frozen soil, boulders, concrete foundations,
- (2) conductive structures such as pipes and cables shall not be within 1/2 a of the electrode span unless they are at right angles to the span.

Location	Spacing between electrodes, a (ft)	range switch	Dial Reading	Resistance, R ohms	Multiplier	Resistivity, ρ $\Omega \cdot cm$
NORTH	2.5	1	14.13	14.13	478.75	6,765
	5	1	6.818	6.818	957.5	6,528
	12.5	1	2.06	2.06	2393.75	4,931
	20	1	1.459	1.459	3830	5,588
	50	1	0.778	0.778	9575	7,449
SOUTH	2.5	1	9.242	9.242	478.75	4,425
	5	1	6.048	6.048	957.5	5,791
	12.5	1	2.196	2.196	2393.75	5,257
	20	1	1.466	1.466	3830	5,615
	50	1	0.828	0.828	9575	7,928
EAST	2.5	1	25.94	25.94	478.75	12,419
	5	1	7.36	7.36	957.5	7,047
	12.5	1	4.23	4.23	2393.75	10,126
	20	1	0.866	0.866	3830	3,317
	50	1	0.675	0.675	9575	6,463
WEST	2.5	1	55.44	55.44	478.75	26,542
	5	1	14.82	14.82	957.5	14,190
	12.5	1	2.311	2.311	2393.75	5,532
	20	1	1.355	1.355	3830	5,190
	50	1	1.064	1.064	9575	10,188

EXHIBIT I

DIRECTIONS TO WFC SITE:

FROM BALLARD COUNTY SEAT; TAKE US-60 E TO N 6TH ST IN BARLOW (6.8 MI), HEAD NORTH ON 4TH ST TOWARD OHIO ST, PASS BY NAPA AUTO PARTS AUTO TIRE AND PARTS OF WICKCKLIFFE (ON THE RIGHT IN 0.2 MI)(0.5 MI), 4TH ST TURNS SLIGHTLY RIGHT AND BECOMES LEE ST (0.1 MI), CONTINUE ONTO US-60 E/N 6TH ST (CONTINUE TO FOLLOW US-60 E) (6.1 MI), TURN RIGHT ONTO BROADWAY ST (0.2 MI), TAKE KY-1105 N/OSCAR RD TO STEVE DENTON RD (5.3 MI), TURN LEFT AT THE 2ND CROSS STREET ONTO N 6TH ST (0.2 M), CONTINUE ONTO KY-1105 N/OSCAR RD (4.3 MI), TURN LEFT ONTO SALLIE CRICE RD (226 FT), TURN LEFT ONTO STEVE DENTON RD, ARRIVE AT DESTINATION 2244 STEVE DENTON RD.



PREPARED BY: GPD GROUP, INC. (317) 299-2996

EXHIBIT J

Prepared By and Upon Recording, Return to:

Matthew R. Clark, Esq.
CLARK, QUINN, MOSES, SCOTT & GRAHN, LLP
320 North Meridian Street, Suite 1100
Indianapolis, IN 46204

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF BALLARD)

Deed Reference: Deed Book 112, Page 227

MEMORANDUM OF LAND LEASE AGREEMENT

This Memorandum of Land Lease Agreement is made this 26th day of ~~November~~, 2018, between The Myatt Family Trust, dated September 9, 2011, by and between Charles Myatt and Deena Myatt, Trustees, with a mailing address of 2224 Steve Denton Road, Barlow, Kentucky 42024, hereinafter collectively referred to as "LESSOR", and Kentucky RSA 1 Partnership d/b/a Verizon Wireless with its principal offices at One Verizon Way, Mail Stop 4AW100, Basking Ridge, New Jersey 07920, hereinafter referred to as "LESSEE". LESSOR and LESSEE are at times collectively referred to hereinafter as the "Parties" or individually as the "Party".

1. LESSOR and LESSEE entered into a Land Lease Agreement (the "Agreement") on ~~Nov 26~~, 2018 for an initial term of five (5) years, commencing on the Commencement Date. The Land Lease Agreement shall automatically be extended for four (4) additional five (5) year terms unless the LESSEE terminates it at the end of the then current term by giving the LESSOR written notice of the intent to terminate at least three (3) months prior to the end of the then current term.
2. LESSOR hereby leases to LESSEE a portion of that certain parcel of property (the entirety of LESSOR's property is referred to hereinafter as the "Property"), located at 2557 Steve Denton Road, Barlow, Kentucky 42024 and being described as a 100' x 100' parcel containing 10,000 square feet, as shown on the Tax Map of Ballard County as a portion of Tax Parcel No. 24-30 and 24 -30 CH, and being part of that real property further described in Deed Book 112, at Page 227, recorded in the Office of the Register of Deeds for Ballard County, together with the non-exclusive right for ingress and egress, seven (7) days a week twenty-four (24) hours a day, on foot or motor vehicle, including trucks, and for the installation and maintenance of utility wires, poles, cables, conduits, and pipes over, under, or along a thirty (30) foot wide right-of-way extending from the nearest public right-of-way, Steve Denton Road, to the demised premises. The demised premises and right-of-way are hereinafter collectively referred to as the "Premises". The Premises are described in Exhibit A attached hereto and made a part hereof, and as shown on the plat of survey attached hereto and incorporated herein as Exhibit B. In the event any public

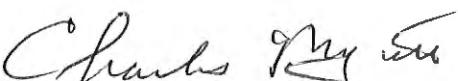
utility is unable to use the aforementioned right-of-way, LESSOR has agreed to grant an additional right-of-way either to the LESSEE or to the public utility at no cost to the LESSEE.

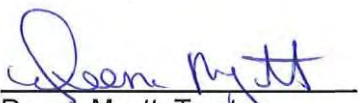
3. The Commencement Date of the Agreement, of which this is a Memorandum, is the first day of the month after LESSEE begins installation of LESSEE'S communication equipment.
4. LESSEE has the right of first refusal to purchase the Premises during the initial term and all renewal terms of the Agreement.
5. The terms, covenants and provisions of the Agreement, the terms of which are hereby Incorporated by reference into this Memorandum, shall extend to and be binding upon the respective executors, administrators, heirs, successors and assigns of LESSOR and LESSEE.

IN WITNESS WHEREOF, hereunto and to a duplicate hereof, LESSOR and LESSEE have caused this Memorandum to be duly executed on the date first written hereinabove.

LESSOR:

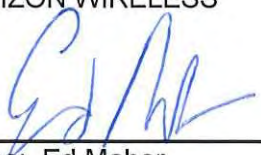
THE MYATT FAMILY TRUST, DATED
SEPTEMBER 9, 2011, BY AND THROUGH
CHARLES MYATT AND DEENA MYATT,
TRUSTEES

BY: 
Charles Myatt, Trustee

BY: 
Deena Myatt, Trustee

LESSEE:

KENTUCKY RSA 1 PARTNERSHIP D/B/A
VERIZON WIRELESS

By: 
Name: Ed Maher
Title: Director Network Field Engineering

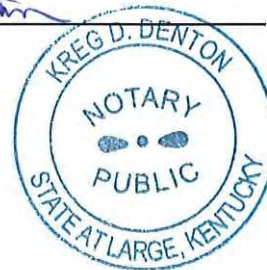
COMMONWEALTH OF KENTUCKY)
)
COUNTY OF BALLARD)

ACKNOWLEDGEMENT

I, Kreg D Denton, a Notary Public for said County and State, do hereby certify that Charles Myatt and Deena Myatt, personally came before me this day and acknowledged that they are the Trustees of The Myatt Family Trust, dated September 9, 2011, and being authorized to do so, executed the foregoing Memorandum of Land Lease Agreement as their own act and deed on behalf of The Myatt Family Trust, dated September 9, 2011.

WITNESS my hand and official Notarial Seal, this 16th day of October, 2018.

Kreg D. Denton
Notary Public



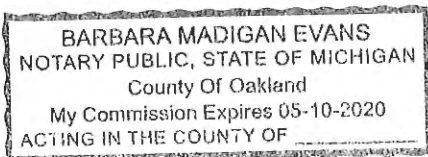
My Commission Expires:
7-17-2022

STATE OF MICHIGAN)
)
COUNTY OF OAKLAND)

ACKNOWLEDGMENT

I, Barbara Madigan Evans, a Notary Public for said County and State, do hereby certify that Ed Maher personally came before me this day and acknowledged that he is the Director Network Field Engineering for Kentucky RSA 1 Partnership d/b/a Verizon Wireless, and that he, as Director Network Field Engineering, being authorized to do so, executed the foregoing Memorandum of Land Lease Agreement on behalf of Kentucky RSA 1 Partnership d/b/a Verizon Wireless.

WITNESS my hand and official Notarial Seal, this 21st day of November, 2018.



Barbara Madigan Evans
Notary Public

My Commission Expires:

"I affirm, under the penalties for perjury, that I have taken reasonable care to redact each Social Security number in this document, unless required by law." Matthew R. Clark

EXHIBIT A

[WRITTEN METES AND BOUNDS OF THE PREMISES
AND INGRESS/EGRESS AND UTILITY EASEMENT]

LEASE AREA DESCRIPTION

A PART OF A 69 ACRE PARCEL OF LAND OWNED BY THE MYATT FAMILY TRUST AS RECORDED IN DEED BOOK 112, PAGE 227, AND LYING SOUTHWEST OF THE INTERSECTION OF SALE CIRCLE ROAD AND STEVE DENTON ROAD, BALLARD COUNTY, KENTUCKY.

COMMENCING AT AN IRON PIN FOUND AT THE INTERSECTION OF SAID SALE CIRCLE ROAD AND STEVE DENTON ROAD, SAID POINT ALSO BEING THE NORTHEAST CORNER OF A PARCEL OF LAND OWNED BY DAVID L. JONES AS RECORDED IN DEED BOOK 93, PAGE 150, THENCE ALONG THE CENTERLINE OF SALE CIRCLE ROAD NORTH 68 DEGREES 26 MINUTES 09 SECONDS WEST 172.37 FEET; THENCE SOUTH 71 DEGREES 49 MINUTES 20 SECONDS WEST 78.79 FEET; THENCE NORTH 76 DEGREES 06 MINUTES 17 SECONDS WEST 128.76 FEET; THENCE SOUTH 32 DEGREES 16 MINUTES 40 SECONDS WEST 132.35 FEET; THENCE NORTH 57 DEGREES 43 MINUTES 20 SECONDS WEST 30.00 FEET TO THE SOUTHERNMOST LEASE CORNER AND BEING THE TRUE PLACE OF BEGINNING OF THIS LEASE AREA DESCRIPTION; THENCE NORTH 57 DEGREES 43 MINUTES 20 SECONDS WEST 100.00 FEET; THENCE NORTH 32 DEGREES 16 MINUTE 20 SECONDS EAST 100.00 FEET; THENCE SOUTH 32 DEGREES 16 MINUTES 40 SECONDS WEST 100.00 FEET TO THE TRUE PLACE OF BEGINNING AND CONTAINING 10,000 SQUARE FEET, (0.23 ACRES), MORE OR LESS.

30' ACCESS & UTILITY EASEMENT DESCRIPTION

A PART OF A 69 ACRE PARCEL OF LAND OWNED BY THE MYATT FAMILY TRUST AS RECORDED IN DEED BOOK 112, PAGE 227, AND LYING SOUTHWEST OF THE INTERSECTION OF SALE CIRCLE ROAD AND STEVE DENTON ROAD, BALLARD COUNTY, KENTUCKY.

COMMENCING AT AN IRON PIN FOUND AT THE INTERSECTION OF SAID SALE CIRCLE ROAD AND STEVE DENTON ROAD, SAID POINT ALSO BEING THE NORTHEAST CORNER OF A PARCEL OF LAND OWNED BY DAVID L. JONES AS RECORDED IN DEED BOOK 93, PAGE 150, THENCE ALONG THE CENTERLINE OF SALE CIRCLE ROAD NORTH 68 DEGREES 26 MINUTES 09 SECONDS WEST 172.37 FEET TO THE TRUE PLACE OF BEGINNING OF THIS ACCESS AND EASEMENT DESCRIPTION; THENCE SOUTH 71 DEGREES 49 MINUTES 20 SECONDS WEST 78.79 FEET; THENCE NORTH 76 DEGREES 06 MINUTES 17 SECONDS WEST 128.76 FEET; THENCE SOUTH 32 DEGREES 16 MINUTES 40 SECONDS WEST 132.35 FEET; THENCE NORTH 57 DEGREES 43 MINUTES 20 SECONDS WEST 30.00 FEET TO THE SOUTHERNMOST LEASE CORNER; THENCE NORTH 32 DEGREES 16 MINUTES 16 SECONDS EAST 141.78 FEET; THENCE NORTH 30 DEGREES 00 MINUTES 00 SECONDS EAST 23.37 FEET; THENCE SOUTH 68 DEGREES 26 MINUTES 09 SECONDS EAST 81.66 FEET TO THE TRUE PLACE OF BEGINNING AND CONTAINING 10,105.1 SQUARE FEET, (0.23 ACRES), MORE OR LESS.

EXHIBIT "A"



LAND SURVEYOR'S CERTIFICATE
 I HEREBY CERTIFY THAT THIS PLAT AND SURVEY WERE MADE UNDER MY SUPERVISION AND THAT THE ANGULAR AND LINEAR MEASUREMENTS AS WITNESSED BY MONUMENTS SHOWN HEREON ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.
Ralph M. Wallem
 RALPH M. WALLEM
 PLS. NO. 80040185

NOTE: THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.



1961 NORTHPOINT BLVD.
 SUITE 130
 HIXSON, TN 37343



PROJECT NUMBER: 20161506655
SITE NAME: EV BARLOW
SITE ADDRESS: 2857 STEVE DENTON RD BARLOW, KY 42024
LEASE AREA: 10000 SQ. FT.
PROPERTY OWNER: MYATT FAMILY TRUST
 CHARLES MYATT & DEBRA MYATT, TRUSTEES
 2284 STEVE DENTON ROAD
 BARLOW, KENTUCKY 42024
TAX PARCEL ID: 24-30

COUNTY: BALLARD COUNTY
SOURCE OF TITLE: DEED BK 112, PG 227
LATITUDE: 37° 05' 42.145" N
LONGITUDE: 89° 02' 44.563" W

DWG BY: GYWW
CHKD BY: RIMVV
DATE: 12.22.17

NO. REVISION/ISSUE:
DATE:

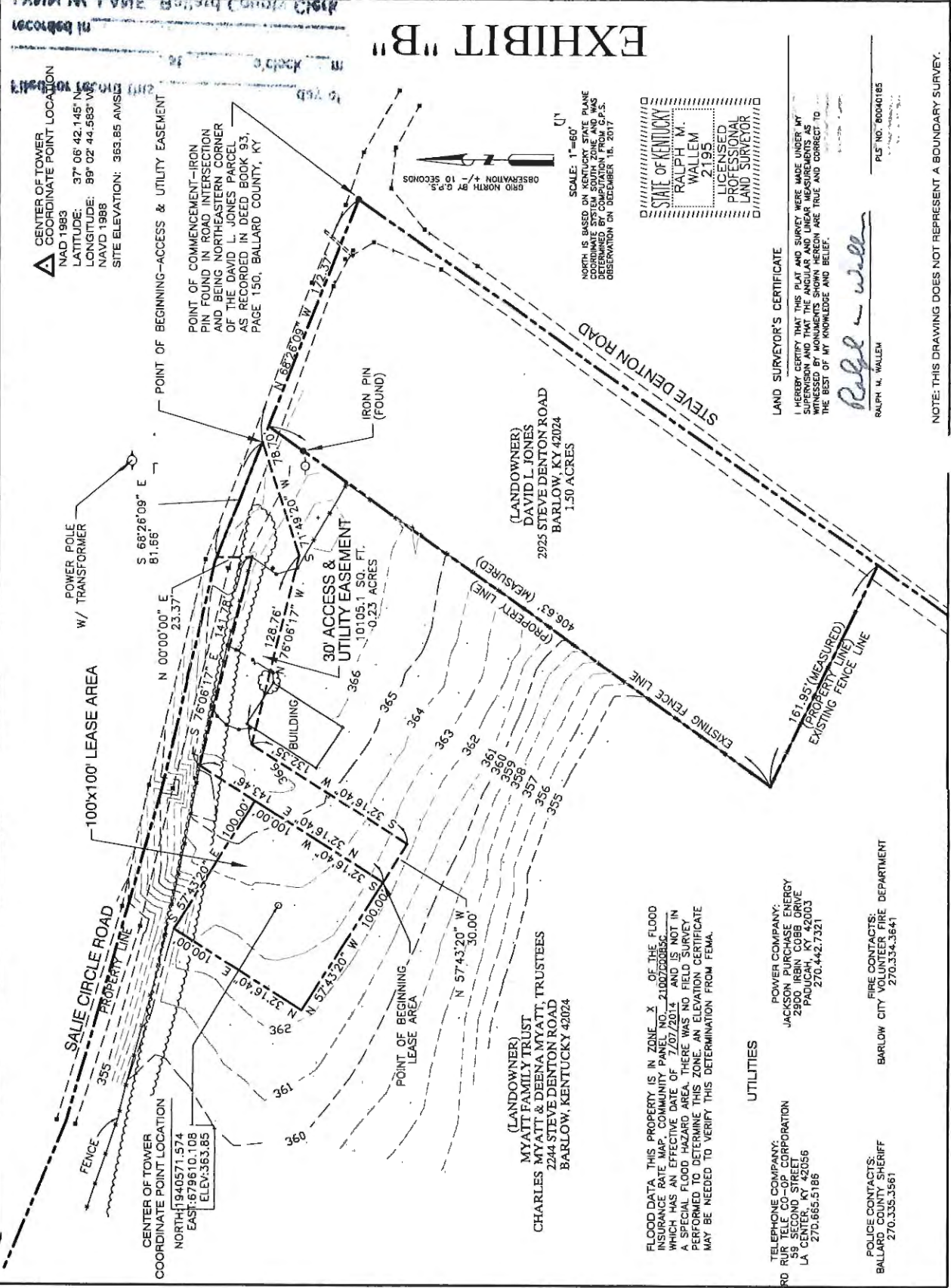
TITLE: SURVEY PLAN

SHEET: 2 OF 2

EXHIBIT B

**[BOUNDARY SURVEY OF THE PREMISES
AND INGRESS/EGRESS AND UTILITY EASEMENT]**

verizon	de CAD
Wireless	1961 NORTHPOINT BLVD.
	SUITE 130
	HIXSON, TN 37343
	BENCHMARK SERVICES, INC.
PROJECT NUMBER:	20161506655
SITE NAME:	EV BARLOW
SITE ADDRESS:	2557 STEVE DENTON RD
	BARLOW, KY 42024
LEASE AREA:	10000 SQ. FT.
PROPERTY OWNER:	MYATT FAMILY TRUST
	CHARLES MYATT & DEENA MYATT, TRUSTEES
	2244 STEVE DENTON ROAD
	BARLOW, KENTUCKY 42024
COUNTY:	BALLARD COUNTY
SOURCE OF TITLE:	DEED BK 112, PG 227
CAD BY:	DATE:
RMV	12.22.17
TITLE:	SURVEY PLAN
SHEET:	1 OF 2



Filed for record this 3rd day of
Dec 2018, at 11:36 o'clock A m
recorded in Deed Book 118 page 287
LYNN W. LANE, Ballard County Clerk
By Katie S. Mercer
Fee \$ 29.00



265748
Filed on: 12/03/2018 12:02:56 PM
Book: DEED Number: 118
Pages: 287 - 293
Lynn Lane, Ballard County Clerk
DC: KATIE
Deed Tax: \$0.00

1/29

EXHIBIT K

NOTICE LIST

1. Commonwealth of Kentucky
Dept. of Fish & Wildlife
Oscar Road
Highway 1105
La Center, KY 42056
2. Myatt Family Trust
Charles Myatt & Dee Ann Myatt, Trustees
2224 Steve Denton Road
Barlow, KY 42024
3. David L. Jones
2925 Steve Denton Road
Barlow, KY 42024
4. Flint Renfo
4540 Oscar Road
Barlow, KY 42024
5. Rhonda Rice & Coy Simmons
11930 Wallace Rd.
Kevil, KY 42053

EXHIBIT L



February 2, 2022

Matthew R. Clark
Robert B. Scott
Charles R. Grahn
Frank D. Otte*
John "Bart" Herriman
William W. Gooden**
Michael P. Maxwell
Russell L. Brown**†
Jennifer F. Perry
Keith L. Beall
N. Davey Neal
Travis W. Cohron
Maggie L. Sadler
Kristin A. McIlwain
Olivia A. Hess

Land Use Consultant
Elizabeth Bentz Williams, AICP

**Notice of Proposed Construction of
Wireless Communications Facility
Site Name: Barlow**

Raymond J. Grahn (2015)
Alex M. Clark (1991)
Peter A. Pappas (1986)
Thomas M. Quinn (1973)
Joseph M. Howard (1964)

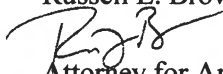
*Also admitted in Montana
†Also admitted in Kentucky
**Registered Civil Mediator

Cellco Partnership, d/b/a Verizon Wireless has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at Steve Denton Road, Barlow, KY, 42024 (North Latitude: (37° 06' 42.15", West Longitude 89° 02' 44.58"). The proposed facility will include a 285-foot tall antenna tower, plus a 5-foot lightning arrestor, for a total height of 290 feet with related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

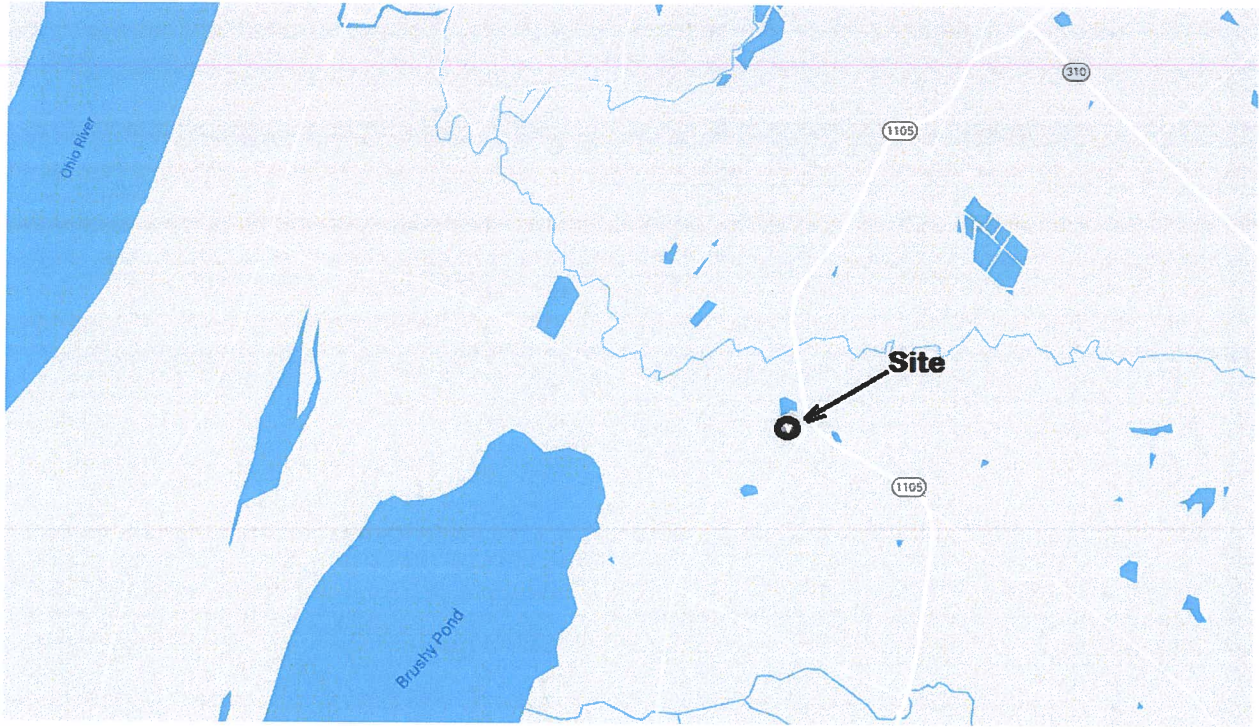
This notice is being sent to you because the County Property Valuation Administrator's records indicate that you may own property that is within a 500' radius of the proposed tower site or contiguous to the property on which the tower is to be constructed. You have a right to submit testimony to the 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 2022-00016 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. Applicant'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 at 317-637-1321 if you have any comments or questions about this proposal.

Sincerely,
Russell L. Brown


Attorney for Applicant
RLB/jdj
enclosure

VICINITY MAP




ClarkQuinn
Clark, Quinn, Moses, Scott & Grahn, LLP



FIRST-CLASS



US POSTAGETM PITNEY BOWES

ZIP 46204 \$ 007.33⁰
02 7H
0006035028 FEB 02 2022

Commonwealth of Kentucky
Dept. of Fish & Wildlife
Oscar Road
Highway 1105
La Center, KY 42056




ClarkQuinn
Clark, Quinn, Moses, Scott & Grahn, LLP



FIRST-CLASS



US POSTAGETM PITNEY BOWES

ZIP 46204 \$ 007.33⁰
02 7H
0006035028 FEB 02 2022

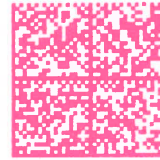
Myatt Family Trust
Charles Myatt & Dee Ann Myatt, Trustees
2224 Steve Denton Road
Barlow, KY 42024




ClarkQuinn
Clark, Quinn, Moses, Scott & Grahn, LLP



FIRST-CLASS

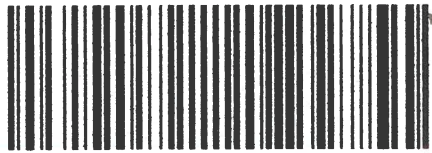


US POSTAGETM PITNEY BOWES

ZIP 46204 \$ 007.33⁰
02 7H
0006035028 FEB 02 2022

David L. Jones
2925 Steve Denton Road
Barlow, KY 42024

CERTIFIED MAIL[®]

ClarkQuinn
Clark, Quinn, Moses, Scott & Grahn, LLP



7020 1810 0002 1853 5010

FIRST-CLASS



US POSTAGE[™] IMI PITNEY BOWES

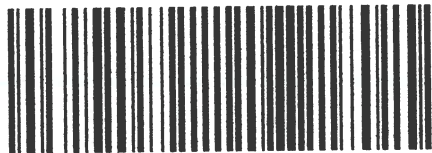


ZIP 46204 \$ 007.33⁰
02 7H
0006035028 FEB 02 2022

Flint Renfo
4540 Oscar Road
Barlow, KY 42024

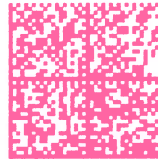
CERTIFIED MAIL[®]

ClarkQuinn
Clark, Quinn, Moses, Scott & Grahn, LLP



7020 1810 0002 1853 0039

FIRST-CLASS



US POSTAGE[™] IMI PITNEY BOWES



ZIP 46204 \$ 007.33⁰
02 7H
0006035028 FEB 02 2022

Rhonda Rice & Coy Simmons
11930 Wallace Road
Kevil, KY 42053

7020 1810 0002 1853 0039

U.S. Postal Service™
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Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee \$	Postmark Here
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy) \$	
<input type="checkbox"/> Return Receipt (electronic) \$	
<input type="checkbox"/> Certified Mail Restricted Delivery \$	
<input type="checkbox"/> Adult Signature Required \$	
<input type="checkbox"/> Adult Sign	
Postage \$	
Total Postage \$	
Sent To	
Street and	
City, State, ZIP+4®	

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

Rhonda Rice & Coy Simmons
 11930 Wallace Road
 Keval, KY 42053

7020 1810 0002 1853 0041

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee \$	Postmark Here
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy) \$	
<input type="checkbox"/> Return Receipt (electronic) \$	
<input type="checkbox"/> Certified Mail Restricted Delivery \$	
<input type="checkbox"/> Adult Signature Required \$	
<input type="checkbox"/> Adult Sign	
Postage \$	
Total Postage \$	
Sent To	
Street and A	
City, State, ZIP+4®	

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

Myatt Family Trust
 Charles Myatt &
 Dee Ann Myatt, Trustees
 2224 Steve Denton Road
 Barlow, KY 42024

7020 1810 0002 1853 5027

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee \$	Postmark Here
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy) \$	
<input type="checkbox"/> Return Receipt (electronic) \$	
<input type="checkbox"/> Certified Mail Restricted Delivery \$	
<input type="checkbox"/> Adult Signature Required \$	
<input type="checkbox"/> Adult Sign	
Postage \$	
Total Postage \$	
Sent To	
Street	
City, State, ZIP+4®	

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

David L. Jones
 2925 Steve Denton Road
 Barlow, KY 42024

7020 1810 0002 1853 5010

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee \$	Postmark Here
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy) \$	
<input type="checkbox"/> Return Receipt (electronic) \$	
<input type="checkbox"/> Certified Mail Restricted Delivery \$	
<input type="checkbox"/> Adult Signature Required \$	
<input type="checkbox"/> Adult Sign	
Postage \$	
Total Postage \$	
Sent To	
Street	
City, State, ZIP+4®	

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

Flint Renfo
 4540 Oscar Road
 Barlow, KY 42024

7020 1810 0002 1853 5034

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee \$	Postmark Here
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy) \$	
<input type="checkbox"/> Return Receipt (electronic) \$	
<input type="checkbox"/> Certified Mail Restricted Delivery \$	
<input type="checkbox"/> Adult Signature Required \$	
<input type="checkbox"/> Adult Sign	
Postage \$	
Total Postage \$	
Sent To	
Street and	
City, State, ZIP+4®	

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

Commonwealth of Kentucky
 Dept. of Fish & Wildlife
 Oscar Road
 Highway 1105
 La Center, KY 42056

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Rhonda Rice & Coy Simmons
 11930 Wallace Road
 Kevil, KY 42053



9590 9402 7133 1251 1975 81

2. Article Number (Transfer from service label)

7020 1810 0002 1853 0039

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature

[Handwritten Signature] Agent
 Addressee

B. Received by (Printed Name)

[Handwritten Name]

C. Date of Delivery

[Handwritten Date]

D. Is delivery address different from item 1? Yes
 If YES, enter delivery address below: No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt

EXHIBIT M



ClarkQuinn
Clark, Quinn, Moses, Scott & Grahn, LLP

Matthew R. Clark
Robert B. Scott
Charles R. Grahn
Frank D. Otte*
John "Bart" Herriman
William W. Gooden**
Michael P. Maxwell
Russell L. Brown**†
Jennifer F. Perry
Keith L. Beall
N. Davey Neal
Travis W. Cohron
Maggie L. Sadler
Kristin A. McIlwain
Olivia A. Hess

February 2, 2022

VIA CERTIFIED MAIL
7020 1810 0002 1853 0596

Hon. Todd Cooper
437 Ohio Street
Wickliffe, KY 402087

Land Use Consultant
Elizabeth Bentz Williams, AICP

RE: Notice of Proposal to Construct Wireless Communications Facility
Kentucky Public Service Commission Docket No. 2022- 00016
Site Name: Barlow

Raymond J. Grahn (2015)
Alex M. Clark (1991)
Peter A. Pappas (1986)
Thomas M. Quinn (1973)
Joseph M. Howard (1964)

*Also admitted in Montana
†Also admitted in Kentucky
**Registered Civil Mediator

Dear Judge Cooper:

Cellco Partnership, d/b/a Verizon Wireless has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at Steve Denton Road, Barlow, KY, 42024 (North Latitude: (37° 06' 42.15", West Longitude 89° 02' 44.58"). The proposed facility will include a 285-foot tall antenna tower, plus a 5-foot lightning arrester, for a total height of 290 feet with 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 2022-00016 in any correspondence sent in connection with this matter.

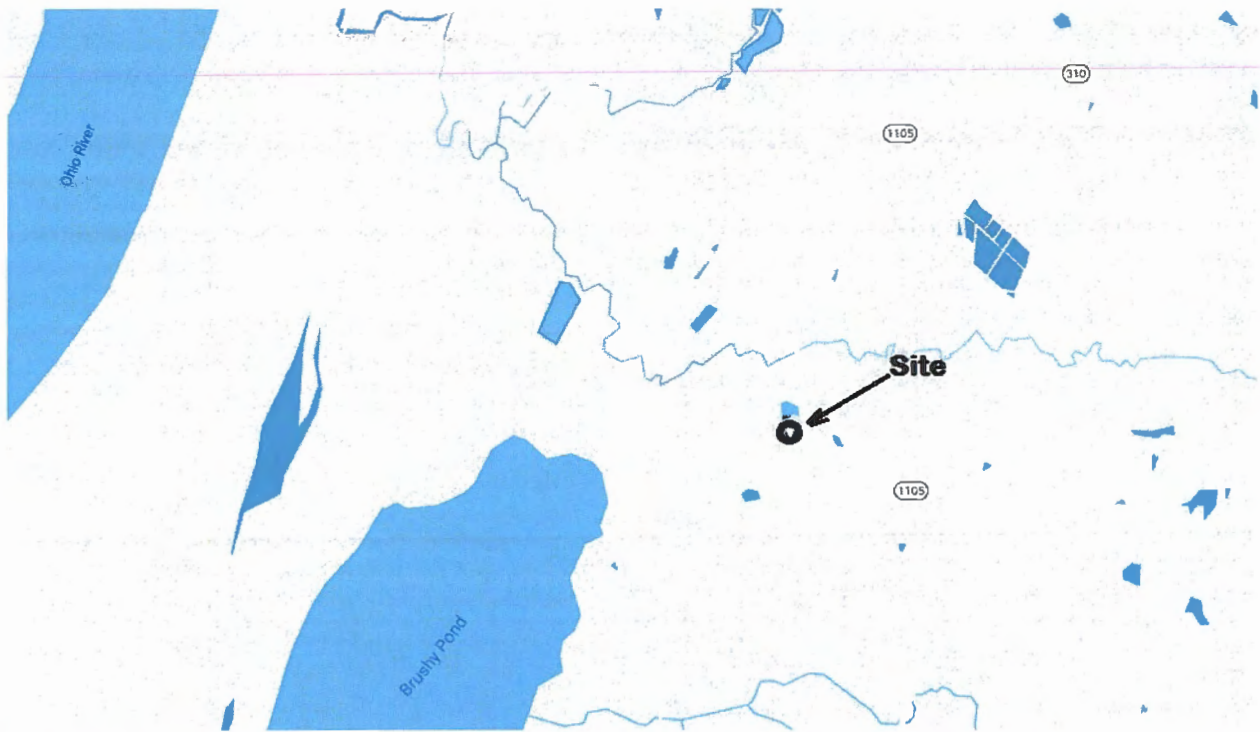
We have attached a map showing the site location for the proposed tower. Verizon Wireless' radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the area. Please feel free to contact us with any comments or questions you may have.

Sincerely,

Russell L. Brown
Attorney for Applicants

RLB/jdj
enclosure

VICINITY MAP





February 2, 2022

Matthew R. Clark
Robert B. Scott
Charles R. Grahn
Frank D. Otte*
John "Bart" Herriman
William W. Gooden**
Michael P. Maxwell
Russell L. Brown**†
Jennifer F. Perry
Keith L. Beall
N. Davey Neal
Travis W. Cohron
Maggie L. Sadler
Kristin A. McIlwain
Olivia A. Hess

Land Use Consultant
Elizabeth Bentz Williams, AICP

**Notice of Proposed Construction of
Wireless Communications Facility
Site Name: Barlow**

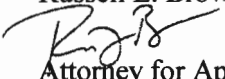
Raymond J. Grahn (2015)
Alex M. Clark (1991)
Peter A. Pappas (1986)
Thomas M. Quinn (1973)
Joseph M. Howard (1964)

*Also admitted in Montana
†Also admitted in Kentucky
**Registered Civil Mediator

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This notice is being sent to you because the 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 2022-00016 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. Applicant'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 at 317-637-1321 if you have any comments or questions about this proposal.

Sincerely,
Russell L. Brown

Attorney for Applicant
RLB/jdj
enclosure

VICINITY MAP

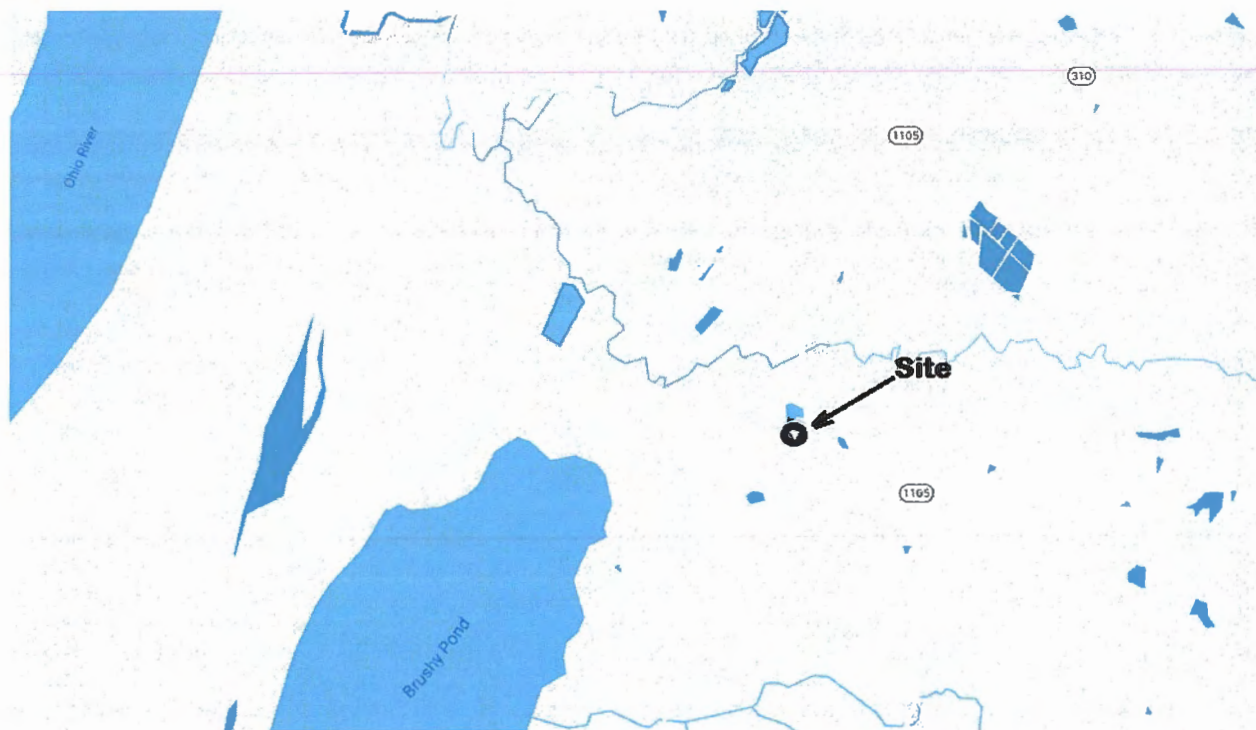


EXHIBIT N

SITE NAME: Barlow 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.

Cellco Partnership, d/b/a Verizon Wireless propose to construct a telecommunications **tower** on this site. If you have questions, please contact Clark, Quinn, Moses, Scott & Grahn, LLP, 320 N. Meridian Street, Indianapolis, IN 46204; 317-637-1321, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2022-00016 in your correspondence.

Cellco Partnership, d/b/a Verizon Wireless propose to construct a telecommunications **tower** on this site. If you have questions, please contact Clark, Quinn, Moses, Scott & Grahn, LLP, 320 N. Meridian Street, Indianapolis, IN 46204; 317-637-1321, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2022-00016 in your correspondence.

EXHIBIT O

VIA EMAIL: larrah@ky-news.com
advanceyeoman@gmail.com

Kentucky Publishing Inc.
1540 McCracken Blvd.
Paducah, KY 42001

February 1, 2022

RE: Legal Notice Advertisement
Site Name: Barlow

Dear Ms. Workman:

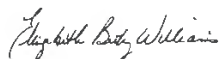
Please publish the following legal notice advertisement in the next available edition of the *Advance Yeoman*:

NOTICE

Cellco Partnership, d/b/a Verizon Wireless has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at Steve Denton Road, Barlow, KY, 42024 (North Latitude: (37° 06' 42.15", West Longitude 89° 02' 44.58"). 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 2022-00016 in any correspondence sent in connection with this matter.

After this advertisement has been published, please forward a tearsheet copy, affidavit of publication, and invoice to Clark, Quinn, Moses, Scott & Grahn, LLC, 320 N. Meridian Street, Indianapolis, IN 46204 or by email to ebw@clarkquinnlaw.com. Please call me or Elizabeth Bentz Williams, in our offices at (317) 637-1321 if you have any questions. Thank you for your assistance.

Sincerely



Elizabeth Bentz Williams
Clark, Quinn, Moses, Scott & Grahn, LLC

EXHIBIT P

Radio Frequency Design Search Area



EXHIBIT Q



Wednesday, December 5, 2018

RE: Proposed Verizon Wireless Communications Facility

Site Name: **EV Barlow.**

Type of Tower: 280' self-support Tower.

Location: 2557 Steve Denton Rd Barlow, KY 42024.

To Whom It May Concern:

As a radio frequency engineer for Verizon Wireless, I am providing this letter to state the need for a Verizon Wireless site called **EV Barlow.**

The **EV Barlow** site is proposed with the below objectives:

1. Offload 4G traffic from busy site to the northwest.
2. Offload 4G traffic from busy site to the northeast.
3. Improve 4G throughput to existing heavy data users.
4. Improve 4G network reliability by increasing the amount of time our customers operate on 4G instead of 3G.

Currently the area is experiencing high demand for wireless high-speed data. Growth forecasts have triggered the need for an additional site in the area. The tower is needed to provide all Verizon customers in the area with the best experience on their 4G wireless devices.

Raw Land – Design plans for a new tower would provide tower height of **280'**. The new structure height was decided upon to best cover the offload area and interact with the existing Verizon sites. If we are limited to building a structure less than the proposed height, another tower would be needed in the vicinity in the near future. In addition, building a structure that is too short can cause existing taller sites to shoot over the proposed site and building a site that is too tall can cause the proposed site to shoot over existing sites. Both situations create a poor experience from a user perspective. The new structure will be placed near the center of the area with high traffic demand and offload the surrounding sites greatly. The new tower design meets stated objectives.

Verizon Wireless cares about the communities as well as the environment and prefers to collocate on existing structures when available. It can be noticed from any map that Verizon Wireless is currently collocated on many existing structures in the area. We prefer collocation due to reduced construction costs, faster deployment, and environment protection. However, Verizon Wireless was unable to find a suitable structure within the center of demand area to collocate the proposed **EV Barlow** site.



Verizon Wireless design engineers establish search area criteria in order to effectively meet coverage objectives as well as offload existing Verizon cell sites. When met, the criterion also reduces the need for a new site to cover the area in the immediate future. Each cellular site covers a limited area, depending on site configuration and the surrounding terrain. Cell sites are built in an interconnected network; which means each cell site must be located so that their respective coverage areas are contiguous. This provides uninterrupted communications throughout the coverage area.

Since collocation is generally the most cost-effective means for prompt deployment of new facilities, Verizon Wireless makes every effort to investigate the feasibility for using existing towers or other tall structures for collocation when designing a new site or system expansion. However, collocation on an existing tower or tall structure is not always feasible due to location of existing cell sites. Cell sites are placed in a way so they provide smooth hand off to each other and are placed at some distance from each other to eliminate too much overlap. Too much overlap may result in a waste of resources and raise a system capacity overload concern.

This cell site has been designed, and shall be constructed and operated in a manner that satisfies regulations and requirements of all applicable governmental agencies that have been charged with regulating tower specifications, operation, construction, and placement, including the FAA and FCC.

Sincerely,

Michael Fahim.

RF Engineer, Verizon Wireless

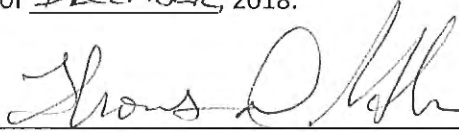
A handwritten signature in blue ink that reads "Michael Fahim". The signature is written in a cursive style and is positioned below the typed name.

STATE OF INDIANA

COUNTY OF HAMILTON

Subscribed and sworn to before me this 5th day of DECEMBER, 2018.

Notary Public

Signature 

THOMAS D. HERNDON
Notary Public, State of Indiana
SEAL
My Commission Expires 9/2/2023

Printed THOMAS D. HERNDON

County of Residence HAMILTON

My Commission expires:
9-2-2023

EXHIBIT Qa



Wednesday, December 5, 2018

RE: Ballard County Zoning Plots

Site Name: **EV Barlow.**

To Whom It May Concern:

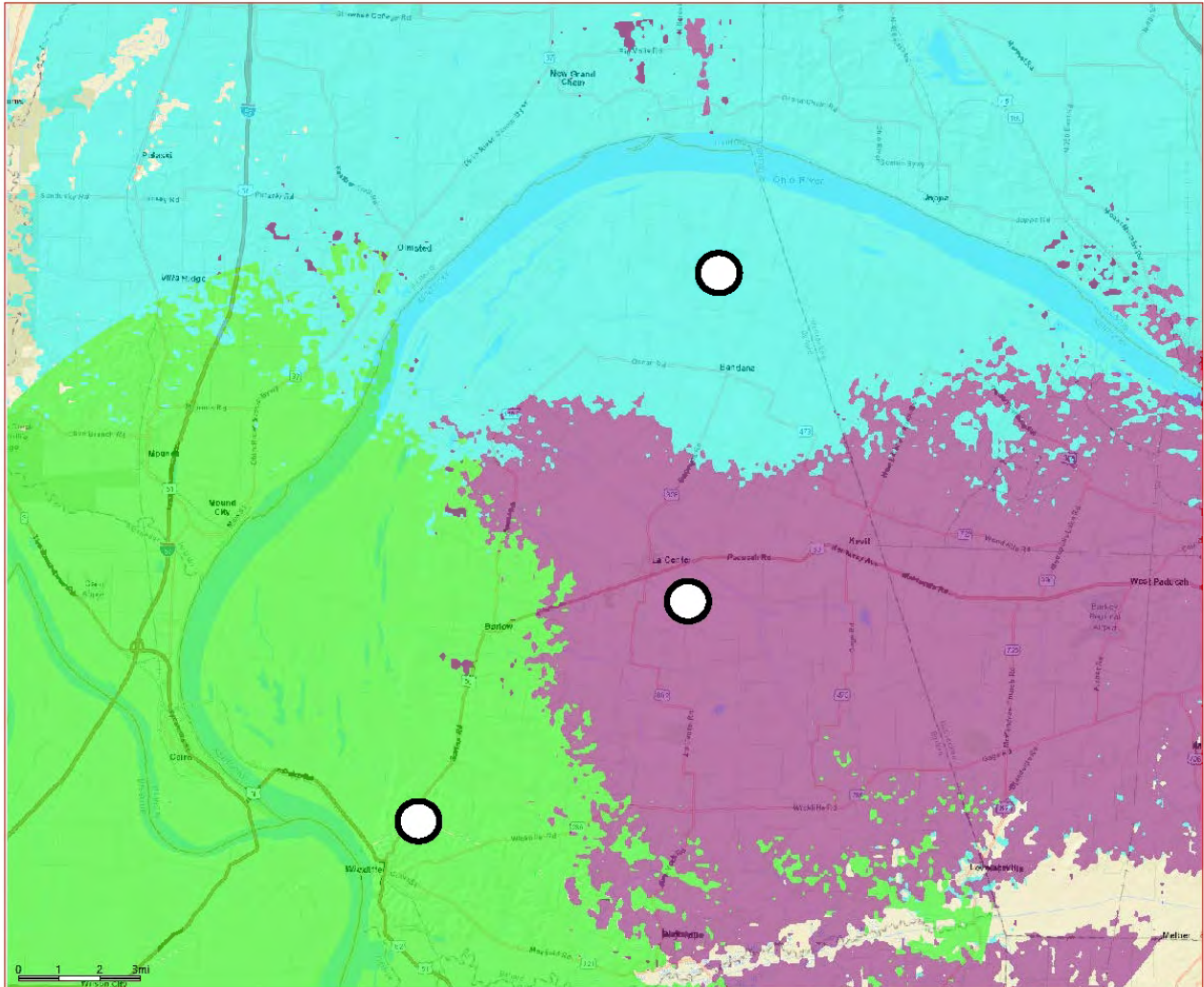
This map is not a guarantee of coverage and may contain areas with no service. This map reflects a depiction of predicted and approximate wireless coverage of the network and is intended to provide a relative comparison of coverage. The depictions of coverage do not guarantee service availability as there are many factors that can influence coverage and service availability. These factors vary from location to location and change over time. The coverage areas may include locations with limited or no coverage. Even within a coverage area shown, there are many factors, including but not limited to, usage volumes, service, outage, and customer's equipment, and terrain, proximity to buildings, foliage, and weather that may impact service.

The proposed site is needed to offload capacity from existing sites. This map reflects the predicted coverage area that will be offloaded from existing sites and transferred to the proposed site.

Michael Fahim.

RF Engineer, Verizon Wireless

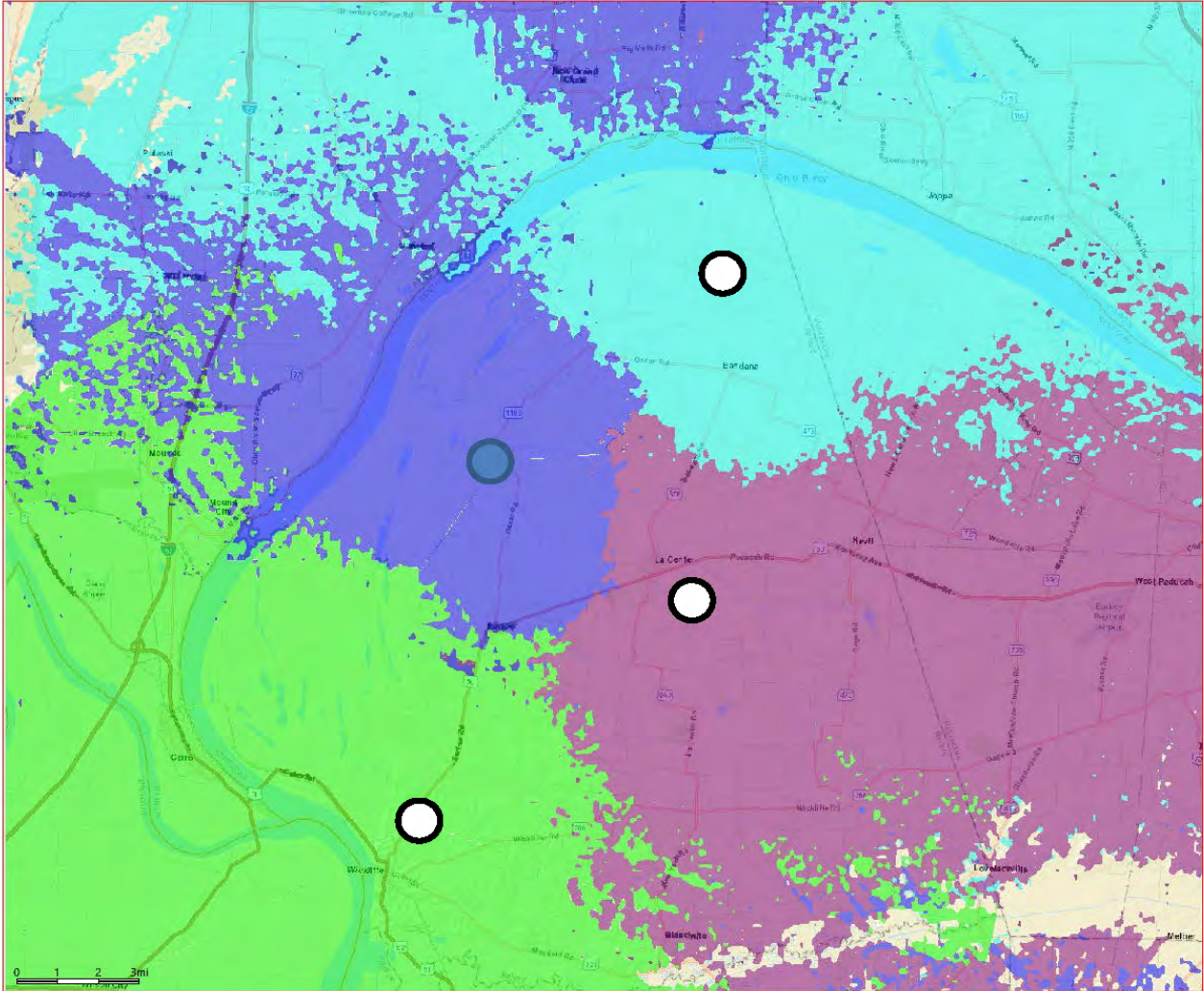
EV Barlow Pre



Legend:

Existing Verizon Sites	○
Proposed Verizon Site	●
Future Verizon Site	○
County Border	-----

EV Barlow Post



Legend:

Existing Verizon Sites	○
Proposed Verizon Site	●
Future Verizon Site	○
County Border	-----

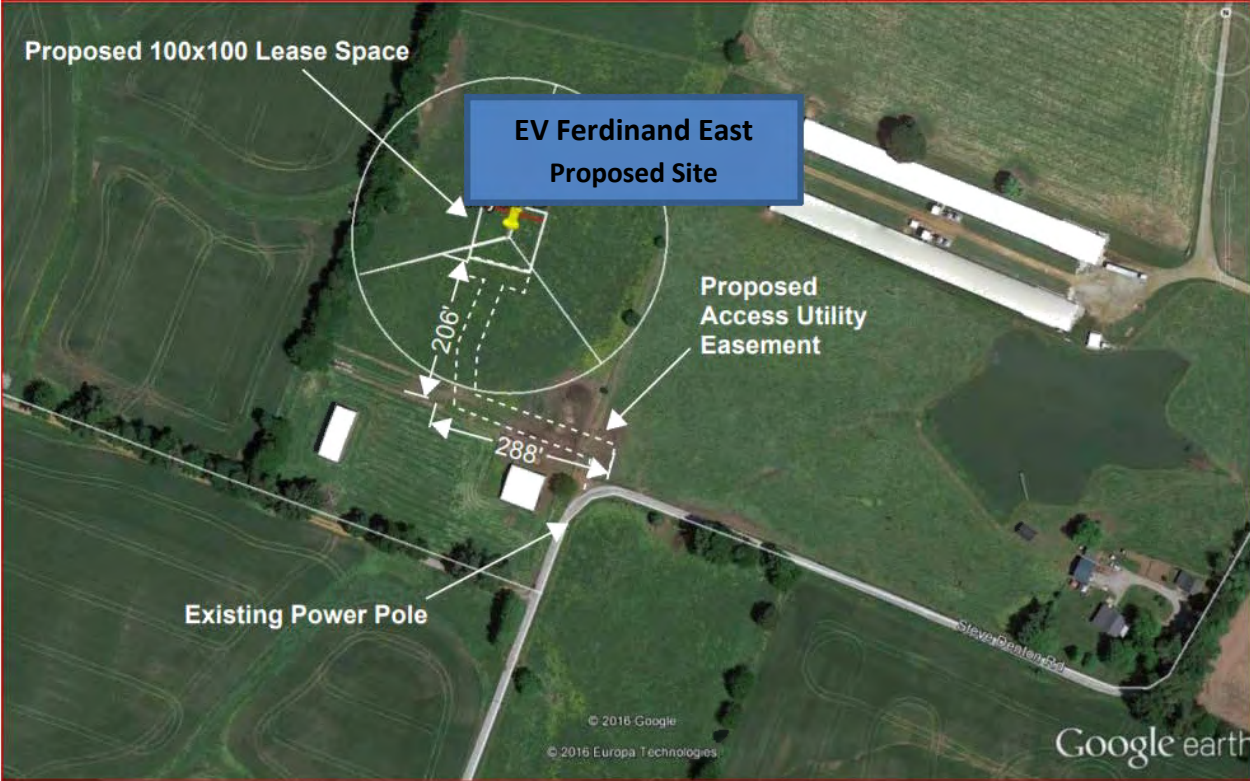


EXHIBIT R

Exhibit R
List and Identity and Qualifications of Professionals

Ralph M. Wallem
Professional Land Surveyor
Kentucky License 2195
Benchmark Services, Inc.
318 North Main Street, PO Box 5
Huntingburg, IN 47542

Leonardo A. Sfera
Professional Civil Engineer
Kentucky License 31562
GPD Group, Incorporated
520 South Main Street, Suite 2531
Akron, OH 44311

Christopher J. Scheks
Professional Structural Engineer
Kentucky License 29760
GPD Group, Incorporated
520 South Main Street, Suite
2531 Akron, OH 44311

Stephen P. Schaub
Professional Electrical Engineer
Kentucky License 29006
GPD Group, Incorporated
520 South Main Street, Suite
2531 Akron, OH 44311

Brad R. Milanowski
Professional Engineer
Kentucky License 25311
B & T Group
1717 S. Boulder Ave, Ste.300
Tulsa, OK 74119

Vince Caprino
Construction Manager
Verizon Wireless

2421 Holloway Road
Louisville, KY 40299

Michael Fahim
RF Engineer
Verizon Wireless
2421 Holloway Road
Louisville, KY 40299

David M. Shumate
Staff Geologist
Davis C. Harness
Professional Electrical Engineer
Kentucky License 20569
Alt & Witzig Engineering, Inc.
4105 West 99th Street
Indianapolis, IN 46032

Electrical
Tom Dilworth
Jackson Purchase Energy
2900 Urban Cobb Toad
Paducah, KY 42002