

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

In the Matter of:

THE APPLICATION OF)	
CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS)	
AND HORVATH V. LLC FOR ISSUANCE OF A)	
CERTIFICATE OF PUBLIC)	CASE NO. 2020-00385
CONVENIENCE AND NECESSITY TO CONSTRUCT)	
A WIRELESS COMMUNICATIONS FACILITY)	
IN THE COMMONWEALTH OF KENTUCKY)	
IN THE COUNTY OF BALLARD)	

SITE NAME: BARLOW SE

* * * * *

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

Cellco Partnership, d/b/a Verizon Wireless and Horvath V. LLC (“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 submit this Application requesting issuance of a Certificate of Public Convenience and Necessity (“CPCN”) from the Kentucky Public Service Commission (“PSC”) to construct, maintain, and operate a Wireless Communications Facility (“WCF”) to serve the customers of the Applicant with wireless communications services.

In support of this Application, Co-Applicants respectfully provide 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. Horvath Towers V. LLC, having a local address of 306 West Main St., Suite 512, Frankfort, KY 40601.
- 2. Co-Applicant
 - 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-1**.
 - b. Horvath Towers V. LLC is a Delaware Limited Liability Company organized in the State of Delaware on June 21, 2016. We attest that Horvath Towers V. LLC is in good standing with the State of Delaware and also authorized to transact business in the Commonwealth of Kentucky. A copy of the Certificate of Authority is on file with the Secretary of State of Commonwealth of Kentucky is included as part of **Exhibit A-2**.
- 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 Applicant submits 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-1**. The WCF is an integral link in the 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, Applicant proposes to construct a WCF on the east side of Wayside Inn Road, Wickliffe, KY 42087 (North Latitude: (36° 01' 45.61", West Longitude 89° 00' 07.63"), 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 Lorea and Kenny Turner pursuant to a Deed recorded at Deed Book 77, Page 464 in the office of the County Clerk. The proposed WCF will consist of a 290-foot tall tower, with an approximately 5-foot tall lightning arrestor attached at the top, for a total height of 295-feet. The WCF will also include concrete foundations and a shelter or cabinets to accommodate the placement of the Co-Applicants' radio electronics equipment and appurtenant equipment. The Co-Applicants' 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. 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-Applicants' antennas on an existing structure. When suitable towers or structures exist, Co-Applicants attempt 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 Power of Design, Louisville, KY, dated February 28, 2020, 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 and R**.
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-Applicants, pursuant to a written agreement, have acquired the right to use the WCF site and associated property rights. A copy of the agreement or an abbreviated agreement recorded with the County Clerk is attached as **Exhibit J**.
16. Personnel directly responsible for the design and construction of the proposed WCF are well qualified and experienced. The tower and foundation drawings for the proposed tower submitted as part of **Exhibit 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 **Exhibits C & 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 21007C0095C, Dated July 7, 2014.
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 have notified every person who, according to the records of the County Property Valuation Administrator, owns property which is within 500 feet of the proposed tower or contiguous to the site property, by certified mail, return receipt requested, of the proposed construction. Each notified property owner has been provided with a map of the location of the proposed construction, the 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 534' feet from the proposed tower site.
24. The process that was used by the Co-Applicant Cellco Partnership, d/b/a Verizon Wireless's 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

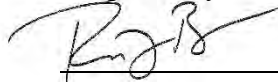
service area. The engineers determined an optimum area for the placement of the proposed facility in terms of elevation and location to provide the best quality service to customers in the service area. A radio frequency design search area prepared in reference to these radio frequency studies was considered 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-1 and Q-2**, respectively. 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 -1 & -2 Applicant Entity
- B FCC License Documentation
- C Site Development Plan:
 - 500' Vicinity Map Legal Descriptions
 - Flood Plain Certification Site Plan
 - Vertical Tower Profile
- D Tower and Foundation Design
- E Competing Utilities Map
- 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 -1 Copy of RF Design Engineer State of Need
- Q -2 Copy of RF Design Propagation Maps
- R List of Qualified Professionals

A

COMMONWEALTH OF KENTUCKY
TREY GRAYSON
SECRETARY OF STATE



1
Secretary of State
Received and Filed
08/21/2006 12:06:00 PM
Fee Receipt: \$20.00

CERTIFICATE OF ASSUMED NAME

This certifies that the assumed name of
Verizon Wireless

(Please Underline in the Blank/over not be underlined)

has been adopted by See Addendum

(Please Underline in the Blank/over not be underlined)

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 Hasking Ridge NJ 07920

The certificate of assumed name is executed by

NYNEX PCS Inc.

Jane A. Schepker
Signature

Jane A. Schepker-Assistant Secretary
Title or Position and Title

June 15, 2006
Date

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 718 Frankfort, KY 40602 (502) 584-3490 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:

1. The assumed name is Verizon Wireless
(The name must be identical to the name on record with the Secretary of State.)
2. The certificate of assumed name was filed with the Secretary of State on: 6/21/2008
3. The current principal office address (if any) is:

<u>One Verizon Way</u>	<u>Basking Ridge</u>	<u>NJ</u>	<u>07920</u>
<small>Street Address or Post Office Box Numbers</small>	<small>City</small>	<small>State</small>	<small>Zip</small>
4. The principal office address is hereby changed to:

_____	_____	_____	_____
<small>Street Address or Post Office Box Numbers</small>	<small>City</small>	<small>State</small>	<small>Zip</small>
5. 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)
6. 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

	<u>Jane A. Schepker</u>	<u>Assistant Secretary</u>	<u>1/21/2012</u>
<small>Signature of Applicant</small>	<small>Printed Name</small>	<small>Title</small>	<small>Date</small>

Addendum

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

<i>General Partners of Cellco 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
JV PartnerCo, LLC	Denver Place South Tower 999-18 th Street, Suite 1750 Denver, CO 80202



COMMONWEALTH OF KENTUCKY
ALISON LUNDERGAN GRIMES, SECRETARY OF STATE

0988137.06 amcroy
ADD
Alison Lundergan Grimes
Kentucky Secretary of State
Received and Filed:
6/13/2017 1:26 PM
Fee Receipt: \$90.00

Division of Business Filings Business Filings PO Box 718, Frankfort, KY 40602 (502) 564-3490 www.sos.ky.gov	Certificate of Authority (Foreign Business Entity)	FBE
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Pursuant to the provisions of KRS 14A and KRS 271B, 273, 274, 275, 362 and 366 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:

- The entity is a : profit corporation (KRS 271B) nonprofit corporation (KRS 273) professional service corporation (KRS 274)
 business trust (KRS 386) limited liability company (KRS 275) professional limited liability company (KRS 275)
 limited partnership (KRS 362) ltd cooperative assn. (KRS) statutory trust
 non-profit llc (KRS 275) cooperative assn. (KRS)
- The name of the entity is HORVATH TOWERS V, LLC
(The name must be identical to the name on record with the Secretary of State.)
- 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.)
- The state or country under whose law the entity is organized is Delaware
- The date of organization is 6/21/2016 and the period of duration is _____
(If left blank, the period of duration is considered perpetual.)
- The mailing address of the entity's principal office is
312 W. Colfax Ave., South Bend IN 46601
Street Address City State Zip Code
- The street address of the entity's registered office in Kentucky is
306 West Main Street - Suite 512 Frankfort KY 40601
Street Address (No P.O. Box Numbers) City State Zip Code
 and the name of the registered agent at that office is CT Corporation System
- 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
Jacqueline L. Stout	312 West Colfax Ave.	South Bend	IN	46601
F. Howard Mandel	86 West Street	Chagrin Falls	OH	44022

Please indicate the Kentucky county in which your business operates:
County: Anderson & Jefferson

To complete the following, please shade the box completely.

Please indicate the size of your business: <input checked="" type="checkbox"/> Small (Fewer than 50 employees) <input type="checkbox"/> Large (50 or more employees)	Please indicate whether any of the following make up more than fifty percent (50%) of your business ownership: <input type="checkbox"/> Women-Owned <input type="checkbox"/> Veteran Owned <input type="checkbox"/> Minority Owned
--	---

Please indicate which of the following best describes your business:

<input type="checkbox"/> Agriculture	<input type="checkbox"/> Mining	<input type="checkbox"/> Services	<input type="checkbox"/> Construction
<input type="checkbox"/> Wholesale Trade	<input type="checkbox"/> Retail Trade	<input type="checkbox"/> Manufacturing	<input type="checkbox"/> Finance, Insurance, Real Estate
<input type="checkbox"/> Public Administration	<input checked="" type="checkbox"/> Transportation, Communications, Electric, Gas, Sanitary Services		
<input type="checkbox"/> Other			

Signature of Authorized Representative: Jacqueline L. Stout Date: 6-6-17
 Printed Name & Title

I, CT Corporation System, consent to serve as the registered agent on behalf of the business entity.
 Type/Print Name of Registered Agent

Alison Lundergan Grimes Assistant Secretary 06/7/2017
 Signature of Registered Agent Printed Name Title Date

(05/17)

Commonwealth of Kentucky
Michael G. Adams, Secretary of State

LARP
0988137
Michael G. Adams
KY Secretary of State
Received and Filed 1/10/2020 2:27:56 PM
Fee receipt: \$15.00

Michael G. Adams
Secretary of State
P. O. Box 1150
Frankfort, KY 40602-1150
(502) 564-3490
<http://www.sos.ky.gov>

**Annual Report
Online Filing**

ARP

Company: HORVATH TOWERS V, LLC
Company ID: 0988137
State of origin: Delaware
Formation date: 6/13/2017 12:00:00 AM
Date filed: 1/10/2020 2:27:56 PM
Fee: \$15.00

Principal Office

312 W. COLFAX AVE.
SOUTH BEND, IN 46601

Registered Agent Name/Address

CT CORPORATION SYSTEM
306 WEST MAIN STREET
SUITE 512
FRANKFORT, KY 40601

Members/Managers

Manager Jacqueline Stout 312 W Colfax Ave, South Bend IN 46601

Business type: Communications

Signatures

Signature Matthew C. Deputy, Esq.
Title Attorney-in-fact



**UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION
ANTENNA STRUCTURE REGISTRATION**



OWNER: Kentucky RSA No. 1 Partnership

FCC Registration Number (FRN): 0001836709

ATTN: Network Regulatory Kentucky RSA No. 1 Partnership 5055 North Point Pkwy NP2NE Network Engineering Alpharetta, GA 30022	Antenna Structure Registration Number <p align="center">1313667</p>
	Issue Date <p align="center">02/05/2020</p>
Location of Antenna Structure TBD Wayside Inn Road - 2505006 Wickliffe, KY 42087 County: BALLARD	Ground Elevation (AMSL) <p align="right">135.0 meters</p>
	Overall Height Above Ground (AGL) <p align="right">89.9 meters</p>
Latitude 37- 01- 45.6 N	Longitude 089- 00- 07.6 W
NAD83	
Center of Array Coordinates <p align="center">N/A</p>	Overall Height Above Mean Sea Level (AMSL) <p align="right">224.9 meters</p>
Type of Structure <p align="center">LTOWER Lattice Tower</p>	
Painting and Lighting Requirements: FAA Chapters 4, 8, 12 Paint and Light in Accordance with FAA Circular Number 70/7460-1L Conditions:	

This registration is effective upon completion of the described antenna structure and notification to the Commission. **YOU MUST NOTIFY THE COMMISSION WITHIN 24 HOURS OF COMPLETION OF CONSTRUCTION OR CANCELLATION OF YOUR PROJECT, please file FCC Form 854.** To file electronically, connect to the antenna structure registration system by pointing your web browser to <http://wireless.fcc.gov/antenna>. Electronic filing is recommended. You may also file manually by submitting a paper copy of FCC Form 854. Use purpose code "NT" for notification of completion of construction; use purpose code "CA" to cancel your registration.

The Antenna Structure Registration is not an authorization to construct radio facilities or transmit radio signals. It is necessary that all radio equipment on this structure be covered by a valid FCC license or construction permit.

You must immediately provide a copy of this Registration to all tenant licensees and permittees sited on the structure described on this Registration (although not required, you may want to use Certified Mail to obtain proof of receipt), and display your Registration Number at the site. See reverse for important information about the Commission's Antenna Structure Registration rules.

You must comply with all applicable FCC obstruction marking and lighting requirements, as set forth in Part 17 of the Commission's Rules (47 C.F.R. Part 17). These rules include, but are not limited to:

Posting the Registration Number: The Antenna Structure Registration Number must be displayed in a conspicuous place so that it is readily visible near the base of the antenna structure. Materials used to display the Registration Number must be weather-resistant and of sufficient size to be easily seen at the base of the antenna structure. Exceptions exist for certain historic structures. See 47 C.F.R. 17.4(g)-(h).

Inspecting lights and equipment: The obstruction lighting must be observed at least every 24 hours in order to detect any outages or malfunctions. Lighting equipment, indicators, and associated devices must be inspected at least once every three months.

Reporting outages and malfunctions: When any top steady-burning light or a flashing light (in any position) burns out or malfunctions, the outage must be reported to the nearest FAA Flight Service Station, unless corrected within 30 minutes. The FAA must again be notified when the light is restored. The owner must also maintain a log of these outages and malfunctions.

Maintaining assigned painting: The antenna structure must be repainted as often as necessary to maintain good visibility.

Complying with environmental rules: If you certified that grant of this registration would not have a significant environmental impact, you must nevertheless maintain all pertinent records and be ready to provide documentation supporting this certification and compliance with the rules, in the event that such information is requested by the Commission pursuant to 47 C.F.R. 1.1307(d).

Updating information: The owner must notify the FCC of proposed modifications to this structure; of any change in ownership; or, within 30 days of dismantlement of the structure.

You can find additional information at [\[insert link\]](#) or by calling (877) 480-3201 (TTY 717-338-2824).

REVISION LOG

REV #	MM/DD/YY	SHEET NUMBER	DESCRIPTION OF REVISION
A	3/16/2020	ALL SHEETS	ISSUED FOR REVIEW
0	3/26/2020	ALL SHEETS	ISSUED AS FINAL
1	8/26/2022	ALL SHEETS	UPDATED TO CURRENT STANDARDS & REFS



EN PERMIT: 3594

ZONING DRAWINGS

REV	DATE	DESCRIPTION
A	3-16-20	ISSUED FOR REVIEW
0	3-26-20	ISSUED AS FINAL
1	8-26-22	UPDATED CURRENT

SITE INFORMATION:
BARLOW SE
WAYSIDE INN RD
WICKLIFFE, KY 42087
BALLARD COUNTY

HORVATH SITE NUMBER:
HV1388

VERIZON WIRELESS SITE NAME:
EV BARLOW SE

POD NUMBER: 19-42124
DRAWN BY: POD
CHECKED BY: MEP
DATE: 03.10.20

SHEET TITLE:

REVISION LOG

SHEET NUMBER:
R-1



POWER OF DESIGN
11400 BLUEGRASS PARKWAY
COLUMBIA, KY 40302
502-437-5252



312 WEST COLFAX AVE
SOUTH BEND, IN 46601

09/12/2022



EN PERMIT: 3594

ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	3.16.20	ISSUED FOR REVIEW
0	3.26.20	ISSUED AS FINAL
1	8.26.22	UPDATED CURRENT

SITE INFORMATION:

BARLOW SE

WAYSIDE INN RD
WICKLIFFE, KY 42087
BALLARD COUNTY

HORVATH SITE NUMBER:
HV1388

VERIZON WIRELESS SITE NAME:
EV BARLOW SE

POD NUMBER: 15-42324
DRAWN BY: POD
CHECKED BY: MEP
DATE: 03.10.20

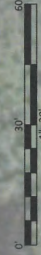
SHEET TITLE:

OVERALL SITE PLAN
W/AERIAL OVERLAY


SHEET NUMBER:
C-1




OVERALL SITE PLAN W/AERIAL OVERLAY
SCALE: 1" = 30'



1-800-752-6007
KENTUCKY 811




POWER OF DESIGN
11499 WINDY HOLLOW WAY
LOUISVILLE, KY 40229
502-437-5252



312 WEST COLFAX AVE
SOUTH BEND, IN 46601

09/12/2022



MARK E. PATTERSON
16,300
PROFESSIONAL ENGINEER

EN PERMIT: 3594

ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	3.16.20	ISSUED FOR REVIEW
0	3.26.20	ISSUED AS FINAL
1	8.26.22	UPDATED CURRENT

SITE INFORMATION:

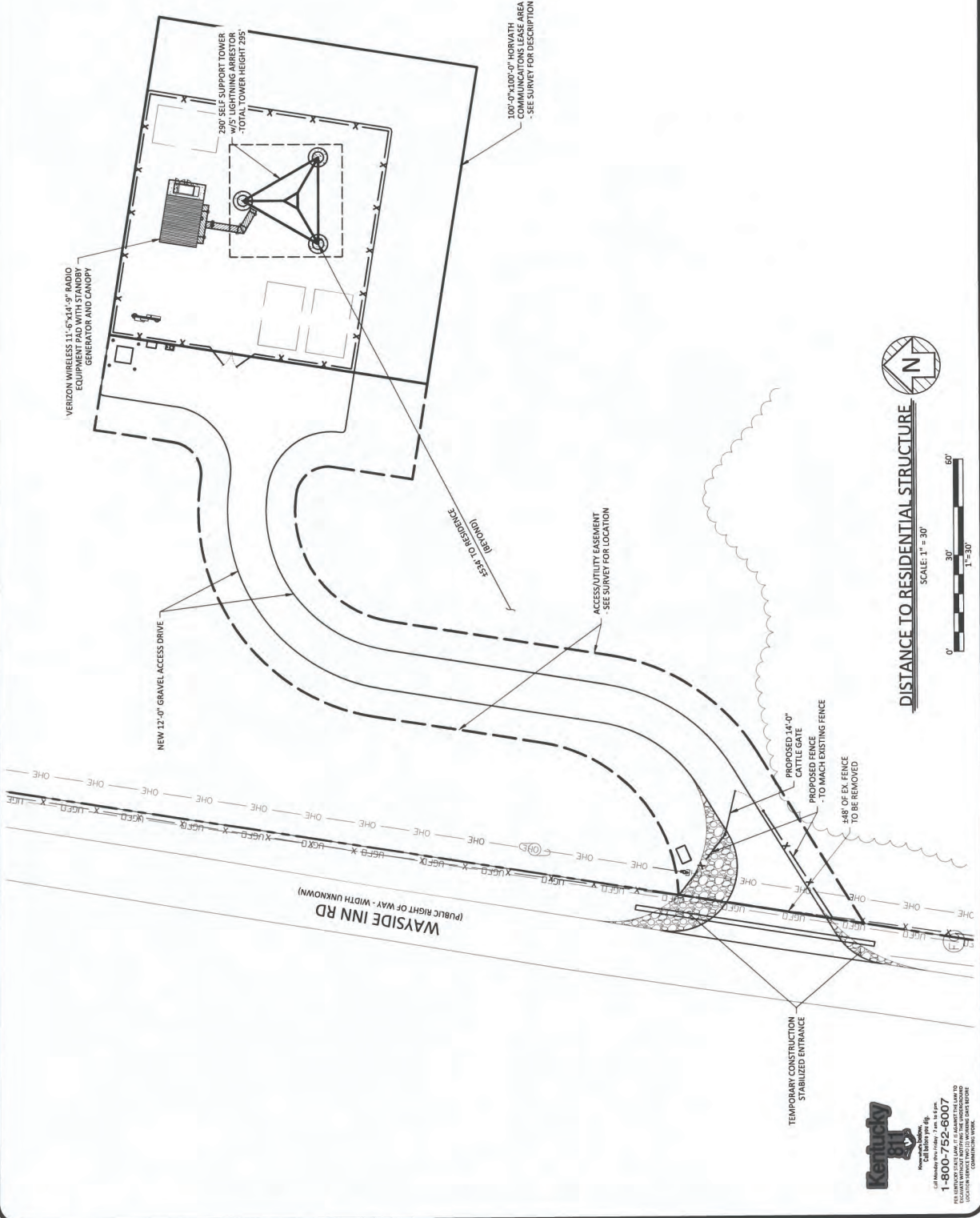
BARLOW SE
WAYSIDE INN RD
WICKLIFFE, KY 42087
BALLARD COUNTY
HORVATH SITE NUMBER:
HV1388

VERIZON WIRELESS SITE NAME:
EV BARLOW SE

POD NUMBER: 19-42224
DRAWN BY: POD
CHECKED BY: MEP
DATE: 09.30.20

SHEET TITLE:
DISTANCE TO RESIDENTIAL STRUCTURE

SHEET NUMBER:
C-1B





EN PERMIT: 3594

REV	DATE	DESCRIPTION
A	3.16.20	ISSUED FOR REVIEW
0	3.26.20	ISSUED AS FINAL
1	8.26.22	UPDATED CURRENT

SITE INFORMATION:
BARLOW SE
 WANSIDE INN RD
 WICKLIFFE, KY 42087
 BALLARD COUNTY

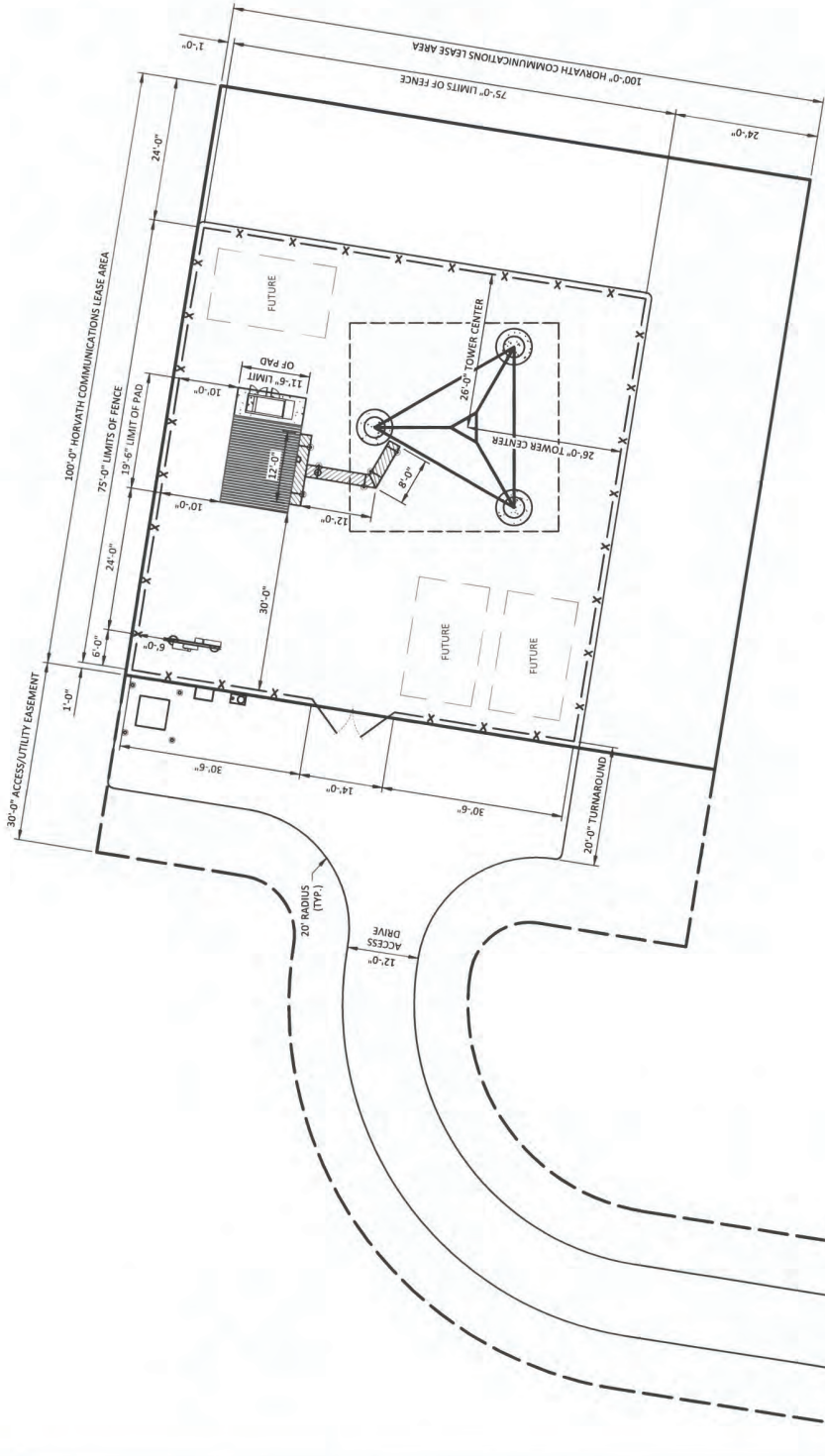
HORVATH SITE NUMBER:
 HV1388

VERIZON WIRELESS SITE NAME:
 EV BARLOW SE

POD NUMBER: 19-42124
 DRAWN BY: POD
 CHECKED BY: MEP
 DATE: 03.10.20

SHEET TITLE:
DIMENSIONED SITE PLAN

SHEET NUMBER:
C-4



LEGEND

- PROPOSED LEASE LINE
- PROPOSED EASEMENT
- PROPOSED GRAVEL
- PROPOSED FENCE



DIMENSIONED SITE PLAN
 SCALE: 1" = 20'



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

1-800-752-6007
 CALL BEFORE YOU DIG! 7-11 PM, 7 DAYS A WEEK
 FOR A FREE SERVICE MANUAL AND TO REGISTER YOUR
 LOCATION SERVICE AREA WITH THE NATIONAL
 CALL BEFORE YOU DIG PROGRAM





Structural Design Report
290' S3TL Series HD1 Self-Supporting Tower
Site: Barlow, KY
Site Number: HV1388

Prepared for: HORVATH COMMUNICATIONS INC
by: Sabre Industries™

Job Number: 457708

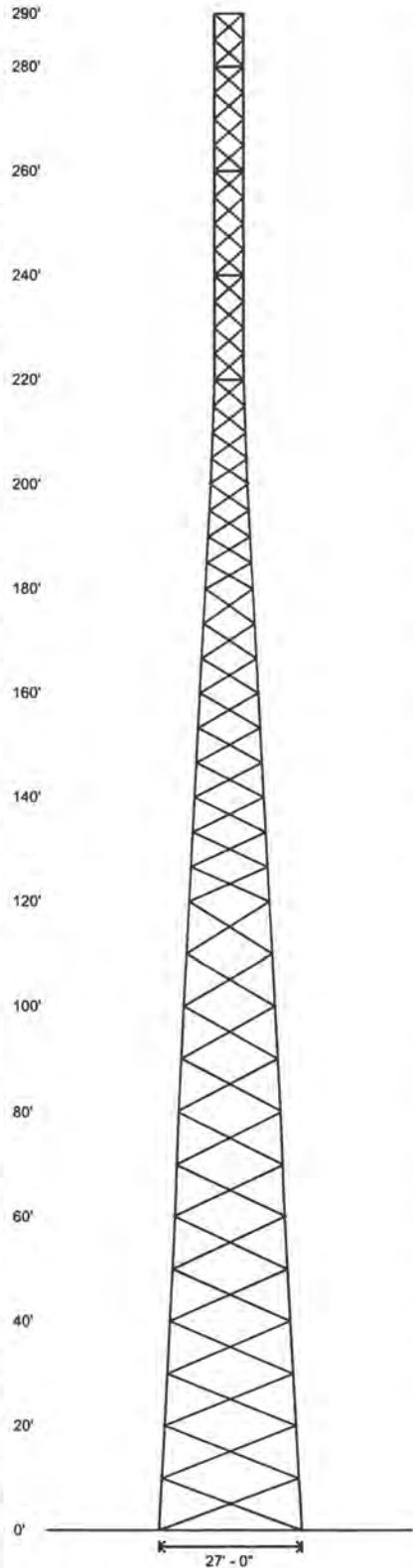
September 27, 2022

Tower Profile.....	1-2
Foundation Design Summary.....	3
Maximum Leg Loads.....	4
Maximum Diagonal Loads.....	5
Maximum Foundation Loads.....	6
Calculations.....	7-25



Digitally Signed By Robert Beacom
DN: c=US, st=Texas, l=Alvarado, o=SABRE INDUSTRIES, INC., cn=Robert Beacom, email=rebeacom@sabreindustries.com Date: 2022.09.27 09:01:53

Legs	8.625 OD X .500	8.625 OD X .322	5.563 OD X .500	5.563 OD X .375	2.875 OD X .203
Diagonals	L 4 X 4 X 1/4	L 3 1/2 X 3 1/2 X 1/4	L 2 1/2 X 2 1/2 X 3/16	L 2 X 2 X 1/8	L 2 X 2 X 1/8
Horizontals	NONE				
Brace Bolts	(2) 5/8"	(1) 3/4"	(1) 3/4"	(1) 5/8"	
Top Face Width	25'	21'	15'	7'	5'
Panel Count/Height	5466	5013	3009	1881	22 @ 5'
Section Weight	5253	3730	2975	1925	1646
					1186
					865
					489



Design Criteria - ANSI/TIA-222-G

ASCE 7-16 Ultimate Wind Speed (No Ice)	106 mph
Wind Speed (Ice)	30 mph
Design Ice Thickness	1.50 in
Structure Class	II
Risk Category	II
Exposure Category	C
Topographic Category	1
Seismic Importance Factor, I _e	1.00
0.2-sec Spectral Response, S _s	1.791 g
1-sec Spectral Response, S ₁	0.595 g
Site Class	C
Seismic Design Category	D
Basic Seismic Force-Resisting System	Telecommunication Tower (Truss: Steel)

Base Reactions - Wind/Ice

Total Foundation		Individual Footing	
Shear (kips)	53.1	Shear (kips)	33.21
Axial (kips)	143.9	Compression (kips)	395
Moment (ft-kips)	8772	Uplift (kips)	342

Base Reactions - Seismic

Total Foundation		Individual Footing	
Shear (kips)	6.7	Shear (kips)	6.46
Axial (kips)	82.41	Compression (kips)	88
Moment (ft-kips)	1408	Uplift (kips)	49

Material List

Display	Value
A	4.500 OD X .337
B	3.500 OD X .300
C	L 3 X 3 X 3/16
D	L 2 X 2 X 3/16
E	L 2 X 2 X 1/8
F	NONE

Notes

- 1) All legs are A500 (50 ksi Min. Yield).
- 2) All braces are A572 Grade 50.
- 3) All brace bolts are A325-X.
- 4) The tower model is S3TL Series HD1.
- 5) Transmission lines are to be attached to standard 12 hole waveguide ladders with stackable hangers.
- 6) Azimuths are relative (not based on true north).
- 7) Foundation loads shown are maximums.
- 8) All unequal angles are oriented with the short leg vertical.
- 9) Weights shown are estimates. Final weights may vary.
- 10) This tower design and, if applicable, the foundation design(s) shown on the following page(s) also meet or exceed the requirements of the 2018 Kentucky Building Code.
- 11) Tower Rating: 99.34%




Sabre Industries
7101 Southbridge Drive
P.O. Box 658
Sioux City, IA 51102-0658
Phone: (712) 258-6650
Fax: (712) 279-0814

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Job:	457708
Customer:	HORVATH COMMUNICATIONS INC
Site Name:	Barlow, KY HV1388
Description:	290' S3TL
Date:	9/27/2022
By:	REB

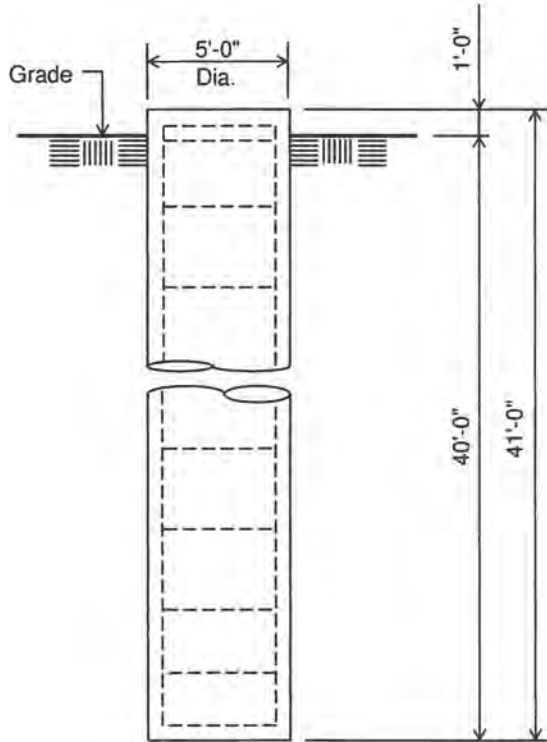
Designed Appurtenance Loading

Elev	Description	Tx-Line	Elev	Description	Tx-Line
285	(1) 208 sq. ft. EPA 4000# (no ice)	(6) 1 5/8"	225	(1) 278 sq. ft. EPA 6000# (no ice)	(3) 1 5/8"

 <p>Sabre Industries 7101 Southbridge Drive P.O. Box 658 Sioux City, IA 51102-0658 Phone (712) 258-6690 Fax (712) 279-0814</p> <p><small>Information contained herein is the sole property of Sabre Communications Corporation, constitutes a trade secret as defined by Iowa Code Ch. 550 and shall not be reproduced, copied or used in whole or part for any purpose whatsoever without the prior written consent of Sabre Communications Corporation.</small></p>	Job:	457708
	Customer:	HORVATH COMMUNICATIONS INC
	Site Name:	Barlow, KY HV1388
	Description:	290' S3TL
	Date:	9/27/2022

Customer: HORVATH COMMUNICATIONS INC
Site: Barlow, KY HV1388

290 ft. Model S3TL Series HD1 Self Supporting Tower



ELEVATION VIEW
(29.8 cu. yds.)
(3 REQUIRED; NOT TO SCALE)

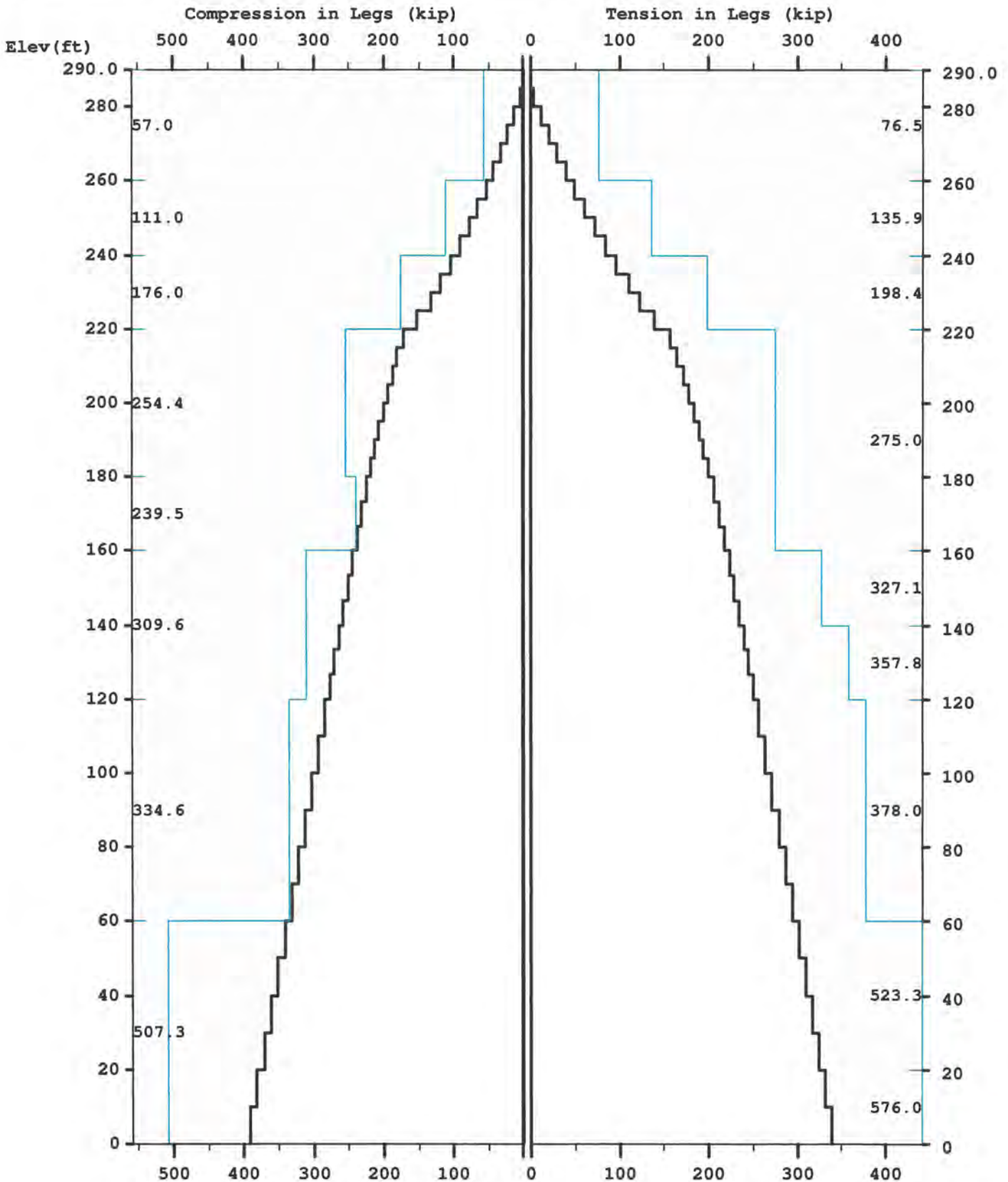
Notes:

- 1) Concrete shall have a minimum 28-day compressive strength of 4,500 psi, in accordance with ACI 318-11.
- 2) Rebar to conform to ASTM specification A615 Grade 60.
- 3) All rebar to have a minimum of 3" concrete cover.
- 4) All exposed concrete corners to be chamfered 3/4".
- 5) The foundation design is based on the geotechnical report by POD project no. 19-42119, dated: 2/28/20.
- 6) See the geotechnical report for drilled pier installation requirements, if specified.
- 7) The foundation is based on the following factored loads:
Factored uplift (kips) = 342.00
Factored download (kips) = 395.00
Factored shear (kips) = 33.00
- 8) The bottom anchor bolt template shall be positioned as closely as possible to the bottom of the anchor bolts.

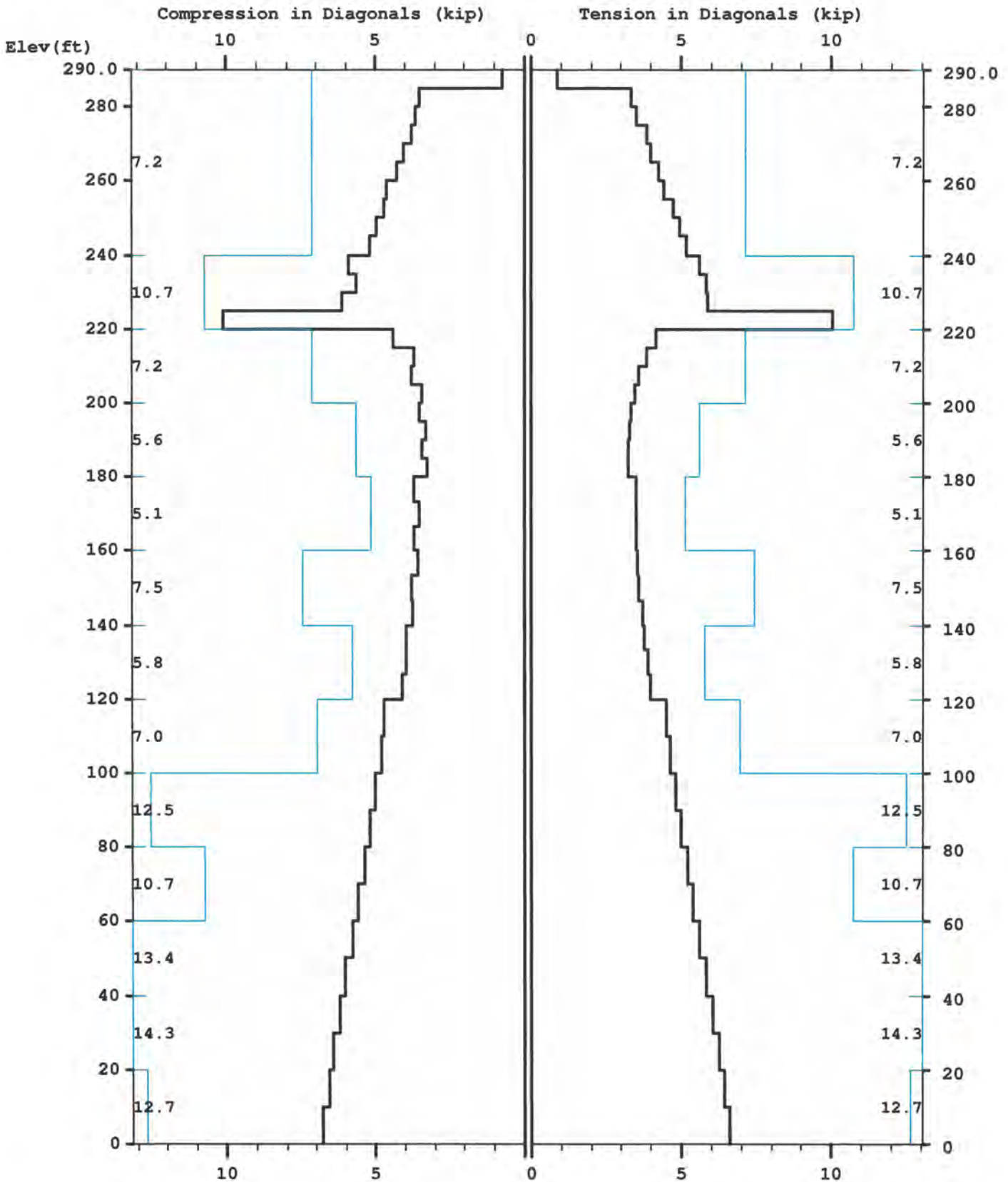
Rebar Schedule per Pier	
Pier	(16) #10 vertical rebar w/ #4 rebar ties, two (2) within top 5" of pier then 12" C/C
Anchor Bolts per Leg	
	(6) 1.5" dia. x 78" F1554-105 on a 13.25" B.C. w/ 9.5" max. projection above concrete.

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Maximum

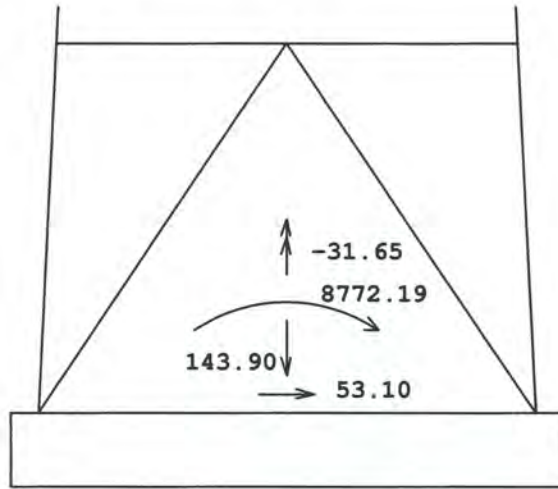


Maximum

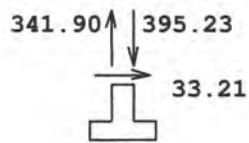
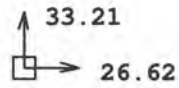


Maximum

TOTAL FOUNDATION LOADS (kip, ft-kip)



INDIVIDUAL FOOTING LOADS (kip)



MAST GEOMETRY (ft)

PANEL TYPE	NO.OF LEGS	ELEV.AT BOTTOM	ELEV.AT TOP	F.W..AT BOTTOM	F.W..AT TOP	TYPICAL PANEL HEIGHT
X	3	285.00	290.00	5.00	5.00	5.00
X	3	280.00	285.00	5.00	5.00	5.00
X	3	275.00	280.00	5.00	5.00	5.00
X	3	260.00	275.00	5.00	5.00	5.00
X	3	255.00	260.00	5.00	5.00	5.00
X	3	240.00	255.00	5.00	5.00	5.00
X	3	235.00	240.00	5.00	5.00	5.00
X	3	220.00	235.00	5.00	5.00	5.00
X	3	215.00	220.00	5.50	5.00	5.00
X	3	200.00	215.00	7.00	5.50	5.00
X	3	180.00	200.00	9.00	7.00	5.00
X	3	160.00	180.00	11.00	9.00	6.67
X	3	140.00	160.00	13.00	11.00	6.67
X	3	120.00	140.00	15.00	13.00	6.67
X	3	100.00	120.00	17.00	15.00	10.00
X	3	80.00	100.00	19.00	17.00	10.00
X	3	60.00	80.00	21.00	19.00	10.00
X	3	40.00	60.00	23.00	21.00	10.00
X	3	20.00	40.00	25.00	23.00	10.00
X	3	0.00	20.00	27.00	25.00	10.00

MEMBER PROPERTIES

MEMBER TYPE	BOTTOM ELEV ft	TOP ELEV ft	X-SECTN AREA in.sq	RADIUS OF GYRAT in	ELASTIC MODULUS ksi	THERMAL EXPANSN /deg
LE	260.00	290.00	1.704	0.947	29000.	0.0000117
LE	240.00	260.00	3.016	0.947	29000.	0.0000117
LE	220.00	240.00	4.407	0.947	29000.	0.0000117
LE	160.00	220.00	6.111	0.947	29000.	0.0000117
LE	120.00	160.00	7.952	0.947	29000.	0.0000117
LE	60.00	120.00	8.399	0.947	29000.	0.0000117
LE	0.00	60.00	12.763	0.947	29000.	0.0000117
DI	240.00	290.00	0.484	0.626	29000.	0.0000117
DI	220.00	240.00	0.715	0.626	29000.	0.0000117
DI	180.00	220.00	0.484	0.626	29000.	0.0000117
DI	160.00	180.00	0.715	0.626	29000.	0.0000117
DI	120.00	160.00	0.902	0.626	29000.	0.0000117
DI	100.00	120.00	1.090	0.626	29000.	0.0000117
DI	60.00	100.00	1.688	0.626	29000.	0.0000117
DI	0.00	60.00	1.938	0.626	29000.	0.0000117
HO	285.00	290.00	0.484	0.626	29000.	0.0000117
HO	275.00	280.00	0.484	0.626	29000.	0.0000117
HO	255.00	260.00	0.484	0.626	29000.	0.0000117
HO	235.00	240.00	0.715	0.626	29000.	0.0000117
HO	215.00	220.00	0.484	0.626	29000.	0.0000117

FACTORED MEMBER RESISTANCES

BOTTOM ELEV ft	TOP ELEV ft	LEGS		DIAGONALS		HORIZONTALS		INT BRACING	
		COMP kip	TENS kip	COMP kip	TENS kip	COMP kip	TENS kip	COMP kip	TENS kip
285.0	290.0	57.04	76.50	7.16	7.16	5.82	5.82	0.00	0.00
280.0	285.0	57.04	76.50	7.16	7.16	0.00	0.00	0.00	0.00
275.0	280.0	57.04	76.50	7.16	7.16	5.82	5.82	0.00	0.00
260.0	275.0	57.04	76.50	7.16	7.16	0.00	0.00	0.00	0.00
255.0	260.0	110.98	135.90	7.16	7.16	5.82	5.82	0.00	0.00
240.0	255.0	110.98	135.90	7.16	7.16	0.00	0.00	0.00	0.00
235.0	240.0	175.98	198.45	10.74	10.74	8.46	8.46	0.00	0.00

220.0	235.0	175.98	198.45	10.74	10.74	0.00	0.00	0.00	0.00
215.0	220.0	254.38	274.95	7.16	7.16	5.82	5.82	0.00	0.00
200.0	215.0	254.38	274.95	7.16	7.16	0.00	0.00	0.00	0.00
180.0	200.0	254.38	274.95	5.63	5.63	0.00	0.00	0.00	0.00
160.0	180.0	239.46	274.95	5.14	5.14	0.00	0.00	0.00	0.00
140.0	160.0	309.64	327.10	7.46	7.46	0.00	0.00	0.00	0.00
120.0	140.0	309.64	357.75	5.78	5.78	0.00	0.00	0.00	0.00
100.0	120.0	334.65	378.00	6.98	6.98	0.00	0.00	0.00	0.00
80.0	100.0	334.65	378.00	12.53	12.53	0.00	0.00	0.00	0.00
60.0	80.0	334.65	378.00	10.73	10.73	0.00	0.00	0.00	0.00
40.0	60.0	507.33	523.32	13.43	13.43	0.00	0.00	0.00	0.00
20.0	40.0	507.33	523.32	14.31	14.31	0.00	0.00	0.00	0.00
0.0	20.0	507.33	576.00	12.68	12.68	0.00	0.00	0.00	0.00

=====
 * Only 5 condition(s) shown in full
 * Some wind loads may have been derived from full-scale wind tunnel testing
 =====

LOADING CONDITION A =====

106 mph Ultimate wind with no ice. Wind Azimuth: 0° (1.2 D + 1.0 Wo) PL - 0

MAST LOADING
 =====

LOAD TYPE	ELEV ft	APPLY. RADIUS ft	LOAD. AT AZI	LOAD AZIFORCES.....	MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	285.0	0.00	0.0	0.0	6.53	4.80	0.00	0.00
C	225.0	0.00	0.0	0.0	8.30	7.20	0.00	0.00
D	290.0	0.00	180.0	0.0	0.06	0.05	0.00	0.00
D	285.0	0.00	180.0	0.0	0.06	0.05	0.00	0.00
D	285.0	0.00	42.0	0.0	0.09	0.05	0.03	0.05
D	260.0	0.00	42.0	0.0	0.09	0.05	0.03	0.05
D	260.0	0.00	42.0	0.0	0.10	0.07	0.03	0.05
D	240.0	0.00	42.0	0.0	0.09	0.07	0.03	0.05
D	240.0	0.00	42.0	0.0	0.10	0.10	0.03	0.05
D	225.0	0.00	42.0	0.0	0.09	0.09	0.03	0.05
D	225.0	0.00	42.0	0.0	0.10	0.10	0.03	0.06
D	220.0	0.00	42.0	0.0	0.10	0.10	0.03	0.06
D	220.0	0.00	34.2	0.0	0.11	0.12	0.04	0.06
D	205.0	0.00	38.7	0.0	0.11	0.11	0.04	0.06
D	205.0	0.00	40.9	0.0	0.11	0.11	0.03	0.06
D	200.0	0.00	40.9	0.0	0.11	0.11	0.03	0.06
D	200.0	0.00	27.9	0.0	0.11	0.11	0.05	0.06
D	180.0	0.00	32.4	0.0	0.12	0.12	0.04	0.06
D	180.0	0.00	23.5	0.0	0.11	0.12	0.06	0.06
D	160.0	0.00	26.4	0.0	0.12	0.13	0.05	0.06
D	160.0	0.00	20.2	0.0	0.12	0.16	0.06	0.06
D	140.0	0.00	22.3	0.0	0.13	0.16	0.06	0.06
D	140.0	0.00	17.6	0.0	0.13	0.17	0.07	0.05
D	120.0	0.00	19.2	0.0	0.13	0.17	0.07	0.05
D	120.0	0.00	15.8	0.0	0.13	0.17	0.08	0.05
D	100.0	0.00	16.7	0.0	0.13	0.17	0.08	0.05
D	100.0	0.00	14.2	0.0	0.14	0.20	0.09	0.05
D	80.0	0.00	14.9	0.0	0.14	0.21	0.09	0.05
D	80.0	0.00	12.9	0.0	0.14	0.21	0.10	0.05
D	60.0	0.00	13.5	0.0	0.14	0.21	0.09	0.05
D	60.0	0.00	11.8	0.0	0.14	0.29	0.11	0.04
D	40.0	0.00	12.3	0.0	0.15	0.29	0.10	0.05
D	40.0	0.00	10.8	0.0	0.14	0.30	0.12	0.04
D	20.0	0.00	11.3	0.0	0.14	0.30	0.11	0.04
D	20.0	0.00	10.0	0.0	0.13	0.30	0.13	0.03
D	0.0	0.00	10.4	0.0	0.13	0.31	0.12	0.04

LOADING CONDITION k =====

106 mph Ultimate wind with no ice. Wind Azimuth: 0° (0.9 D + 1.0 Wo) PL - 0

MAST LOADING
 =====

LOAD TYPE	ELEV ft	APPLY RADIUS ft	LOAD AT AZI	LOAD AZI	FORCES		MOMENTS	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	285.0	0.00	0.0	0.0	6.53	3.60	0.00	0.00
C	225.0	0.00	0.0	0.0	8.30	5.40	0.00	0.00
D	290.0	0.00	180.0	0.0	0.06	0.03	0.00	0.00
D	285.0	0.00	180.0	0.0	0.06	0.03	0.00	0.00
D	285.0	0.00	42.0	0.0	0.09	0.04	0.02	0.05
D	260.0	0.00	42.0	0.0	0.09	0.04	0.02	0.05
D	260.0	0.00	42.0	0.0	0.10	0.05	0.02	0.05
D	240.0	0.00	42.0	0.0	0.09	0.05	0.02	0.05
D	240.0	0.00	42.0	0.0	0.10	0.08	0.02	0.05
D	225.0	0.00	42.0	0.0	0.09	0.07	0.02	0.05
D	225.0	0.00	42.0	0.0	0.10	0.07	0.02	0.06
D	220.0	0.00	42.0	0.0	0.10	0.07	0.02	0.06
D	220.0	0.00	34.2	0.0	0.11	0.09	0.03	0.06
D	205.0	0.00	38.7	0.0	0.11	0.08	0.03	0.06
D	205.0	0.00	40.9	0.0	0.11	0.09	0.03	0.06
D	200.0	0.00	40.9	0.0	0.11	0.09	0.03	0.06
D	200.0	0.00	27.9	0.0	0.11	0.09	0.04	0.06
D	180.0	0.00	32.4	0.0	0.12	0.09	0.03	0.06
D	180.0	0.00	23.5	0.0	0.11	0.09	0.04	0.06
D	160.0	0.00	26.4	0.0	0.12	0.09	0.04	0.06
D	160.0	0.00	20.2	0.0	0.12	0.12	0.05	0.06
D	140.0	0.00	22.3	0.0	0.13	0.12	0.04	0.06
D	140.0	0.00	17.6	0.0	0.13	0.12	0.05	0.05
D	120.0	0.00	19.2	0.0	0.13	0.13	0.05	0.05
D	120.0	0.00	15.8	0.0	0.13	0.13	0.06	0.05
D	100.0	0.00	16.7	0.0	0.13	0.13	0.06	0.05
D	100.0	0.00	14.2	0.0	0.14	0.15	0.07	0.05
D	80.0	0.00	14.9	0.0	0.14	0.16	0.06	0.05
D	80.0	0.00	12.9	0.0	0.14	0.16	0.07	0.05
D	60.0	0.00	13.5	0.0	0.14	0.16	0.07	0.05
D	60.0	0.00	11.8	0.0	0.14	0.22	0.08	0.04
D	40.0	0.00	12.3	0.0	0.15	0.22	0.08	0.05
D	40.0	0.00	10.8	0.0	0.14	0.22	0.09	0.04
D	20.0	0.00	11.3	0.0	0.14	0.22	0.08	0.04
D	20.0	0.00	10.0	0.0	0.13	0.23	0.09	0.03
D	0.0	0.00	10.4	0.0	0.13	0.23	0.09	0.04

=====
LOADING CONDITION AU
=====
30 mph wind with 1.5 ice. Wind Azimuth: 0* (1.2 D + 1.0 Di + 1.0 Wi) PL - 0

MAST LOADING
=====

LOAD TYPE	ELEV ft	APPLY RADIUS ft	LOAD AT AZI	LOAD AZI	FORCES		MOMENTS	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	285.0	0.00	0.0	0.0	0.95	12.24	0.00	0.00
C	225.0	0.00	0.0	0.0	1.20	18.10	0.00	0.00
D	290.0	0.00	180.0	0.0	0.01	0.19	0.00	0.00
D	285.0	0.00	180.0	0.0	0.01	0.19	0.00	0.00
D	285.0	0.00	42.0	0.0	0.01	0.21	0.12	0.01
D	280.0	0.00	42.0	0.0	0.01	0.21	0.12	0.01
D	280.0	0.00	42.0	0.0	0.01	0.25	0.12	0.01
D	275.0	0.00	42.0	0.0	0.01	0.25	0.12	0.01
D	275.0	0.00	42.0	0.0	0.01	0.21	0.12	0.01
D	260.0	0.00	42.0	0.0	0.01	0.21	0.12	0.01
D	260.0	0.00	42.0	0.0	0.01	0.26	0.12	0.01
D	255.0	0.00	42.0	0.0	0.01	0.26	0.12	0.01
D	255.0	0.00	42.0	0.0	0.01	0.23	0.12	0.01
D	240.0	0.00	42.0	0.0	0.01	0.23	0.12	0.01
D	240.0	0.00	42.0	0.0	0.02	0.29	0.12	0.01
D	235.0	0.00	42.0	0.0	0.02	0.29	0.12	0.01
D	235.0	0.00	42.0	0.0	0.01	0.26	0.12	0.01
D	225.0	0.00	42.0	0.0	0.01	0.26	0.12	0.01
D	225.0	0.00	42.0	0.0	0.01	0.27	0.15	0.01
D	220.0	0.00	42.0	0.0	0.01	0.27	0.15	0.01
D	220.0	0.00	34.2	0.0	0.02	0.32	0.17	0.01
D	215.0	0.00	34.2	0.0	0.02	0.32	0.17	0.01
D	215.0	0.00	36.4	0.0	0.01	0.30	0.17	0.01

D	210.0	0.00	36.4	0.0	0.01	0.30	0.17	0.01
D	210.0	0.00	38.7	0.0	0.01	0.30	0.16	0.01
D	200.0	0.00	40.9	0.0	0.02	0.31	0.15	0.01
D	200.0	0.00	27.9	0.0	0.02	0.31	0.21	0.01
D	180.0	0.00	32.4	0.0	0.02	0.33	0.18	0.01
D	180.0	0.00	23.5	0.0	0.02	0.32	0.24	0.01
D	173.3	0.00	23.5	0.0	0.02	0.32	0.24	0.01
D	173.3	0.00	24.9	0.0	0.02	0.32	0.23	0.01
D	166.7	0.00	24.9	0.0	0.02	0.32	0.23	0.01
D	166.7	0.00	26.3	0.0	0.02	0.33	0.22	0.01
D	160.0	0.00	26.3	0.0	0.02	0.33	0.22	0.01
D	160.0	0.00	20.2	0.0	0.02	0.38	0.27	0.01
D	146.7	0.00	21.2	0.0	0.02	0.39	0.26	0.01
D	146.7	0.00	22.3	0.0	0.02	0.40	0.25	0.01
D	140.0	0.00	22.3	0.0	0.02	0.40	0.25	0.01
D	140.0	0.00	17.6	0.0	0.02	0.40	0.31	0.01
D	120.0	0.00	19.2	0.0	0.02	0.42	0.29	0.01
D	120.0	0.00	15.8	0.0	0.02	0.41	0.34	0.01
D	110.0	0.00	15.8	0.0	0.02	0.41	0.34	0.01
D	110.0	0.00	16.7	0.0	0.02	0.42	0.32	0.01
D	100.0	0.00	16.7	0.0	0.02	0.42	0.32	0.01
D	100.0	0.00	14.2	0.0	0.02	0.47	0.37	0.01
D	80.0	0.00	14.9	0.0	0.02	0.48	0.35	0.01
D	80.0	0.00	12.9	0.0	0.02	0.48	0.40	0.01
D	60.0	0.00	13.5	0.0	0.02	0.49	0.38	0.01
D	60.0	0.00	11.8	0.0	0.02	0.58	0.42	0.01
D	40.0	0.00	12.3	0.0	0.02	0.59	0.41	0.01
D	40.0	0.00	10.8	0.0	0.02	0.59	0.44	0.00
D	20.0	0.00	11.3	0.0	0.02	0.59	0.43	0.00
D	20.0	0.00	10.0	0.0	0.01	0.55	0.21	0.00
D	10.0	0.00	10.0	0.0	0.01	0.55	0.21	0.00
D	10.0	0.00	10.4	0.0	0.01	0.56	0.37	0.00
D	0.0	0.00	10.4	0.0	0.01	0.56	0.37	0.00

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LOADING CONDITION CE

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Seismic - Azimuth: 0* (1.2 D + 1.0 Ev + 1.0 Eh)

PL - 0

MAST LOADING

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LOAD TYPE	ELEV ft	APPLY RADIUS ft	LOAD AT AZI	LOAD AZI FORCES MOMENTS	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	285.0	0.00	0.0	0.0	1.31	5.95	0.00	0.00
C	285.0	0.00	0.0	0.0	0.16	0.73	0.00	0.00
C	282.5	0.00	0.0	0.0	0.02	0.08	0.00	0.00
C	270.0	0.00	0.0	0.0	0.06	0.30	0.00	0.00
C	270.0	0.00	0.0	0.0	0.26	1.29	0.00	0.00
C	250.0	0.00	0.0	0.0	0.06	0.30	0.00	0.00
C	250.0	0.00	0.0	0.0	0.32	1.76	0.00	0.00
C	232.5	0.00	0.0	0.0	0.04	0.23	0.00	0.00
C	230.0	0.00	0.0	0.0	0.39	2.45	0.00	0.00
C	225.0	0.00	0.0	0.0	1.38	8.92	0.00	0.00
C	222.5	0.00	0.0	0.0	0.02	0.10	0.00	0.00
C	210.0	0.00	0.0	0.0	0.06	0.40	0.00	0.00
C	210.0	0.00	0.0	0.0	0.39	2.80	0.00	0.00
C	190.0	0.00	0.0	0.0	0.34	2.86	0.00	0.00
C	190.0	0.00	0.0	0.0	0.05	0.40	0.00	0.00
C	170.0	0.00	0.0	0.0	0.04	0.40	0.00	0.00
C	170.0	0.00	0.0	0.0	0.31	3.10	0.00	0.00
C	150.0	0.00	0.0	0.0	0.03	0.40	0.00	0.00
C	150.0	0.00	0.0	0.0	0.33	4.01	0.00	0.00
C	130.0	0.00	0.0	0.0	0.03	0.40	0.00	0.00
C	130.0	0.00	0.0	0.0	0.30	4.42	0.00	0.00
C	110.0	0.00	0.0	0.0	0.02	0.40	0.00	0.00
C	110.0	0.00	0.0	0.0	0.23	4.47	0.00	0.00
C	90.0	0.00	0.0	0.0	0.02	0.40	0.00	0.00
C	90.0	0.00	0.0	0.0	0.21	5.35	0.00	0.00
C	70.0	0.00	0.0	0.0	0.01	0.40	0.00	0.00
C	70.0	0.00	0.0	0.0	0.15	5.55	0.00	0.00
C	50.0	0.00	0.0	0.0	0.01	0.40	0.00	0.00
C	50.0	0.00	0.0	0.0	0.12	7.45	0.00	0.00
C	30.0	0.00	0.0	0.0	0.00	0.40	0.00	0.00
C	30.0	0.00	0.0	0.0	0.06	7.81	0.00	0.00
C	10.0	0.00	0.0	0.0	0.00	0.40	0.00	0.00
C	10.0	0.00	0.0	0.0	0.01	8.13	0.00	0.00

D	290.0	0.00	180.0	180.0	0.00	0.00	0.00	0.00
D	0.0	0.00	180.0	180.0	0.00	0.00	0.00	0.00

LOADING CONDITION CN

Seismic - Azimuth: 0* (0.9 D - 1.0 Ev + 1.0 Eh)

PL - 0

MAST LOADING

LOAD TYPE	ELEV ft	APPLY RADIUS ft	LOAD AT AZI	LOAD AZI	FORCES		MOMENTS	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	285.0	0.00	0.0	0.0	1.31	2.45	0.00	0.00
C	285.0	0.00	0.0	0.0	0.16	0.30	0.00	0.00
C	282.5	0.00	0.0	0.0	0.02	0.03	0.00	0.00
C	270.0	0.00	0.0	0.0	0.06	0.13	0.00	0.00
C	270.0	0.00	0.0	0.0	0.26	0.53	0.00	0.00
C	250.0	0.00	0.0	0.0	0.06	0.13	0.00	0.00
C	250.0	0.00	0.0	0.0	0.32	0.73	0.00	0.00
C	232.5	0.00	0.0	0.0	0.04	0.09	0.00	0.00
C	230.0	0.00	0.0	0.0	0.39	1.01	0.00	0.00
C	225.0	0.00	0.0	0.0	1.38	3.68	0.00	0.00
C	222.5	0.00	0.0	0.0	0.02	0.04	0.00	0.00
C	210.0	0.00	0.0	0.0	0.06	0.16	0.00	0.00
C	210.0	0.00	0.0	0.0	0.39	1.15	0.00	0.00
C	190.0	0.00	0.0	0.0	0.34	1.18	0.00	0.00
C	190.0	0.00	0.0	0.0	0.05	0.16	0.00	0.00
C	170.0	0.00	0.0	0.0	0.04	0.16	0.00	0.00
C	170.0	0.00	0.0	0.0	0.31	1.28	0.00	0.00
C	150.0	0.00	0.0	0.0	0.03	0.16	0.00	0.00
C	150.0	0.00	0.0	0.0	0.33	1.66	0.00	0.00
C	130.0	0.00	0.0	0.0	0.03	0.16	0.00	0.00
C	130.0	0.00	0.0	0.0	0.30	1.82	0.00	0.00
C	110.0	0.00	0.0	0.0	0.02	0.16	0.00	0.00
C	110.0	0.00	0.0	0.0	0.23	1.85	0.00	0.00
C	90.0	0.00	0.0	0.0	0.02	0.16	0.00	0.00
C	90.0	0.00	0.0	0.0	0.21	2.21	0.00	0.00
C	70.0	0.00	0.0	0.0	0.01	0.16	0.00	0.00
C	70.0	0.00	0.0	0.0	0.15	2.29	0.00	0.00
C	50.0	0.00	0.0	0.0	0.01	0.16	0.00	0.00
C	50.0	0.00	0.0	0.0	0.12	3.08	0.00	0.00
C	30.0	0.00	0.0	0.0	0.00	0.16	0.00	0.00
C	30.0	0.00	0.0	0.0	0.06	3.22	0.00	0.00
C	10.0	0.00	0.0	0.0	0.00	0.16	0.00	0.00
C	10.0	0.00	0.0	0.0	0.01	3.35	0.00	0.00
D	290.0	0.00	180.0	180.0	0.00	0.00	0.00	0.00
D	0.0	0.00	180.0	180.0	0.00	0.00	0.00	0.00

MAXIMUM TENSION IN MAST MEMBERS (kip)

ELEV ft	LEGS	DIAG	HORIZ	BRACE
290.0	-----		0.50 l	0.00 A
285.0	0.37 AC	0.88 S	0.08 S	0.00 A
280.0	2.37 k	3.34 l	1.02 B	0.00 A
275.0	11.12 k	3.52 o	0.20 B	0.00 A
270.0	20.23 l	3.84 W	0.02 AC	0.00 A
265.0	29.55 k	4.01 AF	0.24 B	0.00 A
260.0	39.34 k	4.25 D	0.73 A	0.00 A
255.0	49.44 k	4.44 AF	0.31 A	0.00 A
250.0	61.07 k	4.75 D	0.03 AC	0.00 A
245.0	72.15 k	4.93 n	0.29 A	0.00 A

240.0	84.28 k	5.18 D		
	95.93 k	5.61 k	1.10 A	0.00 A
235.0				
	110.54 k	5.84 S	0.35 B	0.00 A
230.0				
	122.81 k	5.89 k	0.03 AK	0.00 A
225.0				
	139.47 k	10.03 AF	0.30 B	0.00 A
220.0				
	156.19 k	4.15 m	0.85 AD	0.00 A
215.0				
	165.01 k	3.87 U	0.31 A	0.00 A
210.0				
	171.19 k	3.61 m	0.05 A	0.00 A
205.0				
	178.11 k	3.47 U	0.21 A	0.00 A
200.0				
	183.62 k	3.35 m	0.07 A	0.00 A
195.0				
	189.47 k	3.30 F	0.15 A	0.00 A
190.0				
	194.48 k	3.25 m	0.13 A	0.00 A
185.0				
	199.74 k	3.26 F	0.12 A	0.00 A
180.0				
	205.06 k	3.51 m	0.13 A	0.00 A
173.3				
	211.44 k	3.51 F	0.14 A	0.00 A
166.7				
	217.14 k	3.50 AH	0.11 A	0.00 A
160.0				
	223.00 k	3.57 F	0.11 A	0.00 A
153.3				
	228.39 k	3.61 p	0.07 A	0.00 A
146.7				
	233.94 k	3.70 F	0.09 A	0.00 A
140.0				
	239.19 k	3.78 p	0.06 A	0.00 A
133.3				
	244.55 k	3.88 F	0.14 A	0.00 A
126.7				
	249.76 k	3.99 p	0.05 A	0.00 A
120.0				
	256.21 k	4.51 AH	0.12 A	0.00 A
110.0				
	263.96 k	4.65 p	0.11 A	0.00 A
100.0				
	271.60 k	4.82 AH	0.10 A	0.00 A
90.0				
	279.21 k	5.01 p	0.10 A	0.00 A
80.0				
	286.80 k	5.21 F	0.06 A	0.00 A
70.0				
	294.37 k	5.40 p	0.09 A	0.00 A
60.0				
	301.89 k	5.62 F	0.05 A	0.00 A
50.0				
	309.28 k	5.84 p	0.05 A	0.00 A
40.0				
	316.72 k	6.06 F	0.05 A	0.00 A
30.0				
	324.11 k	6.25 p	0.04 A	0.00 A
20.0				
	331.50 k	6.44 F	0.01 CE	0.00 A
10.0				
	338.78 k	6.60 p	0.04 A	0.00 A
0.0				
			0.00 A	0.00 A

MAXIMUM COMPRESSION IN MAST MEMBERS (kip)

ELEV ft	LEGS	DIAG	HORIZ	BRACE
290.0			-0.59 S	0.00 A

285.0	-0.62 B	-0.75 k	-0.06 l	0.00 A
	-5.24 S	-3.52 S		
280.0			-0.84 r	0.00 A
	-14.29 S	-3.65 D		
275.0			-0.16 AD	0.00 A
	-24.01 T	-3.78 o		
270.0			-0.02 A	0.00 A
	-33.55 S	-4.06 D		
265.0			-0.20 AD	0.00 A
	-43.81 S	-4.26 D		
260.0			-0.67 AC	0.00 A
	-54.26 S	-4.61 S		
255.0			-0.28 AC	0.00 A
	-66.67 S	-4.70 AF		
250.0			-0.03 A	0.00 A
	-78.20 S	-4.98 D		
245.0			-0.27 AC	0.00 A
	-91.02 S	-5.18 D		
240.0			-1.04 AC	0.00 A
	-103.18 S	-5.92 S		
235.0			-0.31 AD	0.00 A
	-118.87 S	-5.63 n		
230.0			-0.05 g	0.00 A
	-131.83 S	-6.13 S		
225.0			-0.26 AD	0.00 A
	-153.56 S	-10.12 S		
220.0			-0.99 B	0.00 A
	-170.80 S	-4.40 U		
215.0			-0.28 AC	0.00 A
	-180.51 S	-3.71 m		
210.0			-0.05 AC	0.00 A
	-186.94 S	-3.79 U		
205.0			-0.19 AC	0.00 A
	-194.56 S	-3.42 P		
200.0			-0.06 AC	0.00 A
	-200.45 S	-3.50 U		
195.0			-0.14 AC	0.00 A
	-206.95 S	-3.28 p		
190.0			-0.12 AC	0.00 A
	-212.41 S	-3.41 U		
185.0			-0.10 AC	0.00 A
	-218.30 S	-3.24 p		
180.0			-0.12 AC	0.00 A
	-224.20 S	-3.70 U		
173.3			-0.12 AC	0.00 A
	-231.45 S	-3.50 F		
166.7			-0.10 AC	0.00 A
	-237.87 S	-3.68 U		
160.0			-0.10 AC	0.00 A
	-244.66 S	-3.56 U		
153.3			-0.06 AC	0.00 A
	-250.95 S	-3.78 U		
146.7			-0.08 AC	0.00 A
	-257.52 S	-3.73 U		
140.0			-0.06 AC	0.00 A
	-263.74 S	-3.94 U		
133.3			-0.12 AC	0.00 A
	-270.14 S	-3.98 U		
126.7			-0.04 AC	0.00 A
	-276.40 S	-4.10 U		
120.0			-0.11 AC	0.00 A
	-284.15 S	-4.69 U		
110.0			-0.10 AC	0.00 A
	-293.53 S	-4.81 U		
100.0			-0.09 AC	0.00 A
	-302.91 S	-5.01 U		
90.0			-0.09 AC	0.00 A
	-312.40 S	-5.18 U		
80.0			-0.06 AC	0.00 A
	-321.91 S	-5.38 U		
70.0			-0.08 AC	0.00 A
	-331.44 S	-5.59 U		
60.0			-0.05 AC	0.00 A
	-341.16 S	-5.78 U		
50.0			-0.04 AC	0.00 A
	-351.01 S	-6.03 U		
40.0			-0.04 AC	0.00 A
	-360.97 S	-6.22 U		
30.0			-0.04 AC	0.00 A
	-370.92 S	-6.43 U		

20.0	-----		0.00 AC	0.00 A
	-380.92 S	-6.58 U		
10.0	-----		-0.04 AC	0.00 A
	-390.82 S	-6.80 U		
0.0	-----		0.00 A	0.00 A

FORCE/RESISTANCE RATIO IN LEGS
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MAST ELEV ft	-- LEG COMPRESSION --			---- LEG TENSION ----		
	MAX COMP	COMP RESIST	FORCE/ RESIST RATIO	MAX TENS	TENS RESIST	FORCE/ RESIST RATIO
290.00	0.62	57.04	0.01	0.37	76.50	0.00
285.00	5.24	57.04	0.09	2.37	76.50	0.03
280.00	14.29	57.04	0.25	11.12	76.50	0.15
275.00	24.01	57.04	0.42	20.23	76.50	0.26
270.00	33.55	57.04	0.59	29.55	76.50	0.39
265.00	43.81	57.04	0.77	39.34	76.50	0.51
260.00	54.26	110.98	0.49	49.44	135.90	0.36
255.00	66.67	110.98	0.60	61.07	135.90	0.45
250.00	78.20	110.98	0.70	72.15	135.90	0.53
245.00	91.02	110.98	0.82	84.28	135.90	0.62
240.00	103.18	175.98	0.59	95.93	198.45	0.48
235.00	118.87	175.98	0.68	110.54	198.45	0.56
230.00	131.83	175.98	0.75	122.81	198.45	0.62
225.00	153.56	175.98	0.87	139.47	198.45	0.70
220.00	170.80	254.38	0.67	156.19	274.95	0.57
215.00	180.51	254.38	0.71	165.01	274.95	0.60
210.00	186.94	254.38	0.73	171.19	274.95	0.62
205.00	194.56	254.38	0.76	178.11	274.95	0.65
200.00	200.45	254.38	0.79	183.62	274.95	0.67
195.00	206.95	254.38	0.81	189.47	274.95	0.69
190.00	212.41	254.38	0.84	194.48	274.95	0.71
185.00	218.30	254.38	0.86	199.74	274.95	0.73
180.00	224.20	239.46	0.94	205.06	274.95	0.75
173.33	231.45	239.46	0.97	211.44	274.95	0.77
166.67	237.87	239.46	0.99	217.14	274.95	0.79
160.00	244.66	309.64	0.79	223.00	327.10	0.68
153.33	250.95	309.64	0.81	228.39	327.10	0.70
146.67	257.52	309.64	0.83	233.94	327.10	0.72
140.00	263.74	309.64	0.85	239.19	357.75	0.67
133.33	270.14	309.64	0.87	244.55	357.75	0.68
126.67	276.40	309.64	0.89	249.76	357.75	0.70
120.00	284.15	334.65	0.85	256.21	378.00	0.68
110.00	293.53	334.65	0.88	263.96	378.00	0.70

100.00	302.91	334.65	0.91	271.60	378.00	0.72
90.00	312.40	334.65	0.93	279.21	378.00	0.74
80.00	321.91	334.65	0.96	286.80	378.00	0.76
70.00	331.44	334.65	0.99	294.37	378.00	0.78
60.00	341.16	507.33	0.67	301.89	523.32	0.58
50.00	351.01	507.33	0.69	309.28	523.32	0.59
40.00	360.97	507.33	0.71	316.72	523.32	0.61
30.00	370.92	507.33	0.73	324.11	523.32	0.62
20.00	380.92	507.33	0.75	331.50	576.00	0.58
10.00	390.82	507.33	0.77	338.78	576.00	0.59
0.00						

FORCE/RESISTANCE RATIO IN DIAGONALS

MAST ELEV ft	- DIAG COMPRESSION -			--- DIAG TENSION ---		
	MAX COMP	COMP RESIST	FORCE/ RESIST RATIO	MAX TENS	TENS RESIST	FORCE/ RESIST RATIO
290.00	0.75	7.16	0.10	0.88	7.16	0.12
285.00	3.52	7.16	0.49	3.34	7.16	0.47
280.00	3.65	7.16	0.51	3.52	7.16	0.49
275.00	3.78	7.16	0.53	3.84	7.16	0.54
270.00	4.06	7.16	0.57	4.01	7.16	0.56
265.00	4.26	7.16	0.60	4.25	7.16	0.59
260.00	4.61	7.16	0.64	4.44	7.16	0.62
255.00	4.70	7.16	0.66	4.75	7.16	0.66
250.00	4.98	7.16	0.70	4.93	7.16	0.69
245.00	5.18	7.16	0.72	5.18	7.16	0.72
240.00	5.92	10.74	0.55	5.61	10.74	0.52
235.00	5.63	10.74	0.52	5.84	10.74	0.54
230.00	6.13	10.74	0.57	5.89	10.74	0.55
225.00	10.12	10.74	0.94	10.03	10.74	0.93
220.00	4.40	7.16	0.62	4.15	7.16	0.58
215.00	3.71	7.16	0.52	3.87	7.16	0.54
210.00	3.79	7.16	0.53	3.61	7.16	0.50
205.00	3.42	7.16	0.48	3.47	7.16	0.48
200.00	3.50	5.63	0.62	3.35	5.63	0.59
195.00	3.28	5.63	0.58	3.30	5.63	0.59
190.00	3.41	5.63	0.60	3.25	5.63	0.58
185.00	3.24	5.63	0.58	3.26	5.63	0.58
180.00	3.70	5.14	0.72	3.51	5.14	0.68
173.33	3.50	5.14	0.68	3.51	5.14	0.68
166.67	3.68	5.14	0.72	3.50	5.14	0.68
160.00						

153.33	3.56	7.46	0.48	3.57	7.46	0.48
146.67	3.78	7.46	0.51	3.61	7.46	0.48
140.00	3.73	7.46	0.50	3.70	7.46	0.50
133.33	3.94	5.78	0.68	3.78	5.78	0.65
126.67	3.98	5.78	0.69	3.88	5.78	0.67
120.00	4.10	5.78	0.71	3.99	5.78	0.69
110.00	4.69	6.98	0.67	4.51	6.98	0.65
100.00	4.81	6.98	0.69	4.65	6.98	0.67
90.00	5.01	12.53	0.40	4.82	12.53	0.38
80.00	5.18	12.53	0.41	5.01	12.53	0.40
70.00	5.38	10.73	0.50	5.21	10.73	0.49
60.00	5.59	10.73	0.52	5.40	10.73	0.50
50.00	5.78	13.43	0.43	5.62	13.43	0.42
40.00	6.03	13.43	0.45	5.84	13.43	0.43
30.00	6.22	14.31	0.43	6.06	14.31	0.42
20.00	6.43	14.31	0.45	6.25	14.31	0.44
10.00	6.58	12.68	0.52	6.44	12.68	0.51
0.00	6.80	12.68	0.54	6.60	12.68	0.52

MAXIMUM INDIVIDUAL FOUNDATION LOADS: (kip)

LOAD		COMPONENTS		TOTAL
NORTH	EAST	DOWN	UPLIFT	SHEAR
33.21 s	26.62 e	395.23 s	-341.90 k	33.21 s

MAXIMUM TOTAL LOADS ON FOUNDATION : (kip & kip-ft)

HORIZONTAL			DOWN	OVERTURNING			TORSION
NORTH	EAST	TOTAL		NORTH	EAST	TOTAL	
	@	0.0				@	0.0
53.1 S	-42.7 J	53.1 S	143.9 BT	8772.2 S	-7326.2 J	8772.2 S	-31.6 P

Latticed Tower Analysis (Unguyed)
Processed under license at:

(c)2015 Guymast Inc. 416-736-7453

Sabre Towers and Poles

on: 27 sep 2022 at: 8:55:04

***** Service Load Condition *****

* Only 1 condition(s) shown in full
* Some wind loads may have been derived from full-scale wind tunnel testing

LOADING CONDITION A

60 mph wind with no ice. Wind Azimuth: 0° (1.0 D + 1.0 Wc)

PL - 0

MAST LOADING

LOAD TYPE	ELEV ft	APPLY. RADIUS ft	LOAD. AT AZI	LOAD AZI	FORCES		MOMENTS	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	285.0	0.00	0.0	0.0	2.19	4.00	0.00	0.00
C	225.0	0.00	0.0	0.0	2.78	6.00	0.00	0.00
D	290.0	0.00	180.0	0.0	0.02	0.04	0.00	0.00
D	285.0	0.00	180.0	0.0	0.02	0.04	0.00	0.00
D	285.0	0.00	42.0	0.0	0.03	0.04	0.02	0.02
D	260.0	0.00	42.0	0.0	0.03	0.04	0.02	0.02
D	260.0	0.00	42.0	0.0	0.03	0.06	0.02	0.02
D	240.0	0.00	42.0	0.0	0.03	0.06	0.02	0.02
D	240.0	0.00	42.0	0.0	0.03	0.08	0.02	0.02
D	225.0	0.00	42.0	0.0	0.03	0.08	0.02	0.02
D	225.0	0.00	42.0	0.0	0.03	0.08	0.03	0.02
D	220.0	0.00	42.0	0.0	0.03	0.08	0.03	0.02
D	220.0	0.00	34.2	0.0	0.04	0.10	0.03	0.02
D	205.0	0.00	38.7	0.0	0.04	0.09	0.03	0.02
D	205.0	0.00	40.9	0.0	0.04	0.09	0.03	0.02
D	200.0	0.00	40.9	0.0	0.04	0.09	0.03	0.02
D	200.0	0.00	27.9	0.0	0.04	0.10	0.04	0.02
D	180.0	0.00	32.4	0.0	0.04	0.10	0.03	0.02
D	180.0	0.00	23.5	0.0	0.04	0.10	0.05	0.02
D	160.0	0.00	26.4	0.0	0.04	0.11	0.04	0.02
D	160.0	0.00	20.2	0.0	0.04	0.13	0.05	0.02
D	140.0	0.00	22.3	0.0	0.04	0.14	0.05	0.02
D	140.0	0.00	17.6	0.0	0.04	0.14	0.06	0.02
D	120.0	0.00	19.2	0.0	0.05	0.14	0.06	0.02
D	120.0	0.00	15.8	0.0	0.05	0.14	0.07	0.02
D	100.0	0.00	16.7	0.0	0.05	0.14	0.06	0.02
D	100.0	0.00	14.2	0.0	0.05	0.17	0.07	0.02
D	80.0	0.00	14.9	0.0	0.05	0.17	0.07	0.02
D	80.0	0.00	12.9	0.0	0.05	0.18	0.08	0.02
D	60.0	0.00	13.5	0.0	0.05	0.18	0.08	0.02
D	60.0	0.00	11.8	0.0	0.05	0.24	0.09	0.01
D	40.0	0.00	12.3	0.0	0.05	0.24	0.09	0.02
D	40.0	0.00	10.8	0.0	0.05	0.25	0.10	0.01
D	20.0	0.00	11.3	0.0	0.05	0.25	0.09	0.01
D	20.0	0.00	10.0	0.0	0.04	0.25	0.10	0.01
D	0.0	0.00	10.4	0.0	0.04	0.26	0.10	0.01

MAXIMUM MAST DISPLACEMENTS:

ELEV ft	DEFLECTIONS (ft)			TILTS (DEG)		TWIST DEG
	NORTH	EAST	DOWN	NORTH	EAST	
290.0	1.864 S	-1.638 J	0.019 S	0.917 S	-0.824 J	0.111 h
285.0	1.784 S	-1.566 J	0.018 S	0.917 S	-0.824 J	0.111 h
280.0	1.703 S	-1.493 J	0.017 S	0.915 S	-0.822 J	0.111 h
275.0	1.623 S	-1.421 J	0.017 S	0.906 S	-0.813 J	0.110 h
270.0	1.544 S	-1.350 J	0.016 S	0.891 S	-0.799 J	0.109 h
265.0	1.466 S	-1.280 J	0.015 S	0.870 S	-0.778 J	0.107 h
260.0	1.391 S	-1.213 J	0.014 S	0.842 S	-0.752 J	0.105 h
255.0	1.317 S	-1.147 J	0.014 S	0.822 S	-0.733 J	0.102 h
250.0	1.245 S	-1.083 J	0.013 S	0.798 S	-0.710 J	0.099 h
245.0	1.175 S	-1.021 J	0.013 S	0.769 S	-0.683 J	0.095 h
240.0	1.109 S	-0.962 J	0.012 S	0.735 S	-0.652 J	0.090 h
235.0	1.045 S	-0.905 J	0.012 S	0.709 S	-0.628 J	0.087 h
230.0	0.984 S	-0.852 J	0.011 S	0.678 S	-0.600 J	0.083 h
225.0	0.925 S	-0.799 J	0.011 S	0.645 S	-0.569 J	0.079 h
220.0	0.869 S	-0.750 J	0.010 S	0.606 S	-0.534 J	0.075 h
215.0	0.817 S	-0.704 J	0.010 S	0.577 S	-0.508 J	0.069 h
210.0	0.767 S	-0.660 J	0.009 S	0.550 S	-0.483 J	0.063 h
205.0	0.720 S	-0.618 J	0.009 S	0.523 S	-0.459 J	0.058 h
200.0	0.675 S	-0.579 J	0.009 S	0.498 S	-0.436 J	0.053 h
195.0	0.632 S	-0.541 J	0.008 S	0.473 S	-0.414 J	0.049 h
190.0	0.591 S	-0.506 J	0.008 S	0.450 S	-0.393 J	0.045 h
185.0	0.552 S	-0.472 J	0.008 S	0.427 S	-0.372 J	0.041 h
180.0	0.515 S	-0.440 J	0.008 S	0.405 S	-0.352 J	0.037 h

173.3	0.469 S	-0.400 J	0.007 S	0.376 S	-0.327 J	0.034 h
166.7	0.427 S	-0.364 J	0.007 S	0.349 S	-0.302 J	0.031 h
160.0	0.387 S	-0.329 J	0.007 S	0.322 S	-0.278 J	0.028 h
153.3	0.351 S	-0.298 J	0.006 S	0.302 S	-0.261 J	0.025 h
146.7	0.316 S	-0.268 J	0.006 S	0.283 S	-0.244 J	0.023 h
140.0	0.284 S	-0.240 J	0.006 S	0.265 S	-0.228 J	0.021 h
133.3	0.253 S	-0.214 J	0.005 S	0.247 S	-0.212 J	0.019 h
126.7	0.226 S	-0.191 J	0.005 S	0.229 S	-0.196 J	0.017 h
120.0	0.199 S	-0.168 J	0.005 S	0.212 S	-0.181 J	0.015 h
110.0	0.164 S	-0.138 J	0.004 S	0.188 S	-0.161 J	0.013 h
100.0	0.132 S	-0.111 J	0.004 S	0.165 S	-0.141 J	0.011 h
90.0	0.105 S	-0.088 J	0.004 S	0.143 S	-0.121 J	0.010 h
80.0	0.082 S	-0.068 J	0.003 S	0.121 S	-0.102 J	0.008 h
70.0	0.062 S	-0.052 J	0.003 S	0.099 S	-0.084 J	0.007 h
60.0	0.046 S	-0.038 J	0.002 S	0.078 S	-0.066 J	0.006 h
50.0	0.033 S	-0.027 J	0.002 S	0.064 S	-0.054 J	0.005 h
40.0	0.022 S	-0.018 J	0.002 S	0.051 S	-0.043 J	0.004 h
30.0	0.013 S	-0.011 J	0.001 S	0.038 S	-0.032 J	0.003 h
20.0	0.007 S	-0.006 J	0.001 S	0.025 S	-0.021 J	0.002 h
10.0	0.002 S	-0.002 J	0.000 S	0.012 S	-0.010 J	0.001 h
0.0	0.000 A	0.000 A	0.000 A	0.000 A	0.000 A	0.000 A

MAXIMUM TENSION IN MAST MEMBERS (kip)

=====

ELEV ft	LEGS	DIAG	HORIZ	BRACE
290.0	-----	-----	0.14 A	0.00 A
	0.04 S	0.33 S		
285.0	-----	-----	0.03 S	0.00 A
	0.00 A	1.07 A		
280.0	-----	-----	0.40 B	0.00 A
	2.75 A	1.14 D		
275.0	-----	-----	0.08 B	0.00 A
	5.68 B	1.31 V		
270.0	-----	-----	0.01 S	0.00 A
	8.81 A	1.33 V		
265.0	-----	-----	0.09 B	0.00 A
	12.03 A	1.43 D		
260.0	-----	-----	0.27 A	0.00 A
	15.41 A	1.46 D		
255.0	-----	-----	0.11 A	0.00 A
	19.18 A	1.61 V		
250.0	-----	-----	0.01 S	0.00 A
	22.88 A	1.64 D		
245.0	-----	-----	0.11 A	0.00 A
	26.87 A	1.74 V		
240.0	-----	-----	0.39 A	0.00 A
	30.75 A	1.84 A		
235.0	-----	-----	0.13 B	0.00 A
	35.49 A	1.97 S		
230.0	-----	-----	0.00 a	0.00 A
	39.56 A	1.97 A		
225.0	-----	-----	0.11 B	0.00 A
	43.67 A	3.35 V		
220.0	-----	-----	0.23 T	0.00 A
	49.24 A	1.34 C		
215.0	-----	-----	0.12 A	0.00 A
	51.98 A	1.33 U		
210.0	-----	-----	0.02 A	0.00 A
	54.03 A	1.18 C		
205.0	-----	-----	0.08 A	0.00 A
	56.19 A	1.18 U		
200.0	-----	-----	0.03 A	0.00 A
	57.98 A	1.11 C		
195.0	-----	-----	0.06 A	0.00 A
	59.83 A	1.13 F		
190.0	-----	-----	0.05 A	0.00 A
	61.44 A	1.08 C		
185.0	-----	-----	0.04 A	0.00 A
	63.09 A	1.11 X		
180.0	-----	-----	0.05 A	0.00 A
	64.79 A	1.18 C		
173.3	-----	-----	0.05 A	0.00 A
	66.79 A	1.20 X		
166.7	-----	-----	0.04 A	0.00 A
	68.60 A	1.18 X		
160.0	-----	-----	0.04 A	0.00 A
	70.41 A	1.22 X		

153.3			0.03 A	0.00 A
146.7	72.06 A	1.23 X	0.03 A	0.00 A
140.0	73.75 A	1.27 X	0.02 A	0.00 A
133.3	75.36 A	1.29 X	0.05 A	0.00 A
126.7	76.98 A	1.33 X	0.02 A	0.00 A
120.0	78.56 A	1.36 F	0.05 A	0.00 A
110.0	80.52 A	1.54 F	0.04 A	0.00 A
100.0	82.87 A	1.60 X	0.04 A	0.00 A
90.0	85.16 A	1.66 F	0.04 A	0.00 A
80.0	87.42 A	1.73 X	0.02 A	0.00 A
70.0	89.66 A	1.81 F	0.03 A	0.00 A
60.0	91.90 A	1.88 F	0.02 A	0.00 A
50.0	94.05 A	1.96 X	0.02 A	0.00 A
40.0	96.09 A	2.03 F	0.02 A	0.00 A
30.0	98.13 A	2.11 X	0.02 A	0.00 A
20.0	100.16 A	2.18 X	0.00 A	0.00 A
10.0	102.17 A	2.25 F	0.02 A	0.00 A
0.0	104.14 A	2.30 X	0.00 A	0.00 A

MAXIMUM COMPRESSION IN MAST MEMBERS (kip)

ELEV ft	LEGS	DIAG	HORIZ	BRACE
290.0			-0.22 S	0.00 A
285.0	-0.28 A	-0.21 A	-0.01 A	0.00 A
280.0	-2.56 S	-1.23 S	-0.22 T	0.00 A
275.0	-5.65 S	-1.26 D	-0.04 T	0.00 A
270.0	-9.03 T	-1.25 D	-0.01 A	0.00 A
265.0	-12.23 S	-1.38 D	-0.05 T	0.00 A
260.0	-15.74 S	-1.43 V	-0.20 S	0.00 A
255.0	-19.26 S	-1.57 S	-0.08 S	0.00 A
250.0	-23.54 S	-1.56 D	-0.01 A	0.00 A
245.0	-27.44 S	-1.68 V	-0.08 S	0.00 A
240.0	-31.82 S	-1.74 D	-0.32 S	0.00 A
235.0	-35.93 S	-2.02 S	-0.09 T	0.00 A
230.0	-41.35 S	-1.87 D	-0.02 g	0.00 A
225.0	-45.75 S	-2.07 S	-0.07 T	0.00 A
220.0	-54.31 S	-3.41 S	-0.38 B	0.00 A
215.0	-60.15 S	-1.53 U	-0.08 S	0.00 A
210.0	-63.60 S	-1.22 C	-0.01 S	0.00 A
	-65.80 S	-1.30 U		

205.0	-----			-0.06 S	0.00 A
	-68.51 S	-1.14 F			
200.0	-----			-0.02 S	0.00 A
	-70.57 S	-1.20 U			
195.0	-----			-0.04 S	0.00 A
	-72.89 S	-1.11 X			
190.0	-----			-0.04 S	0.00 A
	-74.82 S	-1.17 U			
185.0	-----			-0.03 S	0.00 A
	-76.94 S	-1.09 X			
180.0	-----			-0.03 S	0.00 A
	-79.04 S	-1.27 U			
173.3	-----			-0.04 S	0.00 A
	-81.67 S	-1.19 X			
166.7	-----			-0.03 S	0.00 A
	-83.99 S	-1.27 U			
160.0	-----			-0.03 S	0.00 A
	-86.48 S	-1.22 X			
153.3	-----			-0.02 S	0.00 A
	-88.80 S	-1.30 U			
146.7	-----			-0.02 S	0.00 A
	-91.24 S	-1.28 U			
140.0	-----			-0.02 S	0.00 A
	-93.55 S	-1.36 U			
133.3	-----			-0.04 S	0.00 A
	-95.93 S	-1.36 U			
126.7	-----			-0.01 S	0.00 A
	-98.26 S	-1.41 U			
120.0	-----			-0.03 S	0.00 A
	-101.16 S	-1.62 U			
110.0	-----			-0.03 S	0.00 A
	-104.67 S	-1.66 U			
100.0	-----			-0.03 S	0.00 A
	-108.22 S	-1.74 U			
90.0	-----			-0.02 S	0.00 A
	-111.84 S	-1.80 U			
80.0	-----			-0.02 S	0.00 A
	-115.49 S	-1.87 U			
70.0	-----			-0.02 S	0.00 A
	-119.15 S	-1.95 U			
60.0	-----			-0.01 S	0.00 A
	-122.94 S	-2.02 U			
50.0	-----			-0.01 S	0.00 A
	-126.84 S	-2.10 U			
40.0	-----			-0.01 S	0.00 A
	-130.79 S	-2.17 U			
30.0	-----			-0.01 S	0.00 A
	-134.74 S	-2.25 U			
20.0	-----			0.00 S	0.00 A
	-138.72 S	-2.30 U			
10.0	-----			-0.01 S	0.00 A
	-142.67 S	-2.38 U			
0.0	-----			0.00 A	0.00 A

MAXIMUM INDIVIDUAL FOUNDATION LOADS: (kip)

-----LOAD-----COMPONENTS-----				TOTAL
NORTH	EAST	DOWN	UPLIFT	SHEAR
11.95 S	9.63 e	144.45 S	-104.96 A	11.95 S

MAXIMUM TOTAL LOADS ON FOUNDATION : (kip & kip-ft)

-----HORIZONTAL-----			DOWN	-----OVERTURNING-----			TORSION
NORTH	EAST	TOTAL		NORTH	EAST	TOTAL	
		@ 0.0				@ 0.0	
18.2 S	-14.7 J	18.2 S	50.2 S	2986.5 S	-2502.7 J	2986.5 S	10.6 h

Seismic Load Effects
Equivalent Lateral Force Procedure
ANSI/TIA-222-G

		Vertical Distribution of Seismic Forces						
		W_p (kips)	w_i (kips)	w_i/h^{k_p}	$F_{w,or} E_a$ (kips)	E_v (kips)	$1.2 D + 1.0 E_v$ (kips)	$0.9 D - 1.0 E_v$ (kips)
Parameters	Description	h_i (ft.)						
Risk Category	Antenna Load	285.00	4.0000	21,488.0376	1,3143	1,1464	5,9464	2,4536
R	Structure - Section 1	285.00	0.4890	2,626.9126	0.1607	0.1401	0.7269	0.3000
S_s	Ladder/Line	282.50	0.0512	271.3892	0.0166	0.0147	0.0761	0.0314
S_1	Ladder/Line	270.00	0.2048	1,013.4147	0.0620	0.0587	0.3045	0.1256
Site Class	Structure - Section 2	270.00	0.8650	4,280.2915	0.2618	0.2479	1,2859	0.5306
T_L (sec)	Ladder/Line	250.00	0.2048	901.5707	0.0551	0.0587	0.3045	0.1256
F_a	Structure - Section 3	250.00	1.1860	5,221.0101	0.3193	0.3399	1,7631	0.7275
F_v	Ladder/Line	232.50	0.1536	605.5791	0.0370	0.0440	0.2283	0.0942
S_{MS}	Structure - Section 4	230.00	1.6460	6,383.7413	0.3905	0.4717	2,4469	1,0097
S_{MH}	Antenna Load	225.00	6.0000	22,505.7032	1.3765	1,7196	8,9196	3,6804
S_{OS}	Ladder/Line	222.50	0.0668	246.3454	0.0151	0.0191	0.0993	0.0410
S_{DI}	Ladder/Line	210.00	0.2672	902.5030	0.0552	0.0766	0.3972	0.1639
T_s	Structure - Section 5	210.00	1.8810	6,353.3242	0.3886	0.5391	2,7963	1,1538
I_p	Ladder/Line	190.00	0.2672	775.1800	0.0474	0.0766	0.3972	0.1639
Ω	Structure - Section 6	190.00	1.9250	5,584.6612	0.3416	0.5517	2,8617	1,1808
C_s	Ladder/Line	170.00	0.2672	654.6416	0.0400	0.0766	0.3972	0.1639
h (ft)	Structure - Section 7	170.00	2.0820	5,100.9124	0.3120	0.5967	3,0951	1,2771
W_a (ft)	Ladder/Line	150.00	0.2672	541.2615	0.0331	0.0766	0.3972	0.1639
W_o (ft)	Structure - Section 8	150.00	2.6990	5,467.3082	0.3344	0.7735	4,0123	1,6556
W (kips)	Ladder/Line	130.00	0.2672	435.4852	0.0266	0.0766	0.3972	0.1639
W_1 (kips)	Structure - Section 9	130.00	2.9750	4,848.6841	0.2966	0.8526	4,4226	1,8249
W_2 (kips)	Ladder/Line	110.00	0.2672	337.8568	0.0207	0.0766	0.3972	0.1639
f_1 (Hertz)	Structure - Section 10	110.00	3.0090	3,804.6821	0.2327	0.8624	4,4732	1,8457
T (sec)	Ladder/Line	90.00	0.2672	249.0623	0.0152	0.0766	0.3972	0.1639
k_p	Structure - Section 11	90.00	3.5970	3,352.8331	0.2051	1.0309	5,3473	2,2064
V_s (kips)	Ladder/Line	70.00	0.2672	170.0055	0.0104	0.0766	0.3972	0.1639
Seismic Design Category	Structure - Section 12	70.00	3.7300	2,373.2053	0.1452	1.0690	5,5450	2,2880
	Ladder/Line	50.00	0.2672	101.9580	0.0062	0.0766	0.3972	0.1639
	Structure - Section 13	50.00	5.0130	1,912.8575	0.1170	1.4367	7,4523	3,0750
	Ladder/Line	30.00	0.2672	46.9161	0.0029	0.0766	0.3972	0.1639
	Structure - Section 14	30.00	5.2530	922.3445	0.0564	1.5055	7,8091	3,2222
	Ladder/Line	10.00	0.2672	8.8376	0.0005	0.0766	0.3972	0.1639
	Structure - Section 15	10.00	5.4660	180.7880	0.0111	1.5666	8,1258	3,3528
	Σ		55.44	109,669.30	6.71	15.89	82.41	34.00

Leg Connection Details

Bottom Elevation (ft)	Top Elevation (ft)	Pipe Dimensions	Top Splice				Bottom Splice/Base							
			Bolt Qty.	Bolt Dia. (in)	Bolt Circle (in)	Plate Thickness (in)	Plate Dia. (in)	Bolt Qty.	Bolt Dia. (in)	Bolt Circle (in)	Plate Thickness (in)	Plate Dia. (in)		
280	290	2.875 OD X .203								6	0.75	6.50	1.00	8.50
260	280	2.875 OD X .203	6	0.75	6.50	1.00	8.50			6	0.75	6.50	1.00	8.50
240	260	3.500 OD X .300	6	0.75	6.50	1.00	8.50			6	1.00	9.00	1.25	11.50
220	240	4.500 OD X .337	6	1.00	9.00	1.25	11.50			6	1.00	9.00	1.25	11.50
200	220	5.563 OD X .375	6	1.00	9.00	1.25	11.50			6	1.00	9.00	1.25	11.50
180	200	5.563 OD X .375	6	1.00	9.00	1.25	11.50			6	1.00	9.00	1.25	11.50
160	180	5.563 OD X .375	6	1.00	9.00	1.25	11.50			6	1.00	9.00	1.25	11.50
140	160	5.563 OD X .500	6	1.00	9.00	1.25	11.50			6	1.00	9.00	1.25	11.50
120	140	5.563 OD X .500	6	1.00	9.00	1.25	11.50			6	1.25	12.50	1.75	15.75
100	120	8.625 OD X .322	6	1.25	12.50	1.50	15.75			6	1.25	12.50	1.50	15.75
80	100	8.625 OD X .322	6	1.25	12.50	1.50	15.75			6	1.25	12.50	1.50	15.75
60	80	8.625 OD X .322	6	1.25	12.50	1.50	15.75			6	1.25	12.50	1.50	15.75
40	60	8.625 OD X .500	6	1.25	12.50	1.50	15.75			6	1.25	12.50	1.50	15.75
20	40	8.625 OD X .500	6	1.25	12.50	1.50	15.75			6	1.25	12.50	1.50	15.75
0	20	8.625 OD X .500	6	1.25	12.50	1.50	15.75			6	1.50	13.25	1.75	17.00

Diagonal Bracing Connection Details									
Bottom Elevation (ft)	Top Elevation (ft)	Angle Shape	Bolt Qty.	Bolt Dia. (in)	Bolt End Distance (in)	Bolt Spacing (in)	Gage Distance From Heel (in)	Gusset Plate Thickness (in)	
280	290	L 2 X 2 X 1/8	1	0.625	1.500		1.125	0.375	
260	280	L 2 X 2 X 1/8	1	0.625	1.500		1.125	0.375	
240	260	L 2 X 2 X 1/8	1	0.625	1.500		1.125	0.375	
220	240	L 2 X 2 X 3/16	1	0.625	1.500		1.125	0.375	
200	220	L 2 X 2 X 1/8	1	0.625	1.500		1.125	0.375	
180	200	L 2 X 2 X 1/8	1	0.625	1.500		1.125	0.375	
160	180	L 2 X 2 X 3/16	1	0.625	1.500		1.125	0.375	
140	160	L 2 1/2 X 2 1/2 X 3/16	1	0.625	1.500		1.375	0.375	
120	140	L 2 1/2 X 2 1/2 X 3/16	1	0.750	1.500		1.375	0.375	
100	120	L 3 X 3 X 3/16	1	0.750	1.625		1.750	0.375	
80	100	L 3 1/2 X 3 1/2 X 1/4	1	0.750	1.625		1.750	0.375	
60	80	L 3 1/2 X 3 1/2 X 1/4	1	0.750	1.625		1.750	0.375	
40	60	L 4 X 4 X 1/4	1	0.750	1.625		2.000	0.375	
20	40	L 4 X 4 X 1/4	2	0.625	1.625	2.1250	2.000	0.500	
0	20	L 4 X 4 X 1/4	2	0.625	1.625	2.1250	2.000	0.500	

DRILLED STRAIGHT PIER DESIGN BY SABRE INDUSTRIES

290' S3TL Series HD1 HORVATH COMMUNICATIONS INC Barlow, KY (457708) 09/27/22 REB

Factored Uplift (kips)	342
Factored Download (kips)	395
Factored Shear (kips)	33
Ultimate Bearing Pressure	13.825
Bearing Φ_s	0.75
Bearing Design Strength (ksf)	10.36875
Water Table Below Grade (ft)	24
Bolt Circle Diameter (in)	13.25
Top of Concrete to Top of Bottom Threads (in)	65.125
Pier Diameter (ft)	5
Ht. Above Ground (ft)	1
Pier Length Below Ground (ft)	40
Rebar Quantity	16
Rebar Diameter (in)	1.27
Rebar Area (in ²)	20.27
Rebar Spacing (in)	10.09
Tie Diameter (in)	0.5
Tie Spacing (in)	12
f'_c (ksi)	4.5
f_y (ksi)	60
Unit Wt. of Concrete (kcf)	0.15
Volume of Concrete (yd ³)	29.82

Minimum Pier Diameter (ft) 2.44

Minimum Area of Steel (in²) 14.14

Length to ignore download (ft)

Ignore bottom length in download?

0

Depth at Bottom of Layer (ft)	Ult. Skin Friction (ksf)	Ult. Skin Friction (Uplift)	γ (kcf)
3	0.10	0.10	0.11
20	0.30	0.30	0.11
28	0.75	0.75	0.11
33	0.75	0.75	0.11
37	1.00	1.00	0.11
40	0.75	0.75	0.11

DRILLED STRAIGHT PIER DESIGN BY SABRE INDUSTRIES (CONTINUED)

Download:

Φ_s , Download Friction	0.75
Q_f , Skin Friction (kips)	336.2
Q_b , End Bearing Strength (kips)	271.5
Download Design Strength (kips)	455.7

W_s (kips)	86.4
W_c (kips)	120.8
Factored Net Download (kips)	436.2

Uplift (skin friction):

Φ_s , Uplift	0.75
Q_f , Skin Friction (kips)	336.2
W_c (kips)	120.8
W_w (kips)	19.6
Uplift Design Strength (kips)	343.1

Factored Uplift (kips)	342.0
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Uplift (cone):

$W_{s,cone}$ (kips)	3255.5
$W_{w,cone}$ (kips)	161.7
W_c (kips)	120.8
$W_{w,cyl}$ (kips)	19.6
Uplift Design Strength (kips)	2875.5

Factored Uplift (kips)	342.0
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Tension:

Design Tensile Strength (kips)	1094.5
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T_u (kips)	342.0
--------------	-------

Shear:

ϕV_n (kips)	249.0
$\phi V_c = \phi 2(1 + N_u / (500 A_g)) f'_c {}^{1/2} b_w d$ (kips)	249.0
V_s (kips)	0.0
Maximum Spacing (in)	7.81

*** $V_s \text{ max} = 4 f'_c {}^{1/2} b_w d$ (kips)	772.8
--	-------

(Only if Shear Ties are Required)
 *** Ref. ACI 11.5.5 & 11.5.6.3

Anchor Bolt Pull-Out:

$\phi P_c = \phi \lambda (2/3) f'_c {}^{1/2} (2.8 A_{SLOPE} + 4 A_{FLAT})$	425.8
Rebar Development Length (in)	42.89

P_u (kips)	342.0
Required Development Length (in)	N/A

Condition	1 is OK, 0 Fails
Download	1
Uplift	1
Area of Steel	1
Shear	1
Anchor Bolt Pull-Out	1
Interaction Diagram	1

PREPARED BY:

PREPARED FOR:



REVISIONS	REV.	DATE	DESCRIPTION
	A	9.12.22	ISSUED FOR REVIEW

SITE INFORMATION:
EV BARLOW SE
 WAYSIDE INN RD
 WICKLEE, KY 42087
 BALLARD COUNTY

TAX PARCEL NUMBER:
 37-17-03

PROPERTY OWNER:
 LONEA & KENNY TURNER
 5874 HINKLEVILLE RD
 LACENTER, KY 42056

SOURCE OF TITLE:
 DEED BOOK 77, PAGE 464

POD NUMBER: 22-138399
 DRAWN BY: DAP
 CHECKED BY: MEP
 SURVEY DATE: 6-28-19
 PLAT DATE: 9-12-22

SHEET TITLE:

TOWER GRID MAP

SHEET NUMBER: (1 page)
C-1

BALLARD COUNTY, KENTUCKY
VERIZON WIRELESS SITE NAME: EV BARLOW SE



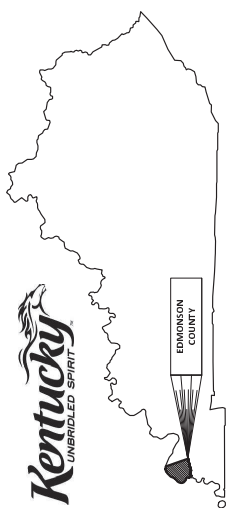
EXISTING TOWER LEGEND

A1	FCC REGISTRATION #: 1108064 CROWN CASTLE CT COMPANY LLC LAT: 37° 01' 23.67"N LONG: 88° 52' 23.67"W
B1	FCC REGISTRATION #: 1025098 LAT: 37° 11' 31.27"N LONG: 88° 58' 53.27"W
C1	FCC REGISTRATION #: 104387 AMERICAN FAMILY ASSOCIATION LAT: 37° 01' 45.67"N LONG: 88° 58' 06.07"W
D1	FCC REGISTRATION #: 1108254 WILKESBORO COMMUNICATIONS COMPANY OF PABULUM, LLC LAT: 36° 58' 24.57"N LONG: 88° 58' 01.07"W
E1	FCC REGISTRATION #: 1005254 S&P PROPERTIES, LLC LAT: 37° 01' 59.67"N LONG: 88° 59' 53.87"W
F1	FCC REGISTRATION #: 1229442 AMERICAN FAMILY ASSOCIATION LAT: 37° 01' 59.67"N LONG: 88° 59' 15.27"W
G1	FCC REGISTRATION #: 1229442 TOWERS III, LLC LAT: 37° 05' 64.27"N LONG: 88° 52' 42.77"W
H1	FCC REGISTRATION #: 1248939 LAT: 37° 06' 39.77"N LONG: 88° 57' 35.47"W
I1	FCC REGISTRATION #: 252513 AMERICAN FAMILY ASSOCIATION LAT: 37° 01' 55.47"N LONG: 88° 56' 43.77"W
J1	FCC REGISTRATION #: 1105272 TNS HOLDINGS LLC LAT: 37° 01' 23.67"N LONG: 88° 52' 23.67"W
K1	FCC REGISTRATION #: 1205530 LAT: 37° 01' 23.67"N LONG: 88° 52' 23.67"W
L1	(GRANTED) FCC REGISTRATION #: 1331667 LAT: 37° 01' 45.67"N LONG: 88° 58' 06.07"W
M1	FCC REGISTRATION #: 1338625 LAT: 37° 01' 45.67"N LONG: 88° 58' 06.07"W
N1	(GRANTED) FCC REGISTRATION #: 1321287 LAT: 37° 05' 42.27"N LONG: 88° 52' 42.77"W
O1	FCC REGISTRATION #: 1006062 CROWN CASTLE CT COMPANY LLC LAT: 37° 05' 42.27"N LONG: 88° 52' 42.77"W
P1	FCC REGISTRATION #: 1006062 CROWN CASTLE CT COMPANY LLC LAT: 37° 05' 42.27"N LONG: 88° 52' 42.77"W
Q1	FCC REGISTRATION #: 1006062 CROWN CASTLE CT COMPANY LLC LAT: 37° 05' 42.27"N LONG: 88° 52' 42.77"W
R1	FCC REGISTRATION #: 1315274 TELUMIN INFRASTRUCTURE, LLC LAT: 37° 01' 23.67"N LONG: 88° 52' 23.67"W



USGS 7.5 MINUTE QUADRANGLE: BARLOW, KY

NOTE: TOWERS, REPORTED AS UNKNOWN, ARE NOT REGISTERED WITH THE FEDERAL COMMUNICATIONS COMMISSION IN BALLARD COUNTY, KENTUCKY.





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

Aeronautical Study No.
2019-ASO-26576-OE

Issued Date: 05/24/2021

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

**** Extension ****

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure:	Antenna Tower EV Barlow SE - C - 2505006
Location:	Wickliffe, KY
Latitude:	37-01-45.61N NAD 83
Longitude:	89-00-07.63W
Heights:	443 feet site elevation (SE) 299 feet above ground level (AGL) 742 feet above mean sea level (AMSL)

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 11/24/2022 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the 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 extension 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 2019-ASO-26576-OE.

Signature Control No: 415690004-481750742

(EXT)

Angelique Eersteling
Technician

Attachment(s)
Additional Information

cc: FCC

Additional information for ASN 2019-ASO-26576-OE

All conditions previously cited in the original FAA determination will remain in effect.



KENTUCKY AIRPORT ZONING COMMISSION

ANDY BESHEAR
Governor

Department of Aviation, 90 Airport Road
Frankfort, KY 40601
www.transportation.ky.gov
502-564-0151

JIM GRAY
Secretary

APPROVAL OF APPLICATION

Monday, August 22, 2022

APPLICANT

Verizon Wireless c/o CMI ACQ
121 Village Blvd
Madison, MS 39910

SUBJECT: AS-BALLARD-PAH-2022-084

STRUCTURE: Antenna Tower
LOCATION: Wickliffe, KY
COORDINATES: 37°01'45.61" N / 89°00'07.63" W
HEIGHT: 299' AGL / 742'AMSL

The Kentucky Airport Zoning Commission has approved your application for a permit to construct an Antenna Tower near Wickliffe, KY.

This permit is valid for a period of 18 Month(s) from its date of issuance. If construction is not completed within said 18-Month period, this permit shall lapse and be void, and no work shall be performed without the issuance of a new permit.

Medium Intensity Dual Obstruction Lighting is required in accordance with 602 KAR 50:100 and FAA Advisory Circular 70/74601-1 L

Brad Schwandt

Airport Zoning Administrator
Department of Aviation
Brad.Schwandt@ky.gov
AirportZoning@ky.gov



An Equal Opportunity Employer M/F/D

Date: February 28, 2020

POD Job Number: 19-42119

GEOTECHNICAL REPORT

EV BARLOW SE

37° 01' 45.61" N

89° 00' 07.63" W

Wayside Inn Rd,
Wickliffe, KY 42087

Prepared For:



Prepared By:





February 28, 2020

Mr. Mike Rerecich
Verizon Wireless
2421 Holloway Road
Louisville, KY 40299

Re: Geotechnical Report – **PROPOSED 290' SELF-SUPPORT TOWER w/ 5' LIGHTNING ARRESTOR**
Site Name: **EV BARLOW SE SE**
Site Address: Wayside Inn Rd, Wickliffe, Ballard County, Kentucky
Coordinates: N37° 01' 45.61", W89° 00' 07.63"
POD Project No. 19-42119

Dear Mr. Rerecich:

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

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

Cordially,

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

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



Copies submitted: (3) Mr. Mike Rerecich

LETTER OF TRANSMITTAL

TABLE OF CONTENTS

	<u>Page</u>
1. PURPOSE AND SCOPE.....	1
2. PROJECT CHARACTERISTICS	1
3. SUBSURFACE CONDITIONS	1
4. FOUNDATION DESIGN RECOMMENDATIONS	2
4.1. PROPOSED TOWER	2
4.1.1. Drilled Piers	2
4.1.2. Mat Foundation	3
4.2. EQUIPMENT PLATFORM.....	4
4.3. EQUIPMENT SLAB.....	4
4.4. EQUIPMENT BUILDING	4
4.5. DRAINAGE AND GROUNDWATER CONSIDERATIONS	5
5. GENERAL CONSTRUCTION PROCEDURES AND RECOMMENDATIONS.....	5
5.1 DRILLED PIERS	5
5.2 FILL COMPACTION	6
5.3 CONSTRUCTION DEWATERING	6
6 FIELD INVESTIGATION	6
7 WARRANTY AND LIMITATIONS OF STUDY	7

APPENDIX

BORING LOCATION PLAN
BORING LOGS
SOIL SAMPLE CLASSIFICATION

Geotechnical Report
PROPOSED 290' SELF-SUPPORT TOWER w/ 5' LIGHTNING ARRESTOR

Site Name: **EV BARLOW SE**
Wayside Inn Rd, Wickliffe, Ballard County, Kentucky
N37° 01' 45.61", W89° 00' 07.63"

1. PURPOSE AND SCOPE

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

2. PROJECT CHARACTERISTICS

Verizon is proposing to construct a self-support tower and either an equipment shelter, slab or platform at N37° 01' 45.61", W89° 00' 07.63", Wayside Inn Rd, Wickliffe, Ballard County, Kentucky. The site is located in a grass covered farm field in a rural area southeast of Barlow. The proposed lease area will be 10,000 square feet and will be accessed by a short access road running north off Wayside Inn Road. The proposed elevation at the tower location is about EL 443 and there is about 5-feet of change in elevation across the proposed lease area. The proposed tower location is shown on the Boring Location Plan in the Appendix.

3. SUBSURFACE CONDITIONS

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

According to the Kentucky Geological Survey, Kentucky Geologic Map Information Services, the site is underlain by the Quaternary age Loess silt.

The borings encountered about 6 inches of topsoil at the existing ground surface. Below the topsoil, the borings encountered clayey silt (ML) to the scheduled termination depths of 20 feet in B-2 and B-3 and to about 18.5 feet in B-1. The SPT N-values in the silt were between 3 and 8 blows per foot (bpf) generally indicating a soft to medium stiff consistency. At about 18.5 feet in B-1, silty clay (CL) of low plasticity was encountered with SPT N-values between 15 and 100 bpf generally indicating a stiff to hard consistency that was inflated by a significant amount of rock fragments in many of the samples. A layer of dense, silty fine sand (SP) was encountered between about 33.5 feet and 37 feet

before returning to the silty clay at about 37 feet to the scheduled termination depth of 40 feet.

Groundwater was noted on the drilling equipment in B-1 at about 28 feet and at 24 feet at completion. Groundwater was not encountered in Borings B-2 and B-3. It must be noted, however, that short-term water readings in test borings are not necessarily a reliable indication of the actual groundwater level. Furthermore, it must be emphasized that the groundwater level is not stationary but will fluctuate seasonally.

Based on the limited subsurface conditions encountered at the site and using Table 1615.1.1 of the 2018 Kentucky Building Code, the site class is considered "C". Seismic design requirements for telecommunication towers are given in section 1622 of the code. A detailed seismic study was beyond the scope of this report.

4. FOUNDATION DESIGN RECOMMENDATIONS

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

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

4.1. Proposed Tower

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

4.1.1. Drilled Piers

The following table summarizes the recommended values for use in analyzing lateral and frictional resistance for the various strata encountered at the test boring. It is important to note that these values are estimated based on the

standard penetration test results and soil types and were not directly measured. The all values provided are ultimate values and appropriate factors of safety should be used in conjunction with these values. If the piers will bear deeper than about 40 feet, a deeper boring should be drilled to determine the nature of the deeper material.

Depth Below Ground Surface, feet	0 – 3	3 – 20	20 – 28	28-33	33-37	37 – 40
Ultimate Bearing Pressure (psf)		5,500	13,825	13,825	24,180	13,825
C Undrained Shear Strength, psf	500	1000	2,500	2,500	0	2,500
∅ Angle of Internal Friction degrees	0	0	0	0	32°	0
Total Unit Weight, pcf	110	120	120	130	120	130
Soil Modulus Parameter k, pci	30	500	750	750	90	750
Passive Soil Pressure, psf/one foot of depth		675 + 40(D-3)	1,675 + 40(D-20)	1,675 + 43(D-28)	52024 (D ²)	1,675 + 43(D-37)
Side Friction, psf	100	300	750	750	1000	750

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

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

4.1.2. Mat Foundation

The tower could be supported on a common mat foundation bearing on the silty soils at least 3 feet in depth can be designed using a net allowable bearing pressure of 2,000 pounds per square foot may be used. This value may be increased by 30 percent for the maximum edge pressure under transient loads. The friction value can be increased to 0.30 between the concrete and silty soils. The passive pressures given for the drilled pier foundation may be used to resist lateral forces.

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

4.2. Equipment Platform

An equipment platform may be supported on shallow piers bearing in the natural clay and designed for a net allowable soil pressure of 1,500 pounds per square foot. The piers should bear at a depth of at least 24 inches to minimize the effects of frost action. All existing topsoil or soft natural soil should be removed beneath footings.

4.3. Equipment Slab

A concrete slab supporting the equipment must be supported on at least 6-inch layer of relatively clean granular material such as gravel or crushed stone containing not more than 10 percent material that passes through a No. 4 sieve. This is to help distribute concentrated loads and equalize moisture conditions beneath the slab. Provided that a minimum of 6 in. of granular material is placed below the slab, a modulus of subgrade reaction (k) of 85 lbs/cu.in. can be used for design of the slab. All existing topsoil or soft natural soil should be removed beneath crushed stone layer.

4.4. Equipment Building

If an equipment building support on a slab is chosen in place of the equipment platform, it may be supported on shallow spread footings bearing in the silty soil and designed for a net allowable soil pressure of 1,500 pounds per square foot.

The footings should be at least ten inches wide. If the footings bear on soil, they should bear at a depth of at least 24 inches to minimize the effects of frost action. All existing topsoil or soft natural soil should be removed beneath footings.

Floor slabs must be supported on at least 4-inch layer of relatively clean granular material such as gravel or crushed stone containing not more than 10 percent material that passes through a No. 4 sieve. This is to help distribute concentrated loads and equalize moisture conditions beneath the slab. Provided that a minimum of 4 in. of granular material is placed below the slab, a modulus of subgrade reaction (k) of 85 lbs/cu.in. can be used for design of the floor slabs.

4.5. Drainage and Groundwater Considerations

Good site drainage must be provided. Surface run-off water should be drained away from the tower and platform and not allowed to pond.

At the time of this investigation, groundwater was encountered has high as 24 feet. Any seepage should be able to be pumped with sumps. It is important that all foundation concrete be placed the same day the excavation is made.

5. GENERAL CONSTRUCTION PROCEDURES AND RECOMMENDATIONS

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

5.1 Drilled Piers

The following recommendations are recommended for drilled pier construction:

- ✦ Clean the foundation bearing area so it is nearly level or suitably benched and is free of ponded water or loose material.
- ✦ Make provisions for ground water removal from the drilled shaft excavation. Groundwater was encountered has high has 24 feet during the soil drilling and some significant seepage may be encountered. The drilled pier contractor should have pumps on hand to remove water from the drilled pier.
- ✦ Specify concrete slumps ranging from 4 to 7 inches for the drilled shaft construction. These slumps are recommended to fill irregularities along the sides and bottom of the drilled hole, displace water as it is placed, and permit placement of reinforcing cages into the fluid concrete.
- ✦ Retain the geotechnical engineer to observe foundation excavations after the bottom of the hole is leveled, cleaned of any mud or extraneous material, and dewatered.
- ✦ Install a temporary protective steel casing to prevent side wall collapse, prevent excessive mud and water intrusion in the drilled shaft.
- ✦ The protective steel casing may be extracted as the concrete is placed provided a sufficient head of concrete is maintained inside the steel casing to prevent soil or water intrusion into the newly

placed concrete.

- Direct the concrete placement into the drilled hole through a centering chute to reduce side flow or segregation.

5.2 Fill Compaction

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

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

5.3 Construction Dewatering

At the time of this investigation, groundwater was encountered at about 24 feet. Any seepage should be able to be pumped with sumps.

If groundwater is encountered in the drilled pier excavations, it may be difficult to dewater since pumping directly from the excavations could cause a deterioration of the bottom of the excavation. If the pier excavations are not dewatered, concrete should be placed by the termie method.

6 FIELD INVESTIGATION

Three soil test borings were drilled near the base of the proposed tower. Split-spoon samples were obtained by the Standard Penetration Test (SPT) procedure (ASTM D1586) in all test borings. The borings were terminated at the scheduled depths of 20 and 40 feet. The split-spoon samples were inspected and visually classified by a geotechnical engineer. Representative portions of the soil samples were sealed in glass jars and returned to our laboratory. Pocket Penetrometer tests, moisture contents and Atterberg limits were performed and noted on the boring logs.

Geotechnical Report

EV BARLOW SE
February 28, 2020

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

7 WARRANTY AND LIMITATIONS OF STUDY

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

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

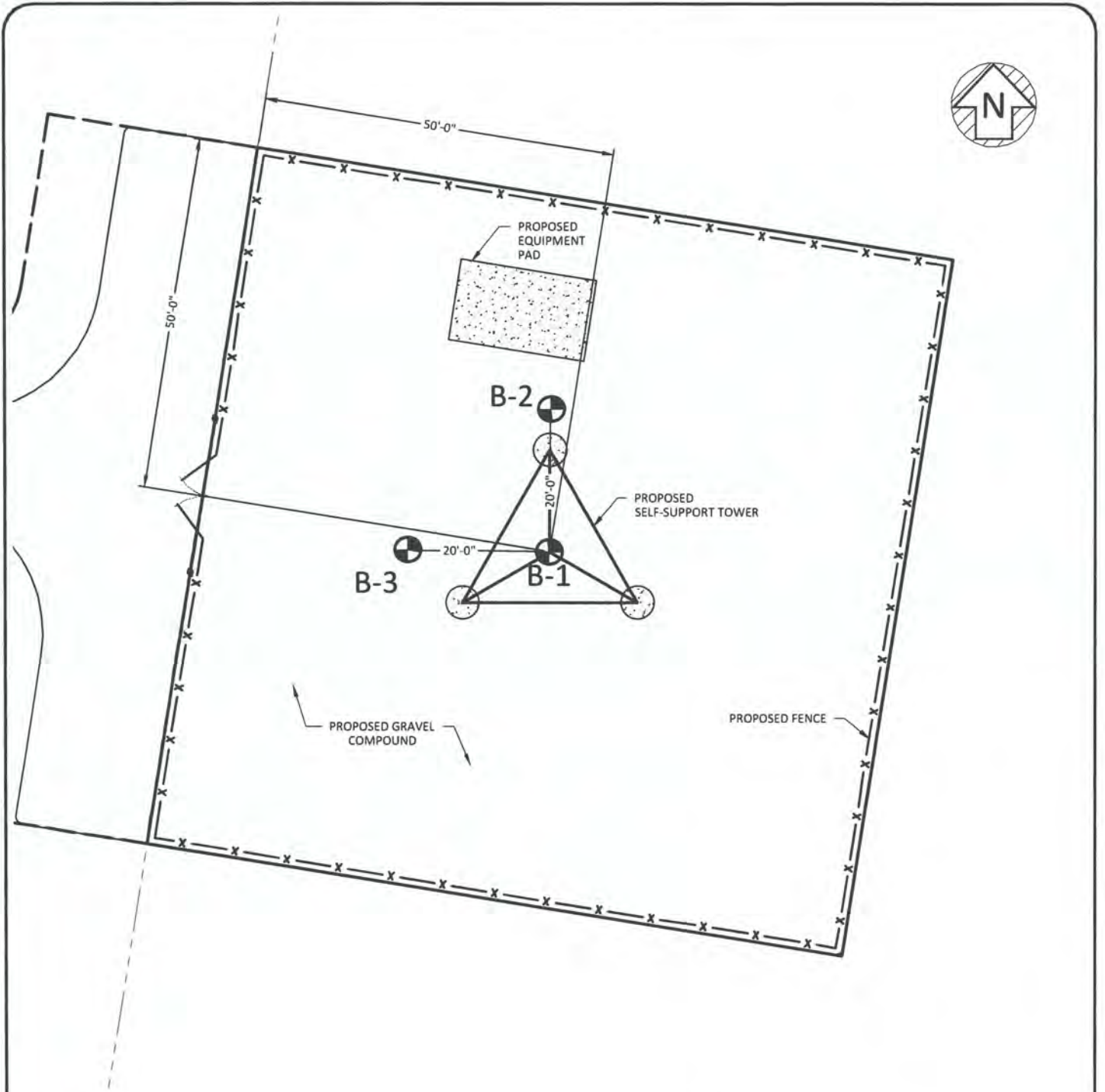
The nature and extent of variation and change in the subsurface conditions at the site may not become evident until the course of construction. Construction monitoring by the geotechnical engineer or a representative is therefore considered necessary to verify the subsurface conditions and to check that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

APPENDIX

BORING LOCATION PLAN

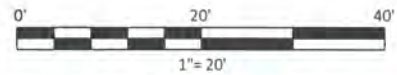
BORING LOGS

SOIL SAMPLE CLASSIFICATION



LEGEND

B-1 BORING LOCATION



SHEET TITLE: BORING LOCATION PLAN	LATITUDE: 37° 01' 45.61" N LONGITUDE: 89° 00' 07.63" W	SITE INFORMATION: EV BARLOW SE	 11490 BLUEGRASS PKWY LOUISVILLE, KY 40299 502-437-5252
	TAX PARCEL NUMBER: 37-17-03 DEED BOOK 77, PAGE 464	WAYSIDE INN RD WICKLIFFE, KY 42087 BALLARD COUNTY	
SHEET NUMBER: 1	POD NUMBER: 19-42119 DRAWN BY: POD CHECKED BY: MEP DATE: 2.13.20	OWNER INFORMATION: LOREA & KENNY TURNER 5874 HINKLEVILLE RD LACENTER, KY 42056	KENTUCKY RSA 1 PSHP DIV A 3421 HOLLOWAY ROAD LOUISVILLE, KY 40299



Boring Log

Boring: B-1

Page 1 of 1

Project: EV Barlow SE

City, State

Wickliffe, KY

Method: H.S.A.	Boring Date: 18-Feb-20	Location: Proposed Tower
Inside Diameter: 2 1/4"	Drill Rig Type: 66 DT	Hammer Type: Auto
Groundwater: Groundwater noted at 28' on rods and 24' at completion		Weather:
Driller: Commonwealth Drilling Co		
Note: About 6 inches of topsoil was encountered at the ground surface		

From (ft)	To (ft)	Material Description	Sample Depth (ft)	Sample Type	Blows per 6-inch increment	Recovery (in)	SPT-N value	Rock Quality (RQD, %)	Atterberg Limits	Moisture Content (%)	% Fines (clay & silt)	Unconfined Compressive Strength, (ksf)
0.5	18.5	CLAYEY SILT (ML) - soft, moist, brown										
	3.5	- medium stiff	1-2.5	SS	1, 1, 2	18	3,			28%		0.0
	8.5	- very moist	3.5-5	SS	3, 3, 4	6	7,			28%		3.3
			6-7.5	SS	3, 3, 3	16	6,			27%		1.3
			8.5-10	SS	2, 3, 3	16	6,			27%		0.5
			13.5-15	SS	3, 3, 5	12	8,			23%		0.5
18.5	33.5	SILTY CLAY (CL) - very stiff, reddish brown with rock, chert and gravel fragments	18.5-20	SS	5, 7, 10	10	17,			18%		4.5
	23.5	- hard, moist with gravel, sand and chert	23.5-25	SS	28, 50, 50	12	100,			12%		
			28.5-30	SS	26, 49, 50	13	99,			13%		
33.5	37.0	SILTY fine SAND (SP) - dense, light orange	33.5-35	SS	18, 24, 31	13	55,			19%		
37.0	40.0	SILTY CLAY (CL) - stiff, very light gray and orange brown	38.5-40	SS	4, 7, 8	9	15,			24%		
		Boring Terminated at 40 feet										



Boring Log

Boring: B-2

Page 1 of 1

Project: EV Barlow SE

City, State

Wickliffe, KY

Method: H.S.A.	Boring Date: 18-Feb-20	Location: Proposed Tower
Inside Diameter: 2 1/4"	Drill Rig Type: 66 DT	Hammer Type: Auto
Groundwater: DRY		Weather:
Driller: Commonwealth Drilling Co		
Note: About 6 inches of topsoil was encountered at the ground surface		

From (ft)	To (ft)	Material Description	Sample Depth (ft)	Sample Type	Blows per 6-inch increment	Recovery (in)	SPT-N value	Rock Quality (RQD,%)	Atterberg Limits	Moisture Content (%)	% Fines (clay & silt)	Unconfined Compressive Strength, (ksf)
0.5	20.0	CLAYEY SILT (ML) - soft, moist, brown										
	3.5	- medium stiff, brown-gray	1-2.5	SS	0, 1, 3	13	4,			27%		1.0
	6.0	- light brown	3.5-5	SS	2, 3, 3	14	6,			24%		2.0
	8.5	- soft, very moist	6-7.5	SS	3, 3, 4	18	7,			25%		1.0
	13.5	- medium stiff	8.5-10	SS	2, 2, 2	15	4,			26%		0.5
	17.0	- red with rock and chert fragments	13.5-15	SS	2, 3, 5	16	8,			23%		1.0
			18.5-20	SS	7, 12, 17	12	29,			14%		2.0
		Boring Terminated at 20 feet										



Boring Log

Boring: B-3

Page 1 of 1

Project: EV Barlow SE

City, State

Wickliffe, KY

Method: H.S.A.

Boring Date: 18-Feb-20

Location: Proposed Tower

Inside Diameter: 2 1/4"

Drill Rig Type: 66 DT

Hammer Type: Auto

Groundwater: DRY

Weather:

Driller: Commonwealth Drilling Co

Note: About 6 inches of topsoil was encountered at the ground surface

From (ft)	To (ft)	Material Description	Sample Depth (ft)	Sample Type	Blows per 6-inch increment	Recovery (in)	SPT-N value	Rock Quality (RQD, %)	Atterberg Limits	Moisture Content (%)	% Fines (clay & silt)	Unconfined Compressive Strength, (ksf)
0.5	20.0	CLAYEY SILT (ML) - soft, slightly moist, brown	1-2.5	SS	1, 2, 2	12	4,			27%		1.0
	3.5	- medium stiff, brown-gray	3.5-5	SS	3, 3, 5	18	8,			25%		1.4
	6.0	- moist	6-7.5	SS	2, 3, 5	14	8,			26%		1.0
			8.5-10	SS	2, 3, 4	13	7,			25%		0.5
	13.5	- reddish brown	13.5-15	SS	3, 3, 4	15	7,			22%		0.5
	17.0	- very stiff with rock and chert fragments	18.5-20	SS	6, 8, 12	16	20,			13%		4.5
		Boring Terminated at 20 feet										

SOIL SAMPLE CLASSIFICATION

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

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

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

Recovery =	$\frac{\text{Length of Rock Core Recovered}}{\text{Length of Core Run}}$	X100	63 REC	Core Diameter	Inches
			NQ	BQ	1-7/16
			43 RQD	NQ	1-7/8
				HQ	2-1/2
RQD =	$\frac{\text{Sum of 4 in. and longer Rock Pieces Recovered}}{\text{Length of Core Run}}$	X100			

SYMBOLS

KEY TO MATERIAL TYPES		SOIL PROPERTY SYMBOLS	
SOILS		ROCKS	
Group Symbols	Typical Names	Symbols	Typical Names
GW	Well graded gravel - sand mixture, little or no fines	[Horizontal lines]	Limestone or Dolomite
GP	Poorly graded gravels or gravel - sand mixture, little or no fines	[Horizontal lines]	Shale
GM	Silty gravels, gravel - sand silt mixtures	[Horizontal lines]	Sandstone
GC	Clayey gravels, gravel - sand - clay mixtures		
SW	Well graded sands, gravelly sands, little or no fines		
SP	Poorly graded sands or gravelly sands, little or no fines		
SM	Silty sands, sand - silt mixtures		
SC	Clayey sands, sand - clay mixtures		
ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts		
OL	Organic silts and organic silty clays of low plasticity		
CL	Inorganic clays of low range plasticity, gravelly clays, sandy clays, silty clays, lean clays		
MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts		
CH	Inorganic clays of high range plasticity, fat clays		

<p>N: Standard Penetration, BPF</p> <p>M: Moisture Content, %</p> <p>LL: Liquid Limit, %</p> <p>PI: Plasticity Index, %</p> <p>Qp: Pocket Penetrometer Value, TSF</p> <p>Qu: Unconfined Compressive Strength Estimated Qu, TSF</p> <p>γ: Dry Unit Weight, PCF</p> <p>γ_d: Fines Content</p>	<p style="text-align: center;">SAMPLING SYMBOLS</p> <p style="text-align: center;">SS Split Spoon Sample</p> <div style="text-align: center; margin: 10px 0;"> Relatively Undisturbed Sample </div> <div style="text-align: center; margin: 10px 0;"> Rock Core Sample </div>
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DIRECTIONS TO SITE

FROM BALLARD COUNTY CIRCUIT CLERK: 132 4TH ST, WICKLIFFE, KY 42087: HEAD SOUTH ON 4TH ST TOWARD COURT ST (197 FEET). TURN LEFT AT THE 1ST CROSS STREET ONTO COURT ST (0.4 MILES). TURN LEFT ONTO KY-286/PHILLIPS DR (1.2 MILES). TURN LEFT ONTO BUCK RD (0.4 MILES). TURN RIGHT ONTO KY-1290 (4.0 MILES). TURN LEFT ONTO S WAYSIDE INN RD (1.6 MILES). SITE WILL BE LOCATED ON RIGHT (EAST) SIDE OF ROAD.

Prepared by:
POWER OF DESIGN
11490 BLUEGRASS PARKWAY
LOUISVILLE, KY 40299
502-437-5252

SITE NAME: EV Barlow SE
SITE NUMBER: 415687
ATTY/DATE

LAND LEASE AGREEMENT

This Land Lease Agreement (the "Agreement") made this 13 day of January 2019, 20 between Kenny Turner and Lorea Turner, Husband and Wife, and both residents of the State of Kentucky with a mailing address of 3819 Tabor Rd., Barlow, Kentucky 42024, hereinafter collectively designated LESSOR and Cellco Partnership d/b/a Verizon Wireless with its principal offices at One Verizon Way, Mail Stop 4AW100, Basking Ridge, New Jersey 07920 (telephone number 866-862-4404), hereinafter designated LESSEE. LESSOR and LESSEE are at times collectively referred to hereinafter as the "Parties" or individually as the "Party."

WITNESSETH

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

1. GRANT. In accordance with this Agreement, LESSOR hereby grants to LESSEE the right to install, maintain and operate a telecommunications tower, facility, and equipment ("Use") upon the Premises (as hereinafter defined), which are a part of that real property owned, leased or controlled by LESSOR at 0 Wayside Inn Rd., Wickliffe, Kentucky 42087 (the "Property"). The Property is legally described on Exhibit "A" attached hereto and made a part hereof. The Premises are a portion of the Property including a portion of the parcel of land space (the "Land Space") consisting of approximately 100' x 100', or 10,000 square feet of land, as shown in detail on Exhibit "B" attached hereto and made a part hereof. LESSOR hereby grants permission to LESSEE to install, maintain and operate the telecommunications tower, facility, and equipment, antennas and appurtenances described in Exhibit "B" attached hereto. LESSEE reserves the right to replace the aforementioned equipment with similar and comparable equipment. In addition, LESSOR hereby grants to LESSEE a non-exclusive right (the "Easements") over the Property for access, ingress and egress, seven (7) days a week twenty-four (24) hours a day, on foot or motor vehicle, including trucks over or along a thirty foot (30') wide right-of-way extending from the nearest public right-of-way, Wayside Inn Rd., to the Land Space, and for the installation and maintenance of utility wires, poles, cables, conduits, fiber, and pipes over, under, or along one or more rights of way from the Land Space, said Land Space and Rights of Way (hereinafter collectively referred to as the "Premises") being substantially as described herein in Exhibit "B" attached hereto and made a part hereof. The Property is also shown on the Tax Map of the City of Wickliffe as Tax Map ID Number 37-17-03 and is further described in a certain Warranty Deed dated November 9, 2005, and recorded on November 10, 2005, and recorded in the Office of the Ballard County Recorder in Deed Book 77, Page 464.

In the event any public utility is unable to use the Easements, the LESSOR hereby agrees to grant an additional right-of-way either to the LESSEE or to the public utility at no cost to the LESSEE.

LESSEE may survey the Premises and said survey shall then become Exhibit "C" which shall be attached hereto and made a part hereof, and shall control in the event of boundary and access discrepancies between it and Exhibit "B". Cost for such work shall be borne by the LESSEE.

2. INITIAL TERM. This Agreement shall be effective as of the date of execution by both Parties ("Effective Date"). The initial term of the Agreement shall be for five (5) years beginning on the first (1st) day of the month following the Commencement Date (as hereinafter defined). The

"Commencement Date" shall be the first (1st) day of the month after LESSEE begins installation of LESSEE's communications equipment once the construction of the new tower has been completed. LESSOR and LESSEE agree that they shall acknowledge, in writing, the Commencement Date once construction of the telecommunications facility has commenced.

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

4. RENTAL.

(a). Rental payments shall begin on the Commencement Date and be due at a total annual rental of [REDACTED], to be paid in equal monthly installments of [REDACTED] on the first (1st) day of the month, in advance, to LESSOR at 3819 Tabor Rd., Barlow, Kentucky 42024 or to such other person, firm, or place as LESSOR may, from time to time, designate in writing at least 30 days in advance of any rental payment date by notice given in accordance with Paragraph 20 below. LESSOR and LESSEE acknowledge and agree that the initial rental payment shall not be delivered by LESSEE until 60 days after the Commencement Date. Upon agreement of the Parties, LESSEE may pay rent by electronic funds transfer and in such event, LESSOR agrees to provide to LESSEE bank routing information for such purpose upon request of LESSEE.

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

(c). The annual rental for the first (1st) five (5) year extension term shall be increased to [REDACTED]; the annual rental for the second (2nd) five (5) year extension term shall be increased to [REDACTED]; the annual rental for the third (3rd) five (5) year extension term shall be increased to [REDACTED] and the annual rental for the fourth (4th) five (5) year extension term shall be increased to [REDACTED].

(d). ADDITIONAL EXTENSIONS. If at the end of the fourth (4th) five (5) year extension term this Agreement has not been terminated by either Party by giving to the other written notice of an intention to terminate it at least three (3) months prior to the end of such term, this Agreement shall continue in force upon the same covenants, terms and conditions for a further term of five (5) years and for five (5) year terms thereafter until terminated by either Party by giving to the other written notice of its intention to so terminate at least three (3) months prior to the end of such term. Annual rental for each such additional five (5) year term shall be equal to the annual rental payable

with respect to the immediately preceding five (5) year term. The initial term and all extensions shall be collectively referred to herein as the "Term".

5. ACCESS. LESSEE shall have the non-exclusive right of ingress and egress from a public right-of-way, 7 days a week, 24 hours a day, over the Property to and from the Premises for the purpose of installation, operation and maintenance of LESSEE's communications equipment over or along a thirty foot (30') right-of-way ("Easement"), which shall be depicted on Exhibit "B". LESSEE may use the Easement for the installation, operation and maintenance of wires, cables, conduits and pipes for all necessary electrical, telephone, fiber and other similar support services. In the event it is necessary, LESSOR agrees to grant LESSEE or the provider the right to install such services on, through, over and/or under the Property, provided the location of such services shall be reasonably approved by LESSOR. Notwithstanding anything to the contrary, the Premises shall include such additional space sufficient for LESSEE's radio frequency signage and/or barricades as are necessary to ensure LESSEE's compliance with Laws (as defined in Paragraph 27).

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

7. IMPROVEMENTS. The communications equipment including, without limitation, the tower, equipment shelters/platforms, antenna mounts, antennas, conduits, and other improvements shall be at LESSEE's expense and installation shall be at the discretion and option of LESSEE. LESSEE shall have the right to replace, repair, add or otherwise modify its communications equipment, antennas, conduits, fencing and other screening, or other improvements or any portion thereof and the frequencies over which the communications equipment operates, whether or not any of the communications equipment, antennas, conduits or other improvements are listed on any exhibit.

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

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

10. INDEMNIFICATION. Subject to Paragraph 12, each Party shall indemnify and hold the other harmless against any claim of liability or loss from personal injury or property damage resulting from or arising out of the negligence or willful misconduct of the indemnified Party, its employees, contractors or agents, except to the extent such claims or damages may be due to or caused by the negligence or willful misconduct of the other Party, or its employees, contractors or agents. The indemnified Party will provide the indemnifying Party with prompt, written notice of any claim covered by this indemnification; provided that any failure of the indemnified Party to provide any such notice, or to provide it promptly, shall not relieve the indemnifying Party from its indemnification obligation in respect of such claim, except to the extent the indemnifying Party can establish actual prejudice and direct damages as a result thereof. The indemnified Party will cooperate appropriately with the indemnifying Party in connection with the indemnifying Party's defense of such claim. The indemnifying Party shall defend any indemnified Party, at the indemnified Party's request, against any claim with counsel reasonably satisfactory to the indemnified Party. The indemnifying Party shall not settle or compromise any such claim or consent to the entry of any judgment without the prior written consent of each indemnified Party and without an unconditional release of all claims by each claimant or plaintiff in favor of each indemnified Party.

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

12. LIMITATION OF LIABILITY. Except for indemnification pursuant to Paragraphs 10 and 24, a violation of Paragraph 30, or a violation of law, neither Party shall be liable to the other, or any of their respective agents, representatives, or employees for any lost revenue, lost profits, loss of technology, rights or services, incidental, punitive, indirect, special or consequential damages, loss of data, or interruption or loss of use of service, even if advised of the possibility of such damages, whether under theory of contract, tort (including negligence), strict liability or otherwise.

13. INTERFERENCE.

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

(b). Without limiting any other rights or remedies, if interference occurs and continues for a period in excess of 48 hours following notice to the interfering party via telephone to

LESSEE'S Network Operations Center (at (800) 224-6620/(800) 621-2622) or to LESSOR at (270) 836-7061, the interfering party shall or shall require any other user to reduce power or cease operations of the interfering equipment until the interference is cured.

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

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

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

16. RIGHT OF FIRST REFUSAL. If at any time after the Effective Date, LESSOR receives an offer or letter of intent from any person or entity that is in the business of owning, managing or operating communications facilities or is in the business of acquiring landlord interests in agreements relating to communications facilities, to purchase fee title, an easement, a lease, a license, or any other interest in the Premises or any portion thereof or to acquire any interest in this Agreement, or an option for any of the foregoing, LESSOR shall provide written notice to LESSEE of said offer ("LESSOR's Notice"). LESSOR's Notice shall include the prospective buyer's name, the purchase price being offered, any other consideration being offered, the other terms and conditions of the offer, a description of the portion of and interest in the Premises and/or this Agreement which will be conveyed in the proposed transaction, and a copy of any letters of intent or form agreements presented to LESSOR by the third party offeror. LESSEE shall have the right of first refusal to meet any bona fide offer of sale or transfer on the terms and conditions of such offer or by effectuating a transaction with substantially equivalent financial terms. If LESSEE fails to provide written notice to LESSOR that LESSEE intends to meet such bona fide offer within thirty (30) days after receipt of LESSOR's Notice, LESSOR may proceed with the proposed transaction in accordance with the terms and conditions of such third party offer, in which event this Agreement shall continue in full force and effect and the right of first refusal described in this Paragraph shall survive any such conveyance to a third party. If LESSEE provides LESSOR with notice of LESSEE's intention to meet the third party offer within thirty (30) days after receipt of LESSOR's Notice, then if LESSOR's Notice describes a transaction involving greater space than the Premises, LESSEE

may elect to proceed with a transaction covering only the Premises and the purchase price shall be pro-rated on a square footage basis. Further, LESSOR acknowledges and agrees that if LESSEE exercises this right of first refusal, LESSEE may require a reasonable period of time to conduct due diligence and effectuate the closing of a transaction on substantially equivalent financial terms of the third party offer. For purposes of this Paragraph, any transfer, bequest or devise of LESSOR's interest in the Property as a result of the death of LESSOR, whether by will or intestate succession, or any conveyance to LESSOR's family members by direct conveyance or by conveyance to a trust for the benefit of family members shall not be considered a sale for which LESSEE has any right of first refusal.

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

18. LESSOR'S TITLE. LESSOR covenants that LESSEE, on paying the rent and performing the covenants herein, shall peaceably and quietly have, hold and enjoy the Premises. LESSOR represents and warrants to LESSEE as of the Effective Date and covenants during the Term that LESSOR has full authority to enter into and execute this Agreement and that there are no liens, judgments, covenants, easements, restrictions or other impediments of title that will adversely affect LESSEE's Use.

19. ASSIGNMENT. Without any approval or consent of the other Party, this Agreement may be sold, assigned or transferred by either Party to (i) any entity in which the Party directly or indirectly holds an equity or similar interest; (ii) any entity which directly or indirectly holds an equity or similar interest in the Party; or (iii) any entity directly or indirectly under common control with the Party. LESSEE may assign this Agreement to any entity which acquires all or substantially all of LESSEE's assets in the market defined by the FCC in which the Property is located by reason of a merger, acquisition or other business reorganization without approval or consent of LESSOR. As to other parties, this Agreement may not be sold, assigned or transferred without the written consent of the other Party, which such consent will not be unreasonably withheld, delayed or conditioned. No change of stock ownership, partnership interest or control of LESSEE or transfer upon partnership or corporate dissolution of either Party shall constitute an assignment hereunder. LESSEE may sublet the Premises in LESSEE's sole discretion.

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

LESSOR: Kenny Turner and Lorea Turner
3819 Tabor Rd.
Barlow, Kentucky 42024

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

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

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

22. DEFAULT. It is a "Default" if (i) either Party fails to comply with this Agreement and does not remedy the failure within thirty (30) days after written notice by the other Party or, if the failure cannot reasonably be remedied in such time, if the failing Party does not commence a remedy within the allotted thirty (30) days and diligently pursue the cure to completion within ninety (90) days after the initial written notice, or (ii) LESSOR fails to comply with this Agreement and the failure substantially interferes with LESSEE's Use, in LESSEE's reasonable discretion, and

LESSOR does not remedy the failure within five (5) days after written notice from LESSEE or, if the failure cannot reasonably be remedied in such time, if LESSOR does not commence a remedy within the allotted five (5) days and diligently pursue the cure to completion within fifteen (15) days after the initial written notice. The cure periods set forth in this Paragraph 22 do not extend the period of time in which either Party has to cure interference pursuant to Paragraph 13 of this Agreement.

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

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

25. CASUALTY. If a fire or other casualty damages the Property or the Premises and substantially impairs LESSEE's Use, in LESSEE's reasonable discretion, rent shall abate until LESSEE'S Use is restored. If LESSEE's Use is not restored within forty-five (45) days, LESSEE may terminate this Agreement.

26. CONDEMNATION. If a condemnation of any portion of the Property or Premises substantially impairs LESSEE's Use, in LESSEE's reasonable discretion, LESSEE may terminate this Agreement. LESSEE may on its own behalf make a claim in any condemnation proceeding involving the Premises for losses related to LESSEE's communications equipment, relocation costs and, specifically excluding loss of LESSEE's leasehold interest, any other damages LESSEE may incur as a result of any such condemnation.

27. APPLICABLE LAWS. During the Term, LESSOR shall maintain the Property in compliance with all applicable laws, EH&S Laws, rules, regulations, ordinances, directives, covenants, easements, consent decrees, zoning and land use regulations, and restrictions of record, permits, building codes, and the requirements of any applicable fire insurance underwriter or rating bureau, now in effect or which may hereafter come into effect (including, without limitation, the Americans with Disabilities Act and laws regulating hazardous substances) (collectively "Laws"). LESSEE shall, in respect to the condition of the Premises and at LESSEE's sole cost and expense, comply with (i) all Laws relating solely to LESSEE's specific and unique nature of use of the Premises; and (ii) all building codes requiring modifications to the Premises due to the improvements being made by LESSEE in the Premises. It shall be LESSOR's obligation to comply with all Laws relating to the Property, without regard to specific use (including, without limitation, modifications required to enable LESSEE to obtain all necessary building permits).

28. TAXES.

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

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

29. ACCESS TO TOWER. LESSOR agrees the LESSEE shall have free access to the Tower at all times for the purpose of installing and maintaining the said equipment. LESSOR shall furnish LESSEE with necessary means of access for the purpose of ingress and egress to this site and Tower location. It is agreed, however, that only authorized engineers, employees or properly authorized contractors of LESSEE or persons under their direct supervision will be permitted to enter said premises.

30. NON-DISCLOSURE. The Parties agree this Agreement and any information exchanged between the Parties regarding the Agreement are confidential. The Parties agree not to provide

copies of this Agreement or any other confidential information to any third party without the prior written consent of the other or as required by law. If a disclosure is required by law, prior to disclosure, the Party shall notify the other Party and cooperate to take lawful steps to resist, narrow, or eliminate the need for that disclosure.

31. MOST FAVORED LESSEE. LESSOR represents and warrants that the rent, benefits and terms and conditions granted to LESSEE by LESSOR hereunder are now and shall be, during the Term, no less favorable than the rent, benefits and terms and conditions for substantially the same or similar tenancies or licenses granted by LESSOR to other parties. If at any time during the Term LESSOR shall offer more favorable rent, benefits or terms and conditions for substantially the same or similar tenancies or licenses as those granted hereunder, then LESSOR shall, within thirty (30) days after the effective date of such offering, notify LESSEE of such fact and offer LESSEE the more favorable offering. If LESSEE chooses, the parties shall then enter into an amendment that shall be effective retroactively to the effective date of the more favorable offering, and shall provide the same rent, benefits or terms and conditions to LESSEE. LESSEE shall have the right to decline to accept the offering. LESSOR's compliance with this requirement shall be subject, at LESSEE's option, to independent verification.

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

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

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

Connie B. Dauder

WITNESS

LESSOR:

Kenny Turner

Kenny Turner

Lorea Turner

Lorea Turner

Date: 08-13-2019

LESSEE:

CELLCO PARTNERSHIP d/b/a Verizon Wireless

By: Ed Maher

Its: **Director - Network Field Engineering**

Date: 1/13/2020

Abigail Ball

WITNESS

Abigail Ball

EXHIBIT "A"

DESCRIPTION OF PROPERTY

A tract of land lying on the South side of Tabor Road, and the East of Wayside Inn Road consisting of 35.27 acres and being designated as Tract 3 on a plat of wavier survey of the Mark Knight, et al, property as recorded in Plat Cabinet 2, Slide 35, in Ballard County Clerk's Office.

Being the same property acquired by KENNY TURNER and LOREA TURNER, her husband, by Deed dated November 9, 2005, of record in Deed Book 77, Page 464, and by Affidavit of Descent of record in Cabinet 1, Drawer 20 Slide 42768, both in the Office of the Clerk of Ballard County, Kentucky.

EXHIBIT "B"

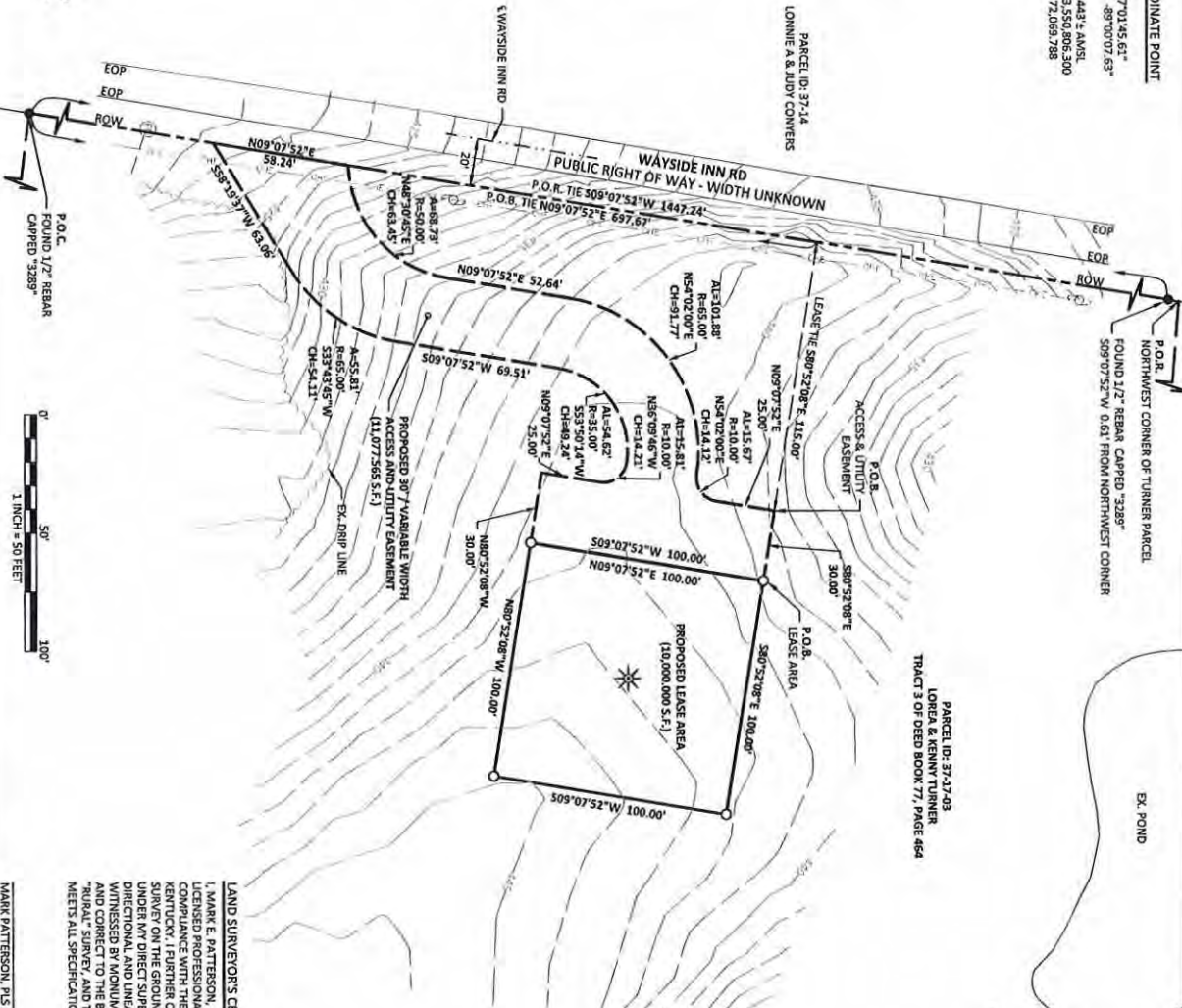
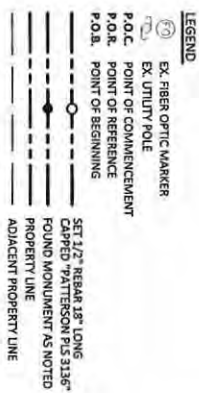
SITE PLAN OF THE PREMISES AND DESCRIPTION OF TOWER EQUIPMENT



F&A COORDINATE POINT
 MAG 83
 LATITUDE: 37°03'45.61"
 LONGITUDE: -89°00'07.63"
 NAVD 83
 ELEVATION: 443 ± AMSL
 NORTHING: 3,550,806.300
 EASTING: 3,972,069.788

GENERAL NOTES
 NO SEARCH OF PUBLIC RECORDS HAS BEEN CONDUCTED BY POD GROUP TO DETERMINE ANY OBJECTS AND/OR AMBIGUITIES IN THE TITLE OF THE SUBJECT PROPERTY.
 THIS SURVEY IS FOR THE PROPOSED LEASE AREA. THE PROPOSED LEASE AREA IS NOT LOCATED IN A 100-FOOT RADIUS (RANDOM SURVEY) OF THE PARENT TRACT. HAS BEEN PERFORMED.
 A PORTION OF THIS SURVEY WAS CONDUCTED BY METHOD OF RANDOM TRAVERSE WITH SIDE SHOTS. UNADJUSTED CLOSURE EQUALS 0.05'. FOR A PRECISION OF 1:52,488 AND HAS NOT BEEN ADJUSTED.
 THIS PROPERTY IS SUBJECT TO ANY RECORDED EASEMENTS AND/OR RIGHTS OF WAY SHOWN HEREON OR NOT.
 THIS PLAT IS NOT INTENDED FOR LAND TRANSFER.
 THE PARENT PARCEL, THE PROPOSED LEASE AREA THE PROPOSED HERON ARE NOT LOCATED IN A 100-FOOT RADIUS (RANDOM SURVEY) OF THE PARENT TRACT. HAS BEEN PERFORMED.
 HERON ARE NOT LOCATED IN A 100-FOOT RADIUS (RANDOM SURVEY) OF THE PARENT TRACT. HAS BEEN PERFORMED.
 NUMBER 2100720995, DATED JULY 7, 2014.

- GLOBAL POSITIONING SYSTEMS NOTE**
1. GLOBAL CONTROL POINTS AND A PORTION OF THE TOPOGRAHY WAS LOCATED USING GPS.
 2. THE TYPE OF GPS UTILIZED WAS NETWORK ADJUSTED REAL TIME KINEMATIC (ROTK) WAS NETWORK, AND 83 KENTUCKY STATE COORDINATE SYSTEM (KSCS) WAS USED FOR ALL POINTS. RELATIVE POSITIONAL ACCURACY VARIED FROM 0.04' TO 0.06' HORIZONTALLY.
 3. TOPCON HIRER V DUAL FREQUENCY RECEIVERS WERE USED TO PERFORM THE SURVEY.



1" = 59' 49"
 BASED ON KENTUCKY STATE PLANE SINGLE ZONE AND DETERMINED BY GPS OBSERVATIONS COMPLETED ON JUNE 23, 2019.



LAND SURVEYOR'S CERTIFICATE
 I, MARK E. PATTERSON, HEREBY CERTIFY THAT I AM A LICENSED PROFESSIONAL LAND SURVEYOR LICENSED IN KENTUCKY. I FURTHER CERTIFY THAT THIS PLAT AND THE SURVEY THEREON WERE CONDUCTED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT THE DIRECTIONAL AND LINEAR MEASUREMENTS BEING WITNESSED BY MONUMENTS SHOWN HEREON ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, THE "RURAL" SURVEY, AND THE PLAT ON WHICH IT IS BASED, MEETS ALL SPECIFICATIONS AS STATED IN KAR 201.18:150.

MARK PATTERSON, PLS #91336 DATE

CELLCO PARTNERSHIP
 V/B/R
verizon

PREPARED BY:
POD
 POWER OF DESIGN
 11700 BUCKLE UP BOULEVARD
 SUITE 200
 502-237-2522

REV.	DATE	DESCRIPTION
A	7.5.19	PRELIM ISSUE

SITE INFORMATION:
 EV BARLOW SE
 WAYSIDE INN RD
 WICKLIFFE, KY 42087
 BALLARD COUNTY
 TAX PARCEL NUMBER:
 37-27-03
 PROPERTY OWNER:
 LORELA & KENNY TURNER
 5874 HINKLEVILLE RD
 LACENTER, KY 42056
 SOURCE OF TITLE:
 DEED BOOK 77, PAGE 464

SITE SURVEY
 THIS DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARENT PARCEL

SHEET NUMBER (2 pages)
B-1

LEGAL DESCRIPTIONS

PROPOSED LEASE AREA

THE FOLLOWING IS A DESCRIPTION OF THE PROPOSED LEASE AREA TO BE LEASED FROM THE PROPERTY CONVERTED TO LORNEA & KENNY TURNER AS DESCRIBED IN DEED BOOK 77, PAGE 464 (TRACT 3) OF RECORD IN THE OFFICE OF THE CLERK OF BALLARD COUNTY, KENTUCKY, PARCEL ID: 37-17-03, WHICH IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEARING DATUM USED HEREIN IS BASED UPON KENTUCKY STATE PLANE COORDINATE SYSTEM, SINGLE ZONE, NAD 83, FROM A REAL TIME KINEMATIC GLOBAL POSITIONING SYSTEM OBSERVATION USING THE KENTUCKY TRANSPORTATION CABINET REAL TIME GPS NETWORK COMPLETED ON JUNE 28, 2019.

COMMENCING AT A POINT 1/2" REBAR WITH CAP STAMPED "3289" AT THE SOUTHWEST CORNER OF THE PARCEL CONVERTED TO LORNEA & KENNY TURNER AS DESCRIBED IN DEED BOOK 77, PAGE 464 (TRACT 3), AND SAID POINT ALSO BEING AT THE NORTHWEST CORNER OF THE PARCEL CONVERTED TO GARY & GERALDINE L. KNIGHT AS DESCRIBED IN DEED BOOK 77, PAGE 461 (TRACT 4), FOR REFERENCE, SAID COMMENCEMENT POINT IS 509'07.52' W. 1447' 24" FROM THE NORTHWEST CORNER OF SAID TURNER PARCEL (A POINT 1/2" REBAR WITH CAP STAMPED "3289" AT THE NORTHWEST CORNER OF SAID TURNER PARCEL) TO THE POINT OF BEGINNING, THENCE S80°52'08" E 69' 57" THENCE LEAVING SAID LINE TRAVELING ACROSS THE LAND OF TURNER, S80°52'08" E 115.00' THENCE S80°52'08" E 30.00' TO A SET 1/2" REBAR, 18" LONG, CAPPED "PATTERSON PLS 3136", HEREFTER REFERRED TO AS A "SET PC", AT THE NORTHWEST CORNER OF THE PROPOSED LEASE AREA AND BEING THE TRUE POINT OF BEGINNING, THENCE S80°52'08" E 100.00' TO A SET PC, THENCE S09°07'52" W 100.00' TO A SET PC, THENCE N80°52'08" E 100.00' TO A SET PC, THENCE S80°52'08" E 100.00' TO THE POINT OF BEGINNING CONTAINING 10,000.00 SQUARE FEET AS PER SURVEY BY MARK E. PATTERSON, PLS #B3136 DATED JUNE 28, 2019.

PROPOSED 30' / VARIABLE WIDTH ACCESS & UTILITY EASEMENT

THE FOLLOWING IS A DESCRIPTION OF THE PROPOSED 30' / VARIABLE WIDTH ACCESS AND UTILITY EASEMENT TO BE GRANTED FROM THE PROPERTY CONVERTED TO LORNEA & KENNY TURNER AS DESCRIBED IN DEED BOOK 77, PAGE 464 (TRACT 3) OF RECORD IN THE OFFICE OF THE CLERK OF BALLARD COUNTY, KENTUCKY, PARCEL ID: 37-17-03, WHICH IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEARING DATUM USED HEREIN IS BASED UPON KENTUCKY STATE PLANE COORDINATE SYSTEM, SINGLE ZONE, NAD 83, FROM A REAL TIME KINEMATIC GLOBAL POSITIONING SYSTEM OBSERVATION USING THE KENTUCKY TRANSPORTATION CABINET REAL TIME GPS NETWORK COMPLETED ON JUNE 28, 2019.

COMMENCING AT A POINT 1/2" REBAR WITH CAP STAMPED "3289" AT THE SOUTHWEST CORNER OF THE PARCEL CONVERTED TO LORNEA & KENNY TURNER AS DESCRIBED IN DEED BOOK 77, PAGE 464 (TRACT 3), AND SAID POINT ALSO BEING AT THE NORTHWEST CORNER OF THE PARCEL CONVERTED TO GARY & GERALDINE L. KNIGHT AS DESCRIBED IN DEED BOOK 77, PAGE 461 (TRACT 4), FOR REFERENCE, SAID COMMENCEMENT POINT IS 509'07.52' W. 1447' 24" FROM THE NORTHWEST CORNER OF SAID TURNER PARCEL (A POINT 1/2" REBAR WITH CAP STAMPED "3289" AT THE NORTHWEST CORNER OF SAID TURNER PARCEL) TO THE POINT OF BEGINNING, THENCE S80°52'08" E 69' 57" THENCE LEAVING SAID LINE TRAVELING ACROSS THE LAND OF TURNER, S80°52'08" E 115.00' TO THE TRUE POINT OF BEGINNING, THENCE S80°52'08" E 30.00' TO A SET 1/2" REBAR, 18" LONG, CAPPED "PATTERSON PLS 3136", HEREFTER REFERRED TO AS A "SET PC", AT THE NORTHWEST CORNER OF THE PROPOSED LEASE AREA, THENCE ALONG PROPOSED LEASE AREA, S09°07'52" W, 100.00' TO A SET PC, THENCE LEAVING SAID LEASE AREA, N80°52'08" E 30.00' THENCE N80°52'08" E 23.00' THENCE ALONG THE ARC OF A CIRCLE TO THE POINT OF BEGINNING, THENCE S80°52'08" E 100.00' TO A SET PC, THENCE N80°52'08" E 100.00' TO A SET PC, THENCE S80°52'08" E 100.00' TO THE POINT OF BEGINNING CONTAINING 11,077.565 SQUARE FEET AS PER SURVEY BY MARK E. PATTERSON, PLS #B3136 DATED JUNE 28, 2019.

PARENT PARCEL LEGAL DESCRIPTION, DEED BOOK 77, PAGE 464 (NOT FIELD SURVEYED)

A TRACT OF LAND LYING ON THE SOUTH SIDE OF TABOR ROAD, AND THE EAST OF WAISIDE INN ROAD CONSISTING OF 35.27 ACRES AND BEING DESIGNATED AS "TRACT 3" ON A PLAT OF WAIVER SURVEY OF THE MARK KNIGHT ET AL, PROPERTY AS RECORDED IN PLAT CABINET 7, SIDE 3, IN THE CLERK'S OFFICE OF BALLARD COUNTY, KENTUCKY, DATED MARCH 2, 2001 AND OF RECORD IN CABINET 1, DRAWER 20, CARD #42768 IN THE BALLARD COUNTY CLERK'S OFFICE.

LAND SURVEYOR'S CERTIFICATE

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

MARK PATTERSON, PLS #3136 DATE

CELLCO PARTNERSHIP
D/B/A
verizon

PREPARED BY:
POD
TOWER OF DESIGN
3240 WOODLAND AVENUE
LOUISVILLE, KY 40208
502-437-5828

SITE SURVEY

REV.	DATE	DESCRIPTION
A	7.8.19	PRELIM ISSUE

PROPERTY OWNER:
LORNEA & KENNY TURNER
5874 HINKLEVILLE RD
LACENTON, KY 42056

SOURCE OF TITLE:
DEED BOOK 77, PAGE 464

TAX PARCEL NUMBER:
37-17-03

EV BARLOW SE
WAISIDE INN RD
WICKLIFFE, KY 42087
BALLARD COUNTY

POD NUMBER: 19-42117

DRAWN BY: JRS

CHECKED BY: MJP

SURVEY DATE: 6.28.19

PLAT DATE: 7.5.19

SHEET TITLE:
SITE SURVEY
THIS DOES NOT REPRESENT A BOUNDARY PLAT OF THE PARENT PARCEL.

SHEET NUMBER: (2 pages)
B-1.1



CELLCO PARTNERSHIP
D/B/A



2431 HOLLOWAY ROAD
LOUISVILLE, KY 40299

PRELIMINARY
NOT FOR
CONSTRUCTION

PRELIMS

REV.	DATE	DESCRIPTION
A	7.23.19	ISSUED FOR REVIEW

SITE INFORMATION:

EV BARLOW SE

WANSIDE INN RD
WICKLIFFE, KY 40387
BALLARD COUNTY

POD NUMBER: 19-42214
DRAWN BY: POD
CHECKED BY: MEP
DATE: 07.11.19
SHEET TITLE:

REVISION LOG

SHEET NUMBER:
R-1

REVISION LOG

REV * MM/DD/YY SHEET NUMBER DESCRIPTION OF REVISION
A 7/23/2019 ALL SHEETS ISSUED FOR REVIEW



POWER OF DESIGN
13495 MAINTENANCE ROAD
LOUISVILLE, KY 40229
502-437-5252

CELCO PARTNERSHIP

DIVISA



2421 HOLLOWAY ROAD
LOUISVILLE, KY 40239

PRELIMINARY
NOT FOR
CONSTRUCTION

PRELIMS

REV.	DATE	DESCRIPTION
A	7.23.19	ISSUED FOR REVIEW

SITE INFORMATION:

EV BARLOW SE

1/4 WIDE HWY RD
WINDYBUSH KY 40227
BALLARD COUNTY

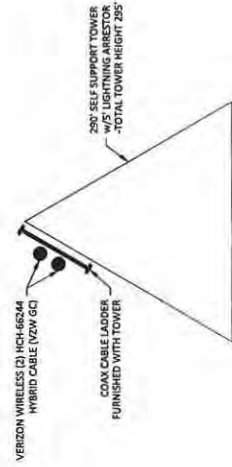
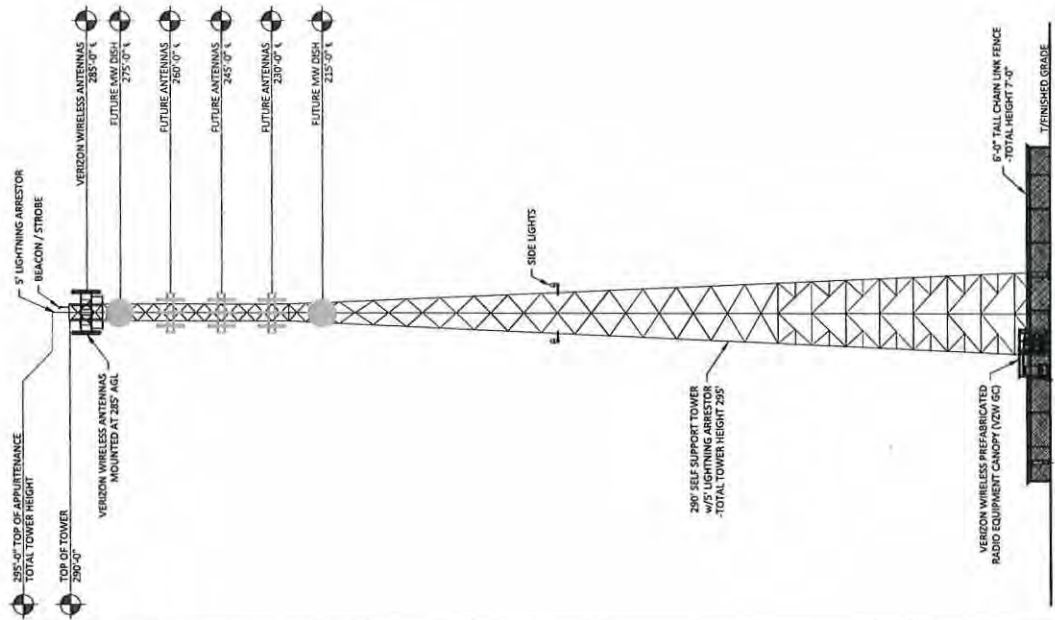
POD NUMBER: 19-42324
DRAWN BY: POD
CHECKED BY: MEP
DATE: 07/11/19
SHEET TITLE:

TOWER ELEVATION

SHEET NUMBER:
TE-1

NOTE:

- IT IS THE INSTALLING CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL REQUIREMENTS FOR LIGHTNING PROTECTION SYSTEMS (VZW GC) PROVIDED BY CELCO PARTNERSHIP 4/1/19 VERIZON WIRELESS (VZW GC)
- ALL TOWER LIGHTING SHALL BE INSTALLED AS REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION AND RECOMMENDED BY THE LIGHTING MANUFACTURER (SEE LIGHTING MANUFACTURER'S GUIDELINES [2008]) FOR LIGHTING OF TOWERS OVER 200' IN HEIGHT.



COAX PLAN
SCALE: N.T.S.



TOWER ELEVATION
SCALE: N.T.S.



CELLCO PARTNERSHIP
D/B/A



2421 HOLLOWAY ROAD
LOUISVILLE, KY 40299

PRELIMINARY
NOT FOR
CONSTRUCTION

REV.	DATE	DESCRIPTION
A	7.23.19	ISSUED FOR REVIEW

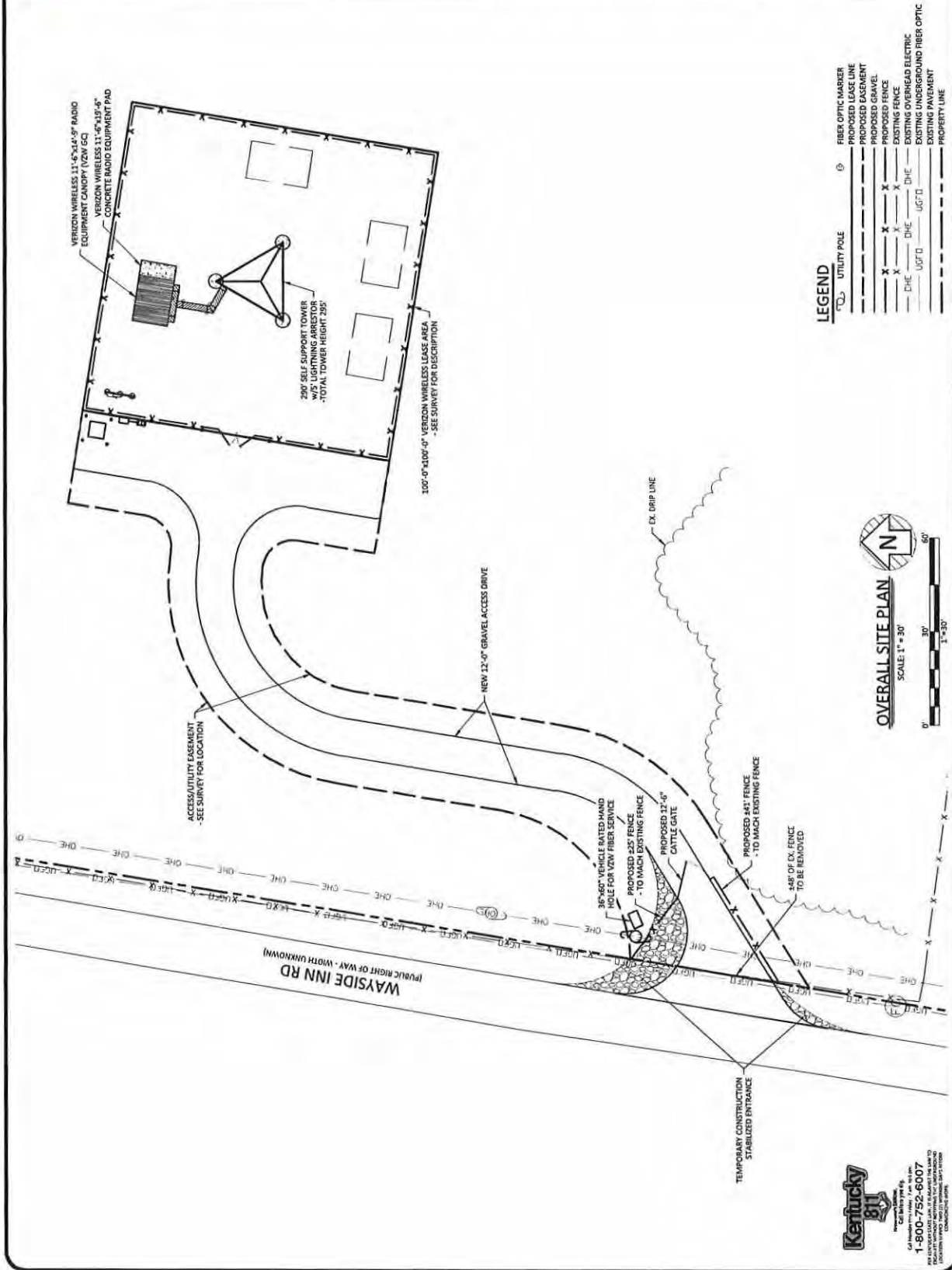
SITE INFORMATION:

EV BARLOW SE
WANGER RAY RD
WANGER, KY 40267
BALLARD COUNTY

POD NUMBER: 19-42224
DRAWN BY: POD
CHECKED BY: MFP
DATE: 07.11.19

SHEET TITLE:
OVERALL SITE PLAN

SHEET NUMBER:
C-1A



LEGEND

	UTILITY POLE		FIBER OPTIC MARKER
	PROPOSED LEASE LINE		PROPOSED EASEMENT
	PROPOSED GRAVEL		EXISTING FENCE
	EXISTING OVERHEAD ELECTRIC		EXISTING UNDERGROUND FIBER OPTIC
	EXISTING PAVEMENT		PROPERTY LINE

OVERALL SITE PLAN
SCALE: 1" = 30'

Call before you dig! 1-800-752-6007
KENTUCKY 811
FOR A LIST OF PARTICIPATING UTILITIES VISIT US AT
WWW.KY811.COM



CELLCO PARTNERSHIP
D/B/A



2421 HOLLOWAY ROAD
LOUISVILLE, KY 40299

PRELIMINARY
NOT FOR
CONSTRUCTION

PRELIMS

REV.	DATE	DESCRIPTION
A	7.23.19	ISSUED FOR REVIEW

SITE INFORMATION:

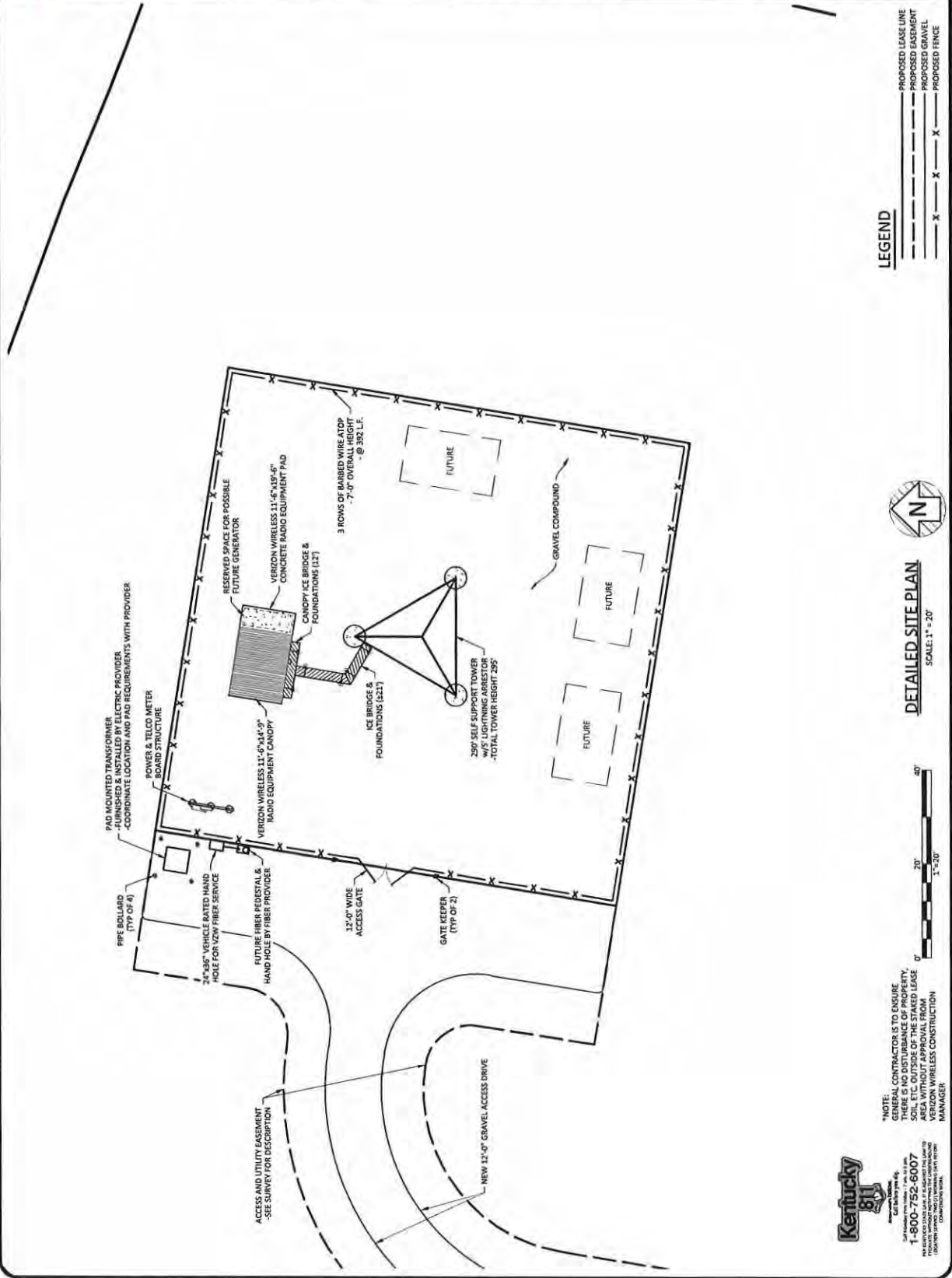
EV BARLOW SE

WAYSIDE INN RD
WINDYFLE 40287
BALLARD COUNTY

POD NUMBER: 19-42124
DRAWN BY: POD
CHECKED BY: MEP
DATE: 07/11/19

DETAILED SITE PLAN

SHEET NUMBER:
C-3



LEGEND
 --- PROPOSED LEASE LINE
 --- PROPOSED EASEMENT
 --- PROPOSED GRAVEL
 --- PROPOSED FENCE



DETAILED SITE PLAN
SCALE: 1" = 20'



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



Call Kentucky 811 at
1-800-752-6007
FOR SERVICE CALLS AND TO REPORT
UNDERGROUND UTILITIES BEFORE
CONSTRUCTION.



CELLCO PARTNERSHIP
D/B/A



2421 HOLLOWAY ROAD
LOUISVILLE, KY 40299

PRELIMINARY
NOT FOR
CONSTRUCTION

PRELIMS

REV.	DATE	DESCRIPTION
A	7.23.19	ISSUED FOR REVIEW

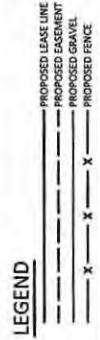
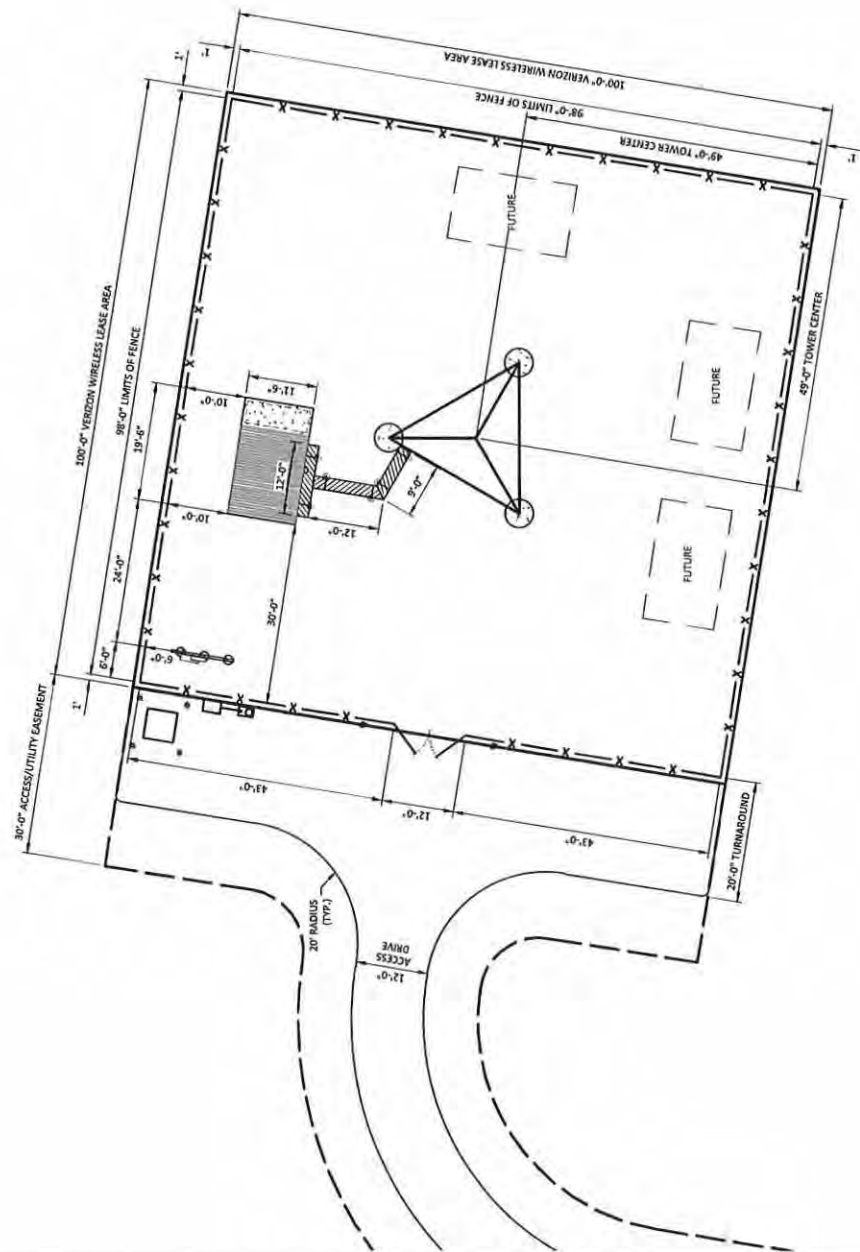
SITE INFORMATION:

EV BARLOW SE
WINDSIDE INN RD
WINDSIDE INN RD
BALLARD COUNTY

POD NUMBER: 15-42224
DRAWN BY: POD
CHECKED BY: MEP
DATE: 07/11/19

DIMENSIONED SITE
PLAN

SHEET NUMBER:
C-4



DIMENSIONED SITE PLAN
SCALE: 1" = 20'



NOTE:
GENERAL CONTRACTOR IS TO ENSURE
THERE IS NO DISTURBANCE OF PROPERTY,
SOIL, ETC. OUTSIDE OF THE STAKED LEASE
AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR
OBTAINING ALL NECESSARY PERMITS AND
CONSTRUCTION PERMITS.
MANAGER



1-800-752-6007
FOR A FREE SERVICE MANUAL VISIT
WWW.KENTUCKY811.COM



11490 ALLEGRETTA PARKWAY
LOUISVILLE, KY 40224
502-437-5252



CELLCO PARTNERSHIP
D/B/A
2421 HOLLOWAY ROAD
LOUISVILLE, KY 40299

PRELIMINARY
NOT FOR
CONSTRUCTION

PRELIMS

REV.	DATE	DESCRIPTION
A	7.23.19	ISSUED FOR REVIEW

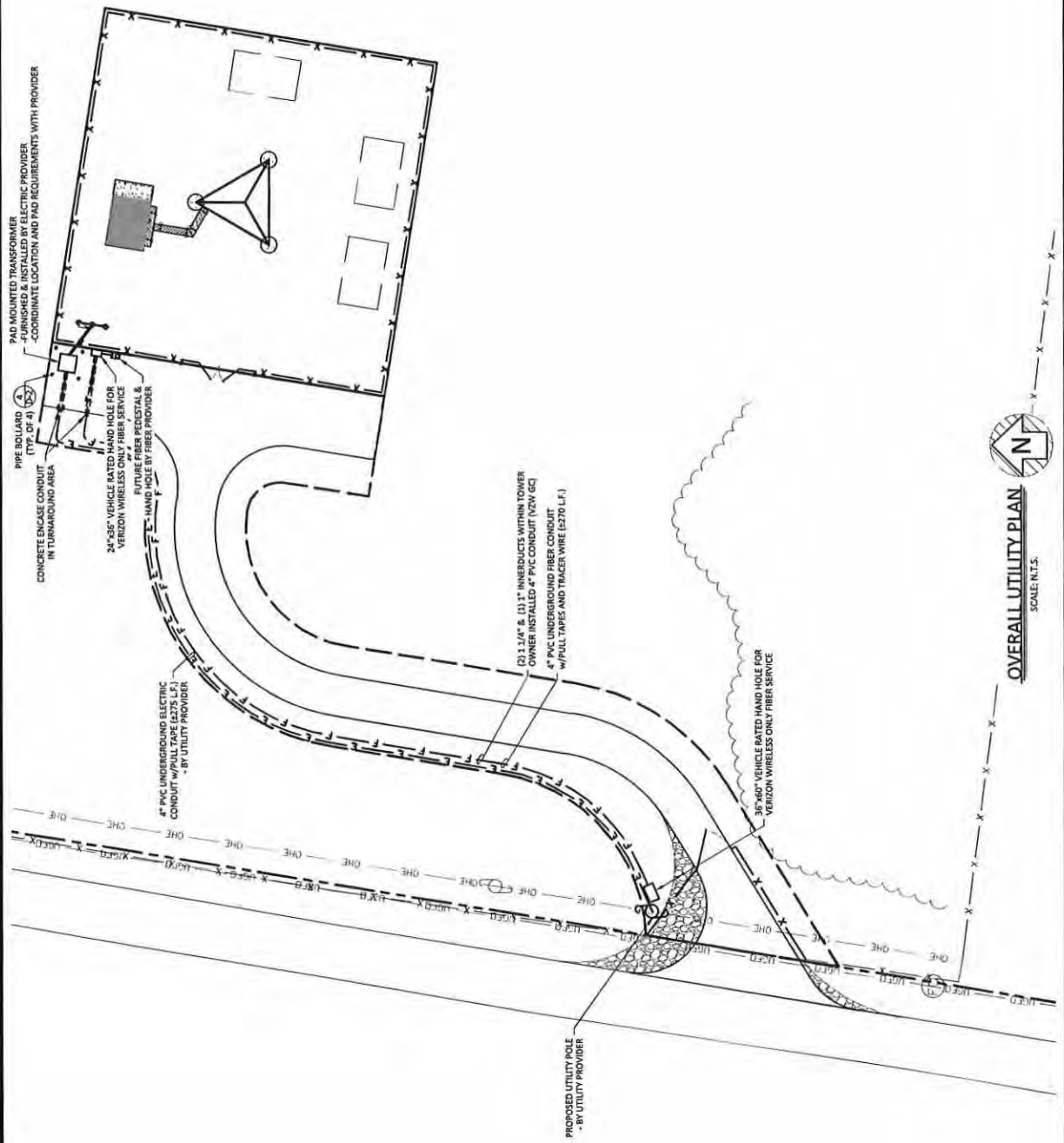
SITE INFORMATION:

EV BARLOW SE
WAYSIDE INN RD
WICKLIFFE, KY 40087
BALLARD COUNTY

POD NUMBER: 19-42224
DRAWN BY: POD
CHECKED BY: MEP
DATE: 07.11.19
SHEET TITLE:

OVERALL UTILITY
PLAN

SHEET NUMBER:
E-0



OVERALL UTILITY PLAN
SCALE: N.T.S.

EXHIBIT "C"
SURVEY

REV.	DATE	DESCRIPTION
A	7.8.19	PRELIM ISSUE
B	8.2.19	TITLE REVIEW

SITE SURVEY

SITE INFORMATION:
 EV BARLOW SE
 WAYSIDE INN RD
 WICKLIFFE, KY 42087
 BALLARD COUNTY
 TAX PARCEL NUMBER:
 37-17-03
 PROPERTY OWNER:
 LOBEA & KENNY TURNER
 3574 HINKLEVILLE RD
 LACERTEN, KY 40096
 SOURCE OF TITLE:
 DEED BOOK 77, PAGE 464

POD NUMBER: 19-02117
 DRAWN BY: JRS
 CHECKED BY: MEF
 DATE: 7.5.19
 PLAT DATE: 7.5.19

SHEET TITLE:
 THIS DOES NOT REPRESENT A
 BOUNDARY SURVEY OF THE
 PARENT PARCEL

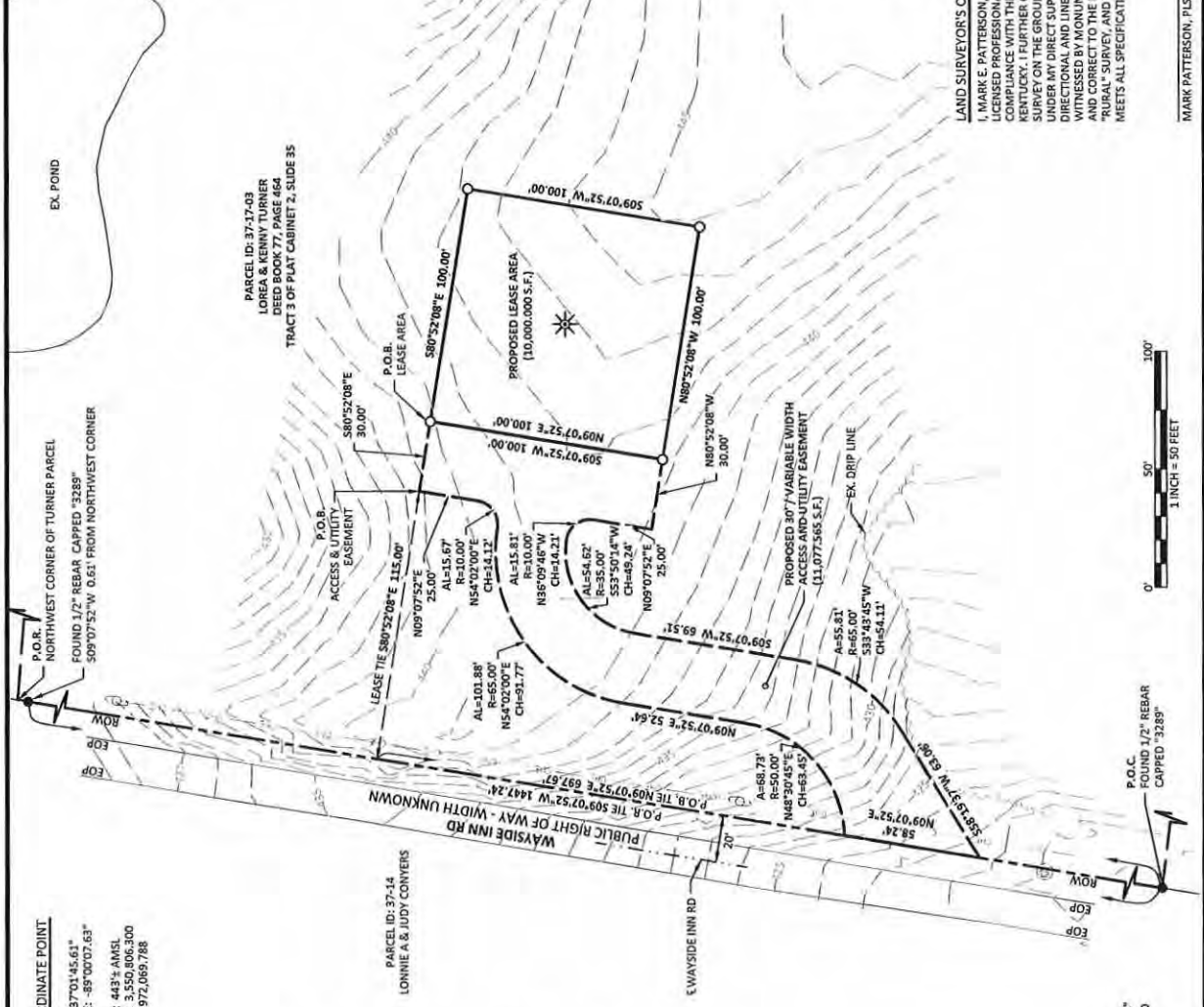
SHEET NUMBER: (2 pages)
B-1

EX. POND
 NORTHWEST CORNER OF TURNER PARCEL
 FOUND 1/2" REBAR CAPPED 3289"
 509'07'52"W 0.61' FROM NORTHWEST CORNER

FAA COORDINATE POINT
 NAD 83
 LATITUDE: 37°01'45.61"
 LONGITUDE: -85°00'07.63"
 NAVD 88
 ELEVATION: 443' AMSL
 NORTHING: 3,550,906.300
 EASTING: 3,972,069.788

PARCEL ID: 37-17-03
 LOBEA & KENNY TURNER
 DEED BOOK 77, PAGE 464
 TRACT 3 OF PLAT CABINET 2, SLIDE 35

PARCEL ID: 37-14-44
 LONNIE A & JUDY CONTERS



LAND SURVEYOR'S CERTIFICATE
 I, MARK E. PATTERSON, HEREBY CERTIFY THAT I AM A LICENSED PROFESSIONAL LAND SURVEYOR IN THE COMMONWEALTH OF KENTUCKY. I FURTHER CERTIFY THAT THIS PLAT AND THE SURVEY ON THE GROUND WERE PERFORMED BY PERSONS UNDER MY DIRECT SUPERVISION, AND THAT THE DIRECTIONAL AND LINEAR MEASUREMENTS BEING WITNESSED BY MONUMENTS SHOWN HEREON ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, THE "RURAL" SURVEY, AND THE PLAT ON WHICH IT IS BASED, MEETS ALL SPECIFICATIONS AS STATED IN KAR 201.18150.

DATE: _____
 MARK PATTERSON, PLS #3136



GENERAL NOTES
 NO SEARCH OF PUBLIC RECORDS HAS BEEN COMPLETED BY POD GROUP TO DETERMINE ANY DEFECTS AND/OR AMBIGUITIES IN THE TITLE OF THE SUBJECT PROPERTY.
 THIS SURVEY IS FOR THE PROPOSED LEASE AREA. THE PROPOSED ACCESS & UTILITY EASEMENT AND ONLY A PARTIAL BOUNDARY SURVEY OF THE PARENT TRACT HAS BEEN PERFORMED.
 A PORTION OF THIS SURVEY WAS CONDUCTED BY METHOD OF ELECTRONIC OBSERVATION. THE PRECISION OF THE SURVEY EQUALS 0.005" FOR A PRECISION OF 1:42,466 AND HAS NOT BEEN ADJUSTED.
 THIS PROPERTY IS SUBJECT TO ANY RECORDED EASEMENTS AND/OR RIGHTS OF WAY SHOWN HEREON OR NOT.
 THIS PLAT IS NOT INTENDED FOR LAND TRANSFER.
 THE PARENT PARCEL, THE PROPOSED LEASE AREA, THE PROPOSED ACCESS & UTILITY EASEMENT, AND THE FLOOD PLAIN (ZONE X) PER FLOOD HAZARD BOUNDARY MAP, COMMUNITY-PANEL NUMBER 2:1007C0095C, DATED JULY 7, 2014.

GLOBAL POSITIONING SYSTEMS NOTE
 1. RANDOM CONTROL POINTS AND A PORTION OF THE TOPOGRAPHY WAS LOCATED USING GPS.
 2. THE TYPE OF GPS INCLUDES BOTH UNADJUSTED REAL TIME NETWORK (RTN) AND POST PROCESSING KENTUCKY SINGLE ZONE WITH THE ORTHONOMIC-HEIGHT COMPUTRY USING GEOID12A. RELATIVE POSITIONAL ACCURACY VARIED FROM 0.04" TO 0.08" HORIZONTALLY.
 3. TOPCON HIPER-V DUAL FREQUENCY RECEIVERS WERE USED TO PERFORM THE SURVEY.

- LEGEND**
- EX. FIBER OPTIC MARKER
 - EX. UTILITY POLE
 - P.O.C. POINT OF COMMENCEMENT
 - P.O.R. POINT OF REFERENCE
 - P.O.B. POINT OF BEGINNING
 - SET 1/2" REBAR 18" LONG CAPPED "PATTERSON PLS 3136" FOUND MONUMENT AS NOTED
 - PROPERTY LINE
 - ADJACENT PROPERTY LINE



Notification List

PARCEL ID: 37-17-03
TURNER LOREA & KENNY
3819 TABOR ROAD
BARLOW KY 42024

PARCEL ID: 37-17-02
KNIGHT SAMANTHA JO
4871 HINKLEVILLE ROAD
LA CENTER KY 42056

PARCEL ID: 37-17-04
KNIGHT GARY & GERALDINE L
1474 WAYSIDE INN ROAD
BARLOW, KY 42024

PARCEL ID: 37-14
CONYERS LONNIE A EST OR JUDY
3193 TABOR ROAD
WICKLIFFE KENTUCKY 42087

PARCEL ID: 37-14-01
CONYERS GINA RENEE
1575 WAYSIDE INN ROAD
BARLOW KY 42024

PARCEL ID: 37-17-01
ABERNATHY LYNN S
3781 TABOR ROAD
BARLOW KY 42024

PARCEL ID: 37-17
TURNER KENNY & LOREA
3819 TABOR ROAD
BARLOW KY 42024

PARCEL ID: 37-07
PURCELL JUDITH
ROBERT NEAL
572 CEREDO ROAD
BARLOW KY 42024



ClarkQuinn

www.clarkquinnlaw.com

Russell L. Brown
Attorney at Law
rbrown@clarkquinnlaw.com

320 N. Meridian St., Ste. 1100
Indianapolis, IN 46204
(317) 637-1321 main
(317) 687-2344 fax

November 18, 2022

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

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 on the east side of Wayside Inn Road, Wickliffe, KY 42087 (North Latitude: (37° 01' 45.61", West Longitude 89° 00' 07.63"). The proposed facility will include a 290-foot tall antenna tower, plus a 5-foot lightning arrestor, for a total height of 295 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 2022-00385 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/mnw
Enclosure



ClarkQuinn

www.clarkquinnlaw.com

Russell L. Brown
Attorney at Law
rbrown@clarkquinnlaw.com

320 N. Meridian St., Ste. 1100
Indianapolis, IN 46204
(317) 637-1321 main
(317) 687-2344 fax

November 18, 2022

VIA CERTIFIED MAIL
7021 2720 0001 4430 7143

Hon. Todd Cooper
437 Ohio Street
Wickliffe, KY 402087

RE: Notice of Proposal to Construct Wireless Communications Facility
Kentucky Public Service Commission Docket No. 2022- 00385
Site Name: Barlow SE

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 on the east side of Wayside Inn Road, Wickliffe, KY, 42087 (North Latitude: (37° 01' 45.61", West Longitude 89° 00' 07.63"). The proposed facility will include a 290-foot tall antenna tower, plus a 5-foot lightning arrester, for a total height of 295 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 2022-00385 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/mnw
Enclosure

SITE NAME: Barlow SE 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 2022-00385 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 2022-00385 in your correspondence.



ClarkQuinn

www.clarkquinnlaw.com

Elizabeth Bentz Williams
AICP
ebw@clarkquinnlaw.com

320 N. Meridian St., Ste. 1100
Indianapolis, IN 46204
(317) 637-1321 main
(317) 687-2344 fax

November 18, 2022

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

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

RE: Legal Notice Advertisement
Site Name: Barlow SE

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 on the east side of Wayside Inn Road, Wickliffe, KY, 42087 (North Latitude: (37° 01' 45.61", West Longitude 89° 00' 07.63"). 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 2022-00385 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

Design Search Area





Tuesday, December 10, 2019

RE: Proposed Verizon Wireless Communications Facility

Site Name: **EV Barlow SE.**

Type of Tower: 290' self-support Tower.

Location: WAYSIDE INN RD, WICKLIFFE, KY 42087.

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 SE.**

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

1. Offload 4G traffic from busy site.
2. Improve 4G throughput to existing heavy data users.
3. 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 **290'**. 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 SE** 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 underlined with a single blue stroke.



STATE OF INDIANA

COUNTY OF Marion

Subscribed and sworn to before me this 10th day of December 2019.

Notary Public

Signature JFB

Printed Jennifer Behn

County of Residence Hancock

My Commission expires:

JENNIFER BEHN
Notary Public, State of Indiana
SEAL
My Commission Expires 9/3/2023



Tuesday, December 10, 2019

RE: Ballard County Zoning Plots

Site Name: **EV Barlow SE.**

To Whom It May Concern:

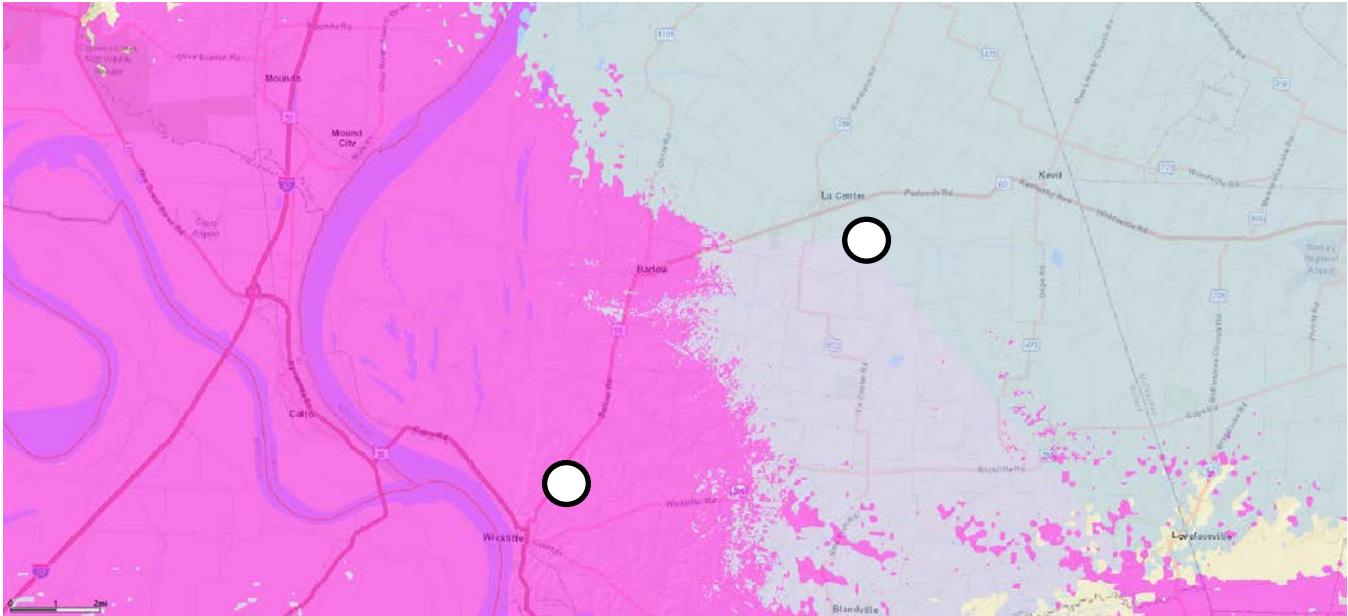
This map is not a guarantee of coverage and may contain areas with no service. This map reflects a depiction of predicted and approximate wireless coverage of the network and is intended to provide a relative comparison of coverage. The depictions of coverage do not guarantee service availability as 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

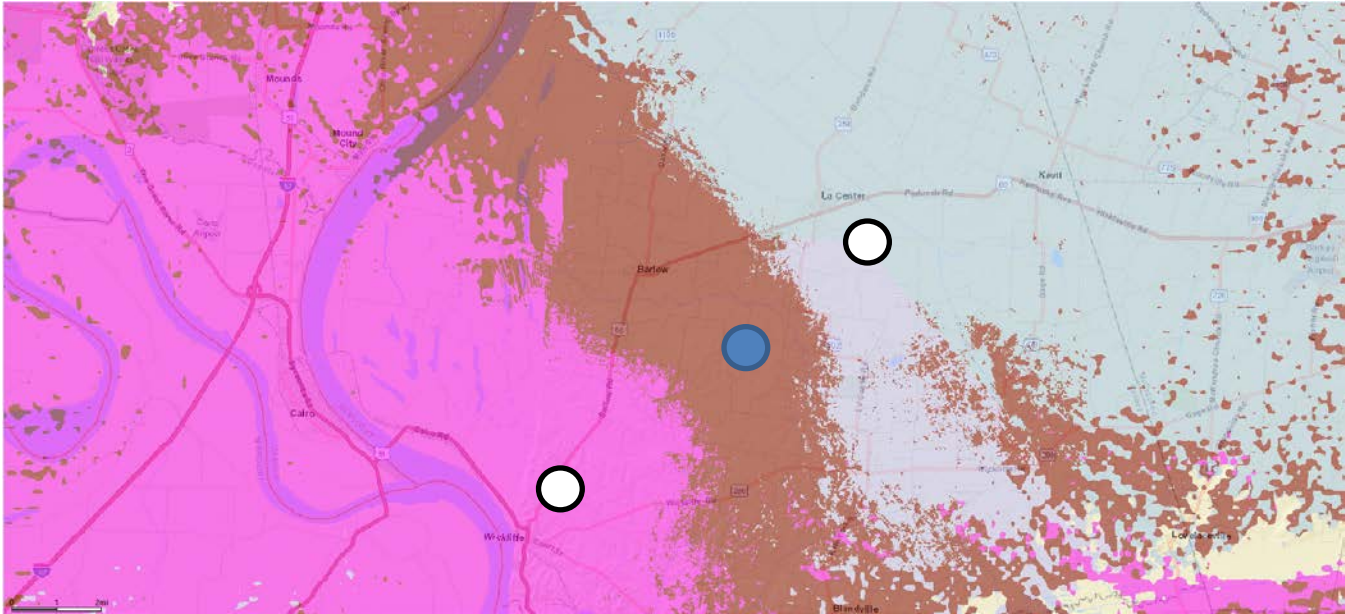
EV Barlow SE Pre



Legend:

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

EV Barlow SE Post



Legend:

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



Exhibit R
List and Identity and Qualifications of Professionals

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