COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF	)	
CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS	)	
AND HARMONI TOWERS, LLC FOR ISSUANCE	)	
OF A CERTIFICATE OF PUBLIC	)	CASE NO. 2023-00133
CONVENIENCE AND NECESSITY TO CONSTRUCT	)	
A WIRELESS COMMUNICATIONS FACILITY	)	
IN THE COMMONWEALTH OF KENTUCKY	)	
IN THE COUNTY OF GRAVES	)	

SITE NAME: FANCY FARM

* * * * * * *

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

Cellco Partnership, d/b/a Verizon Wireless and VB BTS II, LLC d/b/a Vertical Bridge, 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 submits this Application requesting issuance of a Certificate of Public Convenience and Necessity ("CPCN") from the Kentucky Public Service Commission ("PSC") to construct, maintain, and operate a Wireless Communications Facility ("WCF") to serve the customers of the Co-Applicants with wireless communications services.

In support of this Application, Co-Applicants respectfully provide and state 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 2902 Ring Road, Elizabethtown, KY 42701.

b. VB BTS II, LLC d/b/a Vertical Bridge, LLC, having an address of 750 Park of Commerce Dr, Boca Raton, FL 33487.

2. Co-Applicants;

a. Cellco Partnership, d/b/a Verizon Wireless is a Delaware general partnership, and a copy of the Statement of Good Standing from Delaware and Amended Certificate of Assumed Name is on file with the Secretary of State of Commonwealth of Kentucky is included as part of **Exhibits A 1-2**.

b. VB BTS II, LLC d/b/a Vertical Bridge, LLC is a Delaware Limited Liability Company organized in the State of Delaware on December 2, 2015. We attest that VB BTS II, LLC d/b/a Vertical Bridge, LLC is in good standing with the State of Delaware and is also authorized to transact business in the Commonwealth of Kentucky. A copy of the Delaware Certificate of Formation and Certificate of Good Standing is included as part of **Exhibits A 3-4**. The Certificate of Authority is on file with the Secretary of State of Commonwealth of Kentucky and is included as part of **Exhibits A 5**.

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

4. The Co-Applicant, Cellco Partnership, d/b/a Verizon Wireless operates on frequencies licensed by the Federal Communications Commission ("FCC") pursuant to applicable FCC requirements. A copy of the Co-Applicant's FCC Application and Licenses

with Authorization to provide wireless services are attached to this Application 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's RF Design Engineer outlining said need is attached as **Exhibit R** along with Propagation Maps attached as **Exhibit Ra**. The WCF is an integral link in the Co-Applicant's network design that must be in place to provide adequate coverage to the service area.

6. To address the above-described service needs, Co-Applicants propose to construct a WCF on Kentucky Highway 80, Fancy Farm, KY 42039 (North Latitude: (36° 48' 09.61", West Longitude 88° 47' 55.21"), 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 KM & K Farms, LLC pursuant to a Deed recorded at Deed Book 189, Page 85 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-Applicant's radio electronics equipment and appurtenant equipment. The Co-Applicant's equipment cabinet or shelter will be approved for use in the Commonwealth of Kentucky by the relevant building inspector.

The WCF compound will be fenced, and all access gate(s) will be secured. A description of the manner in which the proposed WCF will be constructed is attached as **Exhibit C** and **Exhibit D**.

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

8. The site development plan and a vertical profile sketch of the WCF signed and sealed by a professional engineer registered in Kentucky depicting the tower height, as well as a proposed configuration for the antennas of the Co-Applicant, Cellco Partnership, d/b/a Verizon Wireless has also been included as part of **Exhibit C**.

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

10. Co-Applicants have considered the likely effects of the installation of the proposed WCF on nearby land uses and values and has concluded that there is no more suitable location reasonably available from which adequate services can be provided, and that there are no reasonably available opportunities to co-locate Co-Applicant's antennas on an existing structure. When suitable towers or structures exist, Co-Applicant's attempts to co-locate on existing structures such as communications towers or other structures capable of supporting Co-Applicant's facilities; however, no other suitable or available co-location site was found to be located in the vicinity of the site. A statement from Co-Applicant, Cellco Partnership, d/b/a Verizon Wireless's RF Design Engineer outlining exploration of co-location opportunities is attached as **Exhibit R**.

11. A copy of the Application for Federal Aviation Administration's ("FAA") and the FAA Determination of No Hazard to Air Navigation is attached as **Exhibit F**.

12. A copy of Application to the Kentucky Airport Zoning Commission ("KAZC") is attached as **Exhibit G**. The approval from KAZC will be submitted when received.

13. A geotechnical engineering report was performed by Power of Design Group, LLC, Louisville, KY, dated March 23, 2022, 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 S**.

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 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. The identity and qualifications of each person directly responsible for design and construction of the proposed tower are contained in **Exhibit S**.

17. The Construction Manager for the proposed facility is Vince Caprino and the identity and qualifications of each person directly responsible for design and construction of the proposed tower are contained in **Exhibit S**.

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 21083C0125C, Dated December 3, 2009.

19. **Exhibit K** 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). This map and the associated Notice List is accompanied by a certificate signed and stamped by the registered surveyor that said information is from the PVA records, dated April 20, 2023. In addition, our office verified and updated the notification list with the Graves County PVA on June 6, 2023 at https://www.qpublic.net/ky/graves/index.html . **Exhibit K** also identifies 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.

20. Co-Applicants have sent certified notices to 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 informed of his or her right to request

intervention. A list of the notified property owners and a copy of the form of the notice sent by certified mail to each landowner are attached as **Exhibit L** and **Exhibit M**, respectively. Thirteen (13) notices were sent to surrounding property owners on April 21, 2023; to date ten (10) notice green cards have been returned. After additional research, seventeen (17) notices were sent to the additional surrounding property owners on June 6, 2023, and Three (3) notices were resent to property owners on the original list that have not been returned, also on June 6, 2023. Copies of the mailed envelopes, returned green cards, are included in **Exhibit M**.

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 N**.

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 O**.

23. 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 P**.

24. The area of the proposed facility is in the unincorporated area of Graves County, Kentucky, part of the unincorporated town of Fancy Farm. The 0.5-mile search ring consists of the Highway 80 corridor, largely agricultural with a mix of residential and commercial / industrial properties. The terrain in this area is relatively moderate, rolling topography. There is no zoning or Plan Commission in Graves County. The general area where the proposed facility is to be located is a tilled field adjacent to a water tower. The nearest residential structure is 290 feet from the proposed tower site.

25. The process that was used by the Co-Applicant, Cellco Partnership, d/b/a Verizon Wireless radio frequency engineers in selecting the site for the proposed WCF was consistent with the general process used for selecting all other existing and proposed WCF facilities within the proposed network design area. Co-Applicant's radio frequency engineers have conducted studies and tests 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 Q**.

26. 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 R and Ra.** The proposed tower will expand and improve voice and data service for Verizon Wireless customers.

27. Attached hereto as **Exhibit T** please find an Affidavit of Certification for all information contained in this application.

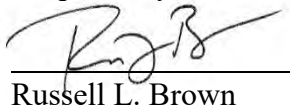
28. All Exhibits to this Application are hereby incorporated by reference as if fully set out as part of the Application.

29. 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
Attorney for Cellco Partnership d/b/a Verizon Wireless

WHEREFORE, Co-Applicants respectfully request that the PSC accept the foregoing Application for filing and having met the requirements of KRS §§278.020(1), 278.650, and 278 .665 and all applicable rules and regulations of the PSC, grant a Certificate of Public Convenience and Necessity to construct and operate the WCF at the location set forth herein.

Respectfully submitted,



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	Co-Applicant Entities
B	FCC Application and 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, Corporations, or Persons List And Map of Like Facilities in Vicinity
F	FAA Application and Determination of no Hazard
G	KAZC Application
H	Geotechnical Report
I	Directions to WCF Site
J	Copy of Real Estate Agreement
K	500’ Radius and Abutters Map with Surveyor Certification
L	Notification Listing
M	Copy of Property Owner Notification
N	Copy of County Judge Executive notice
O	Copy of Posted Notices
P	Copy of Newspaper Legal Notice Advertisement
Q	Copy of Radio Frequency Design Search Area
R	Copy of RF Design Engineer Statement of Need
Ra	Propagation Maps
S	List of Qualified Professionals
T	Affidavit of Certification

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CELLCO PARTNERSHIP" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF APRIL, A.D. 2023.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN PAID TO DATE.

Jeffrey W. Bullock, Secretary of State

3341134 8300

SR# 20231665976

Authentication: 203227418

Date: 04-27-23

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

COMMONWEALTH OF KENTUCKY

Michael G. Adams
Secretary of State

Certificate

I, Michael G. Adams, Secretary of State for the Commonwealth of Kentucky, do hereby certify that the foregoing writing has been carefully compared by me with the original thereof, now in my official custody as Secretary of State and remaining on file in my office, and found to be a true and correct copy of

CERTIFICATE OF ASSUMED NAME OF VERIZON WIRELESS ADOPTED BY GENERAL PARTNERS OF CELLCO PARTNERSHIP FILED JUNE 21, 2006.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at Frankfort, Kentucky, this 10th day of May, 2023.

COMMONWEALTH OF KENTUCKY
OFFICE OF SECRETARY OF STATE

Michael G. Adams
Secretary of State
Commonwealth of Kentucky
kdcoleman/0641227 - Certificate ID: 290787

COMMONWEALTH OF KENTUCKY
TREY GRAYSON
SECRETARY OF STATE

0641227.07 Dcornish C226
Trey Grayson
Secretary of State
Received and Filed
06/21/2006 12:06:09 PM
Fee Receipt: $20.00

CERTIFICATE OF ASSUMED NAME

This certifies that the assumed name of

Verizon Wireless

[Name under which the business will be conducted]

has been adopted by See Addendum

[Real name - KRS 365.015(1)]

which is the "real name" of [YOU MUST CHECK ONE]

- [ ] a Domestic General Partnership
- [ ] a Domestic Registered Limited Liability Partnership
- [ ] a Domestic Limited Partnership
- [ ] a Domestic Business Trust
- [ ] a Domestic Corporation
- [ ] a Domestic Limited Liability Company
- [ ] a Joint Venture
- [✓] a Foreign General Partnership
- [ ] a Foreign Registered Limited Liability Partnership
- [ ] a Foreign Limited Partnership
- [ ] a Foreign Business Trust
- [ ] a Foreign Corporation
- [ ] a Foreign Limited Liability Company

organized and existing in the state or country of Delaware, and whose address is

One Verizon Way	Basking Ridge	NJ	07920
Street address, if any	City	State	Zip Code

The certificate of assumed name is executed by

NYNEX PCS Inc.

Jane A. Schapker-Assistant Secretary
Print or type name and title

June 15, 2006
Date

Signature

Print or type name and title

Date

SSC-225 (7/96) (See attached sheet for instructions)

Addendum

The full name of the Partnership is Cellco Partnership; a Delaware general partnership with its headquarters located One Verizon Way, Basking Ridge NJ 07920-1097.

General Partners of Cellco Partnership	**Address**
Bell Atlantic Cellular Holdings, L.P.	One Verizon Way Basking Ridge, NJ 07920
NYNEX PCS Inc.	One Verizon Way Basking Ridge, NJ 07920
PCSCO Partnership	One Verizon Way Basking Ridge, NJ 07920
GTE Wireless Incorporated	One Verizon Way Basking Ridge, NJ 07920
GTE Wireless of Ohio Incorporated	One Verizon Way Basking Ridge, NJ 07920
PCS Nucleus, L.P.	2999 Oak Road, 7th Floor Walnut Creek, CA 94597
JV PartnerCo, LLC	2999 Oak Road, 7th Floor Walnut Creek, CA 94597

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "VB BTS II, LLC", FILED IN THIS OFFICE ON THE EIGHTH DAY OF JUNE, A.D. 2022, AT 1:01 O`CLOCK P.M.

Jeffrey W. Bullock, Secretary of State

6844426 8100
SR# 20222658754

Authentication: 203631822
Date: 06-08-22

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

STATE OF DELAWARE
CERTIFICATE OF FORMATION
OF LIMITED LIABILITY COMPANY

The undersigned authorized person, desiring to form a limited liability company pursuant to the Limited Liability Company Act of the State of Delaware, hereby certifies as follows:

1. The name of the limited liability company is VB BTS II, LLC.

2. The Registered Office of the limited liability company in the State of Delaware is located at 850 New Burton Road, Suite 201 (street), in the City of Dover, Zip Code 19904. The name of the Registered Agent at such address upon whom process against this limited liability company may be served is COGENCY GLOBAL INC.

By: /s/ Daniel Marinberg
Authorized Person

Name: Daniel Marinberg
Print or Type

State of Delaware
Secretary of State
Division of Corporations
Delivered 01:01 PM 06/08/2022
FILED 01:01 PM 06/08/2022
SR 20222658754 - File Number 6844426

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "VB BTS II, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-THIRD DAY OF JANUARY, A.D. 2023.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "VB BTS II, LLC" WAS FORMED ON THE EIGHTH DAY OF JUNE, A.D. 2022.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

6844426 8300

Authentication: 202551773

SR# 20230223025

Date: 01-23-23

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

202303080004
FAYETTE CO, KY FEE $46.00
PRESENTED / LODGED: 03-08-2023 08:19:15 AM

RECORDED: 03-08-2023
SUSAN LAMB
CLERK
BY: HALLIE WOOSLEY
DEPUTY CLERK

BK: IB 428
PG: 690-690

1265644.06 mmoore ADD

Michael G. Adams
Kentucky Secretary of State
Received and Filed:
3/7/2023 12:33 PM
Fee Receipt: $90.00

COMMONWEALTH OF KENTUCKY
MICHAEL G. ADAMS, SECRETARY OF STATE

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

Certificate of Authority
(Foreign Business Entity)

FBE

Pursuant to the provisions of KRS 14A – 030 the undersigned hereby applies for authority to transact business in Kentucky on behalf of the entity named below and, for that purpose, submits the following statements:

1. The entity is a:
- [ ] profit corporation
- [ ] business trust
- [ ] limited partnership
- [ ] non-profit llc
- [ ] nonprofit corporation
- [x] limited liability company
- [ ] lld cooperative association
- [ ] professional service corporation
- [ ] professional limited liability company
- [ ] statutory trust
- [ ] other

2. The name of the entity is VB BTS II, LLC
(The name must be identical to the name on record with the Secretary of State.)

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

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

5. The date of organization is 6/8/2022 and the period of duration is _____
(If left blank, duration is considered perpetual.)

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

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

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

Name	Street or P.O. Box	City	State	Zip Code
Daniel Marinberg	750 Park of Commerce Dr, Ste 200	Boca Raton	FL	33487

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

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

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

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

13. This application will be effective upon filing.

Signature of Authorized Representative | Adam B. Gender-Vice President & Associate General Counsel (Printed Name & Title) | 03/07/23 (Date)

I, Cogency Global Inc. (Type/Print Name of Registered Agent), consent to serve as the registered agent on behalf of the business entity.

Signature of Registered Agent | Eric B Hood (Printed Name) | Assistant Secretary (Title) | 3/7/23 (Date)

(1/20)

ASR Application Search

Application A1218864

Exhibit B

Application Detail

File Number	A1218864	Constructed	
Registration Number	1324370	Dismantled	
NEPA		EMI	No

Application Information

Status	Granted	Date Received	04/04/2023
Purpose	Amendment	Entered	04/04/2023
Mode	Interactive		

Antenna Structure

Structure Type: LTOWER - Lattice Tower

Location (in NAD83 Coordinates)

Lat/Long	36-48-09.6 N 088-47-54.2 W	Address	10710 State Route 80 West - 16207023
City, State	Fancy Farm , KY		
Zip	42039	County	GRAVES
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
131.3	90.0
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
221.3	88.4

Proposed Marking and/or Lighting

FAA Style E

FAA Notification

FAA Study	2022-ASO-27278-OE	FAA Issue Date	01/06/2023

Owner & Contact Information

FRN	0003290673	Owner Entity Type	General Partnership

Owner

Cellco Partnership
Attention To: Network Regulatory
5055 North Point Pkwy
NP2NE Network Engineering
Alpharetta , GA 30022

P: (770)797-1070
F:
E: Network.Regulatory@verizonwireless.com

Contact

Attention To: Network Regulatory
5055 North Point Pkwy
NP2NE Network Engineering
Alpharetta , GA 30022

P: (770)797-1070
F:
E: Network.Regulatory@verizonwireless.com

Environmental Compliance

Does the applicant request a Waiver of the Commission's rules for environmental notice?	Is the applicant submitting an Environmental Assessment?

No

Is another Federal Agency taking responsibility for environmental review?

No

Reason for another Federal Agency taking responsibility for environmental review

Name of Federal Agency

National Notice Date

07/28/2022

No

Does the applicant certify to No Significant Environmental Effect pursuant to Section

Yes

Basis for Certification

The FCC issued a Finding of No Significant Impact.

Local Notice Date

07/20/2022

Certification

Authorized Party	Le Scanve, Christophe	Title	Authorized Representative
Receipt Date	04/04/2023		

Comments

Comments

None

History

Date	Event
04/04/2023	Amendment Received
04/04/2023	Application Granted
07/13/2022	New Application Received

Trans Log

Date	Description	Existing Value	Requested Value
07/27/2022	Application : Identify the change type as Major or Minor	Minor	Major
07/27/2022	Environmental Compliance : National Notice Date	09/19/2022	07/28/2022
04/04/2023	Structure : The date the FAA determination was issued		01/06/2023

All Trans Log (10)

Pleadings

Pleading Type	Filer Name	Description	Date Entered

None

Automated Letters

Date	Description

None

Attachments

Type	Description	Date Entered

None

CLOSE WINDOW

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

Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: KENTUCKY RSA NO. 1 PARTNERSHIP

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

Call Sign	File Number
KNKQ306	0009611390
Radio Service CL - Cellular	
Market Numer CMA443	**Channel Block** B
Sub-Market Designator 0	

FCC Registration Number (FRN): 0001836709

Market Name
Kentucky 1 - Fulton

Grant Date	Effective Date	Expiration Date	Five Yr Build-Out Date	Print Date
08-31-2021	08-31-2021	10-01-2031		08-31-2021

Site Information:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
1	36-20-59.2 N	089-22-12.3 W	98.0		

Address: 0.68 MILE SOUTH OF LASSITER CORNER & REEL FOOT LAKE
City: LASSITER CORNER **County:** LAKE **State:** TN **Construction Deadline:**

Antenna: 1
Maximum Transmitting ERP in Watts: 135.800

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

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

FCC 601-C
March 2018

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

Call Sign: KNKQ306 **File Number:** 0009611390 **Print Date:** 08-31-2021

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

Address: 416 Jimtown Road
City: MAYFIELD **County:** GRAVES **State:** KY **Construction Deadline:**

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

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

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

Address: (Wickliffe) 353 CR 1307
City: Bardwell **County:** CARLISLE **State:** KY **Construction Deadline:**

Antenna: 4
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 5
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 6
Maximum Transmitting ERP in Watts: 140.820

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

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

Address: (Fulton) 550 Powell Road
City: Fulton **County:** HICKMAN **State:** KY **Construction Deadline:**

Antenna: 4
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 5
Maximum Transmitting ERP in Watts: 140.820

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

Reference Copy

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

Call Sign: KNKQ306 **File Number:** 0009611390 **Print Date:** 08-31-2021

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

Address: (Fulton) 550 Powell Road
City: Fulton **County:** HICKMAN **State:** KY **Construction Deadline:**

Antenna: 6
Maximum Transmitting ERP in Watts: 140.820

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

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

Address: (Murray) 1431 Van Cleave Road
City: Murray **County:** CALLOWAY **State:** KY **Construction Deadline:**

Antenna: 4
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 5
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 6
Maximum Transmitting ERP in Watts: 140.820

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

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

Address: (La Center) 220 RICHARDSON LN
City: LA CENTER **County:** BALLARD **State:** KY **Construction Deadline:**

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 3
Maximum Transmitting ERP in Watts: 140.820

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

Reference Copy

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

Call Sign: KNKQ306 **File Number:** 0009611390 **Print Date:** 08-31-2021

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

Address: (La Center) 220 RICHARDSON LN
City: LA CENTER **County:** BALLARD **State:** KY **Construction Deadline:**

Antenna: 4
Maximum Transmitting ERP in Watts: 140.820

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

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

Address: 3975 State Route 2206
City: CLINTON **County:** HICKMAN **State:** KY **Construction Deadline:**

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

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

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

Address: (Calvert City) 641 Jary Johnson Rd.
City: Calvert City **County:** MARSHALL **State:** KY **Construction Deadline:**

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 3
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 4
Maximum Transmitting ERP in Watts: 140.820

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

Reference Copy

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

Call Sign: KNKQ306 **File Number:** 0009611390 **Print Date:** 08-31-2021

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

Address: 12201 SR 97

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

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

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

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

Address: (Paducah West) 4415 Merredith Rd.

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

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

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

Reference Copy

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

Call Sign: KNKQ306 **File Number:** 0009611390 **Print Date:** 08-31-2021

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

Address: 14664 Canton Road
City: Golden Pond **County:** TRIGG **State:** KY C**onstruction Deadline:** 05-19-2006

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

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

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

Address: (Hickman site) Holley Street
City: Hickman **County:** FULTON **State:** KY C**onstruction Deadline:** 05-28-2014

Antenna: 1
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 3
Maximum Transmitting ERP in Watts: 140.820

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

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

Address: (Monkey's Eyebrow) 4625 Odgen Colvin Circle
City: Kevil **County:** BALLARD **State:** KY C**onstruction Deadline:** 10-24-2014

Antenna: 1
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

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

Reference Copy

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

Call Sign: KNKQ306 **File Number:** 0009611390 **Print Date:** 08-31-2021

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

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

City: Kevil **County:** BALLARD **State:** KY C**onstruction Deadline:** 10-24-2014

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

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

Control Points:

Control Pt. No. 3

Address: 500 W. Dove Rd.

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

Waivers/Conditions:

NONE

Reference Copy

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

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
KNLH404	
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
04-24-2017	11-30-2017	04-28-2027	

Market Number	Channel Block	Sub-Market Designator
BTA339	D	0

Market Name
Paducah-Murray-Mayfield, KY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
04-28-2002			

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

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

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

FCC 601-MB
August 2021

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNLH404 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

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

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: ALLTEL CORPORATION

ATTN: REGULATORY
ALLTEL CORPORATION
5055 NORTH POINT PKWY, NP2NE ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQBT313	
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0002942159

Grant Date	Effective Date	Expiration Date	Print Date
06-05-2015	05-07-2020	06-23-2025	

Market Number	Channel Block	Sub-Market Designator
MTA026	A	18

Market Name
Louisville-Lexington-Evansvill

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
10-23-2000			

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

This authorization is subject to the condition that the remaining balance of the winning bid amount will be paid in accordance with Part 1 of the Commission's rules, 47 C.F.R. Part 1.

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

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

FCC 601-MB
August 2021

Reference Copy

This license is conditioned upon compliance with the provisions of Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation For Consent to Transfer Control of Licenses and Authorizations, Memorandum Opinion and Order, FCC 04-255 (rel. Oct. 26, 2004).

Reference Copy

Licensee Name: ALLTEL CORPORATION

Call Sign: WQBT313 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

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

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: ALLTEL CORPORATION

ATTN: REGULATORY
ALLTEL CORPORATION
5055 NORTH POINT PKWY, NP2NE ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQBT318	
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0002942159

Grant Date	Effective Date	Expiration Date	Print Date
06-05-2015	05-07-2020	06-23-2025	

Market Number	Channel Block	Sub-Market Designator
MTA026	A	16

Market Name
Louisville-Lexington-Evansvill

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-23-2000			

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

This authorization is subject to the condition that the remaining balance of the winning bid amount will be paid in accordance with Part 1 of the Commission's rules, 47 C.F.R. Part 1.

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

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

FCC 601-MB
August 2021

Reference Copy

Licensee Name: ALLTEL CORPORATION

Call Sign: WQBT318 **File Number:** **Print Date:**

This license is conditioned upon compliance with the provisions of Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation For Consent to Transfer Control of Licenses and Authorizations, Memorandum Opinion and Order, FCC 04-255 (rel. Oct. 26, 2004).

Reference Copy

Licensee Name: ALLTEL CORPORATION

Call Sign: WQBT318 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

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

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: ALLTEL CORPORATION

ATTN: REGULATORY
ALLTEL CORPORATION
5055 NORTH POINT PKWY, NP2NE ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQBT318	
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0002942159

Grant Date	Effective Date	Expiration Date	Print Date
06-05-2015	05-07-2020	06-23-2025	

Market Number	Channel Block	Sub-Market Designator
MTA026	A	16

Market Name
Louisville-Lexington-Evansvill

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-23-2000			

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

This authorization is subject to the condition that the remaining balance of the winning bid amount will be paid in accordance with Part 1 of the Commission's rules, 47 C.F.R. Part 1.

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

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

FCC 601-MB
August 2021

Reference Copy

Licensee Name: ALLTEL CORPORATION

Call Sign: WQBT318 **File Number:** **Print Date:**

This license is conditioned upon compliance with the provisions of Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation For Consent to Transfer Control of Licenses and Authorizations, Memorandum Opinion and Order, FCC 04-255 (rel. Oct. 26, 2004).

Reference Copy

Licensee Name: ALLTEL CORPORATION

Call Sign: WQBT318 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

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

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQGA718	0009793647
Radio Service AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
02-22-2022	02-22-2022	11-29-2036	02-23-2022

Market Number	Channel Block	Sub-Market Designator
REA004	F	15

Market Name
Mississippi Valley

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations. See, e.g., FCC and NTIA Coordination Procedures in the 1710-1755 MHz Band, Public Notice, FCC 06-50, WTB Docket No. 02-353, rel. April 20, 2006.

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

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQGA718 **File Number:** 0009793647 **Print Date:** 02-23-2022

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

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

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQGA960	0009775572
Radio Service AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
01-03-2022	01-03-2022	11-29-2036	01-05-2022

Market Number	Channel Block	Sub-Market Designator
BEA072	B	0

Market Name
Paducah, KY-IL

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations. See, e.g., FCC and NTIA Coordination Procedures in the 1710-1755 MHz Band, Public Notice, FCC 06-50, WTB Docket No. 02-353, rel. April 20, 2006.

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

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQGA960 **File Number:** 0009775572 **Print Date:** 01-05-2022

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

REFERENCE COPY

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

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQGD606	0009565676

Radio Service
AW - AWS (1710-1755 MHz and 2110-2155 MHz)

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
12-16-2021	12-16-2021	12-18-2036	07-09-2022

Market Number	Channel Block	Sub-Market Designator
BEA072	C	0

Market Name
Paducah, KY-IL

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations. See, e.g., FCC and NTIA Coordination Procedures in the 1710-1755 MHz Band, Public Notice, FCC 06-50, WTB Docket No. 02-353, rel. April 20, 2006.

Special Condition for AU/name change (6/4/2016): Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station is licensed under the prior name.

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

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQGD606 **File Number:** 0009565676 **Print Date:** 07-09-2022

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

REFERENCE COPY

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

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQJQ692	

Radio Service
WU - 700 MHz Upper Band (Block C)

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
01-10-2020	02-11-2021	06-13-2029	

Market Number	Channel Block	Sub-Market Designator
REA004	C	0

Market Name
Mississippi Valley

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-13-2013	06-13-2019		

Waivers/Conditions:

If the facilities authorized herein are used to provide broadcast operations, whether exclusively or in combination with other services, the licensee must seek renewal of the license either within eight years from the commencement of the broadcast service or within the term of the license had the broadcast service not been provided, whichever period is shorter in length. See 47 CFR §27.13(b).

This authorization is conditioned upon compliance with section 27.16 of the Commission's rules

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

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

FCC 601-MB
August 2021

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQJQ692 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

REFERENCE COPY

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

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WREF214	

Radio Service
UU - Upper Microwave Flexible Use Service

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
10-02-2019	10-02-2019	10-02-2029	

Market Number	Channel Block	Sub-Market Designator
C21083	L1	0

Market Name
GRAVES, KY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

NONE

Conditions:

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

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WREF214 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

REFERENCE COPY

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

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: STRAIGHT PATH SPECTRUM, LLC

ATTN: REGULATORY
STRAIGHT PATH SPECTRUM, LLC
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRHG984	
Radio Service UU - Upper Microwave Flexible Use Service	

FCC Registration Number (FRN): 0012576435

Grant Date	Effective Date	Expiration Date	Print Date
06-04-2020	06-04-2020	06-04-2030	

Market Number	Channel Block	Sub-Market Designator
PEA243	M1	0

Market Name
Paducah, KY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

NONE

Conditions:

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

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Reference Copy

Licensee Name: STRAIGHT PATH SPECTRUM, LLC

Call Sign: WRHG984 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

REFERENCE COPY

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

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: STRAIGHT PATH SPECTRUM, LLC

ATTN: REGULATORY
STRAIGHT PATH SPECTRUM, LLC
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRHG994	
Radio Service UU - Upper Microwave Flexible Use Service	

FCC Registration Number (FRN): 0012576435

Grant Date	Effective Date	Expiration Date	Print Date
06-04-2020	06-04-2020	06-04-2030	

Market Number	Channel Block	Sub-Market Designator
PEA243	N1	0

Market Name
Paducah, KY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

NONE

Conditions:

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

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Reference Copy

Licensee Name: STRAIGHT PATH SPECTRUM, LLC

Call Sign: WRHG994 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

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

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRNG990	
Radio Service PM - 3.7 GHz Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
07-23-2021	07-23-2021	07-23-2036	

Market Number	Channel Block	Sub-Market Designator
PEA243	B1	0

Market Name
Paducah, KY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
07-23-2029	07-23-2033		

Waivers/Conditions:

This final license provides authorization during the full 15-year license term. Operation under this final license may begin on the earlier of (1) 12/5/2025 or (2) the date that the certification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR § 27.1412(g).

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

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

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

FCC 601-MB
August 2021

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRNG990 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

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

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRNG985	
Radio Service PM - 3.7 GHz Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
07-23-2021	07-23-2021	07-23-2036	

Market Number	Channel Block	Sub-Market Designator
PEA243	A1	0

Market Name
Paducah, KY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
07-23-2029	07-23-2033		

Waivers/Conditions:

This final license provides authorization during the full 15-year license term. Operation under this final license may begin on the earlier of (1) 12/5/2025 or (2) the date that the certification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR § 27.1412(g).

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

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

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

FCC 601-MB
August 2021

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRNG985 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

DigiSigner Document ID: 14679689-9113-4145-8725-19dbb9a85930

Exhibit C

FANCY FARM

US-KY-5135

KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

TENANT: KENTICKY RSA 1 PSHP d/b/a VERIZON
"EV FANCY FARM"

FROM GRAVES COUNTY COURT CLERK, 101 E SOUTH ST #2, MAYFIELD, KY 42066: HEAD EAST ON E SOUTH ST TOWARD S 6TH ST (190 FT). TURN LEFT AT THE 1ST CROSS STREET ONTO S 6TH ST (361 FT). TURN LEFT ONTO E BROADWAY (2.4 MI). CONTINUE ONTO KY-80 W (7.8 MI). TURN RIGHT ONTO KY-339 N/KY-80 W (249 FT). TURN LEFT ONTO KY-80 W (0.4 MI). SITE WILL BE LOCATED ON RIGHT (NORTH) SIDE OF ROAD.

FROM EVANSVILLE MTSO: 800 RUSSELL ROAD CHANDLER, IN 47610: HEAD NORTH ON RUSSELL RD TOWARD GARDNER RD (0.2 MI). TURN LEFT ONTO GARDNER RD (1.6 MI). TURN LEFT ONTO IN-62 (4.2 MI). USE THE RIGHT LANE TO TAKE THE RAMP ONTO I-69 S (0.4 MI). MERGE ONTO I-69 S (7.8 MI). TAKE EXIT 0 FOR VETERANS MEM PKWY/US-41 TOWARD VINCENNES/HENDERSON KY (0.3 MI). KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR US-41 S AND MERGE ONTO US-41 S (0.9 MI). MERGE ONTO US-41 S (6.1 MI). KEEP LEFT TO STAY ON US-41 S (4.3 MI). CONTINUE ONTO I-69 (SIGNS FOR MADISONVILLE/FULTON) (41.8 MI). KEEP RIGHT TO STAY ON I-69, FOLLOW SIGNS FOR PADUCAH (38.4 MI). TAKE EXIT 68B TO MERGE ONTO I-24 W/I-69 S TOWARD PADUCAH (16.2 MI). TAKE EXIT 25A ON THE LEFT FOR I-69 S TOWARD FULTON S (0.9 MI). CONTINUE ONTO I-69 (28.4 MI). TAKE EXIT 22 FOR KY-80 TOWARD MAYFIELD/FANCY FARM (0.2 MI). TURN RIGHT ONTO KY-80 W/W BROADWAY/FANCY FARM RD (8.3 MI). TURN RIGHT ONTO KY-339 N/KY-80 W (249 FT). TURN LEFT ONTO KY-80 W (0.4 MI). SITE WILL BE LOCATED ON RIGHT (NORTH) SIDE OF ROAD.

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

NEW 290'-0" SELF SUPPORT TOWER w/5' LIGHTNING ARRESTOR -TOTAL TOWER HEIGHT 295'-0"

PROJECT SUMMARY

VERTICAL BRIDGE SITE
FANCY FARM
SITE #: US-KY-5135

VERIZON SITE
EV FANCY FARM
FUZE ID: 16207023
LOCATION CODE: 495686

SITE ADDRESS
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY
E911 ADDRESS: TBD

CLIENT CONTACT
VERIZON
2902 RING ROAD
ELIZABETHTOWN, KY 42701
CONTACT: JACKIE STRAIGHT
PHONE: (290) 750-0023
E-MAIL: JACKIE.STRAIGHT@
VERIZONWIRELESS.COM

TOWER OWNER
VB BTS II, LLC
750 PARK OF COMMERCE DRIVE
SUITE 200
BOCA RATON, FL 33487
CONTACT: GRETCHEN BLANTON
MOBILE: (704) 472-0374
E-MAIL: GBLANTON@
VERTICALBRIDGE.COM

PROPERTY OWNER
KM & K FARMS LLC
P O BOX 48035
COON RAPIDS, MN 55448
PHONE: (763) 248-2538
E-MAIL: KHAYDEN5191@
COMCAST.NET

POLICE
GRAVES COUNTY SHERIFF
101 E SOUTH ST #3
MAYFIELD, KY 42066
PHONE: (270) 247-4501

FIRE
MILBURN VOLUNTEER FIRE DEPT.
HIGHWAY 80
MILBURN, KY 42070
PHONE: (270) 694-3207

GENERAL INFORMATION

LATITUDE :	36.802670" N
LONGITUDE :	88.798391" W
	1983 (NAD83)
ELEVATION :	431'± AMSL
	1988 (NAVD88)

PROPOSED LEASE AREA
100'-0" x 100'-0"
(10,000 SF)

PROJECT TOTAL DISTURBED AREA

COMPOUND:	(10,000 SF) = (0.23 ACRE)
ACCESS DRIVE:	(13,840 SF) = (0.32 ACRE)
GROSS AREA:	(23,840 SF) = (0.55 ACRE)

PROJECT DESCRIPTION

NOTE:ALL ITEMS WITHIN THESE CONSTRUCTION DOCUMENTS ARE BY TOWER OWNER'S GENERAL CONTRACTOR AND HIS SUB-CONTRACTORS UNLESS NOTED AS (VZW GC) WHICH SHALL INCLUDE VERIZON GENERAL CONTRACTOR AND HIS SUB-CONTRACTORS. GENERALLY DESCRIBED BELOW:

VERTICAL BRIDGE SCOPE:

- INSTALL A NEW 290'-0" SELF SUPPORT TOWER w/ 5' LIGHTNING ROD (TOTAL 295'-0")
- INSTALL A NEW TOWER FOUNDATION SYSTEM
- INSTALL A NEW 75'x80' FENCED GRAVEL COMPOUND
- INSTALL A NEW SITE H-FRAME
- INSTALL A NEW ELECTRICAL SERVICE RUN TO SITE H-FRAME
- INSTALL A NEW GRAVEL ACCESS DRIVE
- NO WATER OR SEWAGE SERVICES RUN TO SITE
- INSTALL NEW TOWER & SITE GROUNDING SYSTEM
- INSTALL NEW VZW SUBSURFACE GROUNDING SYSTEM
- INSTALL A NEW 11'-6"x19'-6" CONCRETE EQUIPMENT / GENERATOR PAD
- INSTALL ELECTRICAL SERVICE CONDUIT WITH PULL TAPES FROM ILC ENCLOSURE STUB-UP WITHIN VZW EQUIPMENT PAD TO UTILITY H-FRAME
- INSTALL NEW CONDUITS WITH PULL TAPES FROM VZW ILC ENCLOSURE STUB-UPS TO EQUIPMENT ENCLOSURE STUB-UPS WITHIN VZW EQUIPMENT PAD
- INSTALL NEW CONDUITS WITH PULL TAPES FROM VZW ILC & EQUIPMENT ENCLOSURE STUB-UP LOCATIONS TO THE GENERATOR LOCATION WITHIN VZW EQUIPMENT PAD
- INSTALL NEW CONDUITS WITH PULL TAPES FROM RF CABINET TO OVP H-FRAME LIT FIBER LOCATION
- INSTALL (1) NEW "VERIZON ONLY" FIBER OPTIC CONDUIT WITH PULL TAPE AND TRACER WIRE FROM VZW EQUIPMENT TO NEW "VERIZON ONLY" 24" x 36" HAND HOLE OUTSIDE COMPOUND
- INSTALL (1) NEW "VERIZON ONLY" FIBER OPTIC CONDUIT WITH PULL TAPE AND TRACER WIRE FROM NEW "VERIZON ONLY" 24" x 36" HAND HOLE OUTSIDE COMPOUND TO NEW "VERIZON ONLY" 36" x 60" HAND HOLE AT ROW
- INSTALL (1) NEW "VERIZON ONLY" FIBER OPTIC CONDUIT WITH PULL TAPE FROM NEW "VERIZON ONLY" 24" x 36" HAND HOLE OUTSIDE COMPOUND AND STUB UP AT FUTURE FIBER PEDESTAL LOCATION
- PERMANENT ELECTRIC POWER MUST BE AVAILABLE FOR VERIZON AT THE METER BASE PRIOR TO THE SITE BEING RELEASED AS TENANT READY.

VERIZON SCOPE (VZW GC):

- INSTALL A NEW 11'-6"x14'-9" PREFABRICATED CANOPY ON EXISTING CONCRETE PAD
- INSTALL NEW 30KW DIESEL GENERATOR ON EXISTING CONCRETE PAD
- INSTALL VZW ICE BRIDGE AND FOUNDATIONS
- INSTALL VZW ANTENNA MOUNTING SUPPORT STRUCTURE ON TOWER
- INSTALL VZW ANTENNAS, LINES, COAX, GPS ANTENNA AND RADIO EQUIPMENT
- INSTALL EXISTING SUBSURFACE GROUND LEADS TO VZW EQUIPMENT & FACILITIES
- INSTALL VZW ELECTRIC SERVICE CONDUCTORS FROM UTILITY H-FRAME TO VZW ILC ENCLOSURE
- INSTALL VZW GENERATOR CIRCUITS FROM VZW ILC & EQUIPMENT ENCLOSURES TO VZW GENERATOR
- INSTALL CIRCUITS FROM VZW ILC TO VZW EQUIPMENT ENCLOSURES
- INSTALL NEW OUTDOOR OVP AND CABLING H-FRAME SUPPORT
- INSTALL (2) 1-1/4" & (1) 1" INNERDUCTS WITH PULL TAPES AND TRACER WIRE WITHIN OWNER INSTALLED "VERIZON ONLY" FIBER OPTIC CONDUITS

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

BUILDING CODE	2018 KENTUCKY BUILDING CODE
STRUCTURAL CODE	TIA/EIA-222 - REVISION G (INCLUDES ADDENDUM #2)
MECHANICAL CODE	2012 INTERNATIONAL MECHANICAL CODE (IMC 2012)
PLUMBING CODE	KENTUCKY STATE PLUMBING CODE (815 KAR CHAP. 20)
ELECTRICAL CODE	2017 NATIONAL ELECTRICAL CODE (NEC) - NFPA 70
FIRE/LIFE SAFETY CODE	2012 INTERNATIONAL FIRE CODE (2012 IFC)
ENERGY CODE	2012 INTERNATIONAL ENERGY CODE (COMMERCIAL)
GAS CODE	2009 NATIONAL FUEL GAS CODE (NFPA 54)

ACCESSIBILITY REQUIREMENTS:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH THE 2009 IBC BUILDING CODE.

APPLICABLE CODES

CONSULTANT TEAM

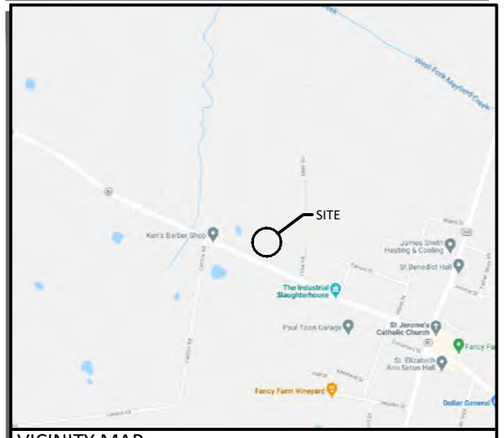
SURVEYOR
POWER OF DESIGN GROUP, LLC
11490 BLUEGRASS PARKWAY
LOUISVILLE, KY 40299
PHONE: (502) 437-5252

ARCHITECTURAL
POWER OF DESIGN GROUP, LLC
11490 BLUEGRASS PARKWAY
LOUISVILLE, KY 40299
PHONE: (502) 437-5252

ELECTRICAL
WEST KENTUCKY RECC
ADDRESS: 1218 W BROADWAY
MAYFIELD, KY 42066
PHONE: (270) 247-1321

SHEET NUMBER	DESCRIPTION
T-1	PROJECT INFORMATION, SITE MAPS, SHEET INDEX
B-1 TO B-1.1	SITE SURVEY
B-2 TO B-2.1	500' RADIUS & ABUTTERS MAP
R-1	REVISION LOG
TOWER ELEVATION	
TE-1	TOWER ELEVATION
CIVIL	
C-1	OVERALL SITE PLAN W/AERIAL OVERLAY
C-1A	OVERALL SITE PLAN W/DISTANCES TO PROPERTY LINES
C-1B	TOWER DISTANCE TO RESIDENTIAL STRUCTURES
C-3	DETAILED SITE PLAN
C-4	DIMENSIONED SITE PLAN

VICINITY MAP



LOCATION MAP

AERIAL

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

vertical bridge

04/25/2023

STATE OF KENTUCKY
MARK E. PATTERSON
16,300
LICENSED
PROFESSIONAL ENGINEER

EN PERMIT: 3594

ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	9.28.22	ISSUED FOR REVIEW
0	11.15.22	ISSUED AS FINAL
1	4.25.23	500'R REVISION

SITE INFORMATION:
FANCY FARM
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

VERTICAL BRIDGE SITE NUMBER:
US-KY-5135

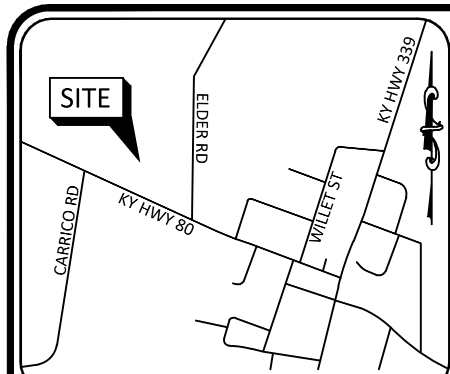
VERIZON SITE NAME:
EV FANCY FARM

POD NUMBER:	21-117201
DRAWN BY:	POD
CHECKED BY:	MEP
DATE:	09.28.22

SHEET TITLE:
PROJECT INFORMATION, SITE MAPS, SHEET INDEX

SHEET NUMBER:
T-1

DigiSigner Document ID: a46b7968-71da-461a-8a45a20d7b25a8930



VICINITY MAP = NO SCALE

GLOBAL POSITIONING SYSTEMS NOTE

1. RANDOM CONTROL POINTS AND A PORTION OF THE TOPOGRAPHY WAS LOCATED USING GPS.
2. THE TYPE OF GPS UTILIZED WAS NETWORK ADJUSTED REAL TIME KINEMATIC (KDOT VRS NETWORK), NAD 83 KENTUCKY SINGLE ZONE WITH THE ORTHOMETRIC HEIGHT COMPUTED USING GEOID12A. RELATIVE POSITIONAL ACCURACY VARIED FROM 0.04' TO 0.06' HORIZONTALLY.
3. SPECTRA PRECISION EPOCH 50 DUAL FREQUENCY RECEIVERS WERE USED TO PERFORM THE SURVEY.

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 RANDOM TRAVERSE WITH SIDE SHOTS. UNADJUSTED CLOSURE EQUALS 0.06', FOR A PRECISION OF 1:42,486 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 SHOWN HEREON ARE NOT LOCATED IN A 100-YEAR FLOOD PLAIN (ZONE X) PER FLOOD HAZARD BOUNDARY MAP, COMMUNITY-PANEL NUMBER 21083C0125C, DATED DECEMBER 3, 2009.

LEGEND

	EX. UTILITY POLE
	EX. GUY ANCHOR
	EX.ROAD SIGN
FO	EX. FIBER OPTIC MANHOLE
FOM	EX. FIBER OPTIC MARKER
WV	EX. WATER VALVE
S	EX. SANITARY SEWER MANHOLE
WM	EX. WATER METER
EOP	EDGE OF PAVEMENT
ROW	RIGHT OF WAY
P.O.C.	POINT OF COMMENCEMENT
P.O.R.	POINT OF REFERENCE
P.O.B.	POINT OF BEGINNING
— OHE —	EX. OVERHEAD ELECTRIC
— OHE&T —	EX. OVERHEAD ELECTRIC & TELE
— x —	EX. FENCE
	SET 1/2" REBAR 18" LONG CAPPED "PATTERSON PLS 3136"
	FOUND 5/8" REBAR WITH YELLOW CAP STAMPED " RT CARTER PLS" UNLESS OTHERWISE NOTED
	PROPERTY LINE
	ADJACENT PROPERTY LINE

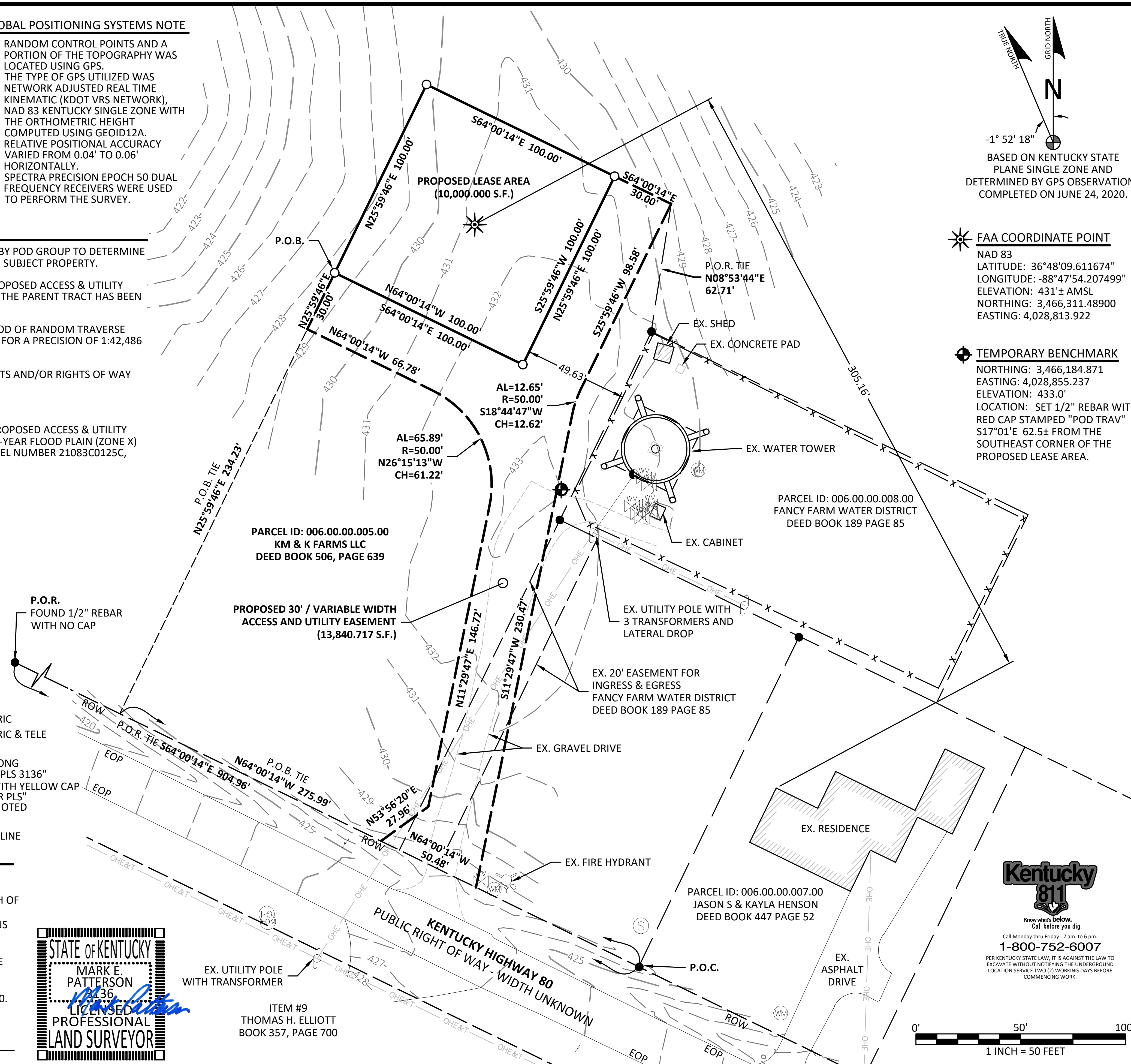
LAND SURVEYOR'S CERTIFICATE

I, MARK E. PATTERSON, HEREBY CERTIFY THAT I AM A LICENSED PROFESSIONAL LAND SURVEYOR LICENSED IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF KENTUCKY. I FURTHER CERTIFY THAT THIS 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 18:150.

Mark Patterson (signature) 09/14/2022

MARK PATTERSON, PLS #3136 DATE

STATE OF KENTUCKY
MARK E. PATTERSON
3136
LICENSED PROFESSIONAL LAND SURVEYOR



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

0' 50' 100'
1 INCH = 50 FEET

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

PREPARED FOR:
KENTUCKY RSA 1 PARTNERSHIP D/B/A verizon

SITE SURVEY

REV.	DATE	DESCRIPTION
A	6.29.20	PRELIM ISSUE
B	11.2.20	TITLE REVIEW
0	9.14.22	ISSUED AS FINAL

SITE INFORMATION:

EV FANCY FARM
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

TAX PARCEL NUMBER:
006.00.00.005.00

PROPERTY OWNER:
KM & K FARMS LLC
P O BOX 48035
COON RAPIDS, MN 55448

SOURCE OF TITLE:
DEED BOOK 506, PAGE 639

POD NUMBER:	20-64963
DRAWN BY:	JRS
CHECKED BY:	MEP
SURVEY DATE:	6.24.20
PLAT DATE:	6.29.20

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

SHEET NUMBER: (2 pages)
B-1

DigiSigner Document ID: af6b79689-91d8-46f4-8a45-a29d7f25a8930

TITLE OF COMMITMENT

THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY POD GROUP, LLC. AND AS SUCH WE ARE NOT RESPONSIBLE FOR THE INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP TITLE EVIDENCE, UNRECORDED EASEMENTS, AUGMENTING EASEMENTS, IMPLIED OR PRESCRIPTIVE EASEMENTS, OR ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE. INFORMATION REGARDING THESE MATTERS WERE GAINED FROM AMC SETTLEMENT SERVICES, LOAN NO.: VZW / EV FANCY FARM2, ORDER NO.: 50012406, DATED AUGUST 5, 2020 AND PER TITLE UPDATE REPORT ORDER NO. 37123186, DATED APRIL 27, 2022. THE FOLLOWING COMMENTS ARE IN REGARD TO SAID COMMITMENT AND THE NUMBERS IN THE COMMENTS CORRESPOND TO THE NUMBERING SYSTEM IN SAID POLICY.

SCHEDULE B SECTION II (EXCEPTIONS)

1. DEFECTS, LIENS, ENCUMBRANCES, ADVERSE CLAIMS OR OTHER MATTERS, IF ANY, CREATED, FIRST APPEARING IN THE PUBLIC RECORDS OR ATTACHING SUBSEQUENT TO THE EFFECTIVE DATE BUT PRIOR TO THE DATE THE PROPOSED INSURED ACQUIRES FOR VALUE OF RECORD THE ESTATE OR INTEREST OR MORTGAGE THEREON COVERED BY THIS COMMITMENT. (POWER OF DESIGN GROUP, LLC., DID NOT EXAMINE OR ADDRESS THIS ITEM.)

2. TAXES OR SPECIAL ASSESSMENTS WHICH ARE NOT SHOWN AS EXISTING LIENS BY THE PUBLIC RECORDS. (NOT A LAND SURVEYING MATTER, THEREFORE POWER OF DESIGN GROUP, LLC., DID NOT EXAMINE OR ADDRESS THIS ITEM.)

3. ANY ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATION, OR ADVERSE CIRCUMSTANCE AFFECTING THE TITLE THAT WOULD BE DISCLOSED BY AN ACCURATE AND COMPLETE LAND SURVEY OF THE LAND. (NO ENCROACHMENTS WERE OBSERVED ON THE AREA OF THE PREMISES, OR EASEMENT. POWER OF DESIGN GROUP, LLC DID NOT PERFORM A BOUNDARY SURVEY OF THE PARENT PARCEL, THEREFORE, THIS SHOULD NOT BE CONSTRUED AS NO ENCROACHMENTS EXIST.)

4. RIGHTS OR CLAIMS OF PARTIES IN POSSESSION NOT SHOWN BY THE PUBLIC RECORDS. (RIGHTS OR CLAIMS ARE NOT A LAND SURVEYING MATTER, THEREFORE POWER OF DESIGN GROUP, LLC., DID NOT EXAMINE OR ADDRESS THIS ITEM.)

5. ANY LIEN OR RIGHT TO A LIEN, FOR SERVICES, LABOR, OR MATERIAL HERETOFORE OR HEREAFTER FURNISHED, IMPOSED BY LAW AND NOT SHOWN BY THE PUBLIC RECORDS. (NOT A LAND SURVEYING MATTER, THEREFORE POWER OF DESIGN GROUP, LLC., DID NOT EXAMINE OR ADDRESS THIS ITEM.)

6. EASEMENTS OR CLAIMS OF EASEMENTS, NOT SHOWN BY THE PUBLIC RECORDS. (POWER OF DESIGN GROUP, LLC., DID NOT EXAMINE OR ADDRESS THIS ITEM.)

TAXES

7. TAXES, OR SPECIAL ASSESSMENTS, IF ANY, NOT SHOWN AS EXISTING LIENS BY THE PUBLIC RECORDS.

PARCEL ID #: 006.00.00.005.00
COMMENTS: PARENT PARCEL

YEAR:	TYPE:	PERIOD:	TAX AMOUNT:	PENALTY:	AMOUNT DUE:	STATUS:	DUE DATE:	GOOD THRU DATE:
2019	CITY & COUNTY	ANNUAL	$148.96	$0.00	N/A	PAID	N/A	N/A

PER TITLE UPDATE REPORT ORDER NO. 37123186, DATED APRIL 27, 2022:

YEAR:	TYPE:	PERIOD:	TAX AMOUNT:	STATUS:	ASSESSMENT:
2021	COUNTY	ANNUAL	$150.53	PAID	$16,800.00

PARCEL ID #: 006.00.00.005.02
COMMENTS: LEASEHOLD PARCEL

YEAR:	TYPE:	PERIOD:	TAX AMOUNT:	PENALTY:	AMOUNT DUE:	STATUS:	DUE DATE:	GOOD THRU DATE:
2019	CITY & COUNTY	ANNUAL	$168.44	$0.00	N/A	PAID	N/A	N/A

PER TITLE UPDATE REPORT ORDER NO. 37123186, DATED APRIL 27, 2022:

YEAR:	TYPE:	PERIOD:	TAX AMOUNT:	STATUS:	ASSESSMENT:
2021	COUNTY	ANNUAL	$170.24	PAID	$19,000.00

(NOT A LAND SURVEYING MATTER, THEREFORE POWER OF DESIGN GROUP, LLC., DID NOT EXAMINE OR ADDRESS THIS ITEM.)

MORTGAGE

NONE OF RECORD.

LIENS / JUDGEMENTS

NONE OF RECORD.

OTHERS

8. SUBJECT TO EASEMENT IN DEED FROM ALBERT EUGENE GOATLEY AND WIFE, MARY VERNON GOATLEY, TO DANNY TOON AND WIFE, NICOLE TOON DATED 8/26/1994 AND RECORDED 8/30/1994 IN BOOK 350, PAGE 477, GRAVES COUNTY RECORDS. (EASEMENT IN DEED AS RECORDED IN BOOK 350, PAGE 477 DOES NOT AFFECT THE PARENT PARCEL OR THE ACCESS & UTILITY EASEMENT.)

9. SUBJECT TO EASEMENT FOR POWER LINES AND WATER METERS IN DEED FROM JAMES M. ELLIOTT, TRUSTEE OF THE JAMES M. ELLIOTT DECLARATION OF TRUST TO THOMAS H. ELLIOTT DATED 10/9/1995 AND RECORDED 10/13/1995 IN BOOK 357, PAGE 700, GRAVES COUNTY RECORDS. (EASEMENT AS RECORDED IN BOOK 357, PAGE 700 DOES NOT AFFECT THE PARENT PARCEL OR THE ACCESS & UTILITY EASEMENT AND IS SHOWN HEREON.)

10. SUBJECT TO EASEMENT OF 20 FOOT WIDE STRIP OF LAND FORMERLY USED AS A ROADWAY REFERENCED IN DEED FROM MAIN STREET BANK & TRUST FKA BANKILLINOIS, SUCCESSOR TRUSTEE OF THE JAMES M. ELLIOTT DECLARATION OF TRUST UNDER AGREEMENT DATED 5/6/1994 TO KENT E. HAYDEN AND W. KEITH HAYDEN DATED 10/7/2005 AND RECORDED 11/14/2005 IN BOOK 427, PAGE 770, GRAVES COUNTY RECORDS. (NO COPY OF THE ACTUAL EASEMENT REFERENCED IN BOOK 80, PAGE 329, IS AVAILABLE) (THERE IS NOT A COPY OF OR A PLOTTABLE DESCRIPTION INCLUDED OF THE 20' EASEMENT AS REFERENCED IN BOOK 427, PAGE 770, THEREFORE POD CANNOT DETERMINE THE AFFECT ON THE PARENT PARCEL OR THE ACCESS & UTILITY EASEMENT.)

11. SUBJECT TO DEED OF EASEMENT FROM ALGENE GOATLEY AND WIFE, MARY VERNON GOATLEY TO FANCY FARM WATER & SEWER DISTRICT DATED 6/29/1995 AND RECORDED 6/30/1995 IN BOOK 356, PAGE 10, GRAVES COUNTY RECORDS. (EASEMENT AS RECORDED IN BOOK 356, PAGE 10 DOES NOT AFFECT THE PARENT PARCEL OR THE ACCESS & UTILITY EASEMENT.)

12. SUBJECT TO ANY MATTERS AS MAY BE SHOWN ON PLAT OF QUAIL HOLLOW SUBDIVISION (PHASE RECORDED 12/12/2016 IN PLAT BOOK F, PAGE 75, GRAVES COUNTY RECORDS. (THIS VOIDS THE EASEMENT SHOWN AS PARCEL 11, TRACT II IN VESTING DEED IN BOOK 506, PAGE 639) (MATTERS AS SHOWN IN PLAT IN BOOK 506, PAGE 639 DOES NOT AFFECT THE PARENT PARCEL OR THE ACCESS & UTILITY EASEMENT.)

PER TITLE UPDATE REPORT ORDER NO. 37123186, DATED APRIL 27, 2022, NO NEW DOCUMENTS OF RECORD WERE FOUND IN THE SEARCH PERIOD OF AUGUST 5, 2020 THROUGH APRIL 20, 2022.

LEGAL DESCRIPTIONS

PROPOSED LEASE AREA

THE FOLLOWING IS A DESCRIPTION OF THE PROPOSED LEASE AREA TO BE LEASED FROM THE PROPERTY CONVEYED TO KM & K FARMS LLC AS RECORDED IN DEED BOOK 506, PAGE 639 OF RECORD IN THE OFFICE OF THE CLERK OF GRAVES COUNTY, KENTUCKY, PARCEL ID: 006.00.00.005.00, 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 24, 2020.

COMMENCING AT A FOUND 5/8" REBAR WITH A YELLOW CAP STAMPED "RT CARTER PLS" AT THE SOUTHWEST CORNER OF THE PARCEL CONVEYED TO JASON S & KAYLA HENSON AS DESCRIBED IN DEED BOOK 447, PAGE 52, PARCEL ID: 006.00.00.007.00 AND BEING IN THE NORTH RIGHT OF WAY LINE OF KENTUCKY HIGHWAY 80; FOR REFERENCE, SAID COMMENCEMENT POINT IS S64°00'14"E 904.96' FROM A FOUND 1/2" REBAR WITH NO CAP IN THE SOUTHWEST CORNER OF KM & K FARMS LLC AS RECORDED IN DEED BOOK 506, PAGE 639, PARCEL ID: 006.00.00.005.00 AND BEING IN THE NORTH RIGHT OF WAY LINE OF SAID KENTUCKY HIGHWAY 80, THENCE N64°00'14"W 275.99' TO A POINT ON THE NORTH RIGHT OF WAY LINE OF SAID KENTUCKY HIGHWAY 80 AND ALSO BEING THE SOUTH LINE OF SAID KM & K FARMS LLC; THENCE LEAVING SAID LINE N25°59'46"E 234.23' TO A SET 1/2" REBAR, 18" LONG, CAPPED "PATTERSON PLS 3136", HEREAFTER REFERRED TO AS A "SET IPC", AT THE SOUTHWEST CORNER OF THE PROPOSED LEASE AREA AND BEING **THE TRUE POINT OF BEGINNING**; THENCE N25°59'46"E 100.00' TO A SET IPC; THENCE S64°00'14"E 100.00' TO A SET IPC; THENCE S25°59'46"W 100.00' TO A SET IPC; THENCE N64°00'14"W 100.00' TO THE POINT OF BEGINNING CONTAINING 10,000.000 SQUARE FEET AS PER SURVEY BY MARK E. PATTERSON, PLS #3136 DATED JUNE 24, 2020.

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 CONVEYED TO KM & K FARMS LLC AS RECORDED IN DEED BOOK 506, PAGE 639 OF RECORD IN THE OFFICE OF THE CLERK OF GRAVES COUNTY, KENTUCKY, PARCEL ID: 006.00.00.005.00, 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 24, 2020.

COMMENCING AT A FOUND 5/8" REBAR WITH A YELLOW CAP STAMPED "RT CARTER PLS" AT THE SOUTHWEST CORNER OF THE PARCEL CONVEYED TO JASON S & KAYLA HENSON AS DESCRIBED IN DEED BOOK 447, PAGE 52, PARCEL ID: 006.00.00.007.00 AND BEING IN THE NORTH RIGHT OF WAY LINE OF KENTUCKY HIGHWAY 80; FOR REFERENCE, SAID COMMENCEMENT POINT IS S64°00'14"E 904.96' FROM A FOUND 1/2" REBAR WITH NO CAP IN THE SOUTHWEST CORNER OF KM & K FARMS LLC AS RECORDED IN DEED BOOK 506, PAGE 639, PARCEL ID: 006.00.00.005.00 AND BEING IN THE NORTH RIGHT OF WAY LINE OF SAID KENTUCKY HIGHWAY 80, THENCE N64°00'14"W 275.99' TO A POINT ON THE NORTH RIGHT OF WAY LINE OF SAID KENTUCKY HIGHWAY 80 AND ALSO BEING THE SOUTH LINE OF SAID KM & K FARMS LLC; THENCE LEAVING SAID LINE N25°59'46"E 234.23' TO A SET 1/2" REBAR, 18" LONG, CAPPED "PATTERSON PLS 3136", HEREAFTER REFERRED TO AS A "SET IPC", AT THE SOUTHWEST CORNER OF THE PROPOSED LEASE AREA AND BEING **THE TRUE POINT OF BEGINNING**; THENCE S64°00'14"E 100.00' TO A SET IPC; THENCE N25°59'46"E 100.00' TO A SET IPC; THENCE LEAVING SAID PROPOSED LEASE AREA S64°00'14"E 30.00' TO A POINT; FOR REFERENCE, SAID POINT IS N08°45'52"E 61.69' FROM A FOUND 5/8" REBAR WITH A YELLOW CAP STAMPED "RT CARTER PLS" AT THE NORTHWEST CORNER OF THE PARCEL CONVEYED TO FANCY FARM WATER DISTRICT AS RECORDED IN DEED BOOK 189 PAGE 85, PARCEL ID: 006.00.00.008.00; THENCE S25°59'46"W 98.58'; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 50.00', ARC LENGTH OF 12.65', THE CHORD OF WHICH BEARS S18°44'47"W 12.62'; THENCE S11°29'47"W 230.47' TO THE NORTH RIGHT OF WAY LINE OF KENTUCKY HIGHWAY 80; THENCE ALONG SAID NORTH RIGHT OF WAY LINE N64°00'14"W 50.48'; THENCE LEAVING SAID NORTH RIGHT OF WAY LINE OF KENTUCKY HIGHWAY 80 N53°56'20"E 27.96'; THENCE N11°29'47"E 146.72'; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 50.00', ARC LENGTH OF 65.89', THE CHORD OF WHICH BEARS N26°15'13"W 61.22'; THENCE N64°00'14"W 66.78'; THENCE N25°59'46"E 30.00' TO THE POINT OF BEGINNING CONTAINING 13,840.717 SQUARE FEET AS PER SURVEY BY MARK E. PATTERSON, PLS #3136 DATED JUNE 24, 2020.

PARENT PARCEL, LEGAL DESCRIPTION, DEED BOOK 506, PAGE 639 (NOT FIELD SURVEYED)

ALL THAT PARCEL OF LAND IN THE IN THE COUNTY OF GRAVES AND COMMONWEALTH OF KENTUCKY AS MORE FULLY DESCRIBED IN DEED AND BOOK 506 PAGE 639 AND PARCEL # 006.00.00.005.00 AND 006.00.00.005.02, BEING KNOWN AND DESIGNATED AS:

DUE TO THE NUMEROUS PRIOR OUTSALES REFERENCED IN THE CURRENT VESTING DEED AND BACK DEEDS, A SURVEY IS REQUIRED IN ORDER TO DETERMINE WHAT THE CURRENT, CORRECT LEGAL DESCRIPTION OF THE SUBJECT PROPERTY IS.

PARCEL NUMBER: 006.00.00.005.00 AND 006.00.00.005.02

BEING THE SAME PROPERTY ACQUIRED BY KM & K FARMS, LLC, A KENTUCKY LIMITED LIABILITY COMPANY BY DEED OF WILLIAM KEITH HAYDEN A/K/A W. KEITH HAYDEN, SINGLE, AND KENT E. HAYDEN A/K/A KENT HAYDEN AND MONICA HAYDEN, HUSBAND AND WIFE, DATED 12/12/2016 AND RECORDED 12/28/2016 IN BOOK / PAGE : 506 / 639

LAND SURVEYOR'S CERTIFICATE

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

STATE OF KENTUCKY
MARK E. PATTERSON
3136
LICENSED PROFESSIONAL LAND SURVEYOR

Mark Patterson 09/14/2022

MARK PATTERSON, PLS #3136 DATE

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

PREPARED FOR:
KENTUCKY RSA 1 PARTNERSHIP D/B/A verizon

SITE SURVEY

REV.	DATE	DESCRIPTION
A	6.29.20	PRELIM ISSUE
B	11.2.20	TITLE REVIEW
0	9.14.22	ISSUED AS FINAL

SITE INFORMATION:

EV FANCY FARM
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

TAX PARCEL NUMBER:
006.00.00.005.00

PROPERTY OWNER:
KM & K FARMS LLC
P O BOX 48035
COON RAPIDS, MN 55448

SOURCE OF TITLE:
DEED BOOK 506, PAGE 639

POD NUMBER:	20-64963
DRAWN BY:	JRS
CHECKED BY:	MEP
SURVEY DATE:	6.24.20
PLAT DATE:	6.29.20

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

SHEET NUMBER: (2 pages)
B-1.1

DigiSigner Document ID: 06070680-9582-4130-8705-d0b0206872030

GENERAL NOTE:

1. ALL INFORMATION SHOWN HEREON WAS OBTAINED FROM THE RECORDS OF THE GRAVES COUNTY KENTUCKY PROPERTY VALUATION ADMINISTRATION OFFICE ON JUNE 24, 2020, RE-VERIFIED ON SEPTEMBER 12, 2022 AND APRIL 20, 2023, THE PROPERTY VALUATION ADMINISTRATION RECORDS MAY NOT REFLECT THE CURRENT OWNERS AND ADDRESSES DUE TO THE INACCURACIES AND TIME LAPSE IN UPDATING FILES. POD AND THE COUNTY PROPERTY VALUATION ADMINISTRATION EXPRESSLY DISCLAIMS ANY WARRANTY FOR THE CONTENT AND ANY ERRORS CONTAINED IN THEIR FILES
2. THIS MAP IS FOR GENERAL INFORMATIONAL PURPOSES ONLY AND IS NOT A BOUNDARY SURVEY
3. NOT FOR RECORDING OR PROPERTY TRANSFER.

(A1) PARCEL ID: 006.00.00.005.00
KM & K FARMS LLC
P O BOX 65
FANCY FARM, KY 42039

(B1) PARCEL ID: 006.00.00.004.00
MARTIN BRENT WELDON &
LYNN ASHLEY
1525 C R 1106
FANCY FARM, KY 42039

(C1) PARCEL ID: 005.00.00.021.01
MARTIN BRENT WELDON &
LYNN ASHLEY
1521 C R 1106
FANCY FARM, KY 42039

(D1) PARCEL ID: 005.00.00.012.00
MILLS ROBERT & SUSAN &
MILLS JOHN D & JOAN
2051 SULLIVAN RD
MAYFIELD, KY 42066

(E1) PARCEL ID: 005.00.00.011.00
ELDER PHILIP L II & JENNIFER B
271 ELDER RD
FANCY FARM, KY 42039

(F1) PARCEL ID: 021.00.00.009.00
WILLETT WILLIAM MERRETT
11443 VALMONT LN
ALPHARETTA, GA 30004

(G1) PARCEL ID: 022.01.00.193.00
R E C PROPERTIES LLC
9965 STATE RT 80 WEST
FANCY FARM, KY 42040

(H1) PARCEL ID: 022.01.00.191.00
NEWTON ANTHONY ALLEN &
RENAE MARIE
7555 STATE RT 80 EAST
ARLINGTON, KY 42021

(I1) PARCEL ID: 006.00.00.009.00
WILSON PAMELA A
87 ELDER RD
FANCY FARM, KY 42039

(J1) PARCEL ID: 006.00.00.0010.00
WILSON PAMELA A
87 ELDER RD
FANCY FARM, KY 42039

(K1) PARCEL ID: 006.00.00.011.00
CISSELL DAVID
612 OLD DUBLIN RD
MAYFIELD, KY 42066

(L1) PARCEL ID: 006.00.00.012.00
THOMPSON JAMES BROWN &
RUTH ANN
10622 STATE RT 80 W
FANCY FARM, KY 42039

(M1) PARCEL ID: 006.00.00.013.00
KM & K FARMS LLC
PO BOX 65
FANCY FARM, KY 42039

(N1) PARCEL ID: 006.00.00.005.02
KM & K FARMS LLC
P O BOX 65
FANCY FARM, KY 42039

(O1) PARCEL ID: 006.00.00.006.00
ELLIOTT THOMAS H & KYLA ELLIOTT
5632 NO. KARLOV
CHICAGO, IL 60646

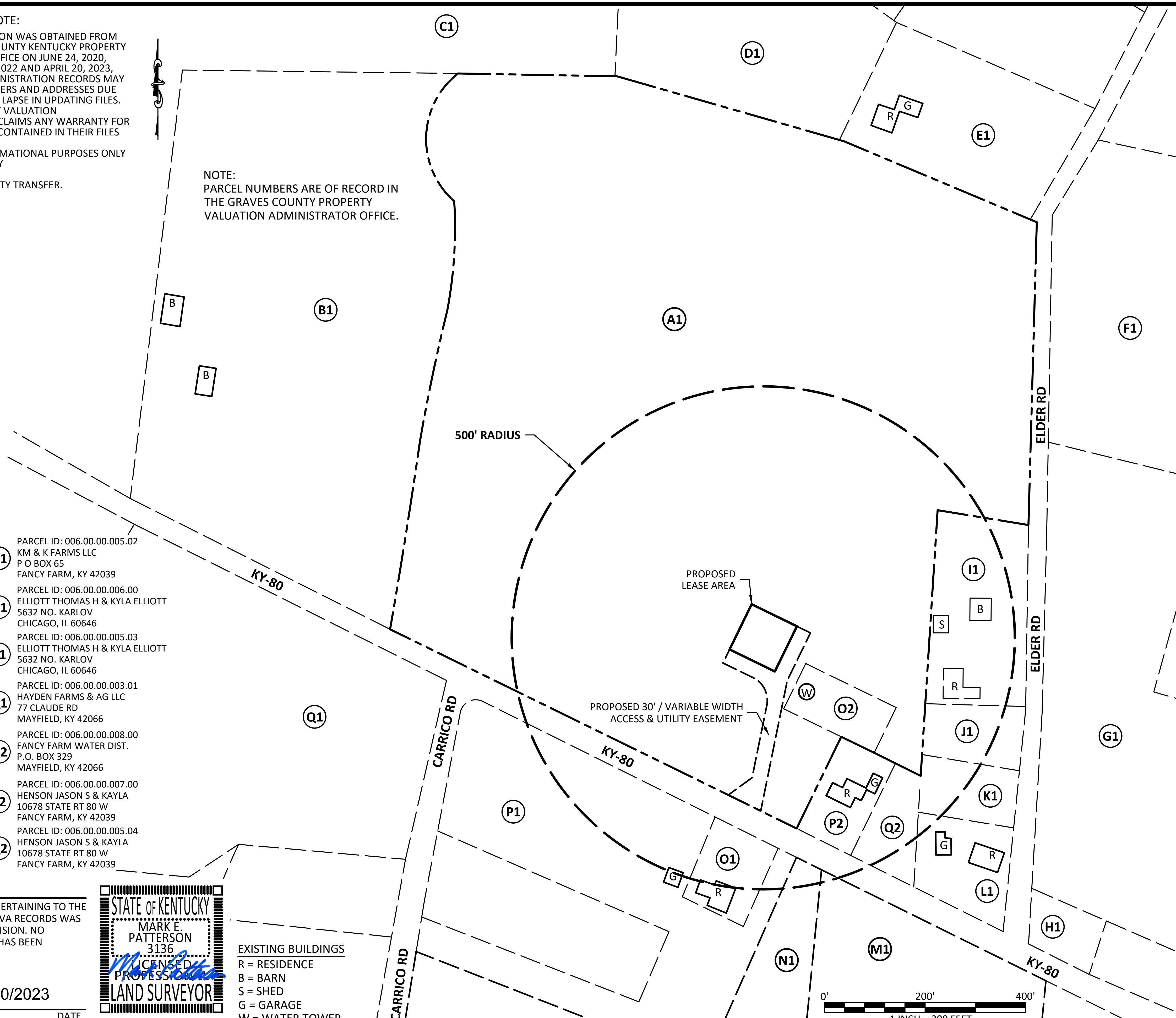
(P1) PARCEL ID: 006.00.00.005.03
ELLIOTT THOMAS H & KYLA ELLIOTT
5632 NO. KARLOV
CHICAGO, IL 60646

(Q1) PARCEL ID: 006.00.00.003.01
HAYDEN FARMS & AG LLC
77 CLAUDE RD
MAYFIELD, KY 42066

(O2) PARCEL ID: 006.00.00.008.00
FANCY FARM WATER DIST.
P.O. BOX 329
MAYFIELD, KY 42066

(P2) PARCEL ID: 006.00.00.007.00
HENSON JASON S & KAYLA
10678 STATE RT 80 W
FANCY FARM, KY 42039

(Q2) PARCEL ID: 006.00.00.005.04
HENSON JASON S & KAYLA
10678 STATE RT 80 W
FANCY FARM, KY 42039



CERTIFICATE

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

04/20/2023

MARK PATTERSON, PLS #3136 DATE

STATE OF KENTUCKY
MARK E. PATTERSON
3136
LICENSED PROFESSIONAL
LAND SURVEYOR

PREPARED BY:

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

PREPARED FOR:

KENTUCKY RSA 1 PARTNERSHIP
D/B/A
verizon

EXHIBIT

REV.	DATE	DESCRIPTION
A	9.12.22	PRELIM ISSUE
0	11.15.22	ISSUED AS FINAL
1	4.20.23	UPDATED ADJOINERS

SITE INFORMATION:

EV FANCY FARM
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

TAX PARCEL NUMBER:
006.00.00.005.00

PROPERTY OWNER:
KM & K FARMS LLC
PO BOX 48035
COON RAPIDS, MN 55448

SOURCE OF TITLE:
DEED BOOK 506, PAGE 639

POD NUMBER:	19-42122
DRAWN BY:	TCS
CHECKED BY:	MEP
SURVEY DATE:	6.24.20
PLAT DATE:	9.12.22

SHEET TITLE:

500' RADIUS AND ABUTTERS MAP

SHEET NUMBER: (2 page)

B-2

DigiSigner Document ID: [illegible]

R1 — PARCEL ID: 006.00.00.015.00
SLAYBOUGH CHARLES R & BRENDA K
183 CARRICO RD
FANCY FARM, KY 42039

S1 — PARCEL ID: 006.00.00.017.00
SLAYBOUGH CHARLES R & BRENDA K
183 CARRICO RD
FANCY FARM, KY 42039

T1 — PARCEL ID: 006.00.00.017.01
MURPHY BRIAN G & TAMMY M
301 CARRICO RD
FANCY FARM, KY 42039

U1 — PARCEL ID: 006.00.00.018.00
MURPHY BRIAN G & TAMMY M
301 CARRICO RD
FANCY FARM, KY 42039

V1 — PARCEL ID: 006.00.00.019.00
CARRICO SUSAN
391 CARRICO RD
FANCY FARM, KY 42039

W1 — PARCEL ID: 006.00.00.020.00
WILSON PHILLIP & JOYCE
388 CARRICO RD
FANCY FARM, KY 42039

X1 — PARCEL ID: 006.00.00.020.01
WILSON MATTHEW ALBERT
18 BARRIGNTON CIRCLE
PADUCAH, KY 42003

Y1 — PARCEL ID: 006.00.00.021.00
WILSON MATTHEW ALBERT
18 BARRIGNTON CIRCLE
PADUCAH, KY 42003

Z1 — PARCEL ID: 006.00.00.056.09
THOMAS DANIEL A & JENNIFER
282 CYPRESS HILL RD
FANCY FARM, KY 42039

A2 — PARCEL ID: 006.00.00.056.05
KEMP NICHOLAS C & ANDREA E
159 EWING DR
FANCY FARM, KY 42039

B2 — PARCEL ID: 006.00.00.056.04
THORNSBROUGH TROY & DANIELLE
152 EWING LN
FANCY FARM, KY 42039

C2 — PARCEL ID: 006.00.00.069.00
WOOD RUTHIE
872 STATE RT 339 S
FANCY FARM, KY 42039

D2 — PARCEL ID: 022.00.00.039.00
WHITLOCK AUTUMN & JULIE
226 PENDEL ST
FANCY FARM, KY 42039

E2 — PARCEL ID: 022.00.00.048.00
WHITLOCK AUTUMN & JULIE
226 PENDEL ST
FANCY FARM, KY 42039

F2 — PARCEL ID: 022.00.00.057.00
CURTSINGER THOMAS A JR & COLMENARES PATRICIA
PAYNE BEVERLY & CURSTSINGER MARY JO
177 HAYDEN ST
FANCY FARM, KY 42039

G2 — PARCEL ID: 022.01.00.037.00
PERKINS RANDALL & OLIF
55 HALL ST
FANCY FARM, KY 42039

H2 — PARCEL ID: 022.01.00.038.00
TRUELOVE ALEX P & AUDREY F
77 CARRICO RD
FANCY FARM, KY 42039

I2 — PARCEL ID: 022.01.00.039.00
TRUELOVE ALEX P & AUDREY F
77 CARRICO RD
FANCY FARM, KY 42039

J2 — PARCEL ID: 022.01.00.040.00
TRUELOVE ALEX P & AUDREY F
77 CARRICO RD
FANCY FARM, KY 42039

K2 — PARCEL ID: 022.01.00.041.00
TRUELOVE ALEX P & AUDREY F
77 CARRICO RD
FANCY FARM, KY 42039

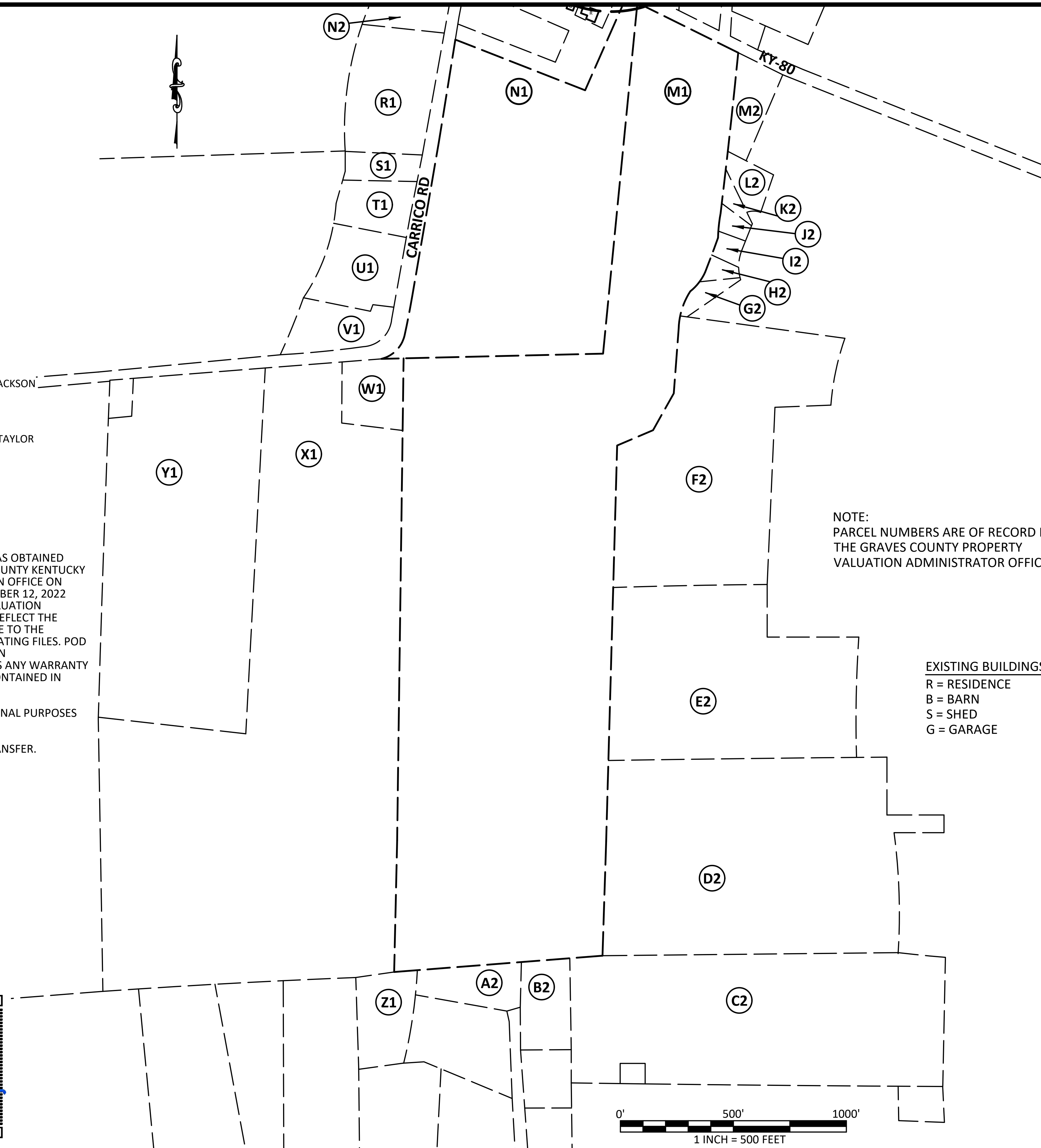
L2 — PARCEL ID: 022.01.00.042.00
TRUELOVE ALEX P & AUDREY F
77 CARRICO RD
FANCY FARM, KY 42039

M2 — PARCEL ID: 022.01.00.080.01
CHAPMAN JACKIE & CHAPMAN JACKSON
1004 SOUTH 10TH ST
MAYFIELD, KY 42066

N2 — PARCEL ID: 006.00.00.014.00
BRADFORD PRESTON EUGENE & TAYLOR
PAIGE
77 CARRICO RD
FANCY FARM, KY 42039

GENERAL NOTE:

1. ALL INFORMATION SHOWN HEREON WAS OBTAINED FROM THE RECORDS OF THE GRAVES COUNTY KENTUCKY PROPERTY VALUATION ADMINISTRATION OFFICE ON JUNE 24, 2020, RE-VERIFIED ON SEPTEMBER 12, 2022 AND APRIL 20, 2023, THE PROPERTY VALUATION ADMINISTRATION RECORDS MAY NOT REFLECT THE CURRENT OWNERS AND ADDRESSES DUE TO THE INACCURACIES AND TIME LAPSE IN UPDATING FILES. POD AND THE COUNTY PROPERTY VALUATION ADMINISTRATION EXPRESSLY DISCLAIMS ANY WARRANTY FOR THE CONTENT AND ANY ERRORS CONTAINED IN THEIR FILES
2. THIS MAP IS FOR GENERAL INFORMATIONAL PURPOSES ONLY AND IS NOT A BOUNDARY SURVEY
3. NOT FOR RECORDING OR PROPERTY TRANSFER.



NOTE:
PARCEL NUMBERS ARE OF RECORD IN THE GRAVES COUNTY PROPERTY VALUATION ADMINISTRATOR OFFICE.

EXISTING BUILDINGS
R = RESIDENCE
B = BARN
S = SHED
G = GARAGE

CERTIFICATE

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

[signature] 04/20/2023

MARK PATTERSON, PLS #3136 DATE

STATE OF KENTUCKY
MARK E. PATTERSON
3136
LICENSED
PROFESSIONAL
LAND SURVEYOR

PREPARED BY:

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

PREPARED FOR:

KENTUCKY RSA 1 PARTNERSHIP
D/B/A
verizon

EXHIBIT

REV.	DATE	DESCRIPTION
A	9.12.22	PRELIM ISSUE
0	11.15.22	ISSUED AS FINAL
1	4.20.23	UPDATED ADJOINERS

SITE INFORMATION:

EV FANCY FARM
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

TAX PARCEL NUMBER:
006.00.00.005.00

PROPERTY OWNER:
KM & K FARMS LLC
PO BOX 48035
COON RAPIDS, MN 55448

SOURCE OF TITLE:
DEED BOOK 506, PAGE 639

POD NUMBER:	19-42122
DRAWN BY:	TCS
CHECKED BY:	MEP
SURVEY DATE:	6.24.20
PLAT DATE:	9.12.22

SHEET TITLE:
500' RADIUS AND ABUTTERS MAP

SHEET NUMBER: (2 page)
B-2.1

DigiSigner Document ID: 14679689-9113-4145-8725-19dbb9a85930

REVISION LOG

REV *	MM/DD/YY	SHEET NUMBER	DESCRIPTION OF REVISION
A	9/28/2022	ALL SHEETS	ISSUED FOR REVIEW
0	11/15/2022	ALL SHEETS	ISSUED AS FINAL
1	4/25/2023	B-2 & B-2.1	500'R REVISION

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

verticalbridge

04/25/2023

STATE OF KENTUCKY
MARK E. PATTERSON
16,300
LICENSED ENGINEER
PROFESSIONAL ENGINEER

EN PERMIT: 3594

ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	9.28.22	ISSUED FOR REVIEW
0	11.15.22	ISSUED AS FINAL
1	4.25.23	500'R REVISION

SITE INFORMATION:
FANCY FARM

KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

VERTICAL BRIDGE SITE NUMBER:
US-KY-5135

VERIZON SITE NAME:
EV FANCY FARM

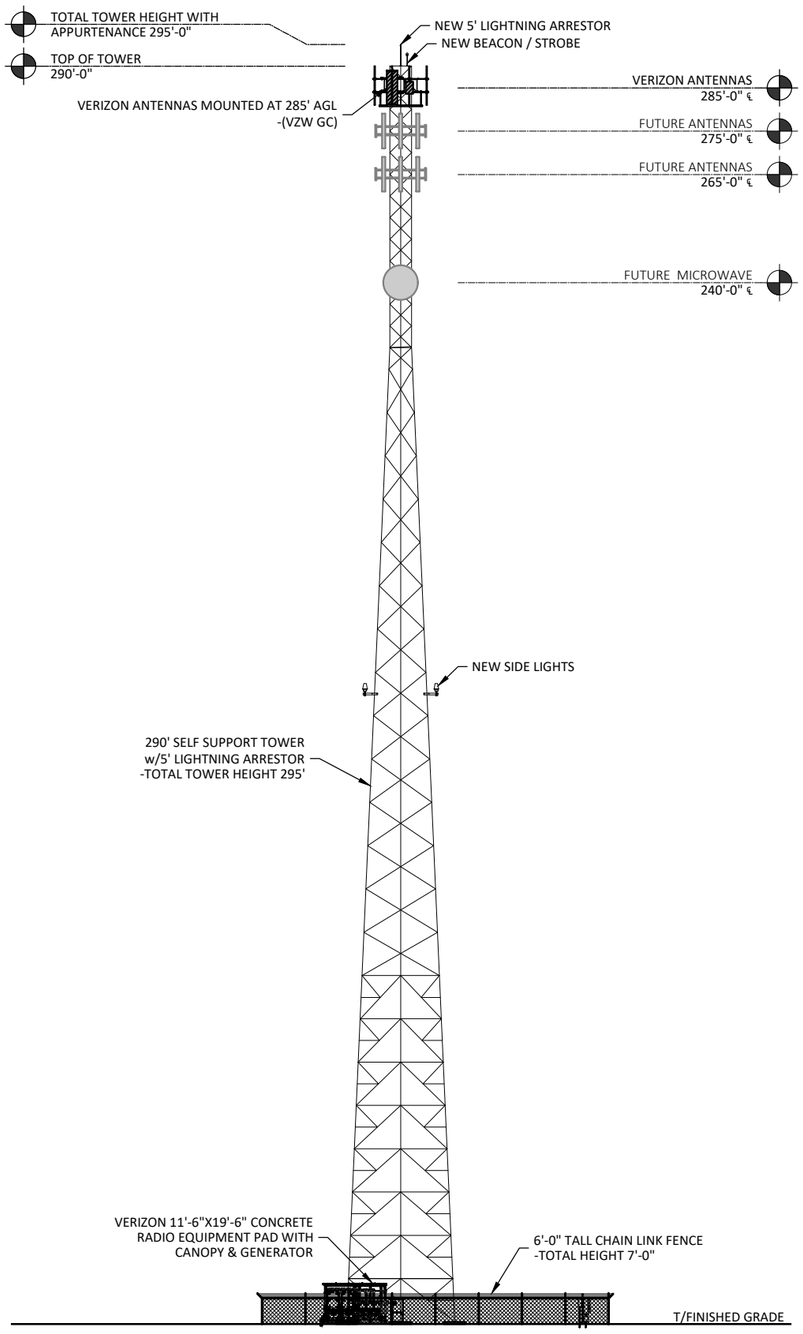
POD NUMBER: 21-117201

DRAWN BY: POD
CHECKED BY: MEP
DATE: 09.28.22

SHEET TITLE:
REVISION LOG

SHEET NUMBER:
R-1

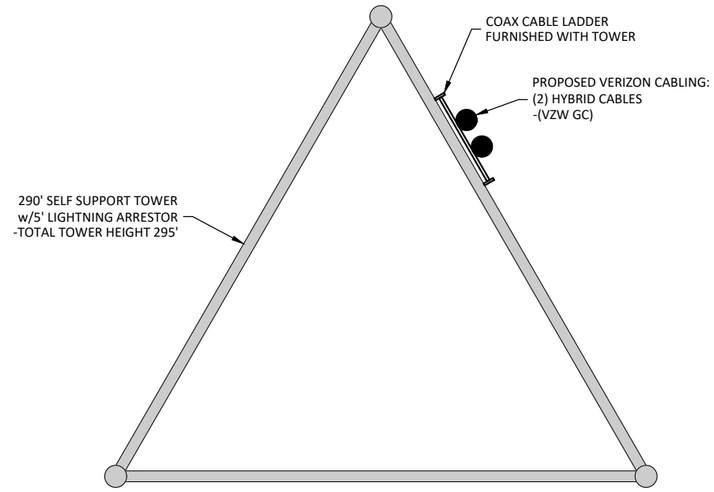
DigiSigner Document ID: 14679689-9113-4145-8725-19dbb9a85930



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

NOTE:

1. IT IS THE INSTALLING CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL ANTENNA INFORMATION AGAINST FINAL RADIO ENGINEERING PLAN PROVIDED BY KENTUCKY RSA 1 PSHP d/b/a VERIZON (VZW GC)
2. ALL TOWER LIGHTING SHALL BE INSTALLED AS REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION AND RECOMMENDED BY THE USFWS INTERIM GUIDELINES (2000) FOR LIGHTING OF TOWERS OVER 200' IN HEIGHT.



COAX PLAN
SCALE: N.T.S.

N

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

verticalbridge

04/25/2023

STATE OF KENTUCKY
MARK E. PATTERSON
16.300
LICENSED
PROFESSIONAL ENGINEER

EN PERMIT: 3594

ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	9.28.22	ISSUED FOR REVIEW
0	11.15.22	ISSUED AS FINAL
1	4.25.23	500'R REVISION

SITE INFORMATION:
FANCY FARM
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

VERTICAL BRIDGE SITE NUMBER:
US-KY-5135

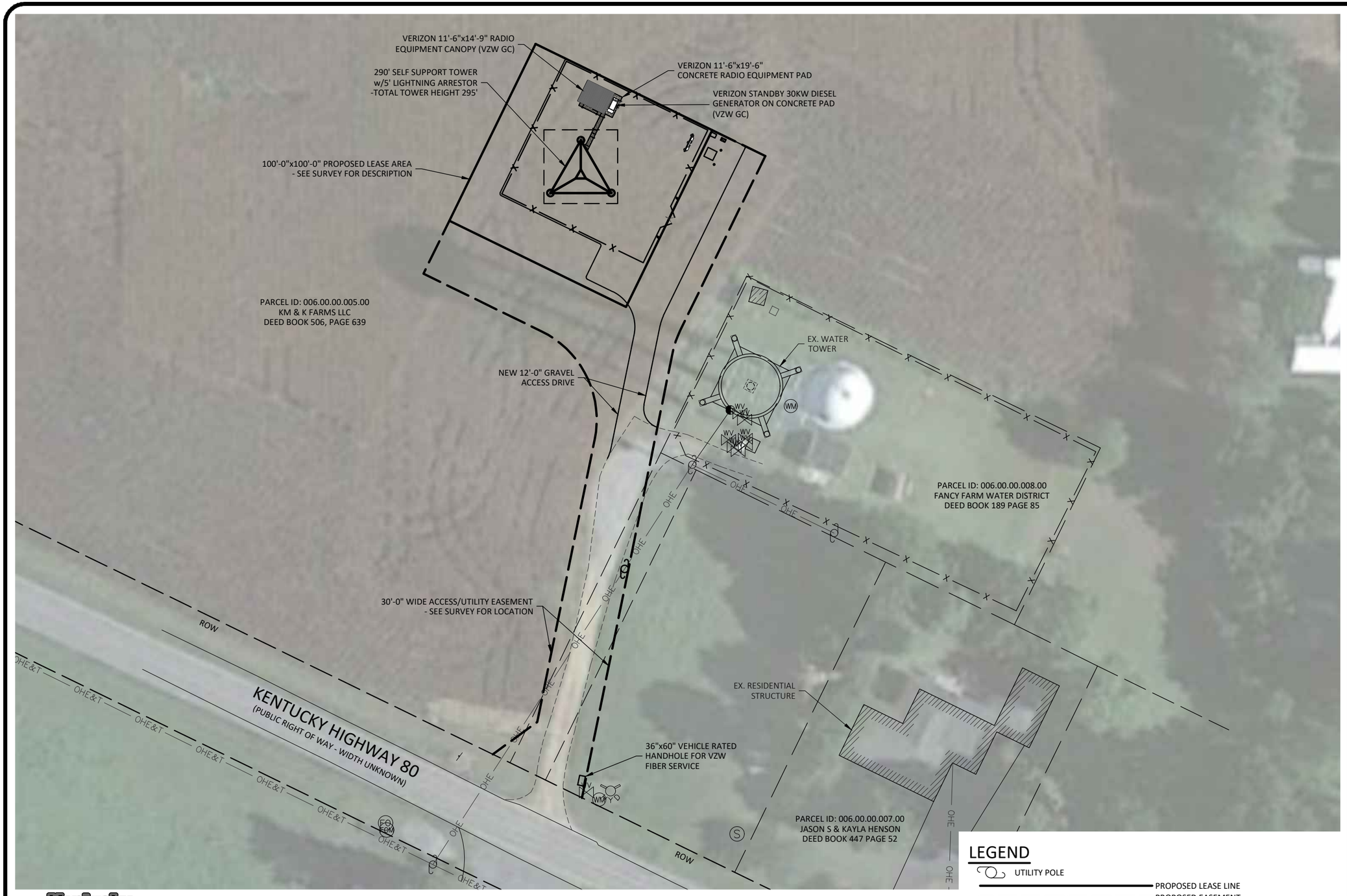
VERIZON SITE NAME:
EV FANCY FARM

POD NUMBER:	21-117201
DRAWN BY:	POD
CHECKED BY:	MEP
DATE:	09.28.22

SHEET TITLE:
TOWER ELEVATION

SHEET NUMBER:
TE-1

DigiSigner Document ID: 14679689-9113-4145-8725-19dbb9a85930



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

0' 50' 100'
1"=50'

OVERALL SITE PLAN W/AERIAL OVERLAY
SCALE: 1" = 50'

N

LEGEND

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

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

verticalbridge

04/25/2023

STATE OF KENTUCKY
MARK E. PATTERSON
16300
LICENSED
PROFESSIONAL ENGINEER

EN PERMIT: 3594

ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	9.28.22	ISSUED FOR REVIEW
0	11.15.22	ISSUED AS FINAL
1	4.25.23	500'R REVISION

SITE INFORMATION:
FANCY FARM
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

VERTICAL BRIDGE SITE NUMBER:
US-KY-5135

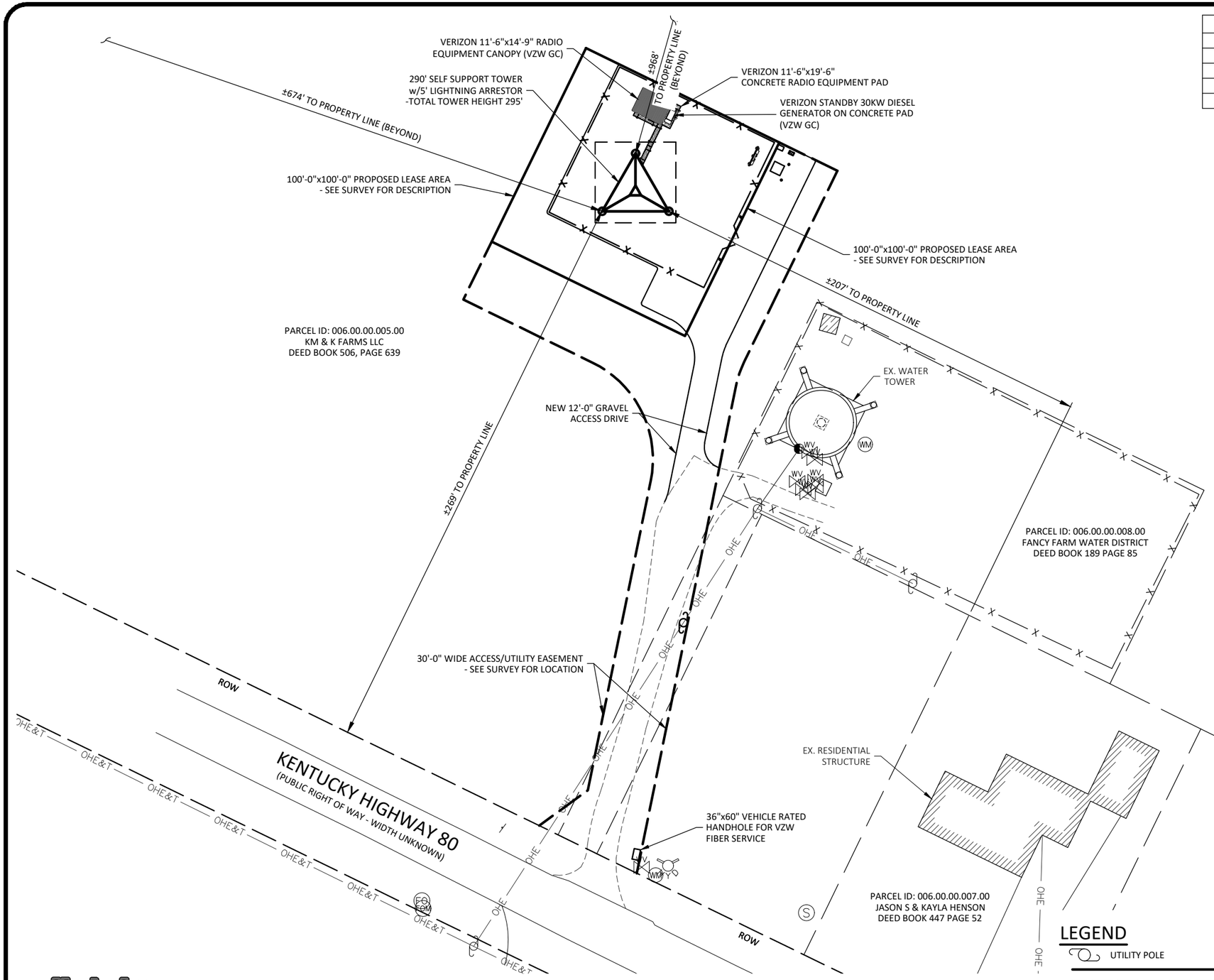
VERIZON SITE NAME:
EV FANCY FARM

POD NUMBER: 21-117201
DRAWN BY: POD
CHECKED BY: MEP
DATE: 09.28.22

SHEET TITLE:
OVERALL SITE PLAN W/AERIAL OVERLAY

SHEET NUMBER:
C-1

DigiSigner Document ID: 14679689-9113-4145-8725-19dbb9a85930



DISTANCE TO PROPERTY LINES		
	EQUIPMENT PAD	GENERATOR
NORTH PROPERTY LINE	±924'	±928'
EAST PROPERTY LINE	±223'	±224'
SOUTH PROPERTY LINE	±319'	±319'
WEST PROPERTY LINE	±679'	±695'

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

vertical bridge

04/25/2023

STATE OF KENTUCKY
MARK E. PATTERSON
16,309
LICENSED
PROFESSIONAL ENGINEER

EN PERMIT: 3594

ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	9.28.22	ISSUED FOR REVIEW
0	11.15.22	ISSUED AS FINAL
1	4.25.23	500'R REVISION

SITE INFORMATION:
FANCY FARM

KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

VERTICAL BRIDGE SITE NUMBER:
US-KY-5135

VERIZON SITE NAME:
EV FANCY FARM

POD NUMBER:	21-117201
DRAWN BY:	POD
CHECKED BY:	MEP
DATE:	09.28.22

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

SHEET NUMBER:
C-1A

LEGEND

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

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

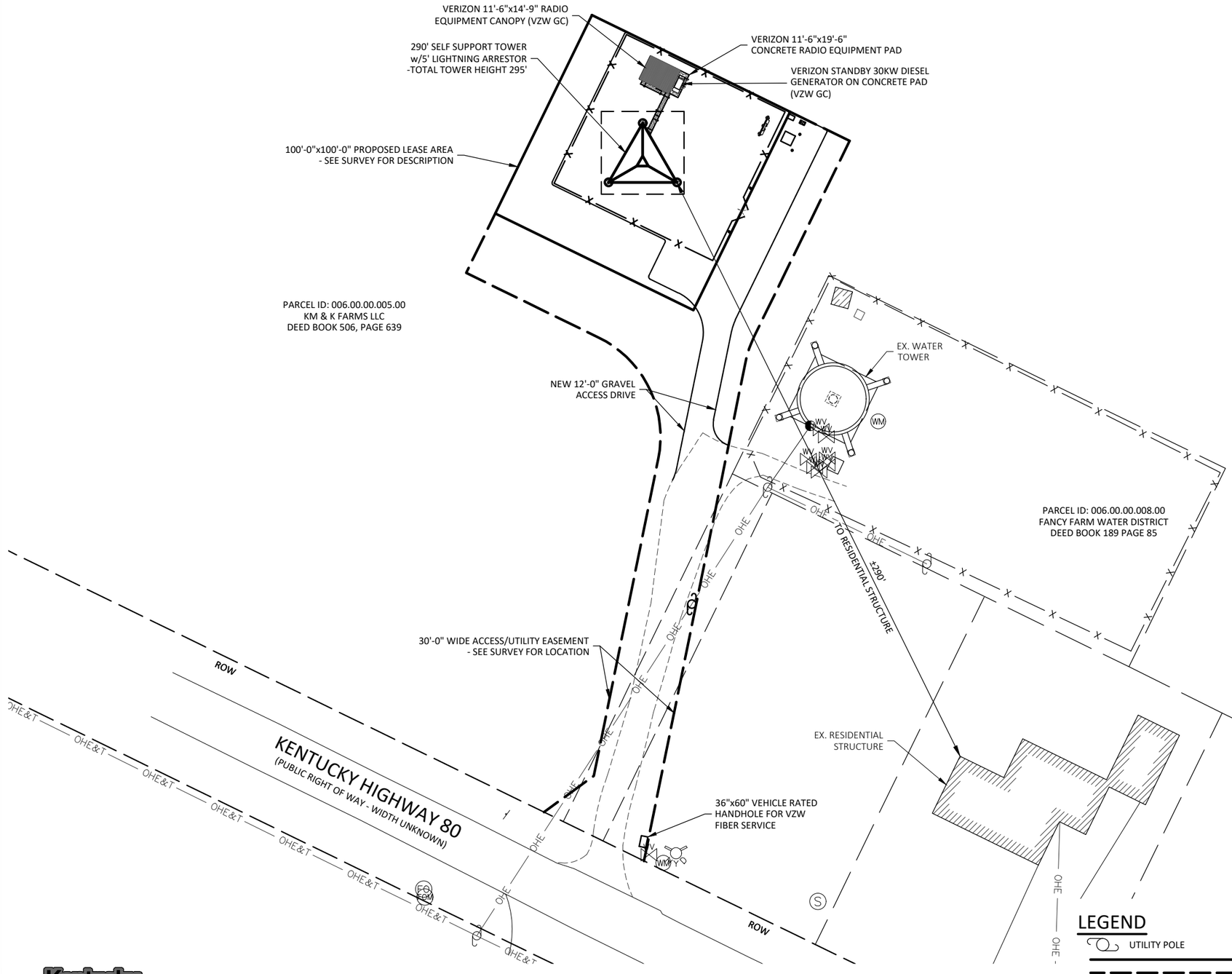
0' 50' 100'
1"=50'

OVERALL SITE PLAN W/DISTANCE TO PROPERTY LINES

SCALE: 1" = 50'

N

DigiSigner Document ID: 14679689-9113-4145-8725-19dbb9a85930



DISTANCE TO RESIDENTIAL STRUCTURES

SCALE: 1" = 50'

0' 50' 100'
1"=50'

LEGEND

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

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

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

verticalbridge

04/25/2023

STATE OF KENTUCKY
MARK E. PATTERSON
16300
LICENSED
PROFESSIONAL ENGINEER

EN PERMIT: 3594

ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	9.28.22	ISSUED FOR REVIEW
0	11.15.22	ISSUED AS FINAL
1	4.25.23	500'R REVISION

SITE INFORMATION:
FANCY FARM
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

VERTICAL BRIDGE SITE NUMBER:
US-KY-5135

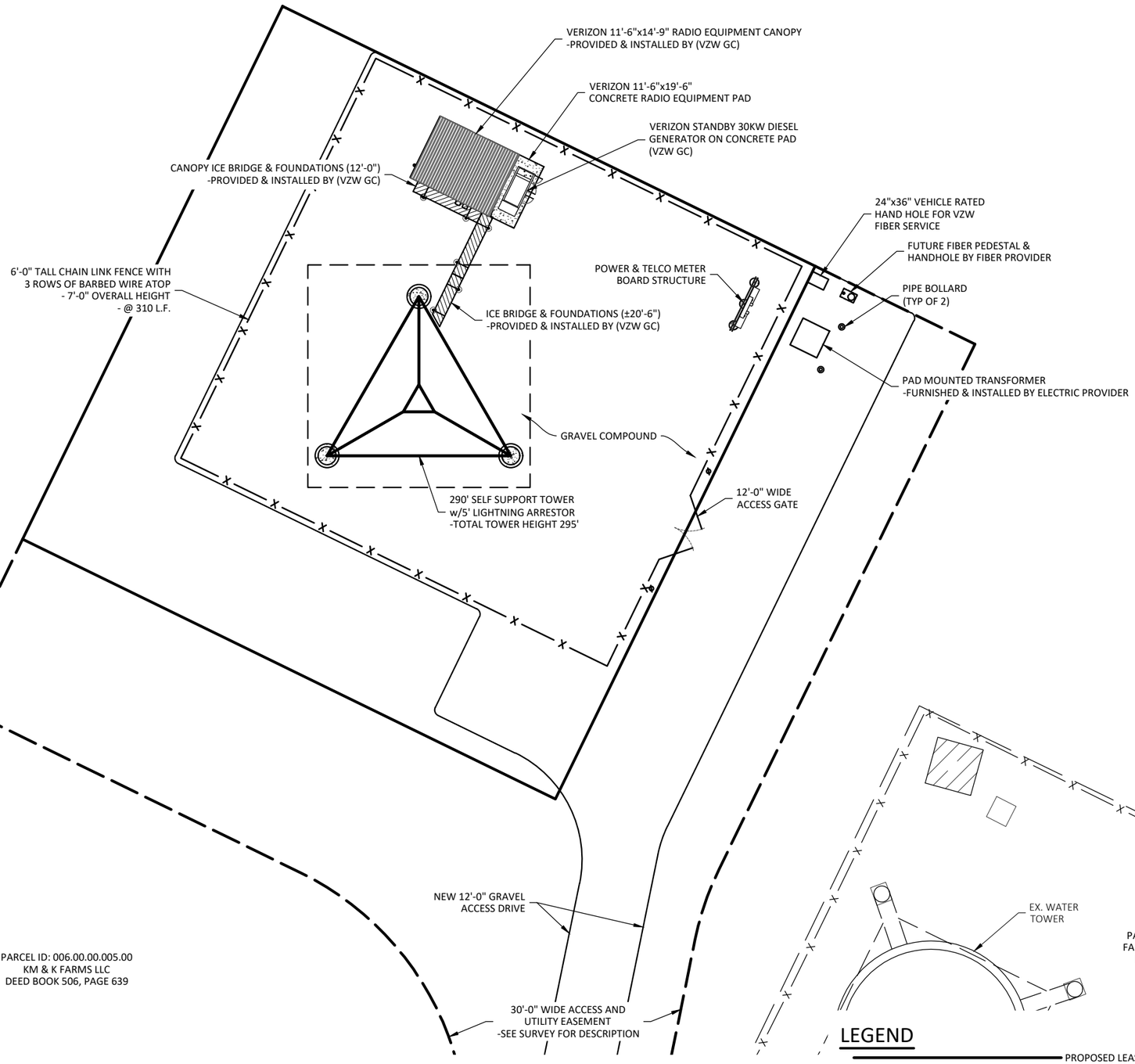
VERIZON SITE NAME:
EV FANCY FARM

POD NUMBER: 21-117201
DRAWN BY: POD
CHECKED BY: MEP
DATE: 09.28.22

SHEET TITLE:
DISTANCE TO RESIDENTIAL STRUCTURES

SHEET NUMBER:
C-1B

DigiSigner Document ID: 14679689-9113-4145-8725-19dbb9a85930



DETAILED SITE PLAN

SCALE: 1" = 20'

0' 20' 40'
1"=20'

N

LEGEND

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

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

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

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

verticalbridge

04/25/2023

STATE OF KENTUCKY
MARK E. PATTERSON
16300
LICENSED
PROFESSIONAL ENGINEER

EN PERMIT: 3594

ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	9.28.22	ISSUED FOR REVIEW
0	11.15.22	ISSUED AS FINAL
1	4.25.23	500'R REVISION

SITE INFORMATION:
FANCY FARM

KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

VERTICAL BRIDGE SITE NUMBER:
US-KY-5135

VERIZON SITE NAME:
EV FANCY FARM

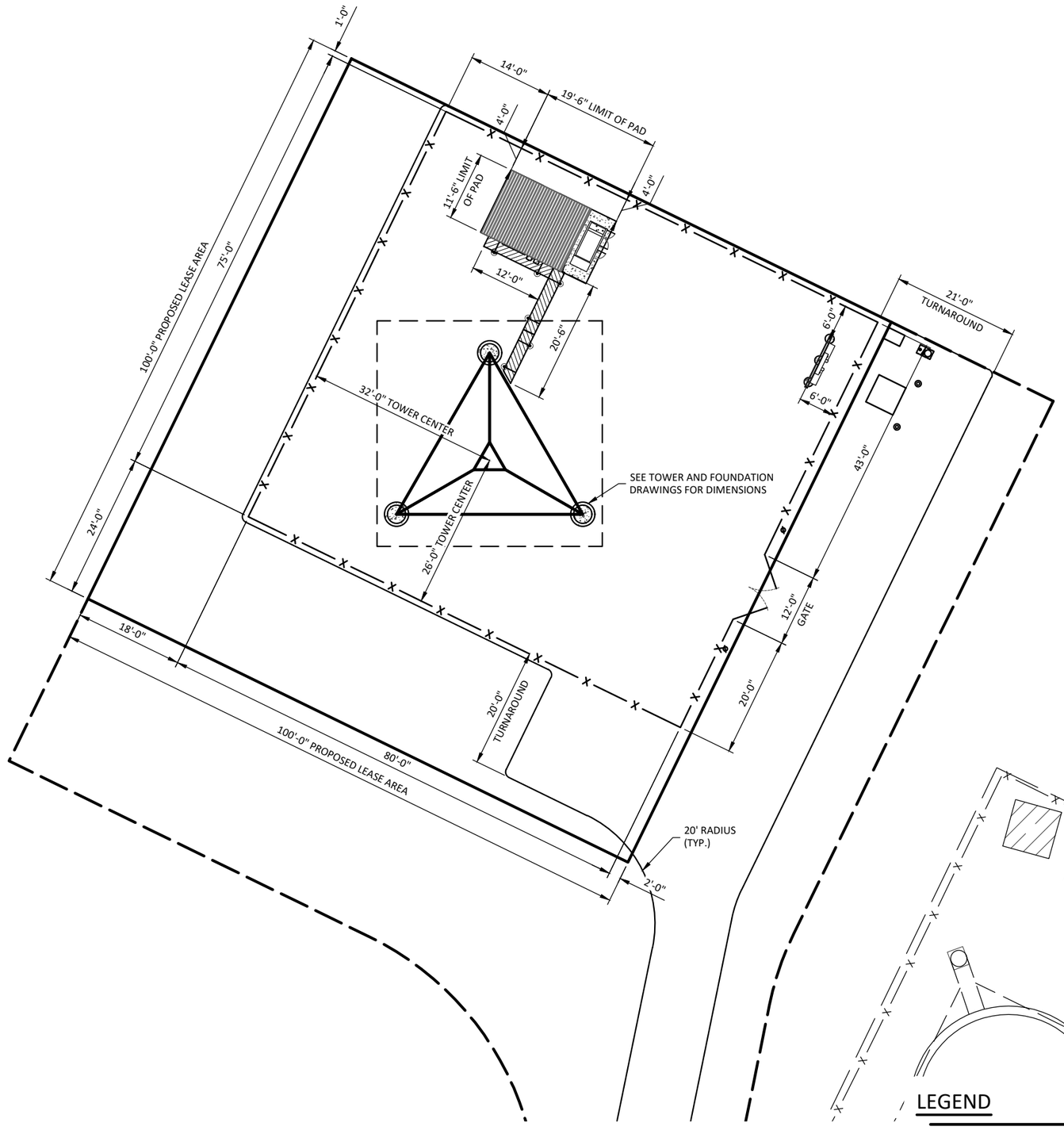
POD NUMBER: 21-117201

DRAWN BY: POD
CHECKED BY: MEP
DATE: 09.28.22

SHEET TITLE:
DETAILED SITE PLAN

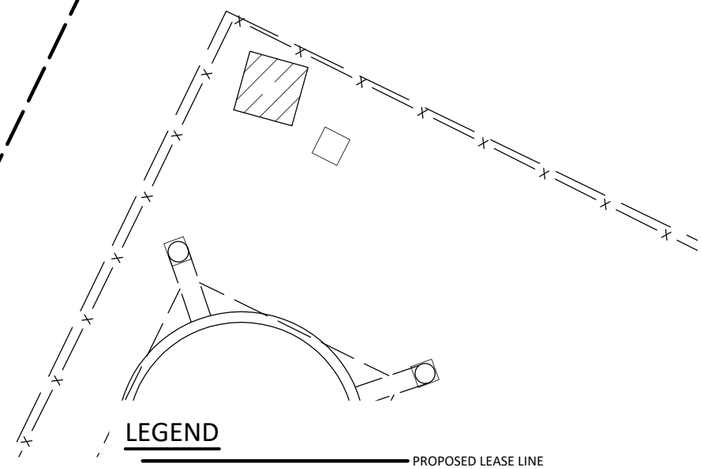
SHEET NUMBER:
C-3

DigiSigner Document ID: 14679689-9113-4145-8725-19dbb9a85930



DIMENSIONED SITE PLAN

SCALE: 1" = 20'



LEGEND

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

0' 20' 40'

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 CONSTRUCTION MANAGER

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

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

verticalbridge

04/25/2023

STATE OF KENTUCKY
MARK E. PATTERSON
16300
LICENSED
PROFESSIONAL ENGINEER

EN PERMIT: 3594

ZONING DRAWINGS

REV.	DATE	DESCRIPTION
A	9.28.22	ISSUED FOR REVIEW
0	11.15.22	ISSUED AS FINAL
1	4.25.23	500'R REVISION

SITE INFORMATION:
FANCY FARM
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

VERTICAL BRIDGE SITE NUMBER:
US-KY-5135

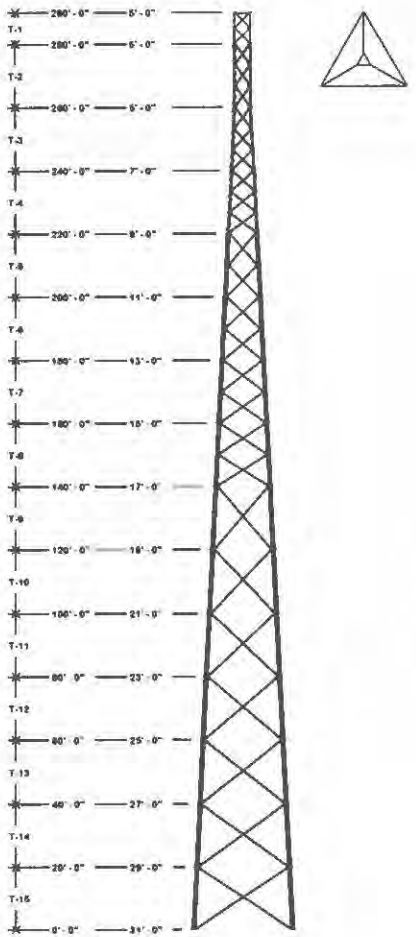
VERIZON SITE NAME:
EV FANCY FARM

POD NUMBER:	21-117201
DRAWN BY:	POD
CHECKED BY:	MEP
DATE:	09.28.22

SHEET TITLE:
DIMENSIONED SITE PLAN

SHEET NUMBER:
C-4

Exhibit D



SEE PAGE 2 FOR APPURTENANCES

TOWER DESIGN CRITERIA

Design Standard:	TIA-222-G*
Design Wind Speeds:	106 mph (3-second gust) basic wind speed per ASCE 7-16
	30 mph (1.00" ice)
Service Wind Speed:	60 mph (deflection only)
Risk Category:	II
Exposure Category:	C
Topographic Category:	1
Crest Height:	0 ft

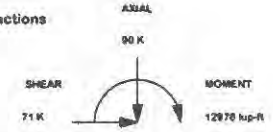
MATERIAL STRENGTHS

Solid Rod	A36	(rod dia. <3/4")
	A572 Gr.50	(3/4" thru 1" dia.)
	A572 Gr.65	(>1" dia.)
Pipe	A500 Gr.B	(antenna pipes)
	A572 Gr.B/C	(tower legs min. Fy 50 ksi)
Angle	A572 Gr.50	
Plate	A572 Gr.50	
Bolts	A-325A-648	(leg & angle)
AnchorBolt	F1554 Grade 105 or A687	

Finish: Tower & Hardware are hot dip galvanized

1. ALL STRUCTURAL HARDWARE IS GALVANIZED IN ACCORDANCE WITH ASTM A-153 (HDG). TOWER SECTIONS & ASSOCIATED STRUCTURAL COMPONENTS ARE GALVANIZED IN ACCORDANCE WITH ASTM A-123 (HDG).
2. ALL BOLTS & NUTS MUST BE IN PLACE BEFORE ADJOINING SECTION(S) ARE INSTALLED.
3. ALL STRUCTURAL BOLTS ARE TO BE TIGHTENED TO A SNUG TIGHT CONDITION AS DEFINED BY AISC & RCSC SPECIFICATION FOR STRUCTURAL JOINTS UNLESS NOTED OTHERWISE.
4. ALL WELDING TO CONFORM TO AWS D1.1 SPECIFICATION. 5/16" MINIMUM WELD SIZE UNLESS NOTED OTHERWISE.
5. MATERIAL LABELED AS ASTM A-572 GR. 50 OR 50 KSI YIELD STRENGTH ALSO CONFORMS TO ASTM A-572 GR. 50.
6. ANALYSIS PERFORMED USING STEEL GRADES LISTED UNDER MATERIALS STRENGTHS SHOWN ON THIS PAGE.
7. THIS DRAWING DOES NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, SEQUENCES AND PROCEDURES.
8. (VIBRATION DISCLAIMER) ALTHOUGH RARE, VIBRATIONS SEVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN STRUCTURES OF ALL TYPES, BECAUSE THEY ARE INFLUENCED BY MANY INTERACTING VARIABLES. VIBRATIONS ARE GENERALLY UNPREDICTABLE. THE USER'S MAINTENANCE PROGRAM SHOULD INCLUDE OBSERVATION FOR EXCESSIVE VIBRATION AND EXAMINATION FOR ANY STRUCTURAL DAMAGE OR BOLT LOOSENING. THE VALMONT WARRANTY SPECIFICALLY EXCLUDES FATIGUE FAILURE OR SIMILAR PHENOMENA RESULTING FROM INDUCED VIBRATION, HARMONIC OSCILLATION OR RESONANCE ASSOCIATED WITH MOVEMENT OF AIR CURRENTS AROUND THE PRODUCT

Maximum Base Reactions



MAX. LEG REACTIONS:

DOWN:	513 K
UPLIFT:	-445 K
SHEAR:	47 K
TORQUE REACTIONS	48 kip-ft 106 mph WIND (no ice)

*Factored Reactions provided per ANSI/TIA-222 Design Criteria & Load Combinations

TOWER COLUMN										
SECTION	ELEVATION	FACE WIDTH	PANELS	LEG SIZE	LEG STYLE	LEG BOLT QTY & DIA	DIAGONAL BRACING SIZE	HORIZONAL BRACING SIZE	BRACING BOLT QTY & DIA	SECTION WEIGHT
T1	280' - 290'	5.0'	2	2.50"	V	4 x 3/4"	1/8" x 2" x 2"	1/4" x 3" x 3"	1 x 3/4 "	894.39
T2	260' - 280'	5.0'	3	4.00"	V	6 x 3/4"	3/16" x 2-1/2" x 2-1/2"		1 x 3/4 "	1373.88
T3	240' - 260'	7.0'	3	5.00"	V	6 x 3/4"	3/16" x 2" x 2"		1 x 3/4 "	1809.39
T4	220' - 240'	9.0'	3	6.00"	V	6 x 1"	3/16" x 2-1/2" x 2-1/2"		1 x 3/4 "	2273.18
T5	200' - 220'	11.0'	2	1.50"	12SDFH	8 x 1"	3/16" x 2-1/2" x 2-1/2"		1 x 1 "	2378.81
T6	180' - 200'	13.0'	2	1.75"	12SDFH	8 x 1 1/4"	1/4" x 2-1/2" x 2-1/2"		1 x 1 "	3041.37
T7	160' - 180'	15.0'	2	1.75"	12SDFH	8 x 1 1/4"	1/4" x 2-1/2" x 2-1/2"		1 x 1 "	3141.38
T8	140' - 160'	17.0'	2	1.75"	12SDFH	8 x 1 1/4"	3/16" x 3" x 3"		1 x 1 "	3164.11
T9	120' - 140'	19.0'	1	2.00"	12SDH2	12 x 1"	3/16" x 3" x 3"		1 x 7/8 "	4046.81
T10	100' - 120'	21.0'	1	2.00"	12SDH2	12 x 1"	3/16" x 3" x 3"		1 x 7/8 "	4199.22
T11	80' - 100'	23.0'	1	2.00"	12SDH2	12 x 1"	3/16" x 3" x 3"		1 x 7/8 "	4236.66
T12	60' - 80'	25.0'	1	2.25"	12SDH2	12 x 1"	3/16" x 3" x 3"		1 x 7/8 "	4826.73
T13	40' - 60'	27.0'	1	2.25"	12SDH2	12 x 1"	1/4" x 3-1/2" x 3-1/2"		1 x 7/8 "	5701.77
T14	20' - 40'	29.0'	1	2.25"	12SDH2	12 x 1"	1/4" x 3-1/2" x 3-1/2"		1 x 7/8 "	6817.87
T15	0' - 20'	31.0'	1	2.50"	12SDH2	4 x 1 3/4"	1/4" x 3-1/2" x 3-1/2"		1 x 7/8 "	8837.67

STATE OF KENTUCKY
NATHAN ANDREW ROSS
35794
LICENSED PROFESSIONAL ENGINEER

Digitally signed by Nathan Ross
Date: 2022-10-06 09:32:07:00

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

COPYRIGHT 2022

DESCRIPTION
Tower View Page 1

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

ENG. FILE NO.
565090

DWG. NO.
293706T

DESIGNED APPURTENANCE LOADING	
TYPE	ELEVATION
(1) 5/8" X 10' LIGHTNING ROD	290.0000'
(1) BEACON	290.0000'
(1) 40,000 SQ. IN. (277.8 SQ.FT. EPA)	285.0000'
(1) 30,000 SQ. IN. (208.3 SQ.FT. EPA)	275.0000'
(1) 30,000 SQ. IN. (208.3 SQ.FT. EPA)	265.0000'
(2) 2-1/2" X 7' SCH. 40	240.0000'
(1) 8' HP @240 DEG AZIMUTH	240.0000'
(1) SP1 RS (INCLUDES 4.5"X72" PIPE)	240.0000'
(3) OB LIGHT	145.0000'

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

COPYRIGHT 2022

DESCRIPTION
Tower View Page 2

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

ENG. FILE NO.
565090

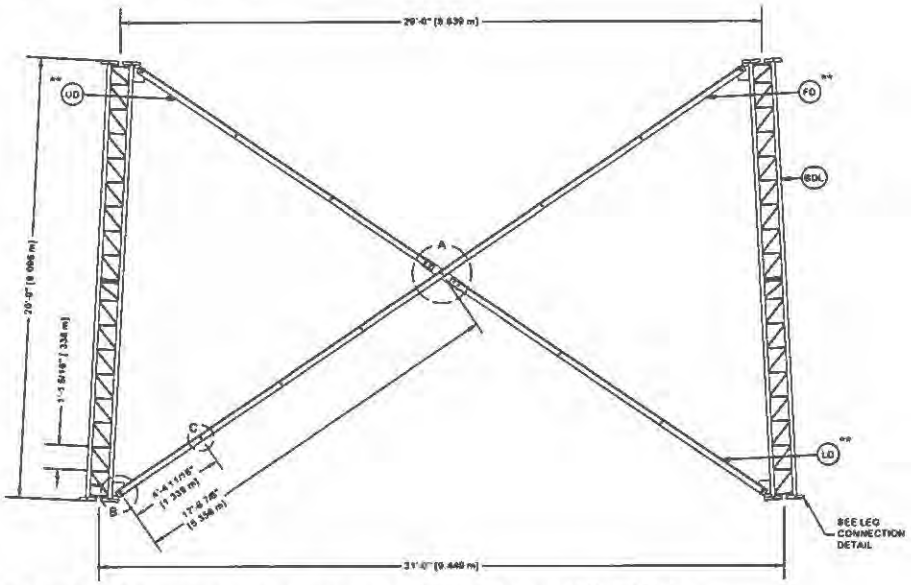
DWG. NO.
293706T

PAGE
2 OF 17

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

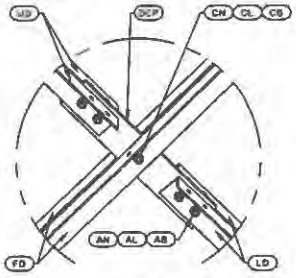
ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION
** DIAGONAL ANGLES MUST BE INSTALLED WITH THE NON-BOLTED FACE UP.

* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES

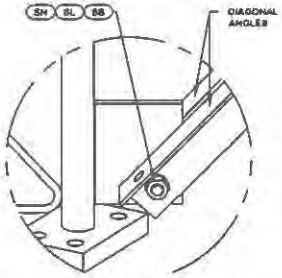


PARTS LIST					
ITEM	QTY	PART NO	PART DESCRIPTION	UNIT WT	NET WT
BDL	3	261171	#12 BASE SECTION - 2 1/2" LEG - 1/2" BRACE WT (1)	1424.950	4274.850
UD	6	265817	U-31 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	97.370	584.220
LD	6	265818	U-31 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	104.620	627.720
FD	6	265816	U-31 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	209.520	1251.120
ML	27	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.540
MN	27	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	3.240
AS	27	237668	RING FILL SPACER 5/8" THICK 1.046" HOLE	0.090	2.430
MB	37	181886	5/8" 11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.280	7.020
AB/CB	15	181886	5/8" 11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.280	3.900
AL / CL	15	312123	5/8" GALVAMZED LOCKWASHER (53-22230)	0.020	0.300
AN / CN	15	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.800
DCP	3	211833	MID BRACE CONNECTION PLATE FOR #12 B/D LEG ANGLES	20.590	61.770
SL	12	312193	7/8" GALVANIZED LOCKWASHER	0.050	0.600
SN	12	312215	7/8"-9 HOT DIPPED GALVANIZED NUT	0.300	3.600
SB	12	172275	7/8"-9 X 2-1/2" A-325 BOLT WITH 1-1/2" THREAD	1.230	14.760
			Total Wt	8837.97 lb (3104.48 kg)	

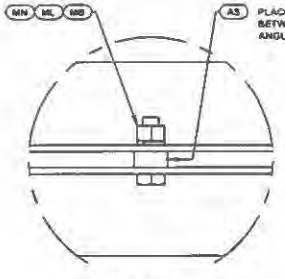
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



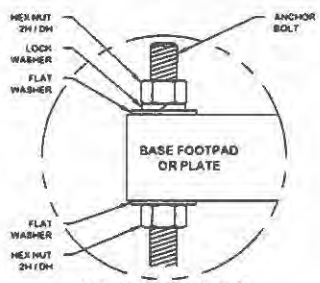
DETAIL A
ANGLE INTERSECTION CONNECTION



DETAIL B
END SIDE PLATE ANGLE CONNECTION



DETAIL C
STITCH BOLT CONNECTION



ANCHOR BOLT ASSY. (TYP)
SEE FOUNDATION DRAWING FOR DETAILS

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

COPYRIGHT 2022

DESCRIPTION
SECTION U-31.0 (0' - 20' ELEVATION)

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

ENG. FILE NO.
565090

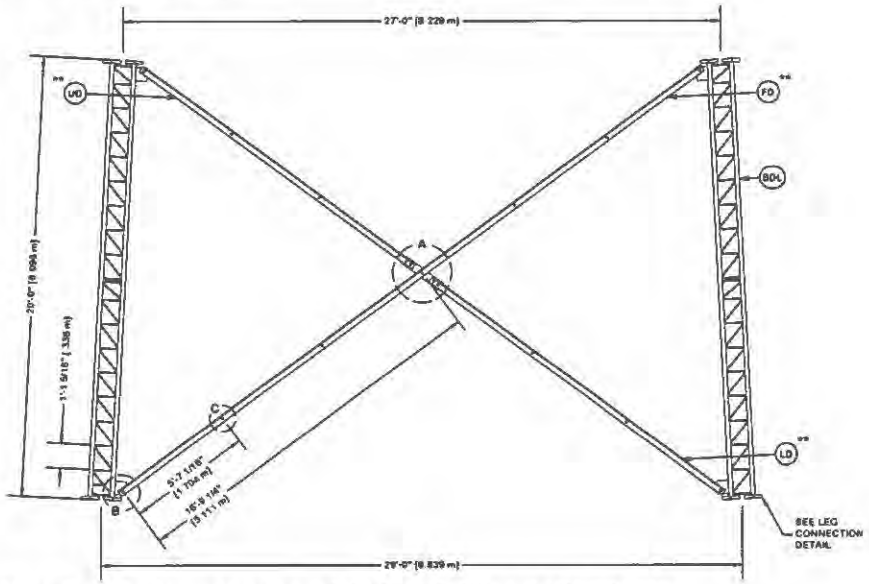
DWG. NO.
293706T

PAGE
3 OF 17

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION
** DIAGONAL ANGLESMUST BE INSTALLED WITH THE NON-BOLTED FACE UP.

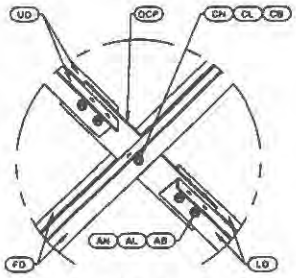
* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES



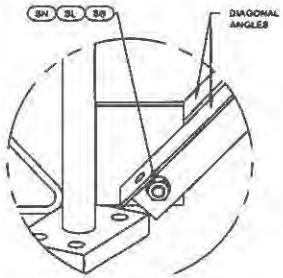
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT	NET WT
BDL	3	196990	#12 LEG SECTION - 2-1/4" LEG - 1/2" BRACE - 7/8" B	1100.520	3301.560
UD	3	286799	U-29 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	92.490	554.940
LD	3	286798	U-29 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	99.730	598.380
FD	3	286797	U-29 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	198.570	1191.420
ML	24	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.480
MN	24	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	2.880
AS	24	237850	RING FILL SPACER 5/8" THICK 1.048" HOLE	0.090	2.160
MB	24	161895	5/8"-11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.260	6.240
AB/CB	15	161895	5/8"-11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.260	3.900
AL / CL	15	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.300
AN / CN	15	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.800
DCP	3	211833	MID BRACE CONNECTION PLATE FOR #12 B/D LEG ANGLES	20.590	61.770
SL	12	312193	7/8" GALVANIZED LOCKWASHER	0.050	0.600
SN	12	312215	7/8"-9 HOT DIPPED GALVANIZED NUT	0.300	3.600
SB	12	172275	7/8"-9 X 2-1/2" A-325 BOLT WITH 1-1/2" THREAD	1.230	14.760
LCB	38	222016	1"-8 X 4-3/4" A-325 BOLT WITH 1-3/4" THREAD	1.380	48.680
LCF	38	312222	1" GALVANIZED FLAT WASHER (FA36)	0.140	5.040
LCL	38	312223	1" GALVANIZED LOCKWASHER	0.060	2.000
LCN	38	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	16.480
			Total Wt		3817.97 lb (2691.36 kg)

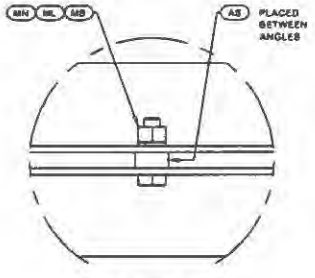
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS



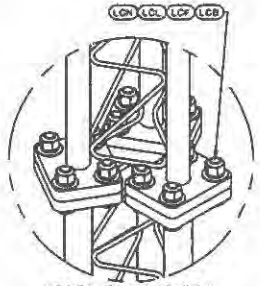
DETAIL A
ANGLE INTERSECTION CONNECTION



DETAIL B
END SIDE PLATE ANGLE CONNECTION



DETAIL C
STITCH BOLT CONNECTION



LEG TO LEG CONNECTION
(SIDE PLATES NOT SHOWN FOR CLARITY)

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

DESCRIPTION
SECTION U-29.0 (20' - 40' ELEVATION)

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

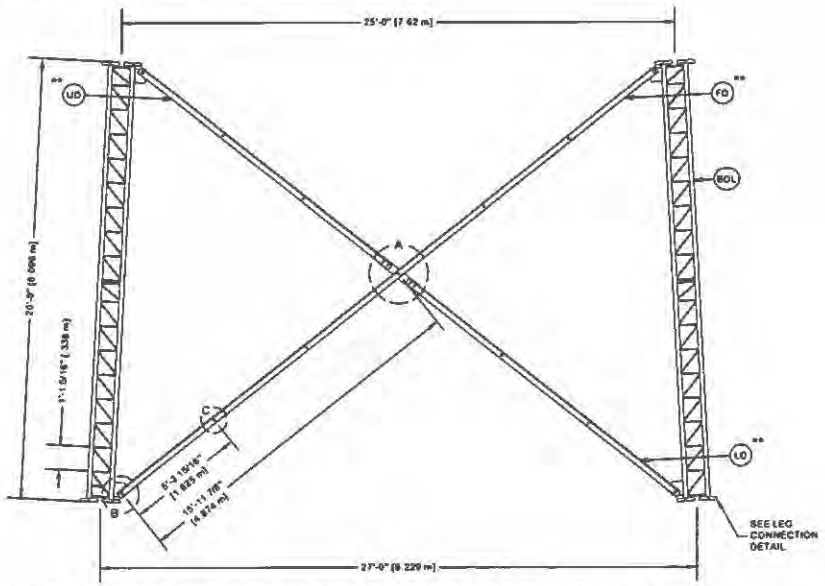
COPYRIGHT 2022
PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE	ENG. FILE NO.	DWG. NO.	PAGE
SAN	SAN	JL	J_L	10/6/2022	565090	293706T	4 OF 17

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION
** DIAGONAL ANGLESMUST BE INSTALLED WITH THE NON-BOLTED FACE UP.

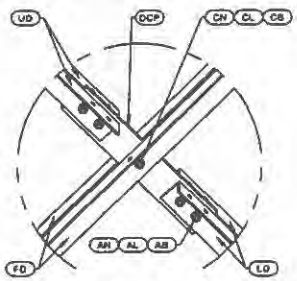
* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES



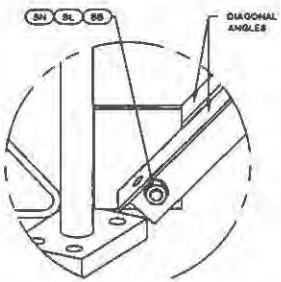
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT	NET WT
BOL	3	166880	#12 LEG SECTION - 2-1/4" LEG - 1/2" BRACE - 7/8" B	1100.520	3301.560
UD	6	286778	U-27 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	87.960	525.360
LD	6	286777	U-27 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	85.000	670.000
FD	9	286776	U-27 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	188.960	1133.340
ML	24	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.480
MN	24	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	2.880
AS	24	237658	RING FILL SPACER 5/8" THICK 1.049" HOLE	0.090	2.160
MB	24	181885	5/8"-11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.260	6.240
AB/CB	15	181885	5/8"-11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.260	3.900
AL / CL	15	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.300
AN / CN	15	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.800
DCP	3	211633	MID BRACE CONNECTION PLATE FOR #12 BID LEG ANGLES	20.590	61.770
SL	12	312193	7/8" GALVANIZED LOCKWASHER	0.050	0.600
SN	12	312216	7/8"-9 HOT DIPPED GALVANIZED NUT	0.300	3.600
SB	12	172275	7/8"-9 X 2-1/2" A-325 BOLT WITH 1-1/2" THREAD	1.230	14.760
LCB	36	222018	1"-8 X 4-3/4" A-325 BOLT WITH 1-3/4" THREAD	1.380	49.680
LCF	36	312222	1" GALVANIZED FLAT WASHER (F436)	0.140	5.040
LCL	36	312223	1" GALVANIZED LOCKWASHER	0.080	2.880
LCN	36	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	15.480
			Total Wt:	5701.77 lb [2586.46 kg]	

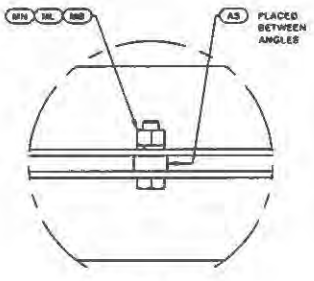
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



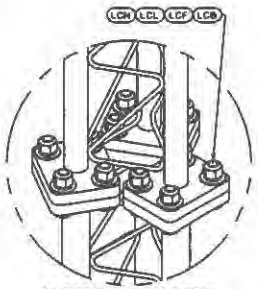
DETAIL A
ANGLE INTERSECTION CONNECTION



DETAIL B
END SIDE PLATE ANGLE CONNECTION



DETAIL C
STITCH BOLT CONNECTION



LEG TO LEG CONNECTION
(SIDE PLATES NOT SHOWN FOR CLARITY)

STATE OF KENTUCKY
NATHAN
ANDREW
ROSS
35794
LICENSED
PROFESSIONAL ENGINEER

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
REVISION HISTORY				

SITE
US-KY-5135 FANCY FARM
V8 BTS II, LLC
U 31 X 290'

COPYRIGHT 2022

DESCRIPTION
SECTION U-27.0 (40' - 60' ELEVATION)

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

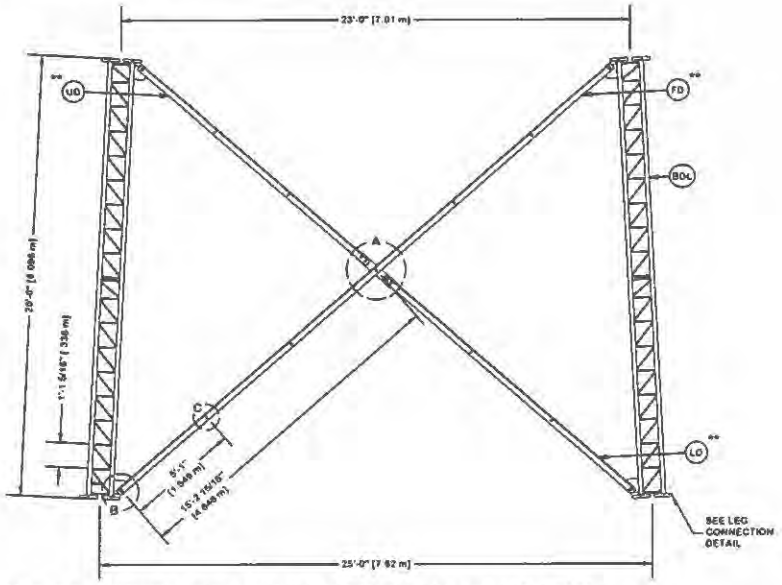
ENG. FILE NO.
565090

DWG. NO.
293706T

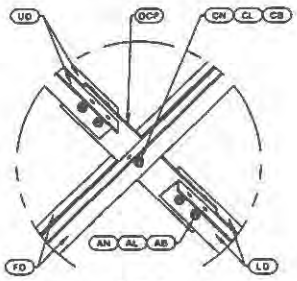
ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION
** DIAGONAL ANGLESMUST BE INSTALLED WITH THE NON-BOLTED FACE UP.

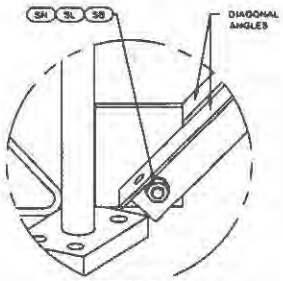
* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES



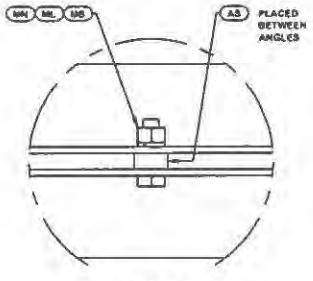
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



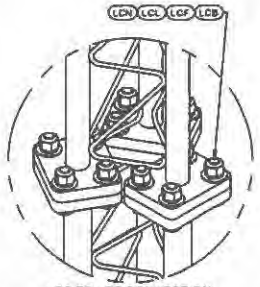
DETAIL A
ANGLE INTERSECTION CONNECTION



DETAIL B
END SIDE PLATE ANGLE CONNECTION



DETAIL C
STITCH BOLT CONNECTION



LEG TO LEG CONNECTION
(SIDE PLATES NOT SHOWN FOR CLARITY)

PARTS LIST

ITEM	QTY	PART NO	PART DESCRIPTION	UNIT WT	NET WT
BDL	3	195660	#12 LEG SECTION - 2-1/4" LEG - 1/2" BRACE - 7/8" B	1100.520	3301.560
UD	6	286757	U-25 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	52.910	317.460
LD	6	286758	U-25 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	57.860	347.160
FD	6	286756	U-25 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	114.830	688.980
ML	24	312122	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.480
MN	24	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	2.880
AS	24	237658	RING FILL SPACER 5/8" THICK 1.040" HOLE	0.090	2.160
MB	24	181896	5/8"-11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.260	6.240
AB/CB	15	181896	5/8"-11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.260	3.900
AL / CL	15	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.300
AN / CN	15	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.800
DCP	3	211833	M/D BRACE CONNECTION PLATE FOR #12 B/D LEG ANGLES	20.590	61.770
SL	12	312193	7/8" GALVANIZED LOCKWASHER	0.050	0.600
SN	12	312315	7/8"-9 HOT DIPPED GALVANIZED NUT	0.300	3.600
SB	12	172276	7/8"-9 X 3-1/2" A-325 BOLT WITH 1-1/2" THREAD	1.230	14.760
LCB	38	222016	1"-8 X 4-3/4" A-325 BOLT WITH 1-3/4" THREAD	1.380	49.680
LCF	38	312222	1" GALVANIZED FLAT WASHER (F436)	0.140	5.040
LCL	38	312223	1" GALVANIZED LOCKWASHER	0.060	2.280
LCN	38	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	16.480
			Total Wt.	4826.73 lb [2191.38 kg]	

STATE OF KENTUCKY
NATHAN ANDREW ROSS
35794
LICENSED PROFESSIONAL ENGINEER

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

COPYRIGHT 2022

DESCRIPTION
SECTION U-25.0 (60' - 80' ELEVATION)

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

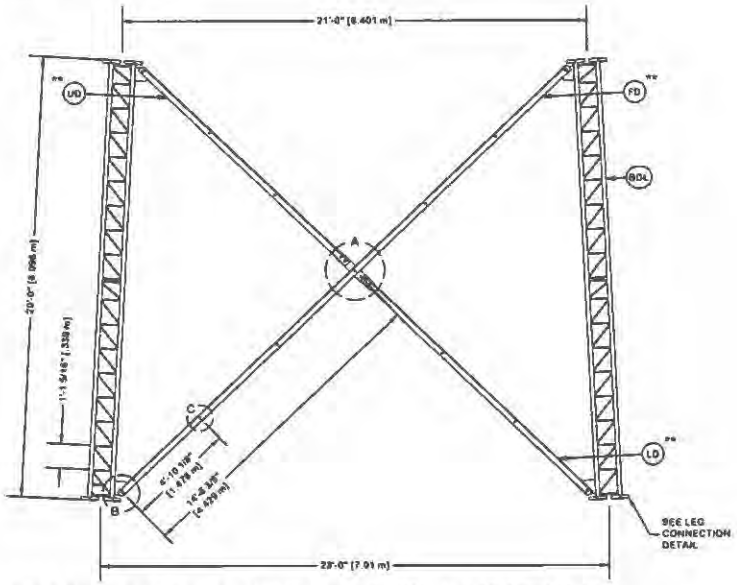
PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED

ENG. FILE NO. 565090
DWG. NO. 293706T
PAGE 6 OF 17

OREINT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION
** DIAGONAL ANGLESMUST BE INSTALLED WITH THE NON-BOLTED FACE UP.

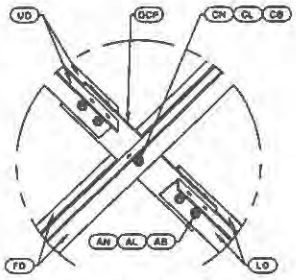
* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES



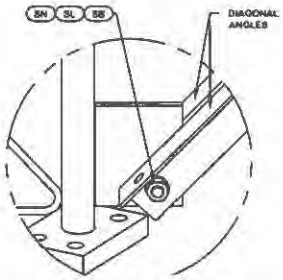
PARTS LIST

ITEM	QTY	PART NO	PART DESCRIPTION	UNIT WT	NET WT
BDL	3	195829	#12 LEG SECTION - 2" LEG - 1/2" BRACE - 7/8" BOLT	926.920	2780.760
UD	6	286733	U-23 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	49.920	299.520
LD	6	286732	U-23 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	55.080	330.480
FD	6	286731	U-23 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	109.040	654.240
ML	24	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.480
MN	24	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.125	2.880
AS	24	237658	RING FILL SPACER 5/8" THICK 1.048" HOLE	0.090	2.160
MB	24	181886	5/8"-11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.260	6.240
ABCB	15	181886	5/8" 11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.260	3.900
AL / DL	15	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.300
AN / CN	15	312501	5/8" 11 HOT DIPPED GALVANIZED NUT	0.120	1.800
DCP	3	211833	MID BRACE CONNECTION PLATE FOR #12 B/D LEG ANGLES	20.590	61.770
SL	12	312193	7/8" GALVANIZED LOCKWASHER	0.050	0.600
SN	12	312216	7/8"-9 HOT DIPPED GALVANIZED NUT	0.300	3.600
SB	12	172275	7/8"-9 X 2-1/2" A-325 BOLT WITH 1-1/2" THREAD	1.230	14.760
LCB	36	222016	1"-8 X 4-3/4" A-325 BOLT WITH 1-3/4" THREAD	1.380	49.680
LCF	36	312222	1" GALVANIZED FLAT WASHER (F436)	0.140	5.040
LCL	36	312223	1" GALVANIZED LOCKWASHER	0.080	2.880
LCN	36	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	15.480
			Total Wt	4236.89 lb [1923.48 kg]	

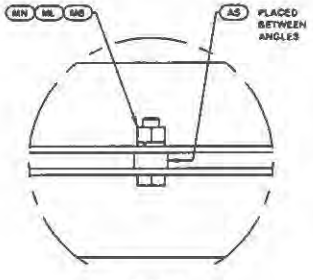
NOTE. THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW. PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



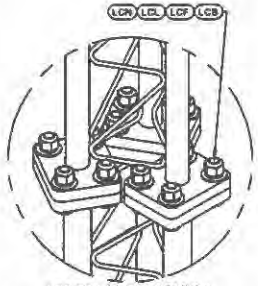
DETAIL A
ANGLE INTERSECTION CONNECTION



DETAIL B
END SIDE PLATE ANGLE CONNECTION



DETAIL C
STITCH BOLT CONNECTION



LEG TO LEG CONNECTION
(SIDE PLATES NOT SHOWN FOR CLARITY)

STATE OF KENTUCKY
NATHAN ANDREW ROSS
35794
LICENSED PROFESSIONAL ENGINEER

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

COPYRIGHT 2022

DESCRIPTION
SECTION U-23.0 (80' - 100' ELEVATION)

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

ENG. FILE NO.
565090

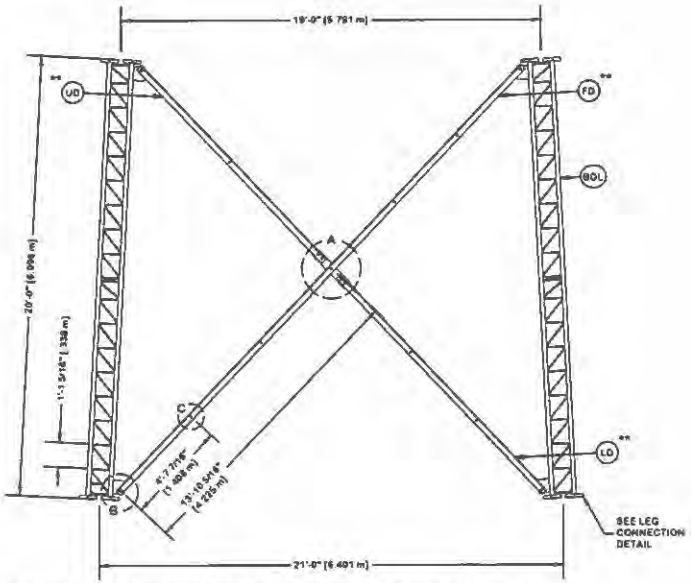
DWG. NO.
293706T

PAGE
7 OF 17

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

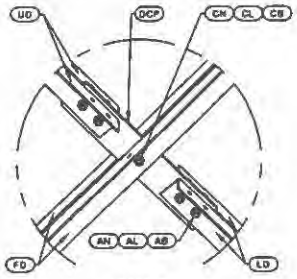
ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION
** DIAGONAL ANGLESMUST BE INSTALLED WITH THE NON-BOLTED FACE UP.

* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES

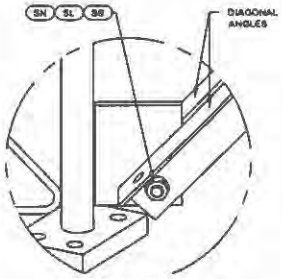


PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195439	#12 LEG SECTION - 2" LEG - 1/2" BRACE - 7/8" BOLT	929.920	2790.760
UD	6	265709	U-21 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	47.030	282.180
LD	6	265708	U-21 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	52.470	314.820
FD	6	265707	U-21 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	103.560	621.360
ML	21	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.420
MN	21	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	2.520
AS	21	237858	RING FILL SPACER 5/8" THICK 1.046" HOLE	0.090	1.890
MB	21	181695	5/8"-11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.280	5.880
AB/CB	15	181695	5/8"-11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.260	3.900
AL / CL	15	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.300
AN / CN	15	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.800
DCP	3	211833	MID BRACE CONNECTION PLATE FOR #12 B/D LEG ANGLES	20.590	61.770
SL	12	312103	7/8" GALVANIZED LOCKWASHER	0.050	0.600
SN	12	312218	7/8"-9 HOT DIPPED GALVANIZED NUT	0.300	3.600
SB	12	172275	7/8"-9 X 2-1/2" A-325 BOLT WITH 1-1/2" THREAD	1.230	14.760
LCB	38	222018	1"-8 X 4-3/4" A-325 BOLT WITH 1-3/4" THREAD	1.380	49.680
LCF	38	312222	1" GALVANIZED FLAT WASHER (F-436)	0.140	5.040
LCL	38	312223	1" GALVANIZED LOCKWASHER	0.080	2.880
LCN	38	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	16.480
			Total Wt	4199.22 lb (1902.96 kg)	

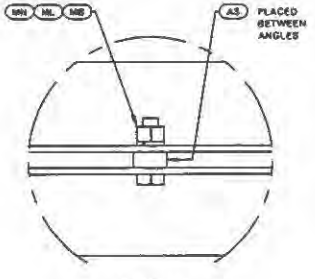
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



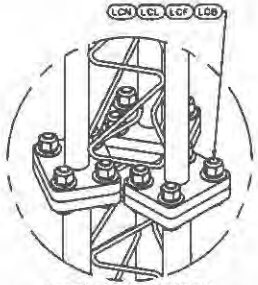
DETAIL A
ANGLE INTERSECTION CONNECTION



DETAIL B
END SIDE PLATE ANGLE CONNECTION



DETAIL C
STITCH BOLT CONNECTION



LEG TO LEG CONNECTION
(SIDE PLATES NOT SHOWN FOR CLARITY)

STATE OF KENTUCKY
NATHAN ANDREW ROSS
35794
LICENSED
PROFESSIONAL ENGINEER

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
REVISION HISTORY				

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

DESCRIPTION
SECTION U-21.0 (100' - 120' ELEVATION)

valmont STRUCTURES
1-877-467-4783 Plymouth, IN
1-800-547-2151 Salem, OR

COPYRIGHT 2022

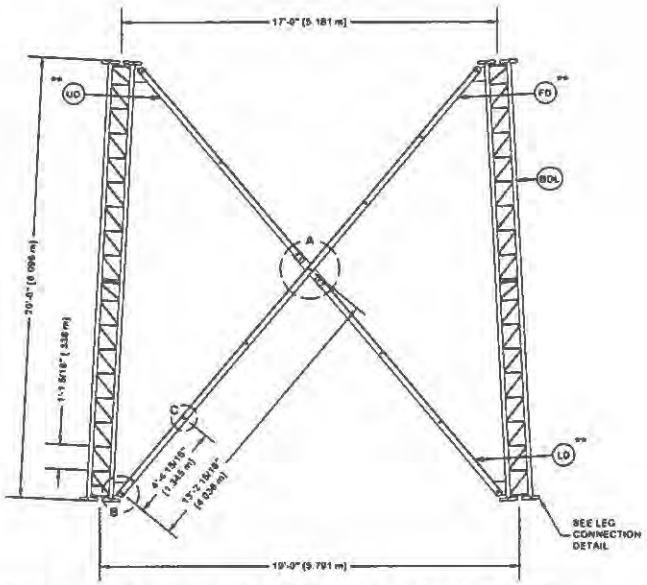
PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE	ENG. FILE NO.	DWG. NO.	PAGE
SAN	SAN	JL	J_L	10/6/2022	565090	293706T	8 OF 17

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION
** DIAGONAL ANGLES MUST BE INSTALLED WITH THE NON-BOLTED FACE UP.

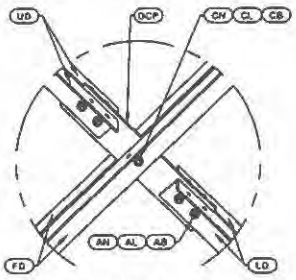
* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES



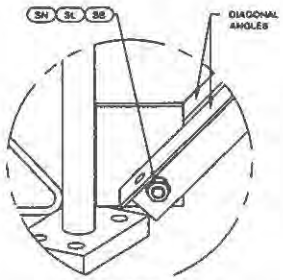
PARTS LIST

ITEM	QTY	PART NO	PART DESCRIPTION	UNIT WT	NET WT
BDL	3	195437	812 LEG SECT - 2" TO 1-3/4" TRANS LEG 1/2" BRACE	906.870	2720.610
UO	6	265682	U-19 UPPER ANGLE - SINGLE BOLT FOR 20'-9" LONG TA	44.280	265.680
LO	6	265681	U-19 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	50.060	300.360
FO	6	265680	U-19 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	99.380	596.280
ML	21	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.420
MN	21	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	2.520
AS	21	257658	RING FILL SPACER 5/8" THICK 1.049" HOLE	0.060	1.260
MB	21	181885	5/8"-11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.280	5.880
ABMB	15	181885	5/8" 11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.280	3.900
AL / CL	15	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.300
AN / CN	15	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.800
DCP	3	211833	MID BRACE CONNECTION PLATE FOR 812 B/O LEG ANGLES	29.590	81.770
SL	12	312193	7/8" GALVANIZED LOCKWASHER	0.050	0.600
SN	12	312215	7/8"-9 HOT DIPPED GALVANIZED NUT	0.300	3.600
SB	12	172275	7/8"-9 X 2-1/2" A-325 BOLT WITH 1-1/2" THREAD	1.230	14.760
LCB	36	222519	1"-8 X 4-3/4" A-325 BOLT WITH 1-3/4" THREAD	1.380	49.680
LCF	36	312222	1" GALVANIZED FLAT WASHER (F436)	0.140	5.040
LCL	36	312223	1" GALVANIZED LOCKWASHER	0.080	2.880
LCN	36	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	15.480
			Total Wt		4046.91 lb (1837.33 kg)

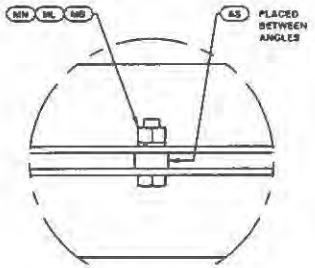
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



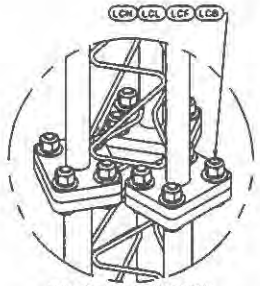
DETAIL A
ANGLE INTERSECTION CONNECTION



DETAIL B
END SIDE PLATE ANGLE CONNECTION



DETAIL C
STITCH BOLT CONNECTION



LEG TO LEG CONNECTION
(SIDE PLATES NOT SHOWN FOR CLARITY)

REV	DESCRIPTION OF REVISIONS	CPO	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

COPYRIGHT 2022

DESCRIPTION
SECTION U-19.0 (120' - 140' ELEVATION)

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED

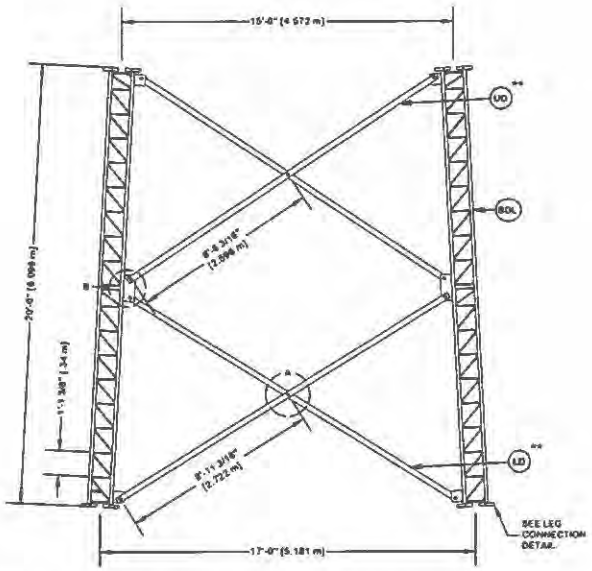
ENG. FILE NO.
565090

DWG. NO.
293706T

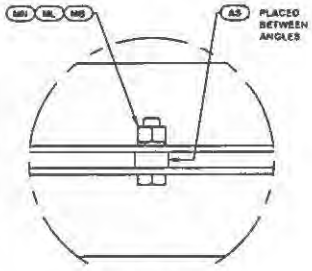
ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

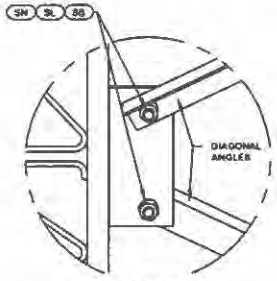
** DIAGONAL ANGLES MUST BE INSTALLED WITH THE NON-BOLTED FACE UP. THIS MAY BE ON THE OPPOSITE SIDE OF THE SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



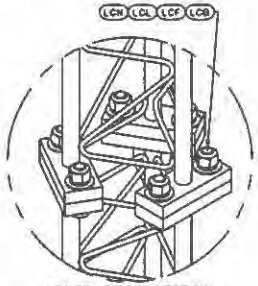
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW. PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



DETAIL A
ANGLE INTERSECTION CONNECTION



DETAIL B
MID SIDE PLATE ANGLE CONNECTION



LEG TO LEG CONNECTION
(SIDE PLATES NOT SHOWN FOR CLARITY)

PARTS LIST

ITEM	QTY	PART NO	PART DESCRIPTION	UNIT WT	NET WT
BDL	3	195217	#12 LEG SECTION - 1-3/4" LEG - 1/2" BRACE - 1" BOL	748.710	2246.130
LQ	6	279284	U-18 UPPER DIAGONAL - 3" x 3" x 3/16" ANGLE (A572	69.430	416.580
AS	6	194291	RING FILL SPACER 1/2" THICK 1.049" HOLE	0.070	0.420
MH	6	312602	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	1.140
ML	6	312153	3/4" GALVANIZED LOCKWASHER	0.030	0.180
MB	6	180427	3/4"-10 X 3" A-325T BOLT WITH FULL THREAD	0.470	2.820
SL	24	312223	1" GALVANIZED LOCKWASHER	0.080	1.920
SN	24	312604	1"-8 HOT DIPPED GALVANIZED NUT	0.430	10.320
SB	24	172266	1"-8 X 2-1/4" A-325 BOLT WITH 1-3/4" THREAD	0.840	20.160
UD	6	126826	U-18 LOWER DIAGONAL - 3" x 3" x 3/16" ANGLE (A572	64.120	384.720
LCB	18	222922	1-1/4"-7 X 5-1/2" A-325 BOLT WITH 2" THREAD	2.530	45.540
LCF	18	312282	1-1/4" GALVANIZED FLAT WASHER (F436)	0.130	2.340
LCL	18	312283	1-1/4" GALVANIZED LOCKWASHER	0.150	2.700
LCN	18	312607	1-1/4"-7 HOT DIPPED GALVANIZED NUT	0.730	13.140
			Total Wt:		3154.11 lb (1431.99 kg)

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

COPYRIGHT 2022

DESCRIPTION
SECTION U-17.0 (140' - 160' ELEVATION)

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED

ENG. FILE NO.
565090

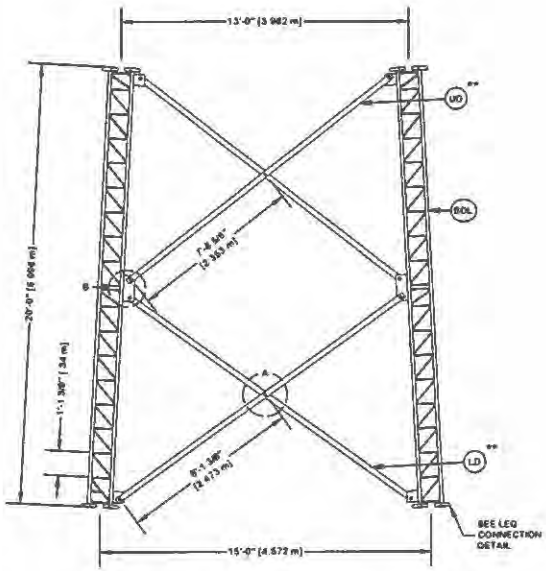
DWG. NO.
293706T

PAGE
10 OF 17

ORIENT LEGS WITH PIN STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

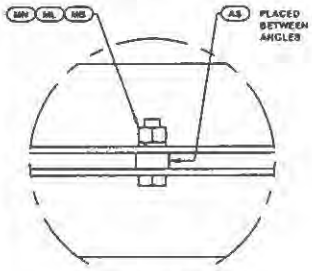
** DIAGONAL ANGLES MUST BE INSTALLED
WITH THE NON-BOLTED FACE UP.
THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL



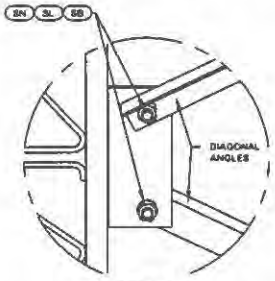
PARTS LIST

ITEM	QTY	PART NO	PART DESCRIPTION	UNIT WT	NET WT
BOL	3	195217	#12 LEG SECTION - 1-3/4" LEG - 1/2" BRACE - 1" BOL	746.710	2240.130
LD	6	279230	U-16 UPPER DIAGONAL - 2 1/2" x 2 1/2" x 1/4" ANGLE	68.430	410.580
AS	6	184291	RING FILL SPACER 1/2" THICK 1.640" HOLE	0.070	0.420
MN	6	312892	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	1.140
ML	6	312163	3/4" GALVANIZED LOCKWASHER	0.030	0.180
MS	6	160427	3/4"-10 X 3" A-325T BOLT WITH FULL THREAD	0.470	2.820
SL	24	312223	1" GALVANIZED LOCKWASHER	0.080	1.920
SN	24	312804	1"-8 HOT DIPPED GALVANIZED NUT	0.430	10.320
SS	24	172246	1"-8 X 2-1/4" A-325 BOLT WITH 1-3/4" THREAD	0.840	20.160
UD	6	279227	U-14 LOWER DIAGONAL - 2 1/2" x 2 1/2" x 1/4" ANGLE	65.000	390.000
LCB	18	222622	1-1/4"-7 X 6-1/2" A-325 BOLT WITH 2" THREAD	2.530	45.540
LCF	18	312282	1-1/4" GALVANIZED FLAT WASHER (F436)	0.130	2.340
LCL	18	312283	1-1/4" GALVANIZED LOCKWASHER	0.150	2.700
LCN	18	312507	1-1/4"-7 HOT DIPPED GALVANIZED NUT	0.730	13.140
			Total Wt		3141.39 lb (1426.22 kg)

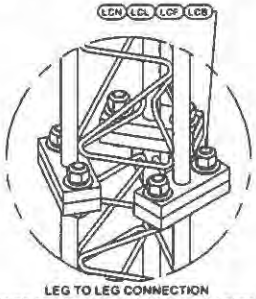
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



DETAIL A
ANGLE INTERSECTION CONNECTION



DETAIL B
MID SIDE PLATE ANGLE CONNECTION



LEG TO LEG CONNECTION
(SIDE PLATES NOT SHOWN FOR CLARITY)

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

COPYRIGHT 2022

DESCRIPTION
SECTION U-15.0 (160' - 180' ELEVATION)

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

ENG. FILE NO.
565090

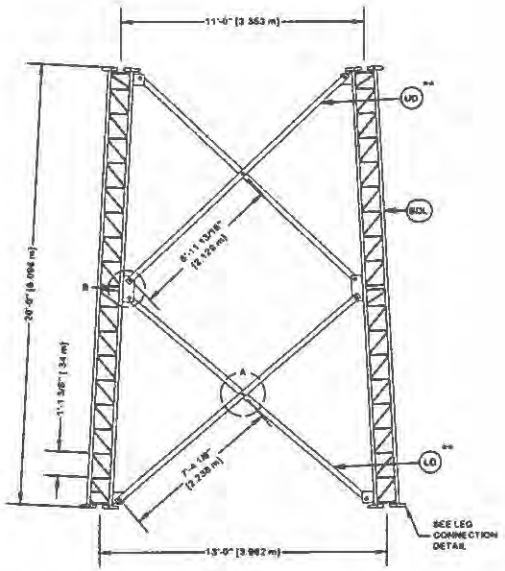
DWG. NO.
293706T

PAGE
11 OF 17

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

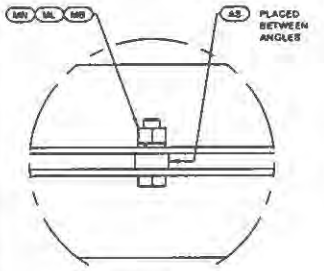
** DIAGONAL ANGLES MUST BE INSTALLED
WITH THE NON-BOLTED FACE UP.
THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



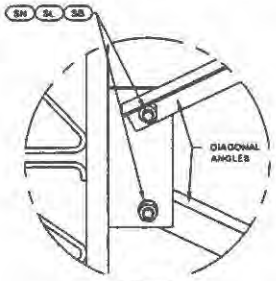
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT	NET WT
BDL	3	185213	#12 LEG SECT - 1-3/4" TO 1-1/2" TRANS LEG - 1/2" B	739.990	2218.970
LD	6	279226	U-14 UPPER DIAGONAL - 2 1/2" x 2 1/2" x 1/4" ANGLE	61.680	370.080
AS	6	104291	RING FILL SPACER 1/2" THICK 1.048" HOLE	0.070	0.420
MN	6	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	1.140
ML	6	312163	3/4" GALVANIZED LOCKWASHER	0.030	0.180
MB	6	180427	3/4"-10 x 3" A-325T BOLT WITH FULL THREAD	0.470	2.820
SL	24	312223	1" GALVANIZED LOCKWASHER	0.080	1.920
SN	24	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	10.320
SB	24	172286	1"-8 X 2-1/4" A-325 BOLT WITH 1-3/4" THREAD	0.840	20.160
UD	6	278671	U-12 LOWER DIAGONAL - 2 1/2" x 2 1/2" x 1/4" ANGLE	58.490	350.940
LCB	16	222022	1-1/4"-7 X 5-1/2" A-325 BOLT WITH 2" THREAD	2.520	40.340
LCF	16	312282	1-1/4" GALVANIZED FLAT WASHER (F436)	0.130	2.340
LCL	16	312263	1-1/4" GALVANIZED LOCKWASHER	0.160	2.700
LCN	16	312807	1-1/4"-7 HOT DIPPED GALVANIZED NUT	0.730	13.140
			Total Wt		3041.37 lb [1380.01 kg]

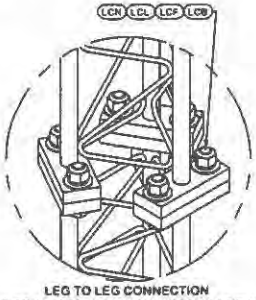
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



DETAIL A
ANGLE INTERSECTION CONNECTION



DETAIL B
MID SIDE PLATE ANGLE CONNECTION



LEG TO LEG CONNECTION
(SIDE PLATES NOT SHOWN FOR CLARITY)

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

COPYRIGHT 2022

DESCRIPTION
SECTION U-13.0 (180' - 200' ELEVATION)

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE.
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

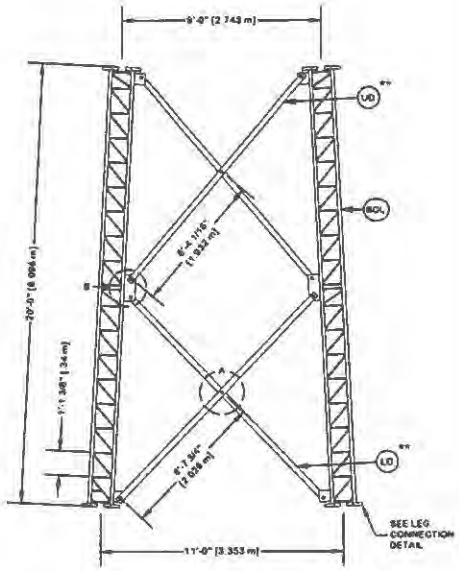
ENG. FILE NO.
565090

DWG. NO.
293706T

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

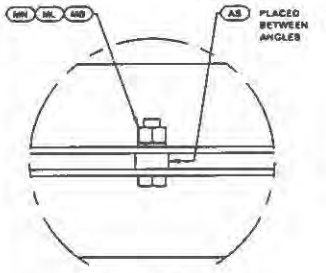
ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

** DIAGONAL ANGLES MUST BE INSTALLED
WITH THE NON-BOLTED FACE UP.
THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.

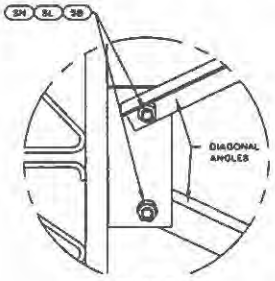


PARTS LIST					
ITEM	QTY	PART NO	PART DESCRIPTION	UNIT WT	NET WT
BOL	3	194851	812 LEG SECTION - 1-1/2" LEG - 1/2" BRACE - 1" BOL	802.630	1605.260
LD	6	126801	U-12 UPPER DIAGONAL - 2 1/2" x 2 1/2" x 3/16" ANGL	42.250	253.500
AS	6	104291	RING FILL SPACER 1/2" THICK 1.040" HOLE	0.070	0.420
MN	6	312602	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	1.140
ML	6	312183	3/4" GALVANIZED LOCKWASHER	0.030	0.180
MB	6	160427	3/4"-10 X 3" A-325T BOLT WITH FULL THREAD	0.470	2.820
SL	24	312223	1" GALVANIZED LOCKWASHER	0.080	1.920
SN	24	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	10.320
SB	24	172286	1"-8 X 2-1/4" A-325 BOLT WITH 1-3/4" THREAD	0.840	20.160
UD	6	126797	U-10 LOWER DIAGONAL - 2 1/2" x 2 1/2" x 3/16" ANGL	40.070	240.420
LCB	18	222016	1"-8 X 4-3/4" A-325 BOLT WITH 1-3/4" THREAD	1.280	24.840
LCF	18	312222	1" GALVANIZED FLAT WASHER (F436)	0.140	2.520
LCL	18	312223	1" GALVANIZED LOCKWASHER	0.080	1.440
LCN	18	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	7.740
			Total Wt		2375.81 lb (1078.66 kg)

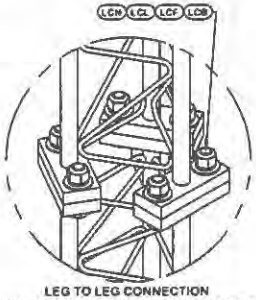
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



DETAIL A
ANGLE INTERSECTION CONNECTION



DETAIL B
MID SIDE PLATE ANGLE CONNECTION



LEG TO LEG CONNECTION
(SIDE PLATES NOT SHOWN FOR CLARITY)

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
V8 BTS II, LLC
U 31 X 290'

COPYRIGHT 2022

DESCRIPTION
SECTION U-11.0 (200' - 220' ELEVATION)

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED

ENG. FILE NO.
565090

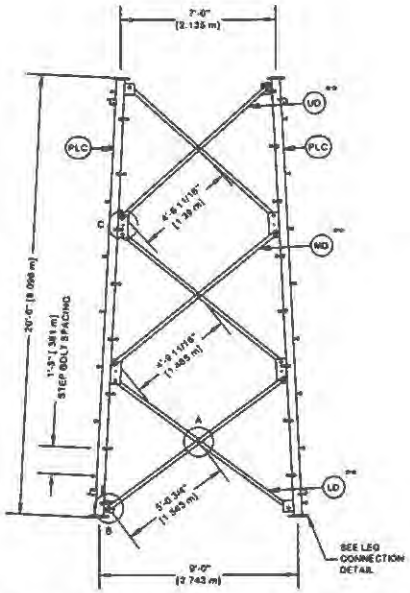
DWG. NO.
293706T

PAGE
13 OF 17

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

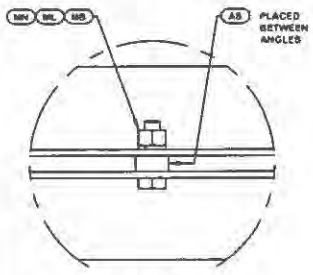
** DIAGONAL ANGLES MUST BE INSTALLED
WITH THE NON-BOLTED FACE UP, ⊤
THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



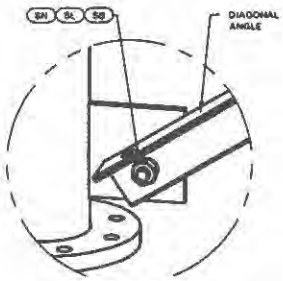
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT	NET WT
PLC	3	229377	PIPE LEG SECTION 20'-0" (CLIMBING) 6" SCH. 40 V-9.0	337.946	1013.829
STP	45	226199	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER HEAVY	1.109	52.905
LD	6	284757	V-9 LOWER CLIPPED ANGLE - 2 1/2" x 2 1/2" x 3/16"	32.090	192.540
MB	9	227580	5/8"-11 X 2-1/4" A325T HOT DIPPED GALV. BOLT (FULL	0.640	5.760
AS	9	293156	RING FILL SPACER 3/8" THICK 1.049" HOLE	0.080	0.540
MN	9	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.080
ML	9	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.180
SL	36	312153	3/4" GALVANIZED LOCKWASHER	0.030	1.080
SN	36	312602	3/4"-10 HOT DIPPED GALVANIZED NUT	0.160	5.640
SB	36	227579	3/4"-10 X 2-1/4" A-325T BOLT WITH FULL THREAD	0.429	15.120
MD	6	284756	V-9 MID ANGLE - 2 1/2" x 2 1/2" x 3/16" ANGLE (AST	30.530	183.180
UD	6	284755	V-9 UPPER ANGLE - 2 1/2" x 2 1/2" x 3/16" ANGLE (A	28.900	173.400
LCB	18	272272	1"-8 X 4-1/4" A-325 BOLT WITH 1 3/4" THREAD	0.840	15.120
LCF	18	312222	1" GALVANIZED FLAT WASHER (F436)	0.140	2.520
LCL	18	312223	1" GALVANIZED LOCKWASHER	0.080	1.440
LCN	18	312604	1"-8 HOT DIPPED GALVANIZED NUT	0.430	7.740
			Total Wt.	2273.16 lb (1032.03 kg)	

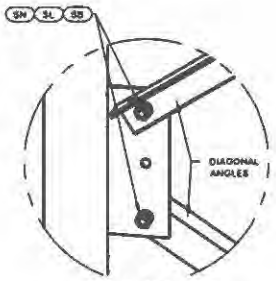
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



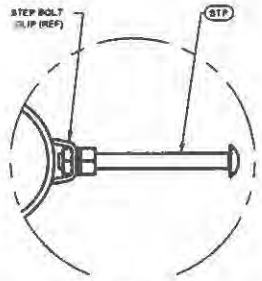
DETAIL A
ANGLE INTERSECTION CONNECTION



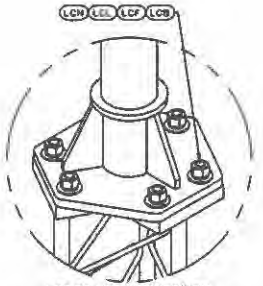
DETAIL B
END SIDE PLATE ANGLE CONNECTION



DETAIL C
MID SIDE PLATE ANGLE CONNECTION



STEP BOLT INSTALLATION



LEG TO LEG CONNECTION
(SIDE PLATES NOT SHOWN FOR CLARITY)

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

COPYRIGHT 2022

DESCRIPTION
SECTION V-9.0 (220' - 240' ELEVATION)

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

ENG. FILE NO.
565090

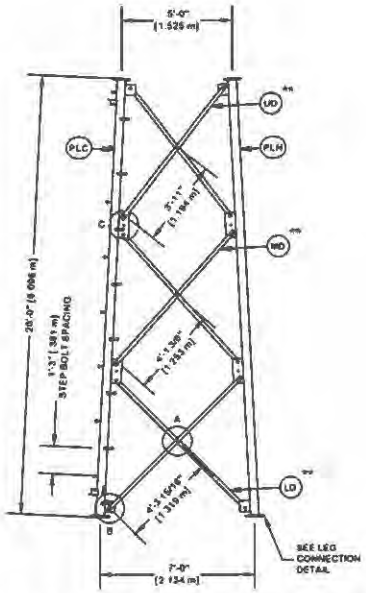
DWG. NO.
293706T

PAGE
14 OF 17

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

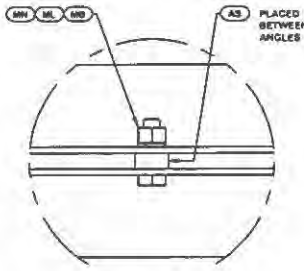
** DIAGONAL ANGLES MUST BE INSTALLED
WITH THE NON-BOLTED FACE UP, ⌐|
THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



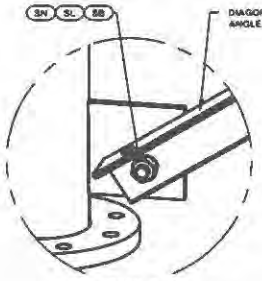
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT	NET WT
PLC	1	226200	PIPE LEG SECTION 20'-0" (CLIMBING) 5" SCH. 40 V-5E	386.610	386.610
PLH	2	226201	PIPE LEG SECTION 20'-0" (NON-CLIMBING) 5" SCH. 40	386.250	772.500
STP	18	226188	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER HEAVY	1.100	17.800
LO	6	264733	V-7 LOWER CLIPPED ANGLE - 2" x 2" x 3/16" ANGLE (A	21.510	129.060
MB	9	227580	5/8"-11 X 2-1/4" A325T HOT DIPPED GALV. BOLT (FULL	0.840	8.760
AS	9	293154	RING FILL SPACER 3/8" THICK 1.049" HOLE	0.080	0.640
MN	9	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.080
ML	9	312123	5/8" GALVANIZED LOCKWASHER (53-72230)	0.020	0.180
SL	36	312153	3/4" GALVANIZED LOCKWASHER	0.030	1.080
SN	36	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.160	5.840
SB	36	227579	3/4"-10 X 2-1/4" A-325T BOLT WITH FULL THREAD	0.420	15.120
MO	6	264732	V-7 MID ANGLE - 2" x 2" x 3/16" ANGLE (A572 GR. 50	20.440	122.640
UO	6	264731	V-7 UPPER ANGLE - 2" x 2" x 3/16" ANGLE (A572 GR	19.370	116.220
LCB	24	227668	3/4"-10 X 3-1/2" A-325T BOLT WITH FULL THREAD	0.540	12.960
LCF	24	312152	3/4" GALVANIZED FLAT WASHER (F436)	0.080	1.920
LCL	24	312153	3/4" GALVANIZED LOCKWASHER	0.030	0.720
LCN	24	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	4.560
			Total Wt:	1599.39 lb (725.68 kg)	

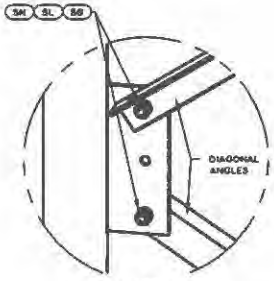
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



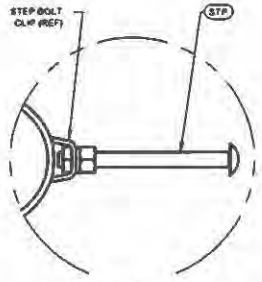
DETAIL A
ANGLE INTERSECTION CONNECTION



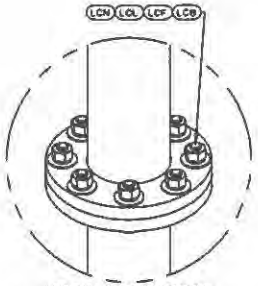
DETAIL B
END SIDE PLATE ANGLE CONNECTION



DETAIL C
MID SIDE PLATE ANGLE CONNECTION



STEP BOLT INSTALLATION



LEG TO LEG CONNECTION
(SIDE PLATES NOT SHOWN FOR CLARITY)

STATE OF KENTUCKY
NATHAN
ANDREW
ROSS
35794
LICENSED
PROFESSIONAL ENGINEER

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE

REVISION HISTORY

SITE
US-KY-513S FANCY FARM
V8 6TS II, LLC
U 31 X 290'

COPYRIGHT 2022

DESCRIPTION
SECTION V-7.0 (240' - 260' ELEVATION)

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

ENG. FILE NO.
565090

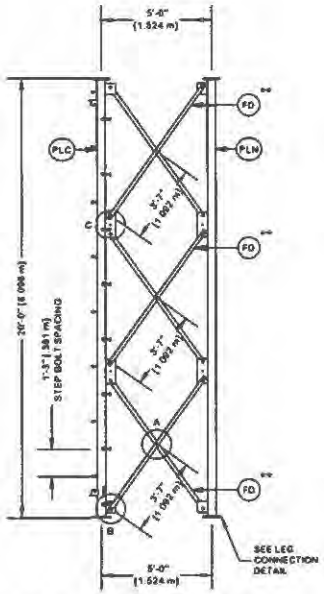
DWG. NO.
293706T

PAGE
15 OF 17

ORIENT LEGS WITH PIN STAMP TOWARD BOTTOM OF SECTION

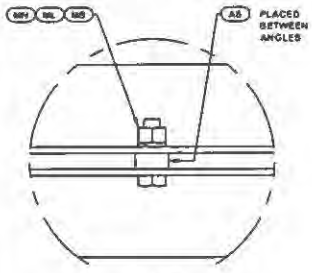
ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION

** DIAGONAL ANGLES MUST BE INSTALLED WITH THE NON-BOLTED FACE UP, ⌐| ! THIS MAY BE ON THE OPPOSITE SIDE OF THE SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.

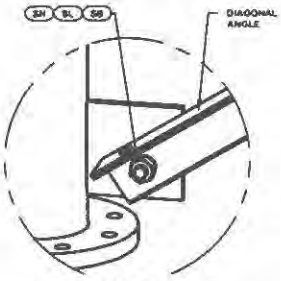


PARTS LIST					
ITEM	QTY	PART NO	PART DESCRIPTION	UNIT WT	NET WT
PLC	1	226164	PIPE LEG SECTION 20'-0" (CLIMBING) 4" SCH. 40 V-BE	302.080	302.080
PLN	2	226165	PIPE LEG SECTION 20'-0" (NON-CLIMBING) 4" SCH. 40	284.670	569.340
STP	16	226196	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER HEAVY	1.100	17.600
FO	18	286012	V-8 DIAGONAL ANGLE - 2 1/2" x 2 1/2" x 3/16" ANGLE	24.300	437.400
WL	9	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.180
AS	9	116467	RING FILL SPACER 1/4" THICK 1.040" DIA HOLE	0.250	2.250
MB	9	227580	5/8"-11 X 2-1/4" A325T HOT DIPPED GALV. BOLT (FULL	0.640	5.760
MN	9	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.080
SL	36	312153	3/4" GALVANIZED LOCKWASHER	0.030	1.080
SN	36	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	6.840
SB	36	227579	3/4"-10 X 2-1/4" A-325T BOLT WITH FULL THREAD	0.420	15.120
LCB	18	227580	3/4"-10 X 3-1/2" A-325T BOLT WITH FULL THREAD	0.540	9.720
LCF	18	312152	3/4" GALVANIZED FLAT WASHER (F436)	0.080	1.440
LCL	18	312153	3/4" GALVANIZED LOCKWASHER	0.030	0.540
LCN	18	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	3.420
			Total Wt:	1373.88 lb (623.74 kg)	

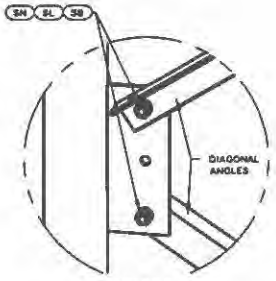
NOTE THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS



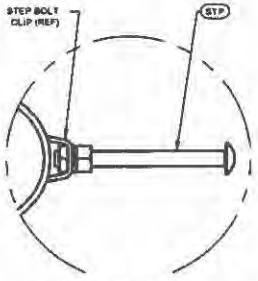
DETAIL A
ANGLE INTERSECTION CONNECTION



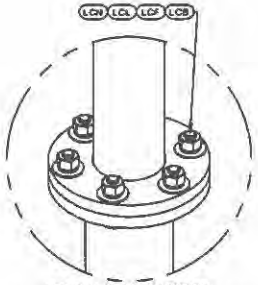
DETAIL B
END SIDE PLATE ANGLE CONNECTION



DETAIL C
MID SIDE PLATE ANGLE CONNECTION



STEP BOLT INSTALLATION



LEG TO LEG CONNECTION
(SIDE PLATES NOT SHOWN FOR CLARITY)

STATE OF KENTUCKY
NATHAN ANDREW ROSS
35794
LICENSED PROFESSIONAL ENGINEER

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
V8 BTS II, LLC
U 31 X 290'

COPYRIGHT 2022

DESCRIPTION
SECTION V-5.0 (260' - 280' ELEVATION)

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

ENG. FILE NO.
565090

DWG. NO.
293706T

PAGE
16 OF 17

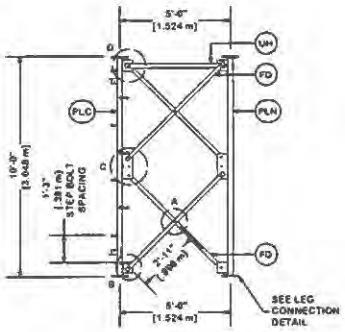
ORIENT LEGS WITH PIN STAMP TOWARD BOTTOM OF SECTION

INSTALL ANGLES WITH STAMPED END TOWARD TOP OF SECTION

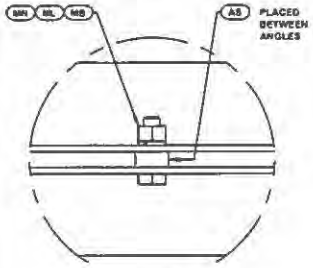
** DIAGONAL ANGLES MUST BE INSTALLED WITH THE NON-BOLTED FACE UP. THIS MAY BE ON THE OPPOSITE SIDE OF THE SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.

PARTS LIST

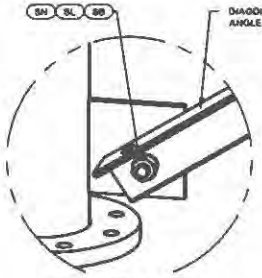
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT	NET WT
PLC	1	226172	PIPE LEG SECTION 10'-0" (CLIMBING) 2 1/2" SCH 40	106.330	106.330
PLN	2	226173	PIPE LEG SECTION 10'-0" (NON-CLIMBING) 2 1/2" SCH	106.650	213.300
STP	6	228188	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER HEAVY	1.100	6.600
FD	12	286980	V-5 DIAGONAL ANGLE - 2" x 2" x 1/8" ANGLE (A572 GR	10.820	129.840
ML	5	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.120
AS	6	116467	RING FILL SPACER 1/4" THICK 1.046" DIA HOLE	0.250	1.500
MB	5	227589	5/8"-11 X 2-1/4" A325T HOT DIPPED GALV BOLT (FULL	0.640	3.840
MN	6	312801	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	0.720
SL	24	312153	3/4" GALVANIZED LOCKWASHER	0.030	0.720
SN	24	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	4.560
SB	24	227579	3/4"-10 X 2-1/4" A-325T BOLT WITH FULL THREAD	0.420	10.080
UH	3	286974	V-5 HORIZONTAL ANGLE (TYPE 1) - 3" x 3" x 1/4" ANG	21.500	64.500
LCB	12	227988	3/4"-10 X 3-1/2" A-325T BOLT WITH FULL THREAD	0.540	6.480
LCF	12	312152	3/4" GALVANIZED FLAT WASHER (F436)	0.080	0.960
LCL	12	312153	3/4" GALVANIZED LOCKWASHER	0.030	0.360
LCN	12	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	2.280
			Total Wt	554.36 lb (252.81 kg)	



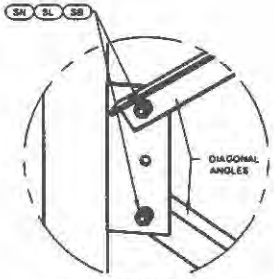
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW. PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



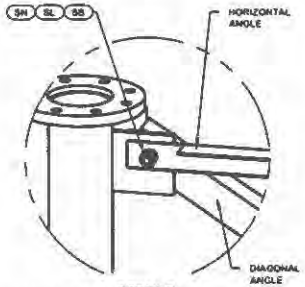
DETAIL A
ANGLE INTERSECTION CONNECTION



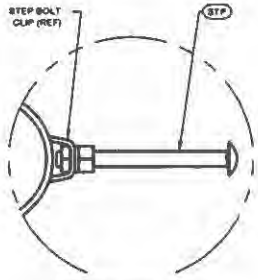
DETAIL B
END SIDE PLATE ANGLE CONNECTION



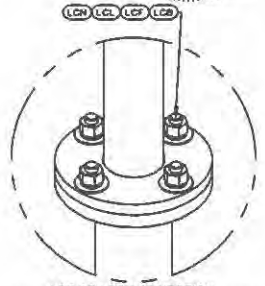
DETAIL C
MID SIDE PLATE ANGLE CONNECTION



DETAIL D
UPPER HORIZONTAL ANGLE CONNECTION



STEP BOLT INSTALLATION



LEG TO LEG CONNECTION
(SIDE PLATES NOT SHOWN FOR CLARITY)

STATE OF KENTUCKY
NATHAN ANDREW ROSS
35794
LICENSED PROFESSIONAL ENGINEER

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

DESCRIPTION
SECTION V-5.0 (280' - 290' ELEVATION)

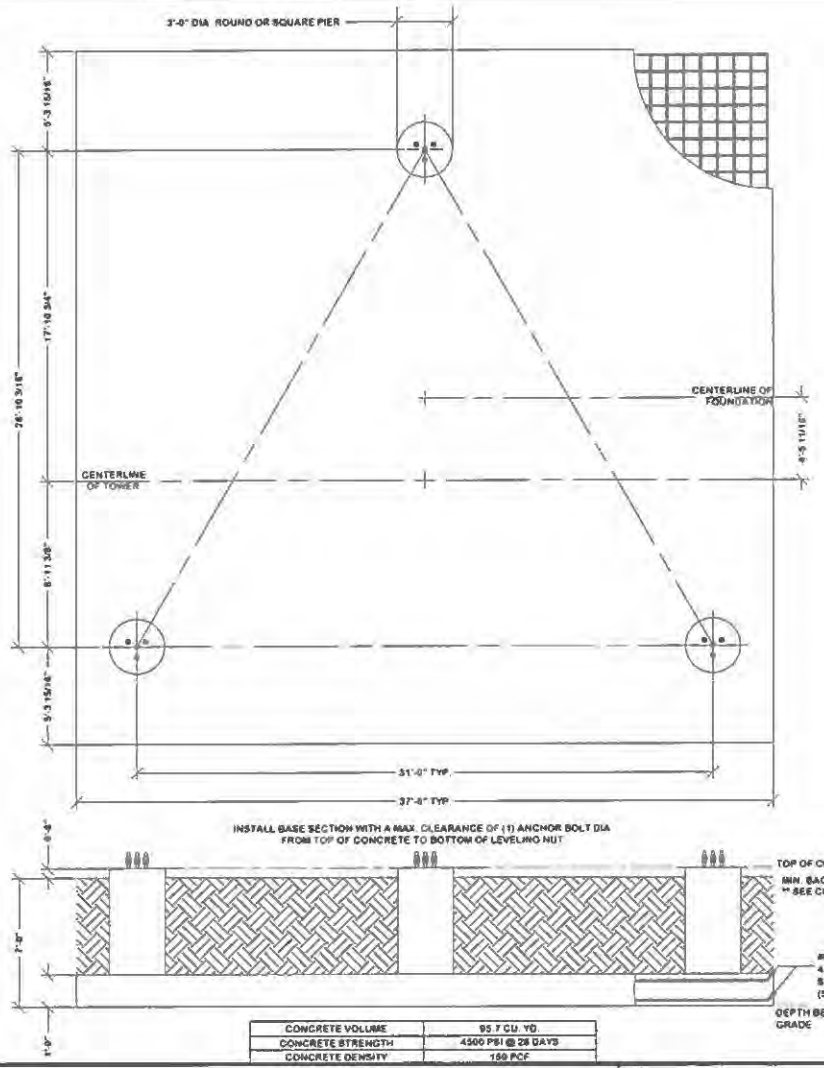
valmont STRUCTURES
1-877-467-4783 Plymouth, IN
1-800-547-2151 Salem, OR

COPYRIGHT 2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

ENG. FILE NO.	DWG. NO.	PAGE
565090	293706T	17 OF 17



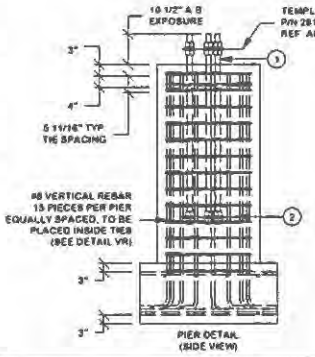
CONCRETE VOLUME	95.7 CU. YD.
CONCRETE STRENGTH	4500 PSI @ 28 DAYS
CONCRETE DENSITY	150 PCF

ATTENTION CONTRACTOR INSTALLING ANCHOR BOLTS!
USE 1 3/4" DIA. ANCHOR BOLTS SUPPLIED BY VALMONT.
INSTALL ALL ANCHOR BOLTS WITH LONGER THREADED ENDS EXPOSED
VERIFY THE PART NUMBER AND SIZE FOR ALL COMPONENTS ON THIS PAGE.
IF THERE ARE ANY DISCREPANCIES, PLEASE NOTIFY VALMONT/PROD, INC PRIOR TO INSTALLATION

TEMPLATE INSTALLATION NOTES
1. THE PROVIDED TEMPLATE ASSEMBLY MUST BE USED TO ENSURE ACCURATE ANCHOR BOLT LOCATION & INSTALLATION ANGLE (BASE LEG REFERENCE ANGLE 0.00°).
2. USING THE TEMPLATE ASSEMBLY, THE CENTER OF EACH ANCHOR BOLT GROUP MUST BE LOCATED WITHIN (+/- 3") OF THE CENTER OF THE REBAR CAGE SHOWN ON THIS PLAN. FAILURE TO USE THE FULLY ASSEMBLED ANCHOR BOLT TEMPLATE WILL CAUSE MISS-LOCATION OF THE ANCHOR BOLT GROUPS. INCORRECTLY LOCATED ANCHOR BOLT GROUPS WILL CAUSE DIFFICULTY OR ALIGNMENT ISSUES DURING TOWER CONSTRUCTION. IN MORE SEVERE CASES, THIS CAN MAKE IT IMPOSSIBLE TO ERECT THE TOWER
3. THE ENTIRE TEMPLATE ASSEMBLY MUST BE LEVEL +/- 1°.
4. INSTALLED TEMPLATE CLEARANCE 2" MIN - 4" MAX T.O.C. TO BOTTOM OF LEVELING NUT
5. MUST USE TEMPLATE ASSEMBLY# 281453

**CONCRETE NOTES
1. BACKFILL MAY NOT BE SLOPED
2. BACKFILL MUST NOT EXCEED THE TOP OF THE CONCRETE
3. CONTRACTOR MUST VERIFY THAT THE MINIMUM FILL HEIGHT CAN BE ACHIEVED PRIOR TO INSTALLING REBAR OR CONCRETE.
4. IF MINIMUM FILL HEIGHT CANNOT BE ACHIEVED THE CONTRACTOR MUST CONTACT VALMONT PRIOR TO REBAR OR CONCRETE PLACEMENT

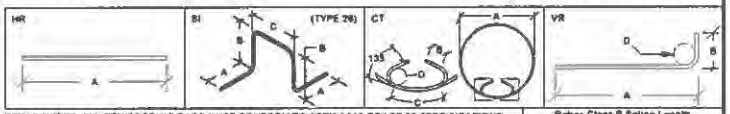
CIRCULAR TIE NOTES
PLACE CIRCULAR TIES SO HOOKS ON ADJACENT TIES ARE APPROX 180° APART. PLACE ONE TIE AT TOP OF REBAR CAGE AND ONE TIE AT TOP OF PIER. EQUALLY SPACE TIES ALONG THE PIER, WITH ONE BAR PLACED 4" DOWN FROM THE TOP TIE. 14 TIES PER PIER (SEE DETAIL CT)



PARTS LIST				
ITEM	QTY	PART DESCRIPTION	UNIT WT.	NET WT.
1	12	1 3/4" DIA. x 96" LONG ANCHOR BOLT - 282357	58.43	666.17
2	3	EMBEDMENT PLATE - 281282	19.86	59.43

FOUNDATION NOTES
1. SOIL AS PER REPORT BY POD, PROJECT NO. 20-64945, DATED: MARCH 23, 2022
2. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR NOT PERMITTED
3. A COLD JOINT IS PERMISSIBLE UPON CONSULTATION WITH VALMONT. ALL COLD JOINTS SHALL BE COATED WITH BONDING AGENTS PRIOR TO SECOND POUR
4. ALL FILL SHOULD BE PLACED IN LOOSE LEVEL LIFTS OF NO MORE THAN 8" THICK. FILL MATERIALS SHOULD BE CLEAN AND FREE OF ORGANIC AND FROZEN MATERIALS OR ANY OTHER DELETERIOUS MATERIALS. COMPACT FILL TO 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D698. MIN. BACKFILL DENSITY = 110 PCF
5. BENDING, STRAIGHTENING OR REALIGNING (HOT OR COLD) OF THE ANCHOR BOLTS BY ANY METHOD IS PROHIBITED
6. CROWN TOP OF FOUNDATION FOR PROPER DRAINAGE
7. THE ON-SITE GEOTECHNICAL ENGINEER SHALL CONFIRM THAT THE INSITU SOIL STRENGTHS MEET OR EXCEED THOSE PARAMETERS GIVEN IN THE SOIL REPORT
8. SEE GEOTECHNICAL REPORT FOR ADDITIONAL CONSTRUCTION RECOMMENDATIONS, BACKFILL COMPACTION DETAIL, SUBGRADE PREPARATION, ETC

REBAR DETAIL									
BAR	QTY	SIZE	UNIGENT LENGTH	A	B	C	D DIAMETER	UNIT WT (LBS)	NET WT (LBS)
HR	168	#8	37'	37'				99.02	16635.68
SI	121	#5	8'-6 5/16"	1'-7 1/4"	11"	1'-9 3/4"		6.83	802.84
CT	42	#4	9'-11 7/16"	2'-8"	3"	12 9/16"	3"	6.65	279.22
VR	45	#8	7'-11 3/4"	6'-10"	1'-4"		6"	21.30	958.42



REBAR NOTES: ALL REINFORCING BARS MUST CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS
STANDEES TO BE EQUALLY SPACED BETWEEN GRIDS - 3'-6 1/4" (TYP)

Rebar Class B Splice Length			
Bar Size	(in)	Bar Size	(in)
3	19	8	61
4	25	9	69
5	31	10	77
6	37	11	84
7	53		

STATE OF KENTUCKY
NATHAN ANDREW ROSS
35794
LICENSED PROFESSIONAL ENGINEER

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

DESCRIPTION
SHALLOW MAT WITH RAISED PIERS
TOWER FOUNDATION #1

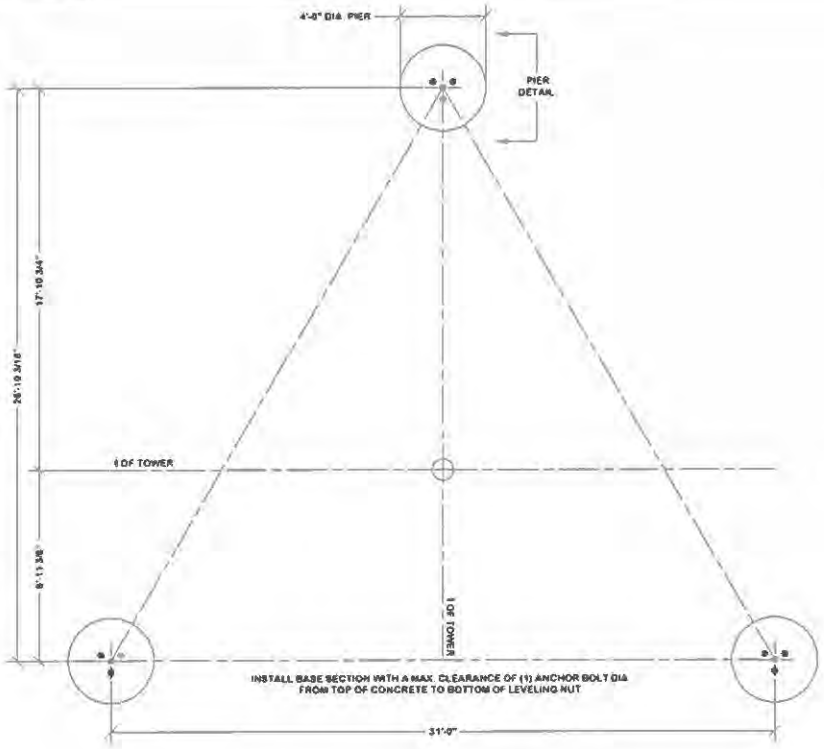
COPYRIGHT 2022

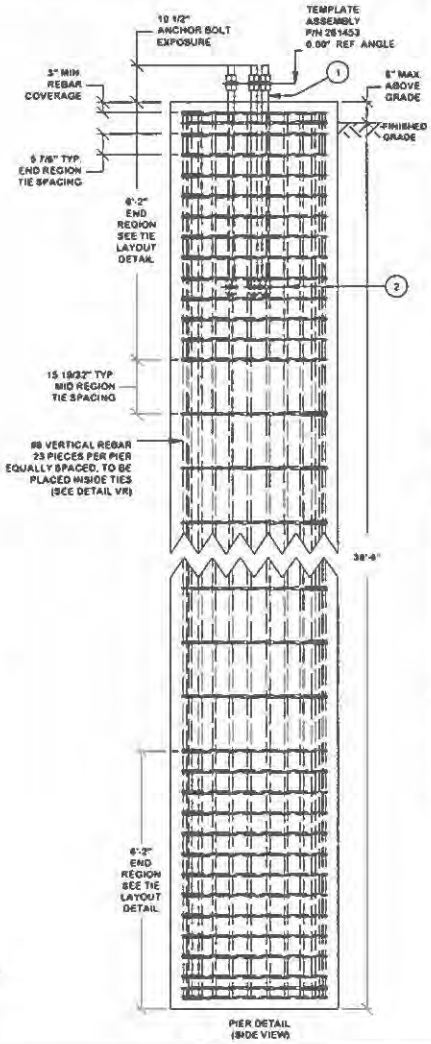
valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

ENG. FILE NO.: 565090
DWG. NO.: 293706F
PAGE: 1 OF 2



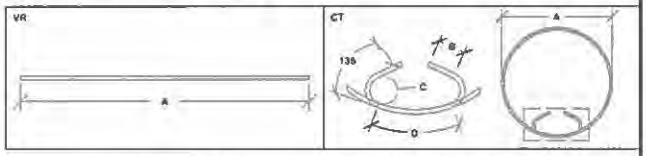


REBAR/ANCHOR STEEL TABLE				
ITEM	QTY	PART DESCRIPTION	UNIT WT	NET WT
1	12	1 3/4" DIA. x 88" LONG ANCHOR BOLT 282357	55.45	665.17
2	3	EMBEDMENT PLATE 281262	19.88	59.63

FOUNDATION NOTES

1. SOIL AS PER REPORT BY POD, PROJECT NO. 20-64085, DATED: MARCH 23, 2022
2. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR NOT PERMITTED
3. A COLD JOINT IS PERMISSIBLE UPON CONSULTATION WITH VALMONT. ALL COLD JOINTS SHALL BE COATED WITH BONDING AGENTS PRIOR TO SECOND POUR
4. ALL REINFORCING STEEL TO BE FORMED INTO A CAGE PRIOR TO SETTING INTO POSITION IN THE EXCAVATED PIER.
5. PERMANENT STEEL CASING SHALL NOT BE USED WITHOUT CONSENT FROM FOUNDATION DESIGNERS.
6. BENDING, STRAIGHTENING OR REALIGNING (HOT OR COLD) OF THE ANCHOR BOLTS BY ANY METHOD IS PROHIBITED
7. CROWN TOP OF FOUNDATION FOR PROPER DRAINAGE.
8. THE ON-SITE GEOTECHNICAL ENGINEER SHALL CONFIRM THAT THE INSITU SOIL STRENGTHS MEET OR EXCEED THOSE PARAMETERS GIVEN IN THE SOIL REPORT.
9. SEE GEOTECHNICAL REPORT FOR ADDITIONAL CONSTRUCTION RECOMMENDATIONS, BACKFILL COMPACTION DETAIL, SUBGRADE PREPARATION, ETC.
10. CONCRETE IS TO BE PLACED THE SAME DAY THAT THE EXCAVATION IS COMPLETED
11. A TEMPORARY, FULL LENGTH STEEL CASING MAY BE REQUIRED DURING INSTALLATION

REBAR DETAIL									
BAR	QTY.	SIZE	UNBENT LENGTH	A	B	C DIAMETER	D	UNIT WT	NET WT
CT	138	64	13'- 3/16"	3'-6"	3"	3"	11 9/2"	8.70	1199.97
VR	88	88	38'-6"	38'-6"				97.68	8740.17



REBAR NOTES: ALL REINFORCING BARS MUST CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS

Rebar Class B Splice Length			
Bar Size	(in)	Bar Size	(in)
3	18	8	47
4	19	9	53
5	24	10	60
6	28	11	66
7	41		

ATTENTION CONTRACTOR INSTALLING ANCHOR BOLTS!
USE 1 3/4" DIA. ANCHOR BOLTS SUPPLIED BY VALMONT
INSTALL ALL ANCHOR BOLTS WITH LONGER THREADED ENDS EXPOSED
VERIFY THE PART NUMBER AND SIZES FOR ALL COMPONENTS ON THIS PAGE. IF THERE ARE ANY DISCREPANCIES, PLEASE NOTIFY VALMONT/PIROD INC. PRIOR TO INSTALLATION

CONCRETE VOLUME	17.2 CU. YD. PER PIER (51.7 CU YD. TOTAL)
CONCRETE STRENGTH	4500 PSI @ 28 DAYS
CONCRETE DENSITY	150 PCF

TEMPLATE INSTALLATION NOTES

1. THE PROVIDED TEMPLATE ASSEMBLY MUST BE USED TO ENSURE ACCURATE ANCHOR BOLT LOCATION & INSTALLATION ANGLE (BASE LEG REFERENCE ANGLE 0.00°.)
2. USING THE TEMPLATE ASSEMBLY, THE CENTER OF EACH ANCHOR BOLT GROUP MUST BE LOCATED WITHIN (+/- 3") OF THE CENTER OF THE REBAR CAGE SHOWN ON THIS PLAN. FAILURE TO USE THE FULLY ASSEMBLED ANCHOR BOLT TEMPLATE WILL CAUSE MISS-LOCATION OF THE ANCHOR BOLT GROUPS. INCORRECTLY LOCATED ANCHOR BOLT GROUPS WILL CAUSE DIFFICULTY OR ALIGNMENT ISSUES DURING TOWER CONSTRUCTION. IN MORE SEVERE CASES, THIS CAN MAKE IT IMPOSSIBLE TO ERECT THE TOWER.
3. THE ENTIRE TEMPLATE ASSEMBLY MUST BE LEVEL +/- 1°
4. INSTALLED TEMPLATE CLEARANCE 2" MIN - 4" MAX T O C TO BOTTOM OF LEVELING NUT
5. MUST USE TEMPLATE ASSEMBLY # 281453

CIRCULAR TIE LAYOUT
(NOT TO SCALE)
PLACE ONE TIE 3" FROM THE END TIE AT THE TOP AND BOTTOM OF THE PIER. PLACE REMAINING TIES @ 5 7/8" NOMINAL SPACING WITHIN END REGIONS AND 15 19/32" NOMINAL SPACING IN THE REMAINDER OF THE PIER. PLACE CIRCULAR TIES SO LAPS ON ADJACENT TIES ARE APPROX. 180 DEGREES APART (SEE DETAIL CT)

STATE OF KENTUCKY
NATHAN ANDREW ROSS
35794
LICENSED PROFESSIONAL ENGINEER

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE
US-KY-5135 FANCY FARM
VB BTS II, LLC
U 31 X 290'

DESCRIPTION
DRILLED PIERS
TOWER FOUNDATION #2

valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

COPYRIGHT 2022

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	JL	J_L	10/6/2022

PROPRIETARY NOTE
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED

ENG. FILE NO. 565090

DWG. NO. 293706F

PAGE 2 OF 2

UNIT BASE FOUNDATION SUMMARY

VB BTS II, LLC
US-KY-5135 Fancy Farm

V- 31.0 290 v 4.1
A- 565090

Foundation Dimensions		
Pad width, W:	37.50	ft
Depth, D:	7.00	ft
Ext. above grade, E:	0.50	ft
Pier diameter, d_f:	3.00	ft
Pad thickness, T:	1.75	ft
Depth neglected, N:	7.00	ft
Volume, V_c:	95.66	cy

Reinforcement Design		
pad rebar qty., m_p:	42	bars *
size, s_p:	8	
pier vertical qty, m_c:	15	verticals/pier
size, s_c:	8	2.5' cage
pier tie qty., m_t:	14	ties/pier
size, s_t:	4	default hook

* Rebar to be equally spaced, both ways, top & bottom, for a total of 168 bars
* Use standees to support top rebar above bottom rebar in mat

Soil Information Per:
POD, Project No. 20-64965, Dated: March 23, 2022

Soil Parameters		
Soil unit weight, γ:	110	pcf
Ultimate Bearing, B_c:	7.000	ksf
Cohesion, C_o:	1.000	ksf
Friction angle, ϕ:	0.0	degrees
Ult. Passive P., P_p:	0.396	pcf
Base sliding, μ:	0.30	
Seismic Design Cat.:	D	
Water at:	none	ft

Anchor Steel Selection		
Part Number, P/N:	262357	Dia = 1.75 Length = 60"

Material Properties		
Steel tensile str., F_y:	60000	psi
Conc. Comp. str. F'_c:	4500	psi
Conc. Density, δ:	150	pcf
Clear cover, cc:	3.00	in

Backfill Compaction		
Lift thickness:	8	in
Compaction:	95	%
Standard Proctor:	ASTM	D698

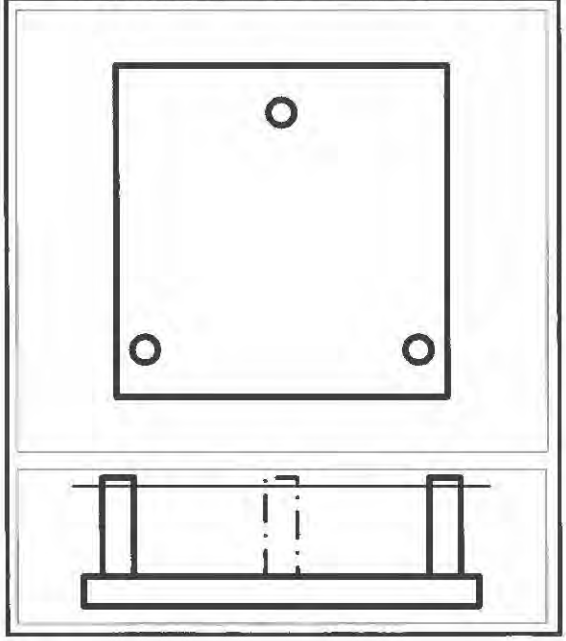
Tower design conforms to the following:

* *International Building Code (IBC)*
* *ANSI TIA-222-G*
* *Building Code Requirements for Reinforced Concrete (ACI 318-14)*

Note: The centroid of the tower is offset from the centroid of the foundation

Foundation Loading				
		stress ratio: 98.6%		mark up: 1.4%
Shear (Per Leg), S_l:	47.00 kips	x 1.01 =	47.66 kips	
Shear (total), S:	71.00 kips	x 1.01 =	71.99 kips	
Moment, M:	12978.00 ft-kips	x 1.01 =	13159.69 ft-kips	
Compression/Leg, C:	513.00 kips	x 1.01 =	520.18 kips	
Uplift/Leg, U:	445.00 kips	x 1.01 =	451.23 kips	
Tower Weight, W_t:	90.00 kips	=	90.00 kips	

Views of Foundation (not to scale)



STATE OF KENTUCKY
NATHAN ANDREW ROSS
35794
LICENSED PROFESSIONAL ENGINEER

Digitally signed by Nathan A Ross
Date: 2022-10-06 09:31-07:00

Additional Notes:

* No foundation modifications listed.
* See attached "Foundation Notes" for further information.

FOUNDATION NOTES

1 THE ON-SITE GEOTECHNICAL ENGINEER SHALL CONFIRM THAT THE INSITU SOIL STRENGTHS MEET OR EXCEED THOSE PARAMETERS GIVEN IN THE SOIL REPORT.

2 SEE GEOTECHNICAL REPORT FOR ADDITIONAL CONSTRUCTION RECOMMENDATIONS, BACKFILL COMPACTION DETAIL, SUBGRADE PREPARATION, ETC.

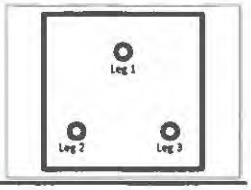
UNIT BASE FOUNDATION (DL - 1.2)

VB BTS II, LLC
US-KY-5135 Fancy Farm

V- 31.0 290 v 4.7
A- 565090

Reactions		stress ratio	98.6%	mark up	1.4%	
Shear (Per Leg), S_i:	47.00	kips	x 1.01 =	47.66	kips	
Shear (total), S:	71.00	kips	x 1.01 =	71.99	kips	
Moment, M:	12978.00	ft-kips	x 1.01 =	13159.69	ft-kips	
Compression / leg, C:	513.00	kips	x 1.01 =	520.18	kips	
Uplift / leg, U:	445.00	kips	x 1.01 =	451.23	kips	
Tower weight, W_t:	90.00	kips	=	90.00	kips	

Soil per: POD, Project No. 20-64965, Dated: March 23, 2022



Physical Parameters:

Concrete volume:	$V = T * W^2 + 3 * (di^2 / 4 * \pi) * (D + E - T)$	$V =$	95.7	cy
Concrete weight:	$W_c = V * \delta$	$W_c =$	387.4	kips
Soil weight:	$W_s = (D - T) * (W^2 - 3 * (di^2 / 4 * \pi)) * \gamma$	$W_s =$	799.9	kips
Total weight:	$P = Wc + Ws + Wt$	$P =$	1277.29	kips

Passive Pressure:

Pp coefficient:	$K_p = TAN(45 + \varphi / 2)^2$	$K_p =$	1.000	
	$P_{pn} = Kp * \gamma * N + 2 * Co * \sqrt{(Kp)}$	$P_{pn} =$	2.770	ksf
	$P_{pt} = Kp * \gamma * (D - T) + 2 * Co * \sqrt{(Kp)}$	$P_{pt} =$	2.578	ksf
	$P_{pb} = Kp * \gamma * D + 2 * Co * \sqrt{(Kp)}$	$P_{pb} =$	2.770	ksf
	$P_{ptop} = IF(N < (D - T), Ppt, Ppn)$	$P_{ptop} =$	2.8	ksf
	$Pp' = (Pptop + Ppb) / 2$	$Pp' =$	2.770	ksf
Shear area:	$T_{pp} = 0$	$T_{pp} =$	0.0	ft
	$A_{pp} = Tpp * W$	$A_{pp} =$	0.00	ft^2
Shear Capacity: $\varphi r = 0.75$	$S_{actual} = (Pp' * App + \mu * P) * \varphi r$	$S_{actual} =$	287.391	kips
	Check $S_{actual} =$ 287.39 kips >= $S =$ 71.99 kips			OK

Overturning Moment Resistance at Toe:

Wt of soil wedge:	$W_{sw} = D * (D * TAN(\varphi)) / 2 * W * \gamma$	$W_{sw} =$	0.0	kips
Dist. from leg to edge:	$O = (W - 0.866 * w') / 2$	$O =$	5.327	ft
Additional offset of Wt:	$O_a = W / 2 - (1 / 3 * 0.866 * w' + O)$	$O_a =$	4.474	ft
Resisting moments:	$M_{rwt} = P * W / 2 - Wt * Oa$	$M_{rwt} =$	23546.57	ft-kips
	$M_{rp} = Pp' * App * (D - N) / 3$	$M_{rp} =$	0.00	ft-kips
	$M_{rsw} = Wsw * (W + D * TAN(\varphi) / 3)$	$M_{rsw} =$	0.00	ft-kips
Total resisting: $\varphi r = 0.75$	$M_{rt} = (Mrwt + Mrp + Mrsw) * \varphi r$	$M_{rt} =$	17659.92	ft-kips
Total overturning:	$M_o = M + S * (D + E)$	$M_o =$	13699.65	ft-kips
	Check $M_{rt} =$ 17659.92 ft-kips >= $M_o =$ 13699.65 ft-kips			OK

Bearing Resistance due to Pressure Distribution

Area of mat:	$area = W^2$	$area =$	1406.3	ft^2
Section modulus:	$SM = W^3 / 6$	$SM =$	8789.1	ft^3
Factored total weight:	$P' = (Wt / 1.2 + Wc + Ws) * 1.2$	$P' =$	1514.8	kip
Pressure exerted:	$P_{pos} = P' / area + Mo / SM$	$P_{max} =$	2.636	ksf
	$P_{neg} = P' / area - Mo / SM$	$P_{min} =$	-0.482	ksf

Note: The stress resultant is NOT within the kern. Bearing area has been adjusted below.

Load eccentricity:	$e_c = Mo / P'$	$e_c =$	9.04	ft
In Parallel Direction	$P_{adj} = 2 * P' / (3 * W * (W / 2 - ec))$	$P_{adj} =$	2.8	ksf
In Diagonal Direction	P_{adj_diag} see Diagonal Bearing Sheet (attached)	$P_{adj\_diag} =$	3.7	ksf
Adj. applied pressure:	$q_a = IF(Pneg >= 0, Ppos, Padj)$	$q_a =$	2.775	ksf
Overburden Pressure: (factored)	q_{dbp} = NA- Gross Bearing Provided	$q_{dbp} =$	0.000	ksf
$\varphi r = 0.75$	**Check** $q_a - q_{dbp} =$ 2.775 ksf <= $B_c * \varphi r =$		5.250	ksf OK

Concrete Shear Strength:

One way beam action at d' from lower

Effective depth:	$d_c = T - cc - db\_p / 2$	$d_c =$	17.500	in
Distance from edge of pad to pier face	$d' = O - di / 2$	$d' =$	3.827	ft
Distance from edge of pad to dc	$d'' = d' - dc$	$d'' =$	2.369	ft
Bearing Pressure Slop	$q_s = qa / Weff$	$q_s =$	0.095	kcf
Required shear:	$V_{n1} = [(qa - d'' * qs) + (d'' * qs / 2)] * d'' * W - [1.2 * (D - T) * \gamma * d'' * W]$	$V_{n1} =$	174.87	kips
Available shear: [ACI 22 5 5 1] $\varphi s = 0.75$ [ACI 21 2 1]	$V_{c1} = \varphi s * 2 * \lambda * \sqrt{(F'c)} * W * dc$	$V_{c1} =$	792.41	kips
	Check $V_{c1} =$ 792.41 kips >= $V_{n1} =$		174.87	kips OK

Two way beam action at d_i / 2 from tower (ACI 22.6.5)- Compression

Eq. Square Column (ACI 8.10.1.3 & 22.6.4.1.2)	d_{eq} =di / 2 * √π	deq =	31.90	in	
Mat effective width in bearing	W_{eff} = Min (W, 3 * (W / 2 - ec))	W_{eff} =	29.12	ft	
Ratio of long side to short side of Pier	β = 1 (for square or round piers)	β =	1.00		
Critical Section: Length	b_1 = dc / 2 + deq / 2 + (W - w\) / 2	b_1 =	63.70	in	
Critical Section: Width	b_2 = (dc + deq + W - SIN(60) * w\) / 2	b_2 =	88.62	in	
Critical Section: Perimeter	b_o = b1 + b2	b_o =	152.32	in	
Critical Section: Centroid	c = (b1 * dc * b1 / 2) / (b1* dc + b2 * dc)	c =	13.320	ft	
Critical Section: Eccentricity	e_c = (deq + dc) / 2 - c	e_c =	11.3818909	in	
Critical Section: Polar MOI	J_c = [(dc * b1^3 / 12) + (b1 * dc^3 / 12) + (b1 * dc * (b1 / 2 - c)^2] + (b1	J_c =	1.063E+06	in^4	
Moment Fraction transferred by flexure	γ_f = 1 / (1 + 2 / 3 * √(b1 / b2))	γ_f =	0.64		
Moment Fraction transferred by eccentricity of shear	γ_v = 1 - γf	γ_v =	0.36		
Bearing Pressure Slope	q_s = qa / Weff	q_s =	0.095	kcf	
Average Bearing Pressure	$q_{a,pl}$ = ((Weff - b1) * qs + qa) / 2	$q_{a,pl}$ =	2.522	ksf	
Shear Force at Section	V_{n_pier} 0	V_{n_pier} =	421.326	kips	
Slab Moment	M_{sc} = Sl * (D - T + E) + Vn_pier * e	M_{sc} =	673.66	ft-kips	
Required shear φs = 0.75 [ACI 21.2.1]	= (Vn_pier / b0 * dc) + (γv * Msc* c / Jc)		194.62	psi	
Available shear: [ACI 22.6.5.2]	= φs * MIN(4*λ*√(Fc) , (2+(4/β))*λ*√(Fc) , (2+(αs*dc/bo))*λ*√(Fc))		201.246	psi	
	Check V_{r2} = 201.25 psi >=	V_{n2} =	194.62	psi	OK
Moment transfered: (Pier 1)	M_{n1} = γf * Msc	M_{n1} =	311.643	ft-kips	
Effective Beam Width	w_{eff1} = deq + 1.5 * T + MIN(1.5 * T , (W - w\ * SIN(60) - deq) / 2)	w_{eff1} =	7.909	ft	
	A_{st_p1}' = Mn1 / (0.9 * Fy * dc)	A_{st_p1}' =	3.957	in^2	
	a_{p1} = Ast_p1' * Fy / (β * F'c * weff1)	a_{p1} =	0.674	in	
Required steel:	$A_{st\_p\_st1}$ = Mn1 / (Fy * (dc - ap1 / 2))	$A_{st\_p\_st1}$ =	3.632	in^2	
Required steel in entire mat	$A_{st\_p\_ste1}$ = Ast_p_st1 * W / weff1	$A_{st\_p\_ste1}$ =	17.219	in^2	
Moment transfered: (Pier 2 or 3)	M_{n2} = γf * Msc (Controlling Case: Corner.)	M_{n2} =	430.392	ft-kips	
Effective Beam Width	w_{eff2} = deq + 1.5 * T + MIN(1.5 * T , (W - w\ - deq) / 2)	w_{eff2} =	7.204	ft	
	A_{st_p2}' = Mn2 / (0.9 * Fy * dc)	A_{st_p2}' =	5.465	in^2	
	a_{p2} = Ast_p2' * Fy / (β * F'c * weff2)	a_{p2} =	1.022	in	
Required steel:	$A_{st\_p\_st2}$ = Mn2 / (Fy * (dc - ap2 / 2))	$A_{st\_p\_st2}$ =	5.067	in^2	
Required steel in entire mat	$A_{st\_p\_ste2}$ = Ast_p_st2 * W / weff2	$A_{st\_p\_ste2}$ =	26.373	in^2	
		Pier Controlling Case			Pier 2: Corner

Two way beam action at d_i / 2 from tower (ACI 22.6.5)- Uplift

Pier Reinforcement Dia	di_T =di -2*cc-2*db_t - 1*db_c	di_T =	28.000	in	
Eq. Square Column (ACI 8.10.1.3 & 22.6.4.1.2)	d_{eq_T} =dprebar / 2 * √π	d_{eq_T} =	24.81	in	
Critical Section Length	b_{1_T} = deq_T + dc	b_{1_T} =	42.314	in	
Critical Section Perimeter	b_{o_T} = 4 * (deq + dc)	b_{o_T} =	169.26	in	
Polar MOI	J_{c_T} = (b1_T^3 * dc / 6)+ (b1_T * d ^3 / 6)+(dc * b1_T * b2_T^2 / 2)	J_{c_T} =	921710.251	in^4	
Shear Force at Section	$V_{n\_pier\_T}$ = U	$V_{n\_pier\_T}$ =	451.23	kips	
Required shear: φs = 0.75 [ACI 21.2.1]	= (Vn_pier_T / b1_T * dc) + (γv * Msc* c_T / Jc_T)		182.533	psi	
Available shear: [ACI 22.6.5.2]	' = φs * MIN(4*λ*√(Fc) , (2+(4/β))*λ*√(Fc) , (2+(αs*dc/bo))*λ*√(Fc))		201.25	psi	
	Check V_{t2} = 201.25 psi >=	V_{nt2} =	182.53	psi	OK

Column Compression Capacity:

Compression reaction: φc = 0.65 [ACI 21.2.2.2]	P_c = φc * 0.85 * F'c * (di² / 4 * π)	P_c =	2530.7	kips	
	Check P_c = 2530.69 kips >=	C =	520.18	kips	OK

Pier Reinforcement:

Cross-sectional area	A_g = di² * π / 4	A_g =	1017.88	in^2	
Min. area of steel (pier) [ACI 10.6.1.1] & [ACI 10.3.1.2]	A_{st_c} =Ag * 0.01	A_{st_c} =	10.18	in^2	
Cage circle	d_o = di - 2 * cc - db_c - 2 * db_t	d_o =	28.00	in	
Rebar	s_c = 8 ; d_{b_c} = 1 in				
	m_c = 15 ; A_{b_c} = 0.79 in^2				
	A_{s_c} = Ab_c * m_c	A_{s_c} =	11.85	in^2	
	Check A_{s_c} = 11.85 in^2 >=	A_{st_c} =	10.18	in^2	OK
Actual moment	M_{max} = (D - T + E) * S / 2	M_{max} =	206.98	ft-kips	
Pier moment capacity: per Maxmomnt.xls (see attached)	M_{allow}	M_{allow} =	212.41	ft-kips	
	Check M_{allow} = 212.41 ft-kips >=	M_{max} =	206.98	ft-kips	OK
Bar separation	B_{s_c} = (do * π) / m_c - db_c	B_{s_c} =	4.86	in	
	Check 17 >= B_{s_c} = 4.86 in	>=	4"		OK

Vertical Rebar Development Length:

Reinforcement location: [ACI 25.4.2.4]	ψ_{t_c} = if the space under the rebar > 12 in, use 1.3, else use 1.0	ψ_{t_c} =	1.3		
Epoxy coating [ACI 25.4.2.4]	ψ_{e_c} = if epoxy-coated bars are not used, use 1.0; but if epoxy-coated bars are used, then if Bs < 6 * db or cc < 3 * db, use 1.5, else 1.2	ψ_{e_c} =	1.0		
Max term: [ACI 25.4.2.4]	$\psi_t\psi_{e\_c}$ = the product of ψt & ψe, need not be taken larger than 1.7	$\psi_t\psi_{e\_c}$ =	1.3		
Reinforcement size: [ACI 25.4.2.4]	ψ_{s_c} = if the bar size is 6 or less, then use 0.8, else use 1.0	ψ_{s_c} =	1		
Light weight concrete: [ACI 25.4.2.4]	λ_c = if lightweight concrete is used, 0.75, else use 1.0	λ_c =	1.0		
Spacing/cover: [ACI 25.4.2.4]	c_c the smaller of: half the bar spacing or the concrete edge distace	c_c =	2.93	in	
Transverse bars: [ACI 25.4.2.3]	k_{tr_c} = 0 in (per simplification)	k_{tr_c} =	0	in	
Max term: [ACI 25.4.2.3]	c_c' = MIN(2.5, (c_c + ktr_c) / db_c)	c_c' =	2.500		
Excess reinforcement: [ACI 25.4.10.1]	R_c = 1 *(excess reinforcement reduction is not used)*	R_c =	1.00		
Development (tensile) [ACI 25.4.2.2]	$L_{d}'_c$ = (3 / 40) * (Fy / λ_c * √(F'c)) * (ψtψe_c * ψs_c * R_c / c_c') * db_c	$L_{d}'_c$ =	34.88	in	
Minimum length: [ACI 25.4.2.1]	L_{d_min} = 12 inches	L_{d_min} =	12.0	in	
Development length:	L_{dt_c} = MAX(Ld_min, Ldt'_c)	L_{dt_c} =	34.88	in	
Confining Reinforcement [ACI 25.4.9.3]	ψ_{r_c} = 1	ψ_{r_c} =	1.00		
Development (comp.): [ACI 25.4.9.2]	$L_{dc}'_c$ = Fy *ψr_c * db_c * R_c / (50 * λ_c * √(F'c))	$L_{dc}'_c$ =	17.89	in	
	$L_{dc}''_c$ = 0.0003 * db_c * Fy * ψr_c * R_c	$L_{dc}''_c$ =	18.00	in	
Development length:	L_{dc_c} = MAX(8, Ldc'_c, Ldc''_c)	L_{dc_c} =	18.00	in	
Length available in pier:	L_{vc} = D - T + E - cc	L_{vc} =	66.0	in	
	Check L_{vc} = 66.0 in >= L_{dt_c} =		34.9	in	OK
	Check L_{vc} = 66.0 in >= L_{dc_c} =		18.0	in	OK
Length available in pad:	L_{vp} = T - cc	L_{vp} =	18.0	in	
	Check L_{vp} = 18.0 in >= L_{dt_c} =		34.9	in	HOOKS
	Check L_{vp} = 18.0 in >= L_{dc_c} =		18.0	in	OK

Vertical Rebar Hook Ending:

Bar size & clear cover: [ACI 25.4.3.2]	ψ_{t_h} = if the bar size <= 11 and side cc >= 2.5", use 0.7, else use 1.0	ψ_{t_h} =	0.7		
Epoxy coating: [ACI 25.4.3.1]	ψ_{e_h} = if epoxy-coated bars are used, use 1.2, else use 1.0	ψ_{e_h} =	1.0		
Light weight concrete: [ACI 25.4.3.1]	λ_h if lightweight concrete is used, 0.75, else use 1.0	λ_h =	1.0		
Confining Reinforcement: [ACI 25.4.3.2]	ψ_{r_h} = 1	ψ_{r_h} =	1.00		
Development (hook): [ACI 25.4.3.1]	L_{dh}' = (Fy * ψt_h * ψe_h * ψr_h * R_c / (50 * λ_h * √(F'c))) * db_c	L_{dh}' =	12.5	in	
Minimum length: [ACI 25.4.3.1]	L_{dh_min} the larger of: 8 * db or 6 in	L_{dh_min} =	8.0	in	
Development length:	L_{dh} = MAX(Ldh_min, Ldh')	L_{dh} =	12.5	in	
	Check L_{vp} = 18.0 in >= L_{dh} =		12.5	in	OK
Hook tail length:	L_{h_tail} 12 * db beyond the bend radius	L_{h_tail} =	16.0	in	
Length available in pad:	L_{h_pad} = (W - W' - di) / 2	L_{h_pad} =	21	in	
	Check L_{h_pad} = 21.0 in >= L_{dh_tail} =		16.0	in	OK

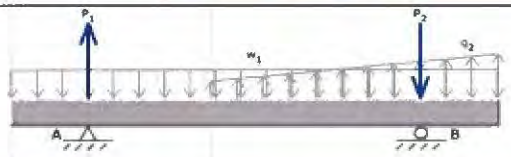
Pier Ties:

Minimum size: [ACI 25.7.2.2]	s_{t_min} =IF(s_c <= 10, 3, 4)			s_{t_min} =	3
z factor:	z = 0.5 if the seismic zone is less than 2, else 1			z =	1
Tie parameters:	s_t = 4	d_{b_t} =	0.5 in		
	m_t = 14	A_{b_t} =	0.2 in^2		
Allowable tie spacing:					
per vertical rebar [ACI 25.7.2.1] & [ACI 18.4.3.3]	$B_{s\_t\_max1}$ = 8 * db_c			$B_{s\_t\_max1}$ =	8 in
per tie size [ACI 25.7.2.1] & [ACI 18.4.3.3]	$B_{s\_t\_max2}$ = 24 * db_t			$B_{s\_t\_max2}$ =	12 in
per pier diameter [ACI 25.7.2.1] & [ACI 18.4.3.3]	$B_{s\_t\_max3}$ = di / 4			$B_{s\_t\_max3}$ =	9 in
per seismic zone [ACI 25.7.2.1] & [ACI 18.4.3.3]	$B_{s\_t\_max4}$ = 12" in active seismic zones, else 18"			$B_{s\_t\_max4}$ =	12 in
	$B_{s\_t\_max}$ = MIN(Bs_t_max1, Bs_t_max2, Bs_t_max3, Bs_t_max4)			$B_{s\_t\_max}$ =	8 in
	m_{t_min} = (D - T + E) / Bs_t_max + 2			m_{t_min} =	10.6
	Check m_t = 14.0	>=	m_{t_min} = 10.6		OK

Anchor Steel:

A/S parameters:	P_{as} = 262357		L_{as} = 66 in				
	d_{as} = 1.75 in		E_{as} = 55.50 in				
Development available:	L_{das} per Anchor Bolts (see attached)			L_{das} =	45.63	in	
Required development:	L_{das_min} per Anchor Bolts (see attached)			L_{das_min} =	34.88	in	
	Check L_{das} = 45.63 in	>=	L_{das_min} = 34.88 in				OK
To bottom rebar grid:	E_{as_max} =D + E - cc - 2 * db_p			E_{as_max} =	85	in	
	Check E_{as} = 55.50 in	<=	E_{as_max} = 85.00 in				OK
To top rebar grid:	rebar @ = D + E - T + cc			rebar @	72.00	in	
	Check 72 + 6 in >=	E_{as} = 55.50 in	or <= 72 in				OK
Min. cage dia:	d_{o_min} per ancasel xls (see attached)			d_{o_min} =	25.25	in	
	Check d_o = 28.00 in	>=	d_{o_min} = 25.25 in				OK

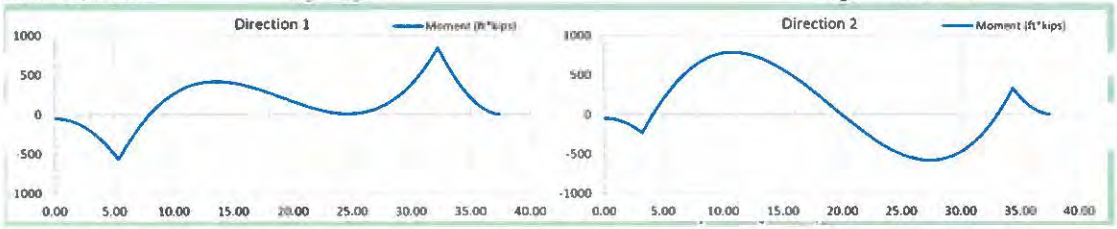
Pad Reinforcement:



Effective length in bearing: 29.12 ft

Effective length not bearing: 8.38 ft

Direction 1					
Total Beam Length:	B_{L1_1} =W		B_{L1_1}=	37.5	ft
Location of Left Support:	S_{L1_1} =O		S_{L1_1}=	5.327	ft
Location of Right Support:	S_{R1_1} =W-O		S_{R1_1}=	32.17	ft
Direction 2					
Total Beam Length:	B_{L1_2} =W		B_{L1_2}=	37.5	ft
Location of Left Support:	S_{L1_2} =(W - wA) / 2		S_{L1_2}=	3.25	ft
Location of Right Support:	S_{R1_2} =S_{L1_2} + wA		S_{R1_2}=	34.25	ft



Direction 1:	M_{max1_1} =M_{max1_1}	M_{max1_1}=	844.77	ft*kips
Direction 2:	M_{max1_2} =M_{max1_2}	M_{max1_2}=	784.43	ft*kips
Diagonal:	M_{max1_diag} =M_{max1_diag}	M_{max1_diag}=	2073.79	ft*kips
Max moment:	M_{maxp} =Max(Mmax1_1,Mmax1_2, Mmax1_diag)	M_{maxp}=	2073.79	ft*kips
Required moment: ϕt = 0.9 [ACI 21.2.2.2]	M_n = Mmaxp / ϕt	M_n =	2304.211	ft-kips

Pad Reinforcement:

	b = IF(F'c <= 4000, 0.85, IF(F'c >= 8000, 0.65, 0.85 - (F'c - 4000) * 0.05))				b =	0.825	
Effective width:	$W_e = W$				W_e =	37.500	ft
	$A_{st\_p}' = Mn / (0.9 * Fy * dc)$				A_{st_p}' =	29.260	in^2
	$a_p = Ast\_p' * Fy / (\beta * F'c * We)$				a_p =	1.05	in
Required steel:	$A_{st\_p\_st} = Mn / (Fy * (dc - ap / 2)) * (W / We)$				$A_{st\_p\_st}$ =	27.149	in^2
Shrinkage:	r_{sh} = IF(Fy >= 60000, 0.0018, 0.002)				r_{sh} =	0.0018	
	$A_{st\_p\_sh} = \rho sh * W * T / 2$				$A_{st\_p\_sh}$ =	8.505	in^2
	$A_{st\_p} = MAX(Ast\_p\_st, Ast\_p\_sh, Ast\_p\_ste1, Ast\_p\_ste2)$				A_{st_p} =	27.149	in^2
Rebar:	s_p = 8	*Equally spaced, top and*	d_{b_p} =	1 in			
	m_p = 42	*bottom, both directions.*	A_{b_p} =	0.79 in^2			
	$A_{s\_p} = Ab\_p * m\_p$				A_{s_p} =	33.18	in^2
	Check A_{s_p} = 33.18 in^2			>=	A_{st_p} =	27.15 in^2	**OK**
Bar separation:	$B_{s\_p} = (W - 2 * cc - db\_p) / (m\_p - 1) - db\_p$				B_{s_p} =	9.80	in
	Check 17 >= B_{s_p} = 9.80 in				>=	4"	**OK**

Pad Development Length:

Reinforcement location: *[ACI 25.4.2.4]*	ψ_{t_p} = if the space under the rebar > 12 in, use 1.3, else use 1.0	ψ_{t_p} =	1.3
Epoxy coating: *[ACI 25.4.2.4]*	ψ_{e_p} = if epoxy-coated bars are not used, use 1.0; but if epoxy-coated bars are used, then if Bs < 6 * db or cc < 3 * db, use 1.5, else 1.2	ψ_{e_p} =	1.0
Max term: *[ACI 25.4.2.4]*	$\psi_t\psi_{e\_p}$ = the product of ψt & ψe, need not be taken larger than 1.7	$\psi_t\psi_{e\_p}$ =	1.3
Reinforcement size: *[ACI 25.4.2.4]*	ψ_{s_p} = if the bar size is 6 or less, then use 0.8, else use 1.0	ψ_{s_p} =	1
Light weight concrete: *[ACI 25.4.2.4]*	λ_p = if lightweight concrete is used, 0.75, else use 1.0	λ_p =	1.0
Spacing/cover: *[ACI 25.4.2.4]*	c_p the smaller of: half the bar spacing or the concrete edge distace	c_p =	3.50 in
Transverse bars: *[ACI 25.4.2.3]*	k_{tr_p} = 0 in (per simplification)	k_{tr_p} =	0 in
Max term: *[ACI 25.4.2.3]*	$c_p' = MIN(2.5, (c\_p + ktr\_p) / db\_p)$	c_p' =	2.500
Excess reinforcement: *[ACI 25.4.10.1]*	R_p = 1 *(excess reinforcement reduction is not used)*	R_p =	1.00
Development (tensile): *[ACI 25.4.2.2]*	$L_d = (3 / 40) * (Fy / \lambda\_p * \sqrt{(F'c)}) * \psi t\psi e\_p * \psi s\_p * R\_p * db\_p / c\_p'\_u$	L_{dp} =	34.9 in
Minimum length: *[ACI 25.4.2.1]*	L_{d_min} = 12 inches	L_{d_min} =	12.0 in
Development length:	$L_{dp} = MAX(Ld\_min, Ldp')$	L_{dp} =	34.9 in
Length available in pad:	$L_{pad} = (W / 2 - w' / 2) - cc$	L_{pad} =	36.0 in
	Check L_{pad} = 36.00 in >=	L_{dp} =	34.88 in **OK**

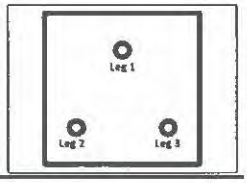
UNIT BASE FOUNDATION (DL - 0.9)

VB BTS II, LLC
US-KY-5135 Fancy Farm

V- 31.0 290 V 4.7
A- 565090

Reactions		stress ratio	98.6%	mark up	1.4%
Shear (Per Leg), S_l:	47.00 kips	x 1.01 =		47.66 kips	
Shear (total), S:	71.00 kips	x 1.01 =		71.99 kips	
Moment, M	12978.00 ft-kips	x 1.01 =		13159.69 ft-kips	
Compression / leg, C:	513.00 kips	x 1.01 =		520.18 kips	
Uplift / leg, U	445.00 kips	x 1.01 =		451.23 kips	
Tower weight, W_t	90.00 kips	=		90.00 kips	

Soil per: POD, Project No. 20-64965, Dated: March 23, 2022



Physical Parameters:

Concrete volume:	$V = T * W^2 + 3 * (di^2 / 4 * \pi) * (D + E - T)$	$V =$	95.7	cy
Concrete weight:	$W_c = V * \delta$	$W_c =$	387.4	kips
Soil weight:	$W_s = (D - T) * (W^2 - 3 * (di^2 / 4 * \pi)) * \gamma$	$W_s =$	799.9	kips
Total weight:	$P = Wc + Ws + Wt$	$P =$	1277.29	kips

Passive Pressure:

Pp coefficient:	$K_p = TAN(45 + \varphi / 2)^2$	$K_p =$	1.000	
	$P_{pn} = Kp * \gamma * N + 2 * Co * \sqrt{(Kp)}$	$P_{pn} =$	2.770	ksf
	$P_{pt} = Kp * \gamma * (D - T) + 2 * Co * \sqrt{(Kp)}$	$P_{pt} =$	2.578	ksf
	$P_{pb} = Kp * \gamma * D + 2 * Co * \sqrt{(Kp)}$	$P_{pb} =$	2.770	ksf
	$P_{ptop} = IF(N < (D - T), Ppt, Ppn)$	$P_{ptop} =$	2.8	ksf
	$Pp' = (Pptop + Ppb) / 2$	$Pp' =$	2.770	ksf
Shear area:	$T_{pp} = 0$	$T_{pp} =$	0.0	ft
	$A_{pp} = Tpp * W$	$A_{pp} =$	0.00	ft²
Shear Capacity: $\varphi r = 0.75$	$S_{actual} = (Pp' * App + \mu * P) * \varphi r$	$S_{actual} =$	287.391	kips
	Check $S_{actual} =$ 287.39 kips >=	$S =$	71.99	kips OK

Overturning Moment Resistance at Toe:

Wt of soil wedge:	$W_{sw} = D * (D * TAN(\varphi)) / 2 * W * \gamma$	$W_{sw} =$	0.0	kips
Dist. from leg to edge:	$O = (W - 0.866 * w') / 2$	$O =$	5.327	ft
Additional offset of Wt:	$O_a = W / 2 - (1 / 3 * 0.866 * w' + O)$	$O_a =$	4.474	ft
Resisting moments:	$M_{rwt} = P * W / 2 - Wt * Oa$	$M_{rwt} =$	23546.57	ft-kips
	$M_{rp} = Pp' * App * (D - N) / 3$	$M_{rp} =$	0.00	ft-kips
	$M_{rsw} = Wsw * (W + D * TAN(\varphi) / 3)$	$M_{rsw} =$	0.00	ft-kips
Total resisting: $\varphi r = 0.75$	$M_{rt} = (Mrwt + Mrp + Mrsw) * \varphi r$	$M_{rt} =$	17659.92	ft-kips
Total overturning:	$M_o = M + S * (D + E)$	$M_o =$	13699.65	ft-kips
	Check $M_{rt} =$ 17659.92 ft-kips >=	$M_o =$	13699.65	ft-kips OK

Bearing Resistance due to Pressure Distribution

Area of mat:	$area = W^2$	$area =$	1406.3	ft²
Section modulus:	$SM = W^3 / 6$	$SM =$	8789.1	ft³
Factored total weight:	$P' = (Wt / 1.2 + Wc + Ws) * 0.9$	$P' =$	1136.1	kip
Pressure exerted:	$P_{pos} = P' / area + Mo / SM$	$P_{max} =$	2.367	ksf
	$P_{neg} = P' / area - Mo / SM$	$P_{min} =$	-0.751	ksf

Note: The stress resultant is NOT within the kern. Bearing area has been adjusted below.

Load eccentricity:	$e_c = Mo / P'$	$e_c =$	12.06	ft
In Parallel Direction	$P_{adj} = 2 * P' / (3 * W * (W / 2 - ec))$	$P_{adj} =$	3.018	ksf
In Diagonal Direction	P_{adj_diag} see Diagonal Bearing Sheet (attached)	$P_{adj\_diag} =$	4.072	ksf
Adj. applied pressure:	$q_a = IF(Pneg >= 0, Ppos, Padj)$	$q_a =$	3.018	ksf
Overburden Pressure: (factored)	$q_{obp} =$ NA- Gross Bearing Provided	$q_{obp} =$	0.000	ksf
$\varphi r = 0.75$	Check $q_a - q_{obp} =$ 3.018 ksf <=	$B_c * \varphi r =$	5.250	ksf OK

Concrete Shear Strength:

One way beam action at d_c from tower

Effective depth:	$d_c = T - cc - db\_p / 2$	$d_c =$	17.500	in
Distance from edge of pad to pier face	$d' = O - di / 2$	$d' =$	3.827	ft
Distance from edge of pad to d_c	$d'' = d' - dc$	$d'' =$	2.369	ft
Bearing Pressure Slop	$q_s = qa / Weff$	$q_s =$	0.1504	kcf
Required shear:	$V_{n1} = [(qa - d'' * qs) + (d'' * qs / 2)] * d'' * W - [0.9 * (D - T) * \gamma * d'' * W]$	$V_{n1} =$	206.13	kips
Available shear: [ACI 22 5 5 1] $\varphi s = 0.75$ [ACI 21 2 1]	$V_{c1} = \varphi s * 2 * \lambda * \sqrt{(F'c)} * W * dc$	$V_{c1} =$	792.41	kips
	Check $V_{c1} =$ 792.41 kips >=	$V_{n1} =$	206.13	kips OK

Two way beam action at d_ / 2 from lower (ACI 22.6.5)

Eq. Square Column (ACI 8.10.1.3 & 22.6.4.1.2)	d_{eq} =di / 2 * √π	deq =	31.90	in	
Mat effective width in bearing	W_{eff} = Min (W, 3 * (W / 2 - ec))	W_{eff} =	20.073402	ft	
Ratio of long side to short side of Pier	β = 1 (for square or round piers)	β =	1.00		
Critical Section — Length:	b_1 = dc / 2 + deq / 2 + (W - w\) / 2	b_1 =	63.70	in	
Critical Section — Width:	b_2 = (dc + deq + W - SIN(60) * w\) / 2	b_2 =	88.62	in	
Critical Section — Perimeter:	b_o = b1 + b2	b_o =	152.32	in	
Critical Section — Centroid:	c = (b1 * dc * b1 / 2) / (b1* dc + b2 * dc)	c =	13.320	ft	
Critical Section — Eccentricity:	e_c = (deq + dc) / 2 - c	e_c =	11.3818909	in	
Critical Section — Polar MOI:	J_c = [(dc * b1^3 / 12) + (b1 * dc^3 / 12) + (b1 * dc * (b1 / 2 - c)^2] + (b1	J_c =	1.063E+06	in⁴	
Moment Fraction transferred by — flexure:	γ_f = 1 / (1 + 2 / 3 * √ (b1 / b2))	γ_f =	0.64		
Moment Fraction transferred by — eccentricity of shear:	γ_v = 1 - γf	γ_v =	0.36		
Bearing Pressure Slope:	q_s = qa / Weff	q_s =	0.150	kcf	
Average Bearing Pressure:	$q_{a.pl}$ = ((Weff - b1) * qs + qa) / 2	$q_{a.pl}$ =	2.619	ksf	
Shear Force at Section:	V_{n_pier} = C - qa.pl * (b1 * b2)	V_{n_pier} =	417.495	kips	
Slab Moment:	M_{sc} = Sl * (D - T + E) + Vn_pier * e	M_{sc} =	670.02	ft-kips	
Required shear: φs = 0.75 [ACI 21.2.1]	= (Vn_pier / b0 * dc) + (γv * Msc* c / Jc)		192.99	psi	
Available shear: [ACI 22.6.5.2]	= φs * MIN(4*λ*√(Fc) , (2+(4/β))*λ*√(Fc) , (2+(αs*dc/bo))*λ*√(Fc))		201.246	psi	
Check	V_{c2} = 201.25 psi >=	V_{n2} =	192.99	psi	OK
Moment transfered: (Pier 1)	M_{n1} = γf * Msc	M_{n1} =	306.779	ft-kips	
Effective Beam Width:	w_{eff1} = deq + 1.5 * T + MIN(1.5 * T , (W - w\ * SIN(60) - deq) / 2)	w_{eff1} =	7.909	ft	
	A_{st_p1}' = Mn1 / (0.9 * Fy * dc)	A_{st_p1}' =	3.896	in²	
	a_{p1} = Ast_p1' * Fy / (β * F'c * weff1)	a_{p1} =	0.663	in	
Required steel:	$A_{st\_p\_st1}$ = Mn1 / (Fy * (dc - ap1 / 2))	$A_{st\_p\_st1}$ =	3.574	in²	
Required steel in entire mat:	$A_{st\_p\_ste1}$ = Ast_p_st1 * W / weff1	$A_{st\_p\_ste1}$ =	16.946	in²	
Moment transfered: (Pier 2 or 3)	M_{n2} = γf * Msc (Controling Case: Corner.)	M_{n2} =	428.070	ft-kips	
Effective Beam Width:	w_{eff2} = deq + 1.5 * T + MIN(1.5 * T , (W - w\ - deq) / 2)	w_{eff2} =	7.204	ft	
	A_{st_p2}' = Mn2 / (0.9 * Fy * dc)	A_{st_p2}' =	5.436	in²	
	a_{p2} = Ast_p2' * Fy / (β * F'c * weff2)	a_{p2} =	1.016	in	
Required steel:	$A_{st\_p\_st2}$ = Mn2 / (Fy * (dc - ap2 / 2))	$A_{st\_p\_st2}$ =	5.039	in²	
Required steel in entire mat:	$A_{st\_p\_ste2}$ = Ast_p_st2 * W / weff2	$A_{st\_p\_ste2}$ =	26.226	in²	
		Controlling Case			Pier 2 Corner

Two way beam action at d_ / 2 from lower (ACI 22.6.5)- Uplift

Pier Reinforcement Dia	di_T =di -2*cc-2*db_t - 1*db_c	di_T =	28.000	in	
Eq. Square Column (ACI 8.10.1.3 & 22.6.4.1.2)	d_{eq_T} =dprebar / 2 * √π	d_{eq_T} =	24.81	in	
Critical Section Length:	b_{1_T} = deq_T + dc	b_{1_T} =	42.314	in	
Critical Section Perimeter:	b_{o_T} = 4 * (deq + dc)	b_{o_T} =	169.26	in	
Polar MOI:	J_{c_T} = (b1_T^3 * dc / 6)+ (b1_T * d ^3 / 6)+(dc * b1_T * b2_T^2 / 2)	J_{c_T} =	921710.251	in⁴	
Shear Force at Section:	$V_{n\_pier\_T}$ = U	$V_{n\_pier\_T}$ =	451.23	kips	
Required shear: φs = 0.75 [ACI 21.2.1]	= (Vn_pier_T / b1_T * dc) + (γv * Msc* c_T / Jc_T)		182.533	psi	
Available shear: [ACI 22.6.5.2]	= φs * MIN(4*λ*√(Fc) , (2+(4/β))*λ*√(Fc) , (2+(αs*dc/bo))*λ*√(Fc))		201.25	psi	
Check	V_{c2} = 201.25 psi >=	V_{n2} =	182.53	psi	OK

Column Compression Capacity:

Compression reaction: φc = 0.65 [ACI 21.2.2.2]	P_c = φc * 0.65 * F'c * (di² / 4 * π)	P_c =	2530.7	kips	
Check	P_c = 2530.69 kips >=	C =	520.18	kips	OK

Pier Reinforcement:

Cross-sectional area:	A_g = di² * π / 4	A_g =	1017.88	in²	
Min. area of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2]	A_{st_c} =Ag * 0.01	A_{st_c} =	10.18	in²	
Cage circle:	d_o = di - 2 * cc - db_c - 2 * db_t	d_o =	28.00	in	
Rebar:	s_c = 8	d_{b_c} = 1 in			
	m_c = 15	A_{b_c} = 0.79 in²			
	A_{s_c} = Ab_c * m_c	A_{s_c} =	11.85	in²	
Check	A_{s_c} = 11.85 in² >=	A_{st_c} =	10.18	in²	OK
Actual moment:	M_{max} = (D - T + E) * S / 2	M_{max} =	206.98	ft-kips	
Pier moment capacity:	M_{allow} per Mexmomnt.xls (see attached)	M_{allow} =	212.41	ft-kips	
Check	M_{allow} = 212.41 ft-kips >=	M_{max} =	206.98	ft-kips	OK
Bar separation:	B_{s_c} = (do * π) / m_c - db_c	B_{s_c} =	4.86	in	
Check	17 >= B_{s_c} = 4.86 in	>=	4"		OK

Vertical Rebar Development Length:

Reinforcement location: [ACI 25.4.2.4]	ψ_{t_c} = if the space under the rebar > 12 in, use 1.3, else use 1.0	ψ_{t_c} =	1.3		
Epoxy coating: [ACI 25.4.2.4]	ψ_{e_c} = if epoxy-coated bars are not used, use 1.0; but if epoxy-coated bars are used, then if Bs < 6 * db or cc < 3 * db, use 1.5, else 1.2	ψ_{e_c} =	1.0		
Max term: [ACI 25.4.2.4]	$\psi_t\psi_{e\_c}$ = the product of ψt & ψe, need not be taken larger than 1.7	$\psi_t\psi_{e\_c}$ =	1.3		
Reinforcement size: [ACI 25.4.2.4]	ψ_{s_c} = if the bar size is 6 or less, then use 0.8, else use 1.0	ψ_{s_c} =	1		
Light weight concrete: [ACI 25.4.2.4]	$\lambda_{\_c}$ = if lightwieght concrete is used, 0.75, else use 1.0	$\lambda_{\_c}$ =	1.0		
Spacing/cover: [ACI 25.4.2.4]	$c_{\_c}$ the smaller of: half the bar spacing or the concrete edge distace	$c_{\_c}$ =	2.93	in	
Transverse bars: [ACI 25.4.2.3]	k_{tr_c} = 0 in (per simplification)	k_{tr_c} =	0	in	
Max term: [ACI 25.4.2.3]	$c_{\_c}'$ = MIN(2.5, (c_c + ktr_c) / db_c)	$c_{\_c}'$ =	2.500		
Excess reinforcement: [ACI 25.4.10.1]	R_c = 1 (excess reinforcement reduction is not used)	$R_{\_c}$ =	1.00		
Development (tensile): [ACI 25.4.2.2]	$L_{dt}'_{\_c}$ = (3 / 40) * (Fy / λ_c * √(F'c)) * (ψtψe_c * ψs_c * R_c / c_c') * db_c	$L_{dt}'_{\_c}$ =	34.88	in	
Minimum length: [ACI 25.4.2.1]	L_{d_min} = 12 inches	L_{d_min} =	12.0	in	
Development length:	L_{dt_c} = MAX(Ld_min, Ldt'_c)	L_{dt_c} =	34.88	in	
Confining Reinforcement. [ACI 25.4.9.3]	ψ_{t_c} = 1	ψ_{t_c} =	1.00		
Development (comp.): [ACI 25.4.9.2]	$L_{dc}'_{\_c}$ = Fy * ψr_c * db_c * R_c / (50 * λ_c * √(F'c))	$L_{dc}'_{\_c}$ =	17.89	in	
	$L_{dc}''_{\_c}$ = 0.0003 * db_c * Fy * ψr_c * R_c	$L_{dc}''_{\_c}$ =	18.00	in	
Development length:	L_{dc_c} = MAX(8, Ldc'_c, Ldc"_c)	L_{dc_c} =	18.00	in	
Length available in pier:	L_{vc} = D - T + E - cc	L_{vc} =	66.0	in	
	Check L_{vc} = 66.0 in >= L_{dt_c} = 34.9 in				OK
	Check L_{vc} = 66.0 in >= L_{dc_c} = 18.0 in				OK
Length available in pad:	L_{vp} = T - cc	L_{vp} =	18.0	in	
	Check L_{vp} = 18.0 in >= L_{dt_c} = 34.9 in				HOOKS
	Check L_{vp} = 18.0 in >= L_{dc_c} = 18.0 in				OK

Vertical Rebar Hook Ending:

Bar size & clear cover: [ACI 25.4.3.2]	ψ_{t_h} = if the bar size <= 11 and side cc >= 2.5", use 0.7, else use 1.0	ψ_{t_h} =	0.7		
Epoxy coating: [ACI 25.4.3.1]	ψ_{e_h} = if epoxy-coated bars are used, use 1.2, else use 1.0	ψ_{e_h} =	1.0		
Light weight concrete: [ACI 25.4.3.1]	λ_h if lightwieght concrete is used, 0.75, else use 1.0	$\lambda_{\_h}$ =	1.0		
Confining Reinforcement: [ACI 25.4.3.2]	ψ_{t_h} = 1	ψ_{t_h} =	1.00		
Development (hook). [ACI 25.4.3.1]	L_{dh}' = (Fy * ψt_h * ψe_h * ψr_h * R_c / (50 * λ_h * √(F'c))) * db_c	L_{dh}' =	12.5	in	
Minimum length: [ACI 25.4.3.1]	L_{dh_min} the larger of: 8 * db or 6 in	L_{dh_min} =	8.0	in	
Development length:	L_{dh} = MAX(Ldh_min, Ldh')	L_{dh} =	12.5	in	
	Check L_{vp} = 18.0 in >= L_{dh} = 12.5 in				OK
Hook tail length:	L_{h_tail} 12 * db beyond the bend radius	L_{h_tail} =	16.0	in	
Length available in pad	L_{h_pad} = (W - w' - di) / 2	L_{h_pad} =	21	in	
	Check L_{h_pad} = 21.0 in >= L_{dh_tail} = 16.0 in				OK

Pier Ties:

Minimum size: [ACI 25.7.2.2]	s_{t_min} =IF(s_c <= 10, 3, 4)				s_{t_min} =	3	
z factor:	z = 0.5 if the seismic zone is less than 2, else 1.0				z =	1	
Tie parameters:	s_t = 4		d_{b_t} =	0.5 in			
	m_t = 14		A_{b_t} =	0.2 in^2			
Allowable tie spacing							
per vertical rebar [ACI 25.7.2.1] & [ACI 18.4.3.3]	$B_{s\_t\_max1}$ = 8 * db_c				$B_{s\_t\_max1}$ =	8	in
per tie size [ACI 25.7.2.1] & [ACI 18.4.3.3]	$B_{s\_t\_max2}$ = 24 * db_t				$B_{s\_t\_max2}$ =	12	in
per pier diameter [ACI 25.7.2.1] & [ACI 18.4.3.3]	$B_{s\_t\_max3}$ = di / 4				$B_{s\_t\_max3}$ =	9	in
per seismic zone [ACI 25.7.2.1] & [ACI 18.4.3.3]	$B_{s\_t\_max4}$ = 12" in active seismic zones, else 18"				$B_{s\_t\_max4}$ =	12	in
	$B_{s\_t\_max}$ = MIN(Bs_t_max1, Bs_t_max2, Bs_t_max3, Bs_t_max4)				$B_{s\_t\_max}$ =	8	in
	m_{t_min} = (D - T + E) / Bs_t_max + 2				m_{t_min} =	10.6	
	Check	m_t = 14.0		>=	m_{t_min} =	10.6	OK

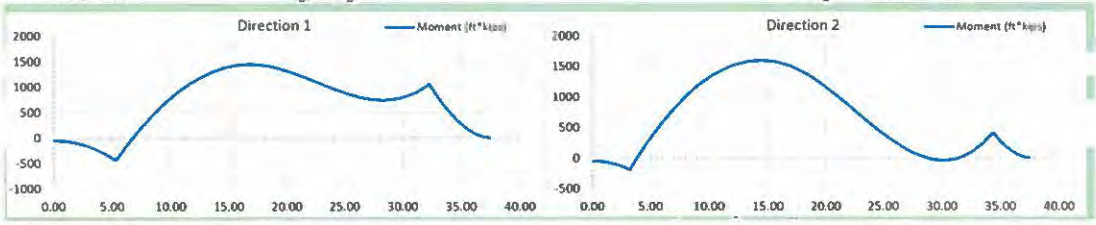
Anchor Steel:

A/S parameters:	P_{as} = 262357		L_{as} =	66 in			
	d_{as} = 1.75 in		E_{as} =	55.50 in			
Development available	L_{das} per Anchor Bolts (see attached)				L_{das} =	45.63	in
Required development	L_{das_min} per Anchor Bolts (see attached)				L_{das_min} =	34.88	in
	Check	L_{das} = 45.63 in		>=	L_{das_min} =	34.88	in OK
To bottom rebar grid:	E_{as_max} =D + E - cc - 2 * db_p				E_{as_max} =	85	in
	Check	E_{as} = 55.50 in		<=	E_{as_max} =	85.00	in OK
To top rebar grid:	rebar @ = D + E - T + cc				rebar @	72.00	in
	Check	72 + 6 in >=	E_{as} = 55.50	in or	<=	72 in	OK
Min. cage dia:	d_{o_min} per encsteel xls (see attached)				d_{o_min} =	25.25	in
	Check	d_o = 28.00 in		>=	d_{o_min} =	25.25	in OK

Pad Reactions:

Effective length in bearing: 20.07 ft
Effective length not bearing: 17.43 ft

Total Beam Length:	B_{L2_1} =W	B_{L2_1}=	37.5	ft
Location of Left Support:	S_{L2_1} =O	S_{L2_1}=	5.327	ft
Location of Right Support:	S_{R2_1} =W-O	S_{R2_1}=	32.17	ft
MDSolids Geometry Input (Option 2)				
Total Beam Length:	B_{L2_2} =W	B_{L2_2}=	37.5	ft
Location of Left Support:	S_{L2_2} =(W - w\) / 2	S_{L2_2}=	3.25	ft
Location of Right Support:	S_{R2_2} =S_{L2_2} + w\	S_{R2_2}=	34.25	ft



MDSolids Design Result

Direction 1:	M_{max2_1} =M_{max2_1}	M_{max2_1}=	1442.62	ft*kips
Direction 2:	M_{max2_2} =M_{max2_2}	M_{max2_2}=	1591.79	ft*kips
Diagonal	M_{max2_diag} =M_{max1_diag}	M_{max2_diag}=	2473.81	ft*kips
Max moment:	M_{maxp} =Max(Mmax2_1,Mmax2_2, Mmax2_diag)	M_{maxp}=	2473.81	ft*kips
Required moment:	M_n = Mmaxp / φt	M_n =	2748.68	ft*kips
φt = 0.9 [ACI 21.2.2.2]				

Pad Reinforcement:

	b = IF(F'c <= 4000, 0.85, IF(F'c >= 8000, 0.65, 0.85 - (F'c - 4000) * 0.05))				b =	0.825		
Effective width:	W_e = W				W_e =	37.500	ft	
	A_{st_p}' = Mn / (0.9 * Fy * dc)				A_{st_p}' =	34.904	in^2	
	a_p = Ast_p' * Fy / (β * F'c * We)				a_p =	1.25	in	
Required steel:	$A_{st\_p\_st}$ = Mn / (Fy * (dc - ap / 2)) * (W / We)				$A_{st\_p\_st}$ =	32.580	in^2	
Shrinkage:	r_{sh} = IF(Fy >= 60000, 0.0018, 0.002)				r_{sh} =	0.0018		
	$A_{st\_p\_sh}$ = psh * W * T / 2				$A_{st\_p\_sh}$ =	8.505	in^2	
	A_{st_p} = MAX(Ast_p_st, Ast_p_sh, Ast_p_ste1, Ast_p_ste2)				A_{st_p} =	32.580	in^2	
Rebar:	s_p = 8	*Equally spaced, top and*		d_{b_p} = 1	in			
	m_p = 42	*bottom, both directions.*		A_{b_p} = 0.79	in^2			
	A_{s_p} = Ab_p * m_p				A_{s_p} =	33.18	in^2	
	Check	A_{s_p} = 33.18	in^2	>=	A_{st_p} =	32.58	in^2	OK
Bar separation:	B_{s_p} = (W - 2 * cc - db_p) / (m_p - 1) - db_p				B_{s_p} =	9.80	in	
	Check	17	>=	B_{s_p} = 9.80	in	>=	4"	OK

Pad Development Length:

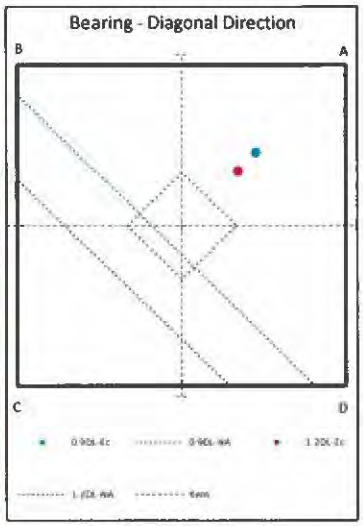
Reinforcement location: *[ACI 25.4.2.4]*	Ψt_p = if the space under the rebar > 12 in, use 1.3, else use 1.0	Ψt_p =	1.3			
Epoxy coating: *[ACI 25.4.2.4]*	Ψe_p = if epoxy-coated bars are not used, use 1.0; but if epoxy-coated bars are used, then if Bs < 6 * db or cc < 3 * db, use 1.5, else 1.2	Ψe_p =	1.0			
Max term: *[ACI 25.4.2.4]*	$\Psi\Psi e\_p$ = the product of ψt & ψe, need not be taken larger than 1.7	$\Psi\Psi e\_p$ =	1.3			
Reinforcement size: *[ACI 25.4.2.4]*	Ψs_p = if the bar size is 6 or less, then use 0.8, else use 1.0	Ψs_p =	1			
Light weight concrete: *[ACI 25.4.2.4]*	λ_p = if lightwieght concrete is used, 0.75, else use 1.0	λ_p =	1.0			
Spacing/cover: *[ACI 25.4.2.4]*	c_p = the smaller of: half the bar spacing or the concrete edge distace	c_p =	3.50	in		
Transverse bars: *[ACI 25.4.2.3]*	k_{tr_p} = 0 in (per simplification)	k_{tr_p} =	0	in		
Max term: *[ACI 25.4.2.3]*	c_p' = MIN(2.5, (c_p + ktr_p) / db_p)	c_p' =	2.500			
Excess reinforcement: *[ACI 25.4.10.1]*	R_p = 1 *(excess reinforcement reduction is not used)*	R_p =	1.00			
Development (tensile): *[ACI 25.4.2.2]*	L_d = (3 / 40) * (Fy / λ_p * √(F'c)) * ψtψe_p * ψs_p * R_p * db_p / c_p'_u	L_{dp}' =	34.9	in		
Minimum length: *[ACI 25.4.2.1]*	L_{d_min} = 12 inches	L_{d_min} =	12.0	in		
Development length:	L_{dp} = MAX(Ld_min, Ldp')	L_{dp} =	34.9	in		
Length available in pad:	L_{pad} = (W / 2 - w' / 2) - cc	L_{pad} =	36.0	in		
	Check L_{pad} = 36.00 in	>=	L_{dp} =	34.88	in	OK

UNIT BASE FOUNDATION DIAGONAL BEARING CHECK

VB BTS II, LLC **V- 31.0 290**

US-KY-5135 Fancy Farm **A- 565090**

		Load Case - DL 1.2	Load Case - DL 0.9	
Moment of Inertia of Mat	MOI	164794.92	164794.92	ft^4
Total Factored Weight	P'	1514.75	1136.06	kips
Load Eccentricity	e	9.04	12.06	ft
Bearing at Corner A	B_{c_a}	3.28	3.01	ksf
Bearing at Corner B	B_{c_b}	1.08	0.81	ksf
Bearing at Corner C	B_{c_c}	-1.13	-1.40	ksf
Bearing at Corner D	B_{c_d}	1.08	0.81	ksf
Initial Location of Neutral Axis from C	NA_{c_ini}	13.56	16.80	ft
Calculated Location of Neutral Axis from C	NA_{c_cal}	17.10	24.09	ft
MOI for Effective Bearing Area	MOI	275305.66	117004.22	ft^4
Distance to Point Load from NA	$L_{p'}$	18.46	14.49	ft
Effective Length in Bearing along AB & AD	W_{eff}	37.50	37.50	ft
Total Vol.	Vol_{tot}	1514.75	1136.06	kips
Difference		-0.0002	0.0000	kips
		ok	ok	
Adjusted Bearing at A	$B_{c\_a\_adj}$	3.6505	4.0723	ksf
Adjusted Bearing at B & D	$B_{c\_bd\_adj}$	0.96	0.34	ksf
Maximum Diagonal Bearing Pressure	$B_{c\_dia\_max}$	3.6505	4.0723	ksf
Bearing Available	$B_c * \varphi r$	5.2500	5.2500	ksf
Check		OK	OK	



THIS SPREADSHEET IS SET UP FOR A MAXIMUM OF 56 BARS.
MAXIMUM FACTORED MOMENT OF A CIRCULAR SECTION

Loading (negative for compression)		
Axial load =	451.23	kips

Foundation		
Concrete		
Pier diameter =	3.00	ft
Pier area =	1017.9	in^2
Reinforcement		
Clear cover =	3.00	in
Cage diameter =	2.33	ft
Bar size =	8	
Bar diameter =	1.000	in
Bar area =	0.785	in^2
Number of bars =	15	

Material Strengths			
Concrete compressive strength =	4500	psi	
Reinforcement yield strength =	60000	psi	
Modulus of elasticity =	29000	ksi	
Reinforcement yield strain =	0.00207		(per ACI 10.3.5 - OK)
Limiting compressive strain =	0.003		

Seismic	
SDC =	D
Are hooks required?	yes

Minimum Area of Steel

Required area of steel =	10.18	in^2	
Actual area of steel =	11.78	in^2	OK
Bar spacing =	5.28	in	

Axial Loading

Load factor =	1.00		
Reduction factor =	0.65575	(per ACI 9.3.1 & 2)	0.6557471
Factored axial load =	451.23	kips	

Neutral Axis

Distance from extreme edge to neutral axis =	3.85	in	
Equivalent compression zone factor =	0.825	(per ACI 10.2.7.3)	
Distance from extreme edge to Equivalent compression zone factor =	3.18	in	
Distance from centroid to neutral axis =	14.15	in	

Compression Zone

Area of steel in compression zone =	0.00	in^2	
Angle from centroid of pier to intersection of equivalent compression zone and edge of pier =	34.58	deg	
Area of concrete in compression =	44.13	in^2	44.130982
Force in concrete = 0.85 * f'c * (Acc - steel in comp zone) =	168.80	kips	(per ACI 10.3.6.2)
Total reinforcement forces =	-620.03	kips	
Factored axial load =	451.23	kips	
Force in concrete =	-168.80	kips	
Sum of the forces in concrete =	0.00	kips	OK

Maximum Moment

First moment of the concrete area in compression about the centoid =			710.62	in^3
Distance between centroid of concrete in compression and centroid of pier =			16.10	in
Moment of concrete in compression =	2718.12	in-kips		
Total reinforcement moment =	1168.94	in-kips		
Nominal moment strength of column =	3887.06	in-kips		
Factored moment strength of column =	2548.93	in-kips	212.41	ft-kips

Maximum allowable moment of the pier =	212.41	ft-kips

Individual Bars

Bar #	Angle from first bar (deg)	Distance to centroid (in)	Distance to neutral axis (in)	Distance to equivalent comp. zone (in)	Strain	Area of steel in compression (in^2)	Axial force (kips)	Moment (in-kips)
1	0.00	0.00	-14.15	-14.82	-0.01101	0.00	-47.12	0.00
2	24.00	5.69	-8.45	-9.13	-0.00658	0.00	-47.12	-268.34
3	48.00	10.40	-3.74	-4.42	-0.00291	0.00	-47.12	-490.28
4	72.00	13.31	-0.83	-1.51	-0.00065	0.00	-14.74	-196.29
5	96.00	13.92	-0.22	-0.90	-0.00017	0.00	-3.95	-55.03
6	120.00	12.12	-2.02	-2.70	-0.00157	0.00	-35.85	-434.65
7	144.00	8.23	-5.92	-6.59	-0.00461	0.00	-47.12	-387.78
8	168.00	2.91	-11.24	-11.91	-0.00875	0.00	-47.12	-137.17
9	192.00	-2.91	-17.06	-17.73	-0.01328	0.00	-47.12	137.17
10	216.00	-8.23	-22.38	-23.05	-0.01742	0.00	-47.12	387.78
11	240.00	-12.12	-26.27	-26.95	-0.02045	0.00	-47.12	571.35
12	264.00	-13.92	-28.07	-28.74	-0.02185	0.00	-47.12	656.12
13	288.00	-13.31	-27.46	-28.14	-0.02138	0.00	-47.12	627.44
14	312.00	-10.40	-24.55	-25.22	-0.01911	0.00	-47.12	490.28
15	336.00	-5.69	-19.84	-20.51	-0.01545	0.00	-47.12	268.34

DEVELOPMENT LENGTH CHECK OF PIER REINFORCEMENT

Foundation:	Pier diameter =	3.0	ft	Cover between side of pier and cage =	3.00	in.
	Cage diameter =	2.33	ft	Cover between top of pier and cage =	3.00	in.
	Rebar size =	8		Compressive strength of concrete =	4500	psi
	Number of bars =	15		Rebar yield strength =	60000	psi
	Clear spacing =	4.86	in.			
	Are there hooks?	n				
	Check Compression?	n				
Anchor Steel:	Part number:	262357				
	Embedment length =	55.5	in.			
	Bolt Diameter =	1.75				
Anchor Plate:	Part number:	281262				
	Plate width =	19.25	in.			
	Required development length (compression) =	999.00	in.			
	Required development length (tension) =	34.88	in.			
	Available development length =	45.625	in.			

OK

The length available in the pier for the development of the vertical reinforcement exceeds the required length (ACI 318-14, section 25.4).

CHECK EMBEDMENT PLATE CLEARANCE IN THE PIER

Foundation:	Pier diameter =	3.0	ft	Cover between side of pier and cage =	3.00	in.
	Cage diameter =	2.333333	ft	Minimum cover between A/S and cage =	3.00	in.
Anchor Steel:	Part number:	262357		Angle of anchor steel in foundation =	0	degrees
	Embedment length =	55.5	in.			
Anchor Plate:	Part number:	281262				
	Largest plate width =	19.25	in.			
	Bolt Diameter =	1.75	in.			
	Minimum cage diameter =	25.25	in.			
	Actual cage diameter =	28	in.			

OK

The available space exceeds the minimum cage diameter required for anchor steel installed in the pier at an angle.

SELF-SUPPORT TOWER FOUNDATION DESIGN SUMMARY

VB BTS II, LLC
US-KY-5135 Fancy Farm

V- 31 290
A- 565090

v 2.8

Pier Dimensions		
Pier diameter, d_i:	4.00	ft
Depth, D:	36.5	ft
Ext. above grade, E:	0.50	ft
Bell diameter, b_d:	none	ft
Volume, V_o:	17.22	cy / leg

Reinforcement Design			
Rebar	m_c:	23	verticals
	size, s_c:	8	equally spaced in 3.5' cage
Ties	size, s_t:	4	default hook
	m_t:	46	tie qty

* Rebar quantities shown above are per pier

Anchor Bolts		
P/N:	262357	66" long, 1.75" diameter

Soil Information Per:
POD, Project No. 20-64965, Dated: March 23, 2022

Site Parameters		
Ultimate Bearing, B_c:	16.500	ksf
Ultimate Pp:	0.846	kcf
Ult. Skin Friction, SF:	1.325	ksf
Seismic Design Cat.:	D	
Depth neglected, N:	4.00	ft
Neglect bottom, N_b:	none	ft

Additional Notes:

* No foundation modifications listed.

* See attached "Foundation Notes" for further information.

Material Properties		
Steel tensile str, F_y:	60000	psi
Conc. Comp. str, F'_c:	4500	psi
Conc. Density, δ:	150.0	pcf
Clear cover, cc:	3.00	in

Tower design conforms to the following:

* *International Building Code (IBC)*

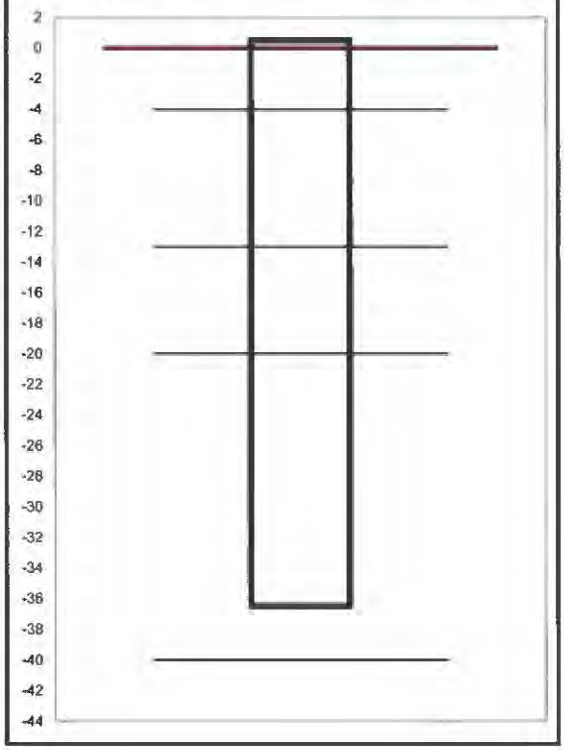
* *ANSI TIA-222-G*

* *Building Code Requirements for Reinforced Concrete (ACI 318-14)*

Foundation Loading

Max Corner Reactions	stress ratio: 95.5%		mark up: 1.4%	
Shear/Leg, S:	47.00 kips	x 1.014 =	47.66 kips
Moment/Leg, M:	0.00 ft-kips	x 1.014 =	0.00 ft-kips
Compression/Leg, C:	513.00 kips	x 1.014 =	520.18 kips
Uplift/Leg, U:	445.00 kips	x 1.014 =	451.23 kips

View of Foundation (not to scale)



Digitally signed by Nathan Ross
Date: 2022-10-06 09:29-07:00

FOUNDATION NOTES

1. THE ON-SITE GEOTECHNICAL ENGINEER SHALL CONFIRM THAT THE INSITU SOIL STRENGTHS MEET OR EXCEED THOSE PARAMETERS GIVEN IN THE SOIL REPORT.
2. SEE GEOTECHNICAL REPORT FOR ADDITIONAL CONSTRUCTION RECOMMENDATIONS, BACKFILL COMPACTION DETAIL, SUBGRADE PREPARATION, ETC.
3. CONCRETE IS TO BE PLACED THE SAME DAY THAT THE EXCAVATION IS COMPLETED.
4. A TEMPORARY, FULL LENGTH STEEL CASING MAY BE REQUIRED DURING INSTALLATION.

SST DRILLED PIER FOUNDATION

VB BTS II, LLC V- 31.0 290 v 3.0
US-KY-5135 Fancy Farm A- 565090

Design Summary		
Pier diameter:	4.00	ft
Design depth:	36.5	ft
Concrete volume:	17.22	cu.yd. each

Maximum Loading		
Max. Uplift, U_{max}:	451.23	kips/leg
Max. Comp., C_{max}:	602.83	kips/leg
Max. Shear, S_{max}:	47.66	kips/leg

Soil per: POD, Project No. 20-64965, Dated: March 23, 2022

Use #4 circular ties.
Min. concrete compressive strength to be 4500 psi.
Use anchor bolt p/n 135818

Ultimate bearing: 16.500 ksf
Ultimate S F (uplift): 1.325 ksf
Ultimate S F (comp.): 1.325 ksf

Skin friction by: Given

Layer #	From (ft)	To (ft)	Cont. layer length (ft)	Pier diameter (ft)	Cohesion (ksf)	Phi (deg)	Unit weight of soil (pcf)	Overburden pressure (ksf)	Average overburden pressure (ksf)	Uplift Resistance: Factored skin friction (ksf)	Factored friction force (kips)	Factored concrete weight (kips)	Uplift Resist. (kips)	Compression Resistance: Factored skin friction (ksf)	Factored friction force (kips)	Factored bearing capacity (ksf)
1	0.00	4.00	4.00	4.00	0.500	0.000	110.0	0.440	0.220	0.000	0.00	6.36	6.36	0.000	0.00	-
2	4.00	13.00	9.00	4.00	1.500	0.000	120.0	1.520	0.980	0.300	33.93	12.72	46.65	0.300	33.93	-
3	13.00	20.00	7.00	4.00	2.000	0.000	120.0	2.360	1.840	0.375	32.99	9.90	42.88	0.375	32.99	-
4	20.00	36.50	16.50	4.00	0.000	32.000	90.0	3.845	3.103	1.875	388.77	23.33	412.10	1.875	388.77	12.38
	Lateral pressure coefficient =		0.6								Total Uplift Capacity (kips) =		508.00	Total friction capacity (kips) =		455.69
													OK	Factored Tip capacity (kips) =		155.51
										Weighted Average Skin Friction (ultimate) =	uplift	1.325	ksf	Total Comp. Capacity (kips) =	611.20
											compression	1.325	ksf			OK

Reinforcement Design:

Concrete Clear Cover (in) = 3.00

# of bars	Bar size #	Area per bar (sq.in.)	Clear spacing (in.)	Bar area (sq.in.)	Steel required (sq.in.)	Ultimate Lateral Resist (kcf) *	Minimum length (ft) **
23	8	0.79	4.74	18.17	18.10	0.846	12.70

Moment Check (ft-k)	
Induced *	261.06
φ Capacity ***	694.78
	OK

* see Passive (attached)
* see Broms method (attached)
*** see Maximum Factored Moment of a Circular Section (attached).

Minimum area of steel is OK
Minimum pier length is OK
Rebar spacing is OK

Equivalent Weighted Average Cohesion

Layer	From (ft)	To (ft)	Layer Length (ft)	Neglect?	Cohesion (ksf)	Weighted Cohesion (ksf)
1	0.00	4.00	0.00	y	0.500	0.00
2	4.00	13.00	9.00	n	1.500	13.50
3	13.00	20.00	7.00	n	2.000	14.00
4	20.00	36.50	16.50	n	0.000	0.00
5	36.50	36.50	0.00	n	0.000	0.00
6	36.50	36.50	0.00	n	0.000	0.00
7	36.50	36.50	0.00	n	0.000	0.00
8	36.50	36.50	0.00	n	0.000	0.00
9	36.50	36.50	0.00	n	0.000	0.00
10	36.50	36.50	0.00	n	0.000	0.00
11	36.50	36.50	0.00	n	0.000	0.00
12	36.50	36.50	0.00	n	0.000	0.00
13	36.50	36.50	0.00	n	0.000	0.00
14	36.50	36.50	0.00	n	0.000	0.00
15	36.50	36.50	0.00	n	0.000	0.00
16	36.50	36.50	0.00	n	0.000	0.00
17	36.50	36.50	0.00	n	0.000	0.00
18	36.50	36.50	0.00	n	0.000	0.00
19	36.50	36.50	0.00	n	0.000	0.00
20	36.50	36.50	0.00	n	0.000	0.00
Bell	36.50	36.50	0.00	n	0.000	0.00
		Total =	32.50		Total =	27.50

Weighted Average Equivalent Cohesion =	0.85	(ksf)

Broms Method for Laterally Loaded Caissons ,Piles,or Piers in Clay

(Reference "Drilled Shafts: Construction Procedures and Design Methods", ADSC No. ADSC-TL-4, August 1988

revised for LRFD

			S/leg (kips)	M/leg (k-ft)
Diameter of pier, d_i:	4.00	ft		
Extension above grade, E:	0.50	ft		
Neglect at ground surface, N:	4.00	ft		
Ultimate Passive Pressure, P_p:	0.846	kcf	LC 47.66	0
Reduction Factor, f:	0.75			
Nominal Passive Pressure (P_p*f), P_{pa}:	0.635	kcf		
# of pier dia P_p acts over, N_d:	3.00			

Depth to Max. M, F (ft)

$$F = S / ((N_d / 3) * 9 * P_p * d_i)$$

LC
1.56

Solved Brom's Equation for G_a (ft)

$$G_a = \sqrt{((S * (E + N + F / 2) + M) / ((N_d / 3) * 2.25 * P_{pa} * d_i))}$$

LC
6.64

Minimum length of pier, L (ft)

$$L = E + N + F + G_a$$

LC
12.70

Minimum length req'd, **L**: 12.70 ft

Max induced moment, M_u (k-ft)

$$M_u = S * (E + N + F) + M - (N_d / 3 * 9 * P_{pa} * d_i * F^2 / 2)$$

LC
261.06

THIS SPREADSHEET IS SET UP FOR A MAXIMUM OF 56 BARS.
MAXIMUM FACTORED MOMENT OF A CIRCULAR SECTION

Loading (negative for compression)		
Axial load =	451.23	kips

Foundation		
Concrete		
Pier diameter =	4.00	ft
Pier area =	1809.6	in^2
Reinforcement		
Clear cover =	3.00	in
Cage diameter =	3.33	ft
Bar size =	8	
Bar diameter =	1.000	in
Bar area =	0.785	in^2
Number of bars =	23	

Material Strengths			
Concrete compressive strength =	4500	psi	
Reinforcement yield strength =	60000	psi	
Modulus of elasticity =	29000	ksi	
Reinforcement yield strain =	0.00207		(per ACI 10.3.5 - OK)
Limiting compressive strain =	0.003		

Seismic	
SDC=	D
Are hooks required?	yes

Minimum Area of Steel

Required area of steel =	18.10	in^2	
Actual area of steel =	18.06	in^2	No Good !!!
Bar spacing =	4.74	in	

Axial Loading

Load factor =	1.00	
Reduction factor =	0.65575	(per ACI 9.3.1 & 2)
Factored axial load =	451.23	kips

Neutral Axis

Distance from extreme edge to neutral axis =	5.93	in	
Equivalent compression zone factor =	0.825		(per ACI 10.2.7.3)
Distance from extreme edge to Equivalent compression zone factor =	4.90	in	
Distance from centroid to neutral axis =	18.07	in	

Compression Zone

Area of steel in compression zone =	1.57	in^2	
Angle from centroid of pier to intersection of equivalent compression zone and edge of pier =	37.25	deg	
Area of concrete in compression =	96.95	in^2	
Force in concrete = 0.85 * f'c * (Acc - steel in comp zone) =	364.83	kips	(per ACI 10.3.6.2)
Total reinforcement forces =	-816.06	kips	
Factored axial load =	451.23	kips	
Force in concrete =	-364.83	kips	
Sum of the forces in concrete =	0.00	kips	OK

Maximum Moment

First moment of the concrete area in compression about the centoid =			2043.81	in^3
Distance between centroid of concrete in compression and centroid of pier =			21.08	in
Moment of concrete in compression =	7690.92	in-kips		
Total reinforcement moment =	5023.33	in-kips		
Nominal moment strength of column =	12714.25	in-kips		
Factored moment strength of column =	8337.33	in-kips	694.78	ft-kips

Maximum allowable moment of the pier =	694.78	ft-kips

Individual Bars

Bar #	Angle from first bar (deg)	Distance to centroid (in)	Distance to neutral axis (in)	Distance to equivalent comp. zone (in)	Strain	Area of steel in compression (in^2)	Axial force (kips)	Moment (in-kips)
1	0.00	0.00	-18.07	-19.10	-0.00913	0.00	-47.12	0.00
2	15.65	5.40	-12.67	-13.71	-0.0064	0.00	-47.12	-254.28
3	31.30	10.39	-7.67	-8.71	-0.00388	0.00	-47.12	-489.70
4	46.96	14.62	-3.45	-4.49	-0.00174	0.00	-39.71	-580.42
5	62.61	17.76	-0.31	-1.35	-0.00016	0.00	-3.54	-62.94
6	78.26	19.58	1.52	0.48	0.00077	0.79	17.46	341.84
7	93.91	19.95	1.89	0.85	0.00095	0.79	21.74	433.72
8	109.57	18.85	0.78	-0.26	0.00039	0.00	8.98	169.18
9	125.22	16.34	-1.73	-2.76	-0.00087	0.00	-19.87	-324.74
10	140.87	12.62	-5.44	-6.48	-0.00275	0.00	-47.12	-594.79
11	156.52	7.97	-10.10	-11.14	-0.0051	0.00	-47.12	-375.48
12	172.17	2.72	-15.34	-16.38	-0.00776	0.00	-47.12	-128.33
13	187.83	-2.72	-20.79	-21.83	-0.01051	0.00	-47.12	128.33
14	203.48	-7.97	-26.03	-27.07	-0.01316	0.00	-47.12	375.48
15	219.13	-12.62	-30.69	-31.73	-0.01551	0.00	-47.12	594.79
16	234.78	-16.34	-34.40	-35.44	-0.01739	0.00	-47.12	769.98
17	250.43	-18.85	-36.91	-37.95	-0.01866	0.00	-47.12	888.06
18	266.09	-19.95	-38.02	-39.06	-0.01922	0.00	-47.12	940.28
19	281.74	-19.58	-37.65	-38.69	-0.01903	0.00	-47.12	922.77
20	297.39	-17.76	-35.82	-36.86	-0.01811	0.00	-47.12	836.81
21	313.04	-14.62	-32.68	-33.72	-0.01652	0.00	-47.12	688.80
22	328.70	-10.39	-28.46	-29.50	-0.01439	0.00	-47.12	489.70
23	344.35	-5.40	-23.46	-24.50	-0.01186	0.00	-47.12	254.28

DEVELOPMENT LENGTH CHECK OF PIER REINFORCEMENT

Foundation:	Pier diameter =	4.0	ft	Cover between side of pier and cage =	3.00	in.
	Cage diameter =	3.5	ft	Cover between top of pier and cage =	3.00	in.
	Rebar size =	8		Compressive strength of concrete =	4500	psi
	Number of bars =	23		Rebar yield strength =	60000	psi
	Clear spacing =	4.74	in.			
	Are there hooks?	n				
	Check Compression?	n				
Anchor Steel:	Part number:	262357				
	Embedment length =	55.5	in.			
	Bolt Diameter =	1.75				
Anchor Plate:	Part number:	281262				
	Plate width =	19.25	in.			
	Required development length (compression) =	999.00	in.			
	Required development length (tension) =	26.83	in.			
			in.			
	Available development length =	38.625	in.			

OK

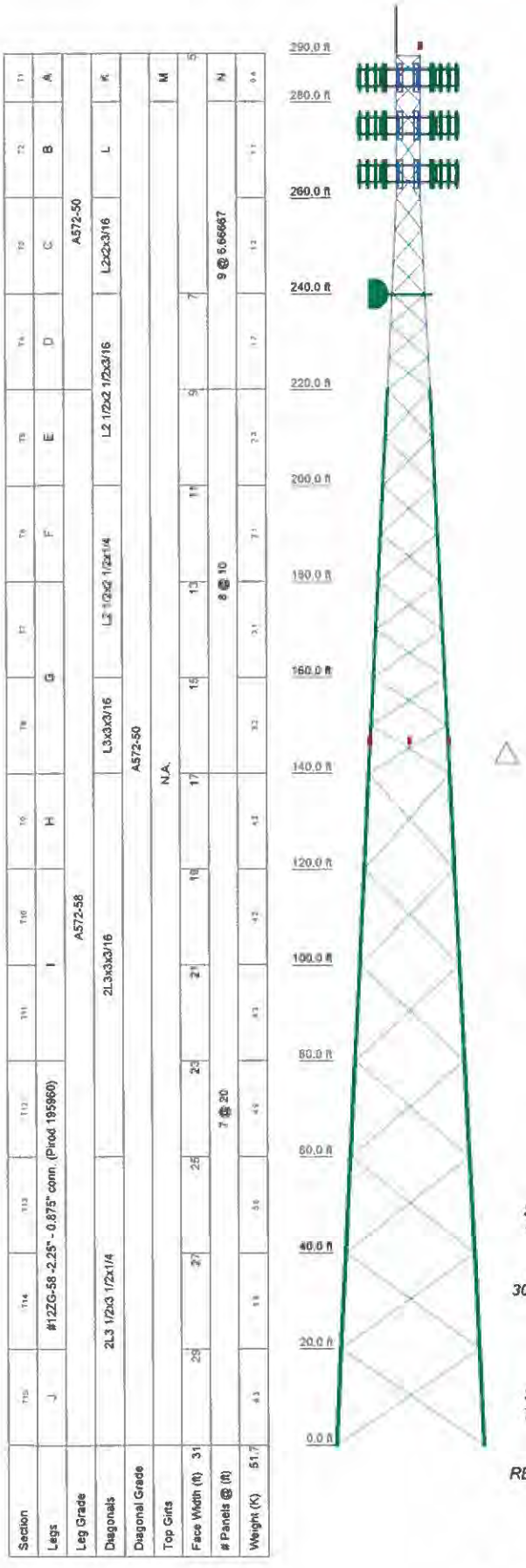
The length available in the pier for the development of the vertical reinforcement exceeds the required length (ACI 318-14, section 25.4).

CHECK EMBEDMENT PLATE CLEARANCE IN THE PIER

Foundation:	Pier diameter =	4.0	ft	Cover between side of pier and cage =	3.00	in.
	Cage diameter =	3.5	ft	Minimum cover between A/S and cage =	3.00	in.
Anchor Steel:	Part number:	262357		Angle of anchor steel in foundation =	0	degrees
	Embedment length =	55.5	in.			
Anchor Plate:	Part number:	281262				
	Largest plate width =	19.25	in.			
	Bolt Diameter =	1.75	in.			
	Minimum cage diameter =	25.25	in.			
	Actual cage diameter =	42	in.			

OK

The available space exceeds the minimum cage diameter required for anchor steel installed in the pier at an angle.



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
5/8" x 10' lightning rod	290	2-1/2" x 7' Sch. 40	240
Beacon	290	2-1/2" x 7' Sch. 40	240
40,000 sq.in. (277.8 sq.ft. EPA)	285	6' HP	240
30,000 sq.in. (208.3 sq.ft. EPA)	275	OB light	145
30,000 sq.in. (208.3 sq.ft. EPA)	265	OB light	145
SP1 R5 (Includes 4.5"x72" Pipe)	240	OB light	145

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	P- 2.50" - 0.75" conn.-10' -C-(Pirod 226172)	H	#12ZG-58 -2.00" - 0.875" conn.-TR3-(Pirod 195837)
B	P- 4.00"- 0.75" conn.-20' -C-Trans-6B-4B-(Pirod 226184)	I	#12ZG-58 -2.00" - 0.875" conn. (Pirod 195639)
C	P- 5.00"- 0.75" conn.-Trans-20' -C-(Pirod 226200)	J	#12ZG-58 BASE - 2.50" - 0.875" conn.-TR4-(Pirod 281171)
D	P- 6.00"- 0.75" conn.-HBD-Trans-20' -C-(Pirod 229377)	K	L2x2x1/8
E	#12ZG-58 - 1.50" - 1.00" conn. (Pirod 194651)	L	L2 1/2x2 1/2x3/16
F	#12ZG-58 - 1.75" - 1.00" conn.-TR1-(Pirod 195213)	M	L3x3x1/4
G	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	N	2 @ 4.79167

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A572-58	58 ksi	75 ksi

TOWER DESIGN NOTES

1. Tower is located in Graves County, Kentucky.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 106 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 30 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. A KA Factor of 1.00 has been applied to the anchor tenant EPA loading (for shielding).
9. A KA factor of 0.82 has been applied to EPA loading for other 2 carriers (for shielding).
10. TOWER RATING: 98.6%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 513 K
SHEAR 47 K

UPLIFT -445 K
SHEAR 41 K

AXIAL 281 K
SHEAR 11 K
MOMENT 2312 kip-ft
TORQUE 8 kip-ft
30 mph WIND - 1.0000 in ICE

AXIAL 90 K
SHEAR 71 K
MOMENT 12978 kip-ft
TORQUE 48 kip-ft
REACTIONS - 106 mph WIND

STATE OF KENTUCKY
NATHAN ANDREW ROSS
35794
LICENSED PROFESSIONAL ENGINEER

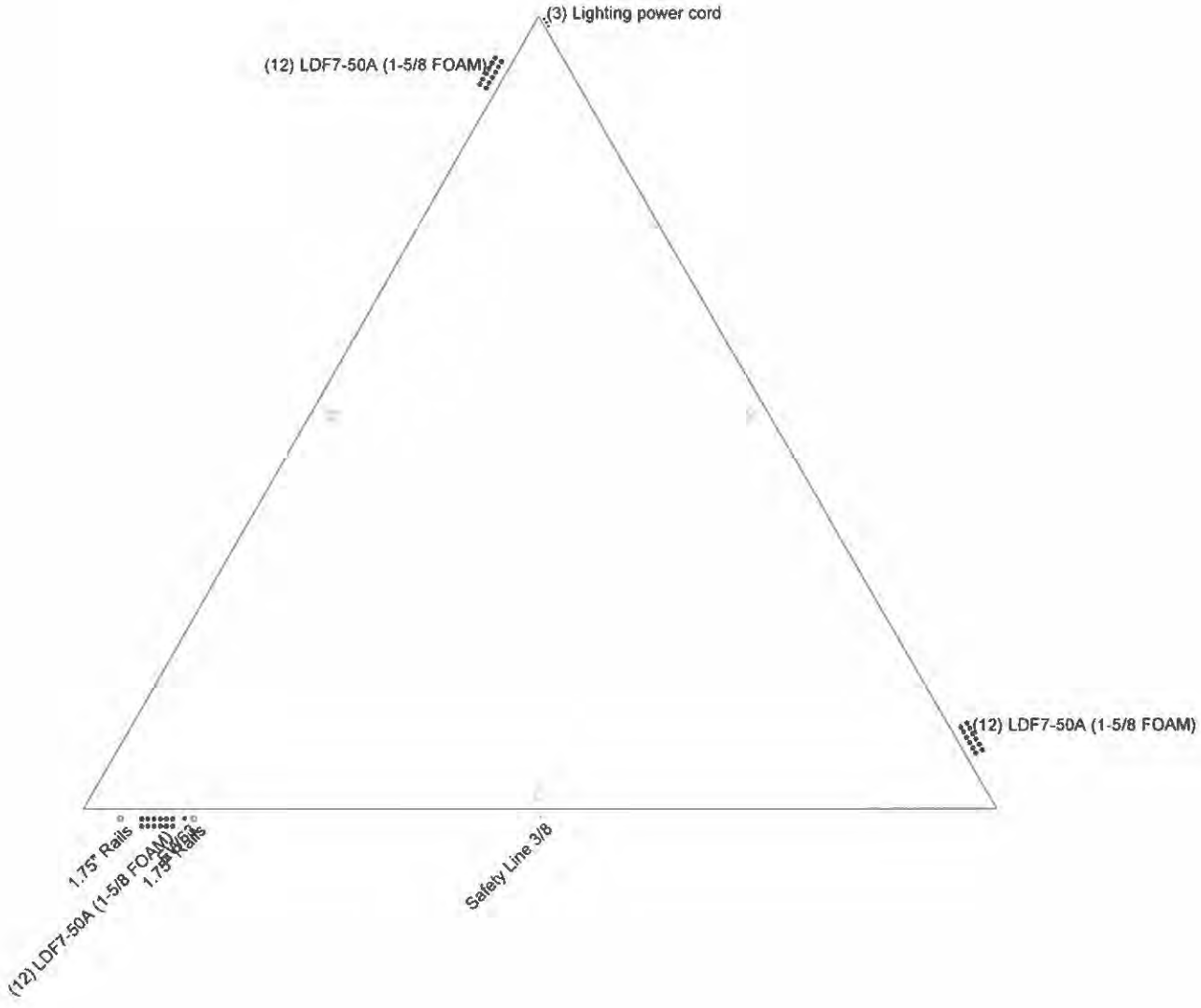
Digitally signed by Nathan A Ross
Date: 2022-10-06 09:25-07:00

valmont STRUCTURES
Valmont Industries, Inc. -Specialty Structures Group
1545 Pidco Dr.
Plymouth, IN
Phone: (574)-936-4221
FAX: (574)-936-6458

Job: 565090		
Project: H-31 x290' SST - US-KY-5135 Fancy Farm		
Client: VB BTS II, LLC	Drawn by: JL	App'd:
Code: TIA-222-G	Date: 10/06/22	Scale: NTS
Path: Z:\Documents\565000\565090 VB BTS II - US-KY-5135 Fancy Farm\02 Tower Calcs\565090.eri		Dwg No. E-1

Feed Line Plan

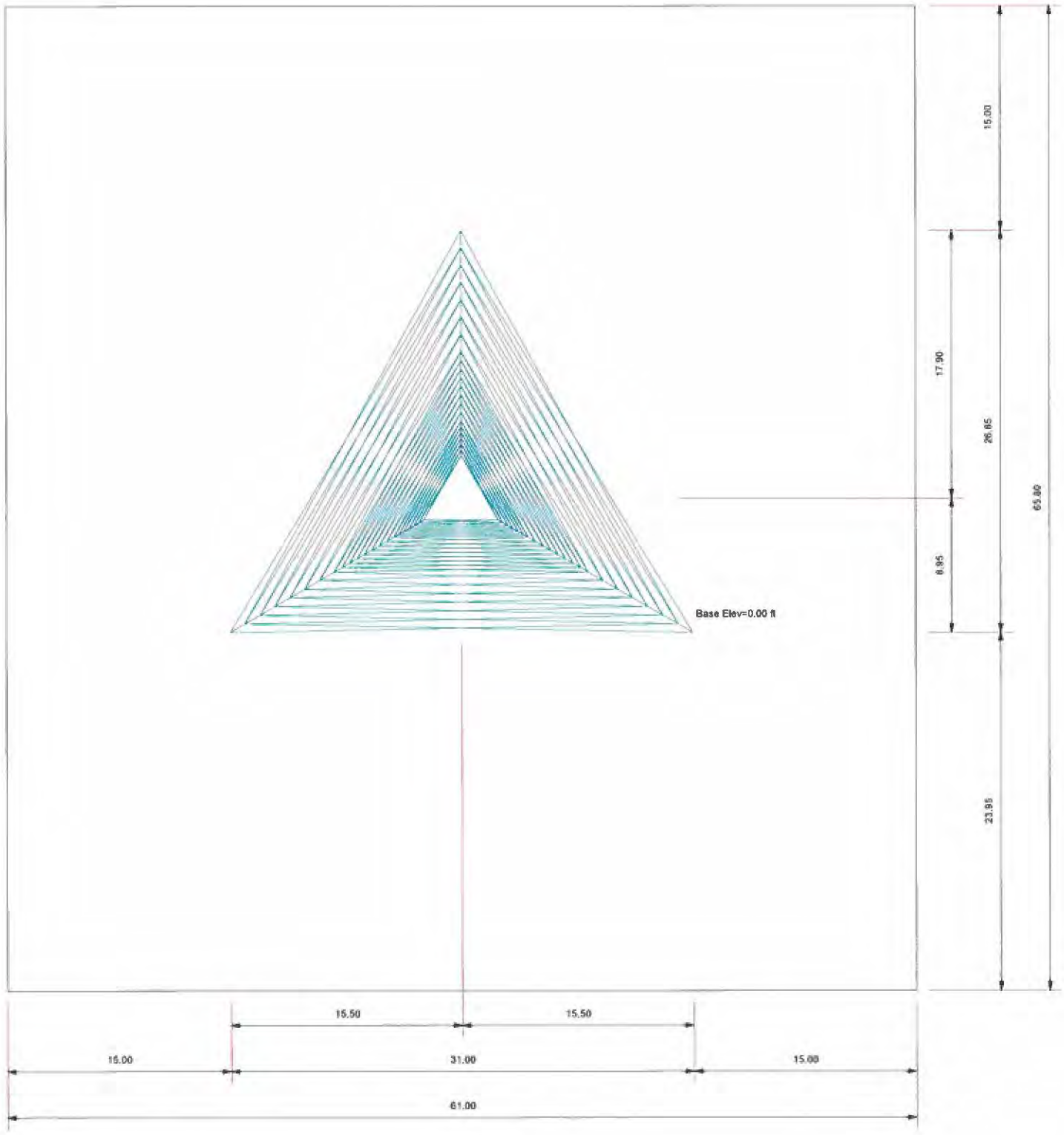
_____ Round _____ Flat _____ App In Face _____ App Out Face _____ Truss-Leg



valmont STRUCTURES
Valmont Industries, Inc. -Specialty Structures Group
1545 Pidco Dr.
Plymouth, IN
Phone: (574)-936-4221
FAX: (574)-936-6458

Job: 565090		
Project: H-31 x290' SST - US-KY-5135 Fancy Farm		
Client: VB BTS II, LLC	Drawn by: JL	App'd
Code: TIA-222-G	Date: 10/06/22	Scale: NTS
Path: Z:\Documents\565090\565090 VB BTS II - US-KY-5135 Fancy Farm\02 Tower Calcs\565090.eri		Dwg No. E-7

Plot Plan
Total Area - 0.09 Acres

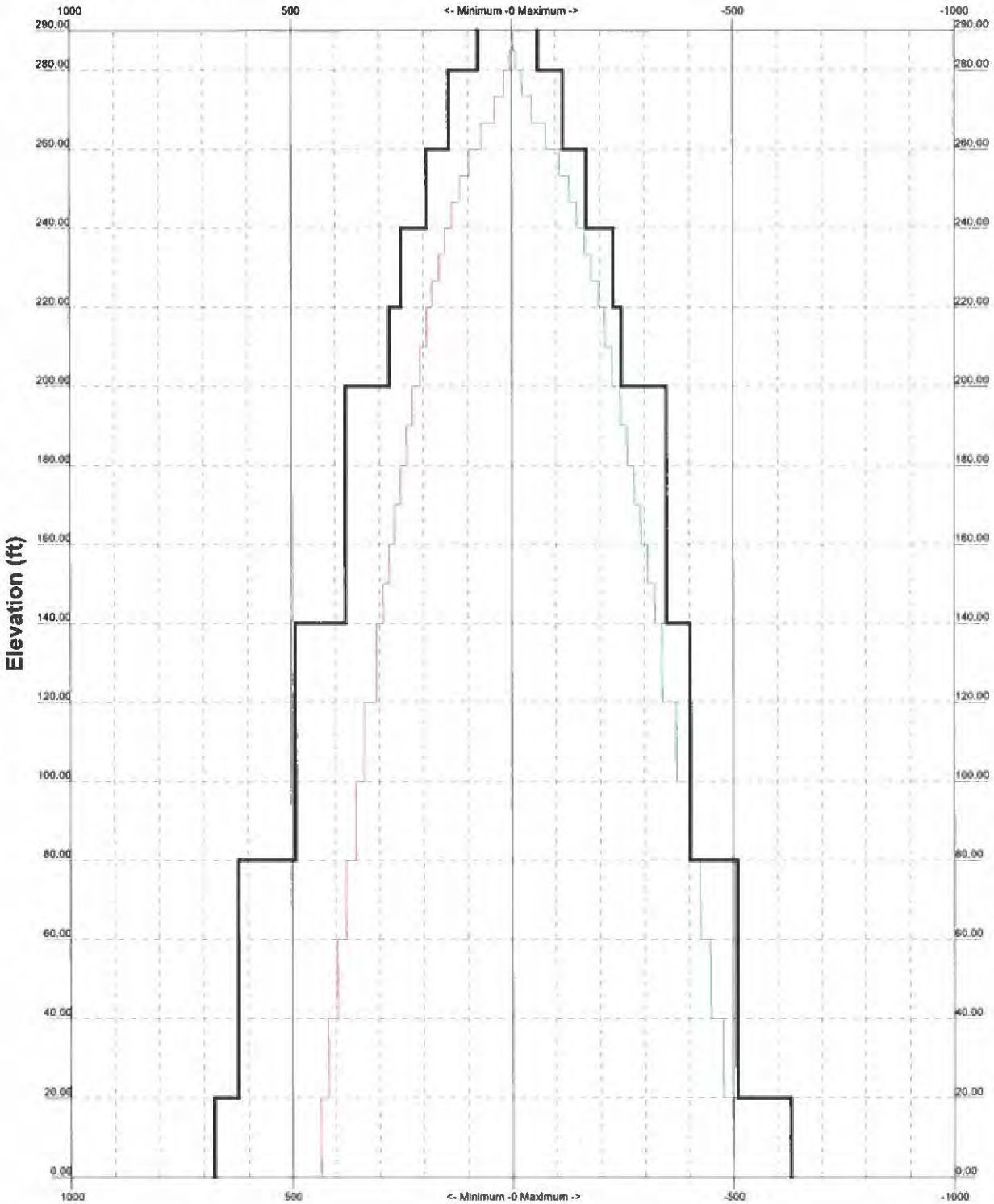


valmont STRUCTURES
Valmont Industries, Inc. -Specialty Structures Group
1545 Pidco Dr.
Plymouth, IN
Phone: (574)-936-4221
FAX: (574)-936-6458

Job: 565090			
Project: H-31 x290' SST - US-KY-5135 Fancy Farm			
Client: VB BTS II, LLC	Drawn by: JL	App'd:	
Code: TIA-222-G	Date: 10/06/22	Scale: NTS	
Path: Z:\Documents\565090 VB BTS II - US-KY-5135 Fancy Farm\02 Tower Calcs\565090.eri		Dwg No. E-2	

TIA-222-G - 106 mph/30 mph 1.0000 in Ice Exposure C

Leg Capacity ——— Leg Compression (K)



valmont STRUCTURES
Valmont Industries, Inc. -Specialty Structures Group
1545 Pidco Dr.
Plymouth, IN
Phone: (574)-936-4221
FAX: (574)-936-6458

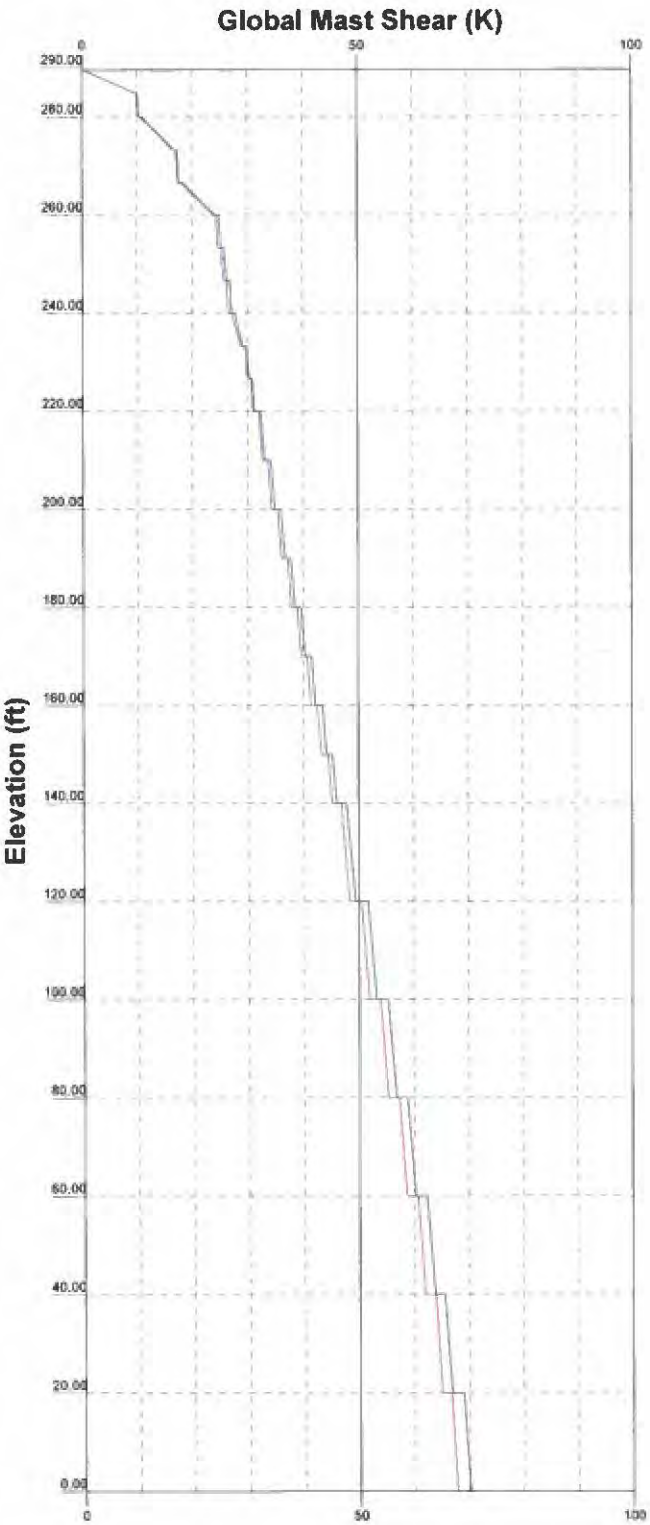
Job: 565090			
Project: H-31 x290' SST - US-KY-5135 Fancy Farm			
Client: VB BTS II, LLC	Drawn by: JL	App'd	
Code: TIA-222-G	Date: 10/06/22	Scale	NTS
Path: Z:\Documents\565\565090 VB BTS II - US-KY-5135 Fancy Farm\02 Tower Calcs\565090.eri		Dwg No.	E-3

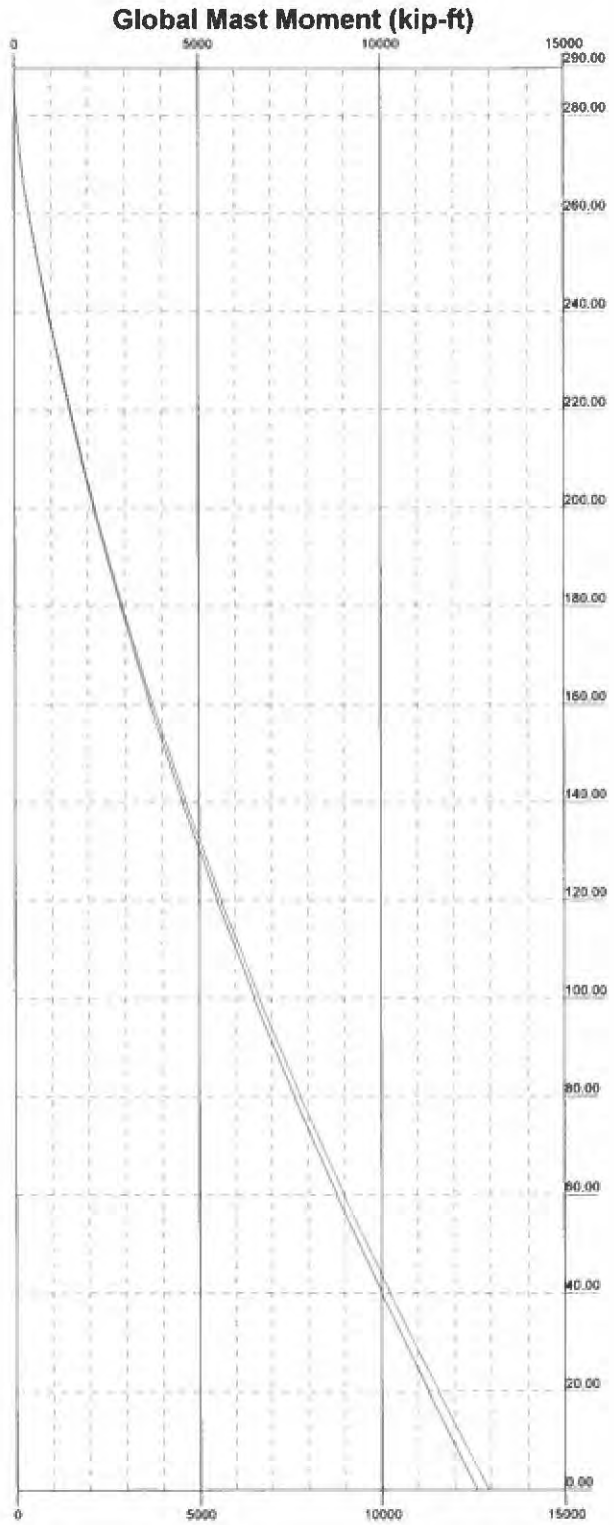
TIA-222-G - 106 mph/30 mph 1.0000 in Ice Exposure C

Vx Vz

Maximum Values

Mx Mz



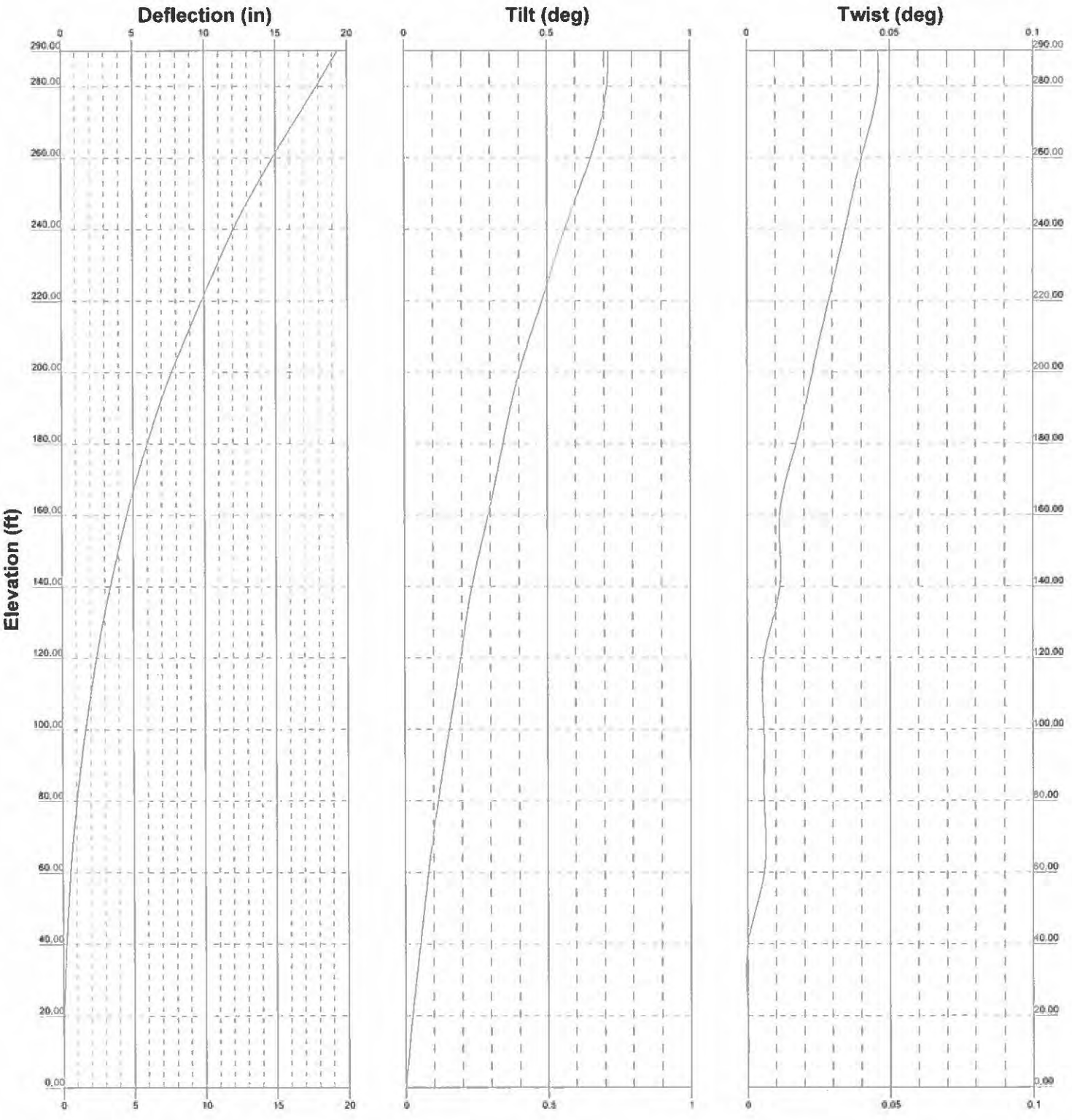


valmont STRUCTURES
Valmont Industries, Inc. -Specialty Structures Group
1545 Pidco Dr.
Plymouth, IN
Phone: (574)-936-4221
FAX: (574)-936-6458

Job: 565090			
Project: H-31 x290' SST - US-KY-5135 Fancy Farm			
Client: VB BTS II, LLC	Drawn by: JL	App'd:	
Code: TIA-222-G	Date: 10/06/22	Scale: NTS	
Path: Z:\Documents\565090 VB BTS II - US-KY-5135 Fancy Farm\02 Tower Calcs\565090.eri		Dwg No. E-4	

TIA-222-G - Service - 60 mph

Maximum Values



valmont STRUCTURES
Valmont Industries, Inc. -Specialty Structures Group
1545 Pidco Dr.
Plymouth, IN
Phone: (574)-936-4221
FAX: (574)-936-6458

Job: 565090			
Project: H-31 x290' SST - US-KY-5135 Fancy Farm			
Client: VB BTS II, LLC	Drawn by: JL	App'd:	
Code: TIA-222-G	Date: 10/06/22	Scale: NTS	
Path: Z:\Documents\565090 VB BTS II - US-KY-5180 Fancy Farm\02 Tower Calcs\565090.eri		Dwg No. E-5	

Valmont

1545 Pidco Dr

Plymouth, IN
Phone: (574)-936-4221
FAX: (574)-936-6458

Job	Page
565090	1 of 72
Project	**Date**
H-31 x290' SST - US-KY-5135 Fancy Farm	07:03:40 10/06/22
Client	**Designed by**
VB BTS II, LLC	JL

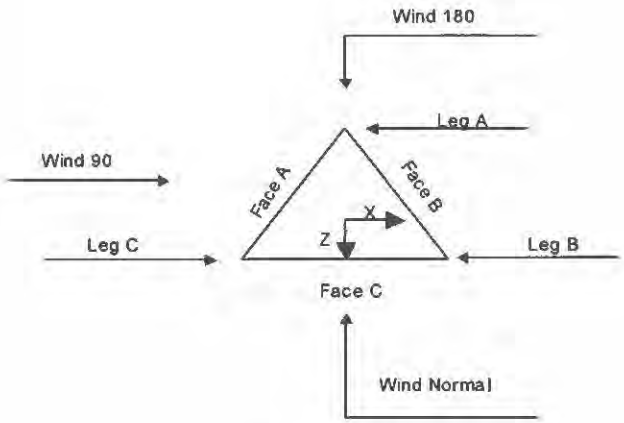
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 290.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 5.00 ft at the top and 31.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Graves County, Kentucky.
ASCE 7-10 Wind Data is used.
Basic wind speed of 106 mph.
Risk Category II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 30 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A KA Factor of 1.00 has been applied to the anchor tenant EPA loading (for shielding)..
A KA factor of 0.82 has been applied to EPA loading for other 2 carriers (for shielding)..
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	√ SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	√ All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	√ Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt	Use TIA-222-G Bracing Resist. Exemption
√ Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC 6D+W Combination	Poles
Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
SR Members Have Cut Ends	√ Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric	Ignore KL/ry For 60 Deg. Angle Legs	Pole Without Linear Attachments
		Pole With Shroud Or No Appurtenances
		Outside and Inside Corner Radii Are Known



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	290.00-280.00		V-Series Leg	5.00	1	10.00
T2	280.00-260.00		V-Series Leg	5.00	1	20.00
T3	260.00-240.00		V-Series Leg	5.00	1	20.00
T4	240.00-220.00		V-Series Leg	7.00	1	20.00
T5	220.00-200.00		PiRod 12BDFH Truss Leg	9.00	1	20.00
T6	200.00-180.00		PiRod 12BDFH Truss Leg	11.00	1	20.00
T7	180.00-160.00		PiRod 12BDFH Truss Leg	13.00	1	20.00
T8	160.00-140.00		PiRod 12BDFH Truss Leg	15.00	1	20.00
T9	140.00-120.00		PiRod 12BDH2 Truss Leg	17.00	1	20.00
T10	120.00-100.00		PiRod 12BDH2 Truss Leg	19.00	1	20.00
T11	100.00-80.00		PiRod 12BDH2 Truss Leg	21.00	1	20.00
T12	80.00-60.00		PiRod 12BDH2 Truss Leg	23.00	1	20.00
T13	60.00-40.00		PiRod 12BDH2 Truss Leg	25.00	1	20.00
T14	40.00-20.00		PiRod 12BDH2 Truss Leg	27.00	1	20.00
T15	20.00-0.00		PiRod 12BDH2 Truss Leg	29.00	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	290.00-280.00	4.79	X Brace	No	No	5.0000	0.0000
T2	280.00-260.00	6.67	X Brace	No	No	0.0000	0.0000
T3	260.00-240.00	6.67	X Brace	No	No	0.0000	0.0000
T4	240.00-220.00	6.67	X Brace	No	No	0.0000	0.0000
T5	220.00-200.00	10.00	X Brace	No	No	0.0000	0.0000
T6	200.00-180.00	10.00	X Brace	No	No	0.0000	0.0000
T7	180.00-160.00	10.00	X Brace	No	No	0.0000	0.0000
T8	160.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T9	140.00-120.00	20.00	X Brace	No	No	0.0000	0.0000
T10	120.00-100.00	20.00	X Brace	No	No	0.0000	0.0000
T11	100.00-80.00	20.00	X Brace	No	No	0.0000	0.0000
T12	80.00-60.00	20.00	X Brace	No	No	0.0000	0.0000
T13	60.00-40.00	20.00	X Brace	No	No	0.0000	0.0000
T14	40.00-20.00	20.00	X Brace	No	No	0.0000	0.0000
T15	20.00-0.00	20.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 290.00-280.00	Pipe	P-2.50" - 0.75" conn -10' -C-(Pirod 226172)	A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A572-50 (50 ksi)
T2 280.00-260.00	Pipe	P-4.00"- 0.75" conn -20' -C-Trans-6B-4B-(Pirod 226184)	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A572-50 (50 ksi)
T3 260.00-240.00	Pipe	P-5.00"- 0.75" conn -Trans-20' -C-(Pirod 226200)	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A572-50 (50 ksi)
T4 240.00-220.00	Pipe	P-6.00"- 0.75" conn.-HBD-Trans-20' -C-(Pirod 229377)	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A572-50 (50 ksi)
T5 220.00-200.00	Truss Leg	#12ZG-58 - 1.50" - 1.00" conn. (Pirod 194651)	A572-58 (58 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A572-50 (50 ksi)
T6 200.00-180.00	Truss Leg	#12ZG-58 - 1.75" - 1.00" conn -TR1-(Pirod 195213)	A572-58 (58 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A572-50 (50 ksi)
T7 180.00-160.00	Truss Leg	#12ZG-58 - 1.75" - 1.00" conn (Pirod 195217)	A572-58 (58 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A572-50 (50 ksi)
T8 160.00-140.00	Truss Leg	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	A572-58 (58 ksi)	Equal Angle	L3x3x3/16	A572-50 (50 ksi)
T9 140.00-120.00	Truss Leg	#12ZG-58 -2.00" - 0.875" conn -TR3-(Pirod 195637)	A572-58 (58 ksi)	Double Equal Angle	2L3x3x3/16	A572-50 (50 ksi)
T10 120.00-100.00	Truss Leg	#12ZG-58 -2.00" - 0.875" conn. (Pirod 195639)	A572-58 (58 ksi)	Double Equal Angle	2L3x3x3/16	A572-50 (50 ksi)
T11 100.00-80.00	Truss Leg	#12ZG-58 -2.00" - 0.875" conn. (Pirod 195639)	A572-58 (58 ksi)	Double Equal Angle	2L3x3x3/16	A572-50 (50 ksi)
T12 80.00-60.00	Truss Leg	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	A572-58 (58 ksi)	Double Equal Angle	2L3x3x3/16	A572-50 (50 ksi)
T13 60.00-40.00	Truss Leg	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	A572-58 (58 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4	A572-50 (50 ksi)
T14 40.00-20.00	Truss Leg	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	A572-58 (58 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4	A572-50 (50 ksi)
T15 20.00-0.00	Truss Leg	#12ZG-58 BASE - 2.50" - 0.875" conn -TR4-(Pirod 281171)	A572-58 (58 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 290.00-280.00	Equal Angle	L3x3x1/4	A572-50 (50 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 290.00-280.00	0.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T2 280.00-260.00	0.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T3 260.00-240.00	0.00	0.3750	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T4 240.00-220.00	0.00	0.3750	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T5 220.00-200.00	0.00	0.5000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T6 200.00-180.00	0.00	0.5000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T7 180.00-160.00	0.00	0.5000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T8 160.00-140.00	0.00	0.5000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T9 140.00-120.00	0.00	0.6250	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T10 120.00-100.00	0.00	0.6250	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T11 100.00-80.00	0.00	0.6250	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T12 80.00-60.00	0.00	0.6250	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T13 60.00-40.00	0.00	0.6250	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T14 40.00-20.00	0.00	0.6250	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T15 20.00-0.00	0.00	0.6250	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

K Factors[1]

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz X Y	Sec Horiz X Y	Inner Brace X Y
T1 290.00-280.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 280.00-260.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 260.00-240.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 240.00-220.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 220.00-200.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 200.00-180.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 180.00-160.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 160.00-140.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 140.00-120.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T10 120.00-100.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T11 100.00-80.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T12 80.00-60.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T13 60.00-40.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T14 40.00-20.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T15 20.00-0.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

[1]Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Truss-Leg K Factors: Truss-Legs Used As Leg Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals	Truss-Legs Used As Inner Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals
T5 220.00-200.00	1	0.5	0.7	1	0.5	0.7
T6 200.00-180.00	1	0.5	0.7	1	0.5	0.7
T7 180.00-160.00	1	0.5	0.7	1	0.5	0.7
T8 160.00-140.00	1	0.5	0.7	1	0.5	0.7
T9 140.00-120.00	1	0.5	0.7	1	0.5	0.7
T10 120.00-100.00	1	0.5	0.7	1	0.5	0.7
T11 100.00-80.00	1	0.5	0.7	1	0.5	0.7

T12 80.00-60.00	1	0.5	0.7	1	0.5	0.7
T13 60.00-40.00	1	0.5	0.7	1	0.5	0.7
T14 40.00-20.00	1	0.5	0.7	1	0.5	0.7
T15 20.00-0.00	1	0.5	0.7	1	0.5	0.7

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 290.00-280.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 280.00-260.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 260.00-240.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 240.00-220.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 220.00-200.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 200.00-180.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 180.00-160.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 160.00-140.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 140.00-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 120.00-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 100.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 80.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 60.00-40.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 40.00-20.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 20.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 290.00-280.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T2 280.00-260.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 260.00-240.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 240.00-220.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 220.00-200.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 200.00-180.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 180.00-160.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 160.00-140.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 140.00-120.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 120.00-100.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 100.00-80.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 80.00-60.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 60.00-40.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 40.00-20.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 20.00-0.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation	Connection Offsets							
	Diagonal				K-Bracing			
	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.
ft	in	in	in	in	in	in	in	in
T1 290.00-280.00	5.0000	5.0000	5.0000	5.0000	0.0000	0.0000	0.0000	0.0000
T2 280.00-260.00	5.0000	5.0000	5.0000	5.0000	0.0000	0.0000	0.0000	0.0000
T3 260.00-240.00	5.0000	6.2500	5.0000	6.2500	0.0000	0.0000	0.0000	0.0000
T4 240.00-220.00	5.0000	6.2500	5.0000	6.2500	0.0000	0.0000	0.0000	0.0000
T5 220.00-200.00	5.0000	10.7500	5.0000	10.7500	0.0000	0.0000	0.0000	0.0000
T6 200.00-180.00	5.0000	10.7500	5.0000	10.7500	0.0000	0.0000	0.0000	0.0000
T7 180.00-160.00	5.0000	10.7500	5.0000	10.7500	0.0000	0.0000	0.0000	0.0000

Tower Elevation	Connection Offsets							
	Diagonal				K-Bracing			
	Vert Top	Horiz Top	Vert Bot	Horiz Bot	Vert Top	Horiz Top	Vert Bot	Horiz Bot
ft	in	in	in	in	in	in	in	in
T8 160.00-140.00	5.0000	10.7500	5.0000	10.7500	0.0000	0.0000	0.0000	0.0000
T9 140.00-120.00	5.0000	11.5000	5.0000	11.5000	0.0000	0.0000	0.0000	0.0000
T10 120.00-100.00	5.0000	11.5000	5.0000	11.5000	0.0000	0.0000	0.0000	0.0000
T11 100.00-80.00	5.0000	11.5000	5.0000	11.5000	0.0000	0.0000	0.0000	0.0000
T12 80.00-60.00	5.0000	11.5000	5.0000	11.5000	0.0000	0.0000	0.0000	0.0000
T13 60.00-40.00	5.0000	11.5000	5.0000	11.5000	0.0000	0.0000	0.0000	0.0000
T14 40.00-20.00	5.0000	11.5000	5.0000	11.5000	0.0000	0.0000	0.0000	0.0000
T15 20.00-0.00	5.0000	11.5000	5.0000	11.5000	0.0000	0.0000	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 290.00-280.00	Flange	0.7500 A325N	4	0.7500 A325N	1	0.7500 A325N	1	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0
T2 280.00-260.00	Flange	0.7500 A325N	6	0.7500 A325N	1	0.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0
T3 260.00-240.00	Flange	0.7500 A325N	8	0.7500 A325N	1	0.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0
T4 240.00-220.00	Flange	1.0000 A325N	6	0.7500 A325N	1	0.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0
T5 220.00-200.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0
T6 200.00-180.00	Flange	1.2500 A325N	6	1.0000 A325N	1	0.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0
T7 180.00-160.00	Flange	1.2500 A325N	6	1.0000 A325N	1	0.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0
T8 160.00-140.00	Flange	1.2500 A325N	6	1.0000 A325N	1	0.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0
T9 140.00-120.00	Flange	1.0000 A325N	12	0.8750 A325N	1	0.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0
T10 120.00-100.00	Flange	1.0000 A325N	12	0.8750 A325N	1	0.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0
T11 100.00-80.00	Flange	1.0000 A325N	12	0.8750 A325N	1	0.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0
T12 80.00-60.00	Flange	1.0000 A325N	12	0.8750 A325N	1	0.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0
T13 60.00-40.00	Flange	1.0000 A325N	12	0.8750 A325N	1	0.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0
T14 40.00-20.00	Flange	1.0000 A325N	12	0.8750 A325N	1	0.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T15 20.00-0.00	Flange	1.7500 F1554-105	4	0 8750 A325N	1	0.0000 A325N	0	1 0000 A325N	0	1 0000 A325N	0	1.0000 A325N	0	1 0000 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8	C	No	No	Ar (CaAa)	290 00 - 0 00	3.0000	0	1	1	0 3750	0 3750		0 22
Lighting power cord	B	No	No	Ar (CaAa)	290.00 - 145.00	1.0000	-0 49	1	1	0 8700	0 8700		0 15
Lighting power cord	B	No	No	Ar (CaAa)	145 00 - 0 00	1.0000	-0 49	3	3	0 8700	0 8700		0 15
****													
LDF7-50A (1-5/8 FOAM)	C	No	No	Ar (CaAa)	285.00 - 0 00	3.0000	0.42	12	6	0 5200 1 0000	1 9800		0 82
LDF7-50A (1-5/8 FOAM)	B	No	No	Ar (CaAa)	275.00 - 0 00	3 0000	0 42	12	6	0 5200 1 0000	1 9800		0 82
LDF7-50A (1-5/8 FOAM)	A	No	No	Ar (CaAa)	265.00 - 0.00	3 0000	0 42	12	6	0.5200 1.0000	1 9800		0 82
EW63	C	No	No	Ar (CaAa)	240 00 - 0.00	3 0000	0 39	1	1	0.9300 1.0000	1.5742		0 51
****													
***													
1 75" Rails	C	No	No	Af (CaAa)	285 00 - 0 00	3 0000	0 46	1	1	32.2500 1.0000	1.7500		2 70
1 75" Rails	C	No	No	Af (CaAa)	285 00 - 0 00	3 0000	0.38	1	1	32 2500 1.0000	1 7500		2 70
***													

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight plf
****								
***								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	290.00-280.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.870	0.000	0.00
		C	0.000	0.000	15.172	0.000	0.08
T2	280.00-260.00	A	0.000	0.000	11.880	0.000	0.05
		B	0.000	0.000	37.380	0.000	0.15
		C	0.000	0.000	59.937	0.000	0.31
T3	260.00-240.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	49.260	0.000	0.20
		C	0.000	0.000	59.937	0.000	0.31
T4	240.00-220.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	49.260	0.000	0.20
		C	0.000	0.000	63.085	0.000	0.32
T5	220.00-200.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	49.260	0.000	0.20
		C	0.000	0.000	63.085	0.000	0.32
T6	200.00-180.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	49.260	0.000	0.20
		C	0.000	0.000	63.085	0.000	0.32
T7	180.00-160.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	49.260	0.000	0.20
		C	0.000	0.000	63.085	0.000	0.32
T8	160.00-140.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	50.130	0.000	0.20
		C	0.000	0.000	63.085	0.000	0.32
T9	140.00-120.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	52.740	0.000	0.21
		C	0.000	0.000	63.085	0.000	0.32
T10	120.00-100.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	52.740	0.000	0.21
		C	0.000	0.000	63.085	0.000	0.32
T11	100.00-80.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	52.740	0.000	0.21
		C	0.000	0.000	63.085	0.000	0.32
T12	80.00-60.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	52.740	0.000	0.21
		C	0.000	0.000	63.085	0.000	0.32
T13	60.00-40.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	52.740	0.000	0.21
		C	0.000	0.000	63.085	0.000	0.32
T14	40.00-20.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	52.740	0.000	0.21
		C	0.000	0.000	63.085	0.000	0.32
T15	20.00-0.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	52.740	0.000	0.21
		C	0.000	0.000	63.085	0.000	0.32

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	290.00-280.00	A	2.481	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	5.832	0.000	0.10
		C		0.000	0.000	26.859	0.000	0.61
T2	280.00-260.00	A	2.468	0.000	0.000	13.620	0.000	0.33
		B		0.000	0.000	52.471	0.000	1.20
		C		0.000	0.000	96.511	0.000	2.24
T3	260.00-240.00	A	2.449	0.000	0.000	54.353	0.000	1.32

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
		B		0.000	0.000	65.888	0.000	1.52
		C		0.000	0.000	96.156	0.000	2.22
T4	240.00-220.00	A	2.429	0.000	0.000	54.216	0.000	1.31
		B		0.000	0.000	65.670	0.000	1.51
		C		0.000	0.000	108.638	0.000	2.45
T5	220.00-200.00	A	2.407	0.000	0.000	54.068	0.000	1.30
		B		0.000	0.000	65.435	0.000	1.49
		C		0.000	0.000	108.139	0.000	2.42
T6	200.00-180.00	A	2.383	0.000	0.000	53.907	0.000	1.29
		B		0.000	0.000	65.178	0.000	1.48
		C		0.000	0.000	107.594	0.000	2.40
T7	180.00-160.00	A	2.356	0.000	0.000	53.730	0.000	1.28
		B		0.000	0.000	64.895	0.000	1.47
		C		0.000	0.000	106.996	0.000	2.37
T8	160.00-140.00	A	2.327	0.000	0.000	53.533	0.000	1.27
		B		0.000	0.000	68.421	0.000	1.49
		C		0.000	0.000	106.330	0.000	2.34
T9	140.00-120.00	A	2.294	0.000	0.000	53.312	0.000	1.25
		B		0.000	0.000	79.493	0.000	1.58
		C		0.000	0.000	105.579	0.000	2.30
T10	120.00-100.00	A	2.256	0.000	0.000	53.057	0.000	1.24
		B		0.000	0.000	78.977	0.000	1.56
		C		0.000	0.000	104.716	0.000	2.26
T11	100.00-80.00	A	2.211	0.000	0.000	52.756	0.000	1.22
		B		0.000	0.000	78.368	0.000	1.53
		C		0.000	0.000	103.698	0.000	2.22
T12	80.00-60.00	A	2.156	0.000	0.000	52.389	0.000	1.20
		B		0.000	0.000	77.624	0.000	1.50
		C		0.000	0.000	102.453	0.000	2.16
T13	60.00-40.00	A	2.085	0.000	0.000	51.911	0.000	1.17
		B		0.000	0.000	76.658	0.000	1.46
		C		0.000	0.000	100.834	0.000	2.09
T14	40.00-20.00	A	1.981	0.000	0.000	51.217	0.000	1.13
		B		0.000	0.000	75.254	0.000	1.40
		C		0.000	0.000	98.479	0.000	1.99
T15	20.00-0.00	A	1.775	0.000	0.000	49.843	0.000	1.05
		B		0.000	0.000	72.474	0.000	1.29
		C		0.000	0.000	93.807	0.000	1.79

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	290.00-280.00	-6.0440	2.5269	-4.1991	1.9665
T2	280.00-260.00	-5.2859	3.4526	-4.4234	3.6711
T3	260.00-240.00	-5.2047	-2.0634	-4.6307	0.2373
T4	240.00-220.00	-6.6195	-1.6863	-7.0257	1.4224
T5	220.00-200.00	-7.5880	-1.8549	-7.2804	1.3960
T6	200.00-180.00	-8.7178	-2.0862	-7.9617	1.4695
T7	180.00-160.00	-9.7798	-2.3069	-9.3024	1.6656
T8	160.00-140.00	-10.1621	-2.8375	-10.0559	1.1845
T9	140.00-120.00	-11.7689	-4.6661	-12.1831	-0.5721
T10	120.00-100.00	-12.8075	-5.0598	-13.2136	-0.6878
T11	100.00-80.00	-13.8031	-5.4391	-14.1893	-0.8162
T12	80.00-60.00	-14.5254	-5.7082	-15.0567	-0.9602
T13	60.00-40.00	-14.7260	-5.8109	-15.5917	-1.1195

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T14	40.00-20.00	-15.5223	-6.1205	-16.3348	-1.3556
T15	20.00-0.00	-16.1588	-6.3656	-16.9095	-1.7876

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	Safety Line 3/8	280.00 - 290.00	0.6000	0.4771
T1	2	Lighting power cord	280.00 - 290.00	0.6000	0.4771
T1	5	LDF7-50A (1-5/8 FOAM)	280.00 - 285.00	0.6000	0.4771
T1	11	1.75" Rails	280.00 - 285.00	0.6000	0.4771
T1	12	1.75" Rails	280.00 - 285.00	0.6000	0.4771
T2	1	Safety Line 3/8	260.00 - 280.00	0.6000	0.4979
T2	2	Lighting power cord	260.00 - 280.00	0.6000	0.4979
T2	5	LDF7-50A (1-5/8 FOAM)	260.00 - 280.00	0.6000	0.4979
T2	6	LDF7-50A (1-5/8 FOAM)	260.00 - 275.00	0.6000	0.4979
T2	7	LDF7-50A (1-5/8 FOAM)	260.00 - 265.00	0.6000	0.4979
T2	11	1.75" Rails	260.00 - 280.00	0.6000	0.4979
T2	12	1.75" Rails	260.00 - 280.00	0.6000	0.4979
T3	1	Safety Line 3/8	240.00 - 260.00	0.6000	0.5535
T3	2	Lighting power cord	240.00 - 260.00	0.6000	0.5535
T3	5	LDF7-50A (1-5/8 FOAM)	240.00 - 260.00	0.6000	0.5535
T3	6	LDF7-50A (1-5/8 FOAM)	240.00 - 260.00	0.6000	0.5535
T3	7	LDF7-50A (1-5/8 FOAM)	240.00 - 260.00	0.6000	0.5535
T3	11	1.75" Rails	240.00 - 260.00	0.6000	0.5535
T3	12	1.75" Rails	240.00 - 260.00	0.6000	0.5535
T4	1	Safety Line 3/8	220.00 - 240.00	0.6000	0.5994
T4	2	Lighting power cord	220.00 - 240.00	0.6000	0.5994
T4	5	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.5994
T4	6	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.5994
T4	7	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.5994

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T4	8	EW63	220.00 - 240.00	0.6000	0.5994
T4	11	1.75" Rails	220.00 - 240.00	0.6000	0.5994
T4	12	1.75" Rails	220.00 - 240.00	0.6000	0.5994
T5	1	Safety Line 3/8	200.00 - 220.00	0.6000	0.5668
T5	2	Lighting power cord	200.00 - 220.00	0.6000	0.5668
T5	5	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.5668
T5	6	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.5668
T5	7	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.5668
T5	8	EW63	200.00 - 220.00	0.6000	0.5668
T5	11	1.75" Rails	200.00 - 220.00	0.6000	0.5668
T5	12	1.75" Rails	200.00 - 220.00	0.6000	0.5668
T6	1	Safety Line 3/8	180.00 - 200.00	0.6000	0.5687
T6	2	Lighting power cord	180.00 - 200.00	0.6000	0.5687
T6	5	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.5687
T6	6	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.5687
T6	7	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.5687
T6	8	EW63	180.00 - 200.00	0.6000	0.5687
T6	11	1.75" Rails	180.00 - 200.00	0.6000	0.5687
T6	12	1.75" Rails	180.00 - 200.00	0.6000	0.5687
T7	1	Safety Line 3/8	160.00 - 180.00	0.6000	0.6000
T7	2	Lighting power cord	160.00 - 180.00	0.6000	0.6000
T7	5	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.6000
T7	6	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.6000
T7	7	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.6000
T7	8	EW63	160.00 - 180.00	0.6000	0.6000
T7	11	1.75" Rails	160.00 - 180.00	0.6000	0.6000
T7	12	1.75" Rails	160.00 - 180.00	0.6000	0.6000
T8	1	Safety Line 3/8	140.00 - 160.00	0.6000	0.6000
T8	2	Lighting power cord	145.00 - 160.00	0.6000	0.6000
T8	3	Lighting power cord	140.00 - 145.00	0.6000	0.6000
T8	5	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev	K_a No Ice	K_a Ice
T8	6	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.6000
T8	7	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.6000
T8	8	EW63	140.00 - 160.00	0.6000	0.6000
T8	11	1.75" Rails	140.00 - 160.00	0.6000	0.6000
T8	12	1.75" Rails	140.00 - 160.00	0.6000	0.6000
T9	1	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T9	3	Lighting power cord	120.00 - 140.00	0.6000	0.6000
T9	5	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	6	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	7	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	8	EW63	120.00 - 140.00	0.6000	0.6000
T9	11	1.75" Rails	120.00 - 140.00	0.6000	0.6000
T9	12	1.75" Rails	120.00 - 140.00	0.6000	0.6000
T10	1	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T10	3	Lighting power cord	100.00 - 120.00	0.6000	0.6000
T10	5	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	6	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	7	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	8	EW63	100.00 - 120.00	0.6000	0.6000
T10	11	1.75" Rails	100.00 - 120.00	0.6000	0.6000
T10	12	1.75" Rails	100.00 - 120.00	0.6000	0.6000
T11	1	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T11	3	Lighting power cord	80.00 - 100.00	0.6000	0.6000
T11	5	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	6	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	7	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	8	EW63	80.00 - 100.00	0.6000	0.6000
T11	11	1.75" Rails	80.00 - 100.00	0.6000	0.6000
T11	12	1.75" Rails	80.00 - 100.00	0.6000	0.6000
T12	1	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T12	3	Lighting power cord	60.00 - 80.00	0.6000	0.6000
T12	5	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	6	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	7	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	8	EW63	60.00 - 80.00	0.6000	0.6000
T12	11	1.75" Rails	60.00 - 80.00	0.6000	0.6000
T12	12	1.75" Rails	60.00 - 80.00	0.6000	0.6000
T13	1	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T13	3	Lighting power cord	40.00 - 60.00	0.6000	0.6000
T13	5	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	6	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev	K_a No Ice	K_a Ice
T13	7	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	8	EW63	40.00 - 60.00	0.6000	0.6000
T13	11	1.75" Rails	40.00 - 60.00	0.6000	0.6000
T13	12	1.75" Rails	40.00 - 60.00	0.6000	0.6000
T14	1	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T14	3	Lighting power cord	20.00 - 40.00	0.6000	0.6000
T14	5	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	6	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	7	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	8	EW63	20.00 - 40.00	0.6000	0.6000
T14	11	1.75" Rails	20.00 - 40.00	0.6000	0.6000
T14	12	1.75" Rails	20.00 - 40.00	0.6000	0.6000
T15	1	Safety Line 3/8	0.00 - 20.00	0.6000	0.6000
T15	3	Lighting power cord	0.00 - 20.00	0.6000	0.6000
T15	5	LDF7-50A (1-5/8 FOAM)	0.00 - 20.00	0.6000	0.6000
T15	6	LDF7-50A (1-5/8 FOAM)	0.00 - 20.00	0.6000	0.6000
T15	7	LDF7-50A (1-5/8 FOAM)	0.00 - 20.00	0.6000	0.6000
T15	8	EW63	0.00 - 20.00	0.6000	0.6000
T15	11	1.75" Rails	0.00 - 20.00	0.6000	0.6000
T15	12	1.75" Rails	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
5/8" x 10' lightning rod	C	From Leg	0.00 0.00 5.00	0.0000	290.00	No Ice 1/2" Ice 1" Ice	0.63 1.63 2.63	0.63 1.63 2.63	0.02 0.03 0.04
Beacon	B	From Leg	0.00 0.00 1.00	0.0000	290.00	No Ice 1/2" Ice 1" Ice	2.40 2.67 2.96	2.40 2.67 2.96	0.07 0.10 0.12
*									
OB light	A	From Leg	0.00 0.00 1.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice	0.50 0.60 0.70	0.50 0.60 0.70	0.03 0.04 0.04
OB light	B	From Leg	0.00 0.00 1.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice	0.50 0.60 0.70	0.50 0.60 0.70	0.03 0.04 0.04
OB light	C	From Leg	0.00 0.00 1.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice	0.50 0.60 0.70	0.50 0.60 0.70	0.03 0.04 0.04
****									
40,000 sq in (277.8 sq ft EPA)	A	None		0.0000	285.00	No Ice 1/2" Ice 1" Ice	277.80 347.25 416.70	277.80 347.25 416.70	4.50 5.50 6.50
30,000 sq in (208.3 sq ft EPA)	C	None		0.0000	275.00	No Ice 1/2" Ice 1" Ice	208.30 260.38 312.46	208.30 260.38 312.46	4.10 5.20 6.30
30,000 sq in (208.3 sq ft EPA)	B	None		0.0000	265.00	No Ice 1/2" Ice	208.30 260.38	208.30 260.38	4.10 5.20

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
****						1" Ice	312.46	312.46	6.30
SP1 R5 (Includes 4.5"x72" Pipe)	C	From Leg	0.50 0.00 0.00	0.0000	240.00	No Ice 1/2" Ice 1" Ice	2.85 3.36 3.90	3.15 3.69 4.26	0.14 0.17 0.21
2-1/2" x 7' Sch. 40	B	From Face	0.00 0.00 0.00	0.0000	240.00	No Ice 1/2" Ice 1" Ice	2.01 2.55 2.92	2.01 2.55 2.92	0.04 0.06 0.07
2-1/2" x 7' Sch. 40	C	From Face	0.00 0.00 0.00	0.0000	240.00	No Ice 1/2" Ice 1" Ice	2.01 2.55 2.92	2.01 2.55 2.92	0.04 0.06 0.07

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight K
6' HP	C	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	0.0000		240.00	6.00	No Ice 1/2" Ice 1" Ice	28.27 29.07 29.86	0.30 0.52 0.74

Truss-Leg Properties

Section Designation	Area in²	Area Ice in²	Self Weight K	Ice Weight K	Equiv Diameter in	Equiv Diameter Ice in	Leg Area in²
#12ZG-58 - 1.50" - 1.00" conn. (Pirod 194651)	2010.3106	6026.8591	0.62	2.07	6.9802	20.9266	5.3014
#12ZG-58 - 1.75" - 1.00" conn.-TR1-(Pirod 195213)	2035.9652	7211.2772	0.79	2.09	7.0693	25.0392	7.2158
#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	2035.9652	7187.9803	0.79	2.06	7.0693	24.9583	7.2158
#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	2035.9652	7162.0721	0.79	2.01	7.0693	24.8683	7.2158
#12ZG-58 -2.00" - 0.875" conn.-TR3-(Pirod 195637)	2339.7677	6176.2066	1.00	2.02	8.1242	21.4452	9.4248
#12ZG-58 -2.00" - 0.875" conn. (Pirod	2339.7677	6154.8760	1.00	1.96	8.1242	21.3711	9.4248

Section Designation	Area	Area Ice	Self Weight	Ice Weight	Equiv Diameter	Equiv Diameter Ice	Leg Area
	in^2	in^2	K	K	in	in	in^2
195639)							
#12ZG-58 -2.00" - 0.875" conn. (Pirod 195639)	2339.7677	6129.7197	1.00	1.90	8.1242	21.2837	9.4248
#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	2475.7141	6170.9183	1.17	1.84	8.5962	21.4268	11.9282
#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	2475.7141	6130.8735	1.17	1.74	8.5962	21.2878	11.9282
#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	2475.7141	6072.5831	1.17	1.60	8.5962	21.0854	11.9282
#12ZG-58 BASE - 2.50" - 0.875" conn.-TR4-(Pirod 281171)	2548.5522	5961.8648	1.29	1.32	8.8491	20.7009	14.7262

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation	z	K_z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
T1	285.00	1.578	39	52.396	A	5.022	4.792	4.792	48.83	0.000	0.000
290.00-280.00					B	5.022	4.792		48.83	0.870	0.000
					C	5.022	4.792		48.83	15.172	0.000
T2	270.00	1.56	38	107.500	A	8.961	15.000	15.000	62.60	11.880	0.000
280.00-260.00					B	8.961	15.000		62.60	37.380	0.000
					C	8.961	15.000		62.60	59.937	0.000
T3	250.00	1.535	38	129.283	A	7.669	18.574	18.574	70.78	47.520	0.000
260.00-240.00					B	7.669	18.574		70.78	49.260	0.000
					C	7.669	18.574		70.78	59.937	0.000
T4	230.00	1.508	37	171.054	A	11.361	22.120	22.120	66.07	47.520	0.000
240.00-220.00					B	11.361	22.120		66.07	49.260	0.000
					C	11.361	22.120		66.07	63.085	0.000
T5	210.00	1.48	36	222.527	A	10.261	23.306	23.306	69.43	47.520	0.000
220.00-200.00					B	10.261	23.306		69.43	49.260	0.000
					C	10.261	23.306		69.43	63.085	0.000
T6	190.00	1.449	35	262.944	A	11.439	23.604	23.604	67.36	47.520	0.000
200.00-180.00					B	11.439	23.604		67.36	49.260	0.000
					C	11.439	23.604		67.36	63.085	0.000
T7	170.00	1.415	35	302.944	A	12.727	23.604	23.604	64.97	47.520	0.000
180.00-160.00					B	12.727	23.604		64.97	49.260	0.000
					C	12.727	23.604		64.97	63.085	0.000
T8	150.00	1.378	34	342.944	A	16.913	23.604	23.604	58.26	47.520	0.000
160.00-140.00					B	16.913	23.604		58.26	50.130	0.000
					C	16.913	23.604		58.26	63.085	0.000
T9	130.00	1.337	33	383.361	A	12.514	27.126	27.126	68.43	47.520	0.000
140.00-120.00					B	12.514	27.126		68.43	52.740	0.000
					C	12.514	27.126		68.43	63.085	0.000
T10	110.00	1.291	32	423.361	A	13.178	27.126	27.126	67.30	47.520	0.000
120.00-100.00					B	13.178	27.126		67.30	52.740	0.000
					C	13.178	27.126		67.30	63.085	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T11	90.00	1.238	30	463.361	A	13.884	27.126	27.126	66.15	47.520	0.000
100.00-80.00					B	13.884	27.126		66.15	52.740	0.000
					C	13.884	27.126		66.15	63.085	0.000
T12	70.00	1.174	29	503.778	A	14.623	28.702	28.702	66.25	47.520	0.000
80.00-60.00					B	14.623	28.702		66.25	52.740	0.000
					C	14.623	28.702		66.25	63.085	0.000
T13	50.00	1.094	27	543.778	A	17.958	28.702	28.702	61.51	47.520	0.000
60.00-40.00					B	17.958	28.702		61.51	52.740	0.000
					C	17.958	28.702		61.51	63.085	0.000
T14	30.00	0.982	24	583.778	A	18.884	28.702	28.702	60.32	47.520	0.000
40.00-20.00					B	18.884	28.702		60.32	52.740	0.000
					C	18.884	28.702		60.32	63.085	0.000
T15 20.00-0.00	10.00	0.85	21	624.196	A	19.836	29.546	29.546	59.83	47.520	0.000
					B	19.836	29.546		59.83	52.740	0.000
					C	19.836	29.546		59.83	63.085	0.000

Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	t_z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	285.00	1.578	3	2.4812	56.531	A	5.022	24.538	13.062	44.19	0.000	0.000
290.00-280.00						B	5.022	24.538		44.19	5.832	0.000
						C	5.022	24.538		44.19	26.859	0.000
T2	270.00	1.56	3	2.4678	115.726	A	8.961	49.143	31.452	54.13	13.620	0.000
280.00-260.00						B	8.961	49.143		54.13	52.471	0.000
						C	8.961	49.143		54.13	96.511	0.000
T3	250.00	1.535	3	2.4489	137.456	A	7.669	53.709	34.927	56.91	54.353	0.000
260.00-240.00						B	7.669	53.709		56.91	65.888	0.000
						C	7.669	53.709		56.91	96.156	0.000
T4	230.00	1.508	3	2.4286	179.160	A	11.361	60.410	38.338	53.42	54.216	0.000
240.00-220.00						B	11.361	60.410		53.42	65.670	0.000
						C	11.361	60.410		53.42	108.638	0.000
T5	210.00	1.48	3	2.4066	230.559	A	10.261	89.627	69.871	69.95	54.068	0.000
220.00-200.00						B	10.261	89.627		69.95	65.435	0.000
						C	10.261	89.627		69.95	108.139	0.000
T6	190.00	1.449	3	2.3826	270.896	A	11.439	105.407	83.603	71.55	53.907	0.000
200.00-180.00						B	11.439	105.407		71.55	65.178	0.000
						C	11.439	105.407		71.55	107.594	0.000
T7	170.00	1.415	3	2.3563	310.808	A	12.727	107.323	83.333	69.42	53.730	0.000
180.00-160.00						B	12.727	107.323		69.42	64.895	0.000
						C	12.727	107.323		69.42	106.996	0.000
T8	150.00	1.378	3	2.3270	350.710	A	16.913	109.270	83.032	65.80	53.533	0.000
160.00-140.00						B	16.913	109.270		65.80	68.421	0.000
						C	16.913	109.270		65.80	106.330	0.000
T9	130.00	1.337	3	2.2939	391.017	A	12.514	90.739	71.603	69.35	53.312	0.000
140.00-120.00						B	12.514	90.739		69.35	79.493	0.000
						C	12.514	90.739		69.35	105.579	0.000
T10	110.00	1.291	3	2.2559	430.890	A	13.178	91.175	71.356	68.38	53.057	0.000
120.00-100.00						B	13.178	91.175		68.38	78.977	0.000
						C	13.178	91.175		68.38	104.716	0.000
T11	90.00	1.238	2	2.2111	470.741	A	13.884	91.529	71.064	67.42	52.756	0.000
100.00-80.00						B	13.884	91.529		67.42	78.368	0.000

Section Elevation ft	z ft	K_z	q_z psf	t_z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						C	13.884	91.529		67.42	103.698	0.000
T12 80.00-60.00	70.00	1.174	2	2.1562	510.975	A	14.623	92.562	71.542	66.75	52.389	0.000
						B	14.623	92.562		66.75	77.624	0.000
						C	14.623	92.562		66.75	102.453	0.000
T13 60.00-40.00	50.00	1.094	2	2.0849	550.737	A	17.958	92.471	71.077	64.36	51.911	0.000
						B	17.958	92.471		64.36	76.658	0.000
						C	17.958	92.471		64.36	100.834	0.000
T14 40.00-20.00	30.00	0.982	2	1.9810	590.390	A	18.884	91.779	70.402	63.62	51.217	0.000
						B	18.884	91.779		63.62	75.254	0.000
						C	18.884	91.779		63.62	98.479	0.000
T15 20.00-0.00	10.00	0.85	2	1.7749	630.119	A	19.836	89.237	69.118	63.37	49.843	0.000
						B	19.836	89.237		63.37	72.474	0.000
						C	19.836	89.237		63.37	93.807	0.000

Tower Pressure - Service

$G_H = 0.850$

Section Elevation ft	z ft	K_z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	285.00	1.578	12	52.396	A	5.022	4.792	4.792	48.83	0.000	0.000
290.00-280.00					B	5.022	4.792		48.83	0.870	0.000
					C	5.022	4.792		48.83	15.172	0.000
T2	270.00	1.56	12	107.500	A	8.961	15.000	15.000	62.60	11.880	0.000
280.00-260.00					B	8.961	15.000		62.60	37.380	0.000
					C	8.961	15.000		62.60	59.937	0.000
T3	250.00	1.535	12	129.283	A	7.669	18.574	18.574	70.78	47.520	0.000
260.00-240.00					B	7.669	18.574		70.78	49.260	0.000
					C	7.669	18.574		70.78	59.937	0.000
T4	230.00	1.508	12	171.054	A	11.361	22.120	22.120	66.07	47.520	0.000
240.00-220.00					B	11.361	22.120		66.07	49.260	0.000
					C	11.361	22.120		66.07	63.085	0.000
T5	210.00	1.48	12	222.527	A	10.261	23.306	23.306	69.43	47.520	0.000
220.00-200.00					B	10.261	23.306		69.43	49.260	0.000
					C	10.261	23.306		69.43	63.085	0.000
T6	190.00	1.449	11	262.944	A	11.439	23.604	23.604	67.36	47.520	0.000
200.00-180.00					B	11.439	23.604		67.36	49.260	0.000
					C	11.439	23.604		67.36	63.085	0.000
T7	170.00	1.415	11	302.944	A	12.727	23.604	23.604	64.97	47.520	0.000
180.00-160.00					B	12.727	23.604		64.97	49.260	0.000
					C	12.727	23.604		64.97	63.085	0.000
T8	150.00	1.378	11	342.944	A	16.913	23.604	23.604	58.26	47.520	0.000
160.00-140.00					B	16.913	23.604		58.26	50.130	0.000
					C	16.913	23.604		58.26	63.085	0.000
T9	130.00	1.337	10	383.361	A	12.514	27.126	27.126	68.43	47.520	0.000
140.00-120.00					B	12.514	27.126		68.43	52.740	0.000
					C	12.514	27.126		68.43	63.085	0.000
T10	110.00	1.291	10	423.361	A	13.178	27.126	27.126	67.30	47.520	0.000
120.00-100.00					B	13.178	27.126		67.30	52.740	0.000
					C	13.178	27.126		67.30	63.085	0.000
T11	90.00	1.238	10	463.361	A	13.884	27.126	27.126	66.15	47.520	0.000
100.00-80.00					B	13.884	27.126		66.15	52.740	0.000
					C	13.884	27.126		66.15	63.085	0.000

Section Elevation ft	z ft	K_z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T12	70.00	1.174	9	503.778	A	14.623	28.702	28.702	66.25	47.520	0.000
80.00-60.00					B	14.623	28.702		66.25	52.740	0.000
					C	14.623	28.702		66.25	63.085	0.000
T13	50.00	1.094	9	543.778	A	17.958	28.702	28.702	61.51	47.520	0.000
60.00-40.00					B	17.958	28.702		61.51	52.740	0.000
					C	17.958	28.702		61.51	63.085	0.000
T14	30.00	0.982	8	583.778	A	18.884	28.702	28.702	60.32	47.520	0.000
40.00-20.00					B	18.884	28.702		60.32	52.740	0.000
					C	18.884	28.702		60.32	63.085	0.000
T15 20.00-0.00	10.00	0.85	7	624.196	A	19.836	29.546	29.546	59.83	47.520	0.000
					B	19.836	29.546		59.83	52.740	0.000
					C	19.836	29.546		59.83	63.085	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl Face
T1	0.08	0.38	A	0.187	2.639	39	1	1	7.764	0.92	91.74	C
290.00-280.00			B	0.187	2.639		1	1	7.764			
			C	0.187	2.639		1	1	7.764			
T2	0.51	1.10	A	0.223	2.521	38	1	1	16.654	2.64	132.05	C
280.00-260.00			B	0.223	2.521		1	1	16.654			
			C	0.223	2.521		1	1	16.654			
T3	0.71	1.28	A	0.203	2.586	38	1	1	16.212	2.95	147.38	C
260.00-240.00			B	0.203	2.586		1	1	16.212			
			C	0.203	2.586		1	1	16.212			
T4	0.72	1.73	A	0.196	2.61	37	1	1	21.167	3.37	168.67	C
240.00-220.00			B	0.196	2.61		1	1	21.167			
			C	0.196	2.61		1	1	21.167			
T5	0.72	2.33	A	0.151	2.768	36	1	1	23.490	3.61	180.50	C
220.00-200.00			B	0.151	2.768		1	1	23.490			
			C	0.151	2.768		1	1	23.490			
T6	0.72	3.07	A	0.133	2.834	35	1	1	24.800	3.69	184.64	C
200.00-180.00			B	0.133	2.834		1	1	24.800			
			C	0.133	2.834		1	1	24.800			
T7	0.72	3.15	A	0.12	2.885	35	1	1	26.067	3.75	187.62	C
180.00-160.00			B	0.12	2.885		1	1	26.067			
			C	0.12	2.885		1	1	26.067			
T8	0.72	3.16	A	0.118	2.892	34	1	1	30.251	4.02	201.07	B
160.00-140.00			B	0.118	2.892		1	1	30.251			
			C	0.118	2.892		1	1	30.251			
T9	0.72	4.16	A	0.103	2.95	33	1	1	27.825	3.80	189.78	B
140.00-120.00			B	0.103	2.95		1	1	27.825			
			C	0.103	2.95		1	1	27.825			
T10	0.72	4.22	A	0.095	2.983	32	1	1	28.484	3.74	187.10	B
120.00-100.00			B	0.095	2.983		1	1	28.484			
			C	0.095	2.983		1	1	28.484			
T11	0.72	4.29	A	0.089	3.011	30	1	1	29.187	3.66	183.08	B
100.00-80.00			B	0.089	3.011		1	1	29.187			
			C	0.089	3.011		1	1	29.187			
T12	0.72	4.89	A	0.086	3.021	29	1	1	30.816	3.60	180.01	B
80.00-60.00			B	0.086	3.021		1	1	30.816			
			C	0.086	3.021		1	1	30.816			
T13	0.72	5.75	A	0.086	3.022	27	1	1	34.150	3.58	179.18	B
60.00-40.00			B	0.086	3.022		1	1	34.150			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
			C	0.086	3.022		1	1	34.150			
T14	0.72	5.87	A	0.082	3.039	24	1	1	35.077	3.29	164.41	B
40.00-20.00			B	0.082	3.039		1	1	35.077			
			C	0.082	3.039		1	1	35.077			
T15	0.72	6.32	A	0.079	3.049	21	1	1	36.506	2.93	146.43	B
20.00-0.00			B	0.079	3.049		1	1	36.506			
			C	0.079	3.049		1	1	36.506			
Sum Weight	9.93	51.68						OTM	6981.92 kip-ft	49.56		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.08	0.38	A	0.187	2.639	39	0.8	1	6.760	0.83	83.05	A
290.00-280.00			B	0.187	2.639		0.8	1	6.760			
			C	0.187	2.639		0.8	1	6.760			
T2	0.51	1.10	A	0.223	2.521	38	0.8	1	14.861	2.49	124.72	A
280.00-260.00			B	0.223	2.521		0.8	1	14.861			
			C	0.223	2.521		0.8	1	14.861			
T3	0.71	1.28	A	0.203	2.586	38	0.8	1	14.678	2.82	141.06	C
260.00-240.00			B	0.203	2.586		0.8	1	14.678			
			C	0.203	2.586		0.8	1	14.678			
T4	0.72	1.73	A	0.196	2.61	37	0.8	1	18.895	3.19	159.37	C
240.00-220.00			B	0.196	2.61		0.8	1	18.895			
			C	0.196	2.61		0.8	1	18.895			
T5	0.72	2.33	A	0.151	2.768	36	0.8	1	21.438	3.44	171.77	C
220.00-200.00			B	0.151	2.768		0.8	1	21.438			
			C	0.151	2.768		0.8	1	21.438			
T6	0.72	3.07	A	0.133	2.834	35	0.8	1	22.512	3.50	174.88	C
200.00-180.00			B	0.133	2.834		0.8	1	22.512			
			C	0.133	2.834		0.8	1	22.512			
T7	0.72	3.15	A	0.12	2.885	35	0.8	1	23.521	3.54	176.82	C
180.00-160.00			B	0.12	2.885		0.8	1	23.521			
			C	0.12	2.885		0.8	1	23.521			
T8	0.72	3.16	A	0.118	2.892	34	0.8	1	26.868	3.74	187.06	C
160.00-140.00			B	0.118	2.892		0.8	1	26.868			
			C	0.118	2.892		0.8	1	26.868			
T9	0.72	4.16	A	0.103	2.95	33	0.8	1	25.322	3.59	179.52	C
140.00-120.00			B	0.103	2.95		0.8	1	25.322			
			C	0.103	2.95		0.8	1	25.322			
T10	0.72	4.22	A	0.095	2.983	32	0.8	1	25.849	3.53	176.55	C
120.00-100.00			B	0.095	2.983		0.8	1	25.849			
			C	0.095	2.983		0.8	1	25.849			
T11	0.72	4.29	A	0.089	3.011	30	0.8	1	26.411	3.45	172.33	C
100.00-80.00			B	0.089	3.011		0.8	1	26.411			
			C	0.089	3.011		0.8	1	26.411			
T12	0.72	4.89	A	0.086	3.021	29	0.8	1	27.891	3.38	169.23	C
80.00-60.00			B	0.086	3.021		0.8	1	27.891			
			C	0.086	3.021		0.8	1	27.891			
T13	0.72	5.75	A	0.086	3.022	27	0.8	1	30.559	3.34	166.85	C
60.00-40.00			B	0.086	3.022		0.8	1	30.559			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl Face
			C	0.086	3.022		0.8	1	30.559			
T14	0.72	5.87	A	0.082	3.039	24	0.8	1	31.300	3.05	152.69	C
40.00-20.00			B	0.082	3.039		0.8	1	31.300			
			C	0.082	3.039		0.8	1	31.300			
T15	0.72	6.32	A	0.079	3.049	21	0.8	1	32.539	2.71	135.74	C
20.00-0.00			B	0.079	3.049		0.8	1	32.539			
			C	0.079	3.049		0.8	1	32.539			
Sum Weight	9.93	51.68						OTM	6584.84 kip-ft	46.60		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl Face
T1	0.08	0.38	A	0.187	2.639	39	0.85	1	7.011	0.82	82.30	B
290.00-280.00			B	0.187	2.639		0.85	1	7.011			
			C	0.187	2.639		0.85	1	7.011			
T2	0.51	1.10	A	0.223	2.521	38	0.85	1	15.309	2.56	128.00	A
280.00-260.00			B	0.223	2.521		0.85	1	15.309			
			C	0.223	2.521		0.85	1	15.309			
T3	0.71	1.28	A	0.203	2.586	38	0.85	1	15.061	2.85	142.64	C
260.00-240.00			B	0.203	2.586		0.85	1	15.061			
			C	0.203	2.586		0.85	1	15.061			
T4	0.72	1.73	A	0.196	2.61	37	0.85	1	19.463	3.23	161.70	C
240.00-220.00			B	0.196	2.61		0.85	1	19.463			
			C	0.196	2.61		0.85	1	19.463			
T5	0.72	2.33	A	0.151	2.768	36	0.85	1	21.951	3.48	173.95	C
220.00-200.00			B	0.151	2.768		0.85	1	21.951			
			C	0.151	2.768		0.85	1	21.951			
T6	0.72	3.07	A	0.133	2.834	35	0.85	1	23.084	3.55	177.32	C
200.00-180.00			B	0.133	2.834		0.85	1	23.084			
			C	0.133	2.834		0.85	1	23.084			
T7	0.72	3.15	A	0.12	2.885	35	0.85	1	24.158	3.59	179.52	C
180.00-160.00			B	0.12	2.885		0.85	1	24.158			
			C	0.12	2.885		0.85	1	24.158			
T8	0.72	3.16	A	0.118	2.892	34	0.85	1	27.714	3.81	190.57	C
160.00-140.00			B	0.118	2.892		0.85	1	27.714			
			C	0.118	2.892		0.85	1	27.714			
T9	0.72	4.16	A	0.103	2.95	33	0.85	1	25.948	3.64	182.09	C
140.00-120.00			B	0.103	2.95		0.85	1	25.948			
			C	0.103	2.95		0.85	1	25.948			
T10	0.72	4.22	A	0.095	2.983	32	0.85	1	26.508	3.58	179.18	C
120.00-100.00			B	0.095	2.983		0.85	1	26.508			
			C	0.095	2.983		0.85	1	26.508			
T11	0.72	4.29	A	0.089	3.011	30	0.85	1	27.105	3.50	175.01	C
100.00-80.00			B	0.089	3.011		0.85	1	27.105			
			C	0.089	3.011		0.85	1	27.105			
T12	0.72	4.89	A	0.086	3.021	29	0.85	1	28.622	3.44	171.93	C
80.00-60.00			B	0.086	3.021		0.85	1	28.622			
			C	0.086	3.021		0.85	1	28.622			
T13	0.72	5.75	A	0.086	3.022	27	0.85	1	31.457	3.40	169.93	C
60.00-40.00			B	0.086	3.022		0.85	1	31.457			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl Face
			C	0.086	3.022		0.85	1	31.457			
T14	0.72	5.87	A	0.082	3.039	24	0.85	1	32.244	3.11	155.62	C
40.00-20.00			B	0.082	3.039		0.85	1	32.244			
			C	0.082	3.039		0.85	1	32.244			
T15	0.72	6.32	A	0.079	3.049	21	0.85	1	33.531	2.77	138.41	C
20.00-0.00			B	0.079	3.049		0.85	1	33.531			
			C	0.079	3.049		0.85	1	33.531			
Sum Weight:	9.93	51.68						OTM	6683.58 kip-ft	47.34		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl Face
T1	0.71	2.28	A	0.523	1.872	3	1	1	22.139	0.15	14.80	C
290.00-280.00			B	0.523	1.872		1	1	22.139			
			C	0.523	1.872		1	1	22.139			
T2	3.76	4.69	A	0.502	1.897	3	1	1	42.679	0.38	19.10	C
280.00-260.00			B	0.502	1.897		1	1	42.679			
			C	0.502	1.897		1	1	42.679			
T3	5.05	4.90	A	0.447	1.979	3	1	1	42.988	0.45	22.39	C
260.00-240.00			B	0.447	1.979		1	1	42.988			
			C	0.447	1.979		1	1	42.988			
T4	5.26	6.24	A	0.401	2.063	3	1	1	49.811	0.52	26.08	C
240.00-220.00			B	0.401	2.063		1	1	49.811			
			C	0.401	2.063		1	1	49.811			
T5	5.22	11.15	A	0.433	2.002	3	1	1	68.631	0.58	29.09	C
220.00-200.00			B	0.433	2.002		1	1	68.631			
			C	0.433	2.002		1	1	68.631			
T6	5.17	12.20	A	0.431	2.005	3	1	1	79.991	0.62	31.25	C
200.00-180.00			B	0.431	2.005		1	1	79.991			
			C	0.431	2.005		1	1	79.991			
T7	5.11	12.43	A	0.386	2.092	3	1	1	80.383	0.64	32.01	C
180.00-160.00			B	0.386	2.092		1	1	80.383			
			C	0.386	2.092		1	1	80.383			
T8	5.09	13.00	A	0.36	2.149	3	1	1	84.636	0.66	32.88	B
160.00-140.00			B	0.36	2.149		1	1	84.636			
			C	0.36	2.149		1	1	84.636			
T9	5.13	13.72	A	0.264	2.396	3	1	1	65.921	0.59	29.73	B
140.00-120.00			B	0.264	2.396		1	1	65.921			
			C	0.264	2.396		1	1	65.921			
T10	5.06	13.72	A	0.242	2.461	3	1	1	66.345	0.58	29.19	B
120.00-100.00			B	0.242	2.461		1	1	66.345			
			C	0.242	2.461		1	1	66.345			
T11	4.97	13.69	A	0.224	2.518	2	1	1	66.886	0.57	28.41	B
100.00-80.00			B	0.224	2.518		1	1	66.886			
			C	0.224	2.518		1	1	66.886			
T12	4.86	14.20	A	0.21	2.564	2	1	1	67.963	0.55	27.40	B
80.00-60.00			B	0.21	2.564		1	1	67.963			
			C	0.21	2.564		1	1	67.963			
T13	4.72	15.26	A	0.201	2.594	2	1	1	71.089	0.53	26.32	B
60.00-40.00			B	0.201	2.594		1	1	71.089			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl Face
			C	0.201	2.594		1	1	71.089			
T14	4.51	14.91	A	0.187	2.638	2	1	1	71.418	0.48	23.78	B
40.00-20.00			B	0.187	2.638		1	1	71.418			
			C	0.187	2.638		1	1	71.418			
T15	4.13	14.16	A	0.173	2.688	2	1	1	70.727	0.41	20.38	B
20.00-0.00			B	0.173	2.688		1	1	70.727			
			C	0.173	2.688		1	1	70.727			
Sum Weight	68.75	166.54						OTM	1101.37 kip-ft	7.71		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl Face
T1	0.71	2.28	A	0.523	1.872	3	0.8	1	21.135	0.14	14.30	A
290.00-280.00			B	0.523	1.872		0.8	1	21.135			
			C	0.523	1.872		0.8	1	21.135			
T2	3.76	4.69	A	0.502	1.897	3	0.8	1	40.887	0.37	18.66	A
280.00-260.00			B	0.502	1.897		0.8	1	40.887			
			C	0.502	1.897		0.8	1	40.887			
T3	5.05	4.90	A	0.447	1.979	3	0.8	1	41.454	0.44	22.01	C
260.00-240.00			B	0.447	1.979		0.8	1	41.454			
			C	0.447	1.979		0.8	1	41.454			
T4	5.26	6.24	A	0.401	2.063	3	0.8	1	47.539	0.51	25.49	C
240.00-220.00			B	0.401	2.063		0.8	1	47.539			
			C	0.401	2.063		0.8	1	47.539			
T5	5.22	11.15	A	0.433	2.002	3	0.8	1	66.579	0.57	28.59	C
220.00-200.00			B	0.433	2.002		0.8	1	66.579			
			C	0.433	2.002		0.8	1	66.579			
T6	5.17	12.20	A	0.431	2.005	3	0.8	1	77.703	0.61	30.69	C
200.00-180.00			B	0.431	2.005		0.8	1	77.703			
			C	0.431	2.005		0.8	1	77.703			
T7	5.11	12.43	A	0.386	2.092	3	0.8	1	77.837	0.63	31.38	C
180.00-160.00			B	0.386	2.092		0.8	1	77.837			
			C	0.386	2.092		0.8	1	77.837			
T8	5.09	13.00	A	0.36	2.149	3	0.8	1	81.254	0.64	32.05	C
160.00-140.00			B	0.36	2.149		0.8	1	81.254			
			C	0.36	2.149		0.8	1	81.254			
T9	5.13	13.72	A	0.264	2.396	3	0.8	1	63.418	0.58	29.07	C
140.00-120.00			B	0.264	2.396		0.8	1	63.418			
			C	0.264	2.396		0.8	1	63.418			
T10	5.06	13.72	A	0.242	2.461	3	0.8	1	63.709	0.57	28.49	C
120.00-100.00			B	0.242	2.461		0.8	1	63.709			
			C	0.242	2.461		0.8	1	63.709			
T11	4.97	13.69	A	0.224	2.518	2	0.8	1	64.109	0.55	27.69	C
100.00-80.00			B	0.224	2.518		0.8	1	64.109			
			C	0.224	2.518		0.8	1	64.109			
T12	4.86	14.20	A	0.21	2.564	2	0.8	1	65.038	0.53	26.67	C
80.00-60.00			B	0.21	2.564		0.8	1	65.038			
			C	0.21	2.564		0.8	1	65.038			
T13	4.72	15.26	A	0.201	2.594	2	0.8	1	67.497	0.51	25.47	C
60.00-40.00			B	0.201	2.594		0.8	1	67.497			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
			C	0.201	2.594		0.8	1	67.497			
T14	4.51	14.91	A	0.187	2.638	2	0.8	1	67.641	0.46	22.96	C
40.00-20.00			B	0.187	2.638		0.8	1	67.641			
			C	0.187	2.638		0.8	1	67.641			
T15	4.13	14.16	A	0.173	2.688	2	0.8	1	66.760	0.39	19.63	C
20.00-0.00			B	0.173	2.688		0.8	1	66.760			
			C	0.173	2.688		0.8	1	66.760			
Sum Weight:	68.75	166.54						OTM	1076.99 kip-ft	7.52		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl Face
T1	0.71	2.28	A	0.523	1.872	3	0.85	1	21.386	0.14	14.24	B
290.00-280.00			B	0.523	1.872		0.85	1	21.386			
			C	0.523	1.872		0.85	1	21.386			
T2	3.76	4.69	A	0.502	1.897	3	0.85	1	41.335	0.38	18.87	A
280.00-260.00			B	0.502	1.897		0.85	1	41.335			
			C	0.502	1.897		0.85	1	41.335			
T3	5.05	4.90	A	0.447	1.979	3	0.85	1	41.837	0.44	22.10	C
260.00-240.00			B	0.447	1.979		0.85	1	41.837			
			C	0.447	1.979		0.85	1	41.837			
T4	5.26	6.24	A	0.401	2.063	3	0.85	1	48.107	0.51	25.64	C
240.00-220.00			B	0.401	2.063		0.85	1	48.107			
			C	0.401	2.063		0.85	1	48.107			
T5	5.22	11.15	A	0.433	2.002	3	0.85	1	67.092	0.57	28.72	C
220.00-200.00			B	0.433	2.002		0.85	1	67.092			
			C	0.433	2.002		0.85	1	67.092			
T6	5.17	12.20	A	0.431	2.005	3	0.85	1	78.275	0.62	30.83	C
200.00-180.00			B	0.431	2.005		0.85	1	78.275			
			C	0.431	2.005		0.85	1	78.275			
T7	5.11	12.43	A	0.386	2.092	3	0.85	1	78.474	0.63	31.54	C
180.00-160.00			B	0.386	2.092		0.85	1	78.474			
			C	0.386	2.092		0.85	1	78.474			
T8	5.09	13.00	A	0.36	2.149	3	0.85	1	82.099	0.64	32.22	C
160.00-140.00			B	0.36	2.149		0.85	1	82.099			
			C	0.36	2.149		0.85	1	82.099			
T9	5.13	13.72	A	0.264	2.396	3	0.85	1	64.044	0.58	29.09	C
140.00-120.00			B	0.264	2.396		0.85	1	64.044			
			C	0.264	2.396		0.85	1	64.044			
T10	5.06	13.72	A	0.242	2.461	3	0.85	1	64.368	0.57	28.53	C
120.00-100.00			B	0.242	2.461		0.85	1	64.368			
			C	0.242	2.461		0.85	1	64.368			
T11	4.97	13.69	A	0.224	2.518	2	0.85	1	64.804	0.55	27.74	C
100.00-80.00			B	0.224	2.518		0.85	1	64.804			
			C	0.224	2.518		0.85	1	64.804			
T12	4.86	14.20	A	0.21	2.564	2	0.85	1	65.769	0.53	26.73	C
80.00-60.00			B	0.21	2.564		0.85	1	65.769			
			C	0.21	2.564		0.85	1	65.769			
T13	4.72	15.26	A	0.201	2.594	2	0.85	1	68.395	0.51	25.56	C
60.00-40.00			B	0.201	2.594		0.85	1	68.395			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl Face
			C	0.201	2.594		0.85	1	68.395			
T14	4.51	14.91	A	0.187	2.638	2	0.85	1	68.585	0.46	23.06	C
40.00-20.00			B	0.187	2.638		0.85	1	68.585			
			C	0.187	2.638		0.85	1	68.585			
T15	4.13	14.16	A	0.173	2.688	2	0.85	1	67.752	0.39	19.72	C
20.00-0.00			B	0.173	2.688		0.85	1	67.752			
			C	0.173	2.688		0.85	1	67.752			
Sum Weight:	68.75	166.54						OTM	1081.65 kip-ft	7.55		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl Face
T1	0.08	0.38	A	0.187	2.639	12	1	1	7.764	0.29	29.39	C
290.00-280.00			B	0.187	2.639		1	1	7.764			
			C	0.187	2.639		1	1	7.764			
T2	0.51	1.10	A	0.223	2.521	12	1	1	17.644	0.87	43.61	C
280.00-260.00			B	0.223	2.521		1	1	17.644			
			C	0.223	2.521		1	1	17.644			
T3	0.71	1.28	A	0.203	2.586	12	1	1	18.168	1.00	49.81	C
260.00-240.00			B	0.203	2.586		1	1	18.168			
			C	0.203	2.586		1	1	18.168			
T4	0.72	1.73	A	0.196	2.61	12	1	1	23.269	1.14	56.80	C
240.00-220.00			B	0.196	2.61		1	1	23.269			
			C	0.196	2.61		1	1	23.269			
T5	0.72	2.33	A	0.151	2.768	12	1	1	23.490	1.16	57.83	C
220.00-200.00			B	0.151	2.768		1	1	23.490			
			C	0.151	2.768		1	1	23.490			
T6	0.72	3.07	A	0.133	2.834	11	1	1	24.800	1.18	59.16	C
200.00-180.00			B	0.133	2.834		1	1	24.800			
			C	0.133	2.834		1	1	24.800			
T7	0.72	3.15	A	0.12	2.885	11	1	1	26.067	1.20	60.11	C
180.00-160.00			B	0.12	2.885		1	1	26.067			
			C	0.12	2.885		1	1	26.067			
T8	0.72	3.16	A	0.118	2.892	11	1	1	30.251	1.29	64.42	B
160.00-140.00			B	0.118	2.892		1	1	30.251			
			C	0.118	2.892		1	1	30.251			
T9	0.72	4.16	A	0.103	2.95	10	1	1	27.825	1.22	60.81	B
140.00-120.00			B	0.103	2.95		1	1	27.825			
			C	0.103	2.95		1	1	27.825			
T10	0.72	4.22	A	0.095	2.983	10	1	1	28.484	1.20	59.95	B
120.00-100.00			B	0.095	2.983		1	1	28.484			
			C	0.095	2.983		1	1	28.484			
T11	0.72	4.29	A	0.089	3.011	10	1	1	29.187	1.17	58.66	B
100.00-80.00			B	0.089	3.011		1	1	29.187			
			C	0.089	3.011		1	1	29.187			
T12	0.72	4.89	A	0.086	3.021	9	1	1	30.816	1.15	57.68	B
80.00-60.00			B	0.086	3.021		1	1	30.816			
			C	0.086	3.021		1	1	30.816			
T13	0.72	5.75	A	0.086	3.022	9	1	1	34.150	1.15	57.41	B
60.00-40.00			B	0.086	3.022		1	1	34.150			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_f	q_z psf	D_p	D_g	A_f ft²	F K	w plf	Ctrl Face
			C	0.086	3.022		1	1	34.150			
T14	0.72	5.87	A	0.082	3.039	8	1	1	35.077	1.05	52.68	B
40.00-20.00			B	0.082	3.039		1	1	35.077			
			C	0.082	3.039		1	1	35.077			
T15	0.72	6.32	A	0.079	3.049	7	1	1	36.506	0.94	46.92	B
20.00-0.00			B	0.079	3.049		1	1	36.506			
			C	0.079	3.049		1	1	36.506			
Sum Weight	9.93	51.68						OTM	2269.60 kip-ft	16.01		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_f	q_z psf	D_p	D_g	A_f ft²	F K	w plf	Ctrl Face
T1	0.08	0.38	A	0.187	2.639	12	0.8	1	6.760	0.27	26.61	A
290.00-280.00			B	0.187	2.639		0.8	1	6.760			
			C	0.187	2.639		0.8	1	6.760			
T2	0.51	1.10	A	0.223	2.521	12	0.8	1	15.852	0.83	41.26	A
280.00-260.00			B	0.223	2.521		0.8	1	15.852			
			C	0.223	2.521		0.8	1	15.852			
T3	0.71	1.28	A	0.203	2.586	12	0.8	1	16.634	0.96	47.78	C
260.00-240.00			B	0.203	2.586		0.8	1	16.634			
			C	0.203	2.586		0.8	1	16.634			
T4	0.72	1.73	A	0.196	2.61	12	0.8	1	20.997	1.08	53.82	C
240.00-220.00			B	0.196	2.61		0.8	1	20.997			
			C	0.196	2.61		0.8	1	20.997			
T5	0.72	2.33	A	0.151	2.768	12	0.8	1	21.438	1.10	55.03	C
220.00-200.00			B	0.151	2.768		0.8	1	21.438			
			C	0.151	2.768		0.8	1	21.438			
T6	0.72	3.07	A	0.133	2.834	11	0.8	1	22.512	1.12	56.03	C
200.00-180.00			B	0.133	2.834		0.8	1	22.512			
			C	0.133	2.834		0.8	1	22.512			
T7	0.72	3.15	A	0.12	2.885	11	0.8	1	23.521	1.13	56.65	C
180.00-160.00			B	0.12	2.885		0.8	1	23.521			
			C	0.12	2.885		0.8	1	23.521			
T8	0.72	3.16	A	0.118	2.892	11	0.8	1	26.868	1.20	59.93	C
160.00-140.00			B	0.118	2.892		0.8	1	26.868			
			C	0.118	2.892		0.8	1	26.868			
T9	0.72	4.16	A	0.103	2.95	10	0.8	1	25.322	1.15	57.52	C
140.00-120.00			B	0.103	2.95		0.8	1	25.322			
			C	0.103	2.95		0.8	1	25.322			
T10	0.72	4.22	A	0.095	2.983	10	0.8	1	25.849	1.13	56.57	C
120.00-100.00			B	0.095	2.983		0.8	1	25.849			
			C	0.095	2.983		0.8	1	25.849			
T11	0.72	4.29	A	0.089	3.011	10	0.8	1	26.411	1.10	55.21	C
100.00-80.00			B	0.089	3.011		0.8	1	26.411			
			C	0.089	3.011		0.8	1	26.411			
T12	0.72	4.89	A	0.086	3.021	9	0.8	1	27.891	1.08	54.22	C
80.00-60.00			B	0.086	3.021		0.8	1	27.891			
			C	0.086	3.021		0.8	1	27.891			
T13	0.72	5.75	A	0.086	3.022	9	0.8	1	30.559	1.07	53.46	C
60.00-40.00			B	0.086	3.022		0.8	1	30.559			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl Face
			C	0.086	3.022		0.8	1	30.559			
T14	0.72	5.87	A	0.082	3.039	8	0.8	1	31.300	0.98	48.92	C
40.00-20.00			B	0.082	3.039		0.8	1	31.300			
			C	0.082	3.039		0.8	1	31.300			
T15	0.72	6.32	A	0.079	3.049	7	0.8	1	32.539	0.87	43.49	C
20.00-0.00			B	0.079	3.049		0.8	1	32.539			
			C	0.079	3.049		0.8	1	32.539			
Sum Weight	9.93	51.68						OTM	2142.37 kip-ft	15.06		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl Face
T1	0.08	0.38	A	0.187	2.639	12	0.85	1	7.011	0.26	26.37	B
290.00-280.00			B	0.187	2.639		0.85	1	7.011			
			C	0.187	2.639		0.85	1	7.011			
T2	0.51	1.10	A	0.223	2.521	12	0.85	1	16.300	0.85	42.31	A
280.00-260.00			B	0.223	2.521		0.85	1	16.300			
			C	0.223	2.521		0.85	1	16.300			
T3	0.71	1.28	A	0.203	2.586	12	0.85	1	17.017	0.97	48.29	C
260.00-240.00			B	0.203	2.586		0.85	1	17.017			
			C	0.203	2.586		0.85	1	17.017			
T4	0.72	1.73	A	0.196	2.61	12	0.85	1	21.565	1.09	54.56	C
240.00-220.00			B	0.196	2.61		0.85	1	21.565			
			C	0.196	2.61		0.85	1	21.565			
T5	0.72	2.33	A	0.151	2.768	12	0.85	1	21.951	1.11	55.73	C
220.00-200.00			B	0.151	2.768		0.85	1	21.951			
			C	0.151	2.768		0.85	1	21.951			
T6	0.72	3.07	A	0.133	2.834	11	0.85	1	23.084	1.14	56.81	C
200.00-180.00			B	0.133	2.834		0.85	1	23.084			
			C	0.133	2.834		0.85	1	23.084			
T7	0.72	3.15	A	0.12	2.885	11	0.85	1	24.158	1.15	57.52	C
180.00-160.00			B	0.12	2.885		0.85	1	24.158			
			C	0.12	2.885		0.85	1	24.158			
T8	0.72	3.16	A	0.118	2.892	11	0.85	1	27.714	1.22	61.06	C
160.00-140.00			B	0.118	2.892		0.85	1	27.714			
			C	0.118	2.892		0.85	1	27.714			
T9	0.72	4.16	A	0.103	2.95	10	0.85	1	25.948	1.17	58.34	C
140.00-120.00			B	0.103	2.95		0.85	1	25.948			
			C	0.103	2.95		0.85	1	25.948			
T10	0.72	4.22	A	0.095	2.983	10	0.85	1	26.508	1.15	57.41	C
120.00-100.00			B	0.095	2.983		0.85	1	26.508			
			C	0.095	2.983		0.85	1	26.508			
T11	0.72	4.29	A	0.089	3.011	10	0.85	1	27.105	1.12	56.07	C
100.00-80.00			B	0.089	3.011		0.85	1	27.105			
			C	0.089	3.011		0.85	1	27.105			
T12	0.72	4.89	A	0.086	3.021	9	0.85	1	28.622	1.10	55.09	C
80.00-60.00			B	0.086	3.021		0.85	1	28.622			
			C	0.086	3.021		0.85	1	28.622			
T13	0.72	5.75	A	0.086	3.022	9	0.85	1	31.457	1.09	54.45	C
60.00-40.00			B	0.086	3.022		0.85	1	31.457			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl Face
			C	0.086	3.022		0.85	1	31.457			
T14	0.72	5.87	A	0.082	3.039	8	0.85	1	32.244	1.00	49.86	C
40.00-20.00			B	0.082	3.039		0.85	1	32.244			
			C	0.082	3.039		0.85	1	32.244			
T15	0.72	6.32	A	0.079	3.049	7	0.85	1	33.531	0.89	44.35	C
20.00-0.00			B	0.079	3.049		0.85	1	33.531			
			C	0.079	3.049		0.85	1	33.531			
Sum Weight:	9.93	51.68						OTM	2174.01 kip-ft	15.30		

Mast Vectors - No Ice

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
T1	290.00-280.00	0	Wind Normal	0.92	0.00	-0.92	-261.33	0.16	-0.46
		30	Wind 90	0.82	0.41	-0.71	-202.99	-117.12	-0.19
		60	Wind 60	0.74	0.64	-0.37	-105.70	-183.16	0.04
		90	Wind 90	0.74	0.74	0.00	0.14	-209.37	0.15
		120	Wind Normal	0.83	0.72	0.41	118.37	-204.61	0.32
		150	Wind 90	0.82	0.41	0.71	203.27	-117.12	0.51
		180	Wind 60	0.83	0.00	0.83	236.85	0.16	0.46
		210	Wind 90	0.82	-0.41	0.71	203.27	117.44	0.19
		240	Wind Normal	0.83	-0.72	0.41	118.37	204.93	-0.04
		270	Wind 90	0.74	-0.74	0.00	0.14	209.69	-0.15
		300	Wind 60	0.74	-0.64	-0.37	-105.70	183.48	-0.32
		330	Wind 90	0.82	-0.41	-0.71	-202.99	117.44	-0.51
T2	280.00-260.00	0	Wind Normal	2.64	0.00	-2.64	-712.51	0.27	-1.16
		30	Wind 90	2.56	1.28	-2.22	-598.05	-345.34	0.40
		60	Wind 60	2.41	2.09	-1.20	-324.48	-562.71	1.10
		90	Wind 90	2.30	2.30	0.00	0.56	-620.63	0.66
		120	Wind Normal	2.38	2.06	1.19	321.93	-556.37	0.81
		150	Wind 90	2.39	1.19	2.07	558.57	-321.90	1.58
		180	Wind 60	2.49	0.00	2.49	674.07	0.27	1.16
		210	Wind 90	2.56	-1.28	2.22	599.16	345.88	-0.40
		240	Wind Normal	2.55	-2.21	1.28	345.37	597.51	-1.10
		270	Wind 90	2.30	-2.30	0.00	0.56	621.18	-0.66
		300	Wind 60	2.23	-1.93	-1.12	-301.05	522.66	-0.81
		330	Wind 90	2.39	-1.19	-2.07	-557.46	322.44	-1.58
T3	260.00-240.00	0	Wind Normal	2.95	0.00	-2.95	-736.70	0.27	-1.28
		30	Wind 90	2.85	1.43	-2.47	-617.42	-356.33	0.51
		60	Wind 60	2.82	2.44	-1.41	-352.42	-610.53	0.87
		90	Wind 90	2.85	2.85	0.00	0.22	-712.92	-0.49
		120	Wind Normal	2.95	2.55	1.47	368.68	-637.92	-0.43
		150	Wind 90	2.85	1.43	2.47	617.87	-356.33	1.24
		180	Wind 60	2.82	0.00	2.82	705.51	0.27	1.28
		210	Wind 90	2.85	-1.43	2.47	617.87	356.87	-0.51
		240	Wind Normal	2.95	-2.55	1.47	368.68	638.46	-0.87
		270	Wind 90	2.85	-2.85	0.00	0.22	713.47	0.49
		300	Wind 60	2.82	-2.44	-1.41	-352.42	611.07	0.43
		330	Wind 90	2.85	-1.43	-2.47	-617.42	356.87	-1.24
T4	240.00-220.00	0	Wind Normal	3.37	0.00	-3.37	-775.56	0.39	-1.86
		30	Wind 90	3.23	1.62	-2.80	-643.85	-371.51	0.53
		60	Wind 60	3.19	2.76	-1.59	-366.25	-634.50	1.17

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
		90	Wind 90	3 23	3 23	0.00	0 31	-743 41	-0 45
		120	Wind Normal	3 37	2 92	1 69	388 24	-671 53	-0 35
		150	Wind 90	3 23	1 62	2 80	644 46	-371 51	1 80
		180	Wind 60	3 19	0 00	3 19	733 42	0 39	1 86
		210	Wind 90	3 23	-1 62	2 80	644 46	372 30	-0 53
		240	Wind Normal	3 37	-2 92	1 69	388 24	672 32	-1 17
		270	Wind 90	3 23	-3 23	0 00	0 31	744 20	0 45
		300	Wind 60	3 19	-2 76	-1 59	-366 25	635 29	0 35
		330	Wind 90	3 23	-1 62	-2 80	-643 85	372 30	-1 80
T5	220 00-200 00	0	Wind Normal	3 61	0 00	-3 61	-757 73	0 49	-2 28
		30	Wind 90	3 48	1 74	-3 01	-632 33	-364 80	0 60
		60	Wind 60	3 44	2 98	-1 72	-360 33	-624 27	1 42
		90	Wind 90	3 48	3 48	0 00	0 38	-730 10	-0 54
		120	Wind Normal	3 61	3 13	1 81	379 43	-656 04	-0 45
		150	Wind 90	3 48	1 74	3 01	633 08	-364 80	2 16
		180	Wind 60	3 44	0 00	3 44	721 79	0 49	2 28
		210	Wind 90	3 48	-1 74	3 01	633 08	365 79	-0 60
		240	Wind Normal	3 61	-3 13	1 81	379 43	657 03	-1 42
		270	Wind 90	3 48	-3 48	0 00	0 38	731 08	0 54
		300	Wind 60	3 44	-2 98	-1 72	-360 33	625 26	0 45
		330	Wind 90	3 48	-1 74	-3 01	-632 33	365 79	-2 16
T6	200 00-180 00	0	Wind Normal	3 69	0 00	-3 69	-701 21	0 59	-2 68
		30	Wind 90	3 55	1 77	-3 07	-583 11	-336 32	0 67
		60	Wind 60	3 50	3 03	-1 75	-331 84	-574 93	1 66
		90	Wind 90	3 55	3 55	0 00	0 44	-673 24	-0 62
		120	Wind Normal	3 69	3 20	1 85	351 27	-607 05	-0 54
		150	Wind 90	3 55	1 77	3 07	584 00	-336 32	2 50
		180	Wind 60	3 50	0 00	3 50	665 00	0 59	2 68
		210	Wind 90	3 55	-1 77	3 07	584 00	337 51	-0 67
		240	Wind Normal	3 69	-3 20	1 85	351 27	608 24	-1 66
		270	Wind 90	3 55	-3 55	0 00	0 44	674 42	0 62
		300	Wind 60	3 50	-3 03	-1 75	-331 84	576 12	0 54
		330	Wind 90	3 55	-1 77	-3 07	-583 11	337 51	-2 50
T7	180 00-160 00	0	Wind Normal	3 75	0 00	-3 75	-637 38	0 69	-3 06
		30	Wind 90	3 59	1 80	-3 11	-528 07	-304 49	0 74
		60	Wind 60	3 54	3 06	-1 77	-300 08	-519 94	1 88
		90	Wind 90	3 59	3 59	0 00	0 51	-609 66	-0 69
		120	Wind Normal	3 75	3 25	1 88	319 46	-551 74	-0 62
		150	Wind 90	3 59	1 80	3 11	529 09	-304 49	2 82
		180	Wind 60	3 54	0 00	3 54	601 68	0 69	3 06
		210	Wind 90	3 59	-1 80	3 11	529 09	305 87	-0 74
		240	Wind Normal	3 75	-3 25	1 88	319 46	553 12	-1 88
		270	Wind 90	3 59	-3 59	0 00	0 51	611 04	0 69
		300	Wind 60	3 54	-3 06	-1 77	-300 08	521 32	0 62
		330	Wind 90	3 59	-1 80	-3 11	-528 07	305 87	-2 82
T8	160 00-140 00	0	Wind Normal	4 02	0 00	-4 02	-602 10	0 79	-3 40
		30	Wind 90	3 81	1 91	-3 30	-494 54	-285 06	0 72
		60	Wind 60	3 74	3 24	-1 87	-280 03	-485 21	1 96
		90	Wind 90	3 81	3 81	0 00	0 56	-570 91	-0 90
		120	Wind Normal	4 02	3 48	2 01	301 90	-521 13	-0 79
		150	Wind 90	3 80	1 90	3 29	493 97	-284 08	3 11
		180	Wind 60	3 74	0 00	3 74	561 19	0 79	3 40
		210	Wind 90	3 81	-1 91	3 30	495 67	286 64	-0 72
		240	Wind Normal	4 02	-3 48	2 01	302 18	523 20	-1 96
		270	Wind 90	3 81	-3 81	0 00	0 56	572 48	0 90
		300	Wind 60	3 74	-3 24	-1 87	-279 75	486 30	0 79
		330	Wind 90	3 80	-1 90	-3 29	-492 84	285 66	-3 11
T9	140 00-120 00	0	Wind Normal	3 78	0 00	-3 78	-490 96	0 89	-3 71
		30	Wind 90	3 64	1 82	-3 15	-409 41	-235 83	0 56
		60	Wind 60	3 59	3 11	-1 80	-232 79	-403 33	1 75
		90	Wind 90	3 64	3 64	0 00	0 58	-472 54	-1 42

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
		120	Wind Normal	3 78	3.27	1 89	246 36	-424.81	-1 16
		150	Wind 90	3.59	1 80	3 11	404.86	-232 52	3 35
		180	Wind 60	3.58	0.00	3 58	465.45	0 89	3 71
		210	Wind 90	3.64	-1 82	3 15	410 58	237 60	-0 56
		240	Wind Normal	3.80	-3 29	1 90	247.30	428 21	-1 75
		270	Wind 90	3.64	-3.64	0 00	0.58	474 31	1 42
		300	Wind 60	3.58	-3 10	-1 79	-231 85	403.47	1 16
		330	Wind 90	3 59	-1.80	-3 11	-403 70	234 30	-3 35
T10	120.00-100 00	0	Wind Normal	3 73	0.00	-3 73	-409 43	0 98	-3 98
		30	Wind 90	3 58	1 79	-3 10	-340 75	-196 12	0 58
		60	Wind 60	3 53	3.06	-1 77	-193.56	-335 38	1 88
		90	Wind 90	3 58	3 58	0 00	0 64	-393 22	-1 51
		120	Wind Normal	3 73	3.23	1 86	205.68	-354 15	-1 25
		150	Wind 90	3.53	1 77	3 06	337 36	-193 42	3 57
		180	Wind 60	3 52	0 00	3 52	387 50	0 98	3 98
		210	Wind 90	3 58	-1 79	3 10	342 03	198 09	-0 58
		240	Wind Normal	3 74	-3 24	1 87	206.45	357 45	-1 88
		270	Wind 90	3 58	-3 58	0 00	0.64	395 19	1 51
		300	Wind 60	3 52	-3 05	-1 76	-192 79	336 02	1 25
		330	Wind 90	3 53	-1 77	-3 06	-336 08	195 39	-3 57
T11	100.00-80.00	0	Wind Normal	3.65	0 00	-3 65	-327.63	1 08	-4 20
		30	Wind 90	3 50	1 75	-3.03	-272 12	-156 43	0 59
		60	Wind 60	3 45	2 98	-1 72	-154 39	-267 55	1 97
		90	Wind 90	3 50	3 50	0.00	0 70	-313 94	-1 59
		120	Wind Normal	3 65	3 16	1 82	164 87	-283 26	-1 32
		150	Wind 90	3 45	1 73	2 99	269 86	-154 31	3 75
		180	Wind 60	3 43	0 00	3 43	309 68	1 08	4 20
		210	Wind 90	3 50	-1 75	3 03	273 53	158.60	-0 59
		240	Wind Normal	3 66	-3 17	1 83	165 48	286.48	-1 97
		270	Wind 90	3 50	-3 50	0 00	0 70	316 11	1 59
		300	Wind 60	3 43	-2 97	-1 72	-153 78	268.67	1 32
		330	Wind 90	3 45	-1 73	-2 99	-268 45	156.48	-3 75
T12	80 00-60 00	0	Wind Normal	3 59	0.00	-3 59	-250.36	1 18	-4 34
		30	Wind 90	3 44	1 72	-2 98	-207 69	-119 17	0 60
		60	Wind 60	3 38	2 93	-1 69	-117 70	-204 00	2 04
		90	Wind 90	3 44	3 44	0 00	0 77	-239 52	-1 64
		120	Wind Normal	3 59	3 11	1 79	126 33	-216 30	-1 37
		150	Wind 90	3 39	1 70	2 94	206 52	-117 61	3 87
		180	Wind 60	3 37	0.00	3 37	236 80	1 18	4 34
		210	Wind 90	3 44	-1 72	2 98	209 22	121 53	-0 60
		240	Wind Normal	3 60	-3 12	1 80	126 77	219 44	-2 04
		270	Wind 90	3 44	-3 44	0 00	0 77	241 88	1 64
		300	Wind 60	3 37	-2 92	-1 69	-117 25	205 60	1 37
		330	Wind 90	3 39	-1 70	-2 94	-204 98	119 97	-3 87
T13	60 00-40 00	0	Wind Normal	3 57	0 00	-3 57	-177 76	1 28	-4 38
		30	Wind 90	3 40	1 70	-2 94	-146 34	-83 68	0 59
		60	Wind 60	3 34	2 89	-1 67	-82 60	-143 21	2 05
		90	Wind 90	3 40	3 40	0 00	0 83	-168.65	-1 65
		120	Wind Normal	3 57	3 09	1 79	90 12	-153 38	-1 39
		150	Wind 90	3 36	1 68	2 91	146.19	-82 65	3 89
		180	Wind 60	3 33	0 00	3 33	167 08	1 28	4 38
		210	Wind 90	3 40	-1 70	2 94	147 99	86 25	-0 59
		240	Wind Normal	3 58	-3 10	1 79	90 42	156 46	-2 05
		270	Wind 90	3 40	-3 40	0 00	0 83	171 21	1 65
		300	Wind 60	3 33	-2 88	-1 66	-82 30	145 26	1 39
		330	Wind 90	3 36	-1 68	-2 91	-144 54	85 21	-3 89
T14	40 00-20 00	0	Wind Normal	3 28	0.00	-3 28	-97 44	1 38	-4 24
		30	Wind 90	3 11	1 56	-2 70	-79 97	-45 31	0 56
		60	Wind 60	3 05	2.64	-1 53	-44 92	-77 96	1 98
		90	Wind 90	3 11	3 11	0 00	0 89	-91 99	-1 59
		120	Wind Normal	3 28	2.84	1 64	50.05	-83 77	-1 35

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
		150	Wind 90	3 08	1 54	2 66	80 78	-44 75	3 76
		180	Wind 60	3 04	0 00	3 04	92 18	1 38	4 24
		210	Wind 90	3 11	-1 56	2 70	81 75	48 06	-0 56
		240	Wind Normal	3 29	-2 85	1 64	50 21	86 81	-1 98
		270	Wind 90	3 11	-3 11	0 00	0 89	94 75	1 59
		300	Wind 60	3 04	-2 64	-1 52	-44 76	80 44	1 35
		330	Wind 90	3 08	-1 54	-2 66	-79 01	47 51	-3 76
T15	20 00-0 00	0	Wind Normal	2 92	0 00	-2 92	-28 25	1 48	-3 93
		30	Wind 90	2 77	1 38	-2 40	-23 03	-12 36	0 52
		60	Wind 60	2 71	2 35	-1 36	-12 63	-22 03	1 83
		90	Wind 90	2 77	2 77	0 00	0 95	-26 20	-1 47
		120	Wind Normal	2 92	2 53	1 46	15 54	-23 80	-1 25
		150	Wind 90	2 74	1 37	2 37	24 64	-12 20	3 47
		180	Wind 60	2 71	0 00	2 71	28 00	1 48	3 93
		210	Wind 90	2 77	-1 38	2 40	24 92	15 32	-0 52
		240	Wind Normal	2 93	-2 54	1 46	15 59	26 84	-1 83
		270	Wind 90	2 77	-2 77	0 00	0 95	29 16	1 47
		300	Wind 60	2 71	-2 34	-1 35	-12 58	24 91	1 25
		330	Wind 90	2 74	-1 37	-2 37	-22 75	15 16	-3 47

Mast Totals - No Ice

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0 00	-49 47	-6966 35	11 93	-44 97
30	23 67	-41 00	-5779 67	-3329 85	8 00
60	40 21	-23 21	-3259 71	-5648 73	23 61
90	46 99	0 00	8 48	-6576 31	-13 73
120	42 54	24 56	3448 22	-5945 88	-11 14
150	23 43	40 57	5734 53	-3294 00	41 38
180	0 00	46 51	6586 22	11 93	44 97
210	-23 67	41 00	5796 62	3353 72	-8 00
240	-42 77	24 69	3475 20	6016 49	-23 61
270	-46 99	0 00	8 48	6600 18	13 73
300	-39 98	-23 08	-3232 73	5625 87	11 14
330	-23 43	-40 57	-5717 58	3317 87	-41 38

Mast Vectors - With Ice

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
T1	290 00-280 00	0	Wind Normal	0 15	0 00	-0 15	-41 36	1 07	-0 05
		30	Wind 90	0 14	0 07	-0 12	-34 33	-19 22	-0 02
		60	Wind 60	0 14	0 12	-0 07	-18 77	-32 85	0 00
		90	Wind 90	0 14	0 14	0 00	0 81	-37 91	0 02
		120	Wind Normal	0 14	0 12	0 07	21 10	-34 06	0 04
		150	Wind 90	0 14	0 07	0 12	35 95	-19 22	0 06
		180	Wind 60	0 14	0 00	0 14	41 57	1 07	0 05
		210	Wind 90	0 14	-0 07	0 12	35 95	21 36	0 02
		240	Wind Normal	0 14	-0 12	0 07	21 10	36 21	-0 00

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
		270	Wind 90	0.14	-0.14	0.00	0.81	40.06	-0.02
		300	Wind 60	0.14	-0.12	-0.07	-18.77	34.99	-0.04
		330	Wind 90	0.14	-0.07	-0.12	-34.33	21.36	-0.06
T2	280.00-260.00	0	Wind Normal	0.38	0.00	-0.38	-99.69	1.82	-0.14
		30	Wind 90	0.38	0.19	-0.33	-84.77	-49.13	0.00
		60	Wind 60	0.37	0.32	-0.18	-46.14	-84.11	0.10
		90	Wind 90	0.36	0.36	0.00	3.47	-95.40	0.11
		120	Wind Normal	0.36	0.32	0.18	52.71	-83.47	0.14
		150	Wind 90	0.37	0.18	0.32	89.01	-47.57	0.19
		180	Wind 60	0.37	0.00	0.37	104.24	1.82	0.14
		210	Wind 90	0.38	-0.19	0.33	91.71	52.76	-0.00
		240	Wind Normal	0.38	-0.33	0.19	54.27	89.81	-0.10
		270	Wind 90	0.36	-0.36	0.00	3.47	99.04	-0.11
		300	Wind 60	0.36	-0.31	-0.18	-44.58	85.05	-0.14
		330	Wind 90	0.37	-0.18	-0.32	-82.07	51.21	-0.19
T3	260.00-240.00	0	Wind Normal	0.45	0.00	-0.45	-110.82	1.81	-0.17
		30	Wind 90	0.44	0.22	-0.38	-94.56	-53.45	-0.01
		60	Wind 60	0.44	0.38	-0.22	-53.87	-93.48	0.06
		90	Wind 90	0.44	0.44	0.00	1.14	-108.70	0.01
		120	Wind Normal	0.45	0.39	0.22	57.12	-95.16	0.05
		150	Wind 90	0.44	0.22	0.38	96.85	-53.45	0.18
		180	Wind 60	0.44	0.00	0.44	111.17	1.81	0.17
		210	Wind 90	0.44	-0.22	0.38	96.85	57.06	0.01
		240	Wind Normal	0.45	-0.39	0.22	57.12	98.77	-0.06
		270	Wind 90	0.44	-0.44	0.00	1.14	112.32	-0.01
		300	Wind 60	0.44	-0.38	-0.22	-53.87	97.09	-0.05
		330	Wind 90	0.44	-0.22	-0.38	-94.56	57.06	-0.18
T4	240.00-220.00	0	Wind Normal	0.52	0.00	-0.52	-117.91	3.16	-0.31
		30	Wind 90	0.51	0.26	-0.44	-100.07	-55.81	-0.04
		60	Wind 60	0.51	0.44	-0.25	-56.57	-98.39	0.10
		90	Wind 90	0.51	0.51	0.00	2.07	-114.78	0.06
		120	Wind Normal	0.52	0.45	0.26	62.06	-100.74	0.13
		150	Wind 90	0.51	0.26	0.44	104.21	-55.81	0.33
		180	Wind 60	0.51	0.00	0.51	119.34	3.16	0.31
		210	Wind 90	0.51	-0.26	0.44	104.21	62.14	0.04
		240	Wind Normal	0.52	-0.45	0.26	62.06	107.06	-0.10
		270	Wind 90	0.51	-0.51	0.00	2.07	121.11	-0.06
		300	Wind 60	0.51	-0.44	-0.25	-56.57	104.72	-0.13
		330	Wind 90	0.51	-0.26	-0.44	-100.07	62.14	-0.33
T5	220.00-200.00	0	Wind Normal	0.58	0.00	-0.58	-119.73	3.91	-0.35
		30	Wind 90	0.57	0.29	-0.50	-101.98	-56.39	-0.06
		60	Wind 60	0.57	0.50	-0.29	-57.57	-100.08	0.11
		90	Wind 90	0.57	0.57	0.00	2.47	-116.69	0.07
		120	Wind Normal	0.58	0.50	0.29	63.57	-101.92	0.15
		150	Wind 90	0.57	0.29	0.50	106.92	-56.39	0.37
		180	Wind 60	0.57	0.00	0.57	122.54	3.91	0.35
		210	Wind 90	0.57	-0.29	0.50	106.92	64.21	0.06
		240	Wind Normal	0.58	-0.50	0.29	63.57	109.74	-0.11
		270	Wind 90	0.57	-0.57	0.00	2.47	124.51	-0.07
		300	Wind 60	0.57	-0.50	-0.29	-57.57	107.90	-0.15
		330	Wind 90	0.57	-0.29	-0.50	-101.98	64.21	-0.37
T6	200.00-180.00	0	Wind Normal	0.62	0.00	-0.62	-115.88	4.63	-0.41
		30	Wind 90	0.62	0.31	-0.53	-98.60	-53.95	-0.07
		60	Wind 60	0.61	0.53	-0.31	-55.46	-96.37	0.13
		90	Wind 90	0.62	0.62	0.00	2.86	-112.53	0.08
		120	Wind Normal	0.62	0.54	0.31	62.22	-98.19	0.17
		150	Wind 90	0.62	0.31	0.53	104.32	-53.95	0.43
		180	Wind 60	0.61	0.00	0.61	119.49	4.63	0.41
		210	Wind 90	0.62	-0.31	0.53	104.32	63.21	0.07
		240	Wind Normal	0.62	-0.54	0.31	62.22	107.46	-0.13
		270	Wind 90	0.62	-0.62	0.00	2.86	121.79	-0.08

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
		300	Wind 60	0.61	-0.53	-0.31	-55.46	105.64	-0.17
		330	Wind 90	0.62	-0.31	-0.53	-98.60	63.21	-0.43
T7	180.00-160.00	0	Wind Normal	0.64	0.00	-0.64	-105.60	5.32	-0.50
		30	Wind 90	0.63	0.32	-0.55	-89.64	-48.29	-0.09
		60	Wind 60	0.63	0.54	-0.31	-50.12	-87.08	0.15
		90	Wind 90	0.63	0.63	0.00	3.23	-101.91	0.09
		120	Wind Normal	0.64	0.55	0.32	57.65	-88.93	0.20
		150	Wind 90	0.63	0.32	0.55	96.10	-48.29	0.52
		180	Wind 60	0.63	0.00	0.63	109.93	5.32	0.50
		210	Wind 90	0.63	-0.32	0.55	96.10	58.94	0.09
		240	Wind Normal	0.64	-0.55	0.32	57.65	99.58	-0.15
		270	Wind 90	0.63	-0.63	0.00	3.23	112.56	-0.09
		300	Wind 60	0.63	-0.54	-0.31	-50.12	97.73	-0.20
		330	Wind 90	0.63	-0.32	-0.55	-89.64	58.94	-0.52
T8	160.00-140.00	0	Wind Normal	0.66	0.00	-0.66	-95.07	5.98	-0.55
		30	Wind 90	0.64	0.32	-0.56	-80.47	-42.35	-0.11
		60	Wind 60	0.64	0.56	-0.32	-44.83	-77.28	0.13
		90	Wind 90	0.64	0.64	0.00	3.24	-90.68	0.06
		120	Wind Normal	0.66	0.57	0.33	52.39	-79.16	0.20
		150	Wind 90	0.64	0.32	0.56	86.65	-42.18	0.56
		180	Wind 60	0.64	0.00	0.64	99.04	5.98	0.55
		210	Wind 90	0.64	-0.32	0.56	86.94	54.30	0.11
		240	Wind Normal	0.66	-0.57	0.33	52.56	91.40	-0.13
		270	Wind 90	0.64	-0.64	0.00	3.24	102.63	-0.06
		300	Wind 60	0.64	-0.55	-0.32	-44.67	88.95	-0.20
		330	Wind 90	0.64	-0.32	-0.56	-80.18	54.14	-0.56
T9	140.00-120.00	0	Wind Normal	0.59	0.00	-0.59	-73.74	6.58	-0.59
		30	Wind 90	0.58	0.29	-0.50	-63.06	-31.24	-0.17
		60	Wind 60	0.58	0.50	-0.29	-35.35	-58.87	0.04
		90	Wind 90	0.58	0.58	0.00	2.43	-69.05	-0.03
		120	Wind Normal	0.59	0.51	0.29	40.52	-59.39	0.17
		150	Wind 90	0.57	0.29	0.50	66.95	-30.67	0.59
		180	Wind 60	0.57	0.00	0.57	76.87	6.58	0.59
		210	Wind 90	0.58	-0.29	0.50	67.93	44.39	0.17
		240	Wind Normal	0.59	-0.52	0.30	41.09	73.53	-0.04
		270	Wind 90	0.58	-0.58	0.00	2.43	82.21	0.03
		300	Wind 60	0.57	-0.50	-0.29	-34.79	71.04	-0.17
		330	Wind 90	0.57	-0.29	-0.50	-62.08	43.83	-0.59
T10	120.00-100.00	0	Wind Normal	0.58	0.00	-0.58	-60.70	7.15	-0.63
		30	Wind 90	0.57	0.29	-0.49	-51.75	-24.23	-0.18
		60	Wind 60	0.57	0.49	-0.28	-28.74	-47.14	0.04
		90	Wind 90	0.57	0.57	0.00	2.60	-55.61	-0.03
		120	Wind Normal	0.58	0.50	0.29	34.25	-47.67	0.18
		150	Wind 90	0.56	0.28	0.49	56.15	-23.77	0.63
		180	Wind 60	0.56	0.00	0.56	64.36	7.15	0.63
		210	Wind 90	0.57	-0.29	0.49	56.95	38.53	0.18
		240	Wind Normal	0.58	-0.51	0.29	34.71	62.77	-0.04
		270	Wind 90	0.57	-0.57	0.00	2.60	69.91	0.03
		300	Wind 60	0.56	-0.49	-0.28	-28.28	60.64	-0.18
		330	Wind 90	0.56	-0.28	-0.49	-50.95	38.07	-0.63
T11	100.00-80.00	0	Wind Normal	0.56	0.00	-0.56	-47.68	7.66	-0.66
		30	Wind 90	0.55	0.28	-0.48	-40.50	-17.31	-0.19
		60	Wind 60	0.55	0.48	-0.28	-22.18	-35.51	0.04
		90	Wind 90	0.55	0.55	0.00	2.74	-42.27	-0.04
		120	Wind Normal	0.56	0.49	0.28	27.95	-36.01	0.18
		150	Wind 90	0.55	0.27	0.47	45.36	-16.94	0.65
		180	Wind 60	0.55	0.00	0.55	51.87	7.66	0.66
		210	Wind 90	0.55	-0.28	0.48	45.98	32.62	0.19
		240	Wind Normal	0.57	-0.49	0.28	28.32	51.95	-0.04
		270	Wind 90	0.55	-0.55	0.00	2.74	57.59	0.04
		300	Wind 60	0.55	-0.47	-0.27	-21.82	50.20	-0.18

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
		330	Wind 90	0 55	-0 27	-0 47	-39 87	32 26	-0 65
T12	80.00-60.00	0	Wind Normal	0 54	0 00	-0 54	-34 97	8 08	-0 68
		30	Wind 90	0 53	0 27	-0 46	-29 55	-10 62	-0 19
		60	Wind 60	0 53	0 46	-0 27	-15 81	-24 25	0 04
		90	Wind 90	0 53	0 53	0 00	2 85	-29 33	-0 04
		120	Wind Normal	0 54	0 47	0 27	21 77	-24 68	0 18
		150	Wind 90	0 53	0 26	0 46	34 79	-10 36	0 67
		180	Wind 60	0 53	0 00	0 53	39 66	8 08	0 68
		210	Wind 90	0 53	-0 27	0 46	35 26	26 79	0 19
		240	Wind Normal	0 55	-0 47	0 27	22 04	41 31	-0 04
		270	Wind 90	0 53	-0 53	0 00	2 85	45 50	0 04
		300	Wind 60	0 53	-0 46	-0 26	-15 55	39 95	-0 18
		330	Wind 90	0 53	-0 26	-0 46	-29 08	26 52	-0 67
T13	60.00-40.00	0	Wind Normal	0 52	0 00	-0 52	-23 04	8 38	-0 67
		30	Wind 90	0 51	0 26	-0 44	-19 22	-4 40	-0 19
		60	Wind 60	0 51	0 44	-0 25	-9 82	-13 68	0 05
		90	Wind 90	0 51	0 51	0 00	2 92	-17 18	-0 05
		120	Wind Normal	0 52	0 45	0 26	15 90	-14 10	0 17
		150	Wind 90	0 50	0 25	0 44	24 74	-4 22	0 66
		180	Wind 60	0 50	0 00	0 50	28 03	8 38	0 67
		210	Wind 90	0 51	-0 26	0 44	25 05	21 16	0 19
		240	Wind Normal	0 53	-0 46	0 26	16 07	31 17	-0 05
		270	Wind 90	0 51	-0 51	0 00	2 92	33 94	0 05
		300	Wind 60	0 50	-0 43	-0 25	-9 64	30 13	-0 17
		330	Wind 90	0 50	-0 25	-0 44	-18 91	20 98	-0 66
T14	40 00-20 00	0	Wind Normal	0 47	0 00	-0 47	-11 18	8 45	-0 64
		30	Wind 90	0.46	0.23	-0 40	-9 09	1 53	-0 18
		60	Wind 60	0.46	0 40	-0 23	-4 00	-3 48	0.05
		90	Wind 90	0.46	0.46	0 00	2 89	-5 39	-0 05
		120	Wind Normal	0.47	0.41	0 23	9 93	-3 74	0 15
		150	Wind 90	0.45	0.23	0 39	14 71	1 63	0.62
		180	Wind 60	0 45	0.00	0 45	16.48	8 45	0.64
		210	Wind 90	0.46	-0.23	0 40	14 87	15 37	0 18
		240	Wind Normal	0.48	-0.41	0 24	10.02	20 80	-0.05
		270	Wind 90	0.46	-0.46	0 00	2 89	22 29	0.05
		300	Wind 60	0.45	-0.39	-0 23	-3 90	20 21	-0 15
		330	Wind 90	0.45	-0.23	-0 39	-8 92	15 27	-0.62
T15	20 00-0.00	0	Wind Normal	0.40	0.00	-0 40	-1 39	7 89	-0 57
		30	Wind 90	0.39	0.20	-0 34	-0 78	5 92	-0 15
		60	Wind 60	0.39	0 34	-0 20	0.67	4 49	0.05
		90	Wind 90	0 39	0.39	0 00	2.63	3 95	-0.06
		120	Wind Normal	0.40	0 35	0 20	4.64	4 41	0 12
		150	Wind 90	0.39	0 19	0 34	6 00	5 95	0.55
		180	Wind 60	0.39	0.00	0 39	6 50	7 89	0 57
		210	Wind 90	0.39	-0 20	0 34	6.05	9 86	0 15
		240	Wind Normal	0.41	-0 35	0 20	4 67	11 42	-0 05
		270	Wind 90	0.39	-0 39	0 00	2.63	11 84	0.06
		300	Wind 60	0.39	-0 34	-0 19	0 70	11 24	-0 12
		330	Wind 90	0.39	-0 19	-0 34	-0 74	9 84	-0 55

Mast Totals - With Ice

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.00	-7.65	-1058 76	81 90	-6 93
30	3 77	-6.54	-898.39	-458 93	-1 65

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
60	6.50	-3 75	-498 57	-848 08	1 09
90	7 53	0 00	38 35	-993 49	0 20
120	6 61	3 82	583 77	-862 80	2 25
150	3 74	6 48	968 70	-455 24	7 03
180	0 00	7 47	1111 08	81 90	6 93
210	-3 77	6 54	975 09	622 72	1 65
240	-6 67	3 85	587 46	1032 98	-1 09
270	-7 53	0 00	38 35	1157 28	-0 20
300	-6 45	-3 72	-494 88	1005 48	-2 25
330	-3 74	-6 48	-892 00	619 03	-7 03

Mast Vectors - Service

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
T1	290 00-280 00	0	Wind Normal	0 29	0.00	-0 29	-83.64	0 16	-0 15
		30	Wind 90	0 26	0 13	-0 23	-64 94	-37.42	-0 06
		60	Wind 60	0 24	0 21	-0 12	-33 77	-58 58	0 01
		90	Wind 90	0 24	0 24	0 00	0 14	-66 97	0 05
		120	Wind Normal	0 27	0 23	0 13	38 02	-65 45	0 10
		150	Wind 90	0 26	0 13	0 23	65 22	-37 42	0 16
		180	Wind 60	0 27	0 00	0 27	75 98	0 16	0 15
		210	Wind 90	0 26	-0 13	0 23	65 22	37 74	0 06
		240	Wind Normal	0 27	-0 23	0 13	38 02	65 77	-0 01
		270	Wind 90	0 24	-0 24	0 00	0 14	67 29	-0 05
		300	Wind 60	0 24	-0 21	-0 12	-33 77	58 90	-0 10
		330	Wind 90	0 26	-0 13	-0 23	-64 94	37 74	-0 16
T2	280.00-260.00	0	Wind Normal	0 87	0 00	-0 87	-234 91	0 27	-0 37
		30	Wind 90	0 85	0 42	-0 73	-197 30	-113 96	0 13
		60	Wind 60	0 80	0 69	-0 40	-107 09	-186 17	0 35
		90	Wind 90	0 76	0 76	0 00	0 56	-205 67	0 21
		120	Wind Normal	0 79	0 68	0 39	107 03	-184 14	0 26
		150	Wind 90	0 79	0 40	0 68	185 41	-106 45	0 51
		180	Wind 60	0 83	0 00	0 83	223 35	0 27	0 37
		210	Wind 90	0 85	-0 42	0 73	198 41	114 50	-0 13
		240	Wind Normal	0 84	-0 73	0 42	114 53	197 69	-0 35
		270	Wind 90	0 76	-0 76	0 00	0 56	206 21	-0 21
		300	Wind 60	0 74	-0 64	-0 37	-99 58	173 71	-0 26
		330	Wind 90	0 79	-0 40	-0 68	-184 30	106 99	-0 51
T3	260 00-240 00	0	Wind Normal	1 00	0.00	-1 00	-248 81	0.27	-0 41
		30	Wind 90	0 97	0 48	-0 84	-208 86	-120.44	0 16
		60	Wind 60	0 96	0 83	-0 48	-119 23	-206.62	0 28
		90	Wind 90	0 97	0 97	0 00	0 22	-241 16	-0 16
		120	Wind Normal	1 00	0 86	0 50	124 74	-215 39	-0 14
		150	Wind 90	0 97	0 48	0 84	209 30	-120.44	0 40
		180	Wind 60	0 96	0 00	0 96	239 12	0.27	0 41
		210	Wind 90	0 97	-0 48	0 84	209 30	120 99	-0 16
		240	Wind Normal	1 00	-0 86	0 50	124 74	215 94	-0 28
		270	Wind 90	0 97	-0 97	0 00	0 22	241 70	0 16
		300	Wind 60	0 96	-0 83	-0 48	-119 23	207 16	0 14
		330	Wind 90	0 97	-0 48	-0 84	-208 86	120 99	-0 40
T4	240 00-220.00	0	Wind Normal	1 14	0 00	-1 14	-260 96	0 39	-0 60
		30	Wind 90	1 09	0 55	-0 95	-217 05	-125 10	0 17
		60	Wind 60	1 08	0 93	-0 54	-123 47	-214 00	0 38
		90	Wind 90	1 09	1 09	0 00	0 31	-250 60	-0 15
		120	Wind Normal	1 14	0 98	0 57	130 94	-225 87	-0 11

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
		150	Wind 90	1.09	0.55	0.95	217.67	-125.10	0.58
		180	Wind 60	1.08	0.00	1.08	247.87	0.39	0.60
		210	Wind 90	1.09	-0.55	0.95	217.67	125.89	-0.17
		240	Wind Normal	1.14	-0.98	0.57	130.94	226.66	-0.38
		270	Wind 90	1.09	-1.09	0.00	0.31	251.38	0.15
		300	Wind 60	1.08	-0.93	-0.54	-123.47	214.79	0.11
		330	Wind 90	1.09	-0.55	-0.95	-217.05	125.89	-0.58
T5	220.00-200.00	0	Wind Normal	1.16	0.00	-1.16	-242.52	0.49	-0.73
		30	Wind 90	1.11	0.56	-0.97	-202.34	-116.55	0.19
		60	Wind 60	1.10	0.95	-0.55	-115.19	-199.68	0.46
		90	Wind 90	1.11	1.11	0.00	0.38	-233.59	-0.17
		120	Wind Normal	1.16	1.00	0.58	121.82	-209.86	-0.14
		150	Wind 90	1.11	0.56	0.97	203.10	-116.55	0.69
		180	Wind 60	1.10	0.00	1.10	231.52	0.49	0.73
		210	Wind 90	1.11	-0.56	0.97	203.10	117.53	-0.19
		240	Wind Normal	1.16	-1.00	0.58	121.82	210.85	-0.46
		270	Wind 90	1.11	-1.11	0.00	0.38	234.57	0.17
		300	Wind 60	1.10	-0.95	-0.55	-115.19	200.67	0.14
		330	Wind 90	1.11	-0.56	-0.97	-202.34	117.53	-0.69
T6	200.00-180.00	0	Wind Normal	1.18	0.00	-1.18	-224.36	0.59	-0.86
		30	Wind 90	1.14	0.57	-0.98	-186.53	-107.36	0.22
		60	Wind 60	1.12	0.97	-0.56	-106.02	-183.81	0.53
		90	Wind 90	1.14	1.14	0.00	0.44	-215.30	-0.20
		120	Wind Normal	1.18	1.02	0.59	112.85	-194.10	-0.17
		150	Wind 90	1.14	0.57	0.98	187.41	-107.36	0.80
		180	Wind 60	1.12	0.00	1.12	213.37	0.59	0.86
		210	Wind 90	1.14	-0.57	0.98	187.41	108.54	-0.22
		240	Wind Normal	1.18	-1.02	0.59	112.85	195.28	-0.53
		270	Wind 90	1.14	-1.14	0.00	0.44	216.49	0.20
		300	Wind 60	1.12	-0.97	-0.56	-106.02	184.99	0.17
		330	Wind 90	1.14	-0.57	-0.98	-186.53	108.54	-0.80
T7	180.00-160.00	0	Wind Normal	1.20	0.00	-1.20	-203.87	0.69	-0.98
		30	Wind 90	1.15	0.58	-1.00	-168.85	-97.09	0.24
		60	Wind 60	1.13	0.98	-0.57	-95.80	-166.12	0.60
		90	Wind 90	1.15	1.15	0.00	0.51	-194.87	-0.22
		120	Wind Normal	1.20	1.04	0.60	102.70	-176.31	-0.20
		150	Wind 90	1.15	0.58	1.00	169.87	-97.09	0.90
		180	Wind 60	1.13	0.00	1.13	193.13	0.69	0.98
		210	Wind 90	1.15	-0.58	1.00	169.87	98.47	-0.24
		240	Wind Normal	1.20	-1.04	0.60	102.70	177.69	-0.60
		270	Wind 90	1.15	-1.15	0.00	0.51	196.25	0.22
		300	Wind 60	1.13	-0.98	-0.57	-95.80	167.50	0.20
		330	Wind 90	1.15	-0.58	-1.00	-168.85	98.47	-0.90
T8	160.00-140.00	0	Wind Normal	1.29	0.00	-1.29	-192.53	0.79	-1.09
		30	Wind 90	1.22	0.61	-1.06	-158.07	-90.80	0.23
		60	Wind 60	1.20	1.04	-0.60	-89.34	-154.93	0.63
		90	Wind 90	1.22	1.22	0.00	0.56	-182.38	-0.29
		120	Wind Normal	1.29	1.11	0.64	97.11	-166.43	-0.25
		150	Wind 90	1.22	0.61	1.05	158.65	-90.48	1.00
		180	Wind 60	1.20	0.00	1.20	180.19	0.79	1.09
		210	Wind 90	1.22	-0.61	1.06	159.19	92.37	-0.23
		240	Wind Normal	1.29	-1.12	0.64	97.20	168.17	-0.63
		270	Wind 90	1.22	-1.22	0.00	0.56	183.96	0.29
		300	Wind 60	1.20	-1.04	-0.60	-89.25	156.35	0.25
		330	Wind 90	1.22	-0.61	-1.05	-157.52	92.06	-1.00
T9	140.00-120.00	0	Wind Normal	1.21	0.00	-1.21	-156.91	0.89	-1.19
		30	Wind 90	1.17	0.58	-1.01	-130.78	-74.96	0.18
		60	Wind 60	1.15	1.00	-0.58	-74.19	-128.63	0.56
		90	Wind 90	1.17	1.17	0.00	0.58	-150.80	-0.45
		120	Wind Normal	1.21	1.05	0.61	79.33	-135.51	-0.37
		150	Wind 90	1.15	0.58	1.00	130.11	-73.90	1.07

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F K	V_1 K	V_2 K	OTM_1 kip-ft	OTM_2 kip-ft	Torque kip-ft
		180	Wind 60	1.15	0.00	1.15	149.53	0.89	1.19
		210	Wind 90	1.17	-0.58	1.01	131.95	76.73	-0.18
		240	Wind Normal	1.22	-1.05	0.61	79.63	137.80	-0.56
		270	Wind 90	1.17	-1.17	0.00	0.58	152.57	0.45
		300	Wind 60	1.15	-0.99	-0.57	-73.89	129.87	0.37
		330	Wind 90	1.15	-0.58	-1.00	-128.95	75.67	-1.07
T10	120.00-100.00	0	Wind Normal	1.19	0.00	-1.19	-130.74	0.98	-1.27
		30	Wind 90	1.15	0.57	-0.99	-108.74	-62.17	0.19
		60	Wind 60	1.13	0.98	-0.57	-61.58	-106.79	0.60
		90	Wind 90	1.15	1.15	0.00	0.64	-125.32	-0.48
		120	Wind Normal	1.19	1.03	0.60	66.34	-112.80	-0.40
		150	Wind 90	1.13	0.57	0.98	108.53	-61.30	1.14
		180	Wind 60	1.13	0.00	1.13	124.59	0.98	1.27
		210	Wind 90	1.15	-0.57	0.99	110.03	64.14	-0.19
		240	Wind Normal	1.20	-1.04	0.60	66.58	115.20	-0.60
		270	Wind 90	1.15	-1.15	0.00	0.64	127.29	0.48
		300	Wind 60	1.13	-0.98	-0.56	-61.33	108.33	0.40
		330	Wind 90	1.13	-0.57	-0.98	-107.24	63.27	-1.14
T11	100.00-80.00	0	Wind Normal	1.17	0.00	-1.17	-104.49	1.08	-1.34
		30	Wind 90	1.12	0.56	-0.97	-86.71	-49.38	0.19
		60	Wind 60	1.10	0.96	-0.55	-48.99	-84.99	0.63
		90	Wind 90	1.12	1.12	0.00	0.70	-99.85	-0.51
		120	Wind Normal	1.17	1.01	0.58	53.30	-90.02	-0.42
		150	Wind 90	1.11	0.55	0.96	86.94	-48.71	1.20
		180	Wind 60	1.10	0.00	1.10	99.70	1.08	1.34
		210	Wind 90	1.12	-0.56	0.97	88.12	51.55	-0.19
		240	Wind Normal	1.17	-1.02	0.59	53.50	92.52	-0.63
		270	Wind 90	1.12	-1.12	0.00	0.70	102.02	0.51
		300	Wind 60	1.10	-0.95	-0.55	-48.79	86.82	0.42
		330	Wind 90	1.11	-0.55	-0.96	-85.53	50.87	-1.20
T12	80.00-60.00	0	Wind Normal	1.15	0.00	-1.15	-79.70	1.18	-1.39
		30	Wind 90	1.10	0.55	-0.95	-66.02	-37.38	0.19
		60	Wind 60	1.08	0.94	-0.54	-37.19	-64.56	0.65
		90	Wind 90	1.10	1.10	0.00	0.77	-75.94	-0.52
		120	Wind Normal	1.15	1.00	0.57	41.00	-68.50	-0.44
		150	Wind 90	1.09	0.54	0.94	66.69	-36.88	1.24
		180	Wind 60	1.08	0.00	1.08	76.39	1.18	1.39
		210	Wind 90	1.10	-0.55	0.95	67.55	39.74	-0.19
		240	Wind Normal	1.15	-1.00	0.58	41.14	71.11	-0.65
		270	Wind 90	1.10	-1.10	0.00	0.77	78.30	0.52
		300	Wind 60	1.08	-0.94	-0.54	-37.05	66.68	0.44
		330	Wind 90	1.09	-0.54	-0.94	-65.16	39.24	-1.24
T13	60.00-40.00	0	Wind Normal	1.14	0.00	-1.14	-56.39	1.28	-1.40
		30	Wind 90	1.09	0.54	-0.94	-46.33	-25.94	0.19
		60	Wind 60	1.07	0.93	-0.53	-25.90	-45.01	0.66
		90	Wind 90	1.09	1.09	0.00	0.83	-53.16	-0.53
		120	Wind Normal	1.14	0.99	0.57	29.44	-48.27	-0.45
		150	Wind 90	1.08	0.54	0.93	47.40	-25.61	1.25
		180	Wind 60	1.07	0.00	1.07	54.09	1.28	1.40
		210	Wind 90	1.09	-0.54	0.94	47.98	28.50	-0.19
		240	Wind Normal	1.15	-0.99	0.57	29.53	51.00	-0.66
		270	Wind 90	1.09	-1.09	0.00	0.83	55.73	0.53
		300	Wind 60	1.07	-0.92	-0.53	-25.81	47.41	0.45
		330	Wind 90	1.08	-0.54	-0.93	-45.75	28.17	-1.25
T14	40.00-20.00	0	Wind Normal	1.05	0.00	-1.05	-30.62	1.38	-1.36
		30	Wind 90	1.00	0.50	-0.86	-25.02	-13.58	0.18
		60	Wind 60	0.98	0.85	-0.49	-13.79	-24.04	0.63
		90	Wind 90	1.00	1.00	0.00	0.89	-28.54	-0.51
		120	Wind Normal	1.05	0.91	0.53	16.64	-25.90	-0.43
		150	Wind 90	0.99	0.49	0.85	26.48	-13.40	1.20
		180	Wind 60	0.98	0.00	0.98	30.14	1.38	1.36

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
		210	Wind 90	1.00	-0.50	0.86	26.79	16.34	-0.18
		240	Wind Normal	1.05	-0.91	0.53	16.69	28.75	-0.63
		270	Wind 90	1.00	-1.00	0.00	0.89	31.30	0.51
		300	Wind 60	0.98	-0.84	-0.49	-13.74	26.71	0.43
		330	Wind 90	0.99	-0.49	-0.85	-24.71	16.16	-1.20
T15	20.00-0.00	0	Wind Normal	0.94	0.00	-0.94	-8.41	1.48	-1.26
		30	Wind 90	0.89	0.44	-0.77	-6.73	-2.96	0.17
		60	Wind 60	0.87	0.75	-0.43	-3.40	-6.06	0.59
		90	Wind 90	0.89	0.89	0.00	0.95	-7.39	-0.47
		120	Wind Normal	0.94	0.81	0.47	5.62	-6.62	-0.40
		150	Wind 90	0.88	0.44	0.76	8.54	-2.91	1.11
		180	Wind 60	0.87	0.00	0.87	9.62	1.48	1.26
		210	Wind 90	0.89	-0.44	0.77	8.63	5.91	-0.17
		240	Wind Normal	0.94	-0.81	0.47	5.64	9.60	-0.59
		270	Wind 90	0.89	-0.89	0.00	0.95	10.35	0.47
		300	Wind 60	0.87	-0.75	-0.43	-3.39	8.99	0.40
		330	Wind 90	0.88	-0.44	-0.76	-6.64	5.86	-1.11

Mast Totals - Service

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.00	-15.98	-2258.85	11.93	-14.41
30	7.65	-13.25	-1874.27	-1075.07	2.56
60	13.00	-7.50	-1054.95	-1829.97	7.56
90	15.19	0.00	8.48	-2131.53	-4.40
120	13.74	7.93	1126.87	-1925.17	-3.57
150	7.57	13.11	1871.33	-1063.58	13.26
180	0.00	15.04	2148.58	11.93	14.41
210	-7.65	13.25	1891.22	1098.94	-2.56
240	-13.82	7.98	1135.51	1964.02	-7.56
270	-15.19	0.00	8.48	2155.40	4.40
300	-12.92	-7.46	-1046.30	1838.86	3.57
330	-7.57	-13.11	-1854.38	1087.45	-13.26

Discrete Appurtenance Pressures - No Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_A Front ft^2	C_AA_A Side ft^2
5/8" x 10' lightning rod	240.0000	0.02	-2.50	1.44	295.00	1.589	39	0.63	0.63
Beacon	120.0000	0.07	2.50	1.44	291.00	1.585	39	2.40	2.40
OB light	0.0000	0.03	0.00	-9.53	146.00	1.371	34	0.50	0.50
OB light	120.0000	0.03	8.25	4.76	146.00	1.371	34	0.50	0.50
OB light	240.0000	0.03	-8.25	4.76	146.00	1.371	34	0.50	0.50
40,000 sq in. (277.8 sq ft EPA)	0.0000	4.50	0.00	0.00	285.00	1.578	39	277.80	277.80
30,000 sq.in. (208.3 sq ft. EPA)	0.0000	4.10	0.00	0.00	275.00	1.566	38	208.30	208.30
30,000 sq.in (208.3 sq ft. EPA)	0.0000	4.10	0.00	0.00	265.00	1.554	38	208.30	208.30

Description	Aiming Azimuth °	Weight K	Offset$_x$ ft	Offset$_z$ ft	z ft	K_a	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
SP1 R5 (Includes 4 5"x72" Pipe)	240 0000	0.14	-3 93	2.27	240 00	1.522	37	2 85	3 15
2-1/2" x 7' Sch. 40	60 0000	0.04	1 75	-1.01	240 00	1 522	37	2 01	2 01
2-1/2" x 7' Sch. 40	180 0000	0.04	0 00	2.02	240.00	1.522	37	2 01	2 01
	Sum Weight:	13.10							

Discrete Appurtenance Vectors - No Ice

5 8" x 10' lightning rod - Elevation 295 - From Leg C

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0 01	0.02	0.00	-0.02	-6 06	0 06	-0 05
30	0.02	0.01	0.01	-0.02	-5 24	-2 99	-0.03
60	0 02	0.00	0 02	-0.01	-3 01	-5 22	0 00
90	0.02	0.01	0.02	0.00	0 03	-6 03	0.03
120	0.01	0.02	0 02	0.01	3 08	-5 22	0.05
150	0.00	0.02	0.01	0.02	5 31	-2 99	0.06
180	0.01	0.02	0.00	0.02	6 12	0 06	0 05
210	0.02	0.01	-0 01	0.02	5 31	3 10	0.03
240	0.02	0.00	-0 02	0.01	3.08	5 33	0.00
270	0.02	0.01	-0.02	0.00	0 03	6.15	-0.03
300	0.01	0 02	-0.02	-0.01	-3 01	5 33	-0 05
330	0.00	0 02	-0.01	-0.02	-5 24	3.10	-0.06

Beacon - Elevation 291 - From Leg B

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0 04	0 07	0.00	-0 08	-22.90	-0 18	0 20
30	0 00	0 08	0.04	-0 07	-19 81	-11.68	0 23
60	0 04	0 07	0.07	-0 04	-11.40	-20 10	0 20
90	0 07	0 04	0 08	0.00	0 11	-23 18	0 11
120	0 08	0 00	0 07	0.04	11 61	-20 10	0 00
150	0 07	0 04	0.04	0.07	20 03	-11 68	-0 11
180	0 04	0 07	0.00	0.08	23.11	-0 18	-0 20
210	0 00	0 08	-0 04	0.07	20.03	11 32	-0 23
240	0 04	0 07	-0.07	0.04	11 61	19 74	-0 20
270	0 07	0 04	-0 08	0.00	0 11	22 82	-0 11
300	0 08	0 00	-0 07	-0.04	-11 40	19 74	0 00
330	0 07	0 04	-0.04	-0.07	-19 81	11 32	0 11

OB light - Elevation 146 - From Leg A

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0 01	0 00	0.00	-0.01	-2 37	0 00	0.00
30	0 01	0 01	0.01	-0.01	-2 09	-1 04	-0 07
60	0 01	0 01	0.01	-0.01	-1 33	-1 80	-0.12
90	0 00	0 01	0.01	0.00	-0 29	-2 08	-0 14
120	0 01	0 01	0.01	0 01	0 75	-1 80	-0 12
150	0 01	0 01	0.01	0 01	1 51	-1 04	-0.07
180	0 01	0.00	0.00	0 01	1 79	0 00	0.00

OB light - Elevation 146 - From Leg A							
Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
210	0.01	0.01	-0.01	0.01	1.51	1.04	0.07
240	0.01	0.01	-0.01	0.01	0.75	1.80	0.12
270	0.00	0.01	-0.01	0.00	-0.29	2.08	0.14
300	0.01	0.01	-0.01	-0.01	-1.33	1.80	0.12
330	0.01	0.01	-0.01	-0.01	-2.09	1.04	0.07

OB light - Elevation 146 - From Leg B							
Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.01	0.01	0.00	-0.01	-1.94	-0.25	0.12
30	0.00	0.01	0.01	-0.01	-1.66	-1.29	0.14
60	0.01	0.01	0.01	-0.01	-0.90	-2.05	0.12
90	0.01	0.01	0.01	0.00	0.14	-2.33	0.07
120	0.01	0.00	0.01	0.01	1.18	-2.05	0.00
150	0.01	0.01	0.01	0.01	1.94	-1.29	-0.07
180	0.01	0.01	0.00	0.01	2.22	-0.25	-0.12
210	0.00	0.01	-0.01	0.01	1.94	0.79	-0.14
240	0.01	0.01	-0.01	0.01	1.18	1.55	-0.12
270	0.01	0.01	-0.01	0.00	0.14	1.83	-0.07
300	0.01	0.00	-0.01	-0.01	-0.90	1.55	0.00
330	0.01	0.01	-0.01	-0.01	-1.66	0.79	0.07

OB light - Elevation 146 - From Leg C							
Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.01	0.01	0.00	-0.01	-1.94	0.25	-0.12
30	0.01	0.01	0.01	-0.01	-1.66	-0.79	-0.07
60	0.01	0.00	0.01	-0.01	-0.90	-1.55	0.00
90	0.01	0.01	0.01	0.00	0.14	-1.83	0.07
120	0.01	0.01	0.01	0.01	1.18	-1.55	0.12
150	0.00	0.01	0.01	0.01	1.94	-0.79	0.14
180	0.01	0.01	0.00	0.01	2.22	0.25	0.12
210	0.01	0.01	-0.01	0.01	1.94	1.29	0.07
240	0.01	0.00	-0.01	0.01	1.18	2.05	0.00
270	0.01	0.01	-0.01	0.00	0.14	2.33	-0.07
300	0.01	0.01	-0.01	-0.01	-0.90	2.05	-0.12
330	0.00	0.01	-0.01	-0.01	-1.66	1.29	-0.14

40,000 sq.in. (277.8 sq.ft. EPA) - Elevation 285 - None A							
Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	9.11	0.00	0.00	-9.11	-2596.13	0.00	0.00
30	9.11	0.00	4.55	-7.89	-2248.31	-1298.06	0.00
60	9.11	0.00	7.89	-4.55	-1298.06	-2248.31	0.00
90	9.11	0.00	9.11	0.00	0.00	-2596.13	0.00
120	9.11	0.00	7.89	4.55	1298.06	-2248.31	0.00
150	9.11	0.00	4.55	7.89	2248.31	-1298.06	0.00
180	9.11	0.00	0.00	9.11	2596.13	0.00	0.00
210	9.11	0.00	-4.55	7.89	2248.31	1298.06	0.00
240	9.11	0.00	-7.89	4.55	1298.06	2248.31	0.00
270	9.11	0.00	-9.11	0.00	0.00	2596.13	0.00

40,000 sq in. (277.8 sq.ft. EPA) - Elevation 285 - None A

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
300	9.11	0.00	-7.89	-4.55	-1298.06	2248.31	0.00
330	9.11	0.00	-4.55	-7.89	-2248.31	1298.06	0.00

30,000 sq in. (208.3 sq.ft. EPA) - Elevation 275 - None C

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	5.56	0.00	0.00	-5.56	-1528.69	0.00	0.00
30	5.56	0.00	2.78	-4.81	-1323.88	-764.34	0.00
60	5.56	0.00	4.81	-2.78	-764.34	-1323.88	0.00
90	5.56	0.00	5.56	0.00	0.00	-1528.69	0.00
120	5.56	0.00	4.81	2.78	764.34	-1323.88	0.00
150	5.56	0.00	2.78	4.81	1323.88	-764.34	0.00
180	5.56	0.00	0.00	5.56	1528.69	0.00	0.00
210	5.56	0.00	-2.78	4.81	1323.88	764.34	0.00
240	5.56	0.00	-4.81	2.78	764.34	1323.88	0.00
270	5.56	0.00	-5.56	0.00	0.00	1528.69	0.00
300	5.56	0.00	-4.81	-2.78	-764.34	1323.88	0.00
330	5.56	0.00	-2.78	-4.81	-1323.88	764.34	0.00

30,000 sq in. (208.3 sq.ft. EPA) - Elevation 265 - None B

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	5.52	0.00	0.00	-5.52	-1461.66	0.00	0.00
30	5.52	0.00	2.76	-4.78	-1265.83	-730.83	0.00
60	5.52	0.00	4.78	-2.76	-730.83	-1265.83	0.00
90	5.52	0.00	5.52	0.00	0.00	-1461.66	0.00
120	5.52	0.00	4.78	2.76	730.83	-1265.83	0.00
150	5.52	0.00	2.76	4.78	1265.83	-730.83	0.00
180	5.52	0.00	0.00	5.52	1461.66	0.00	0.00
210	5.52	0.00	-2.76	4.78	1265.83	730.83	0.00
240	5.52	0.00	-4.78	2.76	730.83	1265.83	0.00
270	5.52	0.00	-5.52	0.00	0.00	1461.66	0.00
300	5.52	0.00	-4.78	-2.76	-730.83	1265.83	0.00
330	5.52	0.00	-2.76	-4.78	-1265.83	730.83	0.00

SP1 R5 (Includes 4.5"x72" Pipe) - Elevation 240 - From Leg C

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.05	0.09	-0.00	-0.10	-23.03	1.52	-0.39
30	0.08	0.05	0.04	-0.08	-19.41	-9.71	-0.23
60	0.09	0.00	0.08	-0.05	-10.50	-18.19	0.00
90	0.08	0.05	0.09	0.00	1.30	-21.66	0.23
120	0.05	0.09	0.08	0.05	12.83	-19.18	0.39
150	0.00	0.10	0.05	0.09	21.02	-11.42	0.45
180	0.05	0.09	0.00	0.10	23.65	-0.45	0.39
210	0.08	0.05	-0.04	0.08	20.03	10.79	0.23
240	0.09	0.00	-0.08	0.05	11.13	19.27	0.00
270	0.08	0.05	-0.09	-0.00	-0.67	22.74	-0.23
300	0.05	0.09	-0.08	-0.05	-12.21	20.26	-0.39
330	0.00	0.10	-0.05	-0.09	-20.39	12.49	-0.45

2-1 2" x 7' Sch. 40 - Elevation 240 - From Face B

Wind Azimuth °	F_a K	F_t K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.03	0.06	0.00	-0.06	-15.32	-0.07	0.11
30	0.06	0.03	0.03	-0.06	-13.27	-7.71	0.06
60	0.06	0.00	0.06	-0.03	-7.68	-13.30	0.00
90	0.06	0.03	0.06	0.00	-0.04	-15.35	-0.06
120	0.03	0.06	0.06	0.03	7.60	-13.30	-0.11
150	0.00	0.06	0.03	0.06	13.19	-7.71	-0.13
180	0.03	0.06	0.00	0.06	15.23	-0.07	-0.11
210	0.06	0.03	-0.03	0.06	13.19	7.57	-0.06
240	0.06	0.00	-0.06	0.03	7.60	13.16	0.00
270	0.06	0.03	-0.06	0.00	-0.04	15.20	0.06
300	0.03	0.06	-0.06	-0.03	-7.68	13.16	0.11
330	0.00	0.06	-0.03	-0.06	-13.27	7.57	0.13

2-1 2" x 7' Sch. 40 - Elevation 240 - From Face C

Wind Azimuth °	F_a K	F_t K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.06	0.00	0.00	-0.06	-15.19	0.00	0.00
30	0.06	0.03	0.03	-0.06	-13.15	-7.64	0.06
60	0.03	0.06	0.06	-0.03	-7.56	-13.23	0.11
90	0.00	0.06	0.06	0.00	0.08	-15.28	0.13
120	0.03	0.06	0.06	0.03	7.72	-13.23	0.11
150	0.06	0.03	0.03	0.06	13.31	-7.64	0.06
180	0.06	0.00	0.00	0.06	15.36	0.00	0.00
210	0.06	0.03	-0.03	0.06	13.31	7.64	-0.06
240	0.03	0.06	-0.06	0.03	7.72	13.23	-0.11
270	0.00	0.06	-0.06	0.00	0.08	15.28	-0.13
300	0.03	0.06	-0.06	-0.03	-7.56	13.23	-0.11
330	0.06	0.03	-0.03	-0.06	-13.15	7.64	-0.06

Discrete Appurtenance Totals - No Ice

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	-0.00	-20.55	-5675.21	1.33	-0.13
30	10.27	-17.80	-4914.31	-2836.08	0.10
60	17.79	-10.27	-2836.50	-4913.48	0.31
90	20.55	0.00	1.48	-5674.22	0.43
120	17.80	10.28	2839.19	-4914.46	0.44
150	10.28	17.80	4916.28	-2837.79	0.33
180	0.00	20.55	5676.19	-0.64	0.13
210	-10.27	17.80	4915.30	2836.77	-0.10
240	-17.79	10.27	2837.49	4914.16	-0.31
270	-20.55	-0.00	-0.50	5674.90	-0.43
300	-17.80	-10.28	-2838.21	4915.15	-0.44
330	-10.28	-17.80	-4915.30	2838.48	-0.33

Discrete Appurtenance Pressures - With Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight K	$Offset_z$ ft	$Offset_r$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	I_z in
5/8" x 10' lightning rod	240.0000	0.13	-2.50	1.44	295.00	1.589	3	5.17	5.17	2.4898
Beacon	120.0000	0.19	2.50	1.44	291.00	1.585	3	3.74	3.74	2.4864
OB light	0.0000	0.05	0.00	-9.53	146.00	1.371	3	0.96	0.96	2.3207
OB light	120.0000	0.05	8.25	4.76	146.00	1.371	3	0.96	0.96	2.3207
OB light	240.0000	0.05	-8.25	4.76	146.00	1.371	3	0.96	0.96	2.3207
40,000 sq in. (277.8 sq ft EPA)	0.0000	9.46	0.00	0.00	285.00	1.578	3	622.44	622.44	2.4812
30,000 sq in. (208.3 sq ft EPA)	0.0000	9.54	0.00	0.00	275.00	1.566	3	465.82	465.82	2.4724
30,000 sq in. (208.3 sq ft EPA)	0.0000	9.52	0.00	0.00	265.00	1.554	3	464.87	464.87	2.4632
SP1 R5 (Includes 4.5"x72" Pipe)	240.0000	0.32	-3.93	2.27	240.00	1.522	3	5.45	5.90	2.4389
2-1/2" x 7' Sch 40	60.0000	0.17	1.75	-1.01	240.00	1.522	3	4.00	4.00	2.4389
2-1/2" x 7' Sch 40	180.0000	0.17	0.00	2.02	240.00	1.522	3	4.00	4.00	2.4389
	Sum Weight	29.65								

Discrete Appurtenance Vectors - With Ice

5.8" x 10' lightning rod - Elevation 295 - From Leg C

Wind Azimuth °	F_a K	F_r K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.01	0.01	0.00	-0.01	-3.85	0.33	-0.03
30	0.01	0.01	0.01	-0.01	-3.30	-1.69	-0.02
60	0.01	0.00	0.01	-0.01	-1.83	-3.16	0.00
90	0.01	0.01	0.01	0.00	0.19	-3.71	0.02
120	0.01	0.01	0.01	0.01	2.21	-3.16	0.03
150	0.00	0.01	0.01	0.01	3.69	-1.69	0.04
180	0.01	0.01	0.00	0.01	4.23	0.33	0.03
210	0.01	0.01	-0.01	0.01	3.69	2.35	0.02
240	0.01	0.00	-0.01	0.01	2.21	3.83	0.00
270	0.01	0.01	-0.01	0.00	0.19	4.37	-0.02
300	0.01	0.01	-0.01	-0.01	-1.83	3.83	-0.03
330	0.00	0.01	-0.01	-0.01	-3.30	2.35	-0.04

Beacon - Elevation 291 - From Leg B

Wind Azimuth °	F_a K	F_r K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.00	0.01	0.00	-0.01	-2.60	-0.48	0.02
30	0.00	0.01	0.00	-0.01	-2.21	-1.92	0.03
60	0.00	0.01	0.01	-0.00	-1.16	-2.97	0.02
90	0.01	0.00	0.01	0.00	0.28	-3.35	0.01
120	0.01	0.00	0.01	0.00	1.71	-2.97	0.00
150	0.01	0.00	0.00	0.01	2.77	-1.92	-0.01
180	0.00	0.01	0.00	0.01	3.15	-0.48	-0.02
210	0.00	0.01	-0.00	0.01	2.77	0.96	-0.03
240	0.00	0.01	-0.01	0.00	1.71	2.01	-0.02
270	0.01	0.00	-0.01	0.00	0.28	2.39	-0.01
300	0.01	0.00	-0.01	-0.00	-1.16	2.01	0.00
330	0.01	0.00	-0.00	-0.01	-2.21	0.96	0.01

OB light - Elevation 146 - From Leg A

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.00	0.00	0.00	-0.00	-0.83	0.00	0.00
30	0.00	0.00	0.00	-0.00	-0.78	-0.16	-0.01
60	0.00	0.00	0.00	-0.00	-0.67	-0.28	-0.02
90	0.00	0.00	0.00	0.00	-0.51	-0.32	-0.02
120	0.00	0.00	0.00	0.00	-0.35	-0.28	-0.02
150	0.00	0.00	0.00	0.00	-0.23	-0.16	-0.01
180	0.00	0.00	0.00	0.00	-0.19	0.00	0.00
210	0.00	0.00	-0.00	0.00	-0.23	0.16	0.01
240	0.00	0.00	-0.00	0.00	-0.35	0.28	0.02
270	0.00	0.00	-0.00	0.00	-0.51	0.32	0.02
300	0.00	0.00	-0.00	-0.00	-0.67	0.28	0.02
330	0.00	0.00	-0.00	-0.00	-0.78	0.16	0.01

OB light - Elevation 146 - From Leg B

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.00	0.00	0.00	-0.00	-0.07	-0.44	0.02
30	0.00	0.00	0.00	-0.00	-0.02	-0.60	0.02
60	0.00	0.00	0.00	-0.00	0.09	-0.72	0.02
90	0.00	0.00	0.00	0.00	0.25	-0.76	0.01
120	0.00	0.00	0.00	0.00	0.41	-0.72	0.00
150	0.00	0.00	0.00	0.00	0.53	-0.60	-0.01
180	0.00	0.00	0.00	0.00	0.57	-0.44	-0.02
210	0.00	0.00	-0.00	0.00	0.53	-0.28	-0.02
240	0.00	0.00	-0.00	0.00	0.41	-0.16	-0.02
270	0.00	0.00	-0.00	0.00	0.25	-0.12	-0.01
300	0.00	0.00	-0.00	-0.00	0.09	-0.16	0.00
330	0.00	0.00	-0.00	-0.00	-0.02	-0.28	0.01

OB light - Elevation 146 - From Leg C

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.00	0.00	0.00	-0.00	-0.07	0.44	-0.02
30	0.00	0.00	0.00	-0.00	-0.02	0.28	-0.01
60	0.00	0.00	0.00	-0.00	0.09	0.16	0.00
90	0.00	0.00	0.00	0.00	0.25	0.12	0.01
120	0.00	0.00	0.00	0.00	0.41	0.16	0.02
150	0.00	0.00	0.00	0.00	0.53	0.28	0.02
180	0.00	0.00	0.00	0.00	0.57	0.44	0.02
210	0.00	0.00	-0.00	0.00	0.53	0.60	0.01
240	0.00	0.00	-0.00	0.00	0.41	0.72	0.00
270	0.00	0.00	-0.00	0.00	0.25	0.76	-0.01
300	0.00	0.00	-0.00	-0.00	0.09	0.72	-0.02
330	0.00	0.00	-0.00	-0.00	-0.02	0.60	-0.02

40,000 sq in. (277.8 sq ft. EPA) - Elevation 285 - None A

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	1.63	0.00	0.00	-1.63	-465.93	0.00	0.00
30	1.63	0.00	0.82	-1.42	-403.51	-232.97	0.00

40,000 sq.in. (277.8 sq.ft. EPA) - Elevation 285 - None A

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
60	1.63	0.00	1.42	-0.82	-232.97	-403.51	0.00
90	1.63	0.00	1.63	0.00	0.00	-465.93	0.00
120	1.63	0.00	1.42	0.82	232.97	-403.51	0.00
150	1.63	0.00	0.82	1.42	403.51	-232.97	0.00
180	1.63	0.00	0.00	1.63	465.93	0.00	0.00
210	1.63	0.00	-0.82	1.42	403.51	232.97	0.00
240	1.63	0.00	-1.42	0.82	232.97	403.51	0.00
270	1.63	0.00	-1.63	0.00	0.00	465.93	0.00
300	1.63	0.00	-1.42	-0.82	-232.97	403.51	0.00
330	1.63	0.00	-0.82	-1.42	-403.51	232.97	0.00

30,000 sq.in. (208.3 sq.ft. EPA) - Elevation 275 - None C

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	1.00	0.00	0.00	-1.00	-273.83	0.00	0.00
30	1.00	0.00	0.50	-0.86	-237.14	-136.91	0.00
60	1.00	0.00	0.86	-0.50	-136.91	-237.14	0.00
90	1.00	0.00	1.00	0.00	0.00	-273.83	0.00
120	1.00	0.00	0.86	0.50	136.91	-237.14	0.00
150	1.00	0.00	0.50	0.86	237.14	-136.91	0.00
180	1.00	0.00	0.00	1.00	273.83	0.00	0.00
210	1.00	0.00	-0.50	0.86	237.14	136.91	0.00
240	1.00	0.00	-0.86	0.50	136.91	237.14	0.00
270	1.00	0.00	-1.00	0.00	0.00	273.83	0.00
300	1.00	0.00	-0.86	-0.50	-136.91	237.14	0.00
330	1.00	0.00	-0.50	-0.86	-237.14	136.91	0.00

30,000 sq.in. (208.3 sq.ft. EPA) - Elevation 265 - None B

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.99	0.00	0.00	-0.99	-261.29	0.00	0.00
30	0.99	0.00	0.49	-0.85	-226.28	-130.64	0.00
60	0.99	0.00	0.85	-0.49	-130.64	-226.28	0.00
90	0.99	0.00	0.99	0.00	0.00	-261.29	0.00
120	0.99	0.00	0.85	0.49	130.64	-226.28	0.00
150	0.99	0.00	0.49	0.85	226.28	-130.64	0.00
180	0.99	0.00	0.00	0.99	261.29	0.00	0.00
210	0.99	0.00	-0.49	0.85	226.28	130.64	0.00
240	0.99	0.00	-0.85	0.49	130.64	226.28	0.00
270	0.99	0.00	-0.99	0.00	0.00	261.29	0.00
300	0.99	0.00	-0.85	-0.49	-130.64	226.28	0.00
330	0.99	0.00	-0.49	-0.85	-226.28	130.64	0.00

SP1 R5 (Includes 4.5"x72" Pipe) - Elevation 240 - From Leg C

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.01	0.01	-0.00	-0.01	-2.80	1.37	-0.06
30	0.01	0.01	0.01	-0.01	-2.27	-0.34	-0.03
60	0.01	0.00	0.01	-0.01	-0.94	-1.62	0.00
90	0.01	0.01	0.01	0.00	0.84	-2.13	0.03
120	0.01	0.01	0.01	0.01	2.58	-1.74	0.06

SP1 R5 (Includes 4.5"x72" Pipe) - Elevation 240 - From Leg C

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
150	0.00	0.01	0.01	0.01	3.83	-0.54	0.07
180	0.01	0.01	0.00	0.01	4.24	1.13	0.06
210	0.01	0.01	-0.01	0.01	3.71	2.84	0.03
240	0.01	0.00	-0.01	0.01	2.38	4.12	0.00
270	0.01	0.01	-0.01	-0.00	0.61	4.64	-0.03
300	0.01	0.01	-0.01	-0.01	-1.14	4.24	-0.06
330	0.00	0.01	-0.01	-0.01	-2.38	3.05	-0.07

2-1/2" x 7' Sch. 40 - Elevation 240 - From Face B

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.01	0.01	0.00	-0.01	-2.60	-0.29	0.02
30	0.01	0.01	0.01	-0.01	-2.27	-1.51	0.01
60	0.01	0.00	0.01	-0.01	-1.38	-2.40	0.00
90	0.01	0.01	0.01	0.00	-0.17	-2.72	-0.01
120	0.01	0.01	0.01	0.01	1.05	-2.40	-0.02
150	0.00	0.01	0.01	0.01	1.94	-1.51	-0.02
180	0.01	0.01	0.00	0.01	2.27	-0.29	-0.02
210	0.01	0.01	-0.01	0.01	1.94	0.93	-0.01
240	0.01	0.00	-0.01	0.01	1.05	1.82	0.00
270	0.01	0.01	-0.01	0.00	-0.17	2.14	0.01
300	0.01	0.01	-0.01	-0.01	-1.38	1.82	0.02
330	0.00	0.01	-0.01	-0.01	-2.27	0.93	0.02

2-1/2" x 7' Sch. 40 - Elevation 240 - From Face C

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.01	0.00	0.00	-0.01	-2.10	0.00	0.00
30	0.01	0.01	0.01	-0.01	-1.77	-1.22	0.01
60	0.01	0.01	0.01	-0.01	-0.88	-2.11	0.02
90	0.00	0.01	0.01	0.00	0.33	-2.43	0.02
120	0.01	0.01	0.01	0.01	1.55	-2.11	0.02
150	0.01	0.01	0.01	0.01	2.44	-1.22	0.01
180	0.01	0.00	0.00	0.01	2.77	0.00	0.00
210	0.01	0.01	-0.01	0.01	2.44	1.22	-0.01
240	0.01	0.01	-0.01	0.01	1.55	2.11	-0.02
270	0.00	0.01	-0.01	0.00	0.33	2.43	-0.02
300	0.01	0.01	-0.01	-0.01	-0.88	2.11	-0.02
330	0.01	0.01	-0.01	-0.01	-1.77	1.22	-0.01

Discrete Appurtenance Totals - With Ice

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	-0.00	-3.68	-1015.95	0.93	-0.05
30	1.84	-3.19	-879.60	-507.67	-0.00
60	3.19	-1.84	-507.19	-880.03	0.04
90	3.68	0.00	1.48	-1016.36	0.08
120	3.19	1.84	510.11	-880.14	0.09

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
150	1 84	3 19	882 43	-507 88	0 08
180	0 00	3 68	1018 67	0 69	0 05
210	-1 84	3 19	882 31	509 30	0 00
240	-3 19	1 84	509 91	881 65	-0 04
270	-3 68	-0 00	1 24	1017 98	-0 08
300	-3 19	-1 84	-507 40	881 77	-0 09
330	-1 84	-3 19	-879 72	509 50	-0 08

Discrete Appurtenance Pressures - Service $G_H = 0.850$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft²	C_AA_C Side ft²
5/8" x 10' lightning rod	240 0000	0 02	-2 50	1 44	295 00	1 589	12	0 63	0 63
Beacon	120 0000	0 07	2 50	1 44	291 00	1 585	12	2 40	2 40
OB light	0 0000	0 03	0 00	-9 53	146 00	1 371	11	0 50	0 50
OB light	120 0000	0 03	8 25	4 76	146 00	1 371	11	0 50	0 50
OB light	240 0000	0 03	-8 25	4 76	146 00	1 371	11	0 50	0 50
40,000 sq in (277 8 sq ft EPA)	0 0000	4 50	0 00	0 00	285 00	1 578	12	277 80	277 80
30,000 sq in (208 3 sq ft EPA)	0 0000	4 10	0 00	0 00	275 00	1 566	12	208 30	208 30
30,000 sq in (208 3 sq ft EPA)	0 0000	4 10	0 00	0 00	265 00	1 554	12	208 30	208 30
SPI R5 (Includes 4 5"x72" Pipe)	240 0000	0 14	-3 93	2 27	240 00	1 522	12	2 85	3 15
2-1/2" x 7' Sch 40	60 0000	0 04	1 75	-1 01	240 00	1 522	12	2 01	2 01
2-1/2" x 7' Sch 40	180 0000	0 04	0 00	2 02	240 00	1 522	12	2 01	2 01
	Sum Weight:	13 10							

Discrete Appurtenance Vectors - Service

5 8" x 10' lightning rod - Elevation 295 - From Leg C

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0 00	0 01	0 00	-0 01	-1 92	0 06	-0 02
30	0 01	0 00	0 00	-0 01	-1 66	-0 92	-0 01
60	0 01	0 00	0 01	-0 00	-0 94	-1 63	0 00
90	0 01	0 00	0 01	0 00	0 03	-1 89	0 01
120	0 00	0 01	0 01	0 00	1 01	-1 63	0 02
150	0 00	0 01	0 00	0 01	1 72	-0 92	0 02
180	0 00	0 01	0 00	0 01	1 98	0 06	0 02
210	0 01	0 00	-0 00	0 01	1 72	1 03	0 01
240	0 01	0 00	-0 01	0 00	1 01	1 75	0 00
270	0 01	0 00	-0 01	0 00	0 03	2 01	-0 01
300	0 00	0 01	-0 01	-0 00	-0 94	1 75	-0 02
330	0 00	0 01	-0 00	-0 01	-1 66	1 03	-0 02

Beacon - Elevation 291 - From Leg B

Wind Azimuth °	F_a K	F_t K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.01	0.02	0.00	-0.03	-7.26	-0.18	0.06
30	0.00	0.03	0.01	-0.02	-6.28	-3.87	0.07
60	0.01	0.02	0.02	-0.01	-3.58	-6.56	0.06
90	0.02	0.01	0.03	0.00	0.11	-7.55	0.04
120	0.03	0.00	0.02	0.01	3.79	-6.56	0.00
150	0.02	0.01	0.01	0.02	6.49	-3.87	-0.04
180	0.01	0.02	0.00	0.03	7.48	-0.18	-0.06
210	0.00	0.03	-0.01	0.02	6.49	3.50	-0.07
240	0.01	0.02	-0.02	0.01	3.79	6.20	-0.06
270	0.02	0.01	-0.03	0.00	0.11	7.19	-0.04
300	0.03	0.00	-0.02	-0.01	-3.58	6.20	0.00
330	0.02	0.01	-0.01	-0.02	-6.28	3.50	0.04

OB light - Elevation 146 - From Leg A

Wind Azimuth °	F_a K	F_t K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.00	0.00	0.00	-0.00	-0.95	0.00	0.00
30	0.00	0.00	0.00	-0.00	-0.86	-0.33	-0.02
60	0.00	0.00	0.00	-0.00	-0.62	-0.58	-0.04
90	0.00	0.00	0.00	0.00	-0.29	-0.67	-0.04
120	0.00	0.00	0.00	0.00	0.05	-0.58	-0.04
150	0.00	0.00	0.00	0.00	0.29	-0.33	-0.02
180	0.00	0.00	0.00	0.00	0.38	0.00	0.00
210	0.00	0.00	-0.00	0.00	0.29	0.33	0.02
240	0.00	0.00	-0.00	0.00	0.05	0.58	0.04
270	0.00	0.00	-0.00	0.00	-0.29	0.67	0.04
300	0.00	0.00	-0.00	-0.00	-0.62	0.58	0.04
330	0.00	0.00	-0.00	-0.00	-0.86	0.33	0.02

OB light - Elevation 146 - From Leg B

Wind Azimuth °	F_a K	F_t K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.00	0.00	0.00	-0.00	-0.52	-0.25	0.04
30	0.00	0.00	0.00	-0.00	-0.43	-0.58	0.04
60	0.00	0.00	0.00	-0.00	-0.19	-0.82	0.04
90	0.00	0.00	0.00	0.00	0.14	-0.91	0.02
120	0.00	0.00	0.00	0.00	0.48	-0.82	0.00
150	0.00	0.00	0.00	0.00	0.72	-0.58	-0.02
180	0.00	0.00	0.00	0.00	0.81	-0.25	-0.04
210	0.00	0.00	-0.00	0.00	0.72	0.09	-0.04
240	0.00	0.00	-0.00	0.00	0.48	0.33	-0.04
270	0.00	0.00	-0.00	0.00	0.14	0.42	-0.02
300	0.00	0.00	-0.00	-0.00	-0.19	0.33	0.00
330	0.00	0.00	-0.00	-0.00	-0.43	0.09	0.02

OB light - Elevation 146 - From Leg C

Wind Azimuth °	F_a K	F_t K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.00	0.00	0.00	-0.00	-0.52	0.25	-0.04
30	0.00	0.00	0.00	-0.00	-0.43	-0.09	-0.02
60	0.00	0.00	0.00	-0.00	-0.19	-0.33	0.00
90	0.00	0.00	0.00	0.00	0.14	-0.42	0.02

OB light - Elevation 146 - From Leg C

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
120	0.00	0.00	0.00	0.00	0.48	-0.33	0.04
150	0.00	0.00	0.00	0.00	0.72	-0.09	0.04
180	0.00	0.00	0.00	0.00	0.81	0.25	0.04
210	0.00	0.00	-0.00	0.00	0.72	0.58	0.02
240	0.00	0.00	-0.00	0.00	0.48	0.82	0.00
270	0.00	0.00	-0.00	0.00	0.14	0.91	-0.02
300	0.00	0.00	-0.00	-0.00	-0.19	0.82	-0.04
330	0.00	0.00	-0.00	-0.00	-0.43	0.58	-0.04

40,000 sq.in. (277.8 sq.ft. EPA) - Elevation 285 - None A

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	2.92	0.00	0.00	-2.92	-831.80	0.00	0.00
30	2.92	0.00	1.46	-2.53	-720.36	-415.90	0.00
60	2.92	0.00	2.53	-1.46	-415.90	-720.36	0.00
90	2.92	0.00	2.92	0.00	0.00	-831.80	0.00
120	2.92	0.00	2.53	1.46	415.90	-720.36	0.00
150	2.92	0.00	1.46	2.53	720.36	-415.90	0.00
180	2.92	0.00	0.00	2.92	831.80	0.00	0.00
210	2.92	0.00	-1.46	2.53	720.36	415.90	0.00
240	2.92	0.00	-2.53	1.46	415.90	720.36	0.00
270	2.92	0.00	-2.92	0.00	0.00	831.80	0.00
300	2.92	0.00	-2.53	-1.46	-415.90	720.36	0.00
330	2.92	0.00	-1.46	-2.53	-720.36	415.90	0.00

30,000 sq.in. (208.3 sq.ft. EPA) - Elevation 275 - None C

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	1.78	0.00	0.00	-1.78	-489.79	0.00	0.00
30	1.78	0.00	0.89	-1.54	-424.17	-244.90	0.00
60	1.78	0.00	1.54	-0.89	-244.90	-424.17	0.00
90	1.78	0.00	1.78	0.00	0.00	-489.79	0.00
120	1.78	0.00	1.54	0.89	244.90	-424.17	0.00
150	1.78	0.00	0.89	1.54	424.17	-244.90	0.00
180	1.78	0.00	0.00	1.78	489.79	0.00	0.00
210	1.78	0.00	-0.89	1.54	424.17	244.90	0.00
240	1.78	0.00	-1.54	0.89	244.90	424.17	0.00
270	1.78	0.00	-1.78	0.00	0.00	489.79	0.00
300	1.78	0.00	-1.54	-0.89	-244.90	424.17	0.00
330	1.78	0.00	-0.89	-1.54	-424.17	244.90	0.00

30,000 sq.in. (208.3 sq.ft. EPA) - Elevation 265 - None B

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	1.77	0.00	0.00	-1.77	-468.31	0.00	0.00
30	1.77	0.00	0.88	-1.53	-405.57	-234.16	0.00
60	1.77	0.00	1.53	-0.88	-234.16	-405.57	0.00
90	1.77	0.00	1.77	0.00	0.00	-468.31	0.00
120	1.77	0.00	1.53	0.88	234.16	-405.57	0.00
150	1.77	0.00	0.88	1.53	405.57	-234.16	0.00
180	1.77	0.00	0.00	1.77	468.31	0.00	0.00

30,000 sq.in. (208.3 sq.ft. EPA) - Elevation 265 - None B

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
210	1.77	0.00	-0.88	1.53	405.57	234.16	0.00
240	1.77	0.00	-1.53	0.88	234.16	405.57	0.00
270	1.77	0.00	-1.77	0.00	0.00	468.31	0.00
300	1.77	0.00	-1.53	-0.88	-234.16	405.57	0.00
330	1.77	0.00	-0.88	-1.53	-405.57	234.16	0.00

SP1 R5 (Includes 4.5"x72" Pipe) - Elevation 240 - From Leg C

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.01	0.03	-0.00	-0.03	-7.17	0.85	-0.13
30	0.03	0.02	0.01	-0.03	-6.01	-2.74	-0.07
60	0.03	0.00	0.03	-0.01	-3.15	-5.46	0.00
90	0.03	0.02	0.03	0.00	0.63	-6.57	0.07
120	0.01	0.03	0.03	0.02	4.32	-5.78	0.13
150	0.00	0.03	0.02	0.03	6.95	-3.29	0.14
180	0.01	0.03	0.00	0.03	7.79	0.22	0.13
210	0.03	0.02	-0.01	0.03	6.63	3.82	0.07
240	0.03	0.00	-0.03	0.01	3.78	6.54	0.00
270	0.03	0.02	-0.03	-0.00	-0.00	7.65	-0.07
300	0.01	0.03	-0.03	-0.02	-3.70	6.86	-0.13
330	0.00	0.03	-0.02	-0.03	-6.32	4.37	-0.14

2-1/2" x 7' Sch. 40 - Elevation 240 - From Face B

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.01	0.02	0.00	-0.02	-4.94	-0.07	0.04
30	0.02	0.01	0.01	-0.02	-4.28	-2.52	0.02
60	0.02	0.00	0.02	-0.01	-2.49	-4.31	0.00
90	0.02	0.01	0.02	0.00	-0.04	-4.97	-0.02
120	0.01	0.02	0.02	0.01	2.41	-4.31	-0.04
150	0.00	0.02	0.01	0.02	4.20	-2.52	-0.04
180	0.01	0.02	0.00	0.02	4.85	-0.07	-0.04
210	0.02	0.01	-0.01	0.02	4.20	2.38	-0.02
240	0.02	0.00	-0.02	0.01	2.41	4.17	0.00
270	0.02	0.01	-0.02	0.00	-0.04	4.82	0.02
300	0.01	0.02	-0.02	-0.01	-2.49	4.17	0.04
330	0.00	0.02	-0.01	-0.02	-4.28	2.38	0.04

2-1/2" x 7' Sch. 40 - Elevation 240 - From Face C

Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.02	0.00	0.00	-0.02	-4.81	0.00	0.00
30	0.02	0.01	0.01	-0.02	-4.16	-2.45	0.02
60	0.01	0.02	0.02	-0.01	-2.37	-4.24	0.04
90	0.00	0.02	0.02	0.00	0.08	-4.89	0.04
120	0.01	0.02	0.02	0.01	2.53	-4.24	0.04
150	0.02	0.01	0.01	0.02	4.32	-2.45	0.02
180	0.02	0.00	0.00	0.02	4.98	0.00	0.00
210	0.02	0.01	-0.01	0.02	4.32	2.45	-0.02
240	0.01	0.02	-0.02	0.01	2.53	4.24	-0.04
270	0.00	0.02	-0.02	0.00	0.08	4.89	-0.04

2-1 2" x 7" Sch. 40 - Elevation 240 - From Face C							
Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
300	0.01	0.02	-0.02	-0.01	-2.37	4.24	-0.04
330	0.02	0.01	-0.01	-0.02	-4.16	2.45	-0.02

Discrete Appurtenance Totals - Service

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	-0.00	-6.58	-1818.00	0.66	-0.04
30	3.29	-5.70	-1574.21	-908.44	0.03
60	5.70	-3.29	-908.48	-1574.04	0.10
90	6.58	0.00	0.81	-1817.78	0.14
120	5.70	3.29	910.01	-1574.35	0.14
150	3.29	5.70	1575.50	-908.99	0.11
180	0.00	6.58	1818.98	0.03	0.04
210	-3.29	5.70	1575.19	909.13	-0.03
240	-5.70	3.29	909.46	1574.72	-0.10
270	-6.58	-0.00	0.17	1818.46	-0.14
300	-5.70	-3.29	-909.03	1575.04	-0.14
330	-3.29	-5.70	-1574.52	909.68	-0.11

Dish Pressures - No Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_a	A_f ft²	q_z psf
240.00	6' HP	240.0000	0.30	-4.37	2.52	1.522	28.27	37
		Sum Weight	0.30					

Dish Vectors - No Ice

6' HP - Elevation 240 - From Leg C											
Wind Azimuth °	C_x	C_z	C_{xz}	F_x K	F_z K	F_{xz} kip-ft	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.002420	-0.000940	0.000022	0.85	-0.33	0.05	0.57	-0.71	-168.90	-134.96	-1.61
30	0.003100	-0.000600	0.000133	1.08	-0.21	0.28	0.83	-0.72	-172.71	-198.57	-0.78
60	0.003230	0.000000	0.000000	1.13	0.00	0.00	0.98	-0.56	-134.61	-233.15	0.00
90	0.003100	0.000600	-0.000133	1.08	0.21	-0.28	1.04	-0.36	-85.61	-248.86	0.78
120	0.002420	0.000940	-0.000022	0.85	0.33	-0.05	0.90	-0.14	-32.43	-213.75	1.61
150	-0.000280	0.001600	0.000251	-0.10	0.56	0.53	0.19	0.53	128.63	-45.42	3.34
180	-0.001820	0.001120	0.000266	-0.64	0.39	0.56	-0.35	0.66	158.33	86.48	2.53
210	-0.002450	0.000450	0.000158	-0.86	0.16	0.33	-0.66	0.56	136.10	160.29	1.12
240	-0.002600	0.000000	0.000000	-0.91	0.00	0.00	-0.79	0.45	109.72	190.04	0.00
270	-0.002450	-0.000450	-0.000158	-0.86	-0.16	-0.33	-0.82	0.29	70.77	198.01	-1.12
300	-0.001820	-0.001120	-0.000266	-0.64	-0.39	-0.56	-0.75	-0.02	-4.27	180.36	-2.53
330	-0.000280	-0.001600	-0.000251	-0.10	-0.56	-0.53	-0.36	-0.44	-103.65	88.69	-3.34

Dish Totals - No Ice

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.57	-0.71	-168.90	-134.96	-1.61
30	0.83	-0.72	-172.71	-198.57	-0.78
60	0.98	-0.56	-134.61	-233.15	0.00
90	1.04	-0.36	-85.61	-248.86	0.78
120	0.90	-0.14	-32.43	-213.75	1.61
150	0.19	0.53	128.63	-45.42	3.34
180	-0.35	0.66	158.33	86.48	2.53
210	-0.66	0.56	136.10	160.29	1.12
240	-0.79	0.45	109.72	190.04	0.00
270	-0.82	0.29	70.77	198.01	-1.12
300	-0.75	-0.02	-4.27	180.36	-2.53
330	-0.36	-0.44	-103.65	88.69	-3.34

Dish Pressures - With Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf	t_z in
240.00	6' HP	240.0000	1.37	-4.37	2.52	1.522	32.13	3	2.4389
		Sum Weight:	1.37						

Dish Vectors - With Ice

6' HP - Elevation 240 - From Leg C

Wind Azimuth °	C_A	C_S	C_M	F_A K	F_S K	F_M kip-ft	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.002420	-0.000940	0.000022	0.08	-0.03	0.00	0.05	-0.06	-11.98	-6.41	-0.15
30	0.003100	-0.000600	0.000133	0.10	-0.02	0.03	0.08	-0.07	-12.33	-12.20	-0.07
60	0.003230	0.000000	0.000000	0.10	0.00	0.00	0.09	-0.05	-8.86	-15.35	0.00
90	0.003100	0.000600	-0.000133	0.10	0.02	-0.03	0.09	-0.03	-4.40	-16.78	0.07
120	0.002420	0.000940	-0.000022	0.08	0.03	-0.00	0.08	-0.01	0.44	-13.59	0.15
150	-0.000280	0.001600	0.000251	-0.01	0.05	0.05	0.02	0.05	15.10	1.74	0.30
180	-0.001820	0.001120	0.000266	-0.06	0.04	0.05	-0.03	0.06	17.81	13.75	0.23
210	-0.002450	0.000450	0.000158	-0.08	0.01	0.03	-0.06	0.05	15.78	20.47	0.10
240	-0.002600	0.000000	0.000000	-0.08	0.00	0.00	-0.07	0.04	13.38	23.18	0.00
270	-0.002450	-0.000450	-0.000158	-0.08	-0.01	-0.03	-0.07	0.03	9.84	23.90	-0.10
300	-0.001820	-0.001120	-0.000266	-0.06	-0.04	-0.05	-0.07	-0.00	3.00	22.30	-0.23
330	-0.000280	-0.001600	-0.000251	-0.01	-0.05	-0.05	-0.03	-0.04	-6.04	13.95	-0.30

Dish Totals - With Ice

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.05	-0.06	-11.98	-6.41	-0.15
30	0.08	-0.07	-12.33	-12.20	-0.07

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
60	0.09	-0.05	-8.86	-15.35	0.00
90	0.09	-0.03	-4.40	-16.78	0.07
120	0.08	-0.01	0.44	-13.59	0.15
150	0.02	0.05	15.10	1.74	0.30
180	-0.03	0.06	17.81	13.75	0.23
210	-0.06	0.05	15.78	20.47	0.10
240	-0.07	0.04	13.38	23.18	0.00
270	-0.07	0.03	9.84	23.90	-0.10
300	-0.07	-0.00	3.00	22.30	-0.23
330	-0.03	-0.04	-6.04	13.95	-0.30

Dish Pressures - Service

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_z	A_1 ft^2	q psf
240.00	6' HP	240.0000	0.30	-4.37	2.52	1.522	28.27	12
		Sum Weight	0.30					

Dish Vectors - Service

6' HP - Elevation 240 - From Leg C											
Wind Azimuth °	C_A	C_S	C_M	F_A K	F_S K	F_M kip-ft	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.002420	-0.000940	0.000022	0.27	-0.11	0.01	0.18	-0.23	-53.60	-42.35	-0.52
30	0.003100	-0.000600	0.000133	0.35	-0.07	0.09	0.27	-0.23	-54.82	-62.73	-0.25
60	0.003230	0.000000	0.000000	0.36	0.00	0.00	0.31	-0.18	-42.61	-73.81	0.00
90	0.003100	0.000600	-0.000133	0.35	0.07	-0.09	0.33	-0.12	-26.91	-78.84	0.25
120	0.002420	0.000940	-0.000022	0.27	0.11	-0.01	0.29	-0.04	-9.88	-67.59	0.52
150	-0.000280	0.001600	0.000251	-0.03	0.18	0.17	0.06	0.17	41.73	-13.66	1.07
180	-0.001820	0.001120	0.000266	-0.20	0.13	0.18	-0.11	0.21	51.24	28.60	0.81
210	-0.002450	0.000450	0.000158	-0.27	0.05	0.11	-0.21	0.18	44.12	52.25	0.36
240	-0.002600	0.000000	0.000000	-0.29	0.00	0.00	-0.25	0.15	35.67	61.78	0.00
270	-0.002450	-0.000450	-0.000158	-0.27	-0.05	-0.11	-0.26	0.09	23.19	64.33	-0.36
300	-0.001820	-0.001120	-0.000266	-0.20	-0.13	-0.18	-0.24	-0.01	-0.85	58.68	-0.81
330	-0.000280	-0.001600	-0.000251	-0.03	-0.18	-0.17	-0.12	-0.14	-32.70	29.31	-1.07

Dish Totals - Service

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.18	-0.23	-53.60	-42.35	-0.52
30	0.27	-0.23	-54.82	-62.73	-0.25
60	0.31	-0.18	-42.61	-73.81	0.00
90	0.33	-0.12	-26.91	-78.84	0.25
120	0.29	-0.04	-9.88	-67.59	0.52
150	0.06	0.17	41.73	-13.66	1.07
180	-0.11	0.21	51.24	28.60	0.81
210	-0.21	0.18	44.12	52.25	0.36

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
240	-0.25	0.15	35.67	61.78	0.00
270	-0.26	0.09	23.19	64.33	-0.36
300	-0.24	-0.01	-0.85	58.68	-0.81
330	-0.12	-0.14	-32.70	29.31	-1.07

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Leg Weight	35.35					
Bracing Weight	16.33					
Total Member Self-Weight	51.68			9.72	13.59	
Total Weight	75.02			9.72	13.59	
Wind 0 deg - No Ice		0.56	-70.72	-12810.45	-121.70	-46.71
Wind 30 deg - No Ice		34.77	-59.52	-10866.70	-6364.50	7.32
Wind 60 deg - No Ice		58.98	-34.05	-6230.83	-10795.36	23.92
Wind 90 deg - No Ice		68.58	-0.36	-75.66	-12499.38	-12.51
Wind 120 deg - No Ice		61.23	34.70	6254.98	-11074.09	-9.09
Wind 150 deg - No Ice		33.90	58.91	10779.44	-6177.21	45.06
Wind 180 deg - No Ice		-0.35	67.72	12420.74	97.77	47.63
Wind 210 deg - No Ice		-34.60	59.36	10848.02	6350.78	-6.98
Wind 240 deg - No Ice		-61.34	35.42	6422.41	11120.69	-23.92
Wind 270 deg - No Ice		-68.36	0.29	78.75	12473.09	12.17
Wind 300 deg - No Ice		-58.52	-33.38	-6075.21	10721.37	8.17
Wind 330 deg - No Ice		-34.07	-58.81	-10736.53	6245.04	-45.06
Member Ice	114.85					
Total Weight Ice	266.31			43.17	88.70	
Wind 0 deg - Ice		0.05	-11.40	-2086.69	76.41	-7.13
Wind 30 deg - Ice		5.69	-9.79	-1790.32	-978.81	-1.72
Wind 60 deg - Ice		9.78	-5.65	-1014.63	-1743.45	1.13
Wind 90 deg - Ice		11.30	-0.03	35.43	-2026.63	0.35
Wind 120 deg - Ice		9.88	5.64	1094.33	-1756.53	2.49
Wind 150 deg - Ice		5.60	9.72	1866.24	-961.38	7.42
Wind 180 deg - Ice		-0.03	11.21	2147.56	96.34	7.21
Wind 210 deg - Ice		-5.68	9.78	1873.19	1152.49	1.75
Wind 240 deg - Ice		-9.93	5.73	1110.75	1937.81	-1.13
Wind 270 deg - Ice		-11.28	0.03	49.43	2199.17	-0.38
Wind 300 deg - Ice		-9.70	-5.56	-999.27	1909.54	-2.57
Wind 330 deg - Ice		-5.62	-9.71	-1777.76	1142.48	-7.42
Total Weight	75.02			9.72	13.59	
Wind 0 deg - Service		0.18	-22.79	-4138.92	-41.69	-14.97
Wind 30 deg - Service		11.21	-19.18	-3511.78	-2058.18	2.35
Wind 60 deg - Service		19.01	-10.98	-2014.52	-3489.75	7.66
Wind 90 deg - Service		22.11	-0.11	-26.11	-4040.09	-4.01
Wind 120 deg - Service		19.73	11.18	2018.52	-3579.06	-2.91
Wind 150 deg - Service		10.93	18.99	3480.08	-1998.17	14.44
Wind 180 deg - Service		-0.11	21.83	4010.32	28.63	15.26
Wind 210 deg - Service		-11.15	19.13	3502.05	2048.38	-2.24
Wind 240 deg - Service		-19.77	11.41	2072.16	3588.58	-7.66
Wind 270 deg - Service		-22.03	0.09	23.36	4026.26	3.90
Wind 300 deg - Service		-18.86	-10.76	-1964.66	3460.64	2.62
Wind 330 deg - Service		-10.98	-18.96	-3470.07	2014.50	-14.44

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	290 - 280	Leg	Max Tension	15	5.07	0.01	-0.31
			Max. Compression	18	-7.59	-0.28	0.17
			Max. Mx	20	-2.00	-0.56	0.02
			Max. My	2	-7.51	-0.02	0.58
			Max. Vy	20	-3.05	0.26	-0.12
			Max. Vx	2	-3.07	-0.01	0.34
		Diagonal	Max Tension	20	4.42	0.00	0.00
			Max. Compression	8	-5.00	0.00	0.00
			Max. Mx	14	-0.49	-0.05	0.00
			Max. My	20	-4.99	-0.01	0.02
			Max. Vy	38	-0.03	0.02	0.00
			Max. Vx	20	0.01	0.00	0.00
		Top Girt	Max Tension	22	1.13	0.00	0.00
			Max. Compression	18	-1.34	0.00	0.00
			Max. Mx	26	0.07	-0.08	0.00
			Max. My	12	-0.23	0.00	0.00
			Max. Vy	26	0.07	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T2	280 - 260	Leg	Max Tension	15	69.91	-0.02	0.60
			Max. Compression	2	-78.36	-0.11	2.53
			Max. Mx	8	32.64	-2.50	0.23
			Max. My	14	39.07	0.04	-2.62
			Max. Vy	20	-1.90	1.92	-0.65
			Max. Vx	2	-2.00	-0.03	2.31
		Diagonal	Max Tension	20	12.31	0.12	-0.01
			Max. Compression	8	-12.84	0.00	0.00
			Max. Mx	17	-5.10	-0.14	-0.01
			Max. My	20	-9.54	-0.06	0.05
			Max. Vy	35	-0.05	0.08	-0.00
			Max. Vx	20	0.01	0.00	0.00
T3	260 - 240	Leg	Max Tension	15	136.21	-0.18	-0.02
			Max. Compression	2	-148.35	2.47	-0.04
			Max. Mx	2	-107.69	3.52	0.04
			Max. My	12	-6.30	-0.00	-2.29
			Max. Vy	2	-0.80	3.52	0.04
			Max. Vx	12	0.50	-0.00	-2.29
		Diagonal	Max Tension	8	7.60	0.04	-0.00
			Max. Compression	20	-8.44	0.00	0.00
			Max. Mx	17	-4.16	-0.07	0.00
			Max. My	2	-8.26	-0.04	0.01
			Max. Vy	35	-0.04	0.04	-0.00
			Max. Vx	2	-0.00	0.00	0.00
T4	240 - 220	Leg	Max Tension	15	181.29	-3.78	0.00
			Max. Compression	18	-197.25	-5.73	0.02
			Max. Mx	18	-197.25	-5.73	0.02
			Max. My	4	-7.27	-0.09	-2.87
			Max. Vy	18	1.54	4.18	0.02
			Max. Vx	12	-0.57	0.12	-0.85
		Diagonal	Max Tension	2	7.77	0.00	0.00
			Max. Compression	14	-7.72	0.00	0.00
			Max. Mx	16	2.37	0.11	0.00
			Max. My	14	-7.71	-0.01	-0.04
			Max. Vy	34	0.05	0.05	-0.01
			Max. Vx	14	0.01	0.00	0.00
T5	220 - 200	Leg	Max Tension	15	208.95	-5.89	0.17
			Max. Compression	18	-226.56	10.50	0.18
			Max. Mx	18	-210.72	13.67	0.15
			Max. My	12	-9.77	0.04	-11.58
			Max. Vy	18	-2.31	13.67	0.15
			Max. Vx	12	1.70	0.04	-11.58
		Diagonal	Max Tension	14	6.82	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	2	-7.89	0.00	0.00
			Max. Mx	35	1.01	0.10	-0.01
			Max. My	27	0.20	0.07	0.01
			Max. Vy	33	0.06	0.09	0.01
			Max. Vx	35	0.00	0.00	0.00
T6	200 - 180	Leg	Max Tension	7	239.43	-4.90	0.08
			Max. Compression	18	-261.49	9.22	0.11
			Max. Mx	18	-245.76	10.62	0.12
			Max. My	12	-11.91	0.00	-7.82
			Max. Vy	2	-0.90	10.62	0.30
			Max. Vx	24	-0.42	0.00	7.82
		Diagonal	Max Tension	2	6.51	0.00	0.00
			Max. Compression	2	-7.07	0.00	0.00
			Max. Mx	35	0.79	0.12	0.02
			Max. My	27	0.06	0.10	0.02
			Max. Vy	33	0.08	0.12	0.02
			Max. Vx	35	0.01	0.00	0.00
T7	180 - 160	Leg	Max Tension	7	266.90	-4.68	0.05
			Max. Compression	18	-292.70	6.93	0.06
			Max. Mx	18	-277.47	9.07	0.10
			Max. My	4	-14.22	-0.13	-8.11
			Max. Vy	2	-0.61	9.06	0.25
			Max. Vx	24	-0.42	-0.17	8.09
		Diagonal	Max Tension	2	6.57	0.00	0.00
			Max. Compression	8	-7.06	0.00	0.00
			Max. Mx	35	1.10	0.15	-0.02
			Max. My	27	0.12	0.13	0.02
			Max. Vy	33	0.09	0.15	0.02
			Max. Vx	35	0.01	0.00	0.00
T8	160 - 140	Leg	Max Tension	7	293.09	-5.70	0.06
			Max. Compression	18	-322.99	5.47	0.26
			Max. Mx	18	-306.81	9.75	0.04
			Max. My	12	-15.34	-0.20	-7.42
			Max. Vy	2	-0.74	9.73	0.09
			Max. Vx	24	-0.69	-0.20	7.42
		Diagonal	Max Tension	2	7.74	0.00	0.00
			Max. Compression	2	-7.90	0.00	0.00
			Max. Mx	33	0.89	0.19	-0.03
			Max. My	14	-7.61	0.01	-0.03
			Max. Vy	33	0.11	0.19	-0.03
			Max. Vx	32	-0.01	0.00	0.00
T9	140 - 120	Leg	Max Tension	7	308.42	0.42	0.04
			Max. Compression	18	-339.90	13.72	0.30
			Max. Mx	2	-339.19	13.72	0.67
			Max. My	12	-16.80	0.11	-10.16
			Max. Vy	3	-0.96	13.68	0.67
			Max. Vx	24	-0.67	0.11	10.16
		Diagonal	Max Tension	15	10.28	0.00	0.00
			Max. Compression	2	-11.77	0.00	0.00
			Max. Mx	33	0.71	-0.45	0.08
			Max. My	33	-1.97	-0.42	0.09
			Max. Vy	33	-0.17	-0.45	-0.08
			Max. Vx	38	-0.01	0.00	0.00
T10	120 - 100	Leg	Max Tension	7	334.87	0.84	0.16
			Max. Compression	18	-371.60	12.31	0.31
			Max. Mx	2	-370.78	12.32	0.67
			Max. My	12	-19.39	-0.01	-8.18
			Max. Vy	2	-0.93	12.32	0.67
			Max. Vx	24	-0.36	-0.01	8.18
		Diagonal	Max Tension	2	10.26	0.00	0.00
			Max. Compression	14	-10.46	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	33	1.20	-0.53	-0.08
			Max. My	27	-0.41	-0.52	-0.09
			Max. Vy	33	-0.19	-0.53	-0.08
			Max. Vx	35	-0.01	0.00	0.00
T11	100 - 80	Leg	Max Tension	7	354.96	-1.89	0.10
			Max. Compression	18	-396.17	11.15	0.23
			Max. Mx	2	-395.26	11.15	0.52
			Max. My	12	-20.92	0.11	-7.48
			Max. Vy	3	-0.71	11.11	0.52
			Max. Vx	24	-0.53	0.11	7.48
		Diagonal	Max Tension	15	10.02	0.00	0.00
			Max. Compression	2	-11.49	0.00	0.00
			Max. Mx	33	1.25	-0.59	-0.09
			Max. My	27	-0.07	-0.58	-0.09
			Max. Vy	33	-0.21	-0.59	-0.09
			Max. Vx	27	-0.01	0.00	0.00
T12	80 - 60	Leg	Max Tension	7	377.92	-0.09	0.11
			Max. Compression	18	-424.77	10.83	0.30
			Max. Mx	19	-417.72	10.85	0.30
			Max. My	12	-23.54	-0.16	-9.22
			Max. Vy	6	0.79	-10.59	-0.29
			Max. Vx	24	-0.53	-0.16	9.22
		Diagonal	Max Tension	2	10.31	0.00	0.00
			Max. Compression	4	-10.51	0.00	0.00
			Max. Mx	33	0.59	-0.69	-0.10
			Max. My	27	-0.96	-0.68	-0.11
			Max. Vy	33	-0.22	-0.69	-0.10
			Max. Vx	27	-0.01	0.00	0.00
T13	60 - 40	Leg	Max Tension	7	397.27	-2.46	0.02
			Max. Compression	18	-449.05	11.05	0.19
			Max. Mx	18	-449.05	11.05	0.19
			Max. My	4	-25.30	-0.36	-5.15
			Max. Vy	3	-0.66	10.93	0.40
			Max. Vx	12	-0.31	-0.36	-5.07
		Diagonal	Max Tension	15	10.60	0.00	0.00
			Max. Compression	2	-12.21	0.00	0.00
			Max. Mx	33	1.74	-0.91	-0.13
			Max. My	27	0.37	-0.89	-0.13
			Max. Vy	33	-0.29	-0.91	-0.13
			Max. Vx	27	-0.02	0.00	0.00
T14	40 - 20	Leg	Max Tension	7	418.66	-1.92	0.07
			Max. Compression	18	-477.13	7.99	0.18
			Max. Mx	6	412.04	-8.34	-0.19
			Max. My	12	-28.72	-0.38	-12.09
			Max. Vy	35	-0.57	-4.12	-0.01
			Max. Vx	12	0.76	-0.38	-12.09
		Diagonal	Max Tension	2	11.29	0.00	0.00
			Max. Compression	14	-11.06	0.00	0.00
			Max. Mx	37	-0.48	-1.06	-0.15
			Max. My	38	-2.76	-1.03	-0.16
			Max. Vy	37	-0.31	-1.06	-0.15
			Max. Vx	38	-0.02	0.00	0.00
T15	20 - 0	Leg	Max Tension	7	436.01	-2.39	0.04
			Max. Compression	18	-499.88	4.39	0.11
			Max. Mx	18	-499.88	4.39	0.11
			Max. My	4	-30.80	-0.72	-8.80
			Max. Vy	10	-0.32	4.38	0.03
			Max. Vx	12	-0.60	-0.73	-8.63
		Diagonal	Max Tension	15	11.73	0.00	0.00
			Max. Compression	2	-13.55	0.00	0.00
			Max. Mx	36	2.40	-1.02	0.13

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	27	1.92	-1.02	-0.14
			Max. Vy	36	-0.30	-1.02	0.13
			Max. Vx	27	-0.02	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	513.42	40.83	-23.06
	Max. H_x	18	513.42	40.83	-23.06
	Max. H_z	7	-445.44	-35.68	20.08
	Min. Vert	7	-445.44	-35.68	20.08
	Min. H_x	7	-445.44	-35.68	20.08
	Min. H_z	18	513.42	40.83	-23.06
Leg B	Max. Vert	10	508.57	-40.26	-23.41
	Max. H_x	23	-440.03	34.97	20.38
	Max. H_z	23	-440.03	34.97	20.38
	Min. Vert	23	-440.03	34.97	20.38
	Min. H_x	10	508.57	-40.26	-23.41
	Min. H_z	10	508.57	-40.26	-23.41
Leg A	Max. Vert	2	512.04	-0.88	46.81
	Max. H_x	21	19.74	2.89	1.45
	Max. H_z	2	512.04	-0.88	46.81
	Min. Vert	15	-443.71	0.89	-40.71
	Min. H_x	9	25.54	-2.91	1.88
	Min. H_z	15	-443.71	0.89	-40.71

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear$_x$ K	Shear$_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	75.02	0.00	-0.00	9.57	13.40	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	90.02	0.56	-70.72	-12941.06	-119.60	-46.94
0.9 Dead+1.0 Wind 0 deg - No Ice	67.52	0.56	-70.72	-12909.96	-123.39	-46.88
1.2 Dead+1.0 Wind 30 deg - No Ice	90.02	34.77	-59.51	-10975.57	-6432.11	7.47
0.9 Dead+1.0 Wind 30 deg - No Ice	67.52	34.77	-59.51	-10949.52	-6419.05	7.47
1.2 Dead+1.0 Wind 60 deg - No Ice	90.02	58.97	-34.05	-6293.54	-10905.56	23.95
0.9 Dead+1.0 Wind 60 deg - No Ice	67.52	58.97	-34.05	-6279.78	-10880.70	23.94
1.2 Dead+1.0 Wind 90 deg - No Ice	90.02	68.58	-0.36	-78.75	-12626.65	-12.57
0.9 Dead+1.0 Wind 90 deg - No Ice	67.52	68.58	-0.36	-81.35	-12597.37	-12.60
1.2 Dead+1.0 Wind 120 deg - No Ice	90.02	61.23	34.70	6321.63	-11185.76	-8.82
0.9 Dead+1.0 Wind 120 deg -	67.52	61.23	34.70	6302.08	-11160.49	-8.89

Load Combination	Vertical K	Shear$_x$ K	Shear$_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 150 deg - No Ice	90.02	33.90	58.90	10896.37	-6234.35	45.55
0.9 Dead+1.0 Wind 150 deg - No Ice	67.52	33.90	58.90	10864.47	-6222.09	45.47
1.2 Dead+1.0 Wind 180 deg - No Ice	90.02	-0.35	67.72	12552.56	102.22	47.81
0.9 Dead+1.0 Wind 180 deg - No Ice	67.52	-0.35	67.72	12516.24	97.82	47.75
1.2 Dead+1.0 Wind 210 deg - No Ice	90.02	-34.60	59.36	10965.33	6415.76	-7.13
0.9 Dead+1.0 Wind 210 deg - No Ice	67.52	-34.60	59.36	10933.26	6394.78	-7.13
1.2 Dead+1.0 Wind 240 deg - No Ice	90.02	-61.34	35.42	6491.21	11238.18	-23.97
0.9 Dead+1.0 Wind 240 deg - No Ice	67.52	-61.34	35.42	6471.19	11204.53	-23.96
1.2 Dead+1.0 Wind 270 deg - No Ice	90.02	-68.36	0.29	77.39	12605.62	12.23
0.9 Dead+1.0 Wind 270 deg - No Ice	67.52	-68.36	0.29	74.36	12568.18	12.26
1.2 Dead+1.0 Wind 300 deg - No Ice	90.02	-58.52	-33.38	-6136.48	10836.11	7.93
0.9 Dead+1.0 Wind 300 deg - No Ice	67.52	-58.52	-33.38	-6123.16	10803.24	8.00
1.2 Dead+1.0 Wind 330 deg - No Ice	90.02	-34.06	-58.81	-10843.85	6317.37	-45.55
0.9 Dead+1.0 Wind 330 deg - No Ice	67.52	-34.07	-58.81	-10818.15	6296.38	-45.47
1.2 Dead+1.0 Ice+1.0 Temp	281.31	0.00	-0.00	47.03	94.41	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	281.31	0.05	-11.40	-2154.09	81.91	-7.34
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	281.31	5.69	-9.79	-1847.87	-1008.76	-1.83
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	281.31	9.78	-5.65	-1046.15	-1799.06	1.15
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	281.31	11.30	-0.03	39.13	-2091.69	0.48
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	281.31	9.88	5.64	1133.51	-1812.43	2.71
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	281.31	5.60	9.72	1931.50	-990.72	7.67
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	281.31	-0.03	11.21	2222.32	102.52	7.42
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	281.31	-5.67	9.78	1938.62	1194.10	1.86
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	281.31	-9.92	5.73	1150.47	2005.60	-1.15
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	281.31	-11.28	0.03	53.62	2275.88	-0.51
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	281.31	-9.70	-5.56	-1030.30	1976.65	-2.79
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	281.31	-5.62	-9.71	-1834.94	1183.83	-7.67
Dead+Wind 0 deg - Service	75.02	0.18	-22.79	-4166.39	-29.99	-15.03
Dead+Wind 30 deg - Service	75.02	11.21	-19.18	-3533.93	-2064.22	2.33
Dead+Wind 60 deg - Service	75.02	19.01	-10.98	-2023.60	-3508.32	7.68
Dead+Wind 90 deg - Service	75.02	22.11	-0.11	-17.83	-4063.36	-3.97
Dead+Wind 120 deg - Service	75.02	19.73	11.18	2044.62	-3598.13	-2.84
Dead+Wind 150 deg - Service	75.02	10.93	18.99	3519.18	-2003.55	14.52
Dead+Wind 180 deg - Service	75.02	-0.11	21.83	4054.09	40.96	15.32

Load Combination	Vertical K	Shear$_x$ K	Shear$_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead+Wind 210 deg - Service	75.02	-11.15	19.13	3541.31	2078.32	-2.22
Dead+Wind 240 deg - Service	75.02	-19.77	11.41	2098.77	3631.84	-7.68
Dead+Wind 270 deg - Service	75.02	-22.03	0.09	32.09	4073.50	3.86
Dead+Wind 300 deg - Service	75.02	-18.86	-10.76	-1973.29	3503.02	2.55
Dead+Wind 330 deg - Service	75.02	-10.98	-18.96	-3491.85	2044.27	-14.52

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-75.02	0.00	-0.00	75.02	0.00	0.001%
2	0.56	-90.02	-70.72	-0.56	90.02	70.72	0.002%
3	0.56	-67.52	-70.72	-0.56	67.52	70.72	0.002%
4	34.77	-90.02	-59.52	-34.77	90.02	59.51	0.002%
5	34.77	-67.52	-59.52	-34.77	67.52	59.51	0.002%
6	58.98	-90.02	-34.05	-58.97	90.02	34.05	0.002%
7	58.98	-67.52	-34.05	-58.97	67.52	34.05	0.002%
8	68.58	-90.02	-0.36	-68.58	90.02	0.36	0.002%
9	68.58	-67.52	-0.36	-68.58	67.52	0.36	0.002%
10	61.23	-90.02	34.70	-61.23	90.02	-34.70	0.002%
11	61.23	-67.52	34.70	-61.23	67.52	-34.70	0.002%
12	33.90	-90.02	58.91	-33.90	90.02	-58.90	0.002%
13	33.90	-67.52	58.91	-33.90	67.52	-58.90	0.002%
14	-0.35	-90.02	67.72	0.35	90.02	-67.72	0.002%
15	-0.35	-67.52	67.72	0.35	67.52	-67.72	0.002%
16	-34.60	-90.02	59.36	34.60	90.02	-59.36	0.002%
17	-34.60	-67.52	59.36	34.60	67.52	-59.36	0.002%
18	-61.34	-90.02	35.42	61.34	90.02	-35.42	0.002%
19	-61.34	-67.52	35.42	61.34	67.52	-35.42	0.002%
20	-68.36	-90.02	0.29	68.36	90.02	-0.29	0.002%
21	-68.36	-67.52	0.29	68.36	67.52	-0.29	0.002%
22	-58.52	-90.02	-33.38	58.52	90.02	33.38	0.002%
23	-58.52	-67.52	-33.38	58.52	67.52	33.38	0.002%
24	-34.07	-90.02	-58.81	34.06	90.02	58.81	0.002%
25	-34.07	-67.52	-58.81	34.07	67.52	58.81	0.002%
26	0.00	-281.31	0.00	-0.00	281.31	0.00	0.000%
27	0.05	-281.31	-11.40	-0.05	281.31	11.40	0.000%
28	5.69	-281.31	-9.79	-5.69	281.31	9.79	0.000%
29	9.78	-281.31	-5.65	-9.78	281.31	5.65	0.000%
30	11.30	-281.31	-0.03	-11.30	281.31	0.03	0.000%
31	9.88	-281.31	5.64	-9.88	281.31	-5.64	0.000%
32	5.60	-281.31	9.72	-5.60	281.31	-9.72	0.000%
33	-0.03	-281.31	11.21	0.03	281.31	-11.21	0.000%
34	-5.68	-281.31	9.78	5.67	281.31	-9.78	0.000%
35	-9.93	-281.31	5.73	9.92	281.31	-5.73	0.000%
36	-11.28	-281.31	0.03	11.28	281.31	-0.03	0.000%
37	-9.70	-281.31	-5.56	9.70	281.31	5.56	0.000%
38	-5.62	-281.31	-9.71	5.62	281.31	9.71	0.000%
39	0.18	-75.02	-22.79	-0.18	75.02	22.79	0.001%
40	11.21	-75.02	-19.18	-11.21	75.02	19.18	0.001%
41	19.01	-75.02	-10.98	-19.01	75.02	10.98	0.001%
42	22.11	-75.02	-0.11	-22.11	75.02	0.11	0.001%
43	19.73	-75.02	11.18	-19.73	75.02	-11.18	0.001%
44	10.93	-75.02	18.99	-10.93	75.02	-18.99	0.001%
45	-0.11	-75.02	21.83	0.11	75.02	-21.83	0.001%
46	-11.15	-75.02	19.13	11.15	75.02	-19.13	0.001%
47	-19.77	-75.02	11.41	19.77	75.02	-11.41	0.001%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
48	-22.03	-75.02	0.09	22.03	75.02	-0.09	0.001%
49	-18.86	-75.02	-10.76	18.86	75.02	10.76	0.001%
50	-10.98	-75.02	-18.96	10.98	75.02	18.96	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00014355
2	Yes	14	0.00003009	0.00007784
3	Yes	14	0.00002591	0.00006759
4	Yes	14	0.00003229	0.00008276
5	Yes	14	0.00002793	0.00007219
6	Yes	14	0.00003398	0.00008666
7	Yes	14	0.00002948	0.00007582
8	Yes	14	0.00003227	0.00008270
9	Yes	14	0.00002791	0.00007215
10	Yes	14	0.00003011	0.00007786
11	Yes	14	0.00002592	0.00006761
12	Yes	14	0.00003229	0.00008275
13	Yes	14	0.00002793	0.00007217
14	Yes	14	0.00003400	0.00008668
15	Yes	14	0.00002949	0.00007583
16	Yes	14	0.00003223	0.00008261
17	Yes	14	0.00002787	0.00007205
18	Yes	14	0.00003009	0.00007783
19	Yes	14	0.00002591	0.00006758
20	Yes	14	0.00003220	0.00008255
21	Yes	14	0.00002785	0.00007200
22	Yes	14	0.00003397	0.00008660
23	Yes	14	0.00002947	0.00007576
24	Yes	14	0.00003229	0.00008274
25	Yes	14	0.00002792	0.00007216
26	Yes	11	0.00000001	0.00008862
27	Yes	14	0.00000001	0.00010924
28	Yes	14	0.00000001	0.00010829
29	Yes	14	0.00000001	0.00010840
30	Yes	14	0.00000001	0.00010839
31	Yes	14	0.00000001	0.00010963
32	Yes	14	0.00000001	0.00011230
33	Yes	14	0.00000001	0.00011499
34	Yes	14	0.00000001	0.00011567
35	Yes	14	0.00000001	0.00011554
36	Yes	14	0.00000001	0.00011505
37	Yes	14	0.00000001	0.00011409
38	Yes	14	0.00000001	0.00011155
39	Yes	14	0.00000001	0.00007291
40	Yes	14	0.00000001	0.00007433
41	Yes	14	0.00000001	0.00007560
42	Yes	14	0.00000001	0.00007428
43	Yes	14	0.00000001	0.00007289
44	Yes	14	0.00000001	0.00007435
45	Yes	14	0.00000001	0.00007567
46	Yes	14	0.00000001	0.00007433
47	Yes	14	0.00000001	0.00007294
48	Yes	14	0.00000001	0.00007427

49	Yes	14	0.00000001	0.00007559
50	Yes	14	0.00000001	0.00007433

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	290 - 280	19.359	47	0.7164	0.0464
T2	280 - 260	17.861	47	0.7132	0.0461
T3	260 - 240	14.777	47	0.6504	0.0420
T4	240 - 220	12.019	47	0.5627	0.0358
T5	220 - 200	9.779	47	0.4792	0.0277
T6	200 - 180	7.683	47	0.4030	0.0213
T7	180 - 160	5.965	47	0.3465	0.0173
T8	160 - 140	4.537	47	0.2895	0.0137
T9	140 - 120	3.367	47	0.2334	0.0102
T10	120 - 100	2.382	47	0.1928	0.0081
T11	100 - 80	1.598	47	0.1526	0.0063
T12	80 - 60	0.994	47	0.1133	0.0045
T13	60 - 40	0.545	47	0.0828	0.0029
T14	40 - 20	0.238	47	0.0528	0.0019
T15	20 - 0	0.054	47	0.0231	0.0009

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
290.00	5/8" x 10' lightning rod	47	19.359	0.7164	0.0464	31165
285.00	40,000 sq in. (277.8 sq ft EPA)	47	18.615	0.7165	0.0464	31165
275.00	30,000 sq in (208.3 sq ft EPA)	47	17.092	0.7040	0.0455	35777
265.00	30,000 sq in (208.3 sq ft EPA)	47	15.539	0.6710	0.0433	21926
240.00	6' HP	47	12.019	0.5627	0.0358	7287
145.00	OB light	47	3.640	0.2462	0.0110	26137

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	290 - 280	59.840	18	2.2174	0.1457
T2	280 - 260	55.206	18	2.2076	0.1448
T3	260 - 240	45.664	18	2.0121	0.1319
T4	240 - 220	37.135	18	1.7390	0.1123
T5	220 - 200	30.215	18	1.4806	0.0871
T6	200 - 180	23.741	18	1.2451	0.0671
T7	180 - 160	18.435	18	1.0703	0.0545
T8	160 - 140	14.022	18	0.8945	0.0431
T9	140 - 120	10.409	18	0.7210	0.0319
T10	120 - 100	7.365	18	0.5957	0.0254

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T11	100 - 80	4.942	18	0.4716	0.0196
T12	80 - 60	3.075	18	0.3502	0.0142
T13	60 - 40	1.686	18	0.2560	0.0091
T14	40 - 20	0.736	18	0.1633	0.0060
T15	20 - 0	0.168	18	0.0716	0.0029

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
290.00	5/8" x 10' lightning rod	18	59.840	2.2174	0.1457	10103
285.00	40,000 sq in. (277.8 sq ft. EPA)	18	57.538	2.2178	0.1456	10103
275.00	30,000 sq in. (208.3 sq ft. EPA)	18	52.825	2.1788	0.1428	11714
265.00	30,000 sq in. (208.3 sq ft. EPA)	18	48.021	2.0764	0.1361	6982
240.00	6' HP	18	37.135	1.7390	0.1123	2348
145.00	OB light	18	11.252	0.7605	0.0343	8438

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	290	Leg	A325N	0.7500	4	1.27	29.82	0.043 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	4.42	7.46	0.592 ✔	1	Member Block Shear
		Top Girt	A325N	0.7500	1	1.13	12.62	0.090 ✔	1	Gusset Bearing
T2	280	Leg	A325N	0.7500	6	11.65	29.82	0.391 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	12.31	12.62	0.976 ✔	1	Gusset Bearing
T3	260	Leg	A325N	0.7500	8	17.03	29.82	0.571 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	7.60	11.20	0.678 ✔	1	Member Block Shear
T4	240	Leg	A325N	1.0000	6	30.22	53.01	0.570 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	7.77	13.48	0.577 ✔	1	Member Block Shear
T5	220	Leg	A325N	1.0000	6	34.82	53.01	0.657 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	6.82	13.03	0.524 ✔	1	Member Block Shear
T6	200	Leg	A325N	1.2500	6	39.91	82.83	0.482 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	6.51	17.37	0.375 ✔	1	Member Block Shear
T7	180	Leg	A325N	1.2500	6	44.48	82.83	0.537 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	6.57	17.37	0.378 ✔	1	Member Block Shear
T8	160	Leg	A325N	1.2500	6	48.85	82.83	0.590 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	7.74	14.17	0.547 ✔	1	Member Block

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T9	140	Leg	A325N	1.0000	12	25.70	53.01	0.485 ✔	1	Shear Bolt Tension
		Diagonal	A325N	0.8750	1	10.28	24.68	0.416 ✔	1	Member Block Shear
T10	120	Leg	A325N	1.0000	12	27.91	53.01	0.526 ✔	1	Bolt Tension
		Diagonal	A325N	0.8750	1	10.26	24.68	0.416 ✔	1	Member Block Shear
T11	100	Leg	A325N	1.0000	12	29.58	53.01	0.558 ✔	1	Bolt Tension
		Diagonal	A325N	0.8750	1	10.02	24.68	0.406 ✔	1	Member Block Shear
T12	80	Leg	A325N	1.0000	12	31.49	53.01	0.594 ✔	1	Bolt Tension
		Diagonal	A325N	0.8750	1	10.31	24.68	0.418 ✔	1	Member Block Shear
T13	60	Leg	A325N	1.0000	12	33.11	53.01	0.624 ✔	1	Bolt Tension
		Diagonal	A325N	0.8750	1	10.60	36.98	0.287 ✔	1	Gusset Bearing
T14	40	Leg	A325N	1.0000	12	34.89	53.01	0.658 ✔	1	Bolt Tension
		Diagonal	A325N	0.8750	1	11.29	36.98	0.305 ✔	1	Gusset Bearing
T15	20	Leg	F1554-105	1.7500	4	109.00	169.12	0.645 ✔	1	Bolt Tension
		Diagonal	A325N	0.8750	1	11.73	36.98	0.317 ✔	1	Gusset Bearing

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_n K	ϕP_n K	Ratio $P_u / \phi P_n$
T1	290 - 280	P-2.50" - 0.75" conn -10' -C-(Pirod 226172)	10.00	4.79	60.7 K=1.00	1.7040	-7.59	58.58	0.130 ✔
T2	280 - 260	P-4.00"- 0.75" conn -20' -C-Trans-6B-4B-(Pirod 226184)	20.00	6.67	53.0 K=1.00	3.1741	-78.36	116.32	0.674 ✔
T3	260 - 240	P-5.00"- 0.75" conn.-Trans-20' -C-(Pirod 226200)	20.03	6.68	42.7 K=1.00	4.2999	-148.35	169.37	0.876 ✔
T4	240 - 220	P-6.00"- 0.75" conn.-HBD-Trans-20' -C-(Pirod 229377)	20.03	6.68	35.7 K=1.00	5.5813	-197.25	228.83	0.862 ✔
T5	220 - 200	#12ZG-58 - 1.50" - 1.00" conn (Pirod 194651)	20.03	10.02	35.7 K=1.00	5.3014	-226.56	248.43	0.912 ✔
T6	200 - 180	#12ZG-58 - 1.75" - 1.00" conn.-TR1-(Pirod 195213)	20.03	10.02	30.6 K=1.00	7.2158	-261.49	347.96	0.751 ✔
T7	180 - 160	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	20.03	10.02	30.6 K=1.00	7.2158	-292.70	347.96	0.841 ✔
T8	160 - 140	#12ZG-58 - 1.75" - 1.00"	20.03	10.02	30.6	7.2158	-322.99	347.96	0.928

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
		conn (Pirod 195217)			K=1.00				✔
T9	140 - 120	#12ZG-58 -2.00" - 0.875" conn.-TR3-(Pirod 195637)	20.03	20.03	48.8 K=1.00	9.4248	-339.90	401.94	0.846 [1] ✔
T10	120 - 100	#12ZG-58 -2.00" - 0.875" conn (Pirod 195639)	20.03	20.03	48.8 K=1.00	9.4248	-371.60	401.94	0.925 [1] ✔
T11	100 - 80	#12ZG-58 -2.00" - 0.875" conn (Pirod 195639)	20.03	20.03	48.8 K=1.00	9.4248	-396.17	401.94	0.986 [1] ✔
T12	80 - 60	#12ZG-58 -2.25" - 0.875" conn (Pirod 195960)	20.03	20.03	48.8 K=1.00	11.9282	-424.77	508.98	0.835 [1] ✔
T13	60 - 40	#12ZG-58 -2.25" - 0.875" conn (Pirod 195960)	20.03	20.03	48.8 K=1.00	11.9282	-449.05	508.98	0.882 [1] ✔
T14	40 - 20	#12ZG-58 -2.25" - 0.875" conn (Pirod 195960)	20.03	20.03	48.8 K=1.00	11.9282	-477.13	508.98	0.937 [1] ✔
T15	20 - 0	#12ZG-58 BASE -2.50" - 0.875" conn.-TR4-(Pirod 281171)	20.03	20.03	48.7 K=1.00	14.7262	-499.88	628.76	0.795 [1] ✔

[1] P_u / ϕP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T5	220 - 200	0.5	1.42	95.2	276.74	0.1963	2.31	4.57	0.507 ✔
T6	200 - 180	0.5	1.40	94.4	376.67	0.1963	0.90	4.61	0.196 ✔
T7	180 - 160	0.5	1.40	94.4	376.67	0.1963	0.62	4.61	0.135 ✔
T8	160 - 140	0.5	1.40	94.4	376.67	0.1963	0.74	4.61	0.163 ✔
T9	140 - 120	0.5	1.39	93.2	491.97	0.1963	0.96	4.67	0.208 ✔
T10	120 - 100	0.5	1.39	93.2	491.97	0.1963	0.93	4.67	0.201 ✔
T11	100 - 80	0.5	1.39	93.2	491.97	0.1963	0.72	4.67	0.155 ✔
T12	80 - 60	0.5	1.38	92.4	622.65	0.1963	0.80	4.71	0.171 ✔
T13	60 - 40	0.5	1.38	92.4	622.65	0.1963	0.67	4.71	0.144 ✔
T14	40 - 20	0.5	1.38	92.4	622.65	0.1963	0.76	4.71	0.175 ✔
T15	20 - 0	0.5	1.34	90.2	768.71	0.1963	0.56	4.87	0.129 ✔

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	290 - 280	L2x2x1/8	5.75	2.69	90.8 K=1.12	0.4844	-5.00	11.03	0.453 [1] ✔
T2	280 - 260	L2 1/2x2 1/2x3/16	7.17	3.40	91.8 K=1.11	0.9020	-12.84	21.92	0.586 [1] ✔
T3	260 - 240	L2x2x3/16	7.24	3.66	113.6 K=1.02	0.7150	-8.44	12.51	0.675 [1] ✔
T4	240 - 220	L2 1/2x2 1/2x3/16	9.60	4.80	117.2 K=1.01	0.9020	-7.72	14.82	0.521 [1] ✔
T5	220 - 200	L2 1/2x2 1/2x3/16	12.65	6.42	155.5 K=1.00	0.9020	-7.89	8.42	0.937 [1] ✔
T6	200 - 180	L2 1/2x2 1/2x1/4	14.10	7.12	174.1 K=1.00	1.1900	-7.07	8.87	0.797 [1] ✔
T7	180 - 160	L2 1/2x2 1/2x1/4	15.67	7.90	193.0 K=1.00	1.1900	-7.06	7.22	0.978 [1] ✔
T8	160 - 140	L3x3x3/16	17.33	8.72	175.6 K=1.00	1.0900	-7.64	7.99	0.957 [1] ✔
T9	140 - 120	2L3x3x3/16	25.03	13.04	166.7 K=1.00	2.1800	-11.77	17.73	0.664 [1] ✔
T10	120 - 100	2L3x3x3/16	26.36	13.67	174.7 K=1.00	2.1800	-10.46	16.14	0.648 [1] ✔
T11	100 - 80	2L3x3x3/16	27.77	14.35	183.4 K=1.00	2.1800	-11.49	14.65	0.784 [1] ✔
T12	80 - 60	2L3x3x3/16	29.25	15.07	192.5 K=1.00	2.1800	-10.51	13.29	0.791 [1] ✔
T13	60 - 40	2L3 1/2x3 1/2x1/4	30.78	15.82	173.9 K=1.00	3.3750	-12.21	25.21	0.484 [1] ✔
T14	40 - 20	2L3 1/2x3 1/2x1/4	32.37	16.60	182.5 K=1.00	3.3750	-11.06	22.89	0.483 [1] ✔
T15	20 - 0	2L3 1/2x3 1/2x1/4	34.01	17.40	191.3 K=1.00	3.3750	-13.55	20.82	0.651 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	290 - 280	L3x3x1/4	5.00	4.49	105.5 K=1.16	1.4400	-1.34	28.72	0.047 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	290 - 280	P- 2.50" - 0 75" conn.-10' -C-(Pirod 226172)	10 00	4 79	60 7	1.7040	5.07	76.68	0 066 [1] ✔
T2	280 - 260	P- 4.00"- 0 75" conn -20' -C-Trans-6B-4B-(Pirod 226184)	20 00	6 67	53 0	3.1741	69 91	142 83	0 489 [1] ✔
T3	260 - 240	P- 5 00"- 0 75" conn.-Trans-20' -C-(Pirod 226200)	20 03	6 68	42 7	4.2999	136.21	193 49	0 704 [1] ✔
T4	240 - 220	P- 6 00"- 0 75" conn.-HBD-Trans-20' -C-(Pirod 229377)	20 03	6 68	35 7	5 5813	181 29	251 16	0 722 [1] ✔
T5	220 - 200	#12ZG-58 - 1 50" - 1.00" conn (Pirod 194651)	20 03	10 02	35 7	5 3014	208 95	276 74	0 755 [1] ✔
T6	200 - 180	#12ZG-58 - 1 75" - 1.00" conn.-TR1-(Pirod 195213)	20 03	10 02	30.6	7 2158	239.43	376.67	0 636 [1] ✔
T7	180 - 160	#12ZG-58 - 1 75" - 1.00" conn. (Pirod 195217)	20.03	10 02	30.6	7 2158	266.90	376.67	0 709 [1] ✔
T8	160 - 140	#12ZG-58 - 1 75" - 1.00" conn. (Pirod 195217)	20 03	10 02	30 6	7 2158	293.09	376 67	0 778 [1] ✔
T9	140 - 120	#12ZG-58 -2 00" - 0 875" conn.-TR3-(Pirod 195637)	20.03	20.03	48 8	9 4248	308.42	491 97	0.627 [1] ✔
T10	120 - 100	#12ZG-58 -2 00" - 0 875" conn. (Pirod 195639)	20 03	20.03	48 8	9 4248	334 87	491 97	0 681 [1] ✔
T11	100 - 80	#12ZG-58 -2 00" - 0 875" conn. (Pirod 195639)	20 03	20.03	48 8	9 4248	354 96	491 97	0 722 [1] ✔
T12	80 - 60	#12ZG-58 -2 25" - 0.875" conn. (Pirod 195960)	20 03	20.03	48 8	11 9282	377 92	622 65	0 607 [1] ✔
T13	60 - 40	#12ZG-58 -2 25" - 0.875" conn. (Pirod 195960)	20 03	20.03	48 8	11 9282	397 27	622 65	0 638 [1] ✔
T14	40 - 20	#12ZG-58 -2 25" - 0.875" conn (Pirod 195960)	20 03	20 03	48 8	11 9282	418 66	622 65	0 672 [1] ✔
T15	20 - 0	#12ZG-58 BASE - 2 50" - 0.875" conn.-TR4-(Pirod 281171)	20 03	20 03	48 7	14 7262	436.01	768 71	0 567 [1] ✔

[1] P_u / ϕP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T5	220 - 200	0 5	1 42	95 2	276 74	0 1963	2 31	4.57	0.507 ✔
T6	200 - 180	0 5	1 40	94 4	376 67	0 1963	0 90	4 61	0 196 ✔
T7	180 - 160	0 5	1.40	94 4	376.67	0 1963	0.62	4.61	0 135 ✔
T8	160 - 140	0 5	1 40	94.4	376.67	0 1963	0 74	4 61	0 163

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T9	140 - 120	0.5	1.39	93.2	491.97	0.1963	0.96	4.67	0.208 ✓
T10	120 - 100	0.5	1.39	93.2	491.97	0.1963	0.93	4.67	0.201 ✓
T11	100 - 80	0.5	1.39	93.2	491.97	0.1963	0.72	4.67	0.155 ✓
T12	80 - 60	0.5	1.38	92.4	622.65	0.1963	0.80	4.71	0.171 ✓
T13	60 - 40	0.5	1.38	92.4	622.65	0.1963	0.67	4.71	0.144 ✓
T14	40 - 20	0.5	1.38	92.4	622.65	0.1963	0.76	4.71	0.175 ✓
T15	20 - 0	0.5	1.34	90.2	768.71	0.1963	0.56	4.87	0.129 ✓

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	290 - 280	L2x2x1/8	5.75	2.69	55.1	0.2813	4.42	13.71	0.322 ✓
T2	280 - 260	L2 1/2x2 1/2x3/16	7.17	3.40	55.3	0.5535	12.31	26.98	0.456 ✓
T3	260 - 240	L2x2x3/16	7.24	3.66	74.8	0.4132	7.60	20.14	0.377 ✓
T4	240 - 220	L2 1/2x2 1/2x3/16	9.60	4.80	76.9	0.5535	7.77	26.98	0.288 ✓
T5	220 - 200	L2 1/2x2 1/2x3/16	12.65	6.42	102.2	0.5183	6.82	25.27	0.270 ✓
T6	200 - 180	L2 1/2x2 1/2x1/4	13.35	6.76	108.7	0.6816	6.51	33.23	0.196 ✓
T7	180 - 160	L2 1/2x2 1/2x1/4	15.67	7.90	126.5	0.6816	6.57	33.23	0.198 ✓
T8	160 - 140	L3x3x3/16	17.33	8.72	114.1	0.6593	7.74	32.14	0.241 ✓
T9	140 - 120	2L3x3x3/16	25.03	13.04	168.8	1.3537	10.28	66.00	0.156 ✓
T10	120 - 100	2L3x3x3/16	26.36	13.67	176.8	1.3537	10.26	66.00	0.156 ✓
T11	100 - 80	2L3x3x3/16	27.77	14.35	185.5	1.3537	10.02	66.00	0.152 ✓
T12	80 - 60	2L3x3x3/16	29.25	15.07	194.7	1.3537	10.31	66.00	0.156 ✓
T13	60 - 40	2L3 1/2x3 1/2x1/4	30.78	15.82	175.8	2.1563	10.60	105.12	0.101 ✓
T14	40 - 20	2L3 1/2x3 1/2x1/4	32.37	16.60	184.3	2.1563	11.29	105.12	0.107 ✓
T15	20 - 0	2L3 1/2x3 1/2x1/4	34.01	17.40	193.2	2.1563	11.73	105.12	0.112 ✓

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	290 - 280	L3x3x1/4	5.00	4.49	61.4	0.9159	1.13	44.65	0.025 [1]

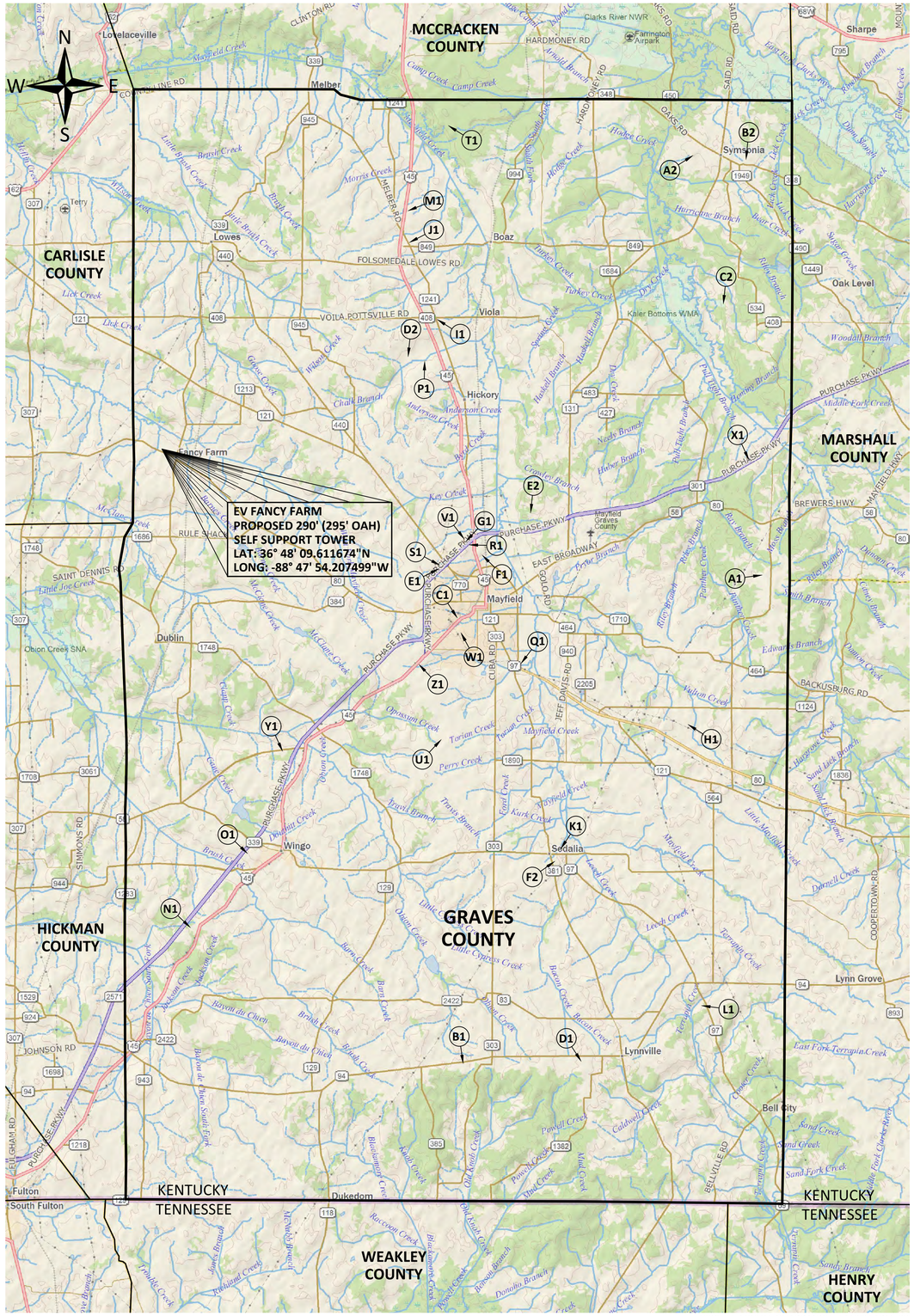
✔

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	290 - 280	Leg	P-2.50" - 0.75" conn -10' -C-(Pirod 226172)	1	-7.59	58.58	13.0	Pass
T2	280 - 260	Leg	P-4.00"- 0.75" conn -20' -C-Trans-6B-4B-(Pirod 226184)	21	-78.36	116.32	67.4	Pass
T3	260 - 240	Leg	P-5.00"- 0.75" conn -Trans-20' -C-(Pirod 226200)	42	-148.35	169.37	87.6	Pass
T4	240 - 220	Leg	P-6.00"- 0.75" conn -HBD-Trans-20' -C-(Pirod 229377)	61	-197.25	228.83	86.2	Pass
T5	220 - 200	Leg	#12ZG-58 - 1.50" - 1.00" conn (Pirod 194651)	82	-226.56	248.43	91.2	Pass
T6	200 - 180	Leg	#12ZG-58 - 1.75" - 1.00" conn -TR1-(Pirod 195213)	97	-261.49	347.96	75.1	Pass
T7	180 - 160	Leg	#12ZG-58 - 1.75" - 1.00" conn (Pirod 195217)	112	-292.70	347.96	84.1	Pass
T8	160 - 140	Leg	#12ZG-58 - 1.75" - 1.00" conn (Pirod 195217)	127	-322.99	347.96	92.8	Pass
T9	140 - 120	Leg	#12ZG-58 -2.00" - 0.875" conn -TR3-(Pirod 195637)	142	-339.90	401.94	84.6	Pass
T10	120 - 100	Leg	#12ZG-58 -2.00" - 0.875" conn (Pirod 195639)	151	-371.60	401.94	92.5	Pass
T11	100 - 80	Leg	#12ZG-58 -2.00" - 0.875" conn (Pirod 195639)	160	-396.17	401.94	98.6	Pass
T12	80 - 60	Leg	#12ZG-58 -2.25" - 0.875" conn (Pirod 195960)	169	-424.77	508.98	83.5	Pass
T13	60 - 40	Leg	#12ZG-58 -2.25" - 0.875" conn (Pirod 195960)	178	-449.05	508.98	88.2	Pass
T14	40 - 20	Leg	#12ZG-58 -2.25" - 0.875" conn (Pirod 195960)	187	-477.13	508.98	93.7	Pass
T15	20 - 0	Leg	#12ZG-58 BASE - 2.50" - 0.875" conn -TR4-(Pirod 281171)	196	-499.88	628.76	79.5	Pass
T1	290 - 280	Diagonal	L2x2x1/8	8	-5.00	11.03	45.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
							59.2 (b)	
T2	280 - 260	Diagonal	L2 1/2x2 1/2x3/16	23	-12.84	21.92	58.6	Pass
							97.6 (b)	
T3	260 - 240	Diagonal	L2x2x3/16	55	-8.44	12.51	67.5	Pass
							67.8 (b)	
T4	240 - 220	Diagonal	L2 1/2x2 1/2x3/16	69	-7.72	14.82	52.1	Pass
							57.7 (b)	
T5	220 - 200	Diagonal	L2 1/2x2 1/2x3/16	89	-7.89	8.42	93.7	Pass
T6	200 - 180	Diagonal	L2 1/2x2 1/2x1/4	104	-7.07	8.87	79.7	Pass
T7	180 - 160	Diagonal	L2 1/2x2 1/2x1/4	116	-7.06	7.22	97.8	Pass
T8	160 - 140	Diagonal	L3x3x3/16	135	-7.64	7.99	95.7	Pass
T9	140 - 120	Diagonal	2L3x3x3/16	149	-11.77	17.73	66.4	Pass
T10	120 - 100	Diagonal	2L3x3x3/16	159	-10.46	16.14	64.8	Pass
T11	100 - 80	Diagonal	2L3x3x3/16	167	-11.49	14.65	78.4	Pass
T12	80 - 60	Diagonal	2L3x3x3/16	176	-10.51	13.29	79.1	Pass
T13	60 - 40	Diagonal	2L3 1/2x3 1/2x1/4	185	-12.21	25.21	48.4	Pass
T14	40 - 20	Diagonal	2L3 1/2x3 1/2x1/4	195	-11.06	22.89	48.3	Pass
T15	20 - 0	Diagonal	2L3 1/2x3 1/2x1/4	203	-13.55	20.82	65.1	Pass
T1	290 - 280	Top Girt	L3x3x1/4	5	-1.34	28.72	4.7	Pass
							9.0 (b)	
							Summary	
						Leg (T11)	98.6	Pass
						Diagonal (T7)	97.8	Pass
						Top Girt (T1)	9.0	Pass
						Bolt Checks	97.6	Pass
						RATING =	**98.6**	**Pass**



NOTE: TOWERS DEPICTED ARE ALL KNOWN TOWER SITES REGISTERED WITH THE FEDERAL COMMUNICATIONS COMMISSION IN GRAVES COUNTY, KENTUCKY.

USGS 7.5 MINUTE QUADRANGLE: FANCY FARM, KY

GRAVES COUNTY, KENTUCKY
VERIZON WIRELESS SITE NAME: EV FANCY FARMS

EXISTING TOWER LEGEND

A1 (GRANTED)
FCC REGISTRATION #: 1018328
SUN MEDIA INC
dba = WRIK RADIO
LAT: 36° 45' 09.0"N
LONG: 88° 29' 58.0"W

B1 FCC REGISTRATION #: 1039661
TEXAS GAS TRANSMISSION, LLC
LAT: 36° 33' 26.0"N
LONG: 88° 38' 54.0"W

C1 FCC REGISTRATION #: 1039661
GRAVES COUNTY CO-OP
LAT: 36° 44' 07.0"N
LONG: 88° 39' 05.0"W

D1 FCC REGISTRATION #: 1041880
BELLSOUTH
TELECOMMUNICATIONS, LLC
LAT: 36° 33' 30.0"N
LONG: 88° 35' 22.0"W

E1 FCC REGISTRATION #: 1043138
MELVIN N SHOLAR
LAT: 36° 45' 19.2"N
LONG: 88° 39' 36.8"W

F1 FCC REGISTRATION #: 1043916
BRISTOL BROADCASTING
COMPANY, INC.
LAT: 36° 45' 37.0"N
LONG: 88° 38' 20.0"W

G1 FCC REGISTRATION #: 1043917
BRISTOL BROADCASTING
COMPANY, INC.
LAT: 36° 45' 58.0"N
LONG: 88° 38' 50.0"W

H1 FCC REGISTRATION #: 1044036
KENTUCKY AUTHORITY FOR
EDUCATIONAL TELEVISION
dba = MKMU
LAT: 36° 41' 34.0"N
LONG: 88° 32' 11.0"W

I1 FCC REGISTRATION #: 1044824
COMMONWEALTH OF KENTUCKY
dba = EMERGENCY WARNING
SYSTEM KEWS
LAT: 36° 51' 17.0"N
LONG: 88° 39' 40.0"W

J1 FCC REGISTRATION #: 1201350
WEST KENTUCKY RURAL
TELEPHONE COOP CORP INC
LAT: 36° 53' 08.0"N
LONG: 88° 40' 29.0"W

K1 FCC REGISTRATION #: 1201356
WEST KENTUCKY RURAL
TELEPHONE COOP CORP INC
LAT: 36° 38' 35.0"N
LONG: 88° 35' 58.0"W

L1 FCC REGISTRATION #: 1202399
KENTUCKY RSA NO. 1 PARTNERSHIP
LAT: 36° 34' 49.2"N
LONG: 88° 31' 45.2"W

M1 FCC REGISTRATION #: 1213964
CROWN CASTLE SOUTH LLC
LAT: 36° 53' 53.3"N
LONG: 88° 40' 32.2"W

N1 FCC REGISTRATION #: 1215493
CROWN CASTLE SOUTH LLC
LAT: 36° 36' 41.4"N
LONG: 88° 47' 03.9"W

O1 FCC REGISTRATION #: 1215862
SBA PROPERTIES, LLC
LAT: 36° 38' 28.6"N
LONG: 88° 45' 21.4"W

P1 FCC REGISTRATION #: 1215910
SBA PROPERTIES, LLC
LAT: 36° 50' 15.7"N
LONG: 88° 40' 02.5"W

Q1 FCC REGISTRATION #: 1217408
SBA PROPERTIES, LLC
LAT: 36° 43' 02.0"N
LONG: 88° 37' 10.0"W

R1 FCC REGISTRATION #: 1222179
SBA PROPERTIES, LLC
LAT: 36° 45' 51.9"N
LONG: 88° 38' 42.5"W

S1 FCC REGISTRATION #: 1223176
CROWN CASTLE SOUTH LLC
LAT: 36° 45' 23.0"N
LONG: 88° 39' 36.1"W

T1 FCC REGISTRATION #: 1223623
SBA PROPERTIES, LLC
LAT: 36° 55' 55.2"N
LONG: 88° 39' 19.1"W

U1 FCC REGISTRATION #: 1244198
KENTUCKY RSA NO. 1 PARTNERSHIP
LAT: 36° 41' 12.0"N
LONG: 88° 39' 33.5"W

V1 FCC REGISTRATION #: 1261078
KENTUCKY RSA NO. 1 PARTNERSHIP
LAT: 36° 46' 00.1"N
LONG: 88° 38' 51.9"W

W1 FCC REGISTRATION #: 1264848
MAYFIELD ELECTRIC & WATER
LAT: 36° 43' 45.5"N
LONG: 88° 38' 57.2"W

X1 FCC REGISTRATION #: 1266082
SBA TOWERS III LLC
LAT: 36° 47' 54.5"N
LONG: 88° 30' 22.2"W

Y1 FCC REGISTRATION #: 1271762
AMERICAN TOWERS LLC
LAT: 36° 40' 56.3"N
LONG: 88° 44' 18.6"W

Z1 FCC REGISTRATION #: 1277402
WEST KENTUCKY RURAL ELECTRIC
LAT: 36° 42' 59.9"N
LONG: 88° 40' 13.0"W

A2 FCC REGISTRATION #: 1287188
KENTUCKY RSA NO. 1 PARTNERSHIP
LAT: 36° 55' 12.8"N
LONG: 88° 32' 02.2"W

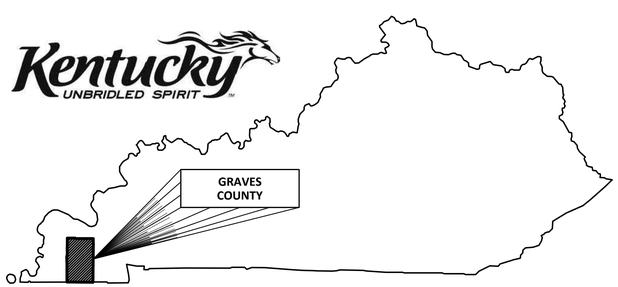
B2 FCC REGISTRATION #: 1305782
TILLMAN INFRASTRUCTURE, LLC
LAT: 36° 55' 07.1"N
LONG: 88° 30' 26.8"W

C2 (GRANTED)
FCC REGISTRATION #: 1314081
KENTUCKY RSA NO. 1 PARTNERSHIP
LAT: 36° 51' 39.0"N
LONG: 88° 31' 07.0"W

D2 (GRANTED)
FCC REGISTRATION #: 1315881
VERTICAL BRIDGE DEVELOPMENT, LLC
LAT: 36° 50' 23.7"N
LONG: 88° 40' 32.7"W

E2 FCC REGISTRATION #: 1317446
VERTICAL BRIDGE DEVELOPMENT, LLC
LAT: 36° 46' 38.0"N
LONG: 88° 36' 52.8"W

F2 (GRANTED)
FCC REGISTRATION #: 1320153
TILLMAN INFRASTRUCTURE, LLC
LAT: 36° 38, 16.2"N
LONG: 88° 36' 09.6"W



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

PREPARED FOR:
KENTUCKY RSA 1 PARTNERSHIP D/B/A verizon

REVISIONS

REV.	DATE	DESCRIPTION
A	9.14.22	ISSUED FOR REVIEW

SITE INFORMATION:

EV FANCY FARM
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

TAX PARCEL NUMBER:
006.00.00.005.00

PROPERTY OWNER:
KM & K FARMS LLC
P O BOX 48035
COON RAPIDS, MN 55448

SOURCE OF TITLE:
DEED BOOK 506, PAGE 639

POD NUMBER:	22-123884
DRAWN BY:	DAP
CHECKED BY:	MEP
SURVEY DATE:	6.24.20
PLAT DATE:	9.14.22

SHEET TITLE:

TOWER GRID MAP

SHEET NUMBER: (1 page)

C-1

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

Aeronautical Study No.
2022-ASO-27278-OE

Issued Date: 01/06/2023

Network Regulatory
Cellco Partnership
5055 North Point Pkwy
NP2NE Network Engineering
Alpharetta, GA 30022

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

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

Structure:	Antenna Tower EV Fancy Farm (16207023)
Location:	Fancy Farm, KY
Latitude:	36-48-09.61N NAD 83
Longitude:	88-47-54.21W
Heights:	431 feet site elevation (SE)
	295 feet above ground level (AGL)
	726 feet above mean sea level (AMSL)

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

Emissions from this site must be in compliance with the parameters set by collaboration between the FAA and telecommunications companies and reflected in the FAA 5G C band compatibility evaluation process (such as power, frequencies, and tilt angle). Operational use of this frequency band is not objectionable provided the Wireless Providers (WP) obtain and adhere to the parameters established by the FAA 5G C band compatibility evaluation process. **Failure to comply with this condition will void this determination of no hazard.**

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, a med-dual system-Chapters 4,8(M-Dual),&15.

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

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

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

See attachment for additional condition(s) or information.
This determination expires on 07/06/2024 unless:

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

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

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

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

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

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

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

If we can be of further assistance, please contact our office at (817) 222-5928, or chris.smith@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2022-ASO-27278-OE.

Signature Control No: 542760464-567380305 (DNE)
Chris Smith
Specialist

Attachment(s)
Additional Information
Frequency Data
Map(s)

cc: FCC

At a distance of 15.9 nautical miles from the site emissions from the 2496-2690 MHz transmitters must be less than -155 dBm in the 2700-3100 MHz Surveillance Radar frequency band.

Additionally, Part 77 authorizes the FAA to evaluate a structure or object's potential electromagnetic effects on air navigation, communication facilities, and other surveillance systems. It also authorizes study of impact on arrival, departure, and en route procedures for aircraft operating under visual or instrument flight rules, as well as the impact on airport traffic capacity at existing public use airports. Broadcast in the 3.7 to 3.98 GHz frequency (5G C band) currently causes errors in certain aircraft radio altimeters and the FAA has determined they cannot be relied upon to perform their intended function when experiencing interference from wireless broadband operations in the 5G C band. The FAA has adopted Airworthiness Directives for all transport and commuter category aircraft equipped with radio altimeters that prohibit certain operations when in the presence of 5G C band.

This determination of no hazard is based upon those mitigations implemented by the FAA and operators of transport and commuter category aircraft, and helicopters operating in the vicinity of your proposed location. It is also based on telecommunication industry and FAA collaboration on acceptable power levels and other parameters as reflected in the FAA 5G C band evaluation process.

The FAA 5G C band compatibility evaluation is a data analytics system used by FAA to evaluate operational hazards related to aircraft design. The FAA 5G C band compatibility evaluation process refers to the process in which the telecommunication companies and the FAA have set parameters, such as power output, locations, frequencies, and tilt angles for antenna that mitigate the hazard to aviation. As the telecommunication companies and FAA refine the tools and methodology, the allowable frequencies and power levels may change in the FAA 5G C band compatibility evaluation process. Therefore, your proposal will not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft provided the equipment and emissions are in compliance with the parameters established through the FAA 5G C band compatibility evaluation process.

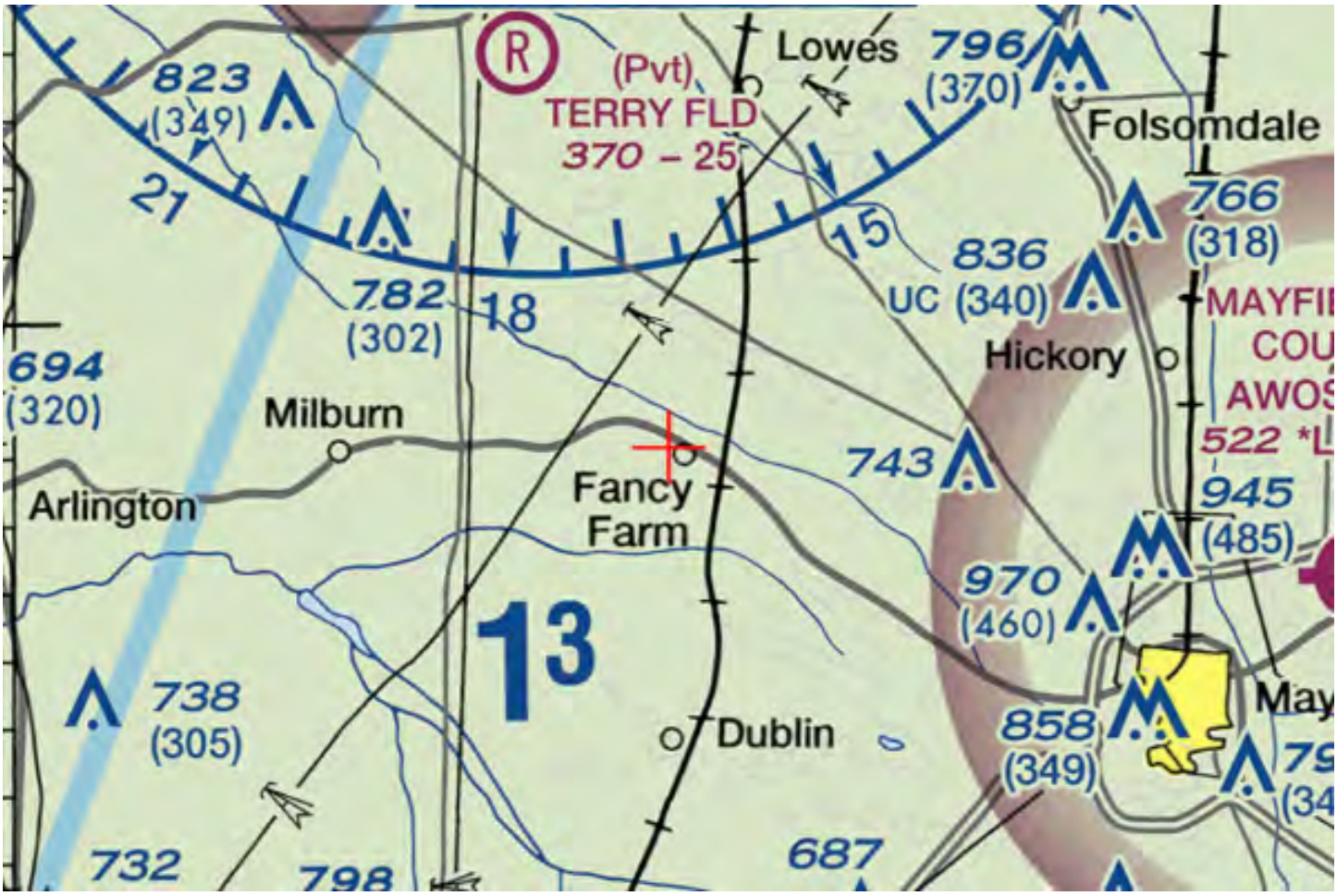
Any future changes that are not consistent with the parameters listed in the FAA 5G C band compatibility evaluation process will void this determination of no hazard.

Frequency Data for ASN 2022-ASO-27278-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	2000	W
614	698	MHz	1000	W
698	806	MHz	1000	W
806	824	MHz	500	W
806	901	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2310	MHz	2000	W
2305	2360	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W
3550	3700	MHz	47	dBm
3700	3980	MHz	3280	W
27500	28350	MHz	75	dBm
29100	29250	MHz	75	dBm
31000	31300	MHz	75	dBm
38600	40000	MHz	75	dBm

TOPO Map for ASN 2022-ASO-27278-OE

Sectional Map for ASN 2022-ASO-27278-OE



Federal Aviation Administration

« OE/AAA

Circle Search for Cases Results Form 7460-1 for ASN 2022-ASO-27278-OE

Overview

Study (ASN):	2022-ASO-27278-OE	**Received Date:**	07/13/2022
Prior Study:		**Entered Date:**	07/13/2022
Status:	Determined	**Completion Date:**	01/06/2023
Letters:	Determination	**Expiration Date:**	07/06/2024
Supplemental Form 7460-2:	Please login to add a Supplemental Form 7460-2.	**Map:**	View Map

Sponsor Information

Sponsor:	Cellco Partnership
Attention Of:	Network Regulatory
Address:	5055 North Point Pkwy
Address2:	NP2NE Network Engineering
City:	Alpharetta
State:	GA
Postal Code:	30022
Country:	US
Phone:	210-488-2623
Fax:	770-797-1034

Sponsor's Representative Information

Representative:	
Attention Of:	Network Regulatory
Address:	5055 North Point Pkwy
Address2:	NP2NE Network Engineering
City:	Alpharetta
State:	GA
Postal Code:	30022
Country:	US
Phone:	770-797-1070
Fax:	

Construction Info

Notice Of:	CONSTR
Duration:	PERM (Months: 0 Days: 0)
Work Schedule:	
Date Built:	

Structure Summary

Structure Type:	Antenna Tower
Structure Name:	EV Fancy Farm (16207023)
FCC Number:	1324370 FCC ASR Registration

Structure Details

Latitude (NAD 83):	36° 48' 09.61" N
Longitude (NAD 83):	88° 47' 54.21" W
Horizontal Datum:	NAD 83
Survey Accuracy:	1A
Marking/Lighting:	Dual-red and medium intensity
Other Description:	
Current Marking/Lighting:	N/A Proposed Structure
Current Marking/Lighting Other Description:	
Name:	
City:	Fancy Farm
State:	KY
Nearest County:	Graves
Nearest Airport:	M25
Distance to Structure:	63732.99 feet
On Airport:	No
Direction to Structure:	280.94°
Description of Location:	N of State Rt 80 between Carrico Rd and Elder Rd
Description of Proposal:	Proposing new 295 ft lattice tower owned by Sponsor of this study. Emissions from this site will adhere to parameters set by collaboration between the FAA and telecomm companies and reflected in the FAA 5G C-Band compatibility evaluation process. Questions to juliane.madsen@vzw.com

Height and Elevation

	Proposed	DNE	DET
Site Elevation:	431		
Structure Height:	295	0	**295**
Total Height (AMSL):	726	0	**726**

Frequencies

Low Freq	High Freq	Unit	ERP	Unit
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	2000	W
614	698	MHz	1000	W
698	806	MHz	1000	W
806	824	MHz	500	W
806	901	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W

	1670	1675	MHz	500	W
	1710	1755	MHz	500	W
	1850	1910	MHz	1640	W
	1850	1990	MHz	1640	W
	1930	1990	MHz	1640	W
	1990	2025	MHz	500	W
	2110	2200	MHz	500	W
	2305	2310	MHz	2000	W
	2305	2360	MHz	2000	W
	2345	2360	MHz	2000	W
	2496	2690	MHz	500	W
	3550	3700	MHz	47	dBm
	3700	3980	MHz	3280	W
	27500	28350	MHz	75	dBm
	29100	29250	MHz	75	dBm
	31000	31300	MHz	75	dBm
	38600	40000	MHz	75	dBm

Previous Back to Search Result Next

Exhibit G

TEAM KENTUCKY TRANSPORTATION CABINET

KENTUCKY TRANSPORTATION CABINET

KENTUCKY AIRPORT ZONING COMMISSION

TC 55-2
Rev. 06/2020

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

APPLICANT (*name*) Vertical Bridge REIT, LLC	**PHONE** 561-406-4015	**FAX**	**KY AERONAUTICAL STUDY #**	
ADDRESS (*street*) 750 Park of Commerce Drive, Suite 200	**CITY** Boca Raton		**STATE** FL	**ZIP** 33487
APPLICANT'S REPRESENTATIVE (*name*) Gretchen Blanton	**PHONE** 704-472-0374	**FAX**		
ADDRESS (*street*) 750 Park of Commerce Drive, Suite 200	**CITY** Boca Raton		**STATE** FL	**ZIP** 33487
APPLICATION FOR ☒ New Construction ☐ Alteration ☐ Existing **DURATION** ☒ Permanent ☐ Temporary (*months* *days*)			**WORK SCHEDULE** Start End	
TYPE ☐ Crane ☐ Building ☒ Antenna Tower ☐ Power Line ☐ Water Tank ☐ Landfill ☐ Other	**MARKING/PAINTING/LIGHTING PREFERRED** ☐ Red Lights & Paint ☐ White- medium intensity ☐ White- high intensity ☒ Dual- red & medium intensity white ☐ Dual- red & high intensity white ☐ Other			
LATITUDE 36°48'09.61"	**LONGITUDE** -88°47'54.21"		**DATUM** ☒ NAD83 ☐ NAD27 ☐ Other	
NEAREST KENTUCKY City Fancy Farm County Graves	**NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT** M25 Mayfield Graves County			
SITE ELEVATION (AMSL, *feet*) 431	**TOTAL STRUCTURE HEIGHT** (AGL, *feet*) 295		**CURRENT** (*FAA aeronautical study #*) 2022-ASO-27278-OE	
OVERALL HEIGHT (*site elevation plus total structure height, feet*) 726			**PREVIOUS** (*FAA aeronautical study #*)	
DISTANCE (*from nearest Kentucky public use or Military airport to structure*) 10.48 Nautical Miles			**PREVIOUS** (*KY aeronautical study #*)	
DIRECTION (*from nearest Kentucky public use or Military airport to structure*) WNW				

DESCRIPTION OF LOCATION (*Attach USGS 7.5 minute quadrangle map or an airport layout drawing with the precise site marked and any certified survey.*)
See attached

DESCRIPTION OF PROPOSAL
295' AGL Lattice Cell Tower

FAA Form 7460-1 (*Has the "Notice of Construction or Alteration" been filed with the Federal Aviation Administration?*)
☐ No ☒ Yes, when? 07/13/2022, Determined 01/06/2023

CERTIFICATION (*I hereby certify that all the above entries, made by me, are true, complete, and correct to the best of my knowledge and belief.*)

PENALITIES (*Persons failing to comply with KRS 183.861 to 183.990 and 602 KAR 050 are liable for fines and/or imprisonment as set forth in KRS 183.990(3). Noncompliance with FAA regulations may result in further penalties.*)

NAME	**TITLE**	**SIGNATURE**	**DATE**
Gretchen Blanton	Project Manager	GretchenBlanton	06/07/2023

COMMISSION ACTION

☐ Chairperson, KAZC
☐ Administrator, KAZC

☐ Approved
☐ Disapproved

SIGNATURE

DATE

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

Exhibit H

Date: March 23, 2022

POD Job Number: 20-64965

GEOTECHNICAL REPORT

EV FANCY FARM

36° 48’ 09.611674” N
88° 47’ 54.207499” W

Kentucky Highway 80,
Fancy Farm, KY 42039

Prepared For:

verizon

Prepared By:

POD
POWER OF DESIGN

11490 Bluegrass Parkway | Louisville, Kentucky 40299 | 502.437.5252
POWER OF DESIGN GROUP, LLC

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

POD
POWER OF DESIGN

March 23, 2022

Ms. Jackie Straight
Verizon Wireless
2902 Ring Road
Elizabethtown, KY 42701

Re: Geotechnical Report – **PROPOSED 290' SELF-SUPPORT TOWER w/ 5' LIGHTNING ARRESTOR**
Site Name: **EV FANCY FARM**
Site Address: Kentucky Highway 80, Fancy Farm, Graves County, Kentucky
Coordinates: N36˚ 48' 09.611674", W88˚ 47' 54.207499"
POD Project No. 20-64965

Dear Ms. Straight:

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,

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

Copies submitted: (3) Ms. Jackie Straight

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

LETTER OF TRANSMITTAL

TABLE OF CONTENTS

Page

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 3

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 7

7 WARRANTY AND LIMITATIONS OF STUDY 7

APPENDIX

BORING LOCATION PLAN
BORING LOGS
SOIL SAMPLE CLASSIFICATION

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

Geotechnical Report
PROPOSED 290' SELF-SUPPORT TOWER w/ 5' LIGHTNING ARRESTOR
Site Name: **EV FANCY FARM**
Kentucky Highway 80, Fancy Farm, Graves County, Kentucky
N36˚ 48' 09.611674", W88˚ 47' 54.207499"

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 and shelter. Also included is an evaluation of the site with respect to potential construction problems and recommendations dealing with quality control during construction.

2. PROJECT CHARACTERISTICS

Verizon Wireless is proposing to construct a self-support tower and either an equipment shelter, slab, or platform at N36˚ 48' 09.611674", W88˚ 47' 54.207499", Kentucky Highway 80, Fancy Farm, Graves County, Kentucky. The site is located in a farm field next to a water tower on Kentucky Highway 80 on the northwest side of Fancy Farm. The proposed lease area will be 10,000 square feet and will be accessed along an existing gravel road from Kentucky Highway 80 north to the proposed lease area. The elevation at the proposed tower location is about EL 431 and there is about 4-feet of change in elevation across the proposed lease area. The development will also include a small equipment shelter near the base of the tower. 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 Loess and the Roxanal Silt with clay, sand, and chert. There is no karst activity in this area.

The borings encountered between 7 and 8 inches of topsoil at the existing ground surface. Below the topsoil, the borings encountered clayey silt (ML) of low plasticity. The SPT N-values in the silty soil were between 3 to 32 blows per foot (bpf) that increased with depth generally indicating a soft to hard consistency. Samples with more than 40 percent

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

chert fragments were much higher. Between 18.5 and 22 feet, the borings encountered very fine sand (SP) that was medium to very dense with SPT N-values ranging from 24 to 62. The borings were terminated at the scheduled depths of 20 and 40 feet in the fine sand.

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

Based on the limited subsurface conditions encountered at the site and using Table 1615.1.1 of the 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 can be supported on drilled piers or on a common mat foundation.

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

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 - 13	13 - 20	20 - 40
Ultimate Bearing Pressure (psf)		8,300	11,000	16,500
C Undrained Shear Strength, psf	500	1500	2000	0
Ø Angle of Internal Friction degrees	0	0	0	32°
Total Unit Weight, pcf	110	120	120	90
Soil Modulus Parameter k, pci	30	750	750	90
Passive Soil Pressure, psf/one foot of depth		1,000 + 40(D-3)	1,340 + 40(D-13)	360 (D^2)
Side Friction, psf	100	400	500	2,500

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 nd 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 clay at a minimum of 4 feet can be designed using an allowable soil pressure of 3,500 pounds per square foot may be used. This value may be increased by 30 percent for the maximum edge pressure under transient loads. A friction value of 0.30 may be used between the

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

concrete and the silt soil. The passive pressures given for the drilled pier foundation may be used to resist lateral forces.

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

4.2. Equipment Platform

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

4.3. Equipment 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 (k30) of 110 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 natural clay soil and designed for a net allowable soil pressure of 2,500 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 30 inches to minimize the effects of frost action. All existing topsoil or soft natural soil should be removed beneath footings.

The floor slab for the new equipment building can be supported on firm natural soils or on new compacted structural fill. 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

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

4 in. of granular material is placed below the slab, a modulus of subgrade reaction (k30) of 110 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. It is recommended that all foundation concrete be placed the same day the excavation is made.

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

5. GENERAL CONSTRUCTION PROCEDURES AND RECOMMENDATIONS

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

5.1 Drilled Piers

The following recommendations are recommended for drilled pier construction:

- All piers must be poured the same day drilling is completed so that any shale is not allowed to swell. Clean the foundation bearing area so it is nearly level or suitably benched and is free of ponded water or loose material.

- Make provisions for ground water removal from the drilled shaft excavation. While the borings were dry at completion and significant seepage is not anticipated, the drilled pier contractor should have pumps on hand to remove water in the event seepage into the drilled pier is encountered.

- Specify concrete slumps ranging from 4 to 7 inches for the drilled shaft construction. These slumps are recommended to fill irregularities along the sides and bottom of the drilled hole, displace water as it is placed, and permit placement of reinforcing cages into the fluid concrete.

- Retain the geotechnical engineer to observe foundation excavations after the bottom of the hole is leveled, cleaned of any mud or extraneous material, and dewatered.

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

- 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

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

If groundwater is encountered in the drilled pier excavations, it may be more difficult since pumping directly from the excavations could cause a deterioration of the bottom of the excavation. If the pier excavations are not dewatered, concrete should be placed by the tremie method. If groundwater sits on the bottom of the foundation for longer than an hour, the bottom should be cleaned again before the pier is poured.

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

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 plastic bags and returned to our laboratory.

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

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.

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

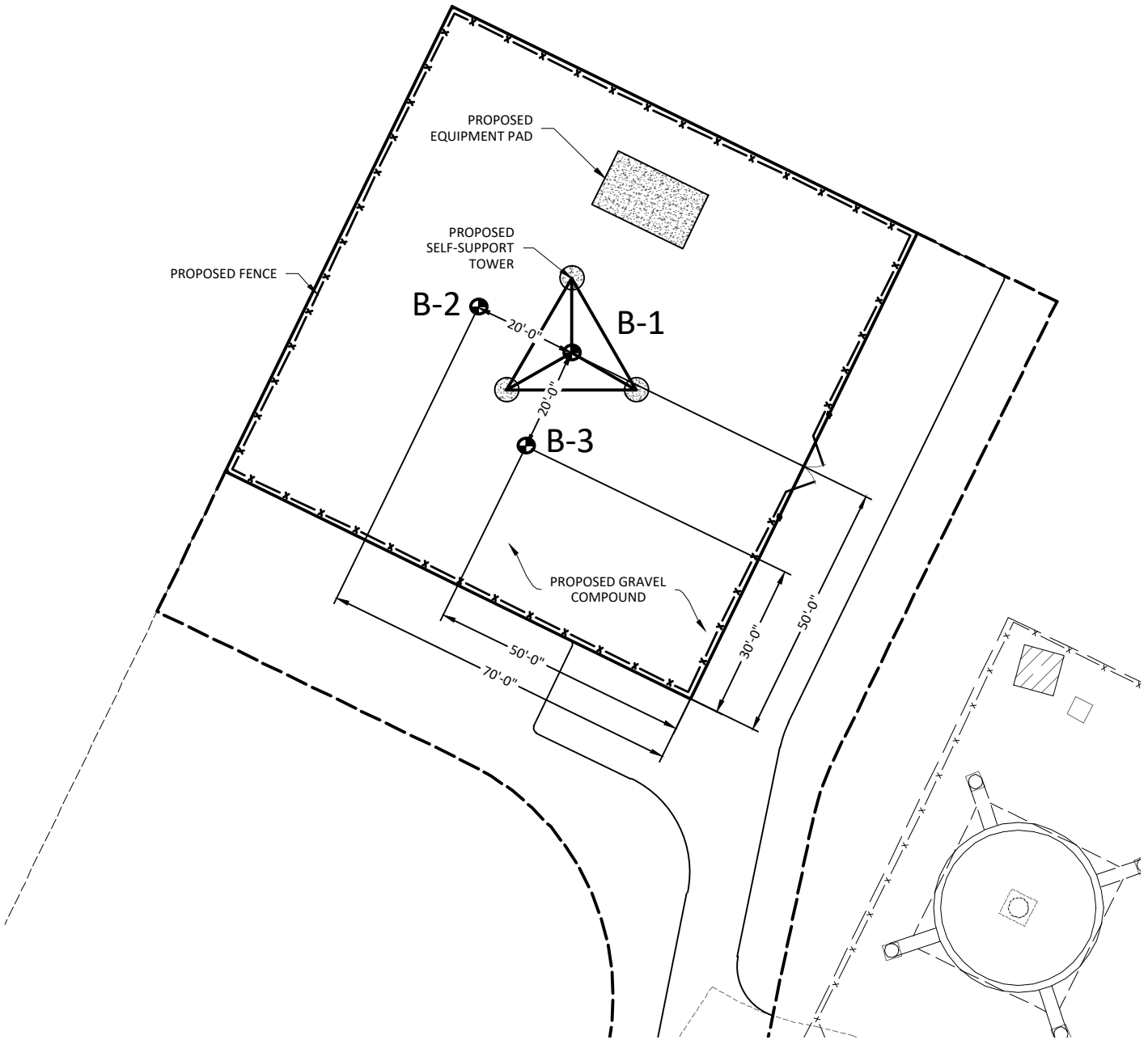
APPENDIX

BORING LOCATION PLAN

BORING LOGS

SOIL SAMPLE CLASSIFICATION

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5



LEGEND

B-1 BORING LOCATION

0' 30' 60'

1"= 30'

SHEET TITLE:

BORING LOCATION PLAN

SHEET NUMBER:

1

LATITUDE: 36° 48' 9.611674" N
LONGITUDE: 88° 47' 54.207499" W

PARCEL #: 006.00.00.005.00
DB 506, PG 639

POD NUMBER: 22-123855

DRAWN BY: POD
CHECKED BY: MEP
DATE: 3.22.2022

SITE INFORMATION:

EV FANCY FARM

KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

OWNER INFORMATION:

KM & K FARMS LLC
PO BOX 48035
COON RAPIDS, MN 55448

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

verizon

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

POD
POWER OF DESIGN

Boring Log

Boring: B-1

Project: EV Fancy Farm | **City, State** Fancy Farm, KY

Method: H.S.A.	**Boring Date:** 10-Mar-22	**Location:** Proposed Tower Center
Inside Diameter: 2 1/4"	**Drill Rig Type:** 7822 DT (ATV)	**Hammer Type:** Auto
Groundwater: DRY		**Weather:**
Driller: Commonwealth Drilling	**Note:** About 7 inches of topsoil were 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)
0.6	22.0	CLAYEY SILT (ML) - soft, moist, brown	1-2.5	SS	1, 1, 2	15	3,			29%		2.0
	3.0	- stiff, slighty moist, brown and tan mottled	3.5 - 5	SS	2, 6, 9	18	15,			23%		3.0
			6 - 7.5	SS	3, 5, 7	18	12,			17%		3.2
			8.5 - 10	SS	5, 7, 8	18	15,			20%		4.2
	12.0	- with fine sand										
	13.5	- very stiff	13.5-15	SS	9, 11, 21	18	32,			10%		
	18.5	- hard with chert fragments	18.5-20	SS	25, 24, 14	18	38,			10%		
22.0	40.0	SAND (SP) - dense, dry, very fine grained, light gray and tan	23.5-25	SS	5, 15, 15	18	30,			7%		
	28.5	- medium dense	28.5-30	SS	9, 12, 15	18	27,			3%		
			33.5-35	SS	8, 11, 13	18	24,			7%		
	38.5	- very dense	38.5-40	SS	11, 25, 37	18	62,			4%		
		Boring Terminated at 40 feet										

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

POD
POWER OF DESIGN

Boring Log

Boring: B-2

Project: EV Fancy Farm | **City, State** Fancy Farm, KY

Method: H.S.A.	**Boring Date:** 10-Mar-22	**Location:** 20' NW of Proposed Tower Center
Inside Diameter: 2 1/4"	**Drill Rig Type:** 7822 DT (ATV)	**Hammer Type:** Auto
Groundwater: DRY		**Weather:**
Driller: Commonwealth Drilling	**Note:** About 8 inches of topsoil were 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)
0.7	18.5	CLAYEY SILT (ML) - medium stiff, moist, brown-tan mottled	1-2.5	SS	1, 2, 3	15	5,			26%		--
	3.0	- very stiff	3.5 - 5	SS	4, 8, 9	18	17,			22%		4.0
			6 - 7.5	SS	3, 4, 4	18	8,			23%		1.5
	8.5	- stiff	8.5 - 10	SS	4, 5, 8	18	13,			18%		3.2
	13.5	- hard with chert	13.5-15	SS	17, 27, 40	18	67,			9%		
18.5	20.0	SAND with Chert (SP) - very dense, reddish brown with trace silt and clay	18.5-20	SS	15, 22, 23	18	45,			7%		
		Boring Terminated at 20 feet										

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

POD
POWER OF DESIGN

Boring Log

Boring: B-3

Project: EV Fancy Farm | **City, State** Fancy Farm, KY

Method: H.S.A.	**Boring Date:** 10-Mar-22	**Location:** 20' SW of Proposed Tower Center
Inside Diameter: 2 1/4"	**Drill Rig Type:** 7822 DT (ATV)	**Hammer Type:** Auto
Groundwater: DRY		**Weather:**
Driller: Commonwealth Drilling	**Note:** About 8 inches of topsoil were 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)
0.7	19.0	CLAYEY SILT (ML) - medium stiff, slighty moist, brown	1-2.5	SS	1, 2, 3	14	5,			28%		2.0
	3.0	- very stiff	3.5 - 5	SS	4, 7, 8	18	15,			24%		3.2
	6.0	- medium stiff, moist	6 - 7.5	SS	2, 3, 4	16	7,			23%		1.8
			8.5 - 10	SS	5, 6, 8	0	14,					
	13.5	- very stiff, moist, reddish brown with very fine sand	13.5-15	SS	4, 8, 12	15	20,			12%		
	18.5	- hard with chert										
19.0	20.0	SAND with Chert (SP) - very dense, reddish brown with trace silt and clay	18.5-20	SS	23, 23, 38	13	61,			8%		
		Boring Terminated at 20 feet										

DigiSigner Document ID: 486d2436-6e13-40a1-8ea9-5b9a060c47b5

SOIL SAMPLE CLASSIFICATION

FINE AND COARSE GRAINED SOIL INFORMATION

COARSE GRAINED SOILS (SANDS & GRAVELS)

N	Relative Density
0-4	Very Loose
5-10	Loose
11-20	Firm
21-30	Very Firm
31-50	Dense
Over 50	Very Dense

FINE GRAINED SOILS (SILTS & CLAYS)

N	Consistency	Qu, KSF Estimated
0-1	Very Soft	0-0.5
2-4	Soft	0.5-1
5-8	Firm	1-2
9-15	Stiff	2-4
16-30	Very Stiff	4-8
Over 31	Hard	8+

PARTICLE SIZE

Boulders	Greater than 300 mm (12 in)
Cobbles	75 mm to 300 mm (3 to 12 in)
Gravel	4.74 mm to 75 mm (3/16 to 3 in)
Coarse Sand	2 mm to 4.75 mm
Medium Sand	0.425 mm to 2 mm
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)

Percent RQD	Quality
0-25	Very Poor
25-50	Poor
50-75	Fair
75-90	Good
90-100	Excellent

ROCK HARDNESS

Very Hard:	Rock can be broken by heavy hammer blows.
Hard:	Rock cannot be broken by thumb pressure, but can be broken by moderate hammer blows.
Moderately Hard:	Small pieces can be broken off along sharp edges by considerable hard thumb pressure; can be broken with light hammer blows.
Soft:	Rock is coherent but breaks very easily with thumb pressure at sharp edges and crumbles with firm hand pressure.
Very Soft:	Rock disintegrates or easily compresses when touched; can be hard to very hard soil.

$$\text{Recovery} = \frac{\text{Length of Rock Core Recovered}}{\text{Length of Core Run}} \times 100$$

63 REC

$$\text{RQD} = \frac{\text{Sum of 4 in. and longer Rock Pieces Recovered}}{\text{Length of Core Run}} \times 100$$

NQ
43 RQD

Core Diameter	Inches
BQ	1-7/16
NQ	1-7/8
HQ	2-1/2

SYMBOLS

KEY TO MATERIAL TYPES

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

ROCKS	
Symbols	Typical Names
	Limestone or Dolomite
	Shale
	Sandstone

SOIL PROPERTY SYMBOLS

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

SAMPLING SYMBOLS

SS	Split Spoon Sample
UD	Relatively Undisturbed Sample
Core 1	Rock Core Sample

Exhibit I

DIRECTIONS FOR SITE

FROM GRAVES COUNTY COURT CLERK, 101 E SOUTH ST #2, MAYFIELD, KY 42066: HEAD EAST ON E SOUTH ST TOWARD S 6TH ST (190 FT). TURN LEFT AT THE 1ST CROSS STREET ONTO S 6TH ST (361 FT). TURN LEFT ONTO E BROADWAY (2.4 MI). CONTINUE ONTO KY-80 W (7.8 MI). TURN RIGHT ONTO KY-339 N/KY-80 W (249 FT). TURN LEFT ONTO KY-80 W (0.4 MI). SITE WILL BE LOCATED ON RIGHT (NORTH) SIDE OF ROAD.

Prepared by Power of Design Group, LLC – 502-437-5252

Exhibit J

SITE NAME: EV Fancy Farm
LOC CODE: 496686
ATTY/DATE: GJ

LAND LEASE AGREEMENT

This Land Lease Agreement (the "Agreement") made this 20 day of Sept, 2022, between KM & K Farms, LLC, a Kentucky limited liability company with a mailing address of P.O. Box 65, Fancy Farm, Kentucky 42039, hereinafter designated LESSOR and Kentucky RSA No. 1 Partnership 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 communications equipment ("Use") upon the Premises (as hereinafter defined), which are a part of that real property owned, leased or controlled by LESSOR at or near Kentucky Highway 80, Fancy Farm, Kentucky 42039 (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 and are approximately 10,000 square feet and are shown in detail on Exhibit "B" attached hereto and made a part hereof. LESSEE may survey the Premises. Upon completion, the survey shall replace Exhibit "B" in its entirety.

2. INITIAL TERM. This Agreement shall be effective as of the date of execution by both Parties ("Effective Date"). The initial term of the Agreement shall be for 5 years beginning on the first day of the month following the Commencement Date (as hereinafter defined). The "Commencement Date" shall be the first day of the month after LESSEE begins installation of LESSEE's communications equipment.

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

4. RENTAL.

a. Rental payments shall begin on the Commencement Date and be due at a total annual rental of in advance, to LESSOR at P.O. Box 65, Fancy Farm, Kentucky 42039 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. The annual rental for each five (5) year extension term shall be equal to one hundred ten percent (110%) of the annual rental payable with respect to the immediately preceding five (5) year term.

c. In consideration for the execution of this Agreement and as a signing bonus contemplating potential delay of the Commencement Date, LESSEE agrees to make a one-time payment to LESSOR in the amount of
("Additional Payment"). The Additional Payment shall be due within sixty (60) days following the date of full execution of this Agreement and shall be due and payable regardless of whether LESSEE commences the Agreement.

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 (30) foot wide right-of-way ("Easement"), which is described on Exhibit "A" and 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. During the term of this Agreement, LESSEE shall, at LESSEE's cost, promptly repair or replace all physical damage over said Easement proximately caused by the construction, operation, maintenance or use of said facilities by LESSEE. 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 structure, antennas, conduits, fencing and other screening, 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, tower structure, antennas, conduits, fencing and other screening, or other improvements or any portion thereof and the frequencies over which the communications equipment operates, whether or not any of the communications equipment, antennas, conduits or other improvements are listed on any exhibit. Any improvements to the roadway comprising the portion of the Easement that shall be used exclusively by LESSEE, its successor, assigns or subtenants, shall be at the LESSEE's expense and shall be at the discretion and option of LESSEE. Notwithstanding the foregoing, nothing contained herein shall prevent the LESSOR or the Fancy Farm Water District from accessing, improving, or maintaining that portion of the Easement which provides access to the water tower depicted on Exhibit "B".

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; (vii) with 3 months prior notice to LESSOR, upon the annual anniversary of the Commencement Date; or (viii) at any time before the Commencement Date for any reason or no reason in LESSEE's sole discretion.

10. INDEMNIFICATION. Subject to Paragraph 11, each Party shall indemnify and hold the other harmless against any claim of liability or loss from personal injury or property damage resulting from or arising out of the negligence or willful misconduct of the indemnifying Party, its employees, contractors or agents, except to the extent such claims or damages may be due to or caused by the negligence or willful misconduct of the other Party, or its employees, contractors or agents. The indemnified Party will provide the indemnifying Party with prompt, written notice of any claim covered by this indemnification; provided that any failure of the indemnified Party to provide any such notice, or to provide it promptly, shall not relieve the indemnifying Party from its indemnification obligation in respect of such claim, expect 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 29, or a violation of law, neither Party shall be liable to the other, or any of their respective agents, representatives, or employees for any lost revenue, lost profits, loss of technology, rights or services, incidental, punitive, indirect, special or consequential damages, loss of data, or interruption or loss of use of service, even if advised of the possibility of such damages, whether under theory of contract, tort (including negligence), strict liability or otherwise.

13. INTERFERENCE.

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

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) 852-2671/(800) 621-2622) or to LESSOR (at 763-248-2538), the interfering party shall or shall require any other user to reduce power or cease operations of the interfering equipment until the interference is cured.

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

14. REMOVAL AT END OF TERM. Upon expiration or within 90 days of earlier termination, LESSEE shall remove 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 rental.

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. LESSEE may elect to amend this Agreement to effectuate the proposed financial terms of the third party offer rather than acquiring fee simple title or an easement interest in the Premises. 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, easement, restrictions or other impediments of title that will adversely affect LESSEE's Use.

19. ASSIGNMENT. Subject to the terms of Paragraph 16, without any approval or consent of the other Party, this Agreement may be sold, assigned or transferred by either Party to any other third party. 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: KM & K Farms, LLC
Attn: Keith Hayden
352 Carrico Road
Fancy Farm, KY 42039

LESSEE: Kentucky RSA No. 1 Partnership
180 Washington Valley Road
Bedminster, New Jersey 07921
Attention: Network Real Estate

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

21. SUBORDINATION AND NON-DISTURBANCE. Within 15 days of the Effective Date, LESSOR shall obtain a Non-Disturbance Agreement, as defined below, from its existing mortgagee(s), ground lessors and master lessors, if any, of the Property. 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 30 days after written notice by the other Party or, if the failure cannot reasonably be remedied in such time, if the failing Party does not commence a remedy within the allotted 30 days and diligently pursue the cure to completion within 90 days after the initial written notice, or (ii) LESSOR fails to comply with this Agreement and the failure interferes with LESSEE's Use and LESSOR does

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

23. REMEDIES. In the event of a Default, without limiting the non-defaulting Party in the exercise of any right or remedy which the non-defaulting Party may have by reason of such default, the non-defaulting Party may terminate this Agreement and/or pursue any remedy now or hereafter available to the non-defaulting Party under the Laws or judicial decisions of the state in which the 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 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 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 or a release of any regulated substance to the environment 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 impairs LESSEE's Use, rent shall abate until LESSEE'S Use is restored. If LESSEE's Use is not restored within 45 days, LESSEE may terminate this Agreement.

26. CONDEMNATION. If a condemnation of any portion of the Property or Premises impairs LESSEE's Use, 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. LESSOR shall be entitled to receive any such condemnation proceeds to which LESSOR is entitled to receive as fee simple owner of the Property or Premises.

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

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 LESSOR for any taxes previously paid by LESSEE, LESSOR agrees to promptly reimburse to LESSEE the amount of said reduction, credit or repayment. In the event that LESSEE does not have the standing rights to pursue a good faith and reasonable dispute of any taxes under this paragraph, LESSOR will pursue such dispute at LESSEE's sole cost and expense upon written request of LESSEE.

29. NON-DISCLOSURE. The Parties agree this Agreement and any information exchanged between the Parties regarding the Agreement are confidential. The Parties agree not to provide copies of this Agreement or any other confidential information to any third party without the prior written consent of the other or as required by law, except the Parties shall be permitted to disclose information regarding this Agreement to their respective legal counsel, accountants, and other professional advisors and agents who shall be advised of this nondisclosure provision. 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.

30. 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 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.

31. MISCELLANEOUS. This Agreement contains all agreements, promises and understandings between LESSOR and LESSEE regarding this transaction, and no oral agreement, promises or understandings shall be binding upon either LESSOR or 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. Time is of the essence with respect to all provisions, covenants, terms, and conditions of this Agreement.

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

LESSOR:

KM & K Farms, LLC

Janice L. Miller

WITNESS

Janice L. Miller

By: W. K. Hayden; member

Name: W. K. Hayden

Date: 12/3/2020

LESSEE:

Kentucky RSA No. 1 Partnership d/b/a Verizon Wireless; By: Cellco Partnership d/b/a Verizon Wireless, Its General Partner

WITNESS

Abigail Ball

By: _____

Name: Ed Maher

Its: Director - Network Field Engineering

Date: 9/20/22

EXHIBIT "A"

DESCRIPTION OF PROPERTY AND PREMISES

Description of Property:

ALL THAT PARCEL OF LAND IN THE IN THE COUNTY OF GRAVES AND COMMONWEALTH OF KENTUCKY AS MORE FULLY DESCRIBED IN DEED DATED DECEMBER 12, 2016 AND RECORDED IN THE GRAVES COUNTY CLERK'S OFFICE IN DEED BOOK 506, PAGE 639

LEGAL DESCRIPTIONS

PROPOSED LEASE AREA

THE FOLLOWING IS A DESCRIPTION OF THE PROPOSED LEASE AREA TO BE LEASED FROM THE PROPERTY CONVEYED TO KM & K FARMS LLC AS RECORDED IN DEED BOOK 506, PAGE 639 OF RECORD IN THE OFFICE OF THE CLERK OF GRAVES COUNTY, KENTUCKY, PARCEL ID: 006.00 00.035.00, 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 24, 2020

COMMENCING AT A FOUND 5/8" REBAR WITH A YELLOW CAP STAMPED 'RT CARTER PLS' AT THE SOUTHWEST CORNER OF THE PARCEL CONVEYED TO JASON S & KAYLA HENSON AS DESCRIBED IN DEED BOOK 447, PAGE 52, PARCEL ID: 006.00.00.007.00 AND BEING IN THE NORTH RIGHT OF WAY LINE OF KENTUCKY HIGHWAY 80; FOR REFERENCE, SAID COMMENCEMENT POINT IS S64°00'14"E 804.96' FROM A FOUND 1/2" REBAR WITH NO CAP IN THE SOUTHWEST CORNER OF KM & K FARMS LLC AS RECORDED IN DEED BOOK 506, PAGE 639, PARCEL ID: 006.00.00.005.00 AND BEING IN THE NORTH RIGHT OF WAY LINE OF SAID KENTUCKY HIGHWAY 80, THENCE N64°00'14"W 275.99' TO A POINT ON THE NORTH RIGHT OF WAY LINE OF SAID KENTUCKY HIGHWAY 80 AND ALSO BEING THE SOUTH LINE OF SAID KM & K FARMS LLC; THENCE LEAVING SAID LINE N25°59'46"E 234.23' TO A SET 1/2" REBAR, 18' LONG, CAPPED "PATTERSON PLS 3136", HEREAFTER REFERRED TO AS A "SET IPC", AT THE SOUTHWEST CORNER OF THE PROPOSED LEASE AREA AND BEING THE TRUE POINT OF BEGINNING; THENCE N25°59'46" E 100.00' TO A SET IPC; THENCE S64°00'14" E 100.00' TO A SET IPC; THENCE S25°59'46"W 100.00' TO A SET IPC; THENCE N64°00'14"W 100.00' TO THE POINT OF BEGINNING CONTAINING 10,000.000 SQUARE FEET AS PER SURVEY BY MARK E. PATTERSON, PLS #3136 DATED JUNE 24, 2020.

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 CONVEYED TO KM & K FARMS LLC AS RECORDED IN DEED BOOK 506, PAGE 639 OF RECORD IN THE OFFICE OF THE CLERK OF GRAVES COUNTY, KENTUCKY, PARCEL ID. 006 00 00.005.00, WHICH IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

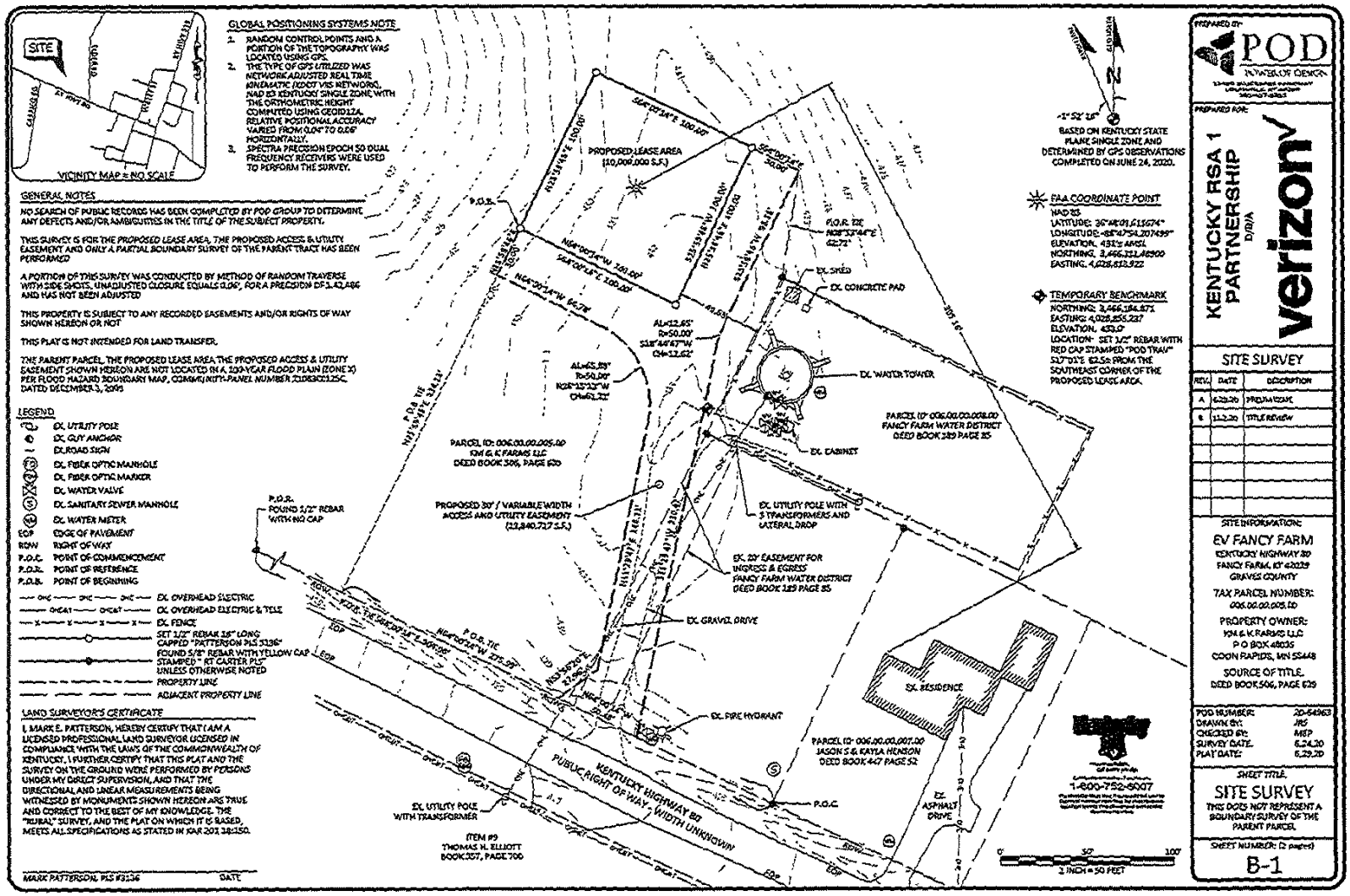
BEARING DATUM USED HEREIN IS BASED UPON KENTUCKY STATE PLANE COORDINATE SYSTEM, SINGLE ZONE, NAD 83, FROM A REAL TIME KINEMATIC GLOBAL POSITIONING SYSTEM OBSERVATION USING THE KENTUCKY TRANSPORTATION CABINET REAL TIME GPS NETWORK COMPLETED ON JUNE 24, 2020.

COMMENCING AT A FOUND 5/8" REBAR WITH A YELLOW CAP STAMPED 'RT CARTER PLS' AT THE SOUTHWEST CORNER OF THE PARCEL CONVEYED TO JASON S & KAYLA HENSON AS DESCRIBED IN DEED BOOK 447, PAGE 52, PARCEL ID: 006.00.00.007.00 AND BEING IN THE NORTH RIGHT OF WAY LINE OF KENTUCKY HIGHWAY 80; FOR REFERENCE, SAID COMMENCEMENT POINT IS S64°00'14"E 804.96' FROM A FOUND 1/2" REBAR WITH NO CAP IN THE SOUTHWEST CORNER OF KM & K FARMS LLC AS RECORDED IN DEED BOOK 506, PAGE 639, PARCEL ID: 006.00.00.005.00 AND BEING IN THE NORTH RIGHT OF WAY LINE OF SAID KENTUCKY HIGHWAY 80, THENCE N64°00'14"W 275.99' TO A POINT ON THE NORTH RIGHT OF WAY LINE OF SAID KENTUCKY HIGHWAY 80 AND ALSO BEING THE SOUTH LINE OF SAID KM & K FARMS LLC; THENCE LEAVING SAID LINE N25°59'46"E 234.23' TO A SET 1/2" REBAR, 18' LONG, CAPPED "PATTERSON PLS 3136", HEREAFTER REFERRED TO AS A "SET IPC", AT THE SOUTHWEST CORNER OF THE PROPOSED LEASE AREA AND BEING THE TRUE POINT OF BEGINNING; THENCE S64°00'14"E 100.03' TO A SET IPC; THENCE N25°59'46"E 100.00' TO A SET IPC; THENCE LEAVING SAID PROPOSED LEASE AREA S64°00'14"E 30.00' TO A POINT; FOR REFERENCE, SAID POINT IS N05°45'51"E 61.69' FROM A FOUND 5/8" REBAR WITH A YELLOW CAP STAMPED 'RT CARTER PLS' AT THE NORTHWEST CORNER OF THE PARCEL CONVEYED TO FANCY FARM WATER DISTRICT AS RECORDED IN DEED BOOK 169 PAGE 85, PARCEL ID, 006.00.00.000 00; THENCE S25°59'46"W 98.56'; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 50.00', ARC LENGTH OF 12.65', THE CHORD OF WHICH BEARS S18°44'47"W 12.62'; THENCE S11°29'47"W 230.47' TO THE NORTH RIGHT OF WAY LINE OF KENTUCKY HIGHWAY 80; THENCE ALONG SAID NORTH RIGHT OF WAY LINE N64°00'14"W 30.40'; THENCE LEAVING SAID NORTH RIGHT OF WAY LINE OF KENTUCKY HIGHWAY 80 N53°56'20"E 27.96'; THENCE N11°29'47"E 146.72'; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 50.00', ARC LENGTH OF 65.59', THE CHORD OF WHICH BEARS N28°15'13"W 61.22'; THENCE N64°00'14"W 66.78'; THENCE N25°59'46"E 30.00' TO THE POINT OF BEGINNING CONTAINING 13,840.717 SQUARE FEET AS PER SURVEY BY MARK E. PATTERSON, PLS #3136 DATED JUNE 24, 2020.

EXHIBIT "B"

SURVEY OF THE PREMISES

(see attached)


SITE
VICINITY MAP = NO SCALE
GLOBAL POSITIONING SYSTEMS NOTE
1. RANDOM CONTROL POINTS AND A PORTION OF THE TOPOGRAPHY WAS LOCATED USING GPS.
2. THE TYPE OF GPS UTILIZED WAS NETWORK ADJUSTED REAL TIME KINEMATIC (NAD) VRS NETWORK, NAD 83 KENTUCKY SINGLE ZONE WITH THE ORTHOMETRIC HEIGHT COMPUTED USING GEOID12A. RELATIVE POSITIONAL ACCURACY VARIED FROM 0.04' TO 0.06' HORIZONTALLY.
3. SPECTRA PRECISION EPOCH 50 DUAL FREQUENCY RECEIVERS WERE USED TO PERFORM THE SURVEY.
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 RANDOM TRAVERSE WITH SIDE SHOTS, UNADJUSTED CLOSURE EQUALS 0.06', FOR A PRECISION OF 1:42,486 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 SHOWN HEREON ARE NOT LOCATED IN A 100-YEAR FLOOD PLAIN (ZONE X) PER FLOOD HAZARD BOUNDARY MAP, COMMUNITY-PANEL NUMBER 21083C0125C, DATED DECEMBER 3, 2009
LEGEND
EX. UTILITY POLE
EX. GUY ANCHOR
EX. ROAD SIGN
EX. FIBER OPTIC MANHOLE
EX. FIBER OPTIC MARKER
EX. WATER VALVE
EX. SANITARY SEWER MANHOLE
EX. WATER METER
EOP EDGE OF PAVEMENT
ROW RIGHT OF WAY
P.O.C. POINT OF COMMENCEMENT
P.O.R. POINT OF REFERENCE
P.O.B. POINT OF BEGINNING
EX. OVERHEAD ELECTRIC
EX. OVERHEAD ELECTRIC & TELE
EX. FENCE
SET 1/2" REBAR 36" LONG CAPPED "PATTERSON PLS 3136"
FOUND 5/8" REBAR WITH YELLOW CAP STAMPED " RT CARTER PLS" UNLESS OTHERWISE NOTED
PROPERTY LINE
ADJACENT PROPERTY LINE
LAND SURVEYOR'S CERTIFICATE
I, MARK E. PATTERSON, HEREBY CERTIFY THAT I AM A LICENSED PROFESSIONAL LAND SURVEYOR LICENSED IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF KENTUCKY. I FURTHER CERTIFY THAT THIS 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 18:150.
MARK PATTERSON, PLS #3136
DATE
PROPOSED LEASE AREA (10,000.000 S.F.)
P.O.B.
P.O.R. TIE
P.O.C.
PROPOSED 30' / VARIABLE WIDTH ACCESS AND UTILITY EASEMENT (23,840.717 S.F.)
EX. 20' EASEMENT FOR INGRESS & EGRESS FANCY FARM WATER DISTRICT DEED BOOK 189 PAGE 85
EX. UTILITY POLE WITH 3 TRANSFORMERS AND LATERAL DROP
EX. SHED
EX. CONCRETE PAD
EX. WATER TOWER
EX. CABINET
EX. GRAVEL DRIVE
EX. FIRE HYDRANT
EX. RESIDENCE
EX. ASPHALT DRIVE
EX. UTILITY POLE WITH TRANSFORMER
KENTUCKY HIGHWAY 80
PUBLIC RIGHT OF WAY - WIDTH UNKNOWN
PARCEL ID: 006.00.00.005.00
KM & K FARMS LLC
DEED BOOK 306, PAGE 620
PARCEL ID: 006.00.00.008.00
FANCY FARM WATER DISTRICT
DEED BOOK 189 PAGE 85
PARCEL ID: 006.00.00.007.00
JASON S & KAYLA HENSON
DEED BOOK 447 PAGE 52
ITEM #9
THOMAS N. ELLIOTT
BOOK 207, PAGE 700
BASED ON KENTUCKY STATE PLANE SINGLE ZONE AND DETERMINED BY GPS OBSERVATIONS COMPLETED ON JUNE 24, 2020.
FAA COORDINATE POINT
NAD 83
LATITUDE: 36°46'01.615674"
LONGITUDE: -88°47'54.2017499"
ELEVATION: 433' AMSL
NORTHING: 3,466,221.46900
EASTING: 4,028,613.922
TEMPORARY BENCHMARK
NORTHING: 3,466,184.871
EASTING: 4,028,855.237
ELEVATION: 433.0'
LOCATION: SET 1/2" REBAR WITH RED CAP STAMPED "POD TRAV" S17°01'E 62.5± FROM THE SOUTHEAST CORNER OF THE PROPOSED LEASE AREA.
1-800-752-6007
0' 50' 100'
1 INCH = 50 FEET
PREPARED BY:
POD
PREPARED FOR:
KENTUCKY RSA 1 PARTNERSHIP D/B/A
verizon
SITE SURVEY
REV. DATE DESCRIPTION
A 6.29.20 PRELIMINARY
B 11.2.20 TITLE REVIEW
SITE INFORMATION:
EV FANCY FARM
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY
TAX PARCEL NUMBER:
006.00.00.005.00
PROPERTY OWNER:
KM & K FARMS LLC
P O BOX 48035
COON RAPIDS, MN 55448
SOURCE OF TITLE:
DEED BOOK 506, PAGE 639
POD NUMBER: 20-64963
DRAWN BY: JRS
CHECKED BY: MEP
SURVEY DATE: 6.24.20
PLAT DATE: 6.29.20
SHEET TITLE:
SITE SURVEY
THIS DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARENT PARCEL
SHEET NUMBER: (2 pages)
B-1

TITLE OF COMMITMENT

THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY POD GROUP, LLC AND AS SUCH WE ARE NOT RESPONSIBLE FOR THE INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP TITLE EVIDENCE, UNRECORDED EASEMENTS, AUGMENTING EASEMENTS, IMPLIED OR PRESCRIPTIVE EASEMENTS, OR ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE. INFORMATION REGARDING THESE MATTERS WERE GAINED FROM AMC SETTLEMENT SERVICES, LOAN NO., VZW / EV FANCY FARM2, ORDER NO.: 50012406, DATED AUGUST 5, 2020. THE FOLLOWING COMMENTS ARE IN REGARD TO SAID COMMITMENT AND THE NUMBERS IN THE COMMENTS CORRESPOND TO THE NUMBERING SYSTEM IN SAID POLICY.

SCHEDULE B SECTION II (EXCEPTIONS)

1. DEFECTS, LIENS, ENCUMBRANCES, ADVERSE CLAIMS OR OTHER MATTERS, IF ANY, CREATED, FIRST APPEARING IN THE PUBLIC RECORDS OR ATTACHING SUBSEQUENT TO THE EFFECTIVE DATE BUT PRIOR TO THE DATE THE PROPOSED INSURED ACQUIRES FOR VALUE OF RECORD THE ESTATE OR INTEREST OR MORTGAGE THEREON COVERED BY THIS COMMITMENT (POWER OF DESIGN GROUP, LLC., DID NOT EXAMINE OR ADDRESS THIS ITEM.)

2. TAXES OR SPECIAL ASSESSMENTS WHICH ARE NOT SHOWN AS EXISTING LIENS BY THE PUBLIC RECORDS. (NOT A LAND SURVEYING MATTER, THEREFORE POWER OF DESIGN GROUP, LLC., DID NOT EXAMINE OR ADDRESS THIS ITEM.)

3. ANY ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATION, OR ADVERSE CIRCUMSTANCE AFFECTING THE TITLE THAT WOULD BE DISCLOSED BY AN ACCURATE AND COMPLETE LAND SURVEY OF THE LAND. (NO ENCROACHMENTS WERE OBSERVED ON THE AREA OF THE PREMISES, OR EASEMENT POWER OF DESIGN GROUP, LLC DID NOT PERFORM A BOUNDARY SURVEY OF THE PARENT PARCEL, THEREFORE, THIS SHOULD NOT BE CONSTRUED AS NO ENCROACHMENTS EXIST.)

4. RIGHTS OR CLAIMS OF PARTIES IN POSSESSION NOT SHOWN BY THE PUBLIC RECORDS. (RIGHTS OR CLAIMS ARE NOT A LAND SURVEYING MATTER, THEREFORE POWER OF DESIGN GROUP, LLC., DID NOT EXAMINE OR ADDRESS THIS ITEM.)

5. ANY LIEN OR RIGHT TO A LIEN, FOR SERVICES, LABOR, OR MATERIAL HERETOFORE OR HEREAFTER FURNISHED, IMPOSED BY LAW AND NOT SHOWN BY THE PUBLIC RECORDS. (NOT A LAND SURVEYING MATTER, THEREFORE POWER OF DESIGN GROUP, LLC., DID NOT EXAMINE OR ADDRESS THIS ITEM.)

6. EASEMENTS OR CLAIMS OF EASEMENTS, NOT SHOWN BY THE PUBLIC RECORDS. (POWER OF DESIGN GROUP, LLC., DID NOT EXAMINE OR ADDRESS THIS ITEM.)

TAXES

7. TAXES, OR SPECIAL ASSESSMENTS, IF ANY, NOT SHOWN AS EXISTING LIENS BY THE PUBLIC RECORDS.

PARCEL ID #: 006.00.00.005.00
COMMENTS: PARENT PARCEL

YEAR:	TYPE:	PERIOD:	TAX AMOUNT:	PENALTY:	AMOUNT DUE:	STATUS	DUE DATE:	GOOD THRU DATE:
2019	CITY & COUNTY	ANNUAL	$148.96	$0.00	N/A	PAID	N/A	N/A

PARCEL ID #: 006.00.00.005.02
COMMENTS: LEASEHOLD PARCEL

YEAR:	TYPE:	PERIOD	TAX AMOUNT	PENALTY:	AMOUNT DUE:	STATUS:	DUE DATE:	GOOD THRU DATE:
2019	CITY & COUNTY	ANNUAL	$168.44	$0.00	N/A	PAID	N/A	N/A

(NOT A LAND SURVEYING MATTER, THEREFORE POWER OF DESIGN GROUP, LLC., DID NOT EXAMINE OR ADDRESS THIS ITEM.)

MORTGAGE

NONE OF RECORD.

LIENS / JUDGEMENTS

NONE OF RECORD.

OTHERS

8. SUBJECT TO EASEMENT IN DEED FROM ALBERT EUGENE GOATLEY AND WIFE, MARY VERNON GOATLEY, TO DANNY TOON AND WIFE, NICOLE TOON DATED 8/26/1994 AND RECORDED 8/30/1994 IN BOOK 350, PAGE 477, GRAVES COUNTY RECORDS. (EASEMENT IN DEED AS RECORDED IN BOOK 350, PAGE 477 DOES NOT AFFECT THE PARENT PARCEL OR THE ACCESS & UTILITY EASEMENT.)

9. SUBJECT TO EASEMENT FOR POWER LINES AND WATER METERS IN DEED FROM JAMES M. ELLIOTT, TRUSTEE OF THE JAMES M. ELLIOTT DECLARATION OF TRUST TO THOMAS H. ELLIOTT DATED 10/9/1995 AND RECORDED 10/13/1995 IN BOOK 357, PAGE 700, GRAVES COUNTY RECORDS. (EASEMENT AS RECORDED IN BOOK 357, PAGE 700 DOES NOT AFFECT THE PARENT PARCEL OR THE ACCESS & UTILITY EASEMENT AND IS SHOWN HEREON.)

10. SUBJECT TO EASEMENT OF 20 FOOT WIDE STRIP OF LAND FORMERLY USED AS A ROADWAY REFERENCED IN DEED FROM MAIN STREET BANK & TRUST FKA BANKILLINOIS, SUCCESSOR TRUSTEE OF THE JAMES M. ELLIOTT DECLARATION OF TRUST UNDER AGREEMENT DATED 5/6/1994 TO KENT E. HAYDEN AND W. KEITH HAYDEN DATED 10/7/2005 AND RECORDED 11/14/2005 IN BOOK 427 PAGE 770, GRAVES COUNTY RECORDS. (NO COPY OF THE ACTUAL EASEMENT REFERENCED IN BOOK 80 PAGE 329, IS AVAILABLE) (THERE IS NOT A COPY OF OR A PLOTTABLE DESCRIPTION INCLUDED OF THE 20' EASEMENT AS REFERENCED IN BOOK 427, PAGE 770, THEREFORE POD CANNOT DETERMINE THE AFFECT ON THE PARENT PARCEL OR THE ACCESS & UTILITY EASEMENT.)

11. SUBJECT TO DEED OF EASEMENT FROM ALGENE GOATLEY AND WIFE, MARY VERNON GOATLEY TO FANCY FARM WATER & SEWER DISTRICT DATED 6/29/1995 AND RECORDED 6/30/1995 IN BOOK 356, PAGE 10 GRAVES COUNTY RECORDS. (EASEMENT AS RECORDED IN BOOK 356, PAGE 10 DOES NOT AFFECT THE PARENT PARCEL OR THE ACCESS & UTILITY EASEMENT.)

12. SUBJECT TO ANY MATTERS AS MAY BE SHOWN ON PLAT OF QUAIL HOLLOW SUBDIVISION (PHASE RECORDED 12/12/2016 IN PLAT BOOK F, PAGE 75, GRAVES COUNTY RECORDS. (THIS VOIDS THE EASEMENT SHOWN AS PARCEL 11, TRACT II IN VESTING DEED IN BOOK 506, PAGE 639) (MATTERS AS SHOWN IN PLAT IN BOOK 506, PAGE 639 DOES NOT AFFECT THE PARENT PARCEL OR THE ACCESS & UTILITY EASEMENT.)

LEGAL DESCRIPTIONS

PROPOSED LEASE AREA

THE FOLLOWING IS A DESCRIPTION OF THE PROPOSED LEASE AREA TO BE LEASED FROM THE PROPERTY CONVEYED TO KM & K FARMS LLC AS RECORDED IN DEED BOOK 506, PAGE 639 OF RECORD IN THE OFFICE OF THE CLERK OF GRAVES COUNTY, KENTUCKY, PARCEL ID: 006.00.00.005.00, 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 24, 2020.

COMMENCING AT A FOUND 5/8" REBAR WITH A YELLOW CAP STAMPED "RT CARTER PLS" AT THE SOUTHWEST CORNER OF THE PARCEL CONVEYED TO JASON S & KAYLA HENSON AS DESCRIBED IN DEED BOOK 447, PAGE 52, PARCEL ID: 006.00.00.007.00 AND BEING IN THE NORTH RIGHT OF WAY LINE OF KENTUCKY HIGHWAY 80; FOR REFERENCE, SAID COMMENCEMENT POINT IS S64°00'14"E 904.96' FROM A FOUND 1/2" REBAR WITH NO CAP IN THE SOUTHWEST CORNER OF KM & K FARMS LLC AS RECORDED IN DEED BOOK 506, PAGE 639 PARCEL ID: 006.00.00.005.00 AND BEING IN THE NORTH RIGHT OF WAY LINE OF SAID KENTUCKY HIGHWAY 80, THENCE N64°00'14"W 275.99' TO A POINT ON THE NORTH RIGHT OF WAY LINE OF SAID KENTUCKY HIGHWAY 80 AND ALSO BEING THE SOUTH LINE OF SAID KM & K FARMS LLC; THENCE LEAVING SAID LINE N25°59'46"E 234.23' TO A SET 1/2" REBAR, 18" LONG, CAPPED "PATTERSON PLS 3136", HEREAFTER REFERRED TO AS A "SET IPC", AT THE SOUTHWEST CORNER OF THE PROPOSED LEASE AREA AND BEING THE TRUE POINT OF BEGINNING; THENCE N25°59'46"E 100.00' TO A SET IPC; THENCE S64°00'14"E 100.00' TO A SET IPC, THENCE S25°59'46"W 100.00' TO A SET IPC; THENCE N64°00'14"W 100.00' TO THE POINT OF BEGINNING CONTAINING 10,000.000 SQUARE FEET AS PER SURVEY BY MARK E. PATTERSON, PLS #3136 DATED JUNE 24, 2020.

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 CONVEYED TO KM & K FARMS LLC AS RECORDED IN DEED BOOK 506, PAGE 639 OF RECORD IN THE OFFICE OF THE CLERK OF GRAVES COUNTY, KENTUCKY, PARCEL ID: 006.00.00.005.00, 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 24, 2020.

COMMENCING AT A FOUND 5/8" REBAR WITH A YELLOW CAP STAMPED "RT CARTER PLS" AT THE SOUTHWEST CORNER OF THE PARCEL CONVEYED TO JASON S & KAYLA HENSON AS DESCRIBED IN DEED BOOK 447, PAGE 52, PARCEL ID: 006.00.00.007.00 AND BEING IN THE NORTH RIGHT OF WAY LINE OF KENTUCKY HIGHWAY 80; FOR REFERENCE, SAID COMMENCEMENT POINT IS S64°00'14"E 904.96' FROM A FOUND 1/2" REBAR WITH NO CAP IN THE SOUTHWEST CORNER OF KM & K FARMS LLC AS RECORDED IN DEED BOOK 506, PAGE 639, PARCEL ID: 006.00.00.005.00 AND BEING IN THE NORTH RIGHT OF WAY LINE OF SAID KENTUCKY HIGHWAY 80, THENCE N64°00'14"W 275.99' TO A POINT ON THE NORTH RIGHT OF WAY LINE OF SAID KENTUCKY HIGHWAY 80 AND ALSO BEING THE SOUTH LINE OF SAID KM & K FARMS LLC; THENCE LEAVING SAID LINE N25°59'46"E 234.23' TO A SET 1/2" REBAR, 18" LONG, CAPPED "PATTERSON PLS 3136", HEREAFTER REFERRED TO AS A "SET IPC", AT THE SOUTHWEST CORNER OF THE PROPOSED LEASE AREA AND BEING THE TRUE POINT OF BEGINNING; THENCE S64°00'14"E 100.00' TO A SET IPC; THENCE N25°59'46"E 100.00' TO A SET IPC; THENCE LEAVING SAID PROPOSED LEASE AREA S64°00'14"E 30.00' TO A POINT; FOR REFERENCE, SAID POINT IS N08°45'52"E 61.69' FROM A FOUND 5/8" REBAR WITH A YELLOW CAP STAMPED "RT CARTER PLS" AT THE NORTHWEST CORNER OF THE PARCEL CONVEYED TO FANCY FARM WATER DISTRICT AS RECORDED IN DEED BOOK 229 PAGE 85 PARCEL ID: 006.00.00.008.00; THENCE S25°59'46"W 98.58', THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 50.00', ARC LENGTH OF 12.65', THE CHORD OF WHICH BEARS S18°44'47"W 12.62'; THENCE S11°29'47"W 230.47' TO THE NORTH RIGHT OF WAY LINE OF KENTUCKY HIGHWAY 80; THENCE ALONG SAID NORTH RIGHT OF WAY LINE N64°00'14"W 50.48'; THENCE LEAVING SAID NORTH RIGHT OF WAY LINE OF KENTUCKY HIGHWAY 80 N53°56'20"E 27.96'; THENCE N11°29'47"E 146.72'; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 50.00', ARC LENGTH OF 65.39', THE CHORD OF WHICH BEARS N26°15'15"W 61.22'; THENCE N64°00'14"W 66.78', THENCE N25°59'46"E 30.00' TO THE POINT OF BEGINNING CONTAINING 13,840.717 SQUARE FEET AS PER SURVEY BY MARK E. PATTERSON, PLS #3136 DATED JUNE 24, 2020.

PARENT PARCEL, LEGAL DESCRIPTION, DEED BOOK 506, PAGE 639 (NOT FIELD SURVEYED)

ALL THAT PARCEL OF LAND IN THE IN THE COUNTY OF GRAVES AND COMMONWEALTH OF KENTUCKY AS MORE FULLY DESCRIBED IN DEED AND BOOK 506 PAGE 639 AND PARCEL # 006.00.00.005.00 AND 006.00.00.005.02, BEING KNOWN AND DESIGNATED AS:

DUE TO THE NUMEROUS PRIOR OUTSALES REFERENCED IN THE CURRENT VESTING DEED AND BACK DEEDS, A SURVEY IS REQUIRED IN ORDER TO DETERMINE WHAT THE CURRENT, CORRECT LEGAL DESCRIPTION OF THE SUBJECT PROPERTY IS.

PARCEL NUMBER: 006.00.00.005.00 AND 006.00.00.005.02

BEING THE SAME PROPERTY ACQUIRED BY KM & K FARMS, LLC, A KENTUCKY LIMITED LIABILITY COMPANY BY DEED OF WILLIAM KEITH HAYDEN A/K/A W. KEITH HAYDEN, SINGLE, AND KENT E. HAYDEN A/K/A KENT HAYDEN AND MONICA HAYDEN, HUSBAND AND WIFE, DATED 12/12/2016 AND RECORDED 12/28/2016 IN BOOK / PAGE - 506 / 639

LAND SURVEYOR'S CERTIFICATE

I, MARK E. PATTERSON, HEREBY CERTIFY THAT I AM A LICENSED PROFESSIONAL LAND SURVEYOR LICENSED IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF KENTUCKY. I FURTHER CERTIFY THAT THIS PLAT AND THE SURVEY ON THE GROUND WERE PERFORMED BY PERSONS UNDER MY DIRECT SUPERVISION, AND THAT THE DIRECTIONAL AND LINEAR MEASUREMENTS BEING WITNESSED BY MONUMENTS SHOWN HEREON ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. THE "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

PREPARED BY:
POD
POWER OF DESIGN

PREPARED FOR:
KENTUCKY RSA 1 PARTNERSHIP
D/B/A
verizon

SITE SURVEY

REV	DATE	DESCRIPTION
A	6.29.20	PRELIM ISSUE
B	11.2.20	TITLE REVIEW

SITE INFORMATION:
EV FANCY FARM
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

TAX PARCEL NUMBER:
006.00.00.005.00

PROPERTY OWNER:
KM & K FARMS LLC
P O BOX 48035
COON RAPIDS, MN 55448

SOURCE OF TITLE:
DEED BOOK 506, PAGE 639

POD NUMBER:	20-64963
DRAWN BY:	JRS
CHECKED BY:	MEP
SURVEY DATE:	6.24.20
PLAT DATE:	6.29.20

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

SHEET NUMBER: (2 pages)
B-1.1

DigiSigner Document ID: [illegible]

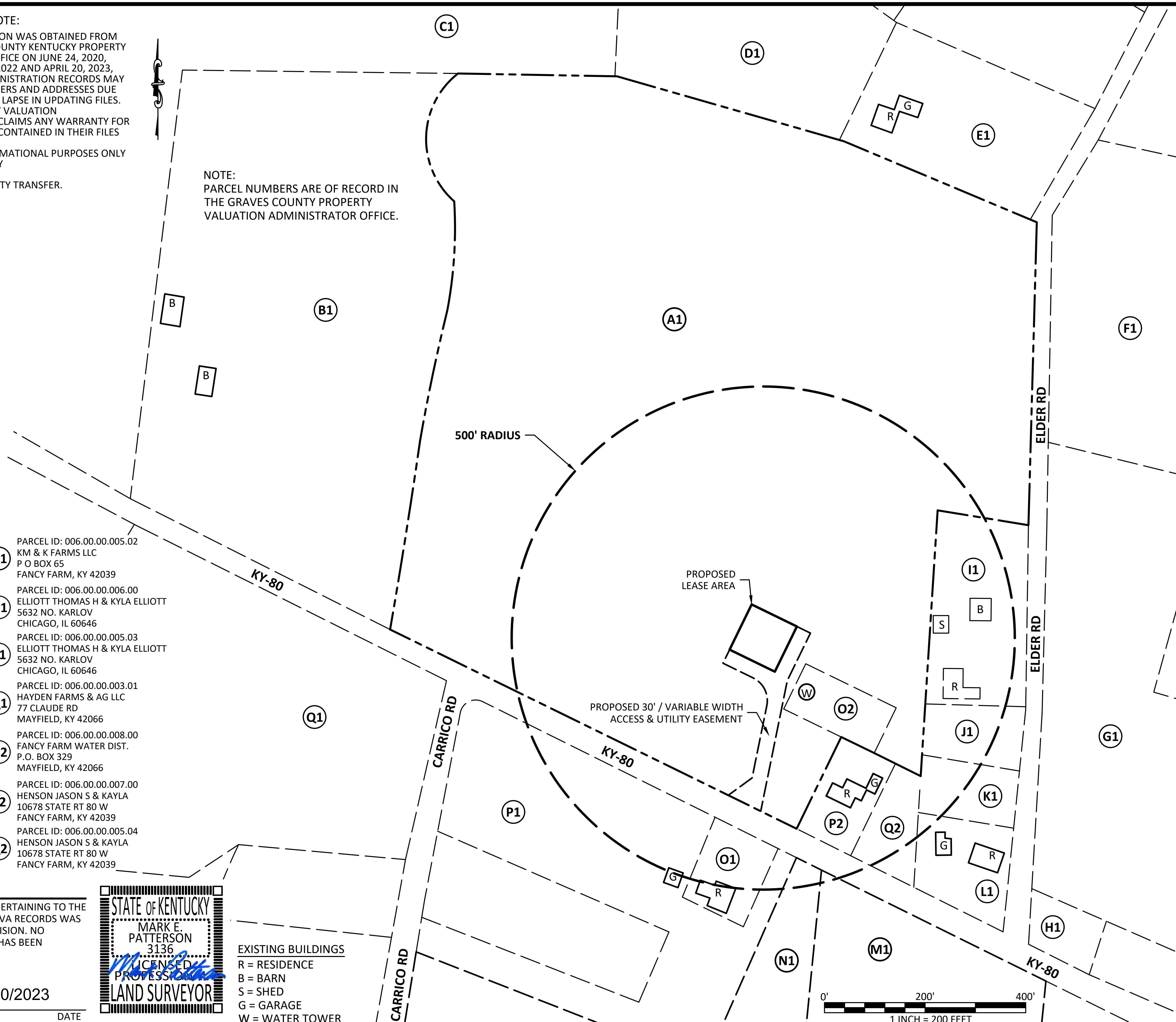
Exhibit K

GENERAL NOTE:

1. ALL INFORMATION SHOWN HEREON WAS OBTAINED FROM THE RECORDS OF THE GRAVES COUNTY KENTUCKY PROPERTY VALUATION ADMINISTRATION OFFICE ON JUNE 24, 2020, RE-VERIFIED ON SEPTEMBER 12, 2022 AND APRIL 20, 2023, THE PROPERTY VALUATION ADMINISTRATION RECORDS MAY NOT REFLECT THE CURRENT OWNERS AND ADDRESSES DUE TO THE INACCURACIES AND TIME LAPSE IN UPDATING FILES. POD AND THE COUNTY PROPERTY VALUATION ADMINISTRATION EXPRESSLY DISCLAIMS ANY WARRANTY FOR THE CONTENT AND ANY ERRORS CONTAINED IN THEIR FILES
2. THIS MAP IS FOR GENERAL INFORMATIONAL PURPOSES ONLY AND IS NOT A BOUNDARY SURVEY
3. NOT FOR RECORDING OR PROPERTY TRANSFER.

A1	PARCEL ID: 006.00.00.005.00 KM & K FARMS LLC P O BOX 65 FANCY FARM, KY 42039
B1	PARCEL ID: 006.00.00.004.00 MARTIN BRENT WELDON & LYNN ASHLEY 1525 C R 1106 FANCY FARM, KY 42039
C1	PARCEL ID: 005.00.00.021.01 MARTIN BRENT WELDON & LYNN ASHLEY 1521 C R 1106 FANCY FARM, KY 42039
D1	PARCEL ID: 005.00.00.012.00 MILLS ROBERT & SUSAN & MILLS JOHN D & JOAN 2051 SULLIVAN RD MAYFIELD, KY 42066
E1	PARCEL ID: 005.00.00.011.00 ELDER PHILIP L II & JENNIFER B 271 ELDER RD FANCY FARM, KY 42039
F1	PARCEL ID: 021.00.00.009.00 WILLETT WILLIAM MERRETT 11443 VALMONT LN ALPHARETTA, GA 30004
G1	PARCEL ID: 022.01.00.193.00 R E C PROPERTIES LLC 9965 STATE RT 80 WEST FANCY FARM, KY 42040
H1	PARCEL ID: 022.01.00.191.00 NEWTON ANTHONY ALLEN & RENAE MARIE 7555 STATE RT 80 EAST ARLINGTON, KY 42021
I1	PARCEL ID: 006.00.00.009.00 WILSON PAMELA A 87 ELDER RD FANCY FARM, KY 42039
J1	PARCEL ID: 006.00.00.0010.00 WILSON PAMELA A 87 ELDER RD FANCY FARM, KY 42039
K1	PARCEL ID: 006.00.00.011.00 CISSELL DAVID 612 OLD DUBLIN RD MAYFIELD, KY 42066
L1	PARCEL ID: 006.00.00.012.00 THOMPSON JAMES BROWN & RUTH ANN 10622 STATE RT 80 W FANCY FARM, KY 42039
M1	PARCEL ID: 006.00.00.013.00 KM & K FARMS LLC PO BOX 65 FANCY FARM, KY 42039
N1	PARCEL ID: 006.00.00.005.02 KM & K FARMS LLC P O BOX 65 FANCY FARM, KY 42039
O1	PARCEL ID: 006.00.00.006.00 ELLIOTT THOMAS H & KYLA ELLIOTT 5632 NO. KARLOV CHICAGO, IL 60646
P1	PARCEL ID: 006.00.00.005.03 ELLIOTT THOMAS H & KYLA ELLIOTT 5632 NO. KARLOV CHICAGO, IL 60646
Q1	PARCEL ID: 006.00.00.003.01 HAYDEN FARMS & AG LLC 77 CLAUDE RD MAYFIELD, KY 42066
O2	PARCEL ID: 006.00.00.008.00 FANCY FARM WATER DIST. P.O. BOX 329 MAYFIELD, KY 42066
P2	PARCEL ID: 006.00.00.007.00 HENSON JASON S & KAYLA 10678 STATE RT 80 W FANCY FARM, KY 42039
Q2	PARCEL ID: 006.00.00.005.04 HENSON JASON S & KAYLA 10678 STATE RT 80 W FANCY FARM, KY 42039

NOTE:
PARCEL NUMBERS ARE OF RECORD IN THE GRAVES COUNTY PROPERTY VALUATION ADMINISTRATOR OFFICE.



CERTIFICATE

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

MARK PATTERSON, PLS #3136 — DATE: 04/20/2023

STATE OF KENTUCKY
MARK E. PATTERSON
3136
LICENSED PROFESSIONAL
LAND SURVEYOR

EXISTING BUILDINGS
R = RESIDENCE
B = BARN
S = SHED
G = GARAGE
W = WATER TOWER

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

PREPARED FOR:
KENTUCKY RSA 1 PARTNERSHIP
D/B/A
verizon

EXHIBIT

REV.	DATE	DESCRIPTION
A	9.12.22	PRELIM ISSUE
0	11.15.22	ISSUED AS FINAL
1	4.20.23	UPDATED ADJOINERS

SITE INFORMATION:
EV FANCY FARM
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

TAX PARCEL NUMBER:
006.00.00.005.00

PROPERTY OWNER:
KM & K FARMS LLC
PO BOX 48035
COON RAPIDS, MN 55448

SOURCE OF TITLE:
DEED BOOK 506, PAGE 639

POD NUMBER:	19-42122
DRAWN BY:	TCS
CHECKED BY:	MEP
SURVEY DATE:	6.24.20
PLAT DATE:	9.12.22

SHEET TITLE:
500' RADIUS AND ABUTTERS MAP

SHEET NUMBER: (2 page)
B-2

DigiSigner Document ID: [illegible]

(R1) PARCEL ID: 006.00.00.015.00
SLAYBOUGH CHARLES R & BRENDA K
183 CARRICO RD
FANCY FARM, KY 42039

(S1) PARCEL ID: 006.00.00.017.00
SLAYBOUGH CHARLES R & BRENDA K
183 CARRICO RD
FANCY FARM, KY 42039

(T1) PARCEL ID: 006.00.00.017.01
MURPHY BRIAN G & TAMMY M
301 CARRICO RD
FANCY FARM, KY 42039

(U1) PARCEL ID: 006.00.00.018.00
MURPHY BRIAN G & TAMMY M
301 CARRICO RD
FANCY FARM, KY 42039

(V1) PARCEL ID: 006.00.00.019.00
CARRICO SUSAN
391 CARRICO RD
FANCY FARM, KY 42039

(W1) PARCEL ID: 006.00.00.020.00
WILSON PHILLIP & JOYCE
388 CARRICO RD
FANCY FARM, KY 42039

(X1) PARCEL ID: 006.00.00.020.01
WILSON MATTHEW ALBERT
18 BARRIGNTON CIRCLE
PADUCAH, KY 42003

(Y1) PARCEL ID: 006.00.00.021.00
WILSON MATTHEW ALBERT
18 BARRIGNTON CIRCLE
PADUCAH, KY 42003

(Z1) PARCEL ID: 006.00.00.056.09
THOMAS DANIEL A & JENNIFER
282 CYPRESS HILL RD
FANCY FARM, KY 42039

(A2) PARCEL ID: 006.00.00.056.05
KEMP NICHOLAS C & ANDREA E
159 EWING DR
FANCY FARM, KY 42039

(B2) PARCEL ID: 006.00.00.056.04
THORNSBROUGH TROY & DANIELLE
152 EWING LN
FANCY FARM, KY 42039

(C2) PARCEL ID: 006.00.00.069.00
WOOD RUTHIE
872 STATE RT 339 S
FANCY FARM, KY 42039

(D2) PARCEL ID: 022.00.00.039.00
WHITLOCK AUTUMN & JULIE
226 PENDEL ST
FANCY FARM, KY 42039

(E2) PARCEL ID: 022.00.00.048.00
WHITLOCK AUTUMN & JULIE
226 PENDEL ST
FANCY FARM, KY 42039

(F2) PARCEL ID: 022.00.00.057.00
CURTSINGER THOMAS A JR & COLMENARES PATRICIA
PAYNE BEVERLY & CURSTSINGER MARY JO
177 HAYDEN ST
FANCY FARM, KY 42039

(G2) PARCEL ID: 022.01.00.037.00
PERKINS RANDALL & OLIF
55 HALL ST
FANCY FARM, KY 42039

(H2) PARCEL ID: 022.01.00.038.00
TRUELOVE ALEX P & AUDREY F
77 CARRICO RD
FANCY FARM, KY 42039

(I2) PARCEL ID: 022.01.00.039.00
TRUELOVE ALEX P & AUDREY F
77 CARRICO RD
FANCY FARM, KY 42039

(J2) PARCEL ID: 022.01.00.040.00
TRUELOVE ALEX P & AUDREY F
77 CARRICO RD
FANCY FARM, KY 42039

(K2) PARCEL ID: 022.01.00.041.00
TRUELOVE ALEX P & AUDREY F
77 CARRICO RD
FANCY FARM, KY 42039

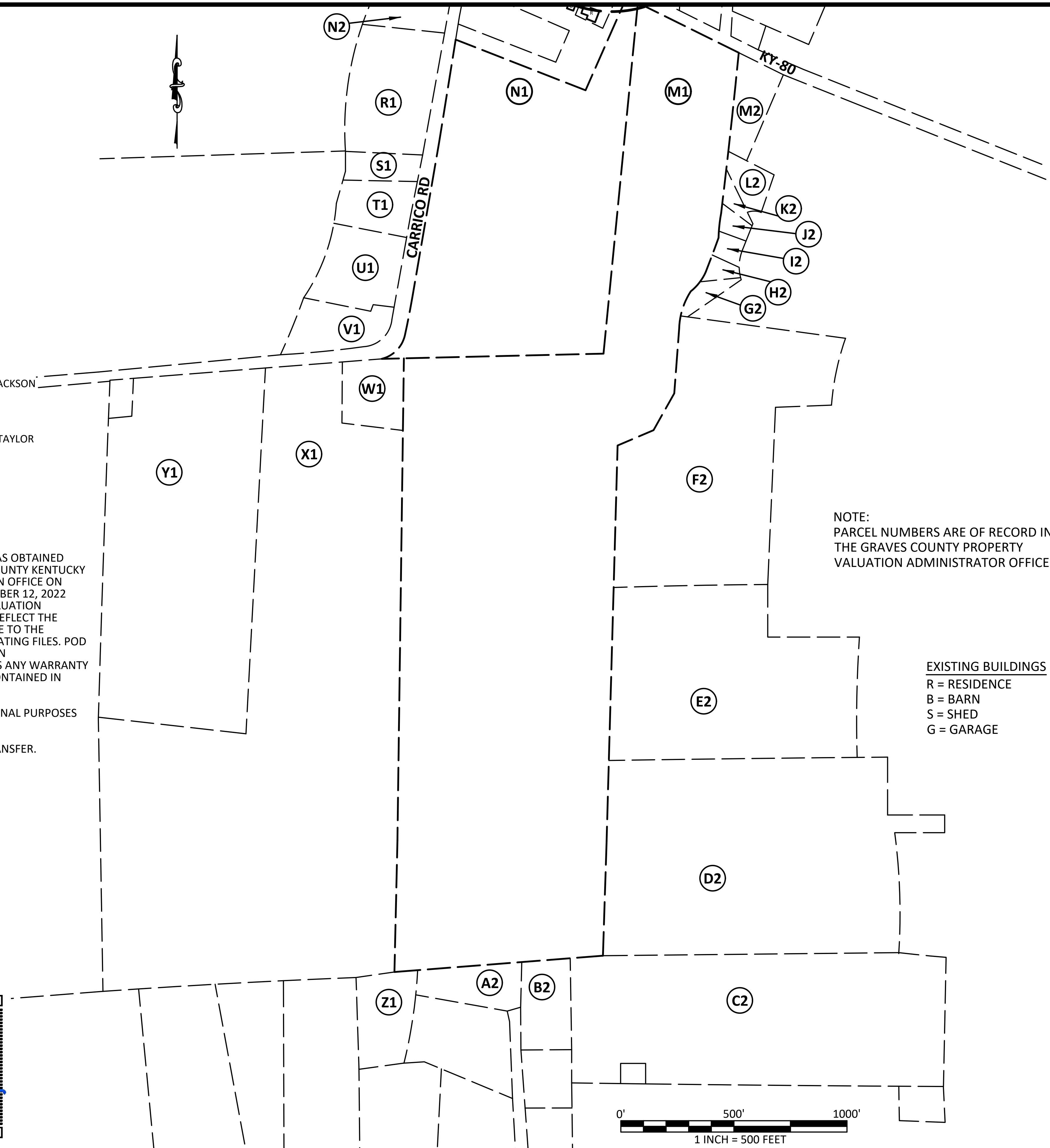
(L2) PARCEL ID: 022.01.00.042.00
TRUELOVE ALEX P & AUDREY F
77 CARRICO RD
FANCY FARM, KY 42039

(M2) PARCEL ID: 022.01.00.080.01
CHAPMAN JACKIE & CHAPMAN JACKSON
1004 SOUTH 10TH ST
MAYFIELD, KY 42066

(N2) PARCEL ID: 006.00.00.014.00
BRADFORD PRESTON EUGENE & TAYLOR
PAIGE
77 CARRICO RD
FANCY FARM, KY 42039

GENERAL NOTE:

1. ALL INFORMATION SHOWN HEREON WAS OBTAINED FROM THE RECORDS OF THE GRAVES COUNTY KENTUCKY PROPERTY VALUATION ADMINISTRATION OFFICE ON JUNE 24, 2020, RE-VERIFIED ON SEPTEMBER 12, 2022 AND APRIL 20, 2023, THE PROPERTY VALUATION ADMINISTRATION RECORDS MAY NOT REFLECT THE CURRENT OWNERS AND ADDRESSES DUE TO THE INACCURACIES AND TIME LAPSE IN UPDATING FILES. POD AND THE COUNTY PROPERTY VALUATION ADMINISTRATION EXPRESSLY DISCLAIMS ANY WARRANTY FOR THE CONTENT AND ANY ERRORS CONTAINED IN THEIR FILES
2. THIS MAP IS FOR GENERAL INFORMATIONAL PURPOSES ONLY AND IS NOT A BOUNDARY SURVEY
3. NOT FOR RECORDING OR PROPERTY TRANSFER.



CERTIFICATE

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

[signature] 04/20/2023

MARK PATTERSON, PLS #3136 DATE

STATE OF KENTUCKY
MARK E. PATTERSON
3136
LICENSED PROFESSIONAL LAND SURVEYOR

PREPARED BY:

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

PREPARED FOR:

KENTUCKY RSA 1 PARTNERSHIP D/B/A verizon

EXHIBIT

REV.	DATE	DESCRIPTION
A	9.12.22	PRELIM ISSUE
0	11.15.22	ISSUED AS FINAL
1	4.20.23	UPDATED ADJOINERS

SITE INFORMATION:

EV FANCY FARM
KENTUCKY HIGHWAY 80
FANCY FARM, KY 42039
GRAVES COUNTY

TAX PARCEL NUMBER:
006.00.00.005.00

PROPERTY OWNER:
KM & K FARMS LLC
PO BOX 48035
COON RAPIDS, MN 55448

SOURCE OF TITLE:
DEED BOOK 506, PAGE 639

POD NUMBER: 19-42122

DRAWN BY: TCS
CHECKED BY: MEP
SURVEY DATE: 6.24.20
PLAT DATE: 9.12.22

SHEET TITLE:
500' RADIUS AND ABUTTERS MAP

SHEET NUMBER: (2 page)
B-2.1

Exhibit L

EV Fancy Farm
Notification List

KM & FARMS LLC
PO BOX 65
FANCY FARM, KY 42039

MARTIN BRENT WELDON & LYNN ASHLEY
1521 C R 1106
FANCY FARM, KY 42039

MARTIN BRENT WELDON & LYNN ASHLEY
1521 C R 1106
FANCY FARM, KY 42039

MILLS ROBERT & SUSAN & MILLS JOHN D & JOAN
2051 SULLIVAN RD
MAYFIELD, KY 42066

ELDER PHILIP L II & JENNIFER B
271 ELDER RD
FANCY FARM, KY 42039

WILLETT WILLIAM MERRETT
11443 VALMONT LN
ALPHARETTA, GA 30004

R E C PROPERTIES LLC
9965 STATE RT 80 WEST
FANCY FARM, KY 42040

NEWTON ANTHONY ALLEN & RENAE MARIE
7555 STATE RT 80 EAST
ARLINGTON, KY 42021

WILSON PAMELA A
87 ELDER RD
FANCY FARM, KY 42039

CISSELL DAVID
612 OLD DUBLIN RD
MAYFIELD, KY 42066

THOMPSON JAMES BROWN & RUTH ANN

10622 STATE RT 80
W FANCY FARM, KY 42039

ELLIOTT THOMAS H c/o KYLA ELLIOTT
5632 NO. KARLOV
CHICAGO, IL 60646

HAYDEN FARMS & AG LLC
77 CLAUDE RD
MAYFIELD, KY 42066

FANCY FARM WATER DISTRICT
PO BOX 329
MAYFIELD, KY 42066

HENSON JASON S & KAYLA
10678 STATE RT 80 W
FANCY FARM, KY 42039

SLAYBOUGH CHARLES R & BRENDA K
183 CARRICO RD
FANCY FARM, KY 42039

MURPHY BRIAN G & TAMMY M
301 CARRICO RD
FANCY FARM, KY 42039

CARRICO SUSAN
391 CARRICO RD
FANCY FARM, KY 42039

WILSON PHILLIP & JOYCE
388 CARRICO RD
FANCY FARM, KY 42039

WILSON MATTHEW ALBERT
18 BARRIGNTON CIRCLE
PADUCAH, KY 42003

THOMAS DANIEL A & JENNIFER
282 CYPRESS HILL RD
FANCY FARM, KY

KEMP NICHOLAS C & ANDREA E
159 EWING DR
FANCY FARM, KY 42039

THORNSBROUGH TROY & DANIELLE
152 EWING LN
FANCY FARM, KY 42039

WOOD RUTHIE
872 STATE RT 339 S
FANCY FARM, KY 42039

WHITLOCK AUTUMN & JULIE
226 PENDEL ST
FANCY FARM, KY 42039

CURTSINGER THOMAS A JR & COLMENARES PATRICIA
PAYNE BEVERLY & CURSTSINGER MARY JO
177 HAYDEN ST
FANCY FARM, KY 42039

PERKINS, RANDALL & OLIF
55 HALL ST
FANCY FARM, KY 42039

TRUELOVE ALEX P & AUDREY F
77 CARRICO RD
FANCY FARM, KY 42039

CHAPMAN JACKIE & CHAPMAN JACKSON
1004 SOUTH 10TH ST
MAYFIELD, KY 42066

BRADFORD PRESTON EUGENE & TAYLOR PAIGE
77 CARRICO RD
FANCY FARM, KY 42039

Exhibit M

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

April 21, 2023

Notice of Proposed Construction of
Wireless Communications Facility
Site Name: Fancy Farm

Cellco Partnership, d/b/a Verizon Wireless and VB BTS II, LLC / Vertical Bridge is filing an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located on Kentucky Highway 80, Fancy Farm, Kentucky 42039, (North Latitude: (36° 48' 09.61, West Longitude 88° 47' 54.21"). The proposed facility will include a 290-foot tall antenna tower, plus a 5-foot lightning arrestor and related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

This notice is being sent to you because the 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 2023-00133 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. Applicant's radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the area. Please feel free to contact us at 317-637-1321 if you have any comments or questions about this proposal.

Sincerely,
Russell L. Brown

Attorney for Applicant
RLB/jdj
enclosure

Site Location Map

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

MARTIN BRENT WELDON
& LYNN ASHLEY
1525 C R 1106
FANCY FARM, KY 42039

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

KM & FARMS LLC
PO BOX 65
FANCY FARM, KY 42039

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

MARTIN BRENT WELDON
& LYNN ASHLEY
1521 C R 1106
FANCY FARM, KY 42039

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

9589 0710 5270 0167 3912 08

MILLS ROBERT & SUSAN &
MILLS JOHN D & JOAN
2051 SULLIVAN RD
MAYFIELD, KY 42066

CERTIFIED MAIL®

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

9589 0710 5270 0167 3911 92

ELDER PHILIP L II & JENNIFER B
271 ELDER RD
FANCY FARM, KY 42039

CERTIFIED MAIL®

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

9589 0710 5270 0167 3911 85

WILLETT WILLIAM MERRETT
11443 VALMONT LN
ALPHARETTA, GA 30004

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

9589 0710 5270 0167 3911 78

FIRST-CLASS

US POSTAGE IMI PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
APR 21 2023

R E C PROPERTIES LLC
9965 STATE RT 80 WEST
FANCY FARM, KY 42040

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

CERTIFIED MAIL®

9589 0710 5270 0167 3911 61

FIRST-CLASS

US POSTAGE IMI PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
APR 21 2023

NEWTON ANTHONY ALLEN
& RENAE MARIE
7555 STATE RT 80 EAST
ARLINGTON, KY 42021

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

CERTIFIED MAIL®

9589 0710 5270 0167 3911 54

FIRST-CLASS

US POSTAGE IMI PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
APR 21 2023

WILSON PAMELA A
87 ELDER RD
FANCY FARM, KY 42039

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

9589 0710 5270 0167 3911 47

FIRST-CLASS

US POSTAGE IMI PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
APR 21 2023

CISSELL DAVID
612 OLD DUBLIN RD
MAYFIELD, KY 42066

CERTIFIED MAIL®

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

9589 0710 5270 0167 3911 30

FIRST-CLASS

US POSTAGE IMI PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
APR 21 2023

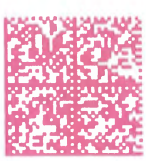
THOMPSON JAMES BROWN
& RUTH ANN
10622 STATE RT 80
W FANCY FARM, KY 42039

CERTIFIED MAIL®

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

9589 0710 5270 0167 3911 23

FIRST-CLASS



US POSTAGE IMI PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
APR 21 2023

ELLIOTT THOMAS H & KYLA ELLIOTT
5632 NO. KARLOV
CHICAGO, IL 60646

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

CERTIFIED MAIL®

9589 0710 5270 0167 3911 09

FIRST-CLASS

US POSTAGE IMI PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
APR 21 2023

HAYDEN FARMS & AG LLC
77 CLAUDE RD
MAYFIELD, KY 42066

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

June 6, 2023

Notice of Proposed Construction of
Wireless Communications Facility
Site Name: Fancy Farm

Cellco Partnership, d/b/a Verizon Wireless and VB BTS II, LLC / Vertical Bridge is filing an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located on Kentucky Highway 80, Fancy Farm, Kentucky 42039, (North Latitude: (36° 48' 09.61, West Longitude 88° 47' 54.21"). The proposed facility will include a 290-foot tall antenna tower, plus a 5-foot lightning arrestor and related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

This notice is being sent to you because the 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 2023-00133 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

Site Location Map

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

CERTIFIED MAIL

9589 0710 5270 0167 3920 83

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

MILLS ROBERT & SUSAN &
MILLS JOHN D & JOAN
2051 SULLIVAN RD
MAYFIELD, KY 42066

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

CERTIFIED MAIL

9589 0710 5270 0167 3920 90

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

WILLETT WILLIAM MERRETT
11443 VALMONT LN
ALPHARETTA, GA 30004

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

CERTIFIED MAIL

9589 0710 5270 0167 3921 06

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

ELLIOTT THOMAS H c/o KYLA ELLIOTT
5632 NO. KARLOV
CHICAGO, IL 60646

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

CERTIFIED MAIL

9589 0710 5270 0167 3921 13

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

FANCY FARM WATER DISTRICT
PO BOX 329
MAYFIELD, KY 42066

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

CERTIFIED MAIL

9589 0710 5270 0167 3921 20

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

HENSON JASON S & KAYLA
10678 STATE RT 80 W
FANCY FARM, KY 42039

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

CERTIFIED MAIL

9589 0710 5270 0167 3921 37

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

SLAYBOUGH CHARLES R & BRENDA K
183 CARRICO RD
FANCY FARM, KY 42039

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

9589 0710 5270 0167 3921 44

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰

JUN 06 2023

MURPHY BRIAN G & TAMMY M
301 CARRICO RD
FANCY FARM, KY 42039

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

CERTIFIED MAIL®

9589 0710 5270 0167 3921 51

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰

JUN 06 2023

CARRICO SUSAN
391 CARRICO RD
FANCY FARM, KY 42039

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

CERTIFIED MAIL®

9589 0710 5270 0167 3921 68

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰

JUN 06 2023

WILSON PHILLIP & JOYCE
388 CARRICO RD
FANCY FARM, KY 42039

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

CERTIFIED MAIL

9589 0710 5270 0167 3921 75

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

WILSON MATTHEW ALBERT
18 BARRIGNTON CIRCLE
PADUCAH, KY 42003

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

CERTIFIED MAIL®

9589 0710 5270 0167 3921 82

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

THOMAS DANIEL A & JENNIFER
282 CYPRESS HILL RD
FANCY FARM, KY

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

CERTIFIED MAIL®

9589 0710 5270 0167 3921 99

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

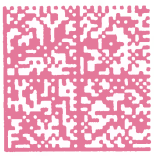
KEMP NICHOLAS C & ANDREA E
159 EWING DR
FANCY FARM, KY 42039

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

CERTIFIED MAIL

9589 0710 5270 0167 3922 05

FIRST-CLASS



US POSTAGE IMI PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

THORNSBROUGH TROY & DANIELLE
152 EWING LN
FANCY FARM, KY 42039

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

CERTIFIED MAIL

9589 0710 5270 0167 3922 12

FIRST-CLASS

US POSTAGE IMI PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

WOOD RUTHIE
872 STATE RT 339 S
FANCY FARM, KY 42039

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

CERTIFIED MAIL

9589 0710 5270 0167 3922 29

FIRST-CLASS

US POSTAGE IMI PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

WHITLOCK AUTUMN & JULIE
226 PENDEL ST
FANCY FARM, KY 42039

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

CERTIFIED MAIL

9589 0710 5270 0167 3922 36

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

CURTSINGER THOMAS A JR
& COLMENARES PATRICIA
PAYNE BEVERLY & CURSTSINGER MARY JO
177 HAYDEN ST
FANCY FARM, KY 42039

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

CERTIFIED MAIL®

9589 0710 5270 0167 3922 43

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

PERKINS, RANDALL & OLIF
55 HALL ST
FANCY FARM, KY 42039

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

CERTIFIED MAIL®

9589 0710 5270 0167 3922 50

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

TRUELOVE ALEX P & AUDREY F
77 CARRICO RD
FANCY FARM, KY 42039

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

CERTIFIED MAIL

9589 0710 5270 0167 3922 67

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

CHAPMAN JACKIE & CHAPMAN JACKSON
1004 SOUTH 10TH ST
MAYFIELD, KY 42066

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

CERTIFIED MAIL®

9589 0710 5270 0167 3922 74

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.10⁰
JUN 06 2023

BRADFORD PRESTON EUGENE
& TAYLOR PAIGE
77 CARRICO RD
FANCY FARM, KY 42039

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

KM & FARMS LLC
PO BOX 65
FANCY FARM, KY 42039

9590 9402 8129 2349 7944 64

2. Article Number *(Transfer from service label)*
9589 0710 5270 0167 3920 52

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X W. K. [illegible]
☐ Agent
☑ Addressee

B. Received by *(Printed Name)* Wilson
C. Date of Delivery 4-24-23

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

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery
☐ Mail Restricted Delivery
(over $500)

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

---

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

MARTIN BRENT WELDON
& LYNN ASHLEY
1525 C R 1106
FANCY FARM, KY 42039

9590 9402 8129 2349 7944 57

2. Article Number *(Transfer from service label)*
9589 0710 5270 0167 3920 45

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Lynn Ashley Martin
☐ Agent
☐ Addressee

B. Received by *(Printed Name)* Ashley Martin
C. Date of Delivery 4/24/23

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

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery
☐ Mail Restricted Delivery
(over $500)

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

---

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

MARTIN BRENT WELDON
& LYNN ASHLEY
1521 C R 1106
FANCY FARM, KY 42039

9590 9402 8129 2349 7944 40

2. Article Number *(Transfer from service label)*
9589 0710 5270 0167 3920 38

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Lynn Ashley Martin
☐ Agent
☐ Addressee

B. Received by *(Printed Name)* Ashley Martin
C. Date of Delivery 4/24/23

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

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery
☐ Mail Restricted Delivery
(over $500)

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

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

ELDER PHILIP L II & JENNIFER B
271 ELDER RD
FANCY FARM, KY 42039

9590 9402 8129 2349 7944 26

2. Article Number *(Transfer from service label)*
9589 0710 5270 0167 3911 92

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Jennifer Elder ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* Jennifer Elder. C. Date of Delivery 4/24/23

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

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery
Mail
Mail Restricted Delivery
0)

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

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

R E C PROPERTIES LLC
9965 STATE RT 80 WEST
FANCY FARM, KY 42040

9590 9402 8129 2349 7944 02

2. Article Number *(Transfer from service label)*
9589 0710 5270 0167 3911 78

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Ellen Carr ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* E Carr C. Date of Delivery 4-24-23

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

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery
Mail
Mail Restricted Delivery
0)

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

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

NEWTON ANTHONY ALLEN
& RENAE MARIE
7555 STATE RT 80 EAST
ARLINGTON, KY 42021

9590 9402 8129 2349 7943 96

2. Article Number *(Transfer from service label)*
9589 0710 5270 0167 3911 61

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Renae Newton ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery

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

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery
Mail
Mail Restricted Delivery
(over $500)

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

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

WILSON PAMELA A
87 ELDER RD
FANCY FARM, KY 42039

9590 9402 8129 2349 7943 89

2. Article Number *(Transfer from service label)*

9589 0710 5270 0167 3911 54

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X [signature] ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* Alex Wilson C. Date of Delivery 9-25-2

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

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation
- ☐ Signature Confirmation Restricted Delivery

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

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

CISSELL DAVID
612 OLD DUBLIN RD
MAYFIELD, KY 42066

9590 9402 8129 2349 7943 72

2. Article Number *(Transfer from service label)*

9589 0710 5270 0167 3911 47

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X [signature] ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* DAVID CISSELL C. Date of Delivery 4/24/2

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

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation
- ☐ Signature Confirmation Restricted Delivery

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

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

THOMPSON JAMES BROWN
& RUTH ANN
10622 STATE RT 80
W FANCY FARM, KY 42039

9590 9402 8129 2349 7943 65

2. Article Number *(Transfer from service label)*

9589 0710 5270 0167 3911 30

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X [signature] ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* Ruth G. Thompson C. Date of Delivery 4-24-2

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

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation
- ☐ Signature Confirmation Restricted Delivery

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

SENDER: *COMPLETE THIS SECTION*

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

1. Article Addressed to:

HAYDEN FARMS & AG LLC
77 CLAUDE RD
MAYFIELD, KY 42066

9590 9402 8129 2349 7943 34

2. Article Number *(Transfer from service label)*

9589 0710 5270 0167 3911 09

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent
☐ Addressee

B. Received by *(Printed Name)* Kevin Hayden

C. Date of Delivery 4-28-23

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

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation
- ☐ Signature Confirmation Restricted Delivery

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

Exhibit N

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

April 21, 2023

Via Certified Mail, Return Receipt Requested

Hon. Jesse Perry
Graves County Judge/Executive
101 East South Street
Mayfield, KY 42066

RE: Notice of Proposal to Construct Wireless Communications Facility
Kentucky Public Service Commission Docket No. 2023-00133
Site Name: Fancy Farm

Dear Judge Perry:

Cellco Partnership, d/b/a Verizon Wireless and VB BTS II, LLC / Vertical Bridge is filing an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located on the north side of Kentucky Highway 80, Fancy Farm, Kentucky 42039, (North Latitude: (36° 48' 09.61, West Longitude 88° 47' 54.21"). The proposed facility will include a 290-foot tall antenna tower, plus a 5-foot lightning arrestor and related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

You have a right to submit comments to the PSC or to request intervention in the PSC's proceedings on the application. You may contact the PSC at: Executive Director, Public Service Commission, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2023-00133 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 Applicant

Site Location Map

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

CERTIFIED MAIL®

9589 0710 5270 0167 3920 76

FIRST-CLASS

US POSTAGE PITNEY BOWES

ZIP 46204
02 7H
0006035028

$ 008.1(

APR 21 20

Hon. Jesse Perry
Graves County Judge/Executive
101 East South Street
Mayfield, KY 42066

SENDER: *COMPLETE THIS SECTION*

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

1. Article Addressed to:

Hon. Jesse Perry
Graves County Judge/Executive
101 East South Street
Mayfield, KY 42066

9590 9402 8129 2349 7944 71

2. Article Number *(Transfer from service label)*
9589 0710 5270 0167 3920 76

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* [illegible] C. Date of Delivery

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

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Mail
- ☐ Mail Restricted Delivery
- 00)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restrict Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

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

Exhibit O

SITE NAME: Fancy Farm
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 proposes 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 2023-00133 in your correspondence.

Cellco Partnership, d/b/a Verizon Wireless proposes 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 2023-00133 in your correspondence.

Exhibit P

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

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

Land Use Consultant
Elizabeth Bentz Williams, AICP

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

VIA EMAIL: classifieds@messenger-inquirer.com

Mayfield Messenger
86A Commerce Blvd.
Benton, KY 42025

RE: Legal Notice Advertisement
Site Name: Fancy Farm

To Whom It May Concern,

Please publish the following legal notice advertisement in the next available edition of the Mayfield Messenger Publication:

NOTICE

Cellco Partnership, d/b/a Verizon Wireless is filing an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located on the north side of Kentucky Highway 80, Fancy Farm, Kentucky 42039, (North Latitude: (36° 48' 09.61, West Longitude 88° 47' 54.21"). The proposed facility will include a 290-foot tall antenna tower, plus a 5-foot lightning arrestor and related ground facilities. 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 2023-00133 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 on my cell with any questions at 317-902-2187 if you have any questions. Thank you for your assistance.

Sincerely,

Elizabeth Bentz Williams, AICP

Exhibit Q

Search Area Map

MK & K Farms LLC - EV Fancy Farm

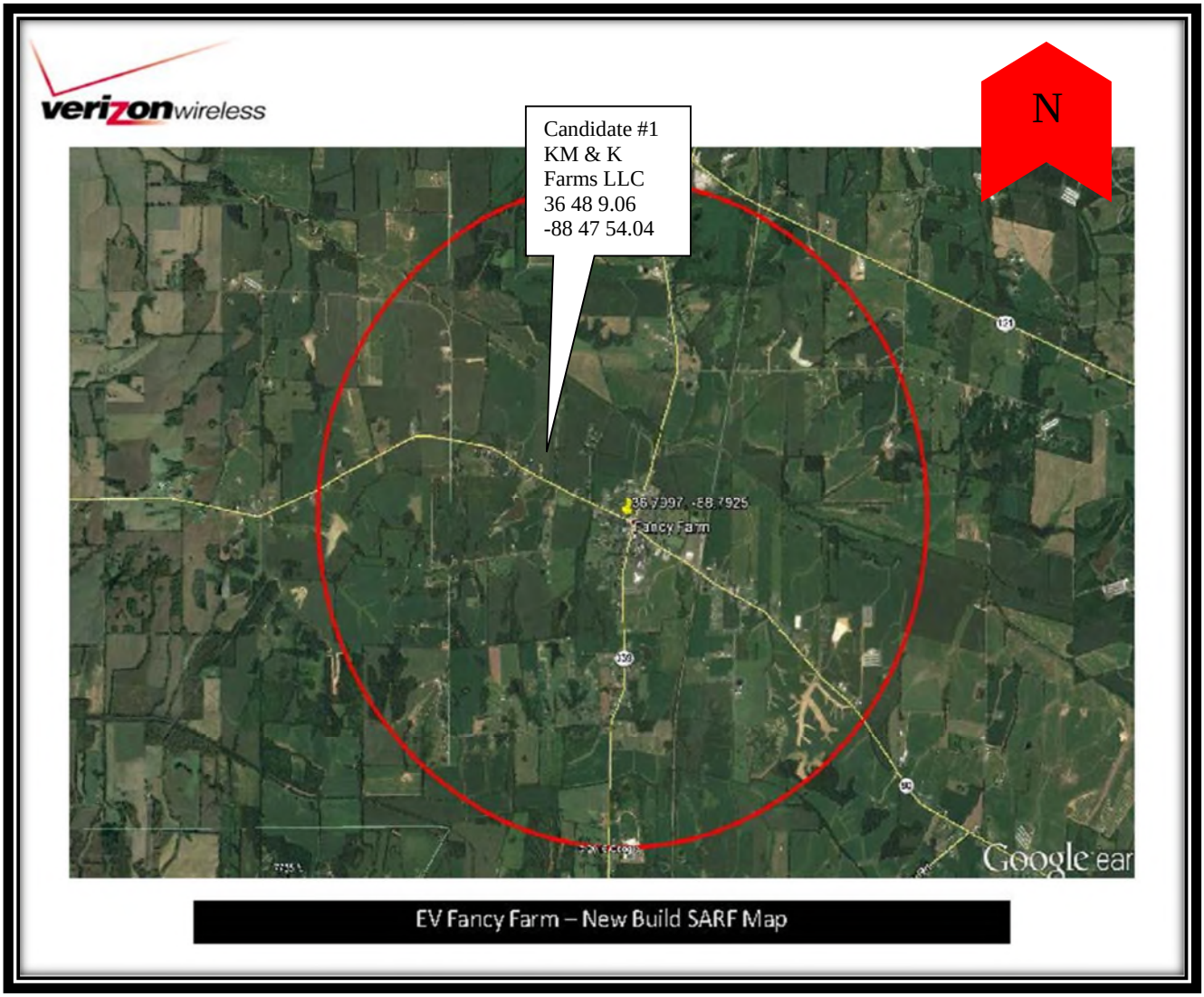


Exhibit R

verizon

Tuesday, September 20, 2022
RE: Proposed Verizon Wireless Communications Facility
Site Name: **EV Fancy Farm.**
Type of Tower: 290' self-support Tower.
Location: HIGHWAY 80 FANCY FARM, KY 42039.

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 Fancy Farm.**

The **EV Fancy Farm** site is proposed with the below objectives:

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

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

Raw Land – Design plans for a new tower would provide tower height of **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 Fancy Farm** site.

verizon

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

verizon

STATE OF INDIANA

COUNTY OF HAMILTON

Subscribed and sworn to before me this 20TH day of SEPT., 2022.

Notary Public

Signature Thomas E Kroh

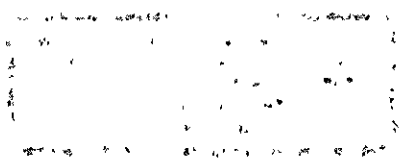
THOMAS E KROH
Notary Public - Seal
Hamilton County - State of Indiana
Commission Number NP0732024
My Commission Expires Feb 28, 2029

Printed THOMAS E KROH

County of Residence HAMILTON

My Commission expires:

2/28/29



verizon

Tuesday, September 20, 2022

RE: GRAVES County Zoning Plots

Site Name: **EV Fancy Farm.**

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.

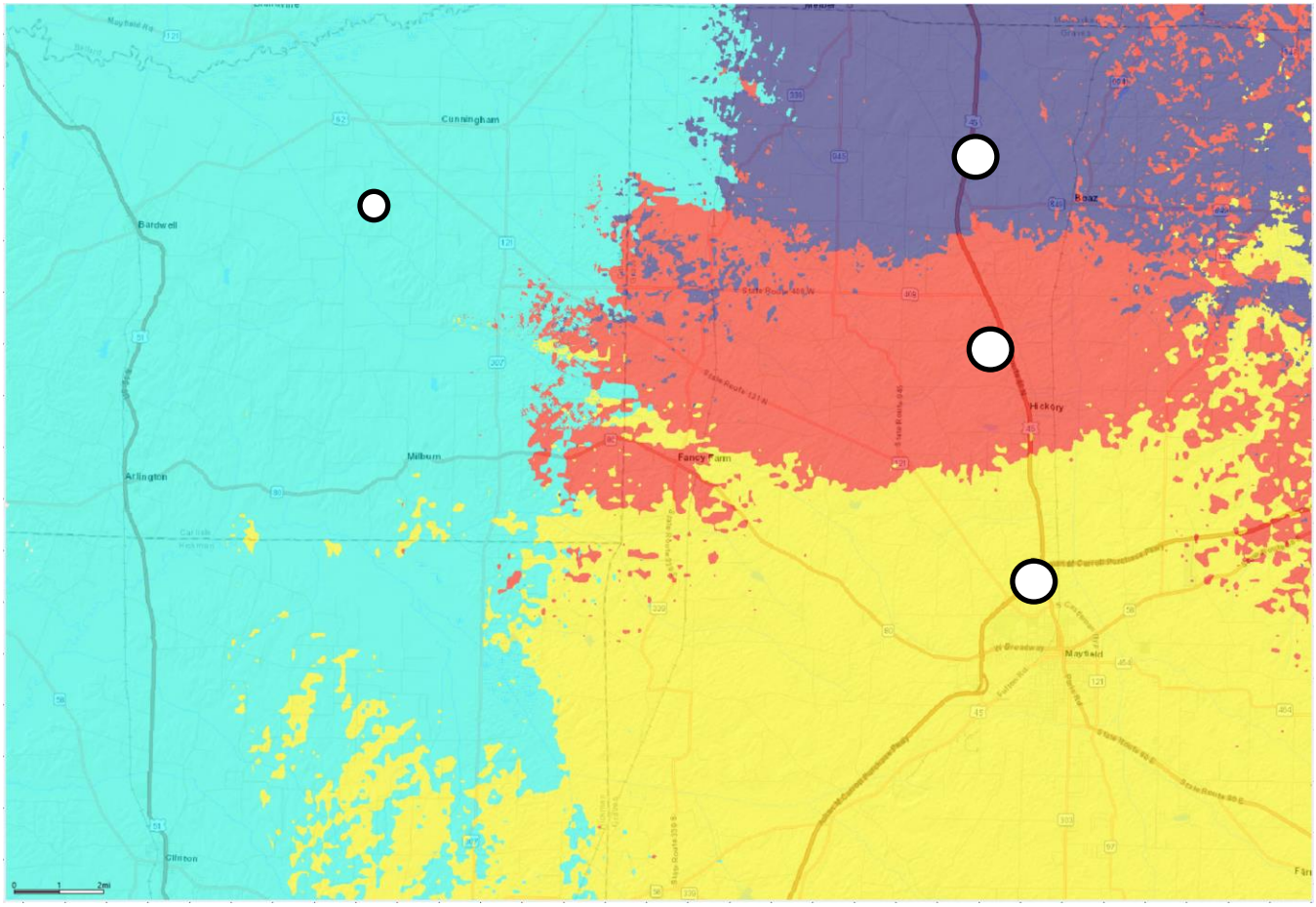
The proposed site is needed to offload capacity from existing sites. This map reflects the predicted coverage area that will be offloaded from existing sites and transferred to the proposed site.

Michael Fahim.

RF Engineer, Verizon Wireless

verizon

EV Fancy Farm Pre



Legend:

Existing Verizon Sites

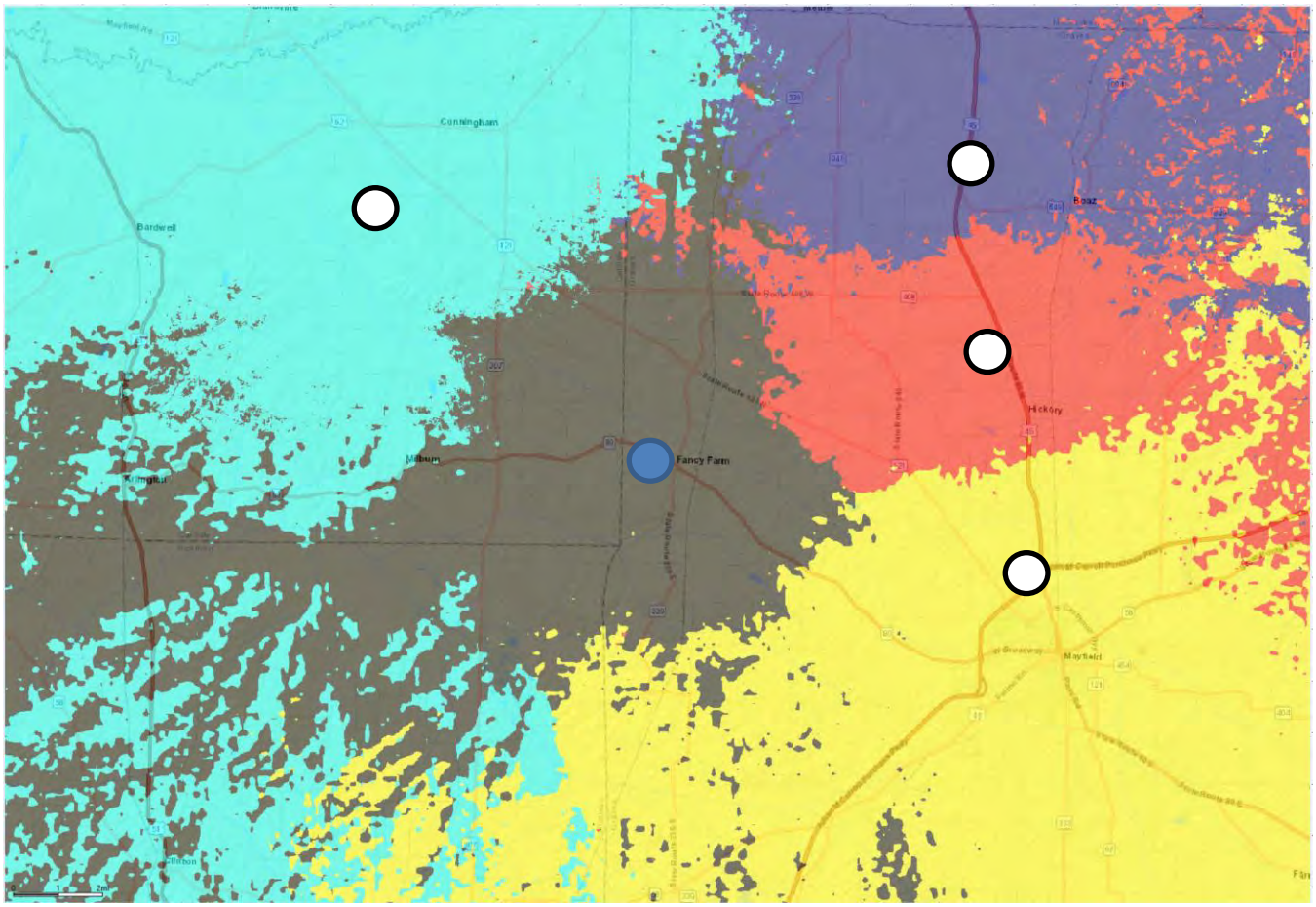
Proposed Verizon Site

Future Verizon Site

County Border ----------

verizon

EV Fancy Farm Post



Legend:

Existing Verizon Sites

Proposed Verizon Site

Future Verizon Site

County Border


EV Fancy Farm Proposed Site
36.80266991 -88.79839097
Fancy Farm Water Tower
Villa Madonna Apartments
The Industrial Slaughterhouse
Paul Teon Garage
St Jerome's Catholic Church
Sts. Martha & Mary Hall
Fancy Farm Vineyard
Hayden St
Barnett Rd
Google

Exhibit S
List and Identity and Qualifications of Professionals

Mark E. Patterson
Professional Land Surveyor
Kentucky License 3136
Power of Design Group, LLC
11490 Bluegrass Parkway
Louisville, KY 40299

Mark E. Patterson
Professional Engineer
Kentucky License 16300
Power of Design Group, LLC
11490 Bluegrass Parkway
Louisville, KY 40299

Nathan Andrew Ross
Professional Engineer
Kentucky License 35794
Valmont
1545 Pidco Dr.
Plymouth, IN 46563

Vince Caprino
Construction Manager
Verizon Wireless
2421 Holloway Road
Louisville, KY 40299

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

Exhibit T

STATE OF INDIANA)
) SS:
COUNTY OF MARION)

AFFIDAVIT OF CERTIFICATION
COMMONWEALTH OF KENTUCKY
PUBLIC SERVICE COMMISSION

I Russell L. Brown, attorney for Cellco Partnership, d/b/a Verizon Wireless do hereby certify that as the person supervising the preparation of this application that the all statements and information contained herein are true and accurate to the best of that person's knowledge, information, and belief formed after a reasonable inquiry for all information within this application.

Russell L. Brown
Attorney, for Cellco Partnership, d/b/a Verizon Wireless

STATE OF INDIANA,
COUNTY OF MARION, SS:
Subscribed and sworn to before me this 6th day of June, 2023.

Notary Public
Printed Name of Notary: Elizabeth Bentz Williams
My commission expires: November 18, 2028
My County of Residence: Marion
Commission #: 0639620