Proposed New Cellular Antenna Tower Application

Presented To: Kentucky Public Service Commission

Presented By: Brett Blackhurst – Fortune Wireless

Filing Date: 12/04/2023

Applicant:
VB BTS II, LLC (Vertical Bridge REIT, LLC)
750 Park of Commerce Drive, Suite 200
Boca Raton, FL 33487
Brandon.Whinery@verticalbridge.com

Applicant Site No. / Name:
US-KY-5152 / Fountain Run

Proposed Tower Location:
Arterburn Road
Fountain Run, KY 42133

Parcel #:	Monroe County Map # 25-13
Latitude:	36.698969
Longitude:	-85.841622

Table of Contents

TAB #1

December 4, 2023

Kentucky Public Service Commission
211 Sower Blvd
Frankfort, Kentucky 40602-0615

RE: Letter of Intent/Uniform Application for Authorization to Place and Construct a New Cellular Antenna Tower near: Arterburn Road, Gamaliel, KY 42140 in Monroe County on Parcel Map #: 25-13 with the tower located at Latitude/ Longitude: (36.698969, -85.841622). The E-911 Address: (TBD)

Dear Members of the Kentucky Public Service Commission:

Please accept this Letter of Intent, along with the enclosed supporting documents, as the uniform application from VB BTS II, LLC (Vertical Bridge) to place and construct a new 255' self-support tower (tower height – 255' + 10' lighting rod), within a 100' x 100' ground compound located on a 112-acre parcel near Arterburn Road, Gamaliel, KY 42140.

VB BTS II, LLC (Vertical Bridge) is seeking authorization to place and construct a new cellular antenna tower as required by the Kentucky Revised Statutes (KRS) 100.985 and (KRS) 100.987 from the Kentucky Public Service Commission. The parcel on which the proposed new cellular antenna tower would be placed is currently a vacant parcel which is currently used for agriculture. The proposed site is approx. 0.20 miles northeast along Arterburn Rd from the Arterburn Rd and Fountain Run Rd intersection and approx. 262 feet north off Arterburn Rd. in Gamaliel, KY. This Letter of Intent will address the requirements set forth in the Kentucky Revised Statutes (KRS) 100.985 and (KRS) 100.987 regarding the placement and construction of new cell towers within Monroe County, KY which does not have an established planning commission.

VB BTS II, LLC (Vertical Bridge) is trying to expand its infrastructure so wireless communications carriers can enhance their networks to bring more reliable, higher speed data & voice services to the residents, Farmers, and travelers in the area, specifically along Fountain Run Road in the rural areas of west Monroe County, KY. T-Mobile will be the anchor tenant on the proposed new tower, with space available for at least two additional carriers to co-locate. The proposed tower would help with the 5G expansion in the area, as that technology comes online. In an effort to meet T-Mobile's and future carrier's goals of enhancing their networks, we are requesting that the Kentucky Public Service Commission approve the placement and installation of the proposed new 255' Self-Support Tower.

The communication facility will not affect current traffic as this is an unmanned, unstaffed facility, and may only be visited once a month or as needed for servicing. Access to the facility will come off Arterburn Road via a proposed gravel access road back to the communication facility.

In conclusion, the communication facility will operate in a clean and quiet manner. The facility is unstaffed, completely automated and does not create air, water or noise pollution, unsanitary conditions, surface drainage problems, environmental nuisances, traffic congestion, threats to morality or public safety, or other objectionable characteristics offensive to the community. To the contrary, the

facility will contribute to the improved safety, convenience, comfort, and general welfare of the community by providing enhanced communications capabilities. Please review the completed application along with the required supporting documentation for a thorough project review and approval.

(KRS) 100.9865 Contents of uniform application.

In addition to the requirements of KRS 100.987, a uniform application shall include:
(1) The full name and address of the applicant;

- VB BTS II, LLC (Vertical Bridge)
  750 Park of Commerce Drive, Suite 200
  Boca Raton, FL 33487

(2) The applicant's articles of incorporation, if applicable;

- Please see the Article of Incorporation for VB BTS II, LLC from the state of Delaware, along with a current statement of good standing from the state in which it is incorporated. Also included is a current Certificate of Authorization from the Commonwealth of Kentucky identifying VB BTS II, LLC is authorized to transact business within the State of Kentucky. These documents are included in **TAB 4** below.

(3) A geotechnical investigation report, signed and sealed by a professional engineer registered in Kentucky, that includes boring logs and foundation design recommendations;

- Please see Geotechnical Report located in **TAB 5** below.

(4) A written report, prepared by a professional engineer or land surveyor, of findings as to the proximity of the proposed site to flood hazard areas;

- Please see Flood Zone Proximity Letter located in **TAB 2** below.

(5) Clear directions from the county seat to the proposed site, including highway numbers and street names, if applicable, with the telephone number of the person who prepared the directions;

- Please find directions to the site located in **TAB 3** below.

(6) The lease or sale agreement for the property on which the tower is proposed to be located, except that, if the agreement has been filed in abbreviated form with the county clerk, an applicant may file a copy of the agreement as recorded by the county clerk and, if applicable, the portion of the agreement demonstrating compliance with KRS 100.987(2);

- Please find the lease agreement in **TAB 4** below.

(7) The identity and qualifications of each person directly responsible for the design and construction of the proposed tower;

- Jeffrey E Grassman, Professional Engineer, License# 21939, with Valmont Structures. Please see Tower & Foundation Drawings, Fall Zone Letter, located in **TAB 5** below.
- David E. Kasper, Professional Engineer, License# 31578 with Fortune Wireless, Inc. Please see Construction Drawings located in **TAB 5** below.

- David N. Robinson, Professional Engineer with The Lotis Environmental Group. Please see Geotechnical Investigation Summary Letter located in **TAB 5** below.
- Joseph V. Borrelli, Jr., Professional Engineer, License# 30809 with Delta Oaks Group. Please see Geotechnical Investigation Report in **TAB 5** below.
- Ralph M Wallem, Professional Land Surveyor, License# 2195 with Benchmark Services, Inc. Please see sealed survey within the enclosed Site Plan Drawings located in TAB 5 below and the FEMA Map Flood Zone Proximity Letter located in **TAB 2** below.
- General Contractor has not been awarded yet (TBD).

(8) A site development plan or survey, signed and sealed by a professional engineer registered in Kentucky, that shows the proposed location of the tower and all easements and existing structures within five hundred (500) feet of the proposed site on the property on which the tower will be located, and all easements and existing structures within two hundred (200) feet of the access drive, including the intersection with the public street system;

- Please see Site Plan Drawings, **(Survey Plan Sheet 2 & page. C-0)** located in **TAB 5** below.

(9) A vertical profile sketch of the tower, signed and sealed by a professional engineer registered in Kentucky, indicating the height of the tower and the placement of all antennas;

- Please see Site Plan Drawings, **(p. C-7)** located in **TAB 5** below.

(10) The tower and foundation design plans and a description of the standard according to which the tower was designed, signed, and sealed by a professional engineer registered in Kentucky;

- Please see Tower & Foundation Drawings located in **TAB 5** below.

(11) A map, drawn to a scale no less than one (1) inch equals two hundred (200) feet, that identifies every structure and every owner of real estate within five hundred (500) feet of the proposed tower;

- Please see Site Plan Drawings **(p. C-0)** located in **TAB 5** below.

(12) A statement that every person who, according to the records of the property valuation administrator, owns property within five hundred (500) feet of the proposed tower or property contiguous to the site upon which the tower is proposed to be constructed, has been:
(a) Notified by certified mail, return receipt requested, of the proposed construction, which notice shall include a map of the location of the proposed construction;

- I affirm that every person, according to the records of the property valuation administrator, owns property within five hundred (500) feet of the proposed tower or property contiguous to the site upon which the tower is proposed to be constructed, has been notified by certified mail, return receipt requested, of the proposed construction. The notification Letters included a map of the location of the proposed construction. The notification letters that were sent are located in **TAB 6** below.

(b) Given the telephone number and address of the Kentucky Public Service Commission;

- The phone number and address of the Kentucky Public Service Commission have been provided in the notifications to property owners within five hundred (500) feet of the proposed tower or

property contiguous to the site upon which the tower is proposed to be constructed. The notification letters that were sent are located in **TAB 6** below.

and

(c) Informed of his or her right to participate in the planning commission's proceedings on the application;

I affirm that every person, according to the records of the property valuation administrator, owns property within five hundred (500) feet of the proposed tower or property contiguous to the site upon which the tower is proposed to be constructed, have been notified by certified mail, return receipt requested, of the proposed construction. The notification will inform property owners of his or her right to participate in the Public Service Commission's proceedings on this application. The notification letters that were sent are located in **TAB 6** below.

(13) A list of the property owners who received the notice, together with copies of the certified letters sent to the listed property owners;

- Please see List of Property Owners who received the notice & copies of the letters that were sent are located in **TABS 6** below.

(14) A statement that the chief executive officer of the affected local governments and their legislative bodies have been notified, in writing, of the proposed construction;

- I affirm that the Monroe County Judge Executive, Mitchell Page, and the five (5) magistrates making up the Monroe County Fiscal Court have been notified. The notification letters that were sent are located in **TAB 6** below.

(15) A copy of the notice sent to the chief executive officer of the affected local governments and their legislative bodies;

- The notification letters that were sent to the County Judge Executive and the five (5) magistrates making up the Monroe County Fiscal Court are located in **TAB 6** below.

(16) A statement that:

(a) A written notice, of durable material at least two (2) feet by four (4) feet in size, stating that "[Name of applicant] proposes to construct a telecommunications tower on this site" and including the addresses and telephone numbers of the applicant and the Public Service Commission, has been posted and shall remain in a visible location on the proposed site until final disposition of the application;

- I affirm that a 2' x 4' sign, of durable material, will be posted, within two weeks of filing the application, at the site notifying the public that a telecommunications tower is proposed to be constructed at the site. The notification will include the name of the applicant, their address and phone number, along with the Executive Director, Public Service Commission address including the assigned case docket number of the application. The word "TOWER" will be printed at least four (4) inches high.

And

(b) A written notice, at least two (2) feet by four (4) feet in size, stating that "[Name of applicant] proposes to construct a telecommunications tower near this site" and including the addresses and

telephone numbers of the applicant and the planning commission, has been posted on the public road nearest the site;

- I affirm that a 2' x 4' sign, of durable material, will be posted, within two weeks of filing the application, at the nearest road notifying the public that a telecommunications tower is proposed to be constructed near this site. The notification will include the name of the applicant, their address and phone number, along with the Executive Director, Public Service Commission address including the assigned case docket number of the application. The word "TOWER" will be printed at least four (4) inches high.

(17) A statement that notice of the location of the proposed construction has been published in a newspaper of general circulation in the county in which the construction is proposed;

- I affirm that notice of the location of the proposed construction will be published in a newspaper of general circulation in the county in which the construction is proposed. The newspaper publication will be provided to the Public Service Commission.

(18) A brief description of the character of the general area in which the tower is proposed to be constructed, which includes the existing land use for the specific property involved;

- The parcel on which the proposed tower will sit is a 112-acre farm field located off Arterburn Road in a rural area of Monroe County, KY. The proposed tower site is mainly surrounded by land used for agricultural purposes, with two existing residential dwellings located south of the proposed tower location across Arterburn Road.

(19) A statement that the applicant has considered the likely effects of the installation on nearby land uses and values and has concluded that there is no more suitable location reasonably available from which adequate service to the area can be provided, and that there is no reasonably available opportunity to locate its antennas and related facilities on an existing structure, including documentation of attempts to locate its antennas and related facilities on an existing structure, if any, with supporting radio frequency analysis, where applicable, and a statement indicating that the applicant attempted to locate its antennas and related facilities on a tower designed to host multiple wireless service providers' facilities or on an existing structure, such as a telecommunications tower or other suitable structure capable of supporting the applicant's antennas and related facilities;

- The proposed location of the tower was selected by the radio frequency (RF) engineers at T-Mobile, as they will be the anchor tenant on the proposed new tower. Their goal for this tower is to enhance their network in order to provide better coverage and capacity to the homesteads and travelers in the rural area along Fountain Run Road in west Monroe County.

  The proposed cellular antenna tower will be an unstaffed facility that is completely automated and does not create air, water or noise pollution, unsanitary conditions, surface drainage problems, environmental nuisances, traffic congestion, threats to morality or public safety, or other objectionable characteristics offensive to the community. To the contrary, the facility will contribute to the improved safety, convenience, comfort, and general welfare of the community by providing enhanced communications capabilities for both wireless communication and wireless broadband services.

There are two (2) residential structures in the general vicinity of the proposed tower. The nearest residential structure is approximately 235' to the south of the proposed tower site, across Arterburn Road from the proposed tower location. The other residential structure is located east of the proposed tower approximately 280', also located across Arterburn Road. This project will preserve prime agricultural lands for farming, as the new tower only requires a small area to operate. The ground compound of the proposed tower is 75' x 75', so it will have little to no effect on the surrounding farmland or residential uses. Farming operations will also benefit from the additional wireless coverage and service to the area. New technological innovations have brought farming into the future. Many farmers are utilizing GPS systems to help them be more productive in the planting and harvesting their crops. Those systems rely on robust communication networks, which this new tower could help enhance. The proposed tower will not adversely affect the use or value of the surrounding properties.

While nothing was noted in the (KRS) regulations regarding the separation distances between towers, T-Mobile wanted the Public Service Commission to be aware of any existing towers in the area and whether co-location was or was not pursued. The nearest tower to the proposed tower location is a 200' self-support lattice tower approximately 2 miles to the northeast from the proposed tower and is shorter than the desired need for T-Mobile's network needs. T-Mobile specified a 1-Mile Search Ring area within which a tower should be constructed in order to meet T-Mobile's RF network requirements. Vertical Bridge's proposed tower is located approximately 0.32 miles from the 1-Mile Search Ring Center. T-Mobile's goal for this project is to provide enhanced service to homesteads, farmers, and travelers in this rural area of western Monroe County mainly along Fountain Run Road. There are no other existing towers and/or structures within T-Mobile's specified search area to co-locate on for their desired 5G technology network needs. Service in this rural area is needed for all major wireless carriers. A proposed Vertical Bridge tower in this rural area will attract other major carriers to co-locate on, which will enhance the other wireless service provider's network and help reduce the need for additional towers in this area.

And

(20) A map of the area in which the tower is proposed to be located and that clearly depicts the necessary search area within which an antenna tower should, pursuant to radio frequency requirements, be located.

- Please see 1-Mile Search Ring Per T-Mobile's Radio Frequency Network Requirements located in **TAB 2** below.

The uniform application shall include a grid map that shows the location of all existing ASR registered cellular antenna towers:

1. All of the Monroe County, KY;

- Please see Grid Map of Existing ASR Towers and the location of the proposed new tower located in **TAB 2** below.

And

verticalbridge

Fortune Wireless, Inc.

2. A one-half (1/2) mile area outside of the boundaries of Monroe County, KY;

- Please see Grid Map of Existing ASR Towers within Monroe County, KY and the location of the proposed new tower located in **TAB 2** below.

The uniform application shall include a copy of the utility's applications to the Federal Aviation Administration (FAA) and Kentucky Airport Zoning Commission;

- Please see FAA application data from FAA Application Form 7460-1 along with the FAA Aeronautical Study Determination of No Hazard to Air Navigation in **TAB 7** below.
- Please see the Kentucky Airport Zoning Commission application along with the KAZC Approval of Application in **TAB 7** below.

The uniform application shall include Federal Communications Commission (FCC) granted antenna registration ASR #;

- Please see the FCC granted ASR registration number and data in **TAB 7** below.

Full description of the proposed location, route, or routes of the new construction or extension, including a description of the manner in which same will be constructed, and also the names of all public utilities, corporations, or persons with whom the proposed new construction or extension is likely to compete:

- The proposed new cellular tower will be constructed on a vacant 112-acre farm field with the proposed access drive coming off Arterburn Road. The proposed cellular tower will be a 255-foot-tall structure with a 10-foot lightening rod on top and will be surrounded by a fenced in compound with 3 runs of barbed wire to help prevent unauthorized personnel from climbing the cellular tower. The proposed cellular tower will not compete with any existing public utilities or corporations within the localized and surrounding areas of the proposed cellular tower. No cellular towers exist near or around the proposed cellular tower location.

Final Statement & Conclusion

- Per the site plan drawings submitted of the proposed design of a galvanized tower and facilities, this proposed project will be designed, constructed, operated, and maintained so as to be harmonious and aesthetically appropriate with the existing or intended character of the general vicinity and that such use will not change the essential character of the same area and the facility will permit reliable wireless telecommunication service for residents, businesses and travelers in the rural area of west Monroe County along Fountain Run Road. This facility will enhance communications, in the event of emergencies, including the use of E-911. Upward of 70% of all U.S. 9-1-1 calls are initiated on a mobile phone.

- The proposed project will not create excessive additional requirements, at public cost, for public facilities and services and will not be detrimental to the economic welfare of the community. To the contrary, the enhanced mobile service in the area will only help the area attract and maintain a thriving residential, agricultural, and business climate.

verticalbridge

Fortune Wireless, Inc.

- The proposed project will not involve uses, activities, processes, materials, equipment, and conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare or odors.

Attracting Businesses & Creating Jobs

- Building next generation network infrastructure will drive local economic development and job creation. *The deployment of 5G is expected to help create 2.2 million jobs, and approximately $420 billion in annual GDP, spread across small, medium, and large communities in the U.S. (Accenture, Smart Cities).* But even greater economic benefits will result when upgraded, revolutionary wireless communications are approved and deployed in every community. Small businesses, Fortune 500 companies and companies of all sizes require modern communications infrastructure. A robust network allows cities and communities to be even more competitive as they work to attract more business and encourage entrepreneurship. Fast, reliable wireless internet connections allow people to more easily telecommute or participate in e-learning to build skills and earning power, and wireless technology enables e-commerce, supporting local retailers, restaurants, and other businesses.

Creating Opportunities for Underserved Populations

- Americans are increasingly connected to the digital world via smartphones and a range of other mobile devices. Just over one in ten American adults are "smartphone-only" internet users, meaning this is the sole device used to connect online. (Pew Research Center) Improvements in wireless infrastructure and 5G networks have the potential to reduce the digital divide and create opportunity by giving all populations access to reliable high-speed broadband and its benefits.

In conclusion, and in relation to Kentucky Public Service Commission regulations, we the applicant, believe we have demonstrated by providing this letter of intent along with related information and documentation to meet the criteria set forth in the Kentucky Revised Statutes (KRS) regulations. With the aforementioned we would respectfully request approval to place and construct the proposed cellular antenna tower, as we feel that we have provided adequate justification, along with a completed application and supporting documentation.

If you have any questions, please do not hesitate to contact me via email: bblackhurst@ffi.net or my cell (317) 220-3864.

Respectfully,

Brett Blackhurst – Agent for VB BTS II, LLC (Vertical Bridge)
Site Development Services
Fortune Wireless, Inc.
5511 W. 79th St.
Indianapolis, IN 46268

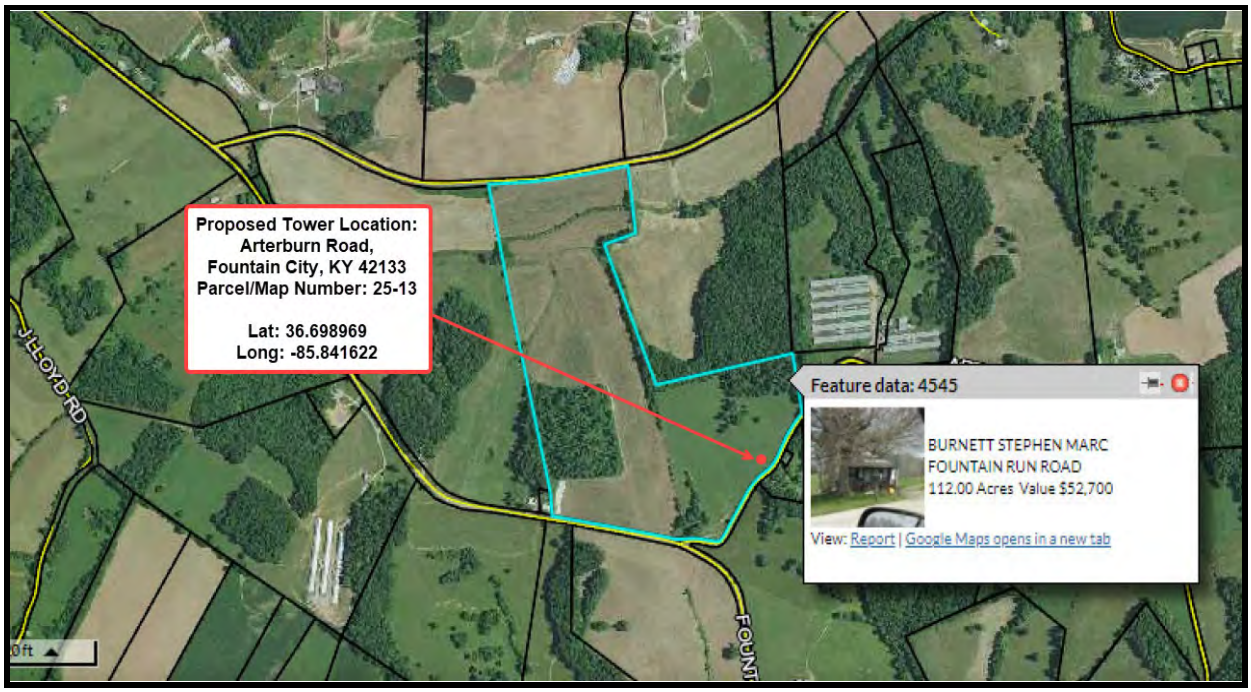
TAB #2

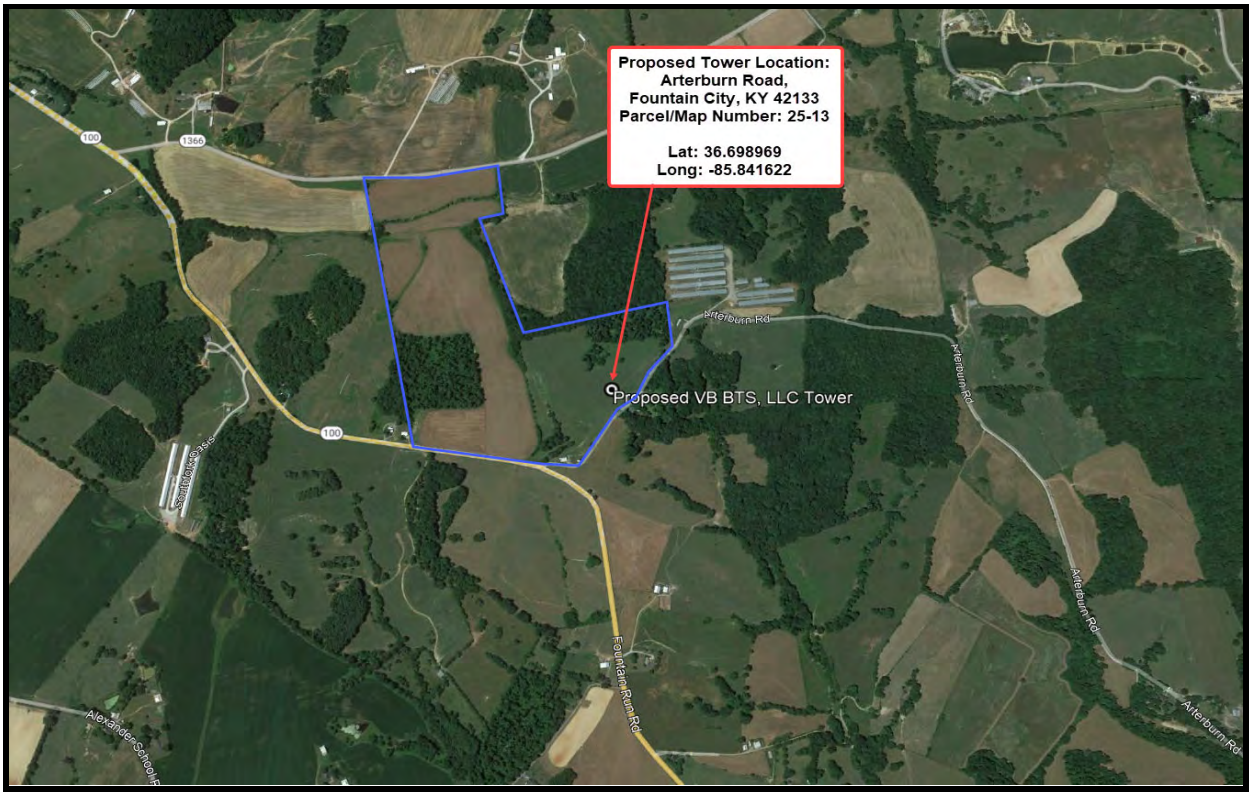
verticalbridge

Fortune Wireless, Inc.

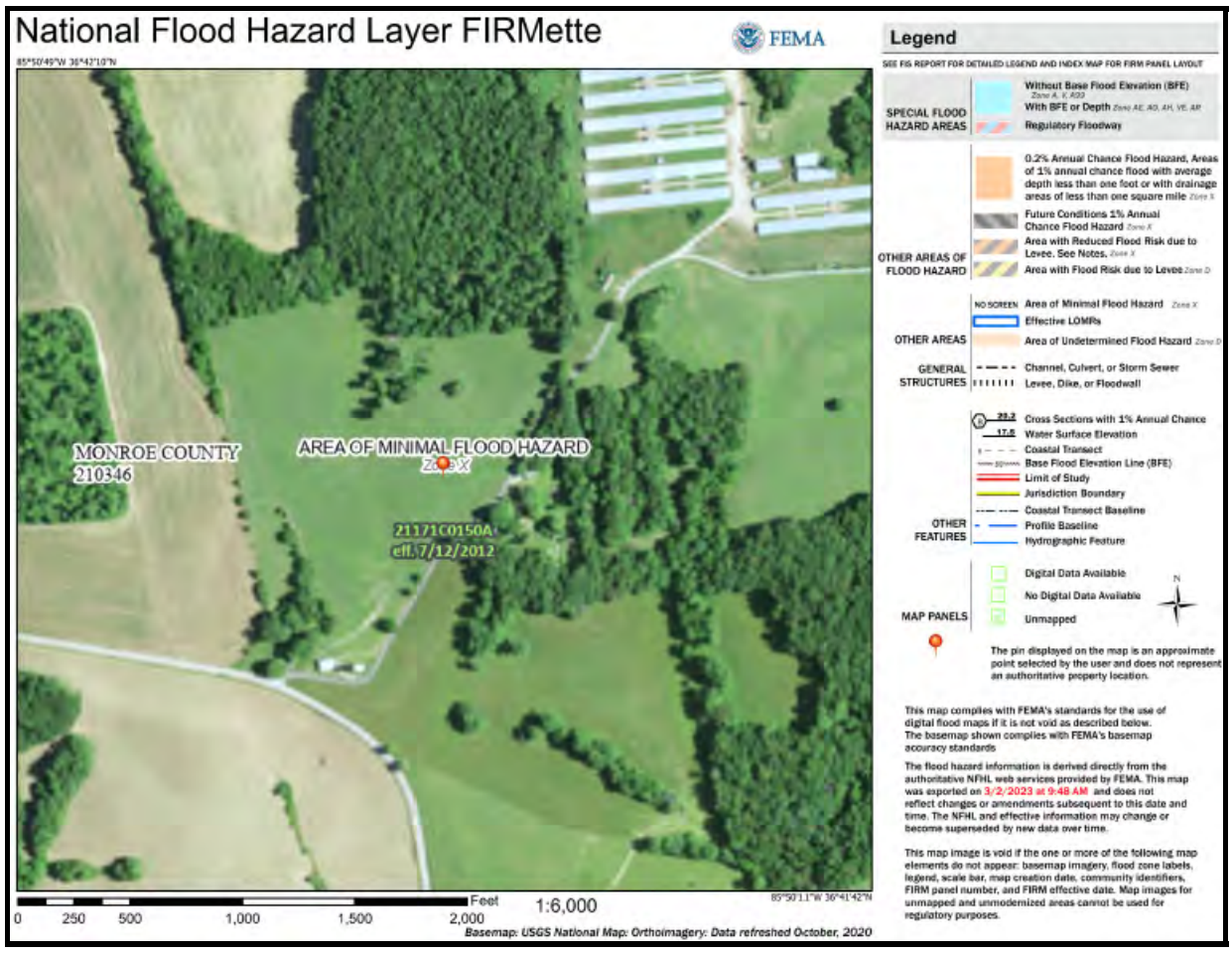
AERIAL AREA MAP

PARCEL MAP


Proposed Tower Location:
Arterburn Road,
Fountain City, KY 42133
Parcel/Map Number: 25-13
Lat: 36.698969
Long: -85.841622
LLOYD RD
Feature data: 4545
BURNETT STEPHEN MARC
FOUNTAIN RUN ROAD
112.00 Acres Value $52,700
View: Report | Google Maps opens in a new tab


Proposed Tower Location:
Arterburn Road,
Fountain City, KY 42133
Parcel/Map Number: 25-13
Lat: 36.698969
Long: -85.841622
Proposed VB BTS, LLC Tower
Arterburn Rd
Fountain Run Rd

FEMA FLOOD MAP AND DETERMINATION LETTER



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

VERTICAL BRIDGE
FORTUNE WIRELESS

DATE: OCTOBER 4, 2023

SITE NAME: US-KY-5152/ FOUNTAIN RUN
ADDRESS: 9180 FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133

FEMA MAP DETERMNATION LETTER

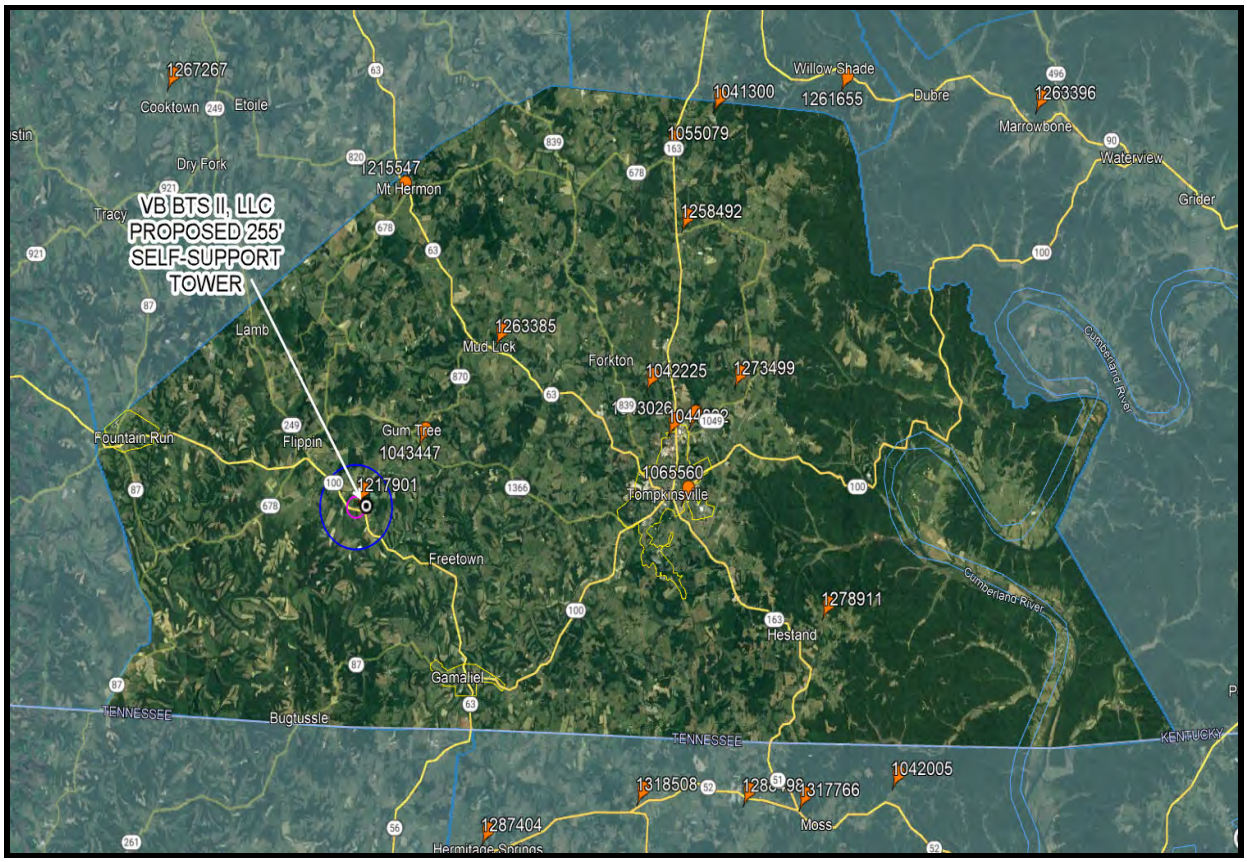
This letter is being written to certify that for the cellular site listed above, the location is at Latitude: 36° 41' 56.29" N (36.698969) and Longitude: 85° 50' 29.84" W (-85.841622).

According to a scaled FEMA MAP (Map No. 21171C01150A), dated July 12, 2012, the proposed site is located in Zone "X". The nearest Flood Zone "A" is in excess of 5,280' to the East, and in excess of 5,280' to the South, and in excess of 5,280' to the West, and 2640' +/- to the North of the proposed tower.

I, Ralph M. Wallem, certify to Vertical Bridge and Fortune Wireless, this information is true and correct as stated to the best of my knowledge and belief.

RALPH M. WALLEM
BENCHMARK SERVICES, INC.
Consulting Engineers & Land Surveyors
DATE: 10.4.2023
PROFESSIONAL LAND SURVEYOR NO. 2195

GRID MAP OF EXISITNG TOWERS AND KNOWN PROPOSED TOWERS IN MONROE COUNTY, KY



verticalbridge

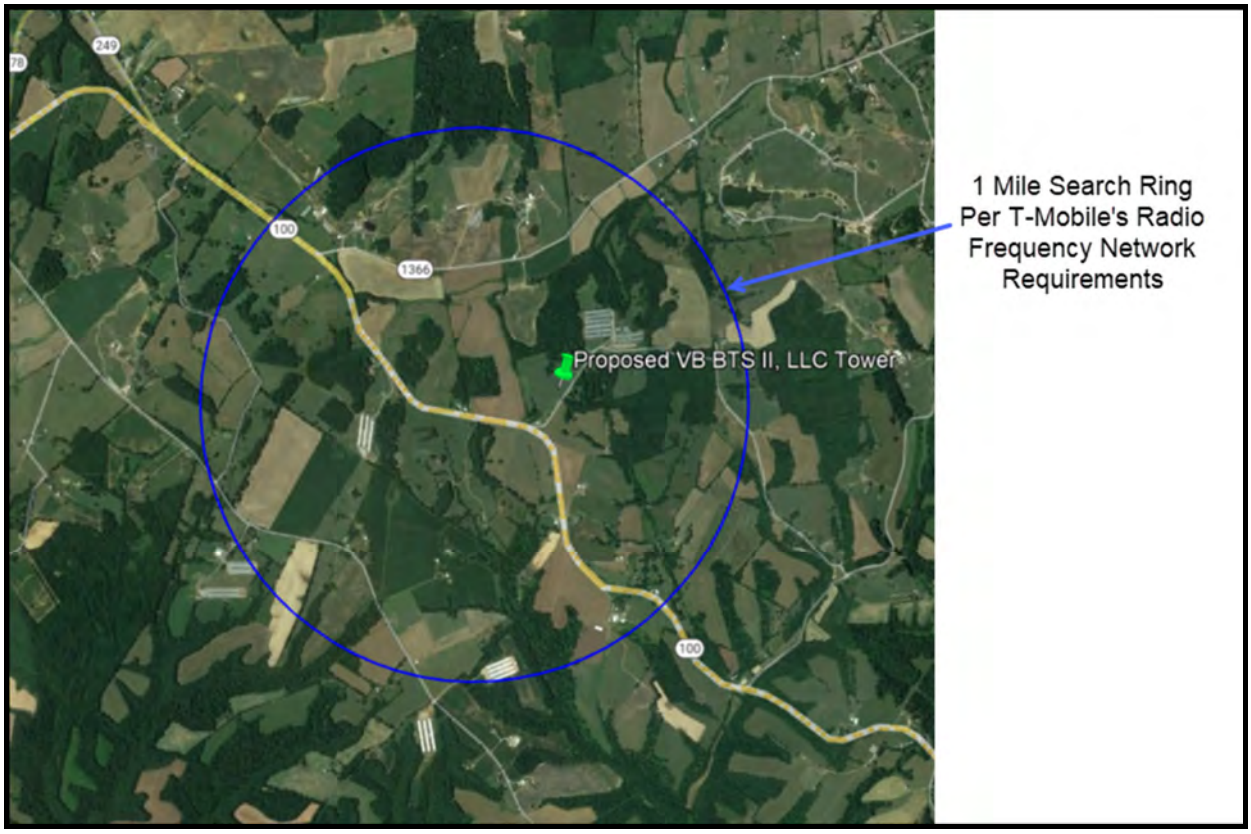
Fortune Wireless, Inc.

CLOSEUP OF EXISTING TOWERS IN WEST MONROE COUNTY, KY

verticalbridge

Fortune Wireless, Inc.

1-MILE SEARCH RING PER T-MOBILE'S RADIO FREQUENCY (RF) NETWORK REQUIREMENTS



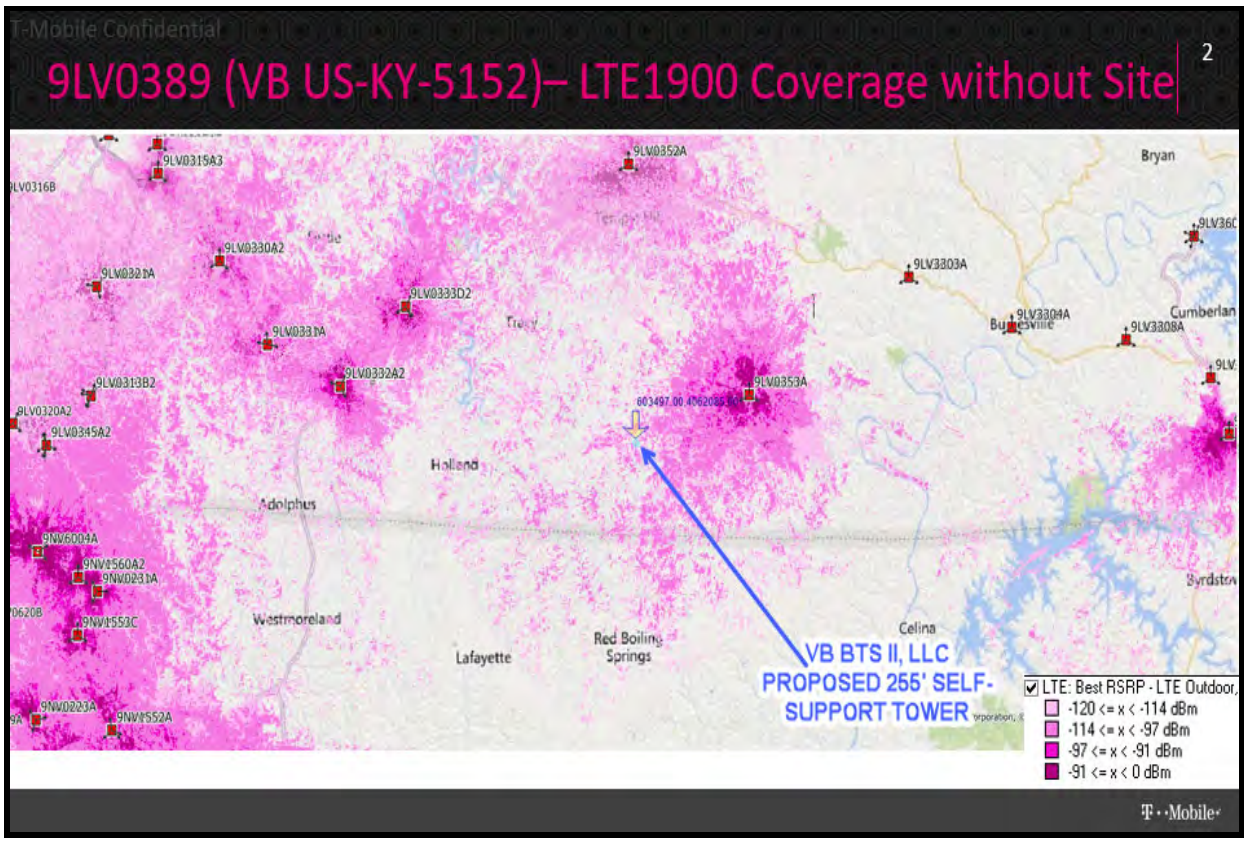
Fortune Wireless, Inc.

MAP OF STRUCTURES & PROPERTY OWNERS WITHIN 500’ OF PROPOSED TOWER

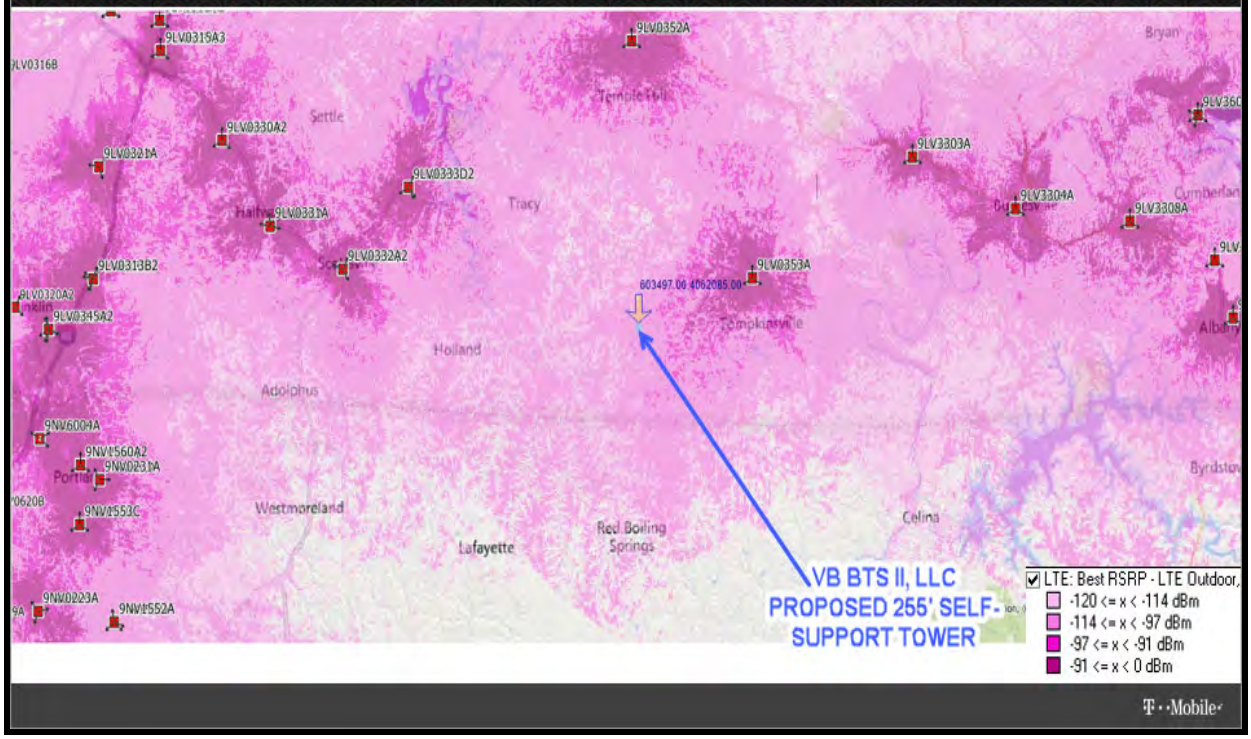
verticalbridge

Fortune Wireless, Inc.

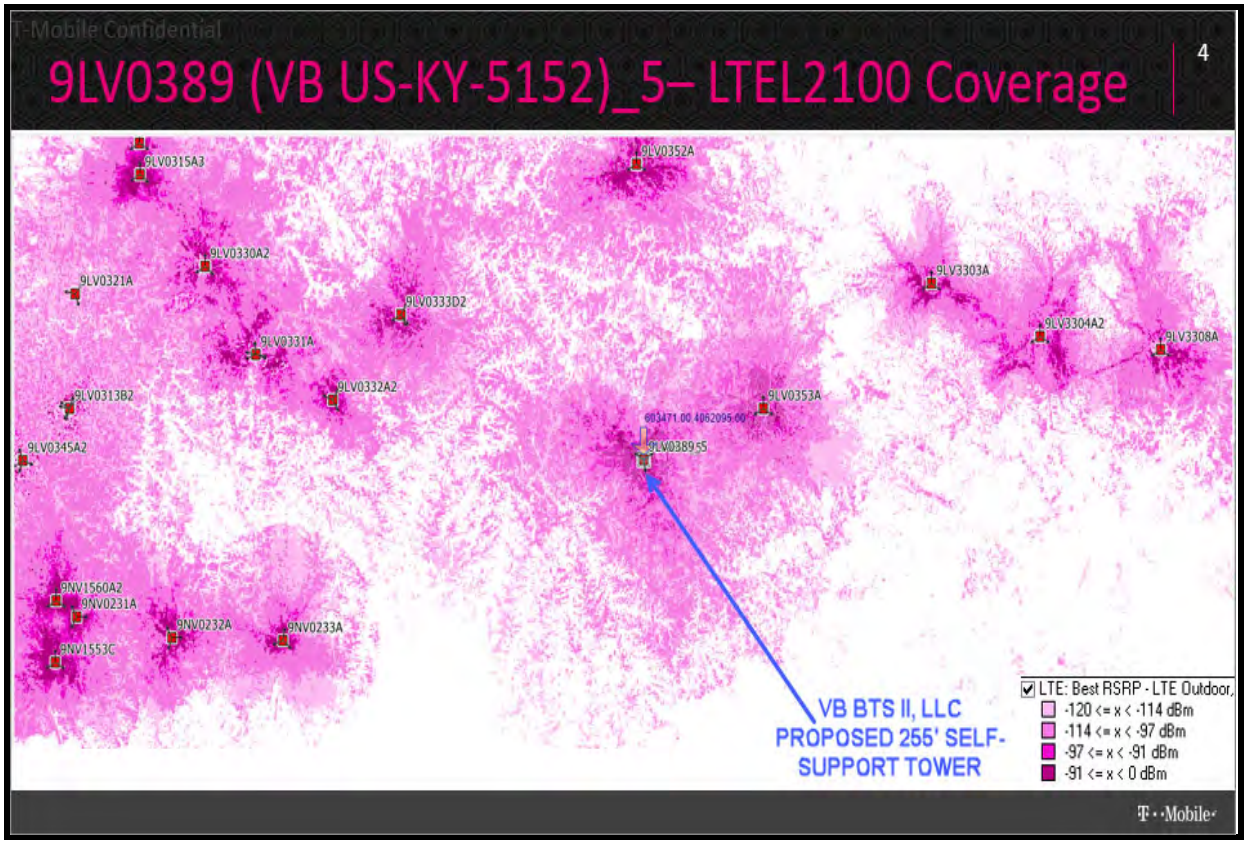
RF PROPAGATION MAPS



9LV0389 (VB US-KY-5152)– L600 Coverage without Site



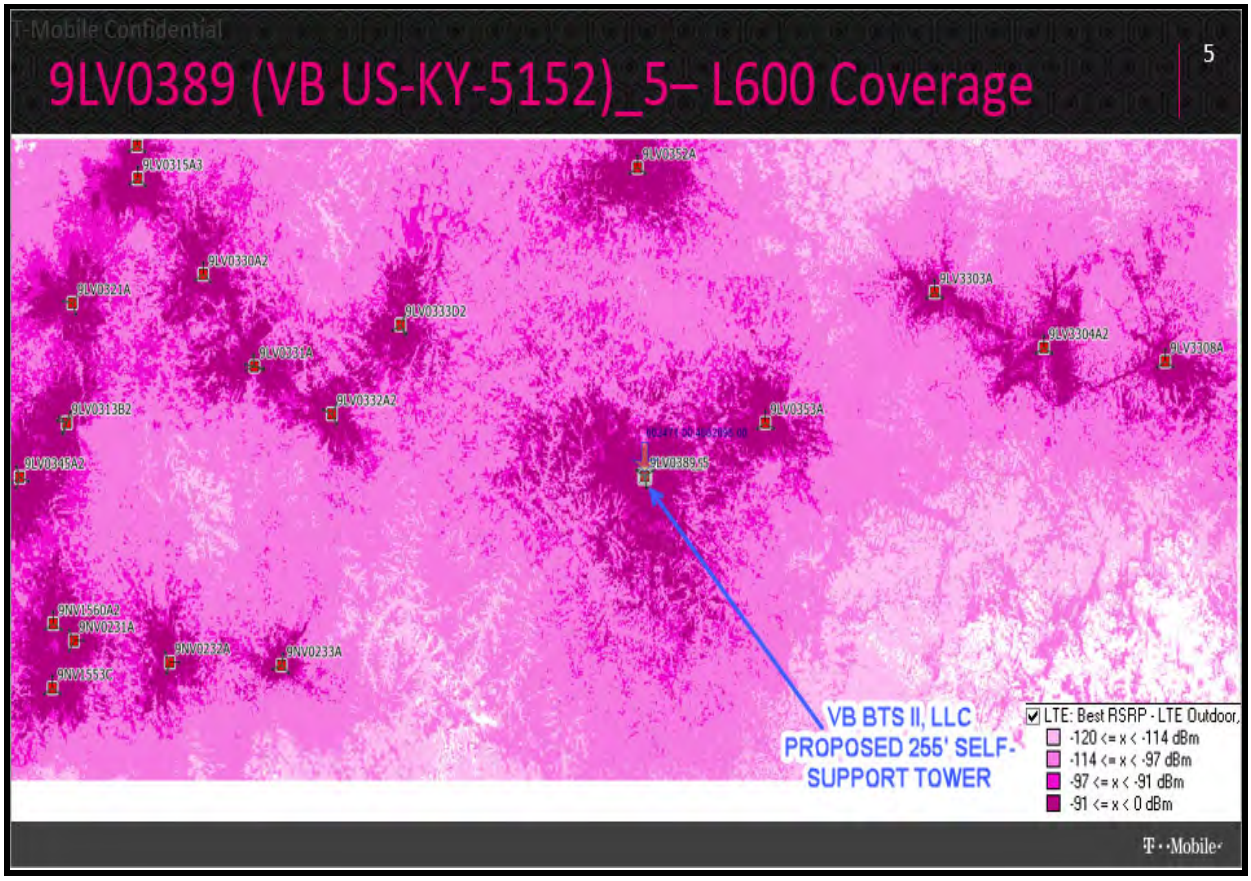
5G LTEL2100 COVERAGE WITH SITE



verticalbridge

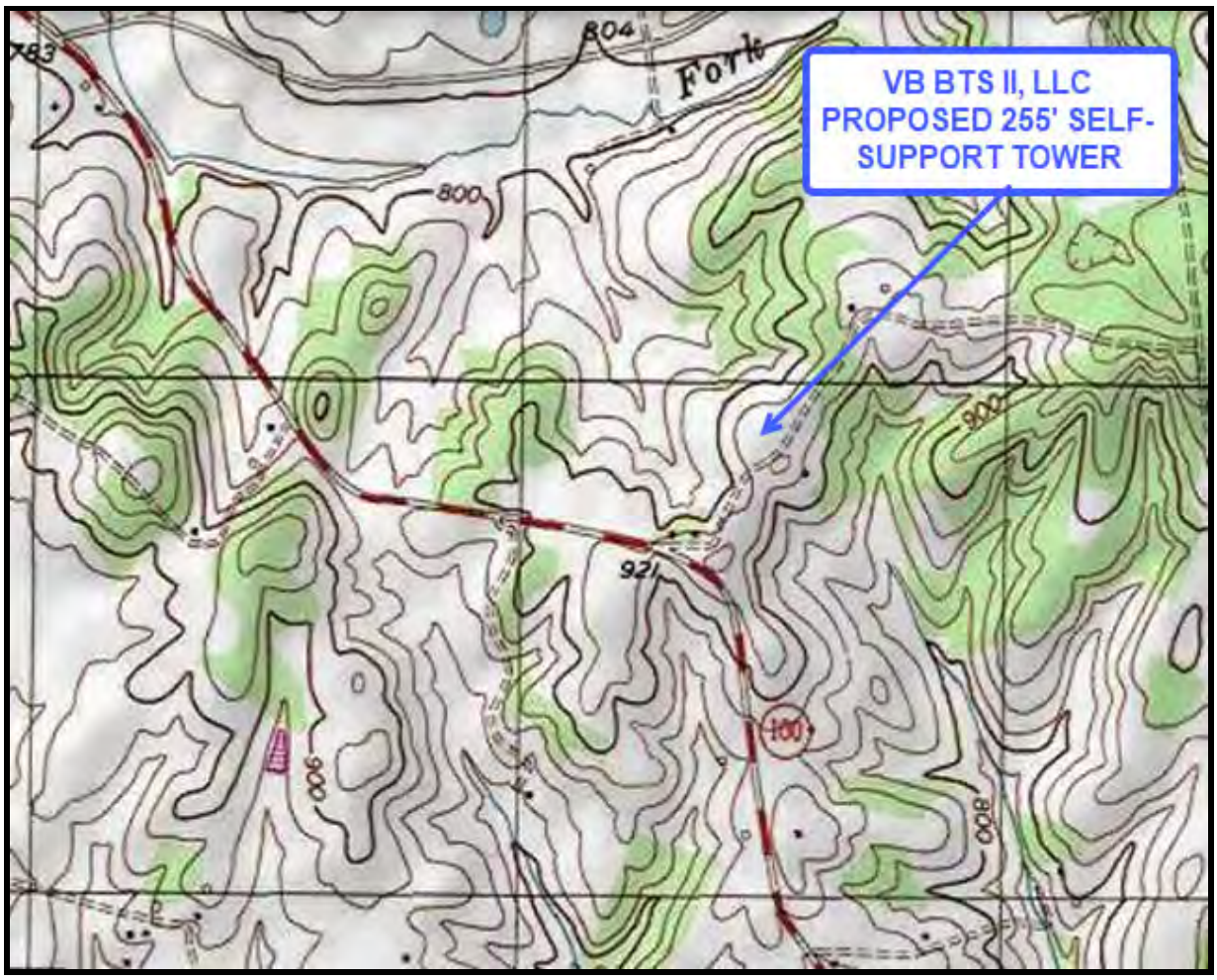
Fortune Wireless, Inc.

5G L600 COVERAGE WITH SITE



Fortune Wireless, Inc.

TOPO MAP WITH PROPOSED SITE



TAB #3

DIRECTIONS TO PROPOSED SITE FROM KPSC OFFICE

Directions Prepared by Brett Blackhurst, Fortune Wireless–Phone: 317-220-3864

From 211 Sower Blvd, Frankfort, KY 40601 (Kentucky Public Service Commission Office)
to 36.698969 N, 85.841622 W / Arterburn Road, Fountain Run, KY 42133 (Proposed Tower Location) –
2 hr 38 min (153 miles)

211 Sower Blvd

Frankfort, KY 40601

↑
Head south toward Sower Blvd
167 ft

↰
Turn right toward Sower Blvd
384 ft

↰
Turn right onto Sower Blvd
0.3 mi

↰
Turn left onto KY-676 W/East-West Connector
2.4 mi

↰
Turn left onto KY-420 S/Old Lawrenceburg Rd
2.2 mi

↰
Turn left onto US-127 S
13.1 mi

↗
Turn right onto the Blue Grass Pkwy W ramp to Elizabethtown
0.3 mi

↗
Merge onto KY-9002 W/Bluegrass Pkwy
58.1 mi

↰
Use any lane to take exit 1B to merge onto I-65 S toward Nashville/Paducah/Western Kentucky Pkwy
41.1 mi

↰
Take exit 53 toward Cave City/Glasgow
0.4 mi

Turn left onto KY-70 E/KY-90 E
Continue to follow KY-90 E
11.0 mi

Turn right onto N Race St
0.7 mi

Turn left onto S Public Square/W Washington St
331 ft

Turn right at the 1st cross street onto S Green St
0.4 mi

Turn left onto Bunche Ave
0.2 mi

Turn right onto S Lewis St
0.5 mi

Continue onto Roseville Rd
15.6 mi

Continue onto KY-249
4.3 mi

Slight left onto KY-100 E
1.8 mi

Slight left onto Arterburn Rd
Destination will be on the left
0.2 mi

Arterburn Road
Fountain Run, KY 42133

TAB #4

LEASE AGREEMENT

**[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK,
LEASE AGREEMENT BEGINS ON NEXT PAGE]**

Landlord:
Marc Burnett and
Melissa Wilson Burnett
9180 Fountain Run Road
Fountain Run, KY 42133

Tenant:
VB BTS II, LLC
750 Park of Commerce Drive, Suite 200
Boca Raton, Florida 33487
Site #: US-KY-5152
Site Name: Fountain Run

OPTION AND LEASE AGREEMENT

THIS OPTION AND LEASE AGREEMENT (this "**Agreement**") is made this 14th day of February, 2023 (the "**Effective Date**"), by and between **Marc Burnett and Melissa Wilson Burnett,** his wife ("**Landlord**"), whose address is 9180 Fountain Run Road, Fountain Run, KY 42133, and **VB BTS II, LLC**, a Delaware limited liability company ("**Tenant**"), whose address is 750 Park of Commerce Drive, Suite 200, Boca Raton, Florida 33487.

WHEREAS, Landlord owns certain real property located in the County of Monroe, in the State or Commonwealth of Kentucky, that is more particularly described and/or depicted in **Exhibit 1** attached hereto (the "**Property**"); and,

WHEREAS, Tenant desires to lease from Landlord a certain portion of the Property measuring approximately 100' x 100' (approximately 10,000 square feet) and to obtain easements for guy wires, guy anchors, landscape buffer, utilities and access, as applicable (collectively, the "**Premises**"), which Premises is more particularly described and/or depicted in **Exhibit 2** attached hereto, for the placement of Communications Facilities (defined below).

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree:

1. OPTION TO LEASE.

(a) As of the Effective Date, Landlord grants to Tenant the exclusive option to lease the Premises (the "**Option**") during the Option Period (defined below). At any time during the Option Period and Term (defined below), Tenant and its agents, engineers, surveyors and other representatives will have the right to enter upon the Property to inspect, examine, conduct soil borings, drainage testing, material sampling, and other geological or engineering tests or studies of the Property (collectively, the "**Tests**"), to apply for and obtain licenses, permits, approvals, or other relief required of or deemed necessary or appropriate at Tenant's sole discretion for its use of the Premises including, without limitation, applications for zoning variances, zoning ordinances, amendments, special use permits, construction permits and any other permits and approvals deemed necessary by Tenant (collectively, the "**Government Approvals**"), initiate the ordering and/or scheduling of necessary utilities, obtain a title report with respect to the Property, and otherwise to do those things on or off the Property that, in the opinion of Tenant, are necessary in Tenant's sole discretion to determine the physical condition of the Property, the environmental history of the Property, and the feasibility or suitability of the Property for Tenant's permitted use under this Agreement, all at Tenant's expense. Tenant shall be authorized to apply for the Government Approvals on behalf of Landlord and Landlord agrees to reasonably cooperate with such applications. Tenant will not be liable to Landlord or any third party on account of any pre-existing defect or condition on or with respect to the Property, whether or not such defect or condition is disclosed by Tenant's Tests. Tenant will restore the Property to its condition as it existed prior to conducting any Tests, reasonable wear and tear and

casualty not caused by Tenant excepted. In addition, Tenant shall indemnify, defend and hold Landlord harmless from and against any and all injury, loss, damage or claims arising directly out of Tenant's Tests.

(b) In consideration of Landlord granting Tenant the Option, Tenant agrees to pay Landlord the sum of [redacted] within thirty (30) days of the full execution of this Agreement. The Option Period will be for an initial term of twelve (12) months from the Effective Date (the "**Initial Option Period**") and may be renewed by Tenant for twelve (12) additional months (the "**Renewal Option Period**") upon written notification to Landlord and the payment of an additional [redacted] prior to the expiration date of the Initial Option Period. Unless utilized independently, the Initial Option Period and any Renewal Option Period shall be referred to collectively as the "**Option Period**."

(c) Tenant may exercise the Option at any time during the Option Period by delivery of written notice to Landlord (the "**Notice of Exercise of Option**"). The Notice of Exercise of Option shall set forth the commencement date (the "**Commencement Date**") of the Initial Term (defined below). If Tenant does not provide a Notice of Exercise of Option during the Option Period, this Agreement will terminate, and the parties will have no further liability to each other.

(d) During the Option Period or the Term, Landlord shall not take any action to change the zoning status or land use of the Property which would diminish, impair, or adversely affect the use of the Premises by Tenant for its permitted uses hereunder.

2. TERM.

(a) Effective as of the Commencement Date, Landlord leases the Premises to Tenant subject to the terms and conditions of this Agreement for an initial term of five (5) years (the "**Initial Term**").

(b) Tenant shall have the option to extend the Initial Term for nine (9) successive terms of five (5) years each (each a "**Renewal Term**"). Each Renewal Term shall commence automatically, unless Tenant delivers notice to Landlord, not less than thirty (30) days prior to the end of the then-current Initial Term or Renewal Term, as applicable, of Tenant's intent not to renew. For purposes of this Agreement, "**Term**" shall mean the Initial Term and any applicable Renewal Term(s).

3. RENT.

(a) Beginning on the first (1st) day of the third (3rd) month after the Commencement Date ("**Rent Commencement Date**"), Tenant shall pay to Landlord a monthly rent payment of [redacted] ("**Rent**") at the address set forth in Section 29 below on or before the fifth (5th) day of each calendar month in advance. The initial payment of Rent will be forwarded by Tenant to Landlord within thirty (30) days after the Rent Commencement Date.

(b) The Rent shall increase by [redacted] annually on each anniversary of the Rent Commencement Date.

4. TAXES. Tenant shall pay any personal property taxes assessed on, or any portion of such taxes attributable to, the Communications Facilities located on the Premises. Landlord shall pay when due all real property taxes and all other fees and assessments attributable to the Property and the Premises. Tenant shall pay as additional rent any increase in real property taxes levied against the Premises, which are directly attributable to Tenant's use of the Premises (but not, however, taxes attributable to periods prior to the Commencement Date such as roll-back or greenbelt assessments) if Landlord furnishes proof of such increase to Tenant (such increase, the "**Landlord Tax Reimbursement**"). In the event that Landlord fails to pay when due any taxes affecting the Premises or any easement relating to the Premises, Tenant shall

have the right, but not the obligation, to pay such taxes and any applicable interest, penalties or similar charges, and deduct the full amount of the taxes and such charges paid by Tenant on Landlord's behalf from future installments of Rent. Notwithstanding the foregoing, Tenant shall not have the obligation to pay any tax, assessment, or charge that Tenant is disputing in good faith in appropriate proceedings prior to a final determination that such tax is properly assessed, provided that no lien attaches to the Property. In addition, Tenant shall not have the obligation to pay or reimburse Landlord for the Landlord Tax Reimbursement if Landlord has not provided proof of such amount and demand therefor within one (1) year of the date such amount is due and payable by Landlord.

5. USE. The Premises are being leased for the purpose of erecting, installing, operating, maintaining, repairing and replacing radio or communications towers, transmitting and receiving equipment, antennas, dishes, satellite dishes, mounting structures, equipment shelters and buildings, solar energy conversion and electrical power generation system, fencing and other supporting structures and related equipment including, without limitation, guy wires and guy anchors, if applicable (collectively, the "**Communications Facilities**"), and to alter, supplement and/or modify same. Tenant may, subject to the foregoing, make any improvements, alterations or modifications to the Premises as are deemed appropriate by Tenant for the permitted use herein. Tenant shall have the right to clear the Premises of any trees, vegetation, or undergrowth which interferes with the use of the Premises for the intended purposes by Tenant and/or its subtenants and licensees, as applicable. Tenant shall have the exclusive right to install and operate the Communications Facilities upon the Premises.

6. ACCESS AND UTILITIES. During the Term, Tenant and its guests, agents, employees, customers, invitees, subtenants, licensees and assigns shall have the unrestricted, exclusive right to use, and shall have free and unfettered access to, the Premises seven (7) days a week, twenty-four (24) hours a day. Landlord for itself, its successors and assigns, hereby grants and conveys unto Tenant, its customers, employees, agents, invitees, subtenants, licensees, successors and assigns a non-exclusive easement throughout the Term to a public right of way (a) for ingress and egress, and (b) for the construction, installation, operation, maintenance, repair and replacement of overhead and underground electric and other utility facilities (including fiber, backhaul, wires, poles, guys, cables, conduits and appurtenant equipment), with the right to reconstruct, improve, add to, enlarge, change and remove such facilities, over, across and through any easement for the benefit of and access to the Premises, subject to the terms and conditions herein set forth. Landlord agrees to obtain the required access and utility easements to the Premises from a public right of way up to and including negotiating and obtaining such access and utility rights from any applicable neighbor parcel and/or coordinating with Tenant's efforts to obtain same. If there are utilities already existing on the Premises which serve the Premises, Tenant may utilize such utilities and services. The rights granted to Tenant herein shall also include the right to partially assign its rights hereunder to any public or private utility company or authority to facilitate the uses contemplated herein, and all other rights and privileges reasonably necessary for Tenant's safe and efficient use and enjoyment of the easements for the purposes described above. Upon Tenant's request, Landlord shall execute and deliver to Tenant requisite recordable documents evidencing the easements contemplated hereunder within fifteen (15) days of Tenant's request, and Landlord shall obtain the consent and joinder of Landlord's mortgagee to any such grant, if applicable.

7. EQUIPMENT, FIXTURES AND REMOVAL. The Communications Facilities shall at all times be the personal property of Tenant and/or its subtenants and licensees, as applicable. Tenant or its customers, subtenants or licensees shall have the right to erect, install, maintain, repair, replace and operate on the Premises such equipment, structures, fixtures, signs, and personal property as Tenant, its customers, subtenants or licensees may deem necessary or appropriate, and such property, including the equipment, structures, fixtures, signs, and personal property currently on the Premises, shall not be deemed to be part of the Premises, but shall remain the property of Tenant or its customers, subtenants or licensees. Within

ninety (90) days after the expiration or earlier termination of this Agreement (the "**Removal Period**"), Tenant, customers, subtenants or licensees shall remove its improvements and personal property and restore the Premises to grade and perform all obligations under this Agreement during the Removal Period, including, without limitation, the payment of Rent at the rate in effect upon the expiration or termination of this Agreement.

8. ASSIGNMENT AND SUBLEASE. Tenant may assign this Agreement to any person or entity, including Lender (defined below), at any time without the prior written consent of Landlord. Upon such assignment, Tenant will be relieved and released of all obligations and liabilities hereunder. Tenant shall have the exclusive right to sublease or grant licenses without Landlord's consent to use all or part of the Premises and/or the Communications Facilities, but no such sublease or license shall relieve or release Tenant from its obligations under this Agreement. Landlord may assign this Agreement only in its entirety and only to any person or entity who or which acquires fee title to the Property, subject to Section 15. Landlord may not subdivide the Property without Tenant's prior written consent.

9. COVENANTS, WARRANTIES AND REPRESENTATIONS.

(a) Landlord warrants and represents that it is the owner in fee simple of the Property, free and clear of all liens and encumbrances except as to those which may have been disclosed to Tenant in writing prior to the execution hereof, and that it alone has full right to lease the Premises for the Term.

(b) Landlord shall pay promptly, when due, any other amounts or sums due and owing with respect to its ownership and operation of the Property, including, without limitation, judgments, taxes, liens, mortgage payments and other similar encumbrances. If Landlord fails to make any payments required under this Agreement, or breaches any other obligation or covenant under this Agreement, Tenant may (without obligation), after providing ten (10) days written notice to Landlord, make such payment or perform such obligation on behalf of Landlord and offset such payment (including any reasonable attorneys' fees incurred in connection with Tenant performing such obligation) against payments of Rent.

(c) Landlord shall not do or knowingly permit anything that will interfere with or negate any special use permit or approval pertaining to the Premises or cause Tenant's use of the Premises to be in nonconformance with applicable local, state, or federal laws. Landlord shall cooperate with Tenant in any effort by Tenant to obtain certificates, permits, licenses and other approvals that may be required by any governmental authorities. Landlord agrees to execute any necessary applications, consents or other documents as may be reasonably necessary for Tenant to apply for and obtain the Government Approvals required to use and maintain the Premises and the Communications Facilities.

(d) To the best of Landlord's knowledge, Landlord has complied and shall comply with all laws with respect to the Property. No asbestos-containing thermal insulation or products containing PCB, formaldehyde, chlordane, or heptachlor or other hazardous materials have been placed on or in the Property by Landlord or, to the knowledge of Landlord, by any prior owner or user of the Property. There has been no release of or contamination by hazardous materials on the Property by Landlord, or to the knowledge of Landlord, any prior owner or user of the Property.

(e) Tenant shall have access to all utilities required for the operation of Tenant's improvements on the Premises that are existing on the Property.

(f) Landlord warrants and represents that there currently exist no licenses, sublicenses, or other agreements, written or oral, granting to any party or parties the right of use or occupancy of any portion of the Property; there are no outstanding options or rights of first refusal to purchase the Property or any

portion thereof or interest therein, or any equity or interest in Landlord if Landlord is an entity; and there are no parties (other than Landlord) in possession of the Property except as to those that may have been disclosed to Tenant in writing prior to the execution hereof.

10. HOLD OVER TENANCY. Should Tenant or any assignee, sublessee or licensee of Tenant hold over the Premises or any part thereof after the expiration of this Agreement, such holdover shall constitute and be construed as a tenancy from month-to-month only, but otherwise upon the same terms and conditions.

11. INDEMNITIES. Each party agrees to indemnify, defend and hold harmless the other party, its parent company or other affiliates, successors, assigns, officers, directors, shareholders, managers, members, agents and employees (collectively, "**Indemnified Persons**") from and against all claims, actions, judgments, damages, liabilities, losses, expenses and costs (including, without limitation, reasonable attorneys' fees and court costs) (collectively, "**Losses**") caused by or arising out of (a) such party's breach of any of its obligations, covenants, representations or warranties contained herein, or (b) such party's acts or omissions with regard to this Agreement; provided, however, in no event shall a party indemnify the other party for any such Losses to the extent arising from the gross negligence or willful misconduct of the party seeking indemnification. However, in the event of an Indemnified Person's contributory negligence or other fault, the Indemnified Person shall not be indemnified hereunder to the extent that the Indemnified Person's negligence or other fault caused such Losses. Tenant will indemnify Landlord from and against any mechanic's liens or liens of contractors and subcontractors engaged by or through Tenant.

12. WAIVERS.

(a) Landlord hereby waives any and all lien rights it may have, statutory or otherwise, in and to the Communications Facilities or any portion thereof, regardless of whether or not such is deemed real or personal property under applicable laws. Landlord will not assert any claim whatsoever against Tenant for loss of anticipatory profits or any other indirect, special, incidental or consequential damages incurred by Landlord as a result of the construction, maintenance, operation or use of the Premises by Tenant.

(b) EACH PARTY HERETO WAIVES ANY AND ALL CLAIMS AGAINST THE OTHER FOR ANY LOSS, COST, DAMAGE, EXPENSE, INJURY OR OTHER LIABILITY WHICH IS IN THE NATURE OF INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES WHICH ARE SUFFERED OR INCURRED AS THE RESULT OF, ARISE OUT OF, OR ARE IN ANY WAY CONNECTED TO THE PERFORMANCE OF THE OBLIGATIONS UNDER THIS AGREEMENT.

13. INSURANCE. Tenant shall insure against property damage and bodily injury arising by reason of occurrences on or about the Premises in the amount of not less than $1,000,000. The insurance coverage provided for herein may be maintained pursuant to master policies of insurance covering other communications facilities of Tenant and its corporate affiliates. All insurance policies required to be maintained by Tenant hereunder shall be with responsible insurance companies, authorized to do business in the State or Commonwealth where the Premises are located if required by law, and shall provide for cancellation only upon ten (10) days' prior written notice to Landlord. Tenant shall evidence such insurance coverage by delivering to Landlord, if requested, a copy of a certificate of insurance of such policies issued by the insurance companies underwriting such risks.

14. INTERFERENCE. During the Option Period and the Term, Landlord, its successors and assigns, will not grant any ground lease, license, or easement with respect to the Property (outside of the Premises) and any property adjacent or contiguous to the Property or in the immediate vicinity of the Property that is fee owned by Landlord: (a) for any of the uses contemplated in Section 5 herein; or (b) if such lease, license, or easement would detrimentally impact the Communications Facilities or Tenant's economic

opportunities at the Premises, or the use thereof. Landlord shall not cause or permit the construction of communications or broadcast towers or structures, fiber optic backhaul facilities, or satellite facilities on the Property or on any other property of Landlord adjacent or contiguous to or in the immediate vicinity of the Property, except for the Communications Facilities constructed by Tenant. Landlord and Tenant intend by this Agreement for Tenant (and persons deriving rights by, through, or under Tenant) to be the sole parties to market, use, or sublease any portion of the Property for Communications Facilities during the Option Period and the Term. Landlord agrees that this restriction on the use of the Property is commercially reasonable, not an undue burden on Landlord, not injurious to the public interest, and shall be specifically enforceable by Tenant (and persons deriving rights by, through or under Tenant) in a court of competent jurisdiction. The foregoing restriction shall run with the land and be binding on the successors and assigns of Landlord.

15. RIGHT OF FIRST REFUSAL. In the event that Landlord determines to sell, transfer, license or otherwise convey any interest, whether fee simple interest, easement interest, leasehold, or otherwise, and whether direct or indirect by way of transfer of ownership interests in Landlord if Landlord is an entity, which interest underlies or affects any or all of the Premises (the "**ROFR Property**") to any third party, during the Option Period or Term, Landlord shall send a written notice to Tenant in accordance with Section 29 below that shall contain an offer to Tenant of a right of first refusal to purchase the Premises (or such larger portion of the Property that encompasses the Premises, if applicable) or such interest proposed to be conveyed. Landlord shall provide a copy of any offer to purchase or acquire, or any executed purchase agreement or letter of intent (each, an "**Offer**"), to Tenant which copy shall include, at a minimum, the purchase or acquisition price, proposed closing date, and financing terms (collectively, the "**Minimum Terms**"). Within thirty (30) days of receipt of such Offer, Tenant shall provide written notice to Landlord of Tenant's election to purchase the ROFR Property on the same Minimum Terms; provided, the closing date shall be no sooner than sixty (60) days after Tenant's purchase election notice; and further provided that given Landlord's direct relationship and access to Tenant, Tenant shall not be responsible for payment of any broker fees associated with an exercise of Tenant's rights to acquire the ROFR Property. In such event, Landlord agrees to sell the ROFR Property to Tenant subject to Tenant's payment of the purchase price and compliance with a purchase and sale agreement to be negotiated in good faith between Landlord and Tenant. If Tenant provides written notice that it does not elect to exercise its rights of first refusal to purchase the ROFR Property, or if Tenant does not provide notice of its election within the thirty (30) day period, Tenant shall be deemed to have waived such right of first refusal only with respect to the specific Offer presented (and any subsequent Offers shall again be subject to Tenant's continuing right of first refusal hereunder), and Landlord shall be permitted to consummate the sale of the ROFR Property in accordance with the strict terms of the Offer ("**Permitted Sale**"). If Landlord does not consummate the Permitted Sale within ninety (90) days of the date of Tenant's waiver of its rights of first refusal, such Offer shall be deemed to have lapsed.

16. SECURITY. The parties recognize and agree that Tenant shall have the right to safeguard and protect its improvements located upon or within the Premises. Consequently, Tenant may elect, at its expense, to construct such enclosures and/or fences as Tenant reasonably determines to be necessary to secure the Communications Facilities. Tenant may also undertake any other appropriate means to restrict access to the Communications Facilities including, without limitation, if applicable, installing security systems, locks and posting signs for security purposes and as may otherwise be required by law.

17. FORCE MAJEURE. The time for performance by Landlord or Tenant of any term, provision, or covenant of this Agreement shall be deemed extended by time lost due to delays resulting from acts of God, strikes, civil riots, floods, pandemics, material or labor restrictions by governmental authority, government shutdowns, quarantines, and/or other disease control measures and any other cause not within the control of Landlord or Tenant, as the case may be.

18. CONDEMNATION; CASUALTY.

(a) In the event Landlord receives any notice of any condemnation proceedings, or other proceedings in the nature of eminent domain related to the Property or the Premises, it will forthwith send a copy of such notice to Tenant. If all or any part of the Premises is taken by eminent domain, Tenant may, upon written notice to Landlord, elect to terminate this Agreement, whereupon neither party shall have any further liability or obligation hereunder. Notwithstanding any provision of this Agreement to the contrary, in the event of condemnation of all or any part of the Premises, Landlord and Tenant shall be entitled to separate awards with respect to the Premises, in the amount determined by the court conducting such condemnation proceedings based upon Landlord's and Tenant's respective interests in the Premises. If a separate condemnation award is not determined by such court, Landlord shall permit Tenant to participate in the allocation and distribution of the award. In no event shall the condemnation award to Landlord exceed the unimproved value of the Premises, without taking into account the improvements located thereon.

(b) In case of damage to the Premises or the Communications Facilities by fire or other casualty, Landlord shall, at its expense, cause any damage to the Property (excluding the Communications Facilities) to be repaired to a condition as nearly as practicable to that existing prior to the damage, with reasonable speed and diligence, subject to delays which may arise by reason of adjustment of loss under insurance policies, governmental regulations, and for delays beyond the control of Landlord, including a force majeure. Landlord shall coordinate with Tenant as to the completion of Landlord's work to restore the Property so as not to adversely impact Tenant's use of the Premises and the Communications Facilities. Landlord shall not be liable for any inconvenience or annoyance to Tenant, or injury to Tenant's business or for any consequential damages resulting in any way from such damage or the repair thereof, except to the extent and for the time that the Communications Facilities or the Premises are thereby rendered unusable for Tenant's intended purpose the Rent shall proportionately abate. In the event the damage shall be so extensive that Tenant shall decide, in its sole discretion, not to repair or rebuild the Communications Facilities, or if the casualty shall not be of a type insured against under standard fire policies with extended type coverage, or if the holder of any mortgage, deed of trust or similar security interest covering the Communications Facilities shall not permit the application of adequate insurance proceeds for repair or restoration, this Agreement shall, at the sole option of Tenant, exercisable by written notice to Landlord, be terminated as of the date of such casualty, and the obligation to pay Rent (taking into account any abatement as aforesaid) shall cease as of the termination date and Tenant shall thereupon promptly vacate the Premises.

19. DEFAULT. The failure of Tenant or Landlord to perform any of the covenants of this Agreement shall constitute a default. The non-defaulting party shall give the other written notice of such default, and the defaulting party shall cure such default within thirty (30) days after receipt of such notice. In the event any such default cannot reasonably be cured within such thirty (30) day period, if the defaulting party shall proceed promptly after the receipt of such notice to cure such default, and shall pursue curing such default with due diligence, the time for curing shall be extended for such period of time as may be necessary to complete such curing, however, in no event shall this extension of time be in excess of sixty (60) days, unless agreed upon by the non-defaulting party.

20. REMEDIES. Should the defaulting party fail to cure a default under this Agreement, the other party shall have all remedies available either at law or in equity, and the right to terminate this Agreement. In the event Landlord elects to terminate this Agreement due to a default by Tenant, Landlord shall continue to honor all sublease and license commitments made by Tenant through the expiration of the term of any such commitment, it being intended hereby that each such commitment shall survive the early termination of this Agreement.

21. ATTORNEYS' FEES. If there is any legal proceeding between Landlord and Tenant arising from or based on this Agreement, the unsuccessful party to such action or proceeding shall pay to the prevailing party all costs and expenses, including, without limitation, reasonable attorneys' fees and disbursements,

incurred by such prevailing party in such action or proceeding and in any appeal in connection therewith. If such prevailing party recovers a judgment in any such action, proceeding or appeal, such costs, expenses and attorneys' fees and disbursements shall be included in and as a part of such judgment.

22. ADDITIONAL TERMINATION RIGHT. If at any time during the Term, Tenant determines, in Tenant's sole and absolute discretion, with or without cause, that the Premises is no longer suitable or desirable for Tenant's intended use and/or purposes, Tenant shall have the right to terminate this Agreement upon sixty (60) days prior written notice to Landlord.

23. PRIOR AGREEMENTS. The parties hereby covenant, recognize and agree that the terms and provisions of this Agreement shall constitute the sole embodiment of the arrangement between the parties with regard to the Premises, and that all other written or unwritten agreements, contracts, or leases by and between the parties with regard to the Premises are hereby terminated, superseded and replaced by the terms hereof.

24. SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT. In the event the Property is encumbered by a mortgage or deed of trust or other security instrument of any kind (a "**Landlord Mortgage**"), Landlord, within fifteen (15) days following Tenant's request or immediately prior to the creation of any encumbrance created after the date this Agreement is fully executed, will obtain from the holder of each such Landlord Mortgage a fully-executed subordination, non-disturbance and attornment agreement (an "**SNDA**") in recordable form, which shall be prepared or approved by Tenant. The holder of every such Landlord Mortgage shall, in the SNDA, agree that in the event of a foreclosure, or conveyance in lieu of foreclosure of Landlord's interest in the Premises, such Landlord Mortgage holder shall recognize and confirm the validity and existence of this Agreement, not disturb the tenancy of Tenant (and its customers, subtenants, and licensees) and Tenant (and its customers, subtenants, and licensees) shall have the right to continue its use and occupancy of the Premises in accordance with the provisions of this Agreement, provided Tenant is not in default of this Agreement beyond applicable notice and cure periods.

25. LENDER'S RIGHTS.

(a) Landlord agrees to recognize the subleases and licenses of all subtenants and licensees and will permit each of them to remain in occupancy of its premises notwithstanding any default hereunder by Tenant so long as each such respective subtenant or licensee is not in default under the lease/license covering its premises. Landlord agrees to execute such documents as any such subtenant and/or licensee might reasonably require, including customary subordination, non-disturbance and attornment agreements and/or Landlord recognition agreements, to further memorialize the foregoing, and further agrees to use Landlord's best efforts to also cause its lenders to similarly acknowledge, in writing, subtenant's and licensee's right to continue to occupy its premises as provided above.

(b) Landlord consents to the granting by Tenant of a lien and security interest in Tenant's interest in this Agreement and/or leasehold estate of the Premises and all of Tenant's personal property and fixtures attached to the real property described herein, and furthermore consents to the exercise by Lender of its rights of foreclosure with respect to its lien and security interest. Landlord agrees to recognize Lender as Tenant hereunder upon any such exercise by Lender of its rights of foreclosure.

(c) Landlord hereby agrees to give Lender written notice of any breach or default of Tenant of the terms of this Agreement within fifteen (15) days after the occurrence thereof at the address set forth in Section 29. Landlord further agrees that no default under this Agreement by Tenant shall be deemed to have occurred unless such notice to Lender is also given and that, in the event of any such breach or default under the terms of this Agreement, Lender shall have the right, to the same extent, for the same period and with the same effect, as Tenant, plus an additional ninety (90) days after any applicable grace period to cure or correct any such default.

(d) Landlord acknowledges that nothing contained herein shall be deemed or construed to obligate Lender to take any action hereunder, or to perform or discharge any obligation, duty or liability of Tenant under this Agreement. Lender shall not become liable under the provisions of this Agreement or any lease executed pursuant to Section 26 hereof unless and until such time as it becomes, and then only for as long as it remains, the owner of the leasehold estate created hereby or thereby.

(e) Tenant shall have the right from time to time to mortgage or otherwise encumber Tenant's interest in this Agreement and/or leasehold estate in the Premises; provided, however, in no event shall there be more than one such mortgage or encumbrance outstanding at any one time. If Tenant shall so mortgage (each a "**Tenant Mortgage**") Tenant's interest in this Agreement and/or leasehold interest in the Premises to Lender, Tenant or Lender shall give Landlord prompt notice of such Tenant Mortgage and furnish Landlord with a complete and correct copy of such Tenant Mortgage, certified as such by Tenant or Lender, together with the name and address of Lender if it is different from the information set forth in Section 29 hereof. The term "**Lender**" as used in this Agreement shall mean the lender identified in Section 29 hereof and its successors, assigns, designees or nominees.

(f) This Agreement shall not be amended or modified without the consent of Lender. In the event that Lender shall become the owner of such leasehold estate, Lender shall not be bound by any modification or amendment of this Agreement made subsequent to the date of a Tenant Mortgage unless Lender shall have consented to such modification or amendment at the time it was made.

26. RIGHT TO NEW LEASE.

(a) In the case of termination of this Agreement for any reason, or in the event this Agreement is rejected or disaffirmed pursuant to any bankruptcy, insolvency or other law affecting creditor's rights, Landlord shall give prompt notice thereof to Lender at the address set forth in Section 29 or as may be provided to Landlord by Tenant following the Commencement Date. Thereafter, Landlord, upon written request of Lender, and within thirty (30) days after the receipt of such request, shall promptly execute and deliver a new lease of the Premises and assignment of all subleases and licenses to Lender or its designee or nominee, for the remainder of the Term upon all the covenants, conditions, limitations and agreements contained herein (including, without limitation, options to extend the Term) except for such provisions which must be modified to reflect such termination, rejection or disaffirmance and the passage of time, provided that Lender (i) shall pay to Landlord, simultaneously with the delivery of such new lease, all unpaid rent due under this Agreement up to and including the date of the commencement of the term of such new lease and all reasonable expenses, including, without limitation, reasonable attorneys' fees and disbursements and court costs, incurred by Landlord in connection with the default by Tenant, the termination of this Agreement and the preparation of the new lease, and (ii) shall cure all defaults existing under this Agreement which are susceptible to being cured by Lender promptly and with due diligence after the delivery of such new lease. Notwithstanding anything to the contrary contained herein, provided Lender shall have otherwise complied with the provisions of this Section, Lender shall have no obligation to cure any defaults which are not susceptible to being cured by Lender (for example, the bankruptcy of Tenant).

(b) For so long as Lender shall have the right to enter into a new lease with Landlord pursuant to this Section, Landlord shall not enter into a new lease of the Premises with any person or entity other than Lender, without the prior written consent of Lender.

27. ADDITIONAL PROVISIONS.

(a) The parties hereto agree that (i) Tenant is in possession of the Premises notwithstanding the fact that Tenant has subleased or licensed, or may in the future sublease or license, certain of the

improvements thereon or portions of the Premises to third parties, and (ii) the requirements of Section 365(h) of Title 11 of the United States Code (the Bankruptcy Code) with respect to Tenant's possession of the leasehold under this Agreement are satisfied. Accordingly, the right of Tenant to remain in possession of the leasehold under this Agreement shall continue notwithstanding any rejection of this Agreement in any bankruptcy proceeding involving Landlord, or any other actions by any party in such a proceeding. This provision, while included in this Agreement, has been separately negotiated and shall constitute a separate contract between the parties as well as a part of this Agreement. The provisions of this Section are for the benefit of Tenant and its assigns, including, without limitation, Lender. The parties hereto also agree that Lender is a party in interest and shall have the right to appear as a party in any proceeding brought under any bankruptcy law or under any other law which may affect this Agreement.

(b) The provisions of Section 25 and Section 26 hereof shall survive the termination, rejection or disaffirmance of this Agreement and shall continue in full force and effect thereafter to the same extent as if such Sections were a separate and independent contract made by Landlord, Tenant and Lender and, from the effective date of such termination, rejection or disaffirmance of this Agreement to the date of execution and delivery of such new lease, Lender may use and enjoy the leasehold estate created by this Agreement without hindrance by Landlord. The aforesaid agreement of Landlord to enter into a new lease with Lender shall be deemed a separate agreement between Landlord and Lender, separate and apart from this Agreement as well as a part of this Agreement, and shall be unaffected by the rejection of this Agreement in any bankruptcy proceeding by any party.

(c) Landlord shall have no right, and expressly waives any right arising under applicable law, in and to the rentals or other fees payable to Tenant, if any, under any sublease or license of the Premises by Tenant, which rentals or fees may be assigned by Tenant to Lender.

(d) If a Tenant Mortgage is in effect, this Agreement shall not be modified or amended by the parties hereto, or terminated or surrendered by Tenant, nor shall Landlord accept any such termination or surrender of this Agreement by Tenant, without the prior written consent of Lender.

(e) The provisions of Section 25 and Section 26 hereof are for the benefit of Lender and may be relied upon and shall be enforceable by Lender as if Lender were a party to this Agreement.

(f) Landlord shall, within ten (10) days of the request of Tenant or any Lender or prospective Lender, provide an estoppel certificate as to any matters reasonably requested by Tenant or Lender.

(g) The right to extend or renew this Agreement and any right of first refusal to purchase the Premises may be exercisable by the holder of a Tenant Mortgage and, before the expiration of any periods to exercise such a right, Landlord must provide to Lender at least thirty (30) days prior written notice before the expiration of the right to so extend or renew in order to extinguish Lender's right to so extend, renew or purchase.

(h) Under no circumstances shall the fee estate of Landlord and the leasehold estate created hereby merge, even though owned by the same party, without the written consent of the holder of a Tenant Mortgage.

28. QUIET ENJOYMENT. So long as Tenant is not in default under this Agreement beyond the applicable notice and cure period, Landlord covenants and agrees that Tenant shall peaceably and quietly

hold and enjoy the Premises throughout the Term, without any hindrance, molestation or ejection by Landlord, its successors or assigns or by those claiming by, through or under them.

29. NOTICES. All notices, requests, claims, demands, and other communications hereunder shall be in writing and may be hand delivered (provided the deliverer provides proof of delivery) or sent by nationally established overnight courier that provides proof of delivery, or certified or registered mail (postage prepaid, return receipt requested). Notice shall be deemed received on the date of delivery as demonstrated by the receipt of delivery. Notices shall be delivered to a party at the party's respective address below, or to such other address that a party below may provide from time to time:

If to Landlord:	**If to Tenant:**	**If to Lender:**
Marc Burnett and	VB BTS II, LLC	Barclays Bank PLC,
Melissa Wilson Burnett	750 Park of Commerce Drive, Suite 200	as Administrative Agent
9180 Fountain Run Road	Boca Raton, Florida 33487	745 Seventh Avenue, 5th Floor
Fountain Run, KY 42133	Ref: US-KY-5152	New York, NY 10019
	Attn: VP Asset Management	Attn: Karen Ngai
	With a copy to: General Counsel	

30. MISCELLANEOUS.

(a) Each party hereto warrants and represents that it has the necessary power and authority to enter into and perform its respective obligations under this Agreement.

(b) If any term of this Agreement is found to be void or invalid, such invalidity shall not affect the remaining terms of this Agreement, which shall continue in full force and effect.

(c) All attached exhibits are hereby incorporated by this reference as if fully set forth herein.

(d) Failure of a party to insist on strict performance of any of the conditions or provisions of this Agreement, or failure to exercise any of a party's rights hereunder, shall not waive such rights.

(e) This Agreement shall be governed by and construed in accordance with the laws of the State or Commonwealth in which the Premises are located.

(f) This Agreement constitutes the entire agreement and understanding of the parties and supersedes all offers, negotiations, other leases and/or agreements with regard to the Premises. There are no representations or understandings of any kind not set forth herein. Any amendment to this Agreement must be in writing and executed by both parties.

(g) This Agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective heirs, legal representatives, successors and assigns.

(h) A short-form Memorandum of Option to Lease (and a short-form Memorandum of Lease in the event Tenant exercises its option to lease the Premises) may be recorded at Landlord's or Tenant's option in the form as depicted in **Exhibit 3** and **Exhibit 4**, respectively, attached hereto. In addition, Tenant's subtenants and licensees shall have the right to record a memorandum of its sublease or license with Tenant.

(i) Landlord shall keep the terms of this Agreement confidential and shall not disclose any terms contained within this Agreement to any third party other than such terms as are set forth in the Memorandum of Option to Lease or Memorandum of Lease.

[SIGNATURES BEGIN ON NEXT PAGE]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the Effective Date (date last signed by a party hereto).

WITNESSES:

LANDLORD:

Marc Burnett
Marc Burnett

Name:_____

Date: 1·31·23

Melissa Wilson Burnett
Melissa Wilson Burnett

Name:_____

Date: 1·31·23

STATE OF Kentucky

COUNTY OF Monroe

The foregoing instrument was acknowledged before me this 31st day of January 2023 by Marc Burnett and Melissa Wilson Burnett, his wife.

Notary Public

Print Name: Ann Marie Gordon Anderson

My Commission Expires: 9·30·2023

ANN MARIE GORDON
NOTARY PUBLIC
STATE AT LARGE
KENTUCKY
NOTARY ID# 632669
MY COMMISSION EXPIRES SEPTEMBER 30, 2023

(Tenant signature page to Option and Lease Agreement)

WITNESSES:

Name: Janette Castillo

Name: Esther Nelson

TENANT:

VB BTS II, LLC
a Delaware limited liability company

By:
Name: Ariel Rubin
Title: Vice President of Tower Development
Date: 2-14-2023

LEGAL DS LJ

STATE OF FLORIDA

COUNTY OF PALM BEACH

The foregoing instrument was acknowledged before me this February 14th, 2023 by Ariel Rubin (name of signatory), VPTD (title of signatory) of VB BTS II, LLC, a Delaware limited liability company, on behalf of the company.

Rachel Williamson
Notary Public

Print Name: Rachel Williamson

My Commission Expires: Oct. 17, 2026

RACHEL WILLIAMSON
Notary Public - State of Florida
Commission # HH 309112
My Comm. Expires Oct 17, 2026
Bonded through National Notary Assn.

EXHIBIT 1

Legal Description of the Property (Parent Parcel)
(may be updated by Tenant upon receipt of final legal description from title)

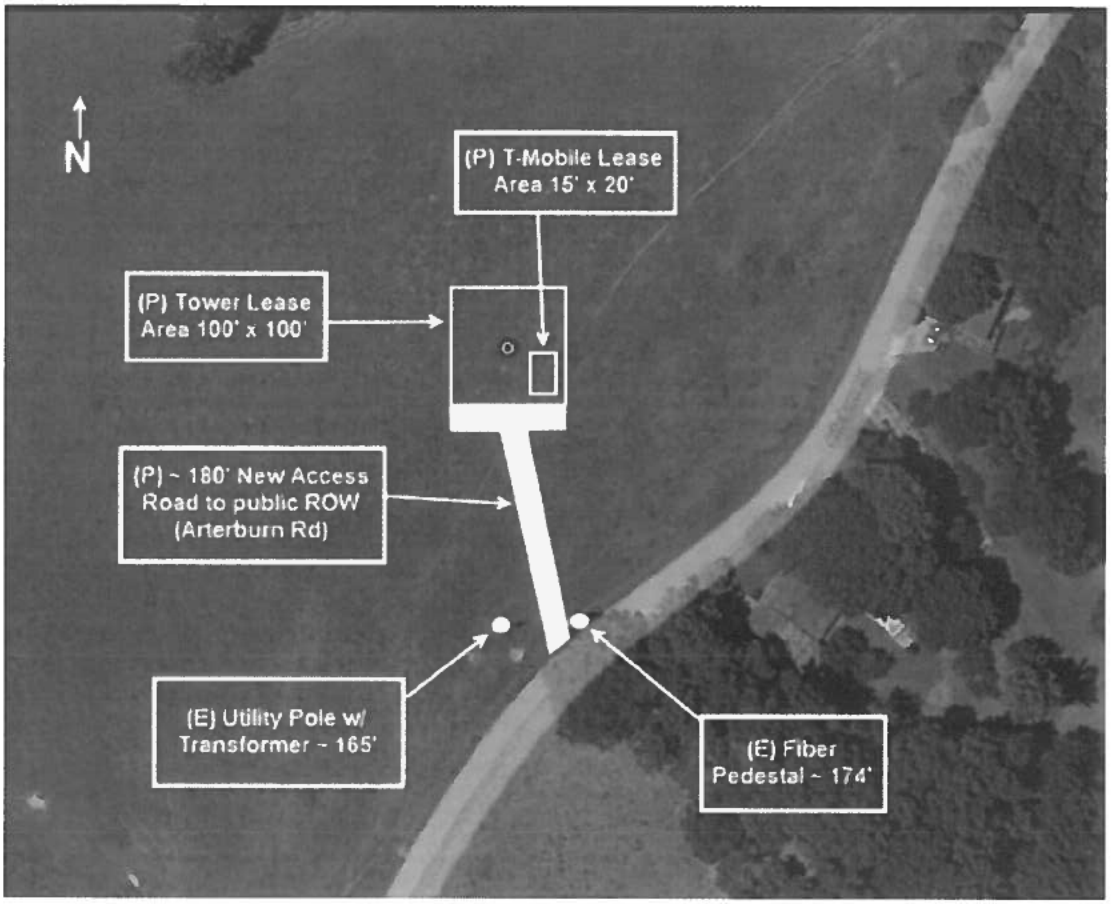
PARCEL ONE

BEGINNING at a stake on the north side, in the right-of-way of Highway 100, north of a culvert; thence with the right-of-way S 78 E 11 P and 5 feet to a side road; thence with the side road S 84 E 19 P, N 33 E 36 P, N 49 E 12 P, N 26 E 22 P, N 38 E 8 P to a stone and sassafras, Arterburn's corner; thence with his line N 5-1/2 W 31 P to a stone; thence S 75 W 76-1/4 P to a stone, Hagan's corner; thence N 22 W 78-1/2 P to a stone on the south side of an old road; thence N 71 E 18 P to a stone on west side of said road; thence with a ditch N 11 W 35-1/2 P to the road right-of-way of Highway 1366; thence with the right-of-way W 75 P to Ford's line; thence with his line S 12 E 186-1/2 P to the right-of-way of 100; thence with the right-of-way S 79 E 58-1/4 P to the beginning, containing 112 acres, more or less.

Being the same land that Carlos Burnett and wife, Banna Burnett acquired by deed dated November 23, 1962, from A.C. Downing and wife, Pauline Downing, of record in Deed Book 35, Page 347, records Monroe County Clerk.

EXHIBIT 2

Premises
(below may be replaced with a final survey and legal description of the Premises)



ARTICLE OF INCORPORATION / CERTIFICATE OF FORMATION

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK, CERTIFICATES BEGIN ON NEXT PAGE]

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 SECOND DAY OF NOVEMBER, 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 PAID TO DATE.

6844426 8300

Authentication: 204507112

SR# 20233880630

Date: 11-02-23

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

Commonwealth of Kentucky
Michael G. Adams, Secretary of State

Michael G. Adams
Secretary of State
P. O. Box 718
Frankfort, KY 40602-0718
(502) 564-3490
http://www.sos.ky.gov

Certificate of Authorization

Authentication number: 299760
Visit https://web.sos.ky.gov/ftshow/certvalidate.aspx to authenticate this certificate.

I, Michael G. Adams, Secretary of State of the Commonwealth of Kentucky, do hereby certify that according to the records in the Office of the Secretary of State,

VB BTS II, LLC

, a limited liability company authorized under the laws of the state of Delaware, is authorized to transact business in the Commonwealth of Kentucky, and received the authority to transact business in Kentucky on March 7, 2023.

I further certify that all fees and penalties owed to the Secretary of State have been paid; that an application for certificate of withdrawal has not been filed; and that the most recent annual report required by KRS 14A.6-010 has been delivered to the Secretary of State.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at Frankfort, Kentucky, this 2nd day of November, 2023, in the 232nd year of the Commonwealth.

Michael G. Adams
Secretary of State
Commonwealth of Kentucky
299760/1265644

TAB #5

ZONING SITE PLAN DRAWINGS

**[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK,
ZONING SITE PLAN DRAWINGS BEGIN ON NEXT PAGE]**

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 CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

1. 2018 INTERNATIONAL BUILDING CODE
2. 2017 NATIONAL ELECTRIC CODE
3. 2018 NFPA101 LIFE SAFETY CODE
4. 2018 IFC
5. AMERICAN CONCRETE INSTITUTE
6. AMERICAN INSTITUTE OF STEEL CONSTRUCTION
7. MANUAL OF STEEL CONSTRUCTION, 13TH EDITION
8. ANSI/TIA/EIA-222-G
9. TIA 607
10. INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEER 81
11. IEEE C2 NATIONAL ELECTRIC SAFETY CODE, LATEST EDITION
12. TELECORDIA GR-1275
13. ANSI/T 311
14. UNIFORM MECHANICAL CODE
15. UNIFORM PLUMBING CODE
16. LOCAL BUILDING CODE
17. CITY/COUNTY ORDINANCES
18. STATE BUILDING CODE

CODE COMPLIANCE

750 PARK OF COMMERCE DRIVE, SUITE 200
BOCA RATON, FL 33487

RF ENGINEER
ZONING
SITE ACQUISITION
CONSTRUCTION MANAGER
VERTICAL BRIDGE
INITIALS DATE

VERTICAL BRIDGE DEPARTMENT APPROVALS

VERTICAL BRIDGE: FOUNTAIN RUN / US-KY-5152

DIRECTIONS

PROPOSED 100'x100' LEASE AREA WITH A 75'x75' FENCED COMPOUND. PROPOSED 255' SELF SUPPORT TOWER WITH (6) ANTENNAS, (3) AHLOA'S, (3) AHFIB'S & (2) HYBRID CABLES.

PROJECT DESCRIPTION

SITE ADDRESS

ARTERBURN ROAD
FOUNTAIN RUN, KY 42133
MONROE COUNTY
LATITUDE: 36° 41' 56.29" (36.698969) N
LONGITUDE: 85° 50' 29.84" (-85.841622) W

VICINITY MAP

MUNICIPALITY:
MONROE COUNTY

STATE:
KENTUCKY

TOWER TYPE:
SELF SUPPORT

TOWER HEIGHT:
255' (265' TO HIGHEST APPURTENANCE)

NUMBER OF CARRIERS:
0 EXISTING, 1 PROPOSED

USE:
PROPOSED TELECOMMUNICATIONS TOWER AND UNMANNED EQUIPMENT

CONSULTANT
FORTUNE WIRELESS
5511 WEST 79TH STREET
INDIANAPOLIS, IN 46278
PHONE: (317) 532-1374
ATTN.: DAVID KASPER

811 Know what's below. Call before you dig.

PROJECT SUMMARY

DEVELOPER
VERTICAL BRIDGE DEVELOPMENT, LLC
750 PARK OF COMMERCE DRIVE, STE 200
BOCA RATON, FL 33487
PHONE: (214) 669-7978
ATTN: PAULETTE HYDER

T-MOBILE
PHONE:
ATTN:

POWER COMPANY
TRI COUNTY ELECTRIC
PHONE:
CONTACT:
EMAIL:
WO#: ACCT #

TELEPHONE COMPANY
REFERENCE ONLY
SOUTH CENTRAL RURAL TELECOMM. COOP

PROPERTY OWNER
STEPHEN (MARC) BURNETT
9180 FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133
PHONE: (270) 427-7720
ATTN.: STEPHEN (MARC) BURNETT

CONTACTS

SHEET	DESCRIPTION	REV.
T1	COVER SHEET	A
-	SITE SURVEY	-
GN1	GENERAL NOTES	A
GN2	GENERAL NOTES	A
C0	OVERALL SITE PLAN (500' TOWER RING)	A
C1	OVERALL SITE PLAN	A
C2	ENLARGED SITE PLAN	A
C3	FENCE, GATE, & COMPOUND DETAILS	A
C4	CIVIL DETAILS	A
C5	GRADING & EROSION CONTROL PLAN	A
C6	EROSION CONTROL DETAIL	A
C7	TOWER ELEVATION DETAIL	A
E0	UTILITY SITE PLAN	A
TMO3	ANTENNA PLAN	A

SHEET INDEX

BUILDING DEPARTMENT
MONROE COUNTY, KY

PHONE: (504) 564-3940 EXT. 782-2551
ATTN.: KENT CHANDLER

PERMIT INFORMATION

PROJECT INFORMATION:
US-KY-5152
9LV0389A
FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133
MONROE COUNTY

CURRENT ISSUE DATE:
04/24/23

ISSUED FOR:
ZONING

REV.:	DATE:	ISSUED FOR:	BY:
A	04/24/23		GNP

CONSULTANT:
FORTUNE
WIRELESS INC.
5511 WEST 79TH STREET
INDIANAPOLIS, IN 46278
(317) 532-1374

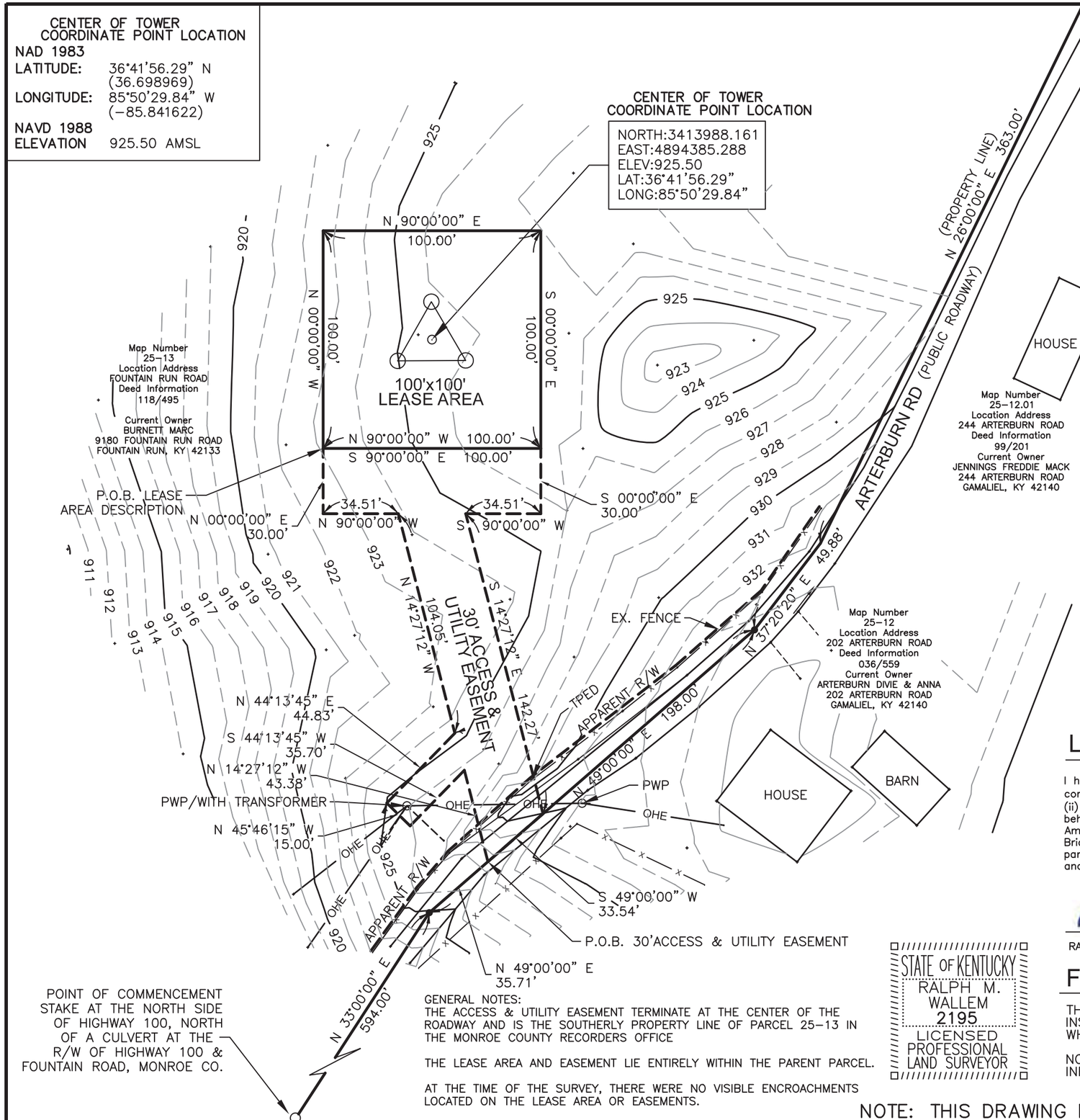
DRAWN BY:	CHK.:	APV.:
GNP	DEK	DEK

LICENSER:
STATE OF KENTUCKY
DAVID E. KASPER
31578
LICENSED PROFESSIONAL ENGINEER
09/24/23

SHEET TITLE:
TITLE PAGE

SHEET NUMBER:	REVISION:
T-1	A -

CENTER OF TOWER
COORDINATE POINT LOCATION
NAD 1983
LATITUDE: 36°41'56.29" N (36.698969)
LONGITUDE: 85°50'29.84" W (−85.841622)
NAVD 1988
ELEVATION 925.50 AMSL



LEGEND

- PK NAIL (FOUND)
- RAILROAD SPIKE (FOUND)
- IRON PIPE (FOUND)
- IRON PIN (FOUND)
- TELEPHONE PEDESTAL
- POWER POLE
- GUY WIRE
- STORM INLET
- OHE — OVERHEAD ELECTRIC
- x—x— EXISTING FENCE
- SUBJECT PROPERTY BOUNDARY
- MH — MANHOLE
- W — WATER VALVE
- LIGHT POLE

GRID NORTH BY G.P.S. OBSERVATION +/− 10 SECONDS

SCALE: 1"=50'
(11"X17" PLOT)

NORTH IS BASED ON KENTUCKY STATE PLANE SINGLE COORDINATE SYSTEM AND WAS DETERMINED BY COMPUTATION FROM G.P.S. OBSERVATION ON FEBRUARY 9, 2023

0 50 100

GENERAL NOTES:
THE ACCESS & UTILITY EASEMENT TERMINATE AT THE CENTER OF THE ROADWAY AND IS THE SOUTHERLY PROPERTY LINE OF PARCEL 25-13 IN THE MONROE COUNTY RECORDERS OFFICE

THE LEASE AREA AND EASEMENT LIE ENTIRELY WITHIN THE PARENT PARCEL.

AT THE TIME OF THE SURVEY, THERE WERE NO VISIBLE ENCROACHMENTS LOCATED ON THE LEASE AREA OR EASEMENTS.

STATE OF KENTUCKY
RALPH M. WALLEM
2195
LICENSED PROFESSIONAL LAND SURVEYOR

LAND SURVEYOR'S CERTIFICATE

I hereby certify to: Vertical Bridge REIT, LLC, a Delaware limited liability company, its subsidiaries, and their respective successors and/or assigns; and (ii) Toronto Dominion (Texas) LLC, as Administrative Agent, for itself and on behalf of the lenders parties from time to time to that certain Second Amended and Restated Loan Agreement dated June 17, 2016 with Vertical Bridge Holdco, LLC, as borrower, and Vertical Bridge Holdco Parent, LLC, as parent, as may be amended, restated, modified or renewed, their successors and assigns as their interests may appear; and Tower Title, LLC

RALPH M. WALLEM PLS NO. KY LS#2195

FLOOD DATA

THIS PROPERTY APPEARS TO BE IN ZONE "X" OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 21171C01150A WHICH HAS AN EFFECTIVE DATE OF JULY 12, 2012.

NOTE: FLOOD ZONE INFORMATION SHOWN HEREON IS BASED ON INFORMATION FROM A FEMA SCALED MAP AND GPS OBSERVATION.

NOTE: THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.

FORTUNE WIRELESS INC.
6402 CORPORATE DRIVE
INDIANAPOLIS, IN 46278
(317) 822-6222

verticalbridge

T-Mobile

BENCHMARK SERVICES, INC.
Consulting Engineers
Land Surveyors
318 North Main Street
Huntingburg, IN 47542
(812) 683-3049
benchmark@mw.twcbc.com

SITE NUMBER: US-KY-5152

SITE NAME: FOUNTAIN RUN-(BURNETT)

PARCEL ID NUMBER: 25-13

LANDOWNER:
BURNETT, MARC
9180 FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133

SITE ADDRESS:
FOUNTAIN RUN RD
FOUNTAIN RUN, KY 42133

LEASE AREA: 10000 SQ. FT.

DEED BOOK-PAGE DB 118, PG 495

COUNTY: MONROE COUNTY

LATITUDE: 36°41'56.29"N
LONGITUDE: 85°50'29.84"W

DWG BY:	CHKD BY:	DATE:
GVW	RMW	3.2.23

NO.	REVISION/ISSUE	DATE:
1	REVIEW	3.23.23
2	FINAL	6.23.23

TITLE: SURVEY PLAN

SHEET: 1 OF 2

DESCRIPTION OF LEASE AREA

A PART OF A PARCEL OF LAND RECORDED IN THE MONROE COUNTY RECORDERS OFFICE AS PARCEL 25–13, CURRENT OWNER STEPHEN MARC BURNETT AS RECORDED IN DEED BOOK 118, PAGE 495, AND FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A STAKE (BY DEED) AT THE NORTH SIDE OF HIGHWAY 100, NORTH OF A CULVERT AT THE RIGHT OF WAY OF FOUNTAIN ROAD AND SAID HIGHWAY 100; THENCE ALONG THE SOUTH PROPERTY LINE NORTH 33 DEGREES 00 MINUTES 00 SECONDS EAST 594.00 FEET; THENCE NORTH 49 DEGREES 00 MINUTES 00 SECONDS EAST 35.71 FEET; THENCE NORTH 14 DEGREES 27 MINUTES 12 SECONDS WEST 43.38 FEET; THENCE SOUTH 44 DEGREES 13 MINUTES 45 SECONDS WEST 35.70 FEET; THENCE NORTH 45 DEGREES 46 MINUTES 15 SECONDS WEST 15.00 FEET; THENCE NORTH 44 DEGREES 13 MINUTES 45 SECONDS EAST 44.83 FEET; THENCE NORTH 14 DEGREES 27 MINUTES 12 SECONDS WEST 104.05 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS WEST 34.51 FEET; THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS EAST 30.00 FEET TO THE SOUTHWEST LEASE CORNER AND BEING THE TRUE PLACE OF BEGINNING OF THIS LEASE AREA DESCRIPTION; THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS WEST 100.00 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS EAST 100.00 FEET; SOUTH 00 DEGREES 00 MINUTES 00 SECONDS EAST 100.00 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS WEST 100.00 FEET TO THE TRUE PLACE OF BEGINNING AND CONTAINING 10,000 SQUARE FEET, (0.23 ACRES), MORE OR LESS.

DESCRIPTION OF NON-EXCLUSIVE 30' ACCESS & UTILITY EASEMENT

A PART OF A PARCEL OF LAND RECORDED IN THE MONROE COUNTY RECORDERS OFFICE AS PARCEL 25–13, CURRENT OWNER STEPHEN MARC BURNETT AS RECORDED IN DEED BOOK 118, PAGE 495, AND FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A STAKE (BY DEED) AT THE NORTH SIDE OF HIGHWAY 100, NORTH OF A CULVERT AT THE RIGHT OF WAY OF FOUNTAIN ROAD AND SAID HIGHWAY 100; THENCE ALONG THE SOUTH PROPERTY LINE NORTH 33 DEGREES 00 MINUTES 00 SECONDS EAST 594.00 FEET; THENCE NORTH 49 DEGREES 00 MINUTES 00 SECONDS EAST 35.71 FEET TO THE TRUE PLACE OF BEGINNING OF THIS ACCESS AND UTILITY EASEMENT; THENCE NORTH 14 DEGREES 27 MINUTES 12 SECONDS WEST 43.38 FEET; THENCE SOUTH 44 DEGREES 13 MINUTES 45 SECONDS WEST 35.70 FEET; THENCE NORTH 45 DEGREES 46 MINUTES 15 SECONDS WEST 15.00 FEET; THENCE NORTH 44 DEGREES 13 MINUTES 45 SECONDS EAST 44.83 FEET; THENCE NORTH 14 DEGREES 27 MINUTES 12 SECONDS WEST 104.05 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS WEST 34.51 FEET; THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS EAST 30.00 FEET TO THE SOUTHWEST LEASE CORNER; THENCE ALONG THE SOUTH LINE OF SAID LEASE BEARING SOUTH 90 DEGREES 00 MINUTES 00 SECONDS EAST 100.00 FEET TO THE SOUTHEAST LEASE CORNER; THENCE SOUTH 00 DEGREES 00 MINUTES 00 SECONDS EAST 30.00 FEET; THENCE SOUTH 90 DEGREES 00 MINUTES 00 SECONDS WEST 34.51 FEET; THNECE SOUTH 14 DEGREES 27 MINUTES 12 SECONDS EAST 142.27 FEET TO A POINT ON THE SOUTH PROPERTY LINE (BY DEED) THENCE SOUTH 49 DEGREES 00 MINUTES 00 SECONDS WEST 33.54 FEET TO THE TRUE PLACE OF BEGINNING AND CONTAINING 8,213 SQUARE FEET, (0.19 ACRES), MORE OR LESS.

THE ABOVE DESCRIBED PARCELS ARE SUBJECT TO ALL LEGAL RIGHTS OF WAYS AND EASEMENTS OF RECORD.

TITLE COMMITMENT

WESTCOR LAND TITLE INSURANCE COMPANY
ALTA COMMITMENT FOR TITLE INSURANCE
Issuing Office: Tower Title, LLC
ALTA® Universal ID: RI1044

Client File Number: US-KY-5152
Commitment Number: VTB-146550-C
Property Address: 0 Fountain Run Road, Fountain Run, KY 42133
SCHEDULE A
1. Commitment Date: January 31, 2023

SURVEYOR CERTIFICATION

I hereby certify to: Vertical Bridge REIT, LLC, a Delaware limited liability company, its subsidiaries, and their respective successors and/or assigns; and (ii) Toronto Dominion (Texas) LLC, as Administrative Agent, for itself and on behalf of the lenders parties from time to time to that certain Second Amended and Restated Loan Agreement dated June 17, 2016 with Vertical Bridge Holdco, LLC, as borrower, and Vertical Bridge Holdco Parent, LLC, as parent, as may be amended, restated, modified or renewed, their successors and assigns as their interests may appear; and Tower Title, LLC

SCHEDULE B–SECTION II

I CERTIFY THAT THIS PLAT AND SURVEY WERE MADE UNDER MY SUPERVISION, AND THAT THE ANGULAR AND LINEAR MEASUREMENTS, AS WITNESSED BY MONUMENTS SHOWN HEREON, ARE TRUE AND CORRECT TO THE BEST OF MY ABILITY AND BELIEF.
THIS SURVEY AND PLAT MEETS OR EXCEEDS THE MINIMUM STANDARDS OF THE GOVERNING AUTHORITIES.

SURVEYOR STATEMENT–MY COMMENTS ARE BASED SOLELY ON THE TITLE DOCUMENT THAT HAVE BEEN SUPPIED TO ME BY THE TITLE COMPANY . SINCE THE TITLE DOCUMENTS ARE FURNISHED FOR THE PARENT TRACT, OUR TOPOGRAPHIC SURVEY IS OF A PORTION OF THAT TRACT. MY COMMENTS ARE RESTRICTED TO EXCLUSIONS THAT I CAN DETERMINE AFFECT ONLY OUR PORTION OF THE PARENT TRACT. NO BOUNDARY SURVEY WAS PERFORMED ON THE PARENT TRACT, THUS IT IS NOT POSSIBLE TO DETERMINE WITH CERTAINTY EXCLUSIONS REFERENCING THE PARENT TRACT.

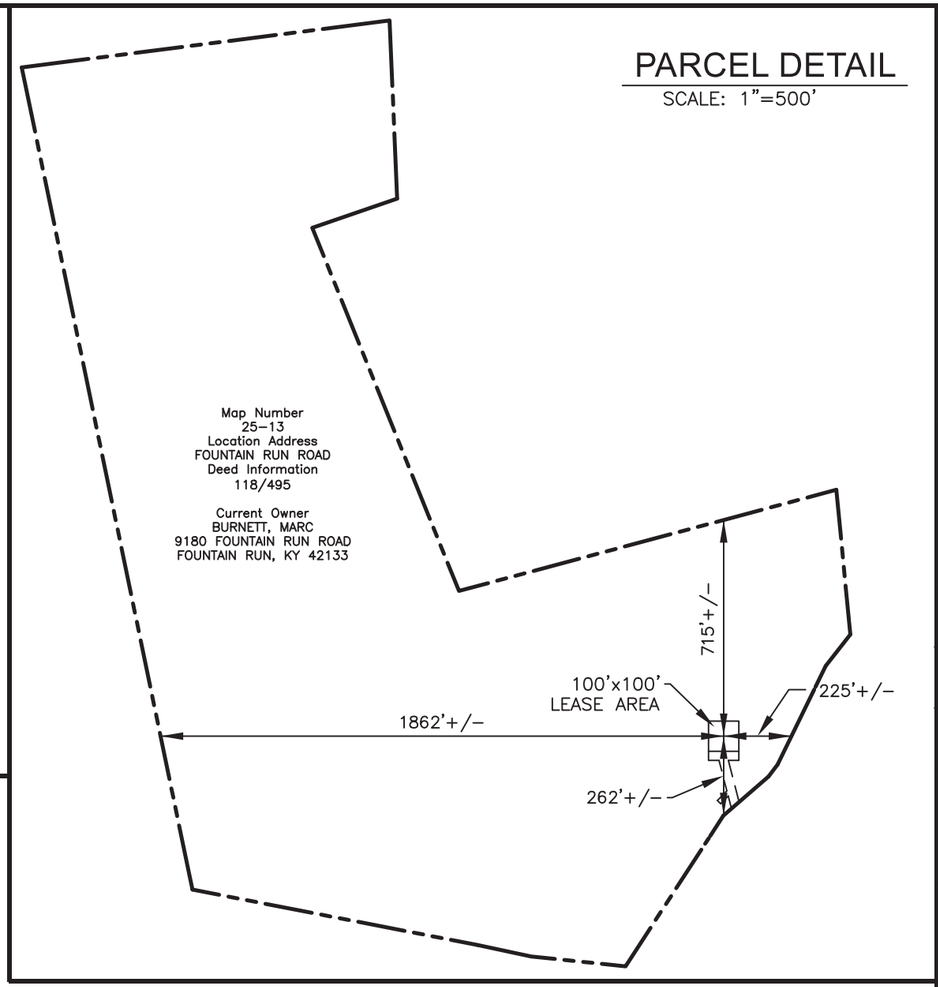
SCHEDULE "B" SECTION II EXCEPTIONS

1. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I–Requirements are met. (NOT A SURVEYOR RELATED ITEM)
2. Rights or claims of parties in possession not shown by the public records. (NOT A SURVEYOR RELATED ITEM)
3. Easements or claims of easements not shown by the public records. (NOT A SURVEYOR RELATED ITEM)
4. Discrepancies, conflicts in boundary lines, encroachments, overlaps, variations or shortage in area or content, party walls and any other matters that would be disclosed by a correct survey and/or physical inspection of the land. (BENCHMARK SERVICES, INC., DID NOT PERFORM A BOUNDARY SURVEY. BSI DID CREATE AN ACCESS & UTILITY EASEMENT AND LEASE EASEMENT)
5. Any lien, or right to lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public record. (NOT A SURVEYOR RELATED ITEM)
6. Any water or well rights, or rights or title to water or claims thereof, in, on or under the land. (NOT A SURVEYOR RELATED ITEM)
7. Unpatented mining claims, reservations or exceptions in patents or in the Acts authorizing the issuance of said patents. (NOT A SURVEYOR RELATED ITEM)
8. All taxes, assessments, levies and charges which constitute liens or are due or payable including unredeemed tax sales. (NOT A SURVEYOR RELATED ITEM)

Additionally, the policy will not insure against loss or damage resulting from the terms and provisions of any lease or easement identified in Schedule A, and will include the following Specific Exceptions unless cleared to the satisfaction of the Company: (NOT A SURVEYOR RELATED ITEM)

PARCEL DETAIL

SCALE: 1"=500'



9. Rights of fee simple owners in and to the subject property. (NOT A SURVEYOR RELATED ITEM)
10. Deed between Carlos Burnette and his wife, Banna Burnette; and Monroe County Water District, dated August 27, 1986 and recorded February 9, 1993 in (book) 74 (page) 220, in Monroe County, Kentucky. (NOT A SURVEYOR RELATED ITEM)

END OF SCHEDULE B

RALPH M. WALLEM PLS NO. KY LS 2195

STATE OF KENTUCKY
RALPH M. WALLEM
2195
LICENSED PROFESSIONAL LAND SURVEYOR

PARENT PARCEL
LEGAL DESCRIPTION-EXHIBIT "A" TITLE REPORT

The following described real property located in Monroe County, Kentucky, to–wit:
Parcel One
Beginning at a stake on the North side, in the right–of–way of Highway 100, North of culvert; thence with the right–of–way S78 E 11 P and 5 feet to a side road; thence with the side road S 84 E 19 P, N 33 E 36 P, N 49 E 12 P, N 26 E 22 P, N 38 E 8 P to a stone and sassafras, Arterburn's corner; thence with his line N 5–1/2 W 31 P to a stone; thence S 75 W 76–1/4 P to a stone, Hagan's corner; thence N 22 W 78–1/2 P to a stone on the South side of an old road; thence N 71 E 18 P to a stone on West side of said road; thence with a ditch N 11 W 35–1/2 P to the road right–of–way of Highway 1366; thence with the right–of–way W 75 P to Ford's line; thence with his line S 12 E 186–1/2 P to the right–of–way of 100; thence with the right–of–way S 79 E 58–1/4 P to the beginning, containing 112 acres, more or less.
Parcel ID: 25–13
This being a portion of the same property conveyed to Marc Burnett, a single person by a Deed from Carlos Burnett and wife, Banna Burnett dated 1/19/2012 and recorded 3/24/2012 in Book D118 Page 498 and Instrument 85225 in the County of Monroe, State of Kentucky.

FORTUNE WIRELESS INC.
6402 CORPORATE DRIVE
INDIANAPOLIS, IN 46278
(317) 822–6222

verticalbridge

T··Mobile·

BENCHMARK SERVICES, INC.
Consulting Engineers
Land Surveyors
318 North Main Street
Huntingburg, IN 47542
(812) 683-3049
benchmark@mw.twcbc.com

SITE NUMBER: US–KY–5152

SITE NAME: FOUNTAIN RUN–(BURNETT)

PARCEL ID NUMBER: 25–13

LANDOWNER:
BURNETT, MARC
9180 FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133

SITE ADDRESS:
FOUNTAIN RUN RD
FOUNTAIN RUN, KY 42133

LEASE AREA: 10000 SQ. FT.

DEED BOOK–PAGE DB 118, PG 495

COUNTY: MONROE COUNTY

LATITUDE: 36°41'56.29"N
LONGITUDE: 85°50'29.84"W

DWG BY:	CHKD BY:	DATE:
GVW	RMW	3.2.23

NO.	REVISION/ISSUE	DATE:
1	REVIEW	3.23.23
2	FINAL	6.23.23

TITLE: SURVEY PLAN

SHEET: 2 OF 2

SITE WORK GENERAL NOTES: DETAIL 1/GN-1

1. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR IS TO POT HOLE UTILITY LOCATES POST MARKING TO VERIFY UTILITY LOCATES ARE CORRECT.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR/SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
6. THE OWNER SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE (TO BE INSTALLED BY CONTRACTOR).
7. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
8. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
9. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
10. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE PROJECT SPECIFICATIONS.
11. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
12. CONTRACTOR SHALL NOT INSTALL EQUIPMENT THAT WILL IMPEDE DOOR OR ACCESS PANELS.

ABBREVIATIONS AND SYMBOLS:

ABBREVIATIONS:

AGL	ABOVE GRADE LEVEL
BTS	BASE TRANSCEIVER STATION
(E)	EXISTING
MIN.	MINIMUM
N.T.S.	NOT TO SCALE
REF	REFERENCE
RF	RADIO FREQUENCY
T.B.D.	TO BE DETERMINED
T.B.R.	TO BE RESOLVED
TYP	TYPICAL
REQ	REQUIRED
EGR	EQUIPMENT GROUND RING
AWG	AMERICAN WIRE GAUGE
MGB	MASTER GROUND BUSS
EG	EQUIPMENT GROUND
BCW	BARE COPPER WIRE
SIAD	SMART INTEGRATED ACCESS DEVICE
GEN	GENERATOR
IGR	INTERIOR GROUND RING (HALO)
RBS	RADIO BASE STATION
U.N.O.	UNLESS NOTED OTHERWISE

SYMBOLS:

S/G	SOLID GROUND BUSS BAR
S/N	SOLID NEUTRAL BUSS BAR
	SUPPLEMENTAL GROUND CONDUCTOR
	2–POLE THERMAL–MAGNETIC CIRCUIT BREAKER
	SINGLE–POLE THERMAL–MAGNETIC CIRCUIT BREAKER
	CHEMICAL GROUND ROD
	DISCONNECT SWITCH
M	METER
	EXOTHERMIC WELD (CADWELD) (UNLESS OTHERWISE NOTED)
	MECHANICAL WELD
	5/8" x 10'–0" COPPER CLAD STEEL GROUND ROD
	5/8" x 10'–0" COPPER CLAD STEEL GROUND ROD WITH INSPECTION SLEEVE
	GROUNDING WIRE

STRUCTURAL STEEL NOTES: DETAIL 2/GN-1

1. ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A36 UNLESS OTHERWISE NOTED.
2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
3. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
4. NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8"ø ASTM A307 BOLTS UNLESS NOTED OTHERWISE.
5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS.

CONCRETE AND REINFORCING STEEL NOTES: DETAIL 3/GN-1

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. SLAB FOUNDATION DESIGN ASSUMING ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, U.N.O.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER.....2 IN.
   #5 AND SMALLER & WWF.....1 1/2 IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALLS.....3/4 IN.
   BEAMS AND COLUMNS.....1 1/2 IN.

5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO. IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

MASONRY NOTES: DETAIL 3A/GN-1

1. HOLLOW CONCRETE MASONRY UNITS SHALL MEET A.S.T.M. SPECIFICATION C90, GRADE N. TYPE 1. THE SPECIFIED DESIGN COMPRESSIVE STRENGTH OF CONCRETE MASONRY (F'm) SHALL BE 1500 PSI.
2. MORTAR SHALL MEET THE PROPERTY SPECIFICATION OF A.S.T.M. C270 TYP. "S" MORTAR AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.
3. GROUT SHALL MEET A.S.T.M. SPECIFICATION C475 AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI.
4. CONCRETE MASONRY SHALL BE LAID IN RUNNING (COMMON) BOND.
5. WALL SHALL RECEIVE TEMPORARY BRACING. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL GROUT IS FULLY CURED.

GENERAL NOTES: DETAIL 4/GN-1

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR– GENERAL CONTRACTOR
   SUBCONTRACTOR– SUBCONTRACTOR HIRED BY GENERAL CONTRACTOR.
   OWNER– **VERTICAL BRIDGE**
   OEM– ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF OWNER.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED WERE DESIGNED AND SCALED TO 11x17 FORMAT.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
7. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE OWNER.
8. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWINGS.
9. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
10. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.
11. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
12. CONSTRUCTION SHALL COMPLY WITH VERTICAL BRIDGE MASTER SPECIFICATIONS AND THESE DRAWINGS WHERE A CONFLICT EXISTS IT IS CONTRACTORS RESPONSIBILITY TO NOTIFY OWNER.
13. NOTHING CONTAINED IN THESE DRAWINGS SHALL CREATE ANY CONTRACTUAL RELATIONSHIP BETWEEN ANY SUBCONTRACTOR(S) AND VERTICAL BRIDGE.
14. CONTRACTOR SHALL HOLD HARMLESS VERTICAL BRIDGE AND ITS REPRESENTATIVES FROM ALL SUITS, ACTIONS, OR CLAIMS OF ANY KIND BROUGHT ABOUT AS A RESULT OF ANY INJURIES OR DAMAGES SUSTAINED BY PERSON(S) OR PROPERTY DURING THE CONSTRUCTION OF THIS PROJECT.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS FOR ANY AND ALL PERSONS, INCLUDING SUBCONTRACTORS, ON SITE AS REQUIRED BY CURRENT OSHA STANDARDS; INCLUDING BUT NOT LIMITED TO
   A) PERSONAL PROTECTIVE & LIFE SAVING EQUIPMENT
   B) SIGNS, SIGNALS, & BARRICADES
   C) TOOLS – HAND & POWER
   D) ELECTRICAL
   E) FALL PROTECTION
   F) EXCAVATIONS
   G) CONCRETE & MASONRY CONSTRUCTION
   H) STEEL ERECTION
   I) POWER TRANSMISSION & DISTRIBUTION
   J) CRANES & DERRICKS IN CONSTRUCTION.

1. THE ENGINEER SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT ON A ONE TIME BASIS.
2. THE CONTRACTOR SHALL TOPSOIL AND SEED ALL DISTURBED AREAS.
3. THE PLANS SHOW SOME KNOWN SUBSURFACE STRUCTURES, ABOVEGROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA, EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPELINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE AREA MAY BE SHOWN OR MAY NOT BE SHOWN; AN IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. 48 HOURS BEFORE YOU DIG, DRILL, OR BLAST, CALL 811.
4. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE ENGINEER.

verticalbridge

T-Mobile

PROJECT INFORMATION:

US-KY-5152
9LV0389A
FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133
MONROE COUNTY

CURRENT ISSUE DATE:

04/24/23

ISSUED FOR:

ZONING

REV.:	DATE:	ISSUED FOR:	BY:
A	04/24/23		GNP

CONSULTANT:

FORTUNE
WIRELESS INC.
5511 WEST 79TH STREET
INDIANAPOLIS, IN 46278
(317) 532–1374

DRAWN BY:	CHK.:	APV.:
GNP	DEK	DEK

LICENSER:

STATE OF KENTUCKY
DAVID E. KASPER
31578
LICENSED PROFESSIONAL ENGINEER
09/24/23

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:	REVISION:
GN-1	A

ELECTRICAL INSTALLATION NOTES:

DETAIL 1/GN-2

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
5. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
6. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PLASTIC TAPE PER COLOR SCHEDULE. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (I.E. PANEL BOARD AND CIRCUIT ID'S).
8. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
10. POWER, CONTROL AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET & DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION WITH OUTER JACKET LISTED OR LABELED FOR THE LOCATION USED UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E. RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT) OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
18. RIGID NONMETALLIC CONDUIT (I.E. RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
19. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
20. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
21. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
22. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER).

ELECTRICAL INSTALLATION NOTES (CONT.):

23. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND RATED NEMA 1 (OR BETTER) INDOORS OR NEMA 3R (OR BETTER) OUTDOORS.
24. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
25. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
26. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
27. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.
28. INSTALL PLASTIC LABEL ON THE METER CENTER IDENTIFYING SPECIFIC CARRIER.

DETAIL 2/GN-2

KEYED NOTES: (SEE GROUNDING PLAN DIAGRAM – SHEET E-1)

1. TOWER GROUNDING: EXTEND #2 SOLID TINNED CU WIRE FROM BURIED GROUND RING TO EXISTING TOWER AND MAKE EXOTHERMIC CONNECTION.
2. HATCH PLATE GROUND BAR: EXTEND #2 SOLID TINNED CU WIRE FROM BURIED GROUND RING UP THROUGH 1/2"ø PVC SLEEVE INTO EQUIPMENT SHELTER FOR CONNECTION TO INTERIOR HALO GROUND RING. TYPICAL AT 4 BUILDING CORNERS.
3. GROUNDING OF INTERNAL GROUND RING: EXTEND #2 TINNED CU WIRE FROM BURIED GROUND RING THROUGH 1/2" DIA. PVC SLEEVE INTO EQUIPMENT SHELTER FOR CONNECTION TO INTERIOR HALO GROUND RING. TYPICAL AT (4) BUILDING CORNERS.
4. GROUND ROD: COPPER CLAD STEEL, 5/8"ø TEN (10) FEET LONG.
5. ICE BRIDGE SUPPORT POST GROUNDING: EXTEND #2 TINNED CU WIRE FROM BURIED GROUND RING TO ALL ICE BRIDGE SUPPORT POSTS AND EXOTHERMICALLY WELD.
6. FENCE GROUNDING: IF FENCE IS WITHIN 6' OF GROUNDING RING, EXTEND #2 TINNED CU WIRE FROM BURIED GROUND RING TO FENCE CORNER POSTS AND EXOTHERMICALLY WELD. BOND INTERMEDIATE POST IF REQUIRED TO MAINTAIN 25' MAX. SPACING.
7. HVAC GROUNDING: EXTEND #2 TINNED CU WIRE FORM BURIED GROUND RING TO THE HVAC UNIT AND MAKE A MECHANICAL CONNECTION.
8. TOWER GROUNDING BAR: EXTEND #2 TINNED CU WIRE FROM BURIED GROUND RING UP TO THE TOWER GROUND BAR AND MAKE A MECHANICAL CONNECTION. SECURE GROUND BAR DIRECTLY TO TOWER WITH ISOLATOR KIT USING STAINLESS STEEL MOUNTING MATERIAL.
9. CELL REFERENCE GROUND BAR: EXTEND (2) #2 TINNED CU WIRE FROM BURIED GROUND RING UP TO THE CELL REFERENCE GROUND BAR (INSIDE SHELTER) AND MAKE AN EXOTHERMIC WELD CONNECTION.
10. TELCO GROUNDING BAR: EXTEND #2 TINNED CU WIRE FROM BURIED GROUND RING UP TO TELCO GROUND BAR (INSIDE SHELTER) AND MAKE AN EXOTHERMIC WELD CONNECTION.
11. ANTENNA GROUND BAR: MOUNT GROUND BAR DIRECTLY TO TOWER AT TOP OF COAX RUNS. SECURE TO TOWER WITH ISOLATOR KIT USING STAINLESS STEEL MOUNTING MATERIAL.
12. GATE GROUNDING: EXTEND #2 TINNED CU WIRE FROM BURIED GROUND RING TO GATE POSTS AND EXOTHERMICALLY WELD.
13. EXTERIOR GFCI RECEPTACLE GROUNDING: EXTEND #2 TINNED CU WIRE FROM BURIED GROUND RING TO THE EXTERIOR GFCI RECEPTACLE AND MAKE A MECHANICAL CONNECTION.

GREENFIELD GROUNDING NOTES:

DETAIL 3/GN-2

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 AWG SOLID TINNED COPPER FOR OUTDOOR BTS.
7. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
8. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
9. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
10. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
11. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
12. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
13. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
14. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
15. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WIT A CORROSION RESISTANT MATERIAL.
16. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
17. BOND ALL METALLIC OBJECTS WITHIN 6 FT. OF MAIN GROUND WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
18. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS, WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

verticalbridge

T-Mobile

PROJECT INFORMATION:

US-KY-5152
9LV0389A
FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133
MONROE COUNTY

CURRENT ISSUE DATE:

04/24/23

ISSUED FOR:

ZONING

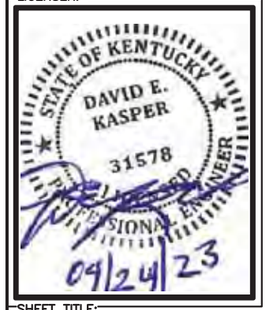
REV.:	DATE:	ISSUED FOR:	BY:
A	04/24/23		GNP

CONSULTANT:

FORTUNE WIRELESS INC.
5511 WEST 79TH STREET
INDIANAPOLIS, IN 46278
(317) 532-1374

DRAWN BY:	CHK.:	APV.:
GNP	DEK	DEK

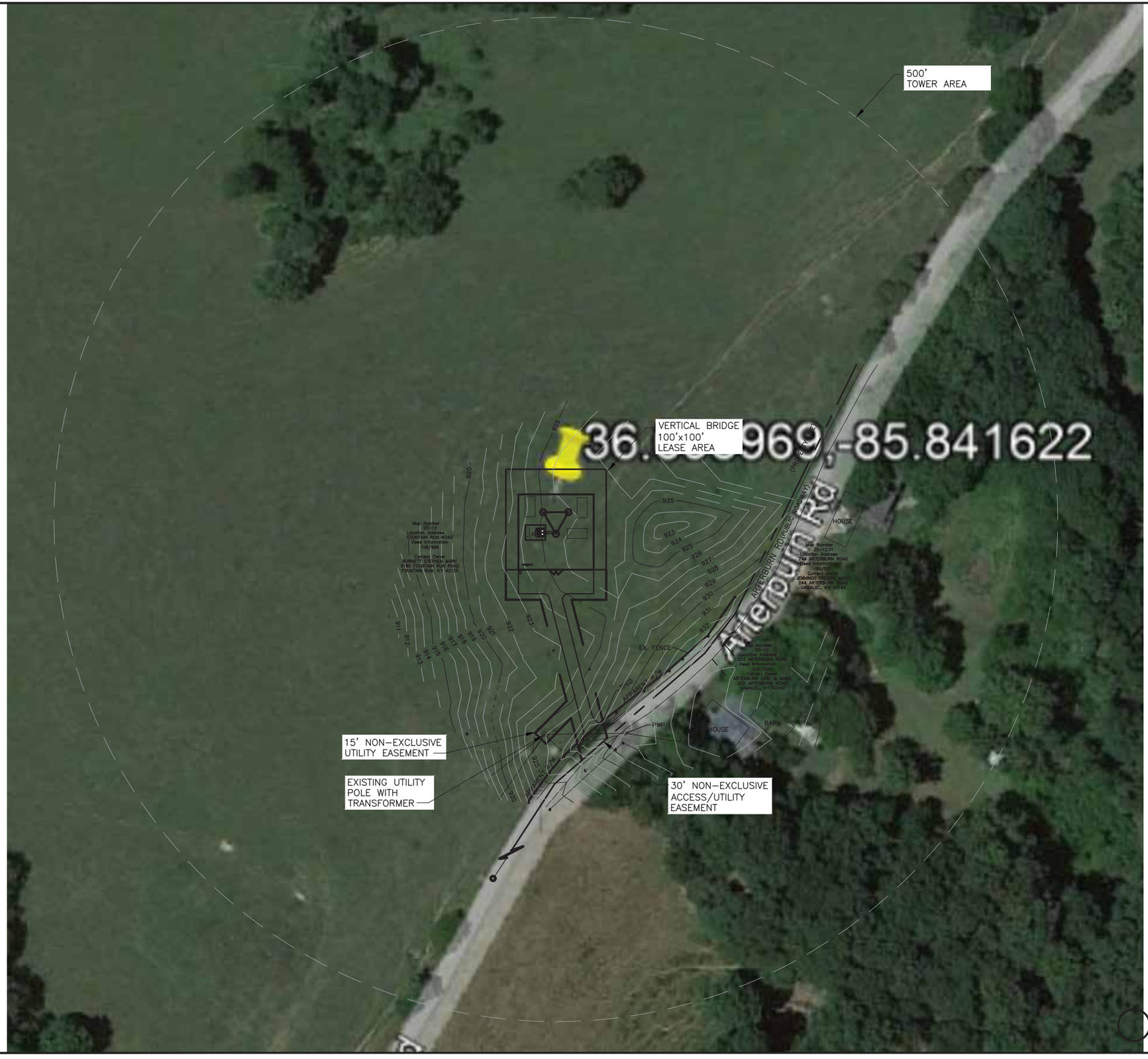
LICENSER:



SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:	REVISION:
GN-2	A



OVERALL SITE PLAN
SCALE: 1"=100'-0"

vertical bridge
T-Mobile

PROJECT INFORMATION:

US-KY-5152
9LV0389A
FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133
MONROE COUNTY

CURRENT ISSUE DATE:

04/24/23

ISSUED FOR:

ZONING

REV.:	DATE:	ISSUED FOR:	BY:
A	04/24/23		GNP

CONSULTANT:

FORTUNE
WIRELESS INC.
5511 WEST 79TH STREET
INDIANAPOLIS, IN 46278
(317) 532-1374

DRAWN BY:	CHK.:	APV.:
GNP	DEK	DEK

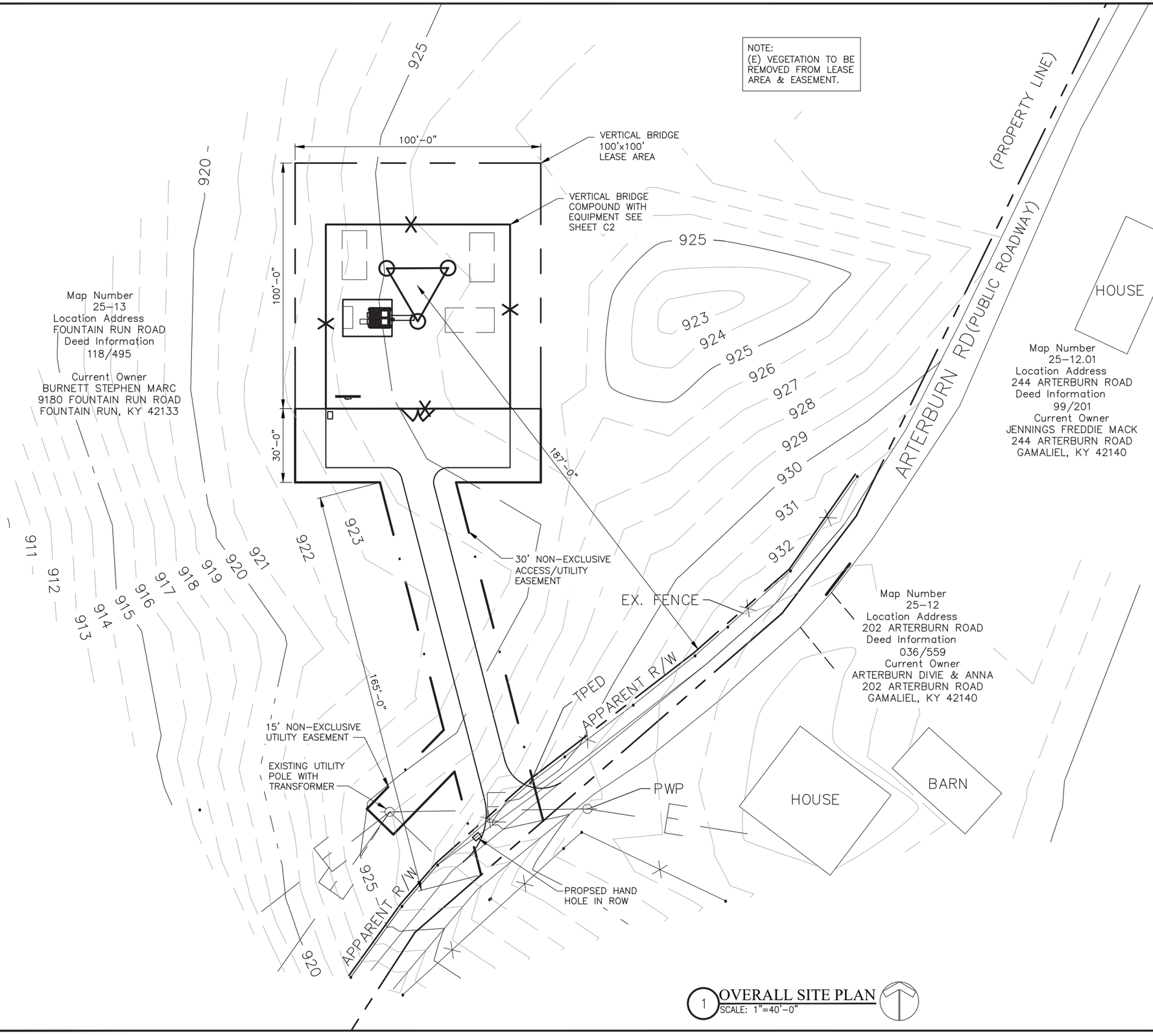
LICENSER:

STATE OF KENTUCKY
DAVID E. KASPER
31578
LICENSED PROFESSIONAL ENGINEER
09/24/23

SHEET TITLE:

OVERALL SITE PLAN
(500' RADIUS)

SHEET NUMBER:	REVISION:
C-0	A



1 OVERALL SITE PLAN
SCALE: 1"=40'-0"

verticalbridge
T··Mobile·

PROJECT INFORMATION:

US-KY-5152
9LV0389A
FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133
MONROE COUNTY

CURRENT ISSUE DATE:

04/24/23

ISSUED FOR:

ZONING

REV.:	DATE:	ISSUED FOR:	BY:
A	04/24/23		GNP

CONSULTANT:

FORTUNE
WIRELESS INC.
5511 WEST 79TH STREET
INDIANAPOLIS, IN 46278
(317) 532-1374

DRAWN BY:	CHK.:	APV.:
GNP	DEK	DEK

LICENSER:

STATE OF KENTUCKY
DAVID E. KASPER
31578
LICENSED PROFESSIONAL ENGINEER
09/24/23

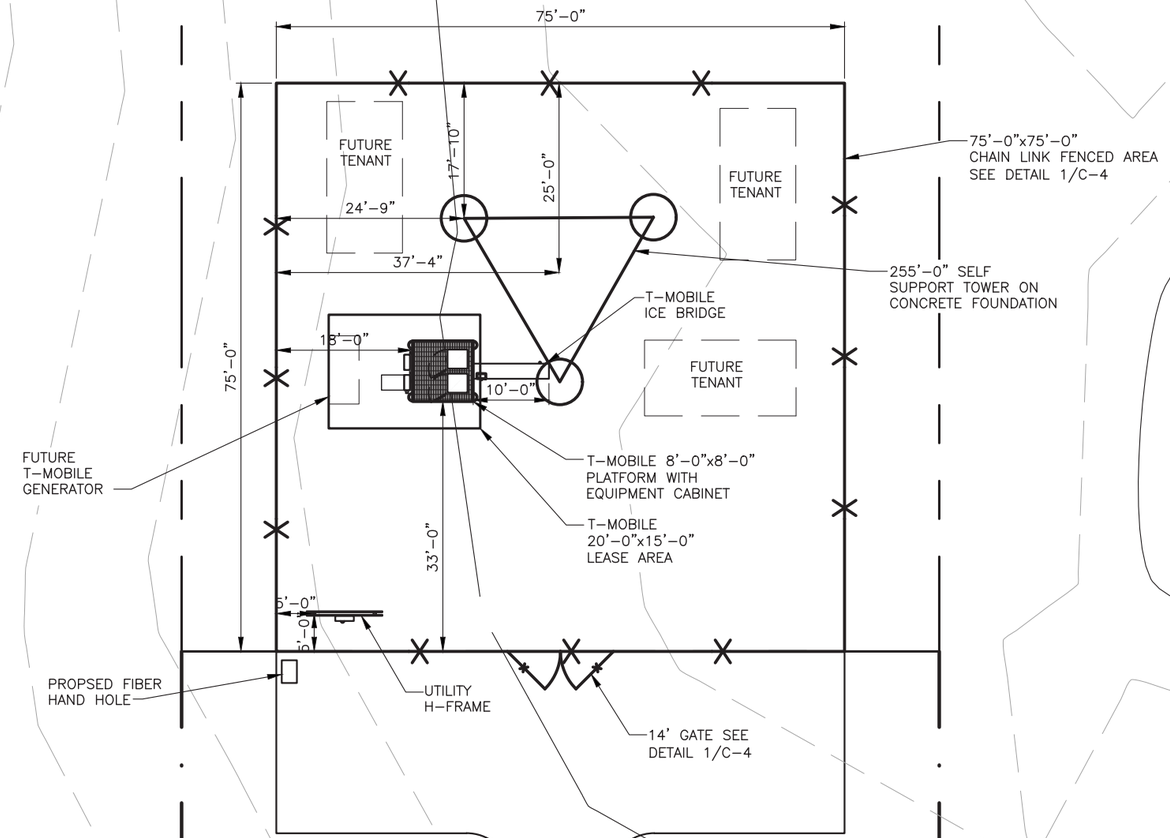
SHEET TITLE:

OVERALL SITE PLAN

SHEET NUMBER:	REVISION:
C-1	A

umber
5–13
Address
RUN ROAD
nformation
3/495

nt Owner
TEPHEN MARC
AIN RUN ROAD
RUN, KY 42133



1 ENLARGED SITE PLAN
SCALE: 1"=20'–0"

vertical bridge
T-Mobile

PROJECT INFORMATION:

US-KY-5152
9LV0389A
FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133
MONROE COUNTY

CURRENT ISSUE DATE:
04/24/23

ISSUED FOR:
ZONING

REV.:	DATE:	ISSUED FOR:	BY:
A	04/24/23		GNP

CONSULTANT:

FORTUNE
WIRELESS INC.
5511 WEST 79TH STREET
INDIANAPOLIS, IN 46278
(317) 532–1374

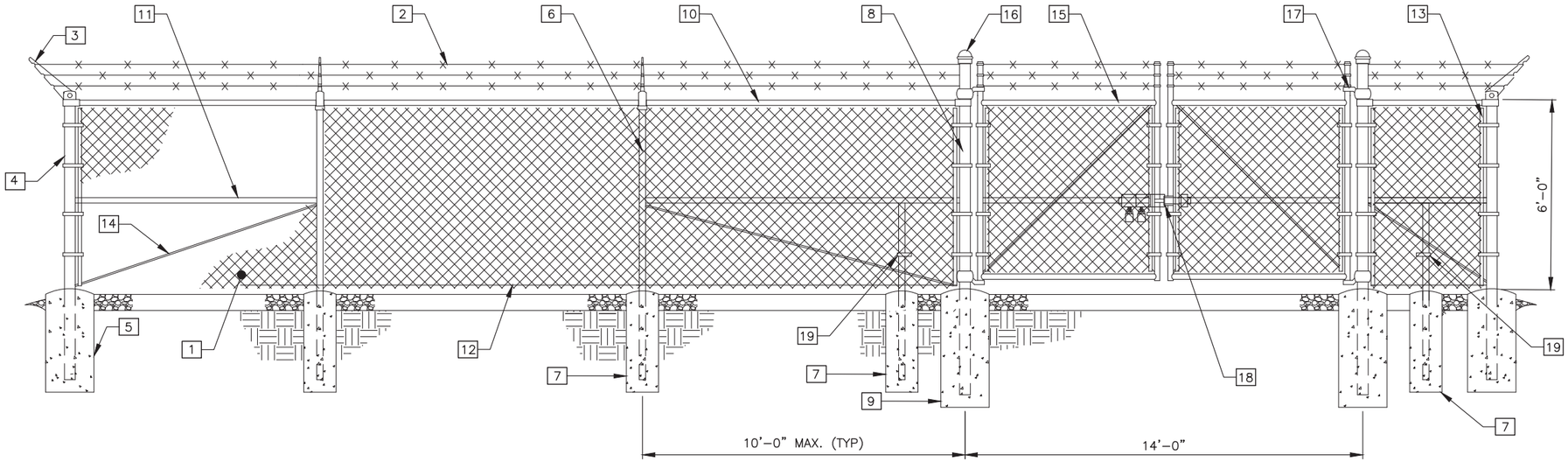
DRAWN BY:	CHK.:	APV.:
GNP	DEK	DEK

LICENSER:

STATE OF KENTUCKY
DAVID E. KASPER
31578
LICENSED PROFESSIONAL ENGINEER
09/24/23

SHEET TITLE:
ENLARGED SITE PLAN

SHEET NUMBER:	REVISION:
C-2	A –



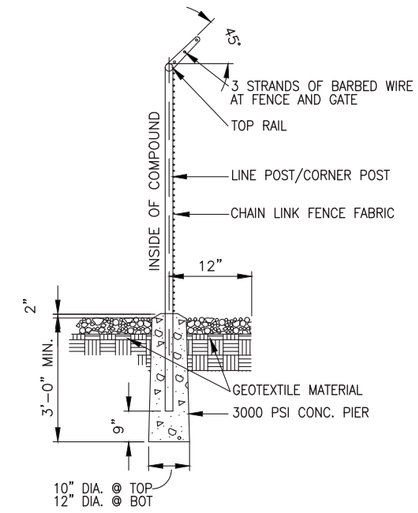
1 TYPICAL FENCE SECTION
SCALE: N.T.S.

KEYNOTE LEGEND:

1. FABRIC: 6FT. HEIGHT, 9 GAUGE, 2" MESH, ASTM A392.
2. BARBED WIRE: 12 GAUGE WIRE, 4 POINT (3 RUNS), FINISH TO MATCH FABRIC, ASTM A121.
3. EXTENSION ARMS: STAMPED STEEL WITH MALLEABLE IRON BASE, FINISH TO MATCH FENCE FRAMEWORK, ASTM F626.
4. END AND CORNER POSTS: 3"ø PIPE SCH. 40 (GALV.) ASTM F1083
5. CONCRETE FOUNDATION: 36"x12"ø (3000 PSI)
6. LINE POSTS: 2"ø PIPE SCH. 40 (GALV.) ASTM F1083
7. CONCRETE FOUNDATION: 36"x10"ø (3000 PSI)
8. GATE POSTS: 4"ø PIPE SCH. 40 (GALV.) ASTM F1083
9. CONCRETE FOUNDATION: 48"x12"ø (3000 PSI)
10. TOP RAIL & BRACE RAIL: 1-1/2"ø PIPE SCH. 40 (GALV.) ASTM F1083
11. MIDDLE RAILS: 1-1/2"ø PIPE SCH. 40 (GALV.) ASTM F1083
12. BOTTOM TENSION WIRE: 0.177"ø METALLIC-COATED STEEL (GALV.), MARCELLED, ASTM A824
13. TENSION BARS: 3/16"x3/4", FULL HEIGHT OF FABRIC, FINISH TO MATCH FENCE FRAMEWORK.
14. TENSION ROD: 3/8"ø WITH ADJ. TIGHTNER, FINISH TO MATCH FENCE FRAMEWORK.
15. GATE FRAME: 2"ø SCH. 40 (GALV.) ASTM F1083
16. POST CAPS: PER POST DIAMETER.
17. GATE HINGES: NON-LIFT-OFF TYPE, OFFSET TO PERMIT 180 DEGREE SWING.
18. CONTRACTOR TO PROVIDE STYMIE LOCK OR APPROVED EQUIVALENT
19. DUCK BILL OPEN GATE HOLDER. VERIFY LOCATION IN FIELD BEFORE INSTALLATION

FENCE NOTES:

1. REFER TO PROJECT SPECIFICATIONS FOR INFORMATION NOT SHOWN IN THE DRAWING.
2. FENCE FABRIC SHALL COMFORN TO CHAIN LINK FENCE MANUFACTURERS INSTITUTE (CLFMI) PRODUCT MANUAL.
3. INSTALL FENCE IN COMPLIANCE WITH ASTM F 567.
4. INSTALL SWING GATES IN COMPLIANCE WITH ASTM F 900.
5. DO NOT BEGIN INSTALLATION AND ERECTION BEFORE FINAL GRADING IS COMPLETED, UNLESS OTHERWISE PERMITTED. INSTALL FENCING ON BOUNDARY LINES INSIDE OF PROPERTY LINE ESTABLISHED BY SURVEY.
6. DRILL OR HAND-EXCAVATE (USING POST - HOLE DIGGER) HOLES FOR POSTS TO DIAMETERS AND SPACINGS INDICATED, IN FIRM, UNDISTURBED OR COMPACTED SOIL. IF NOT INDICATED ON DRAWINGS, EXCAVATE HOLES FOR EACH POST TO MINIMUM DIAMETER RECOMMENDED BY FENCE MANUFACTURER, BUT NOT LESS THAN (4) TIMES LARGEST GROSS-SECTION OF POST.
7. REMOVE POST HOLE SPOILS FROM SITE. DO NOT SET SPOILS ON AGGREGATE WITHOUT ADEQUATE PROTECTION.
8. PROTECT PORTION OF POSTS ABOVE GROUND FROM CONCRETE SPLATTER. PLACE CONCRETE AROUND POSTS AND VIBRATE OR TAMP FOR CONSOLIDATION. CHECK EACH POST FOR VERTICAL AND TOP ALIGNMENT AND HOLD IN POSITION DURING PLACEMENT AND FINISHING OPERATIONS, UNLESS OTHERWISE SHOWN, EXTEND CONCRETE FOOTING 1 INCH ABOVE GRADE AND TROWEL TO A CROWN TO SHED WATER.
9. INSTALL BARBED WIRE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
10. APPLY FABRIC TO OUTSIDE OF FRAMEWORK.



2 FENCE DETAIL
SCALE: N.T.S.

vertical bridge
T-Mobile

PROJECT INFORMATION:

US-KY-5152
9LV0389A
FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133
MONROE COUNTY

CURRENT ISSUE DATE:
04/24/23

ISSUED FOR:
ZONING

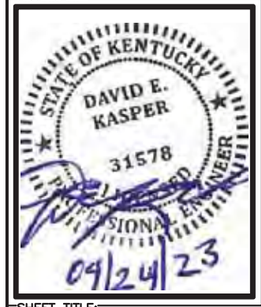
REV.:	DATE:	ISSUED FOR:	BY:
A	04/24/23		GNP

CONSULTANT:

FORTUNE
WIRELESS INC.
5511 WEST 79TH STREET
INDIANAPOLIS, IN 46278
(317) 532-1374

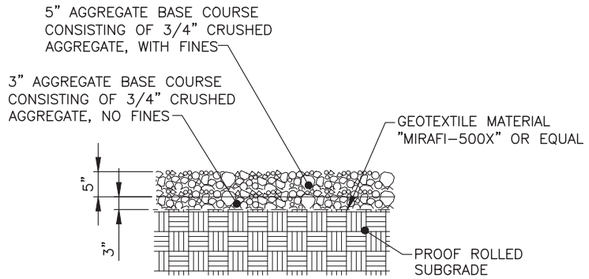
DRAWN BY:	CHK.:	APV.:
GNP	DEK	DEK

LICENSER:



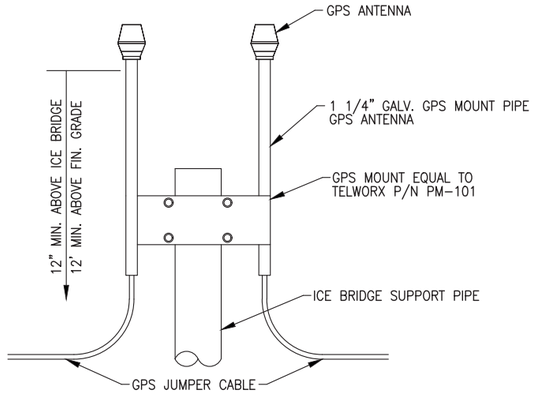
SHEET TITLE:
FENCE, GATE, & COUMPOUND DETAILS

SHEET NUMBER:	REVISION:
C-3	A -

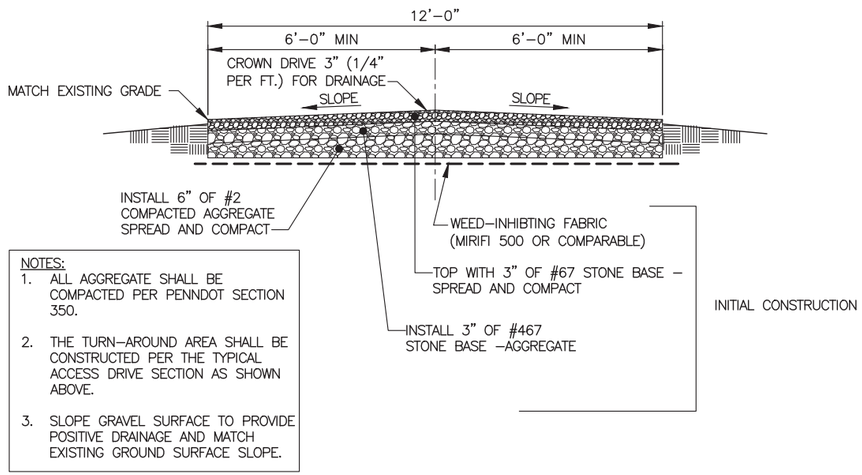


NOTE:
IT IS THE RESPONSIBILITY OF THE G.C. TO VERIFY THAT THE LIMESTONE IS UNIFORMLY WHITE IN COLOR AFTER PLACEMENT

1 SITE SURFACING DETAIL
SCALE: N.T.S.

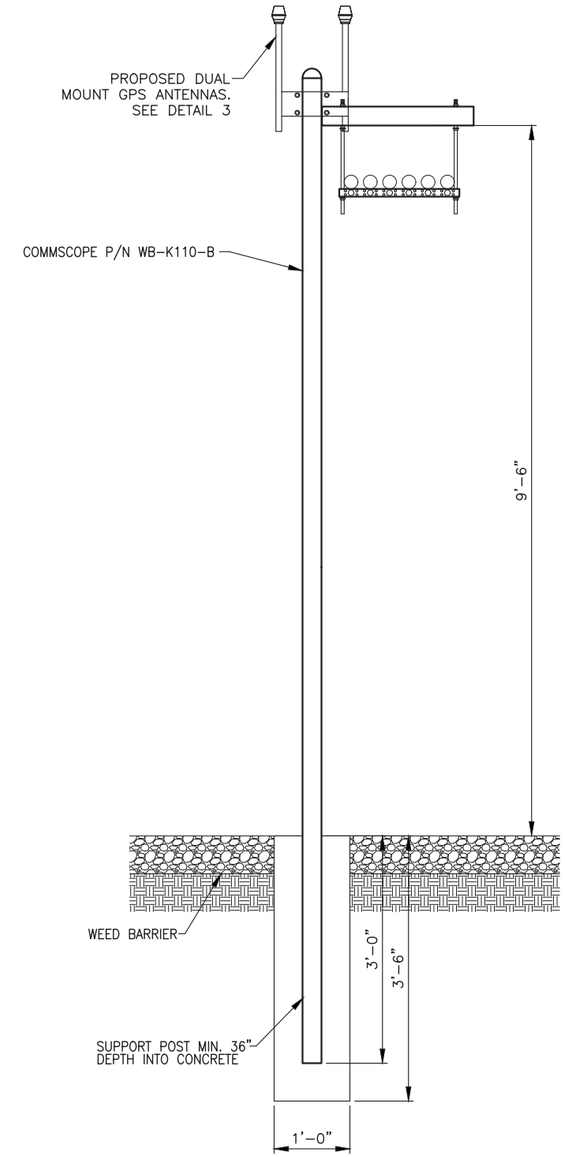


3 DUAL GPS MOUNT DETAIL
SCALE: N.T.S.



NOTES:
1. ALL AGGREGATE SHALL BE COMPACTED PER PENNDOT SECTION 350.
2. THE TURN-AROUND AREA SHALL BE CONSTRUCTED PER THE TYPICAL ACCESS DRIVE SECTION AS SHOWN ABOVE.
3. SLOPE GRAVEL SURFACE TO PROVIDE POSITIVE DRAINAGE AND MATCH EXISTING GROUND SURFACE SLOPE.

2 ACCESS DRIVE DETAIL
SCALE: N.T.S.



4 ICE BRIDGE SECTION
SCALE: N.T.S.

vertical bridge
T-Mobile

PROJECT INFORMATION:

US-KY-5152
9LV0389A
FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133
MONROE COUNTY

CURRENT ISSUE DATE:
04/24/23

ISSUED FOR:
ZONING

REV.:	DATE:	ISSUED FOR:	BY:
A	04/24/23		GNP

CONSULTANT:

FORTUNE
WIRELESS INC.
5511 WEST 79TH STREET
INDIANAPOLIS, IN 46278
(317) 532-1374

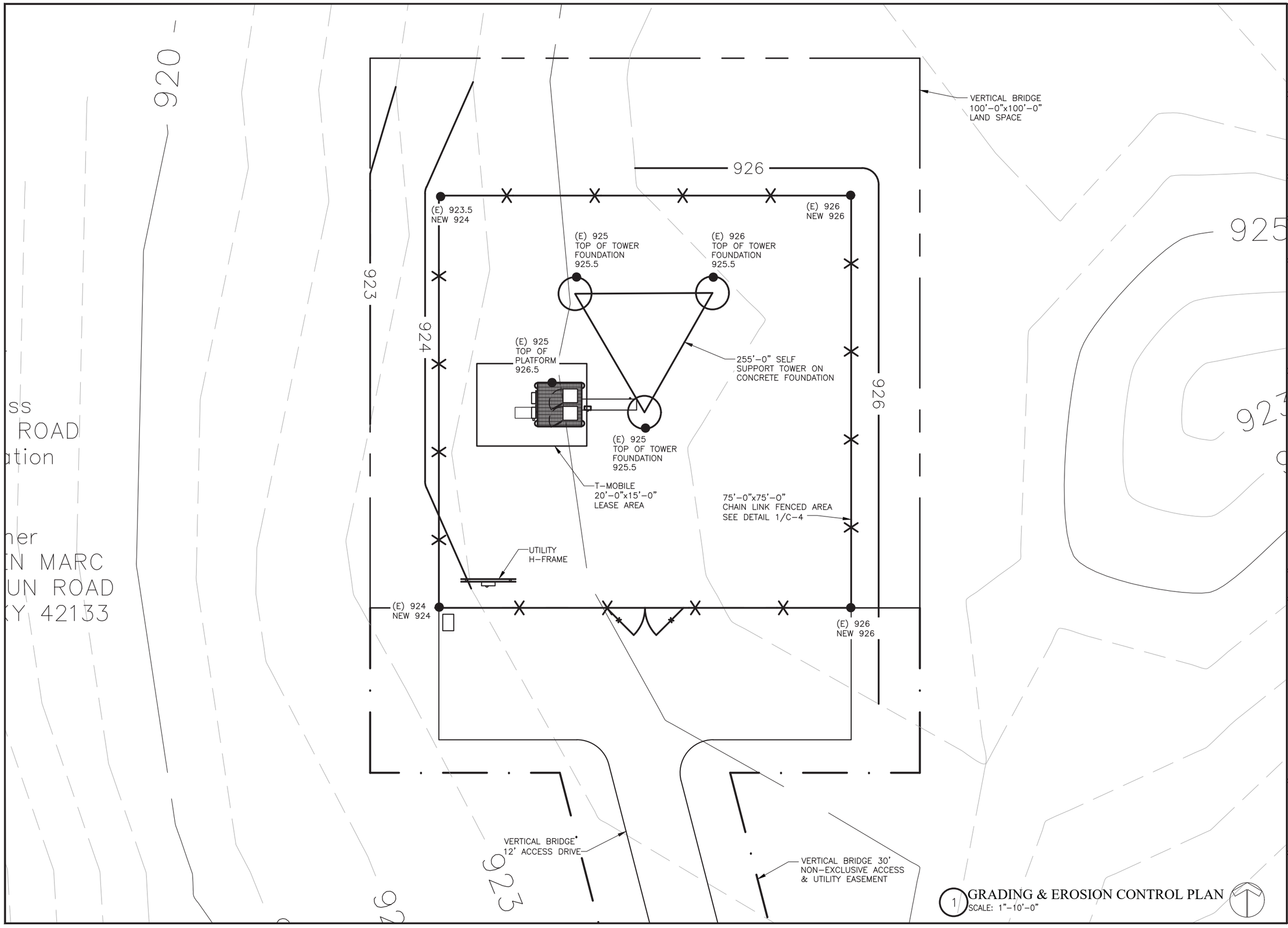
DRAWN BY:	CHK.:	APV.:
GNP	DEK	DEK

LICENSER:

STATE OF KENTUCKY
DAVID E. KASPER
31578
LICENSED PROFESSIONAL ENGINEER
09/24/23

SHEET TITLE:
CIVIL DETAILS

SHEET NUMBER:	REVISION:
C-4	A -



1 GRADING & EROSION CONTROL PLAN
SCALE: 1"-10'-0"

vertical bridge
T-Mobile

PROJECT INFORMATION:

US-KY-5152
9LV0389A
FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133
MONROE COUNTY

CURRENT ISSUE DATE:
04/24/23

ISSUED FOR:
ZONING

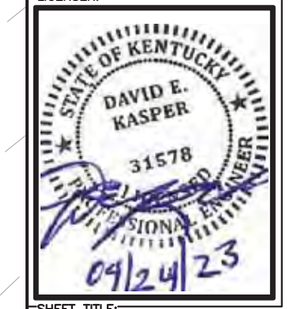
REV.:	DATE:	ISSUED FOR:	BY:
A	04/24/23		GNP

CONSULTANT:

FORTUNE
WIRELESS INC.
5511 WEST 79TH STREET
INDIANAPOLIS, IN 46278
(317) 532-1374

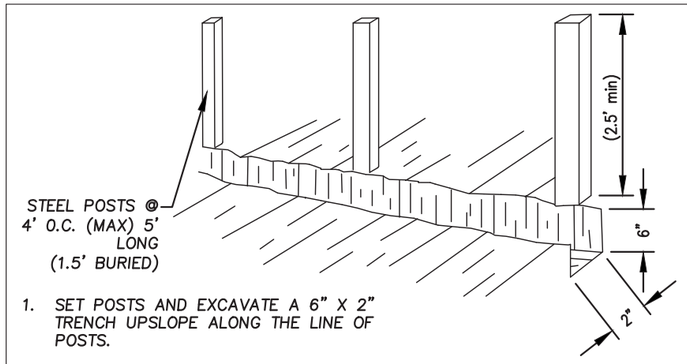
DRAWN BY:	CHK.:	APV.:
GNP	DEK	DEK

LICENSER:

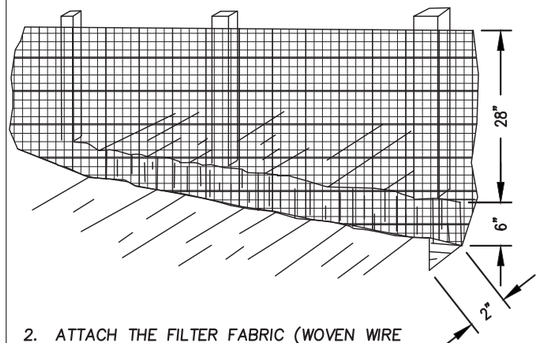


SHEET TITLE:
GRADING & EROSION
CONTROL PLAN

SHEET NUMBER:	REVISION:
C-5	A



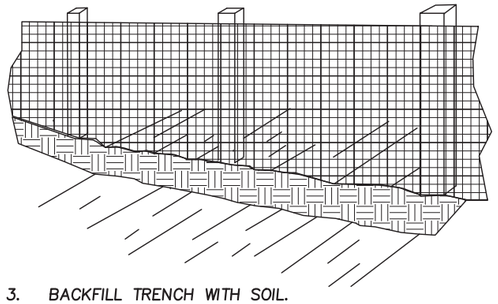
1. SET POSTS AND EXCAVATE A 6" X 2" TRENCH UPSLOPE ALONG THE LINE OF POSTS.



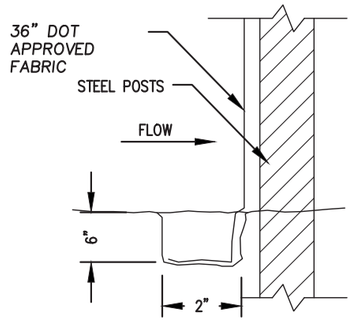
2. ATTACH THE FILTER FABRIC (WOVEN WIRE BACKING) TO THE POSTS AND EXTEND IT INTO THE TRENCH. FILTER FABRIC SHALL MEET THE REQUIREMENTS OF THE DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATION (MOST RECENT EDITION). FABRIC SHALL BE ON THE DOT APPROVAL PRODUCTS LIST.

TYPE "C" FENCE

TENSILE STRENGTH (lbs. MIN.) WARP–260
(ASTM D–4632FILL–180
ELONGATION (% MAX.) 40
(ASTM D–4632)
AOS (APPARENT OPENING SIZE) #30
(MAX. SIEVE SIZE) (ASTM D 4751)
FLOW RATE (GAL./MIN./SQ.FT) 70
(GDT–87)
ULTRAVIOLET STABILITY 80
(ASTM D–4632 AFTER 300 HOURS
WEATHERING IN ACCORDANCE WITH
ASTM D–4355)
BURSTING STRENGTH (PSI MIN.) 175
(ASTM D–3786 DIAPHRAGM
BURSTING STRENGTH TESTER)
MINIMUM FABRIC WIDTH (INCHES) 36



3. BACKFILL TRENCH WITH SOIL.



SILT FENCE SECTION

MAINTENANCE REQUIREMENTS

SEDIMENT SHALL BE REMOVED ONCE IT HAS ACCUMULATED TO ONE–HALF THE ORIGINAL HEIGHT OF THE BARRIER. FILTER FABRIC SHALL BE REPLACED WHENEVER IT HAS DETERIORATED TO SUCH AN EXTENT THAT THE EFFECTIVENESS OF THE FABRIC IS REDUCED (APPROXIMATELY 6 MONTHS). TEMPORARY SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. ALL SEDIMENT ACCUMULATED AT THE BARRIER SHALL BE REMOVED AND PROPERLY DISPOSED OF BEFORE THE BARRIER IS REMOVED.

Sd1–C TYPE C SILT FENCE
N.T.S.

verticalbridge
T··Mobile·

PROJECT INFORMATION:

US-KY-5152
9LV0389A
FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133
MONROE COUNTY

CURRENT ISSUE DATE:
04/24/23

ISSUED FOR:
ZONING

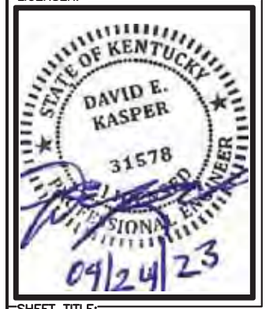
REV.:	DATE:	ISSUED FOR:	BY:
A	04/24/23		GNP

CONSULTANT:

FORTUNE
WIRELESS INC.
5511 WEST 79TH STREET
INDIANAPOLIS, IN 46278
(317) 532–1374

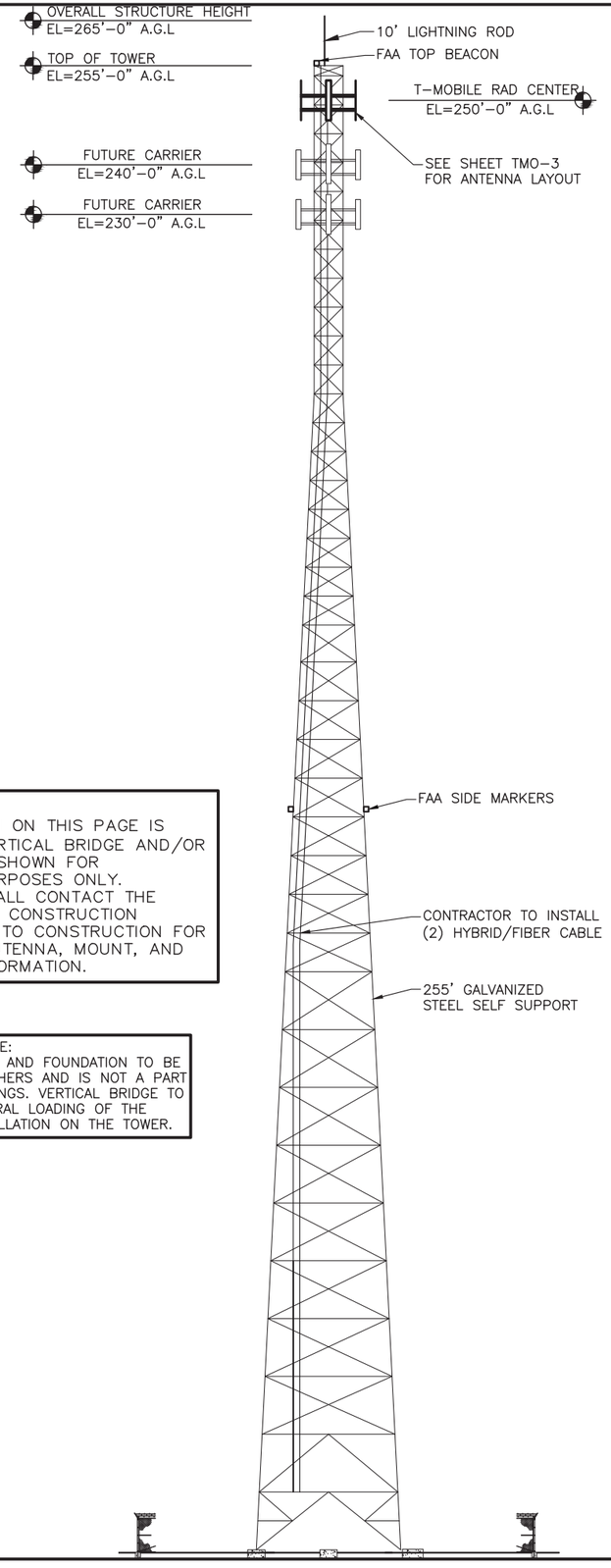
DRAWN BY:	CHK.:	APV.:
GNP	DEK	DEK

LICENSER:



SHEET TITLE:
EROSION CONTROL DETAIL

SHEET NUMBER:	REVISION:
C-6	A –



NOTE:
ALL INFORMATION ON THIS PAGE IS PROVIDED BY VERTICAL BRIDGE AND/OR OTHERS AND IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. CONTRACTOR SHALL CONTACT THE VERTICAL BRIDGE CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION FOR ALL DETAILED ANTENNA, MOUNT, AND COAX CABLE INFORMATION.

STRUCTURAL NOTE:
TOWER, MOUNTS, AND FOUNDATION TO BE DESIGNED BY OTHERS AND IS NOT A PART OF THESE DRAWINGS. VERTICAL BRIDGE TO VERIFY STRUCTURAL LOADING OF THE PROPOSED INSTALLATION ON THE TOWER.

1 NEW TOWER ELEVATION
SCALE: N.T.S.

verticalbridge
T-Mobile

PROJECT INFORMATION:

US-KY-5152
9LV0389A
FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133
MONROE COUNTY

CURRENT ISSUE DATE:

04/24/23

ISSUED FOR:

ZONING

REV.:	DATE:	ISSUED FOR:	BY:
A	04/24/23		GNP

CONSULTANT:

FORTUNE
WIRELESS INC.
5511 WEST 79TH STREET
INDIANAPOLIS, IN 46278
(317) 532-1374

DRAWN BY:	CHK.:	APV.:
GNP	DEK	DEK

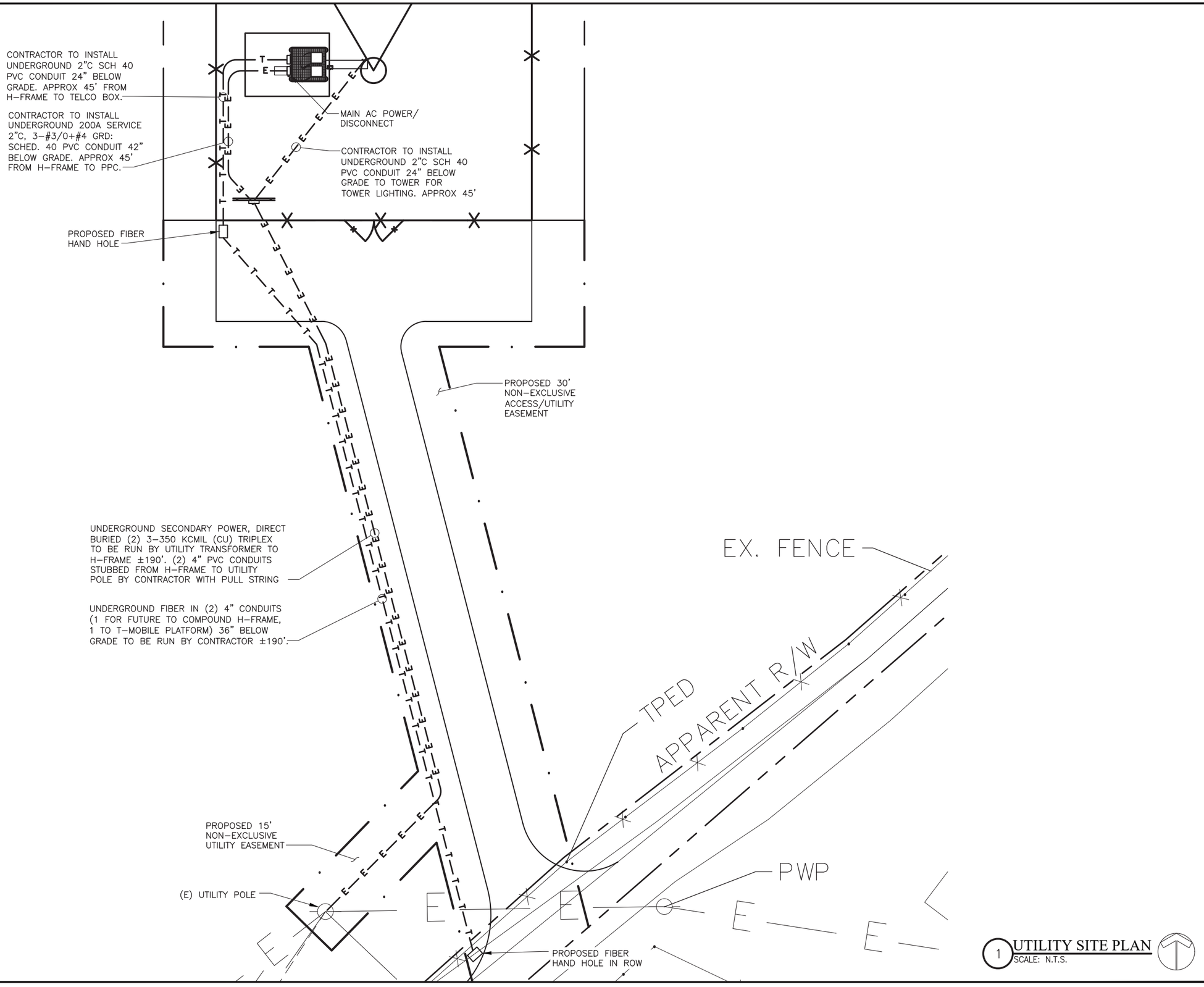
LICENSER:

STATE OF KENTUCKY
DAVID E. KASPER
31578
LICENSED PROFESSIONAL ENGINEER
09/24/23

SHEET TITLE:

ANTENNA & TOWER
ELEVATION DETAIL

SHEET NUMBER:	REVISION:
C-7	A



1 UTILITY SITE PLAN
SCALE: N.T.S.

verticalbridge
T-Mobile

PROJECT INFORMATION:

US-KY-5152
9LV0389A
FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133
MONROE COUNTY

CURRENT ISSUE DATE:

04/24/23

ISSUED FOR:

ZONING

REV.:	DATE:	ISSUED FOR:	BY:
A	04/24/23		GNP

CONSULTANT:

FORTUNE
WIRELESS INC.
5511 WEST 79TH STREET
INDIANAPOLIS, IN 46278
(317) 532-1374

DRAWN BY:	CHK.:	APV.:
GNP	DEK	DEK

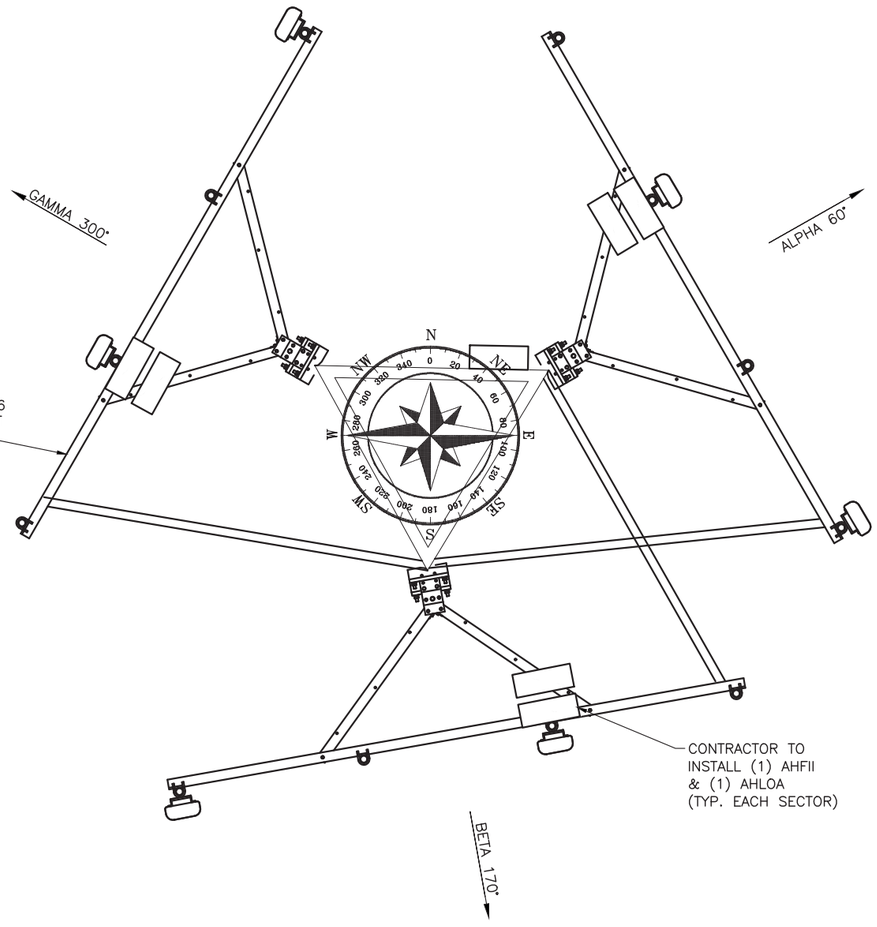
LICENSER:

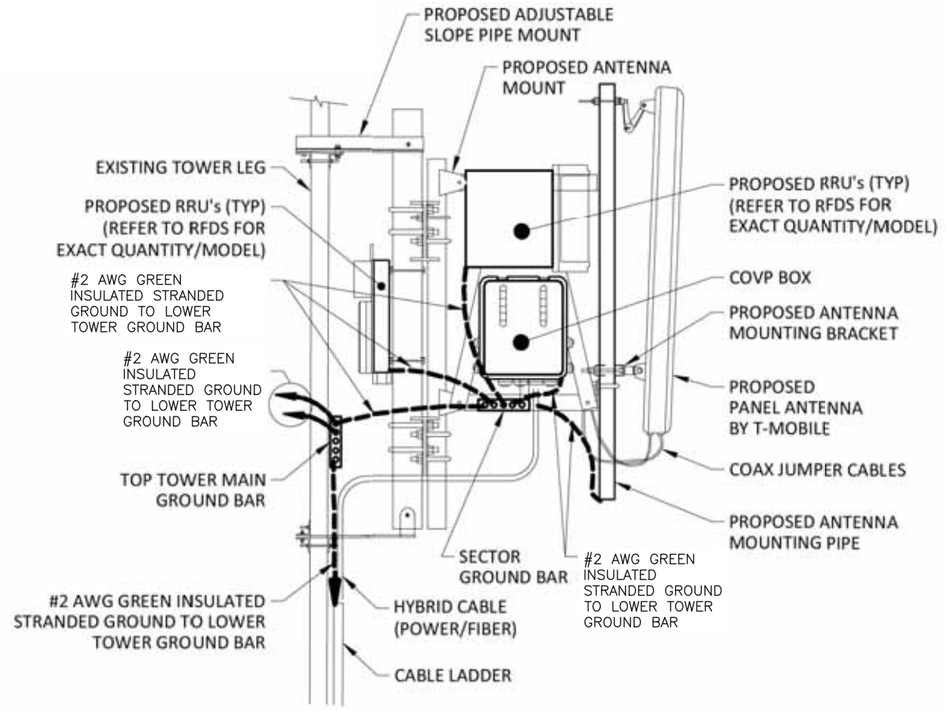
STATE OF KENTUCKY
DAVID E. KASPER
31578
LICENSED PROFESSIONAL ENGINEER
04/24/23

SHEET TITLE:

UTILITY SITE PLAN

SHEET NUMBER:	REVISION:
E-0	A





ANTENNA/RRU MOUNT DIAGRAM

SCALE: NOT TO SCALE

verticalbridge

T-Mobile

PROJECT INFORMATION:

US-KY-5152
9LV0389A
FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133
MONROE COUNTY

CURRENT ISSUE DATE:

04/24/23

ISSUED FOR:

ZONING

REV.:	DATE:	ISSUED FOR:	BY:
A	04/24/23		GNP

CONSULTANT:

FORTUNE
WIRELESS INC.
5511 WEST 79TH STREET
INDIANAPOLIS, IN 46278
(317) 532-1374

DRAWN BY:	CHK.:	APV.:
GNP	DEK	DEK

LICENSER:

STATE OF KENTUCKY
DAVID E. KASPER
31578
LICENSED PROFESSIONAL ENGINEER
04/24/23

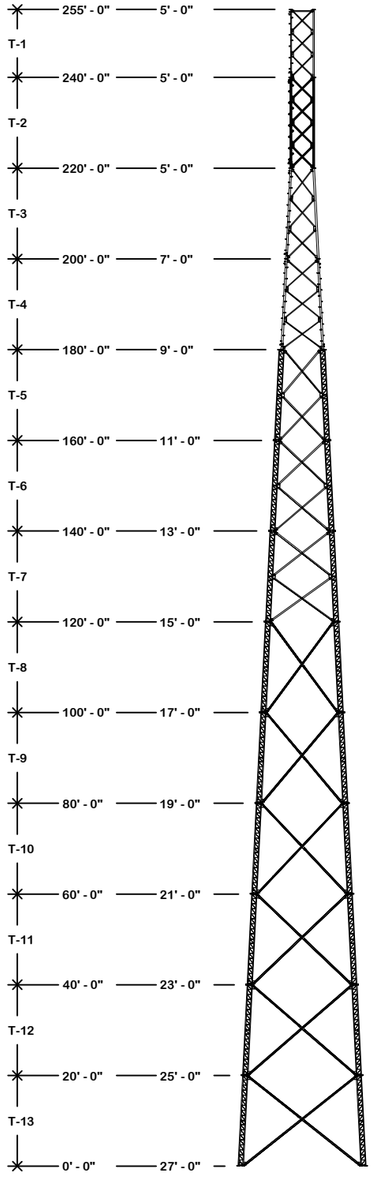
SHEET TITLE:

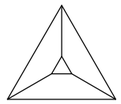
ANTENNA PLAN

SHEET NUMBER:	REVISION:
TMO-3	A

TOWER & FOUNDATION PLANS

**[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK,
TOWER & FOUNDATION PLANS BEGIN ON NEXT PAGE]**





SEE PAGE 2 FOR
APPURTENANCES

TOWER DESIGN CRITERIA

Design Standard:	TIA-222-G*
Design Wind Speeds:	105 mph (3-second gust) basic wind speed per ASCE 7-16
	30 mph (0.75" ice)
Service Wind Speed:	60 mph (deflection only)
Risk Category:	II
Exposure Category:	C
Topographic Category:	1
Crest Height:	0 ft.
Latitude:	36.698969
Longitude:	-85.841622

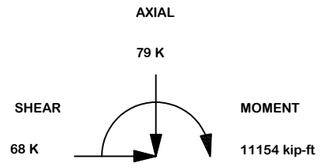
MATERIAL STRENGTHS

Solid Rod	A36	(rod dia. <3/4")
	A572 Gr.50	(3/4" thru 1" dia.)
	A572 Gr.58	(>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-325/A-449	(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. 58 OR 58 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. THE CONTRACTOR MUST BE EXPERIENCED IN THE PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN.
9. (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 ECCESSIVE 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.
10. THE CONTRACTOR SHALL VERIFY MATERIALS TO BE FREE FROM FAULTS AND DEFECTS UPON ARRIVAL,AND IN CONFORMANCE WITH THE SUPPLIED DOCUMENTS. ALL SUBSTITUTIONS MUST BE DULY APPROVED AND AUTHORIZED IN WRITING BY VALMONT ENGINEERING PRIOR TO FABRICATION AND INSTALLATION. VALMONT IS NOT RESPONSIBLE FOR MATERIALS DAMAGED DURING UNLOADING OR CONSTRUCTION.
11. THE CONTRACTOR SHALL MAINTAIN A CHECK OF TOWER PLUMBNESS DURING ALL PHASES OF CONSTRUCTION WORK. THE TOWER SHALL BE PLUMB WITHIN THE TOLERANCE SPECIFIED IN THE LATEST REVISION OF THE TIA - STANDARD. MEANS AND METHODS ARE FULL RESPONSIBILITY OF THE CONTRACTOR. AFTER COMPLETION OF THE TOWER ERECTION, WITH ALL JOINTS TIGHT, AND ALL APPURTENANCES INSTALLED, THE CONTRACTOR SHALL MAKE A FINAL CHECK OF TOWER PLUMBNESS. CONTRACTOR SHALL SUBMIT DOCUMENTS TO THE THIRD PARTY INSPECTOR APPOINTED BY THE TOWER OWNER AS REQUIRED.
12. ANTENNAS, MOUNTS, MOUNT ACCESSORIES ETC. SHOULD NOT BE ATTACHED TO THE DIAGONALS SHOWN ON THIS DRAWING.

Maximum Base Reactions



MAX. LEG REACTIONS:

DOWN:	503 K
UPLIFT:	-446 K
SHEAR:	45 K
TORQUE	48 kip-ft
REACTIONS	105 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	240' - 255'	5.0'	3	2.50"	V	4 x 3/4"	1/8" x 2" x 2"	1/4" x 3" x 3"	1 x 3/4 "	759.78
T2	220' - 240'	5.0'	4	3.00"	V	6 x 3/4"	3/16" x 2" x 2"		1 x 3/4 "	1334.45
T3	200' - 220'	7.0'	3	5.00"	V	8 x 3/4"	3/16" x 2" x 2"		1 x 3/4 "	1596.63
T4	180' - 200'	9.0'	3	6.00"	V	6 x 1"	3/16" x 2" x 2"		1 x 3/4 "	2151.30
T5	160' - 180'	11.0'	2	1.75"	12BDFH	6 x 1 1/4"	3/16" x 2-1/2" x 2-1/2"		1 x 1 "	2814.27
T6	140' - 160'	13.0'	2	1.75"	12BDFH	6 x 1 1/4"	1/4" x 2-1/2" x 2-1/2"		1 x 1 "	3061.83
T7	120' - 140'	15.0'	2	1.75"	12BDFH	6 x 1 1/4"	3/16" x 3" x 3"		1 x 1 "	3076.47
T8	100' - 120'	17.0'	1	2.00"	12BDH2	12 x 1"	3/16" x 3" x 3"		1 x 7/8 "	3989.16
T9	80' - 100'	19.0'	1	2.00"	12BDH2	12 x 1"	3/16" x 3" x 3"		1 x 7/8 "	4107.06
T10	60' - 80'	21.0'	1	2.25"	12BDH2	12 x 1"	3/16" x 3" x 3"		1 x 7/8 "	4690.02
T11	40' - 60'	23.0'	1	2.25"	12BDH2	12 x 1"	3/16" x 3" x 3"		1 x 7/8 "	4757.49
T12	20' - 40'	25.0'	1	2.25"	12BDH2	12 x 1"	3/16" x 3" x 3"		1 x 7/8 "	4826.73
T13	0' - 20'	27.0'	1	2.50"	12BDH2	4 x 1 3/4"	1/4" x 3" x 3"		1 x 7/8 "	6267.36

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
REVISION HISTORY				

SITE
US-KY-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

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	J_S	J_S	8/8/2023

ENG. FILE NO. 591478

DWG. NO. 296280T

DESIGNED APPURTENANCE LOADING	
TYPE	ELEVATION
(1) 5/8" X 10' LIGHTNING ROD	255.0000'
(1) BEACON	255.0000'
(1) 40,000 SQ IN (277.78 SQ FT EPA)	250.0000'
(1) 30,000 SQ IN (208.33 SQ FT EPA)	240.0000'
(1) 30,000 SQ IN (208.33 SQ FT EPA)	230.0000'
(1) 30,000 SQ IN (208.33 SQ FT EPA)	220.0000'
(3) OB LIGHT	127.5000'

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE

REVISION HISTORY

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	J_S	J_S	8/8/2023

SITE

US-KY-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION

Tower View Page 2

ENG. FILE NO.

591478

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

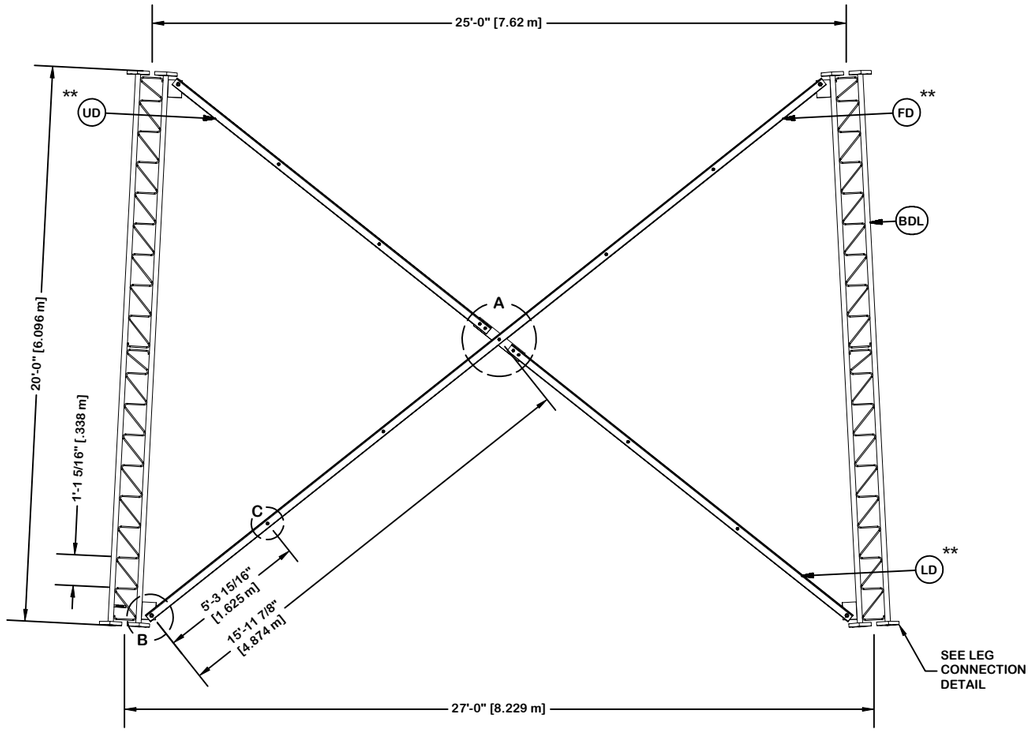
DWG. NO.

296280T

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,

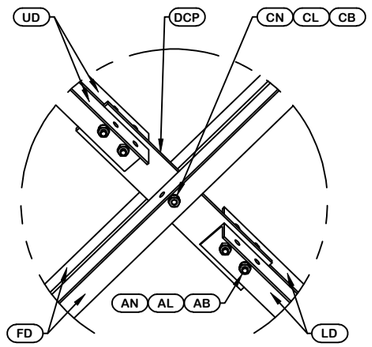
* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES



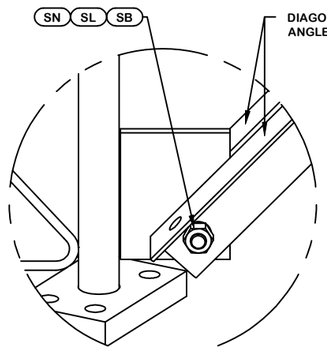
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	281171	#12 BASE SECTION - 2 1/2" LEG - 1/2" BRACE W/ (1)	1424.950	4274.850
UD	6	295732	U-27 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	74.370	446.220
LD	6	295731	U-27 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	80.710	484.260
FD	6	295730	U-27 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	160.590	963.540
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	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
			Total Wt	6267.36 lb [2845.44 kg]	

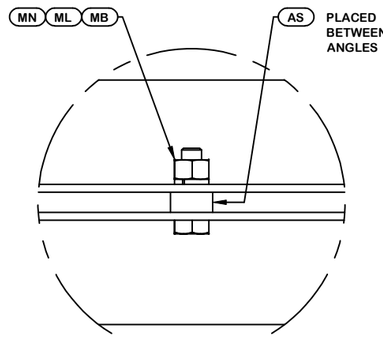
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



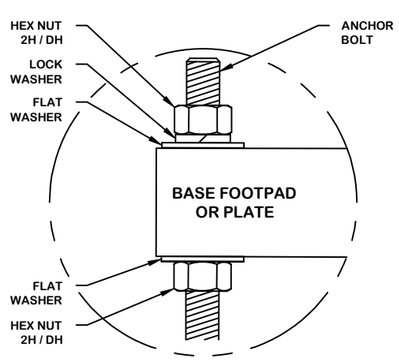
DETAIL A
ANGLE INTERSECTION CONNECTION



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-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION
SECTION U-27.0 (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	J_S	J_S	8/8/2023

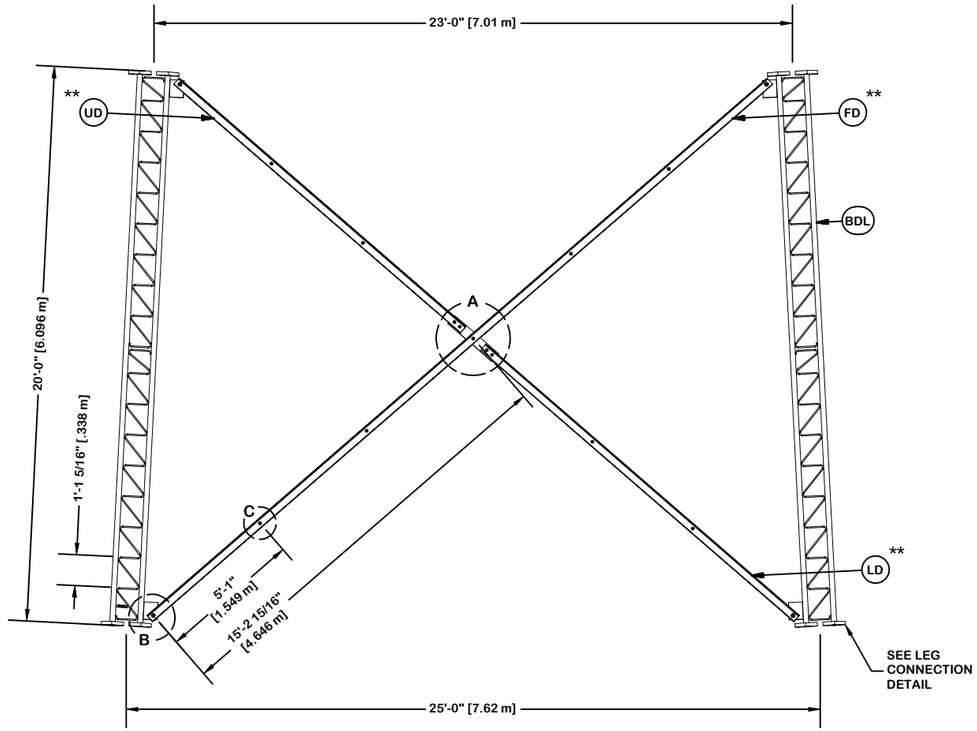
ENG. FILE NO. 591478

DWG. NO. 296280T

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,

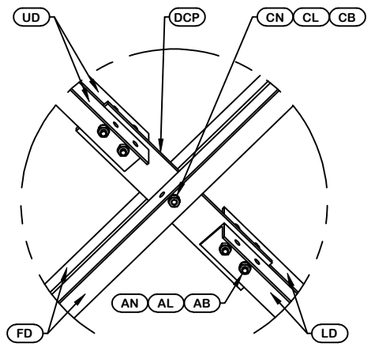
* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES



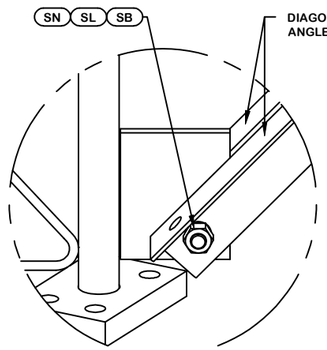
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195960	#12 LEG SECTION - 2-1/4" LEG - 1/2" BRACE - 7/8" B	1100.520	3301.560
UD	6	265757	U-25 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	52.910	317.460
LD	6	265756	U-25 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	57.860	347.160
FD	6	265755	U-25 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	114.830	688.980
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	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	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		4826.73 lb [2191.38 kg]

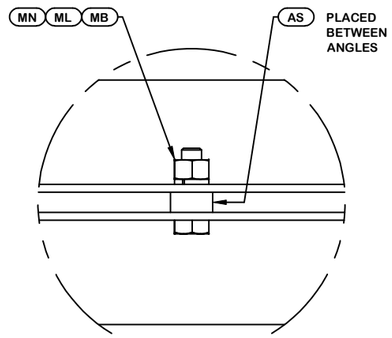
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



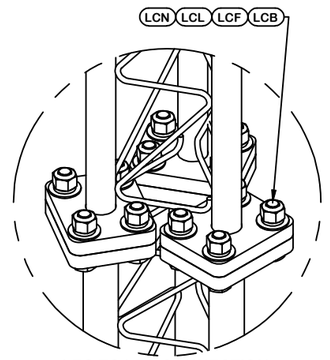
DETAIL A
ANGLE INTERSECTION CONNECTION



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-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION

SECTION U-25.0 (20' - 40' 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	J_S	J_S	8/8/2023

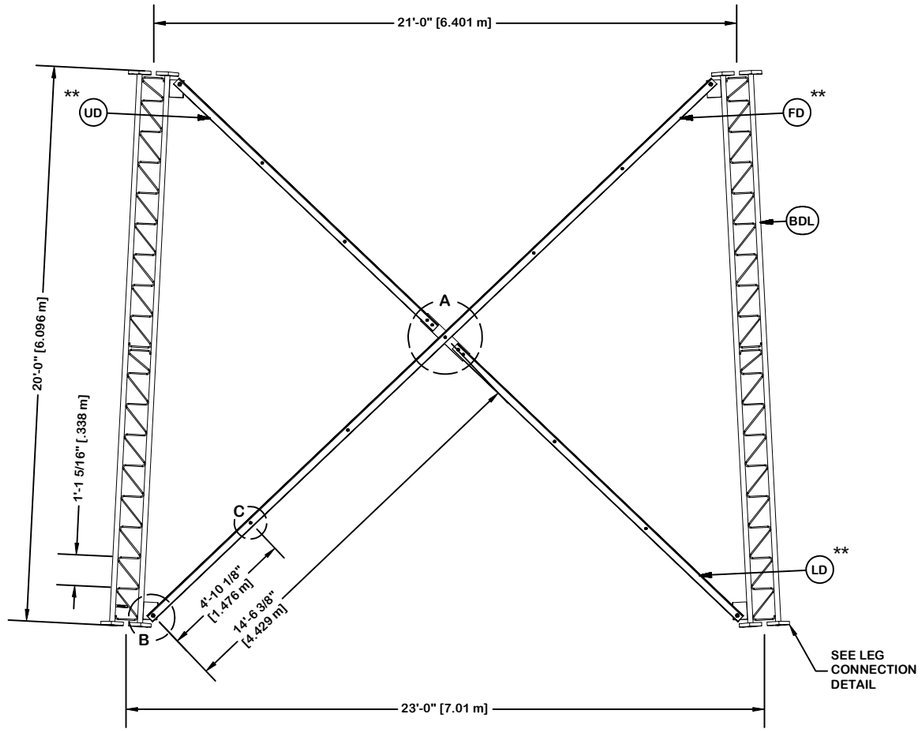
ENG. FILE NO. 591478

DWG. NO. 296280T

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,

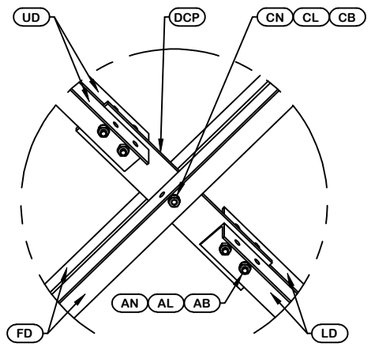
* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES



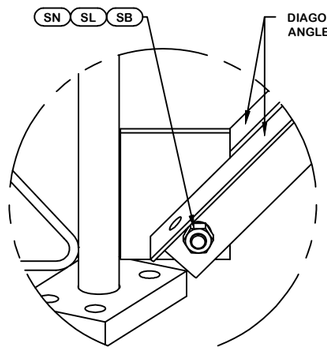
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195960	#12 LEG SECTION - 2-1/4" LEG - 1/2" BRACE - 7/8" B	1100.520	3301.560
UD	6	265733	U-23 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	49.920	299.520
LD	6	265732	U-23 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	55.080	330.480
FD	6	265731	U-23 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	109.060	654.360
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	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	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		4757.49 lb [2159.94 kg]

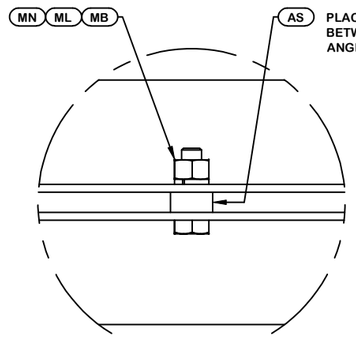
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



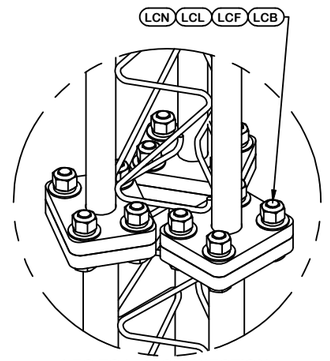
DETAIL A
ANGLE INTERSECTION CONNECTION



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-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION

SECTION U-23.0 (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	J_S	J_S	8/8/2023

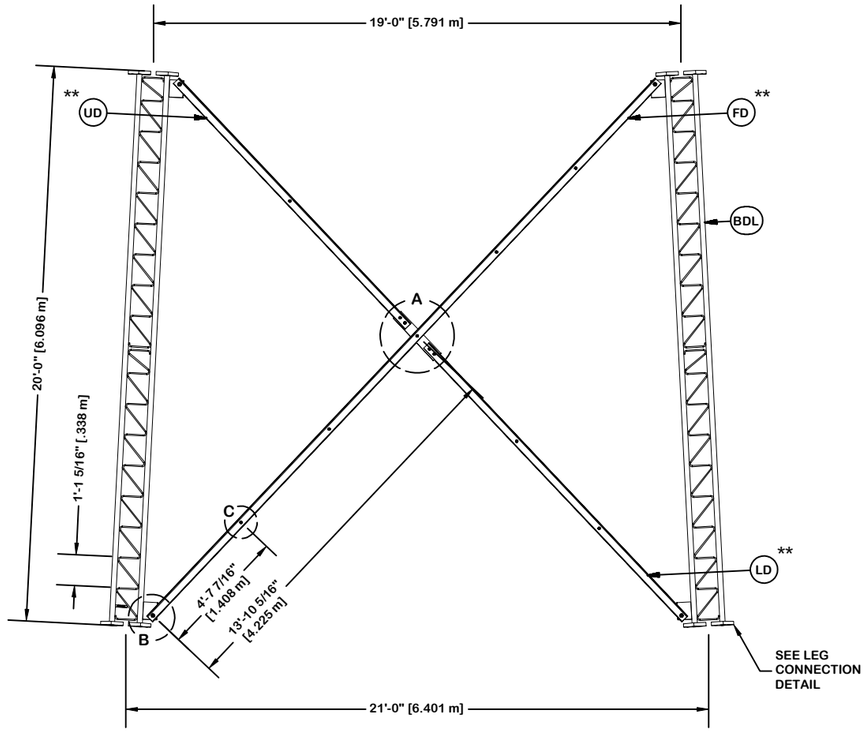
ENG. FILE NO. 591478

DWG. NO. 296280T

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,

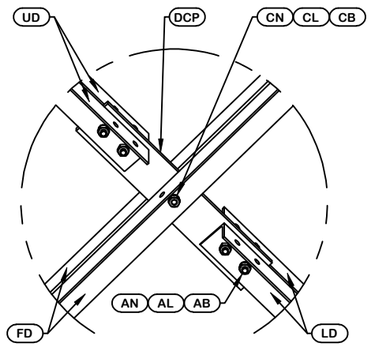
* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES



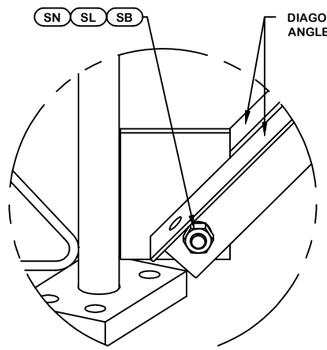
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195960	#12 LEG SECTION - 2-1/4" LEG - 1/2" BRACE - 7/8" B	1100.520	3301.560
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	237658	RING FILL SPACER 5/8" THICK 1.049" HOLE	0.090	1.890
MB	21	161895	5/8"-11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.260	5.460
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	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		4690.02 lb [2129.31 kg]

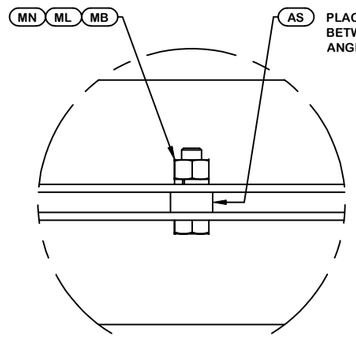
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



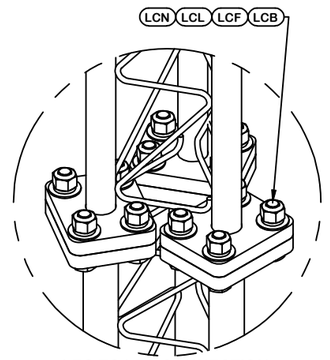
DETAIL A
ANGLE INTERSECTION CONNECTION



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-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION

SECTION U-21.0 (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	J_S	J_S	8/8/2023

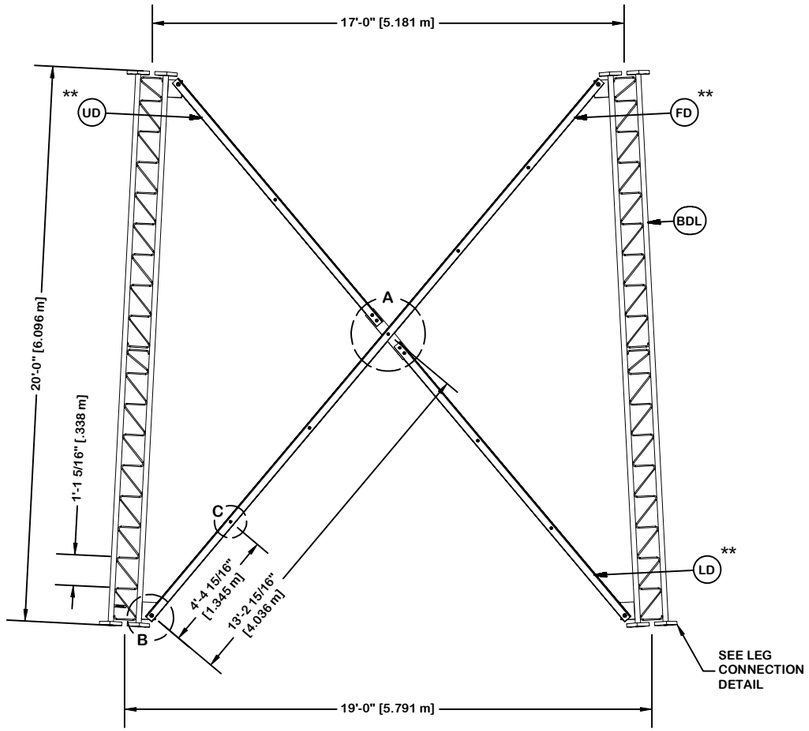
ENG. FILE NO. 591478

DWG. NO. 296280T

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,

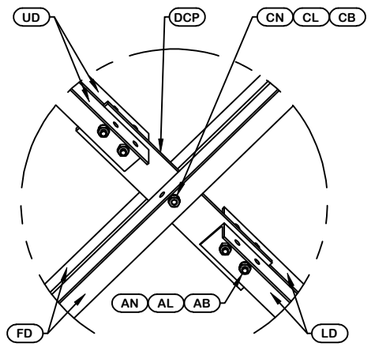
* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES



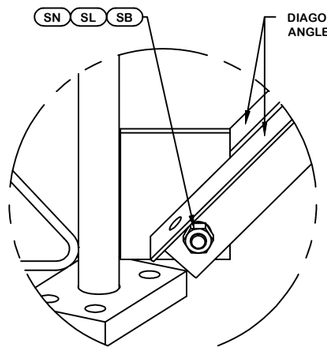
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195639	#12 LEG SECTION - 2" LEG - 1/2" BRACE - 7/8" BOLT	926.920	2780.760
UD	6	265682	U-19 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	44.260	265.560
LD	6	265681	U-19 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	50.060	300.360
FD	6	265680	U-19 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	98.380	590.280
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	237658	RING FILL SPACER 5/8" THICK 1.049" HOLE	0.090	1.890
MB	21	161895	5/8"-11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.260	5.460
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	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		4107.06 lb [1864.64 kg]

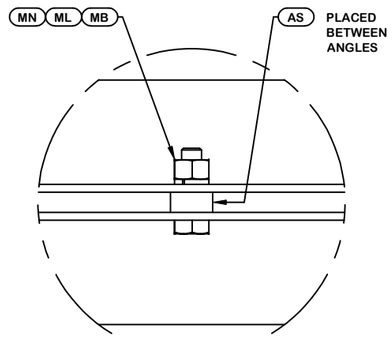
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



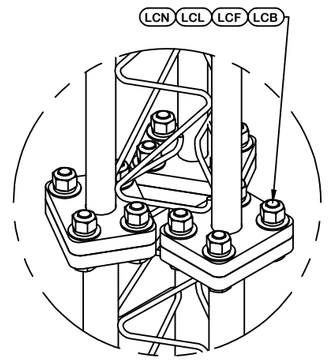
DETAIL A
ANGLE INTERSECTION CONNECTION



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-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION

SECTION U-19.0 (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	J_S	J_S	8/8/2023

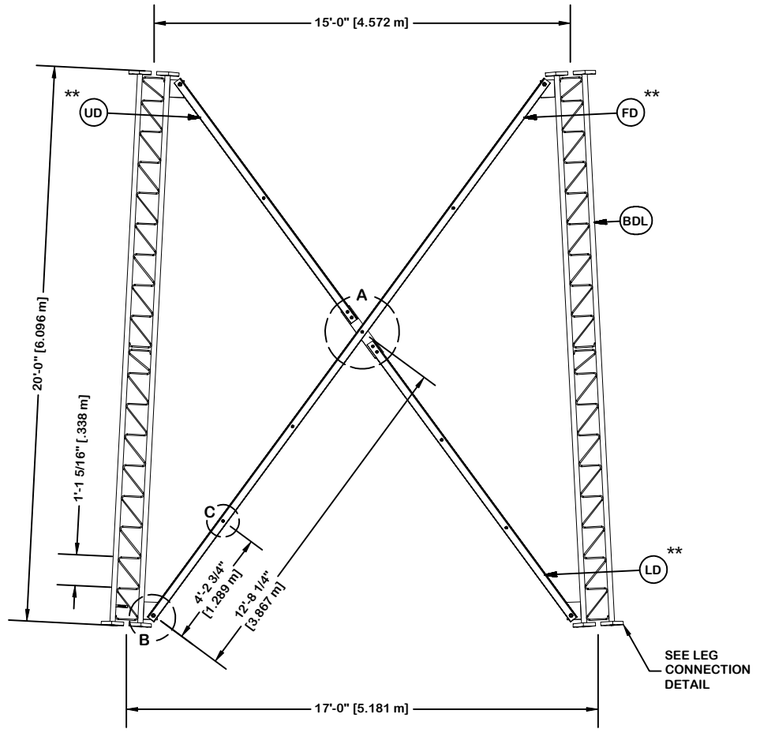
ENG. FILE NO. 591478

DWG. NO. 296280T

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,

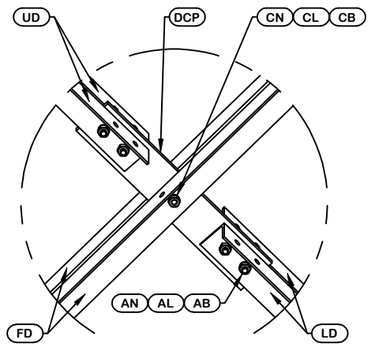
* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES



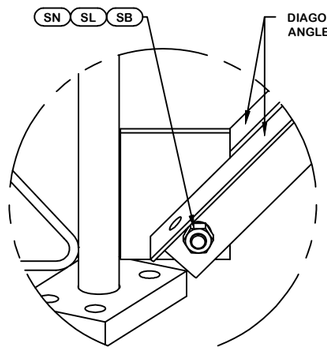
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195637	#12 LEG SECT - 2" TO 1-3/4" TRANS LEG - 1/2" BRACE	906.870	2720.610
UD	6	265655	U-17 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	41.860	251.160
LD	6	265654	U-17 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	47.900	287.400
FD	6	265653	U-17 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	93.560	561.360
ML	18	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.360
MN	18	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	2.160
AS	18	237658	RING FILL SPACER 5/8" THICK 1.049" HOLE	0.090	1.620
MB	18	161895	5/8"-11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.260	4.680
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	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		3989.16 lb [1811.11 kg]

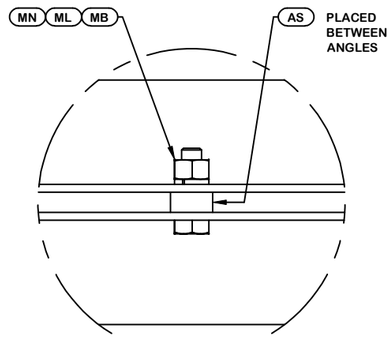
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



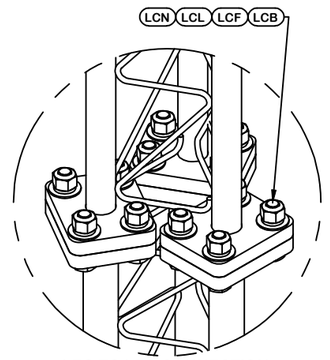
DETAIL A
ANGLE INTERSECTION CONNECTION



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-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION
SECTION U-17.0 (100' - 120' 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	J_S	J_S	8/8/2023

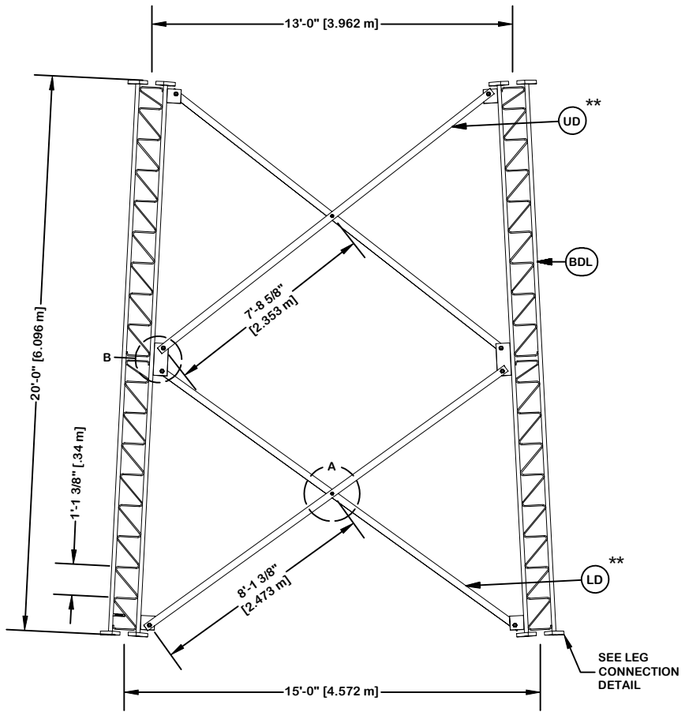
ENG. FILE NO. 591478

DWG. NO. 296280T

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

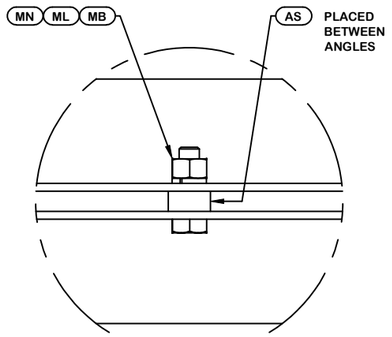
** DIAGONAL ANGLES MUST BE INSTALLED
WITH THE NON-BOLTED FACE UP,
THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



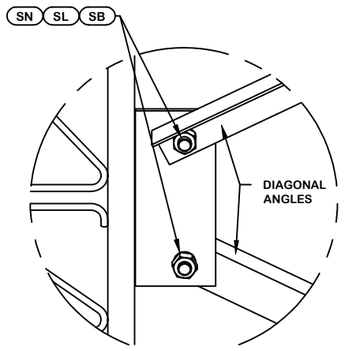
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195217	#12 LEG SECTION - 1-3/4" LEG - 1/2" BRACE - 1" BOL	746.710	2240.130
LD	6	126815	U-16 UPPER DIAGONAL - 3" x 3" x 3/16" ANGLE (A572	62.880	377.280
AS	6	104291	RING FILL SPACER 1/2" THICK 1.049" HOLE	0.070	0.420
MN	6	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	1.140
ML	6	312153	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	172265	1"-8 X 2-1/4" A-325 BOLT WITH 1-3/4" THREAD	0.840	20.160
UD	6	126812	U-14 LOWER DIAGONAL - 3" x 3" x 3/16" ANGLE (A572	59.730	358.380
LCB	18	222022	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	312507	1-1/4"-7 HOT DIPPED GALVANIZED NUT	0.730	13.140
			Total Wt	3076.47 lb [1396.74 kg]	

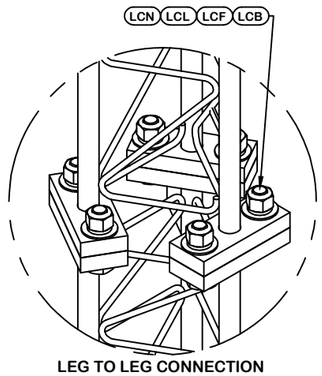
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



DETAIL A
ANGLE INTERSECTION CONNECTION



DETAIL B
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-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION
SECTION U-15.0 (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	J_S	J_S	8/8/2023

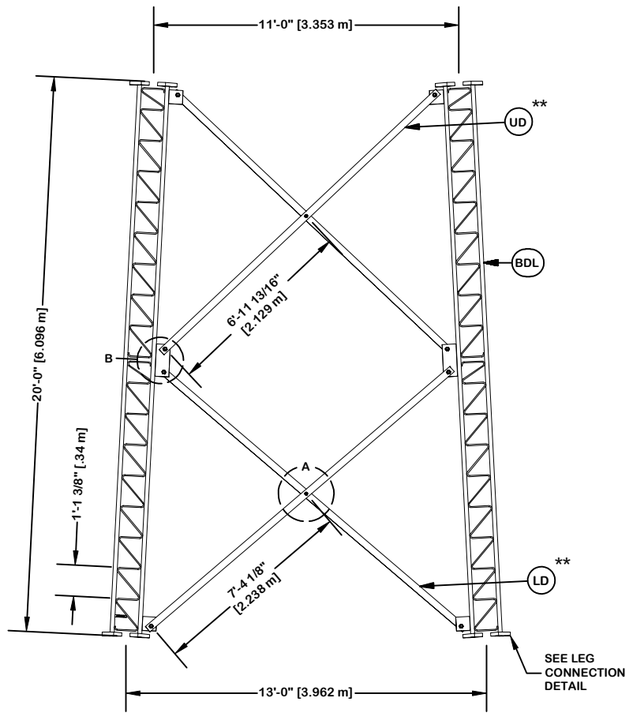
ENG. FILE NO. 591478

DWG. NO. 296280T

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

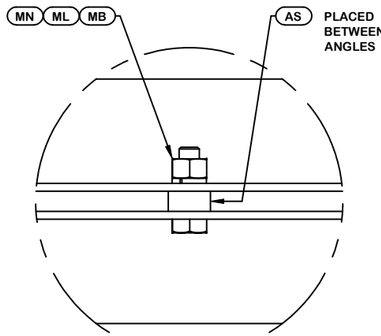
** DIAGONAL ANGLES MUST BE INSTALLED
WITH THE NON-BOLTED FACE UP,
THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



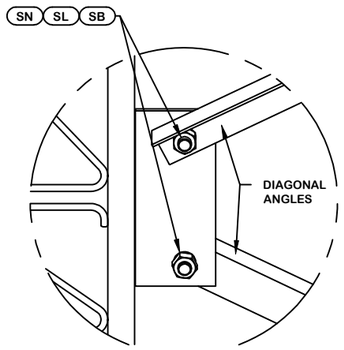
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195217	#12 LEG SECTION - 1-3/4" LEG - 1/2" BRACE - 1" BOL	746.710	2240.130
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 1.049" HOLE	0.070	0.420
MN	6	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	1.140
ML	6	312153	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	172265	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	18	222022	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	312507	1-1/4"-7 HOT DIPPED GALVANIZED NUT	0.730	13.140
			Total Wt	3061.83 lb [1390.10 kg]	

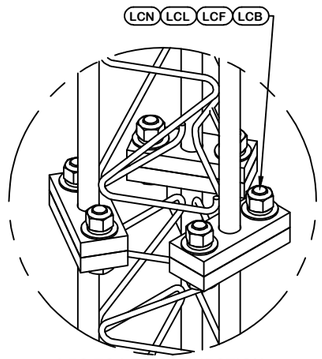
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



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-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION
SECTION U-13.0 (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	J_S	J_S	8/8/2023

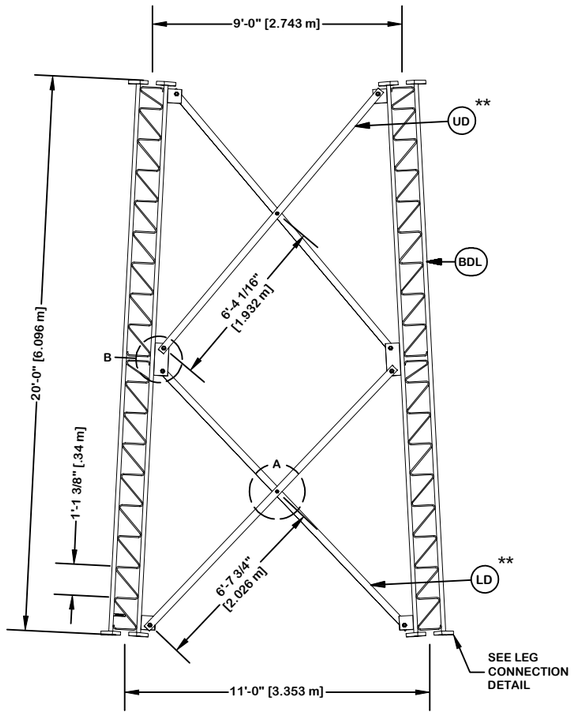
ENG. FILE NO. 591478

DWG. NO. 296280T

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

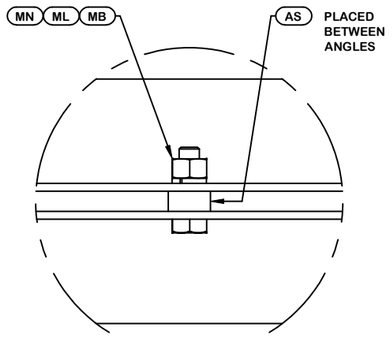
** DIAGONAL ANGLES MUST BE INSTALLED
WITH THE NON-BOLTED FACE UP,
THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



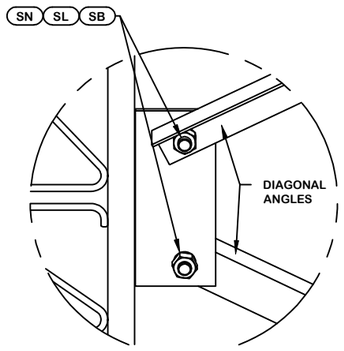
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195213	#12 LEG SECT - 1-3/4" TO 1-1/2" TRANS LEG - 1/2" B	739.890	2219.670
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 1.049" HOLE	0.070	0.420
MN	6	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	1.140
ML	6	312153	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	172265	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	222022	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	312507	1-1/4"-7 HOT DIPPED GALVANIZED NUT	0.730	13.140
			Total Wt	2814.27 lb [1277.70 kg]	

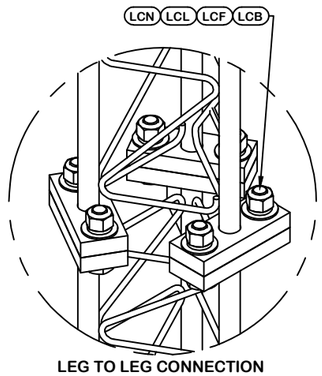
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



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-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION
SECTION U-11.0 (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	J_S	J_S	8/8/2023

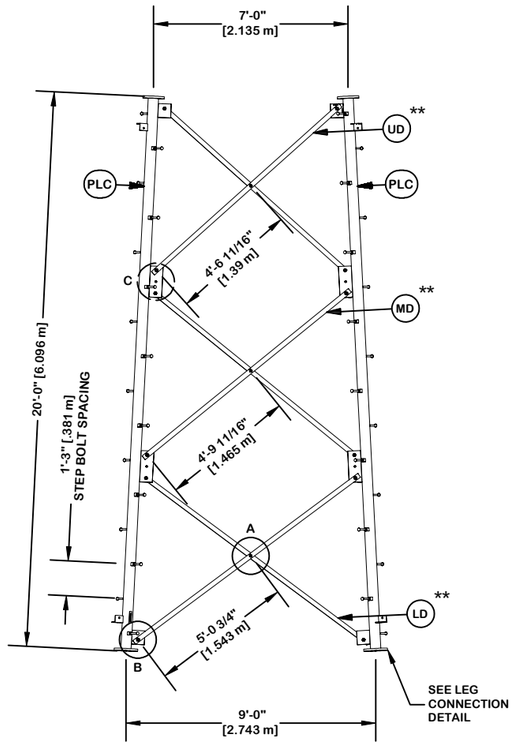
ENG. FILE NO. 591478

DWG. NO. 296280T

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

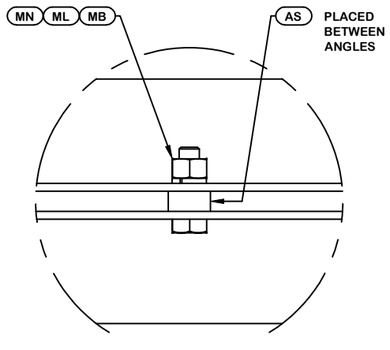
** DIAGONAL ANGLES MUST BE INSTALLED
WITH THE NON-BOLTED FACE UP,
THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



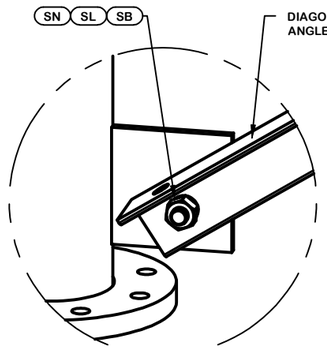
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
PLC	3	229377	PIPE LEG SECTION 20'-0" (CLIMBING) 6" SCH. 40 V-SE	537.940	1613.820
STP	48	285595	STEP BOLT ASSY 5/8"-11 X 7" W/(2)HEAVY HEX NUT	0.990	47.520
LD	6	284754	V-9 LOWER CLIPPED ANGLE - 2" x 2" x 3/16" ANGLE (A	25.380	152.280
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	0.060	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	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
MD	6	284753	V-9 MID ANGLE - 2" x 2" x 3/16" ANGLE (A572 GR. 50	24.120	144.720
UD	6	284752	V-9 UPPER ANGLE - 2" x 2" x 3/16" ANGLE (A572 GR.	22.830	136.980
LCB	18	172272	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
LCN	18	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	7.740
			Total Wt	2151.30 lb [976.71 kg]	

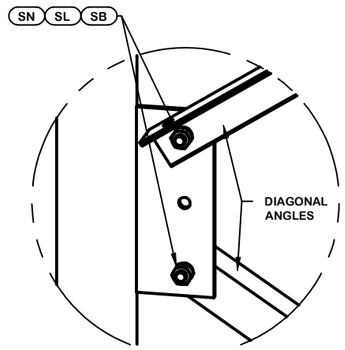
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



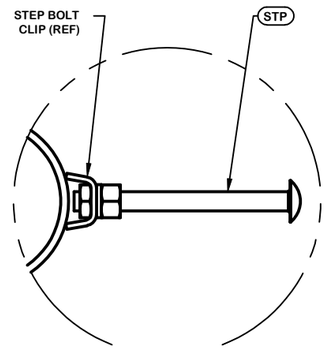
DETAIL A
ANGLE INTERSECTION CONNECTION



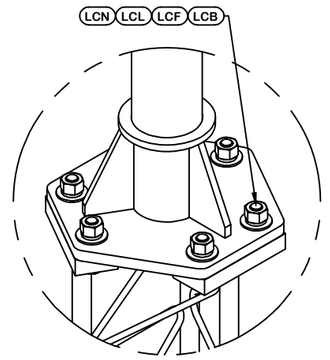
DETAIL B
END SIDE PLATE ANGLE CONNECTION



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-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION
SECTION V-9.0 (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	J_S	J_S	8/8/2023

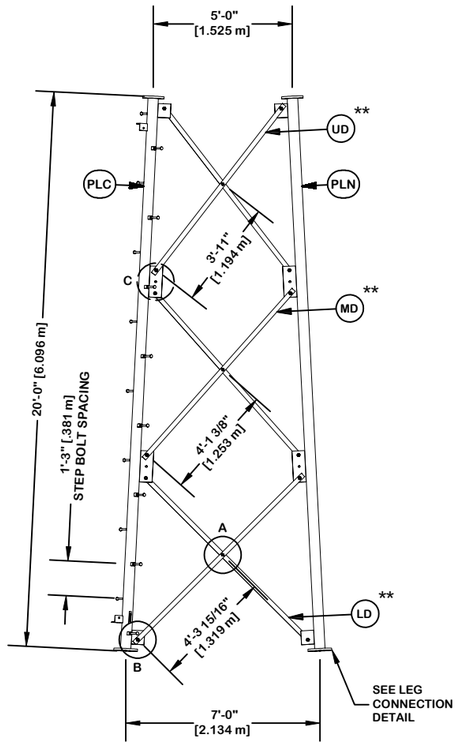
ENG. FILE NO. 591478

DWG. NO. 296280T

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

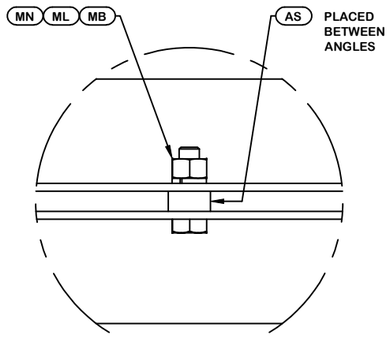
** DIAGONAL ANGLES MUST BE INSTALLED
WITH THE NON-BOLTED FACE UP,
THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



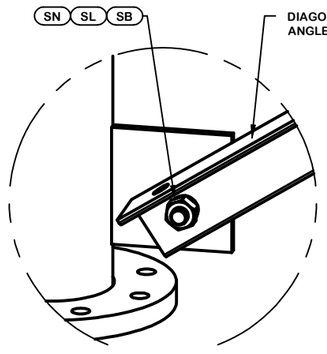
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
PLC	1	226200	PIPE LEG SECTION - 20'-0" LENGTH (CLIMBING) - 5" S	389.610	389.610
PLN	2	226201	PIPE LEG SECTION - 20'-0" LENGTH (NON-CLIMBING) -	386.250	772.500
STP	16	285595	STEP BOLT ASSY 5/8"-11 X 7" W/(2)HEAVY HEX NUT	0.990	15.840
LD	6	284733	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	0.640	5.760
AS	9	293156	RING FILL SPACER 3/8" THICK 1.049" HOLE	0.060	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	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
MD	6	284732	V-7 MID ANGLE - 2" x 2" x 3/16" ANGLE (A572 GR. 50	20.440	122.640
UD	6	284731	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	1596.63 lb [724.88 kg]	

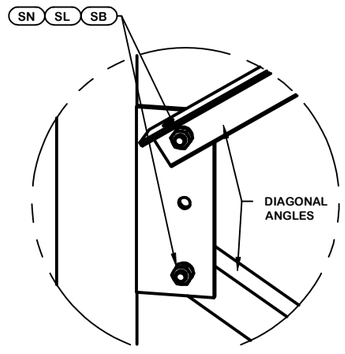
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



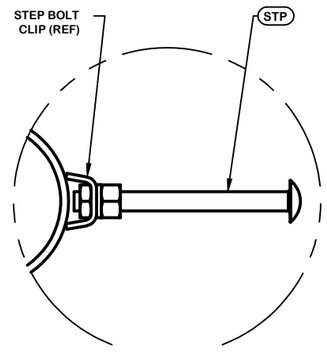
DETAIL A
ANGLE INTERSECTION CONNECTION



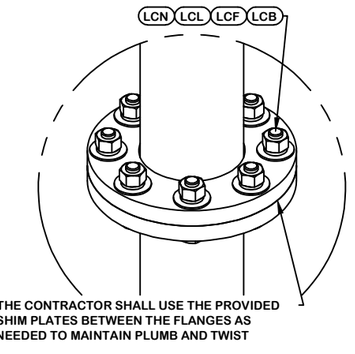
DETAIL B
END SIDE PLATE ANGLE CONNECTION



DETAIL C
MID SIDE PLATE ANGLE CONNECTION



STEP BOLT INSTALLATION



THE CONTRACTOR SHALL USE THE PROVIDED
SHIM PLATES BETWEEN THE FLANGES AS
NEEDED TO MAINTAIN PLUMB AND TWIST

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

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
REVISION HISTORY				

SITE
US-KY-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION
SECTION V-7.0 (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	J_S	J_S	8/8/2023

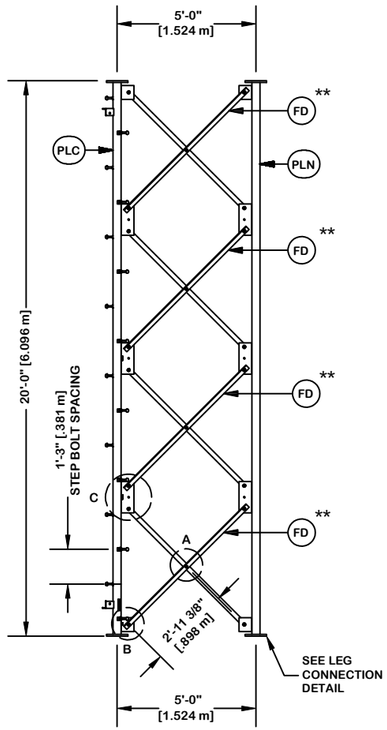
ENG. FILE NO. 591478

DWG. NO. 296280T

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

INSTALL ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

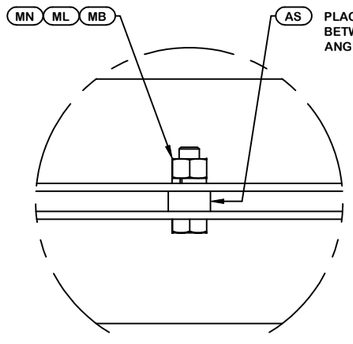
** DIAGONAL ANGLES MUST BE INSTALLED
WITH THE NON-BOLTED FACE UP,
THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



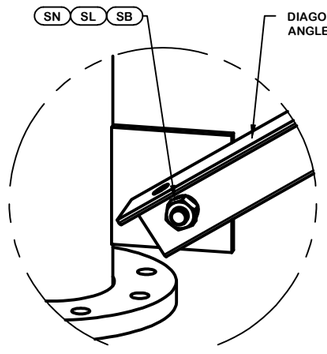
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
PLC	1	295584	PIPE LEG SECTION 20'-0" (CLIMBING) 3" SCH. 80 PIPE	297.710	297.710
PLN	2	295585	PIPE LEG SECTION 20'-0" (NON-CLIMBING) 3" SCH. 80	290.550	581.100
STP	16	285595	STEP BOLT ASSY 5/8"-11 X 7" W/(2)HEAVY HEX NUT	0.990	15.840
FD	24	284981	V-5 DIAGONAL ANGLE - 2" x 2" x 3/16" ANGLE (A572 G	15.900	381.600
ML	12	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.240
AS	12	116467	RING FILL SPACER 1/4" THICK 1.049" DIA HOLE	0.250	3.000
MB	12	227580	5/8"-11 X 2-1/4" A325T HOT DIPPED GALV. BOLT (FULL	0.640	7.680
MN	12	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.440
SL	48	312153	3/4" GALVANIZED LOCKWASHER	0.030	1.440
SN	48	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	9.120
SB	48	227579	3/4"-10 X 2-1/4" A-325T BOLT WITH FULL THREAD	0.420	20.160
LCB	18	227668	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	1334.45 lb [605.85 kg]	

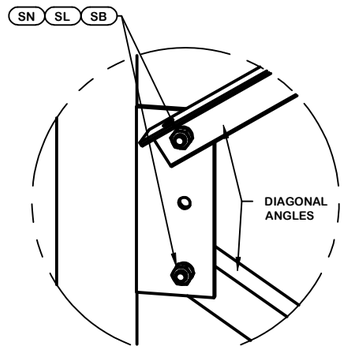
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



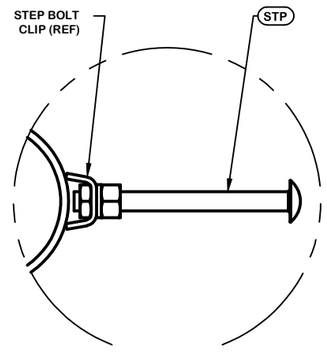
DETAIL A
ANGLE INTERSECTION CONNECTION



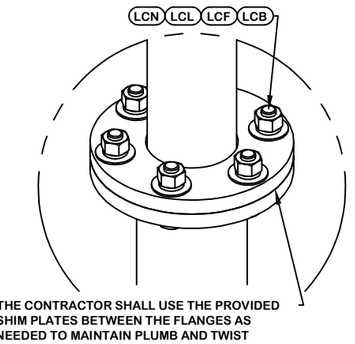
DETAIL B
END SIDE PLATE ANGLE CONNECTION



DETAIL C
MID SIDE PLATE ANGLE CONNECTION



STEP BOLT INSTALLATION



THE CONTRACTOR SHALL USE THE PROVIDED
SHIM PLATES BETWEEN THE FLANGES AS
NEEDED TO MAINTAIN PLUMB AND TWIST

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

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

SITE

US-KY-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION

SECTION V-5.0 (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	J_S	J_S	8/8/2023

ENG. FILE NO. 591478

DWG. NO. 296280T

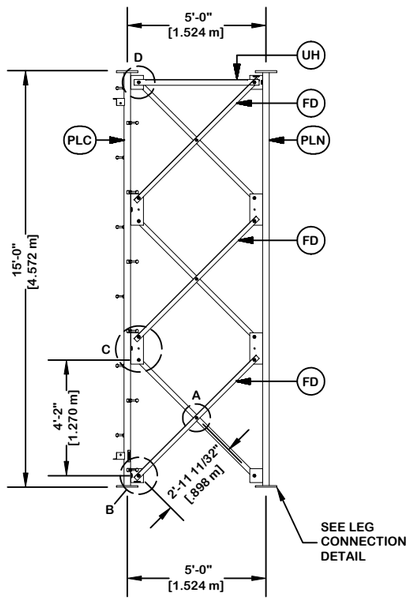
ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

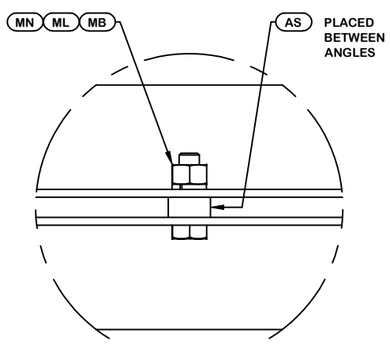
INSTALL ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

** 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.

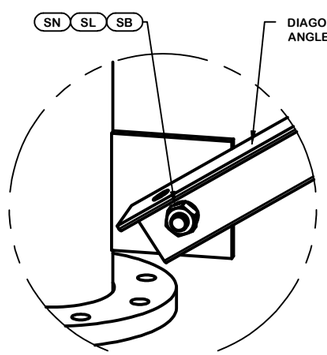
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
PLC	1	226169	PIPE LEG SECTION 15'-0" (CLIMBING) 2 1/2" SCH. 40	150.430	150.430
PLN	2	226170	PIPE LEG SECTION 15'-0" (NON-CLIMBING) 2 1/2" SCH.	147.910	295.820
STP	12	285595	STEP BOLT ASSY 5/8"-11 X 7" W/(2)HEAVY HEX NUT	0.990	11.880
FD	18	284980	V-5 DIAGONAL ANGLE - 2" x 2" x 1/8" ANGLE (A572 GR	10.820	194.760
ML	9	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.180
AS	9	116467	RING FILL SPACER 1/4" THICK 1.049" 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
UH	3	285974	V-5 HORIZONTAL ANGLE (TYPE 1) - 3" x 3" x 1/4" ANG	21.500	64.500
LCB	12	227668	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		759.78 lb [344.95 kg]

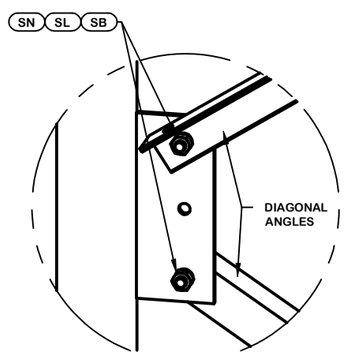




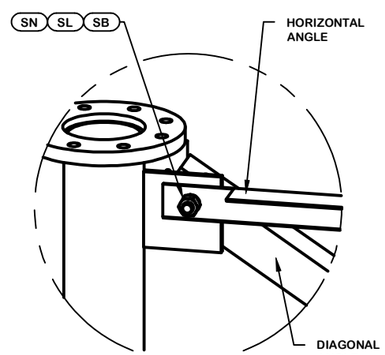
DETAIL A
ANGLE INTERSECTION CONNECTION



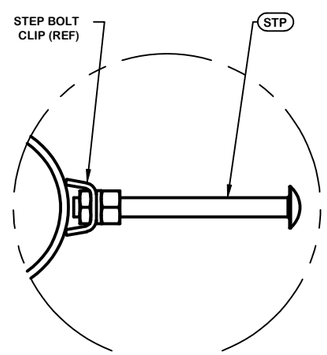
DETAIL B
END SIDE PLATE ANGLE CONNECTION



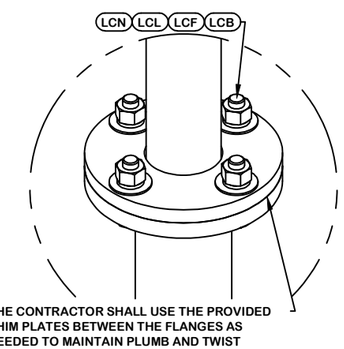
DETAIL C
MID SIDE PLATE ANGLE CONNECTION



DETAIL D
UPPER HORIZONTAL ANGLE CONNECTION



STEP BOLT INSTALLATION



THE CONTRACTOR SHALL USE THE PROVIDED
SHIM PLATES BETWEEN THE FLANGES AS
NEEDED TO MAINTAIN PLUMB AND TWIST

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

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE

REVISION HISTORY

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	J_S	J_S	8/8/2023

SITE

US-KY-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION

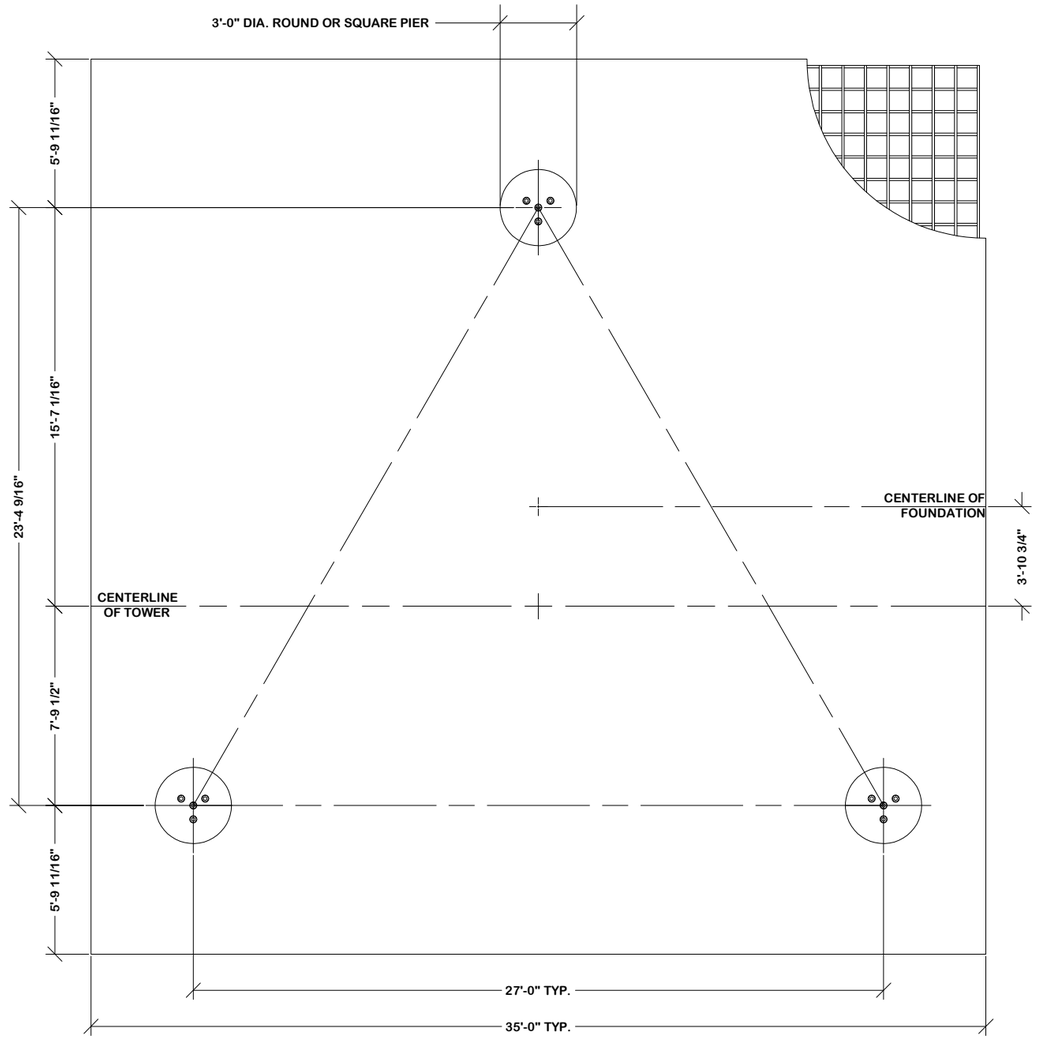
SECTION V-5.0 (240' - 255' ELEVATION)

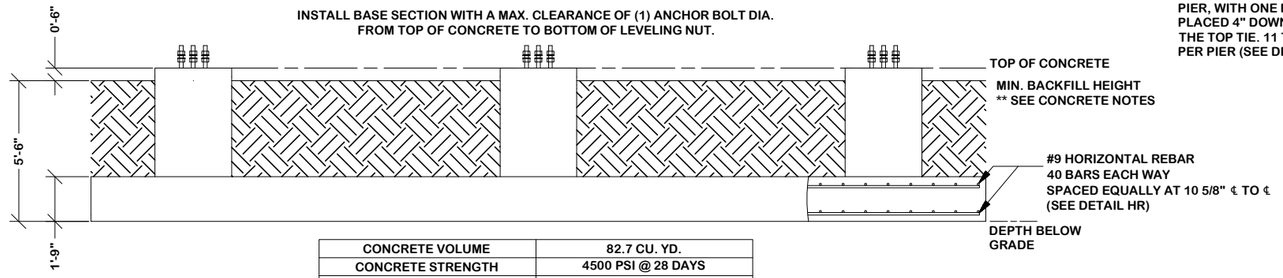
ENG. FILE NO. 591478

DWG. NO. 296280T

PAGE 15 OF 15

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





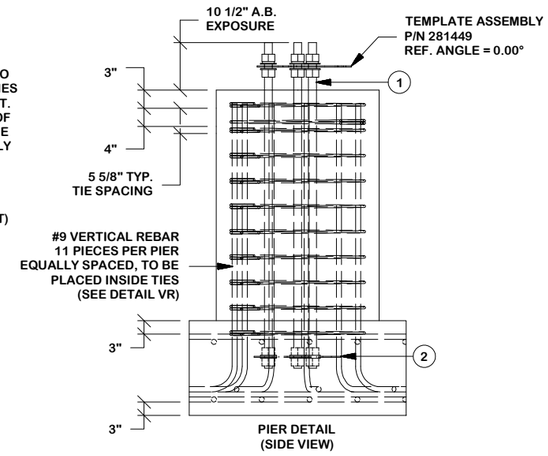
CONCRETE VOLUME	82.7 CU. YD.
CONCRETE STRENGTH	4500 PSI @ 28 DAYS
CONCRETE DENSITY	150 PCF

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 SIZES FOR ALL COMPONENTS ON THIS PAGE.
IF THERE ARE ANY DISCREPANCIES, PLEASE NOTIFY VALMONT/PIROD, 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# 281449

****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 GRID AND ONE TIE AT TOP OF PIER. EQUALLY SPACE TIES ALONG THE PIER, WITH ONE BAR PLACED 4" DOWN FROM THE TOP TIE. 11 TIES PER PIER (SEE DETAIL CT)

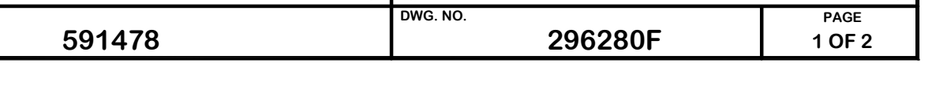


PARTS LIST				
ITEM	QTY	PART DESCRIPTION	UNIT WT.	NET WT.
1	12	1 3/4" DIA. x 72" LONG ANCHOR BOLT - 262330	59.53	714.34
2	3	EMBEDMENT PLATE - 281262	19.88	59.63

FOUNDATION NOTES:

1. SOIL AS PER REPORT BY SOIL REPORT BY DELTA OAKS, REPORT # GEO23-18848-08 DATED 05/02/2023
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. 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 12" THICK. FILL MATERIALS SHOULD BE CLEAN AND FREE OF ORGANIC AND FROZEN MATERIALS OR ANY OTHER DELETERIOUS MATERIALS. COMPACT FILL TO 98% 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. GRADE THE SITE TO DRAIN AWAY FROM FOUNDATION.
9. PROVISIONS SHALL BE MADE TO PROTECT THE SUBGRADE FROM EXCESS MOISTURE.
10. SEE GEOTECHNICAL REPORT FOR ADDITIONAL CONSTRUCTION RECOMMENDATIONS, BACKFILL COMPACTION DETAIL, SUBGRADE PREPARATION, ETC.

REBAR DETAIL									
BAR	QTY	SIZE	UNBENT LENGTH	A	B	C	D DIAMETER	UNIT WT. (LBS)	NET WT. (LBS)
HR	160	#9	34'-6"	34'-6"				117.48	18796.91
SI	100	#5	6'-2 5/8"	1'-7 1/8"	10 1/2"	1'-9 5/8"		6.49	648.85
CT	33	#4	9'-7 9/16"	2'-6"	3"	8 9/16"	3"	6.43	212.25
VR	33	#9	6'-7 3/4"	5'-3 3/4"	1'-7 3/16"		9"	22.59	745.53



REBAR NOTES: ALL REINFORCING BARS MUST CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS
STANDEES TO BE EQUALLY SPACED BETWEEN GRIDS - 3'-7 5/8" (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	86
7	53		

JEFFREY E. GRASSMAN 21939 LICENSED PROFESSIONAL ENGINEER STATE OF KENTUCKY

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
@A	UPDATED PER GEO REPORT		J_S	8/9/2023

REVISION HISTORY

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	J_S	J_S	8/9/2023

SITE
US-KY-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

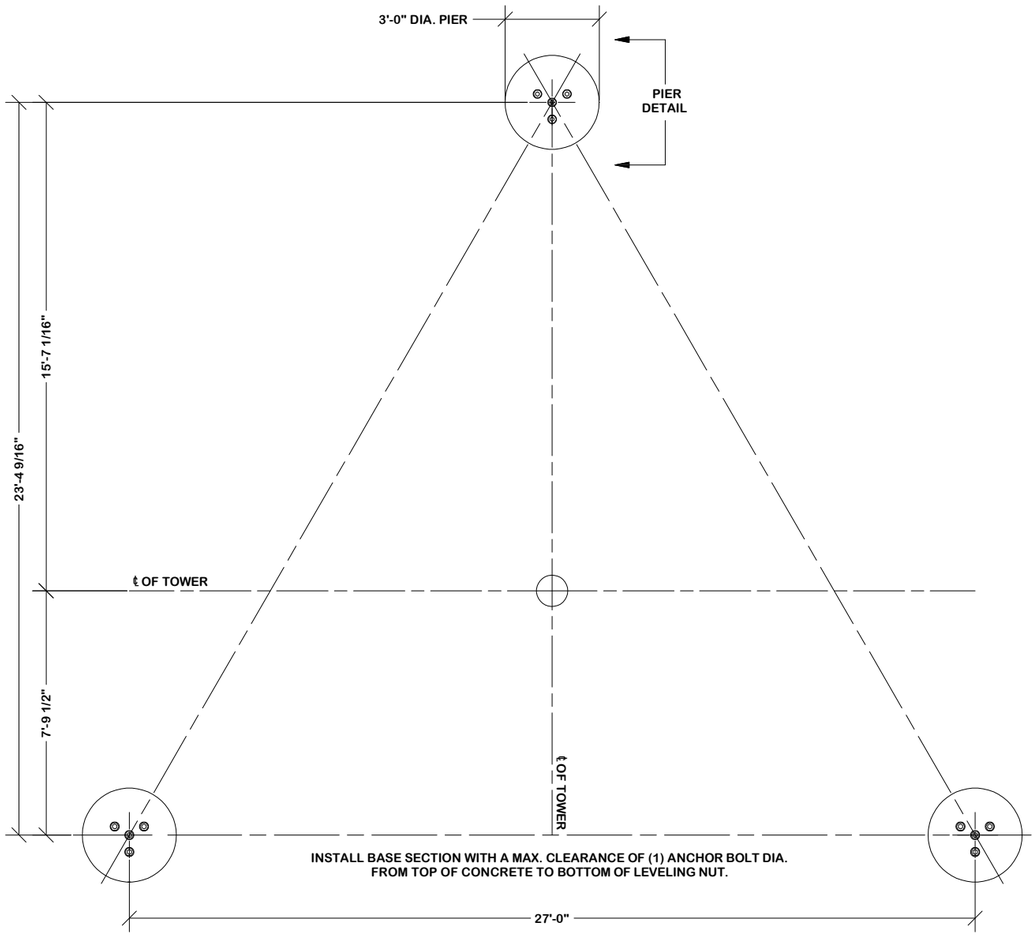
DESCRIPTION
SHALLOW MAT WITH RAISED PIERS
TOWER FOUNDATION #1

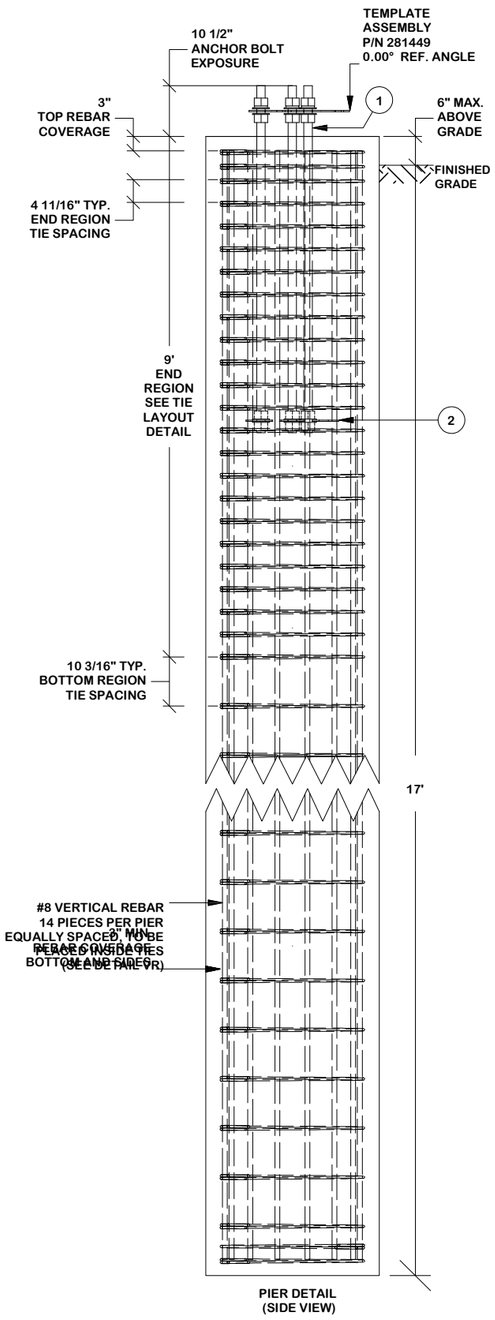
ENG. FILE NO. 591478

DWG. NO. 296280F

PAGE 1 OF 2

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





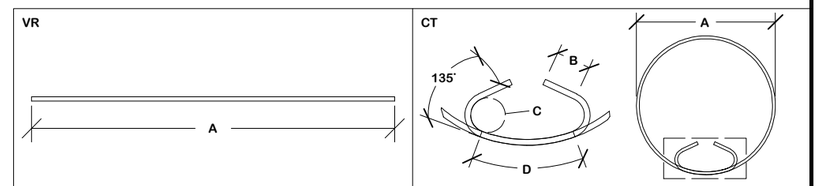
PIER DETAIL
(SIDE VIEW)

REBAR/ANCHOR STEEL TABLE				
ITEM	QTY	PART DESCRIPTION	UNIT WT.	NET WT.
1	12	1 3/4" DIA. x 72" LONG ANCHOR BOLT - 262330	59.53	714.34
2	3	EMBEDMENT PLATE - 281262	19.88	59.63

FOUNDATION NOTES:

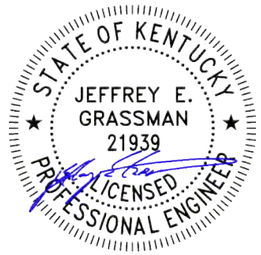
1. SOIL AS PER REPORT BY SOIL REPORT BY DELTA OAKS, REPORT # GEO23-18848-08 DATED 05/02/2023
2. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. 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. GRADE THE SITE TO DRAIN AWAY FROM FOUNDATION.
10. PROVISIONS SHALL BE MADE TO PROTECT THE SUBGRADE FROM EXCESS MOISTURE.
11. SEE GEOTECHNICAL REPORT FOR ADDITIONAL CONSTRUCTION RECOMMENDATIONS, BACKFILL COMPACTION DETAIL, SUBGRADE PREPARATION, ETC.
12. A TEMPORARY, FULL LENGTH STEEL CASING MAY BE REQUIRED DURING INSTALLATION.
13. DRILLING SLURRY AND TREMIE METHODS OF CONCRETE PLACEMENT MAY BE REQUIRED DURING INSTALLATION.
14. DIFFICULT DRILLING AND/OR ROCK CORING IS TO BE EXPECTED BELOW A DEPTH OF 12 FT. THE DRILLING CONTRACTOR SHOULD BE PREPARED TO REMOVE ROCK AND/OR ROCK CORES FROM THE EXCAVATION.
15. THE DRILLED PIER MUST BE FULLY SOCKETED IN THE ROCK LAYER. THIS SHOULD BE VERIFIED DURING CONSTRUCTION.

REBAR DETAIL									
BAR	QTY	SIZE	UNBENT LENGTH	A	B	C DIAMETER	D	UNIT WT.	NET WT.
CT	105	#4	9'-5 11/16"	2'-6"	3"	3"	6 3/4"	6.33	664.65
VR	42	#8	16'-11 11/16"	16'-11 3/4"				45.43	1907.93



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

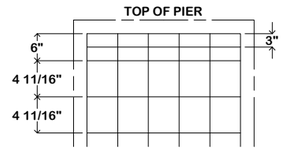
Rebar Class B Splice Length			
Bar Size	(in)	Bar Size	(in)
3	16	8	47
4	19	9	53
5	24	10	60
6	28	11	66
7	41		



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	4.6 CU.YD. PER PIER (13.7 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# 281449



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 @ 4 11/16" NOMINAL SPACING WITHIN END REGION AND 10 3/16" NOMINAL SPACING IN THE REMAINDER OF THE PIER. PLACE CIRCULAR TIES SO LAPS ON ADJACENT TIES ARE APPROX. 180 DEGREES APART. (SEE DETAIL CT)

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
@A	UPDATED PER GEO REPORT		J_S	8/9/2023

REVISION HISTORY

DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
SAN	SAN	J_S	J_S	8/9/2023

SITE
US-KY-5152 FOUNTAIN RUN, KY
VB BTS II
H 27 X 255'

DESCRIPTION
DRILLED PIERS
TOWER FOUNDATION #2

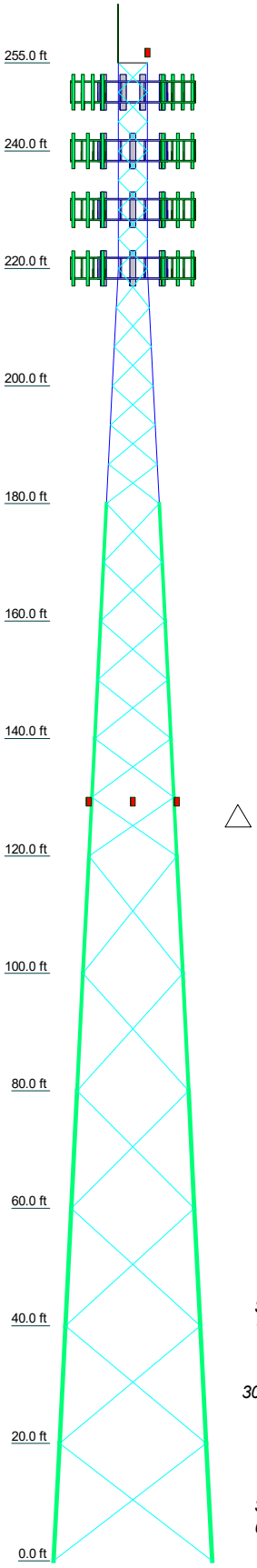
valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

ENG. FILE NO. 591478

DWG. NO. 296280F

PAGE 2 OF 2

Section		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13		
Legs		A	B	C	D	E	F		G	H				I		
Leg Grade		A572-50								A572-58						
Diagonals		L2x2x1/8	L2x2x3/16			L2 1/2x2 1/2x3/16	L2 1/2x2 1/2x1/4	L3x3x3/16		2L3x3x3/16		#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)		2L3x3x1/4		
Diagonal Grade		A572-50														
Top Girts		L3x3x1/4	N.A.													
Face Width (ft)	5			7		9	11	13	15	17	19	21	23	25	27	
# Panels @ (ft)	7 @ 5	6 @ 6.66667				6 @ 10				6 @ 20						
Weight (K)	0.5	1.0	1.3	1.6	2.8	3.1	3.1	4.1	4.2	4.8	4.8	4.9	5.8	41.9		



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
5/8" x 10' lightning rod	255	30,000 sq in (208.33 sq ft EPA)	220
Beacon	255	OB light	127.5
40,000 sq in (277.78 sq ft EPA)	250	OB light	127.5
30,000 sq in (208.33 sq ft EPA)	240	OB light	127.5
30,000 sq in (208.33 sq ft EPA)	230		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	0033) 2.50" S - 15' - C - 0.75" conn - (Pirod 226169)	F	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)
B	0131) 3.00 to 5" TS - 20' - C - 0.75" conn - (Pirod 295584)	G	#12ZG-58 -2.00" - 0.875" conn.-TR3-(Pirod 195637)
C	0375) 5.00" to 4" S - 20' - C - 0.75" conn - (Pirod 226200)	H	#12ZG-58 -2.00" - 0.875" conn. (Pirod 195639)
D	0419) 6.00" to #12 S - 20' - C - 0.75" conn - (Pirod 229377)	I	#12ZG-58 BASE - 2.50" - 0.875" conn.-TR4-(Pirod 281171)

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 Monroe County, Kentucky.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 105 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 30 mph basic wind with 0.75 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. Considered one (1) 12 lines wave guide ladder to the top.
9. Tower design does not include safety climb ladder. Break-down legs are designed to act as climbing facility.
10. A KA factor of 0.82 has been applied to all EPA loading provided for shielding.
11. Design considers a 50' fall zone.
12. TOWER RATING: 99.3%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 503 K
SHEAR: 45 K

UPLIFT: -446 K
SHEAR: 40 K

AXIAL 200 K
SHEAR 10 K *MOMENT 1731 kip-ft*
TORQUE 4 kip-ft
30 mph WIND - 0.7500 in ICE

AXIAL 79 K
SHEAR 68 K *MOMENT 11154 kip-ft*
TORQUE 48 kip-ft
REACTIONS - 105 mph WIND

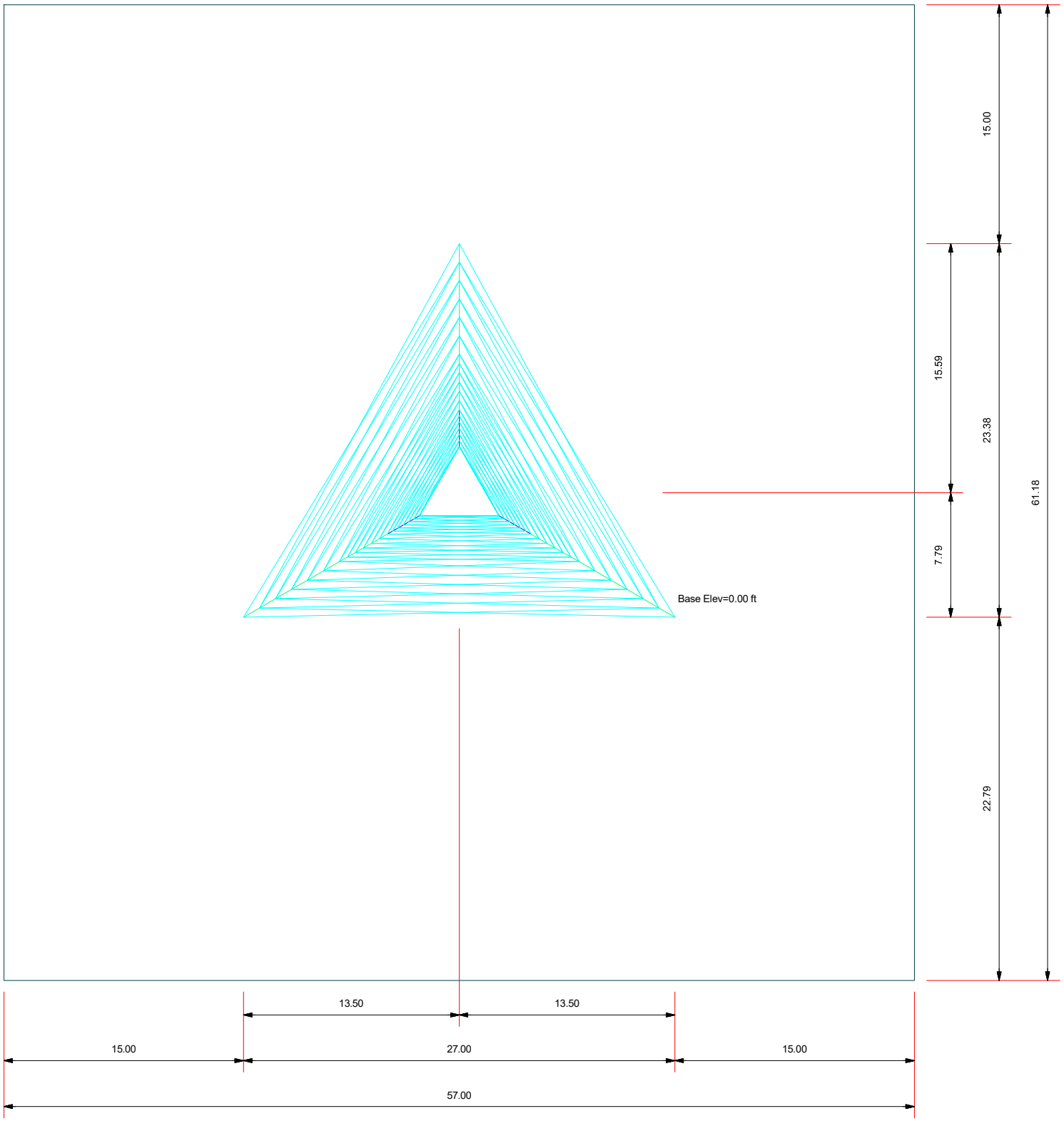
STATE OF KENTUCKY
JEFFREY E. GRASSMAN
21939
LICENSED PROFESSIONAL ENGINEER

Valmont Industries, Inc. Global Telecom
1545 Pidco Drive
Plymouth, IN
Phone: (574) 936-4221
FAX: (574) 936-6458

Job: *591478*			
Project: *H-27' x 255' - US-KY-5152 Fountain Run, KY*			
Client: VB BTS II	Drawn by: js716466	App'd:	
Code: TIA-222-G	Date: 08/06/23	Scale: NTS	
Path: \\PLYSTRFILE02\FileRoom\Documents\591\591478 VB BTS II - US-KY-5152 Fountain Run - 250' SST\02 Tower Calcs\591478.RevG.eri		Dwg No. E-1	

Plot Plan

Total Area - 0.08 Acres

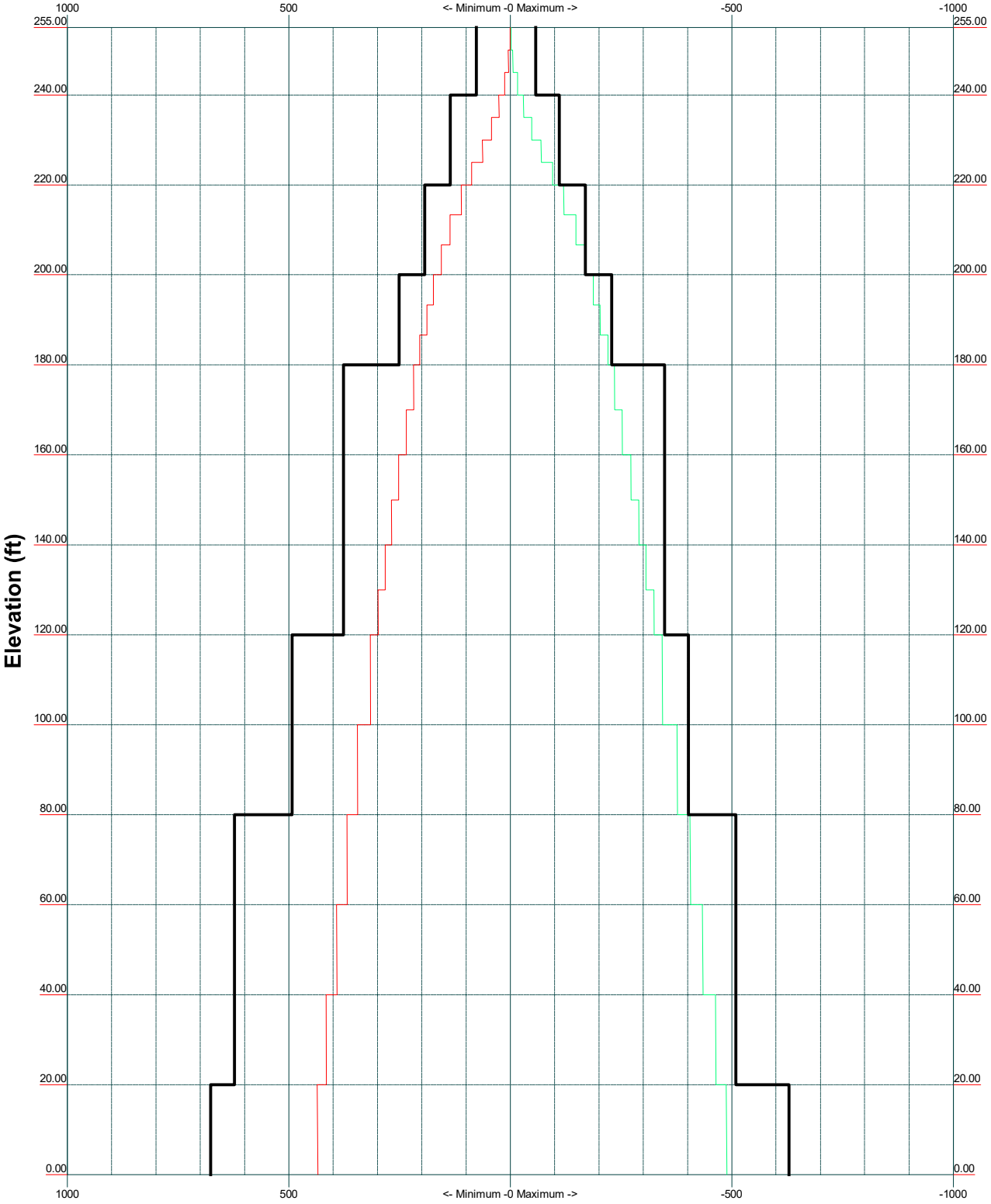


Valmont Industries, Inc. Global Telecom
1545 Pidco Drive
Plymouth, IN
Phone: (574) 936-4221
FAX: (574) 936-6458

Job: ***591478***		
Project: ***H-27' x 255' - US-KY-5152 Fountain Run, KY***		
Client: VB BTS II	Drawn by: js716466	App'd:
Code: TIA-222-G	Date: 08/06/23	Scale: NTS
Path: \\PLYSTRFILE02\FileRoom\Documents\591\591478 VB BTS II - US-KY-5152 Fountain Run - 250' SST\02 Tower Calcs\591478.RevG.eri		Dwg No. E-2

TIA-222-G - 105 mph/30 mph 0.7500 in Ice Exposure C

Leg Capacity ——— **Leg Compression (K)**



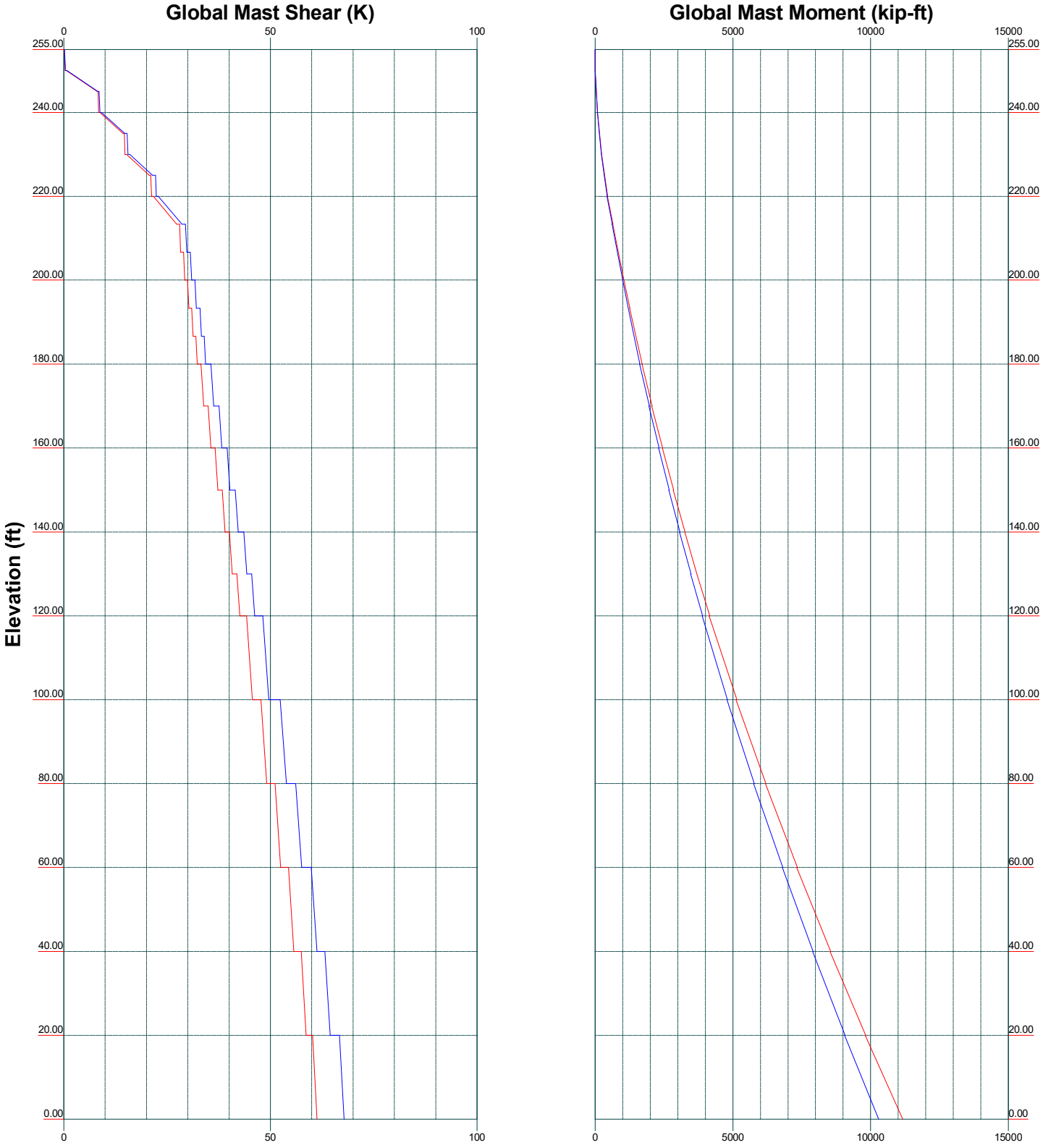
Valmont Industries, Inc. Global Telecom
1545 Pidco Drive
Plymouth, IN
Phone: (574) 936-4221
FAX: (574) 936-6458

Job: ***591478***		
Project: ***H-27' x 255' - US-KY-5152 Fountain Run, KY***		
Client: VB BTS II	Drawn by: js716466	App'd:
Code: TIA-222-G	Date: 08/06/23	Scale: NTS
Path: \\PLYSTRFILE02\FileRoom\Documents\591\591478 VB BTS II - US-KY-5152 Fountain Run - 250' SST\02 Tower Calcs\591478.RevG.eri		Dwg No. E-3

TIA-222-G - 105 mph/30 mph 0.7500 in Ice Exposure C

Maximum Values

Vx Vz Mx Mz

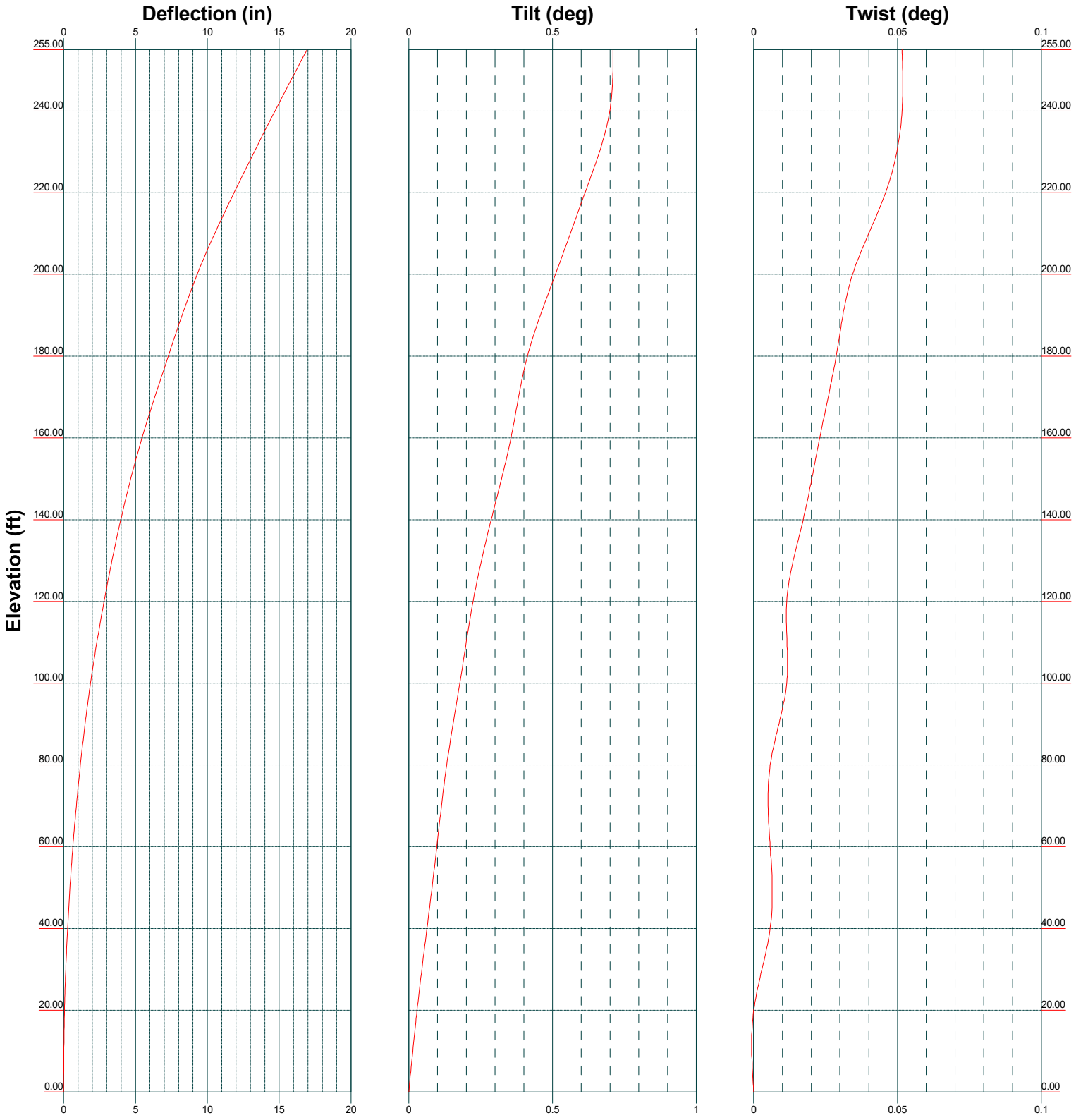


Valmont Industries, Inc. Global Telecom
1545 Pidco Drive
Plymouth, IN
Phone: (574) 936-4221
FAX: (574) 936-6458

Job: ***591478***			
Project: ***H-27' x 255' - US-KY-5152 Fountain Run, KY***			
Client: VB BTS II	Drawn by: js716466	App'd:	
Code: TIA-222-G	Date: 08/06/23	Scale: NTS	
Path: \\PLYSTRFILE02\FileRoom\Documents\591\591478 VB BTS II - US-KY-5152 Fountain Run - 250' SST\02 Tower Calcs\591478.RevG.eri		Dwg No. E-4	

TIA-222-G - Service - 60 mph

Maximum Values

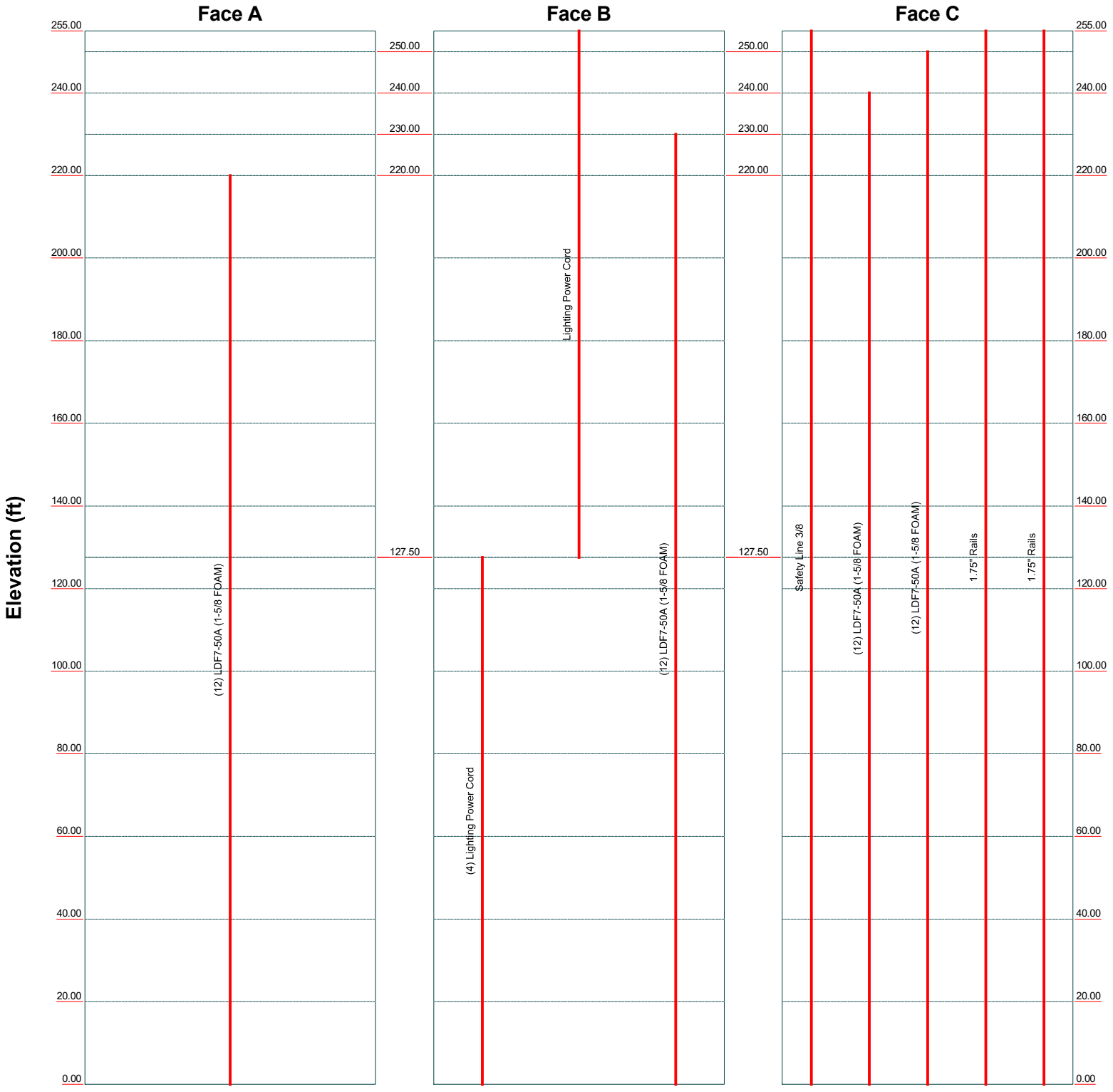


Valmont Industries, Inc. Global Telecom
1545 Pidco Drive
Plymouth, IN
Phone: (574) 936-4221
FAX: (574) 936-6458

Job: ***591478***			
Project: ***H-27' x 255' - US-KY-5152 Fountain Run, KY***			
Client: VB BTS II	Drawn by: js716466	App'd:	
Code: TIA-222-G	Date: 08/06/23	Scale: NTS	
Path: \\PLYSTRFILE02\FileRoom\Documents\591\591478 VB BTS II - US-KY-5152 Fountain Run - 250' SST\02 Tower Calcs\591478.RevG.eri		Dwg No. E-5	

Feed Line Distribution Chart
0' - 255'

Round | Flat | App In Face | App Out Face | Truss Leg

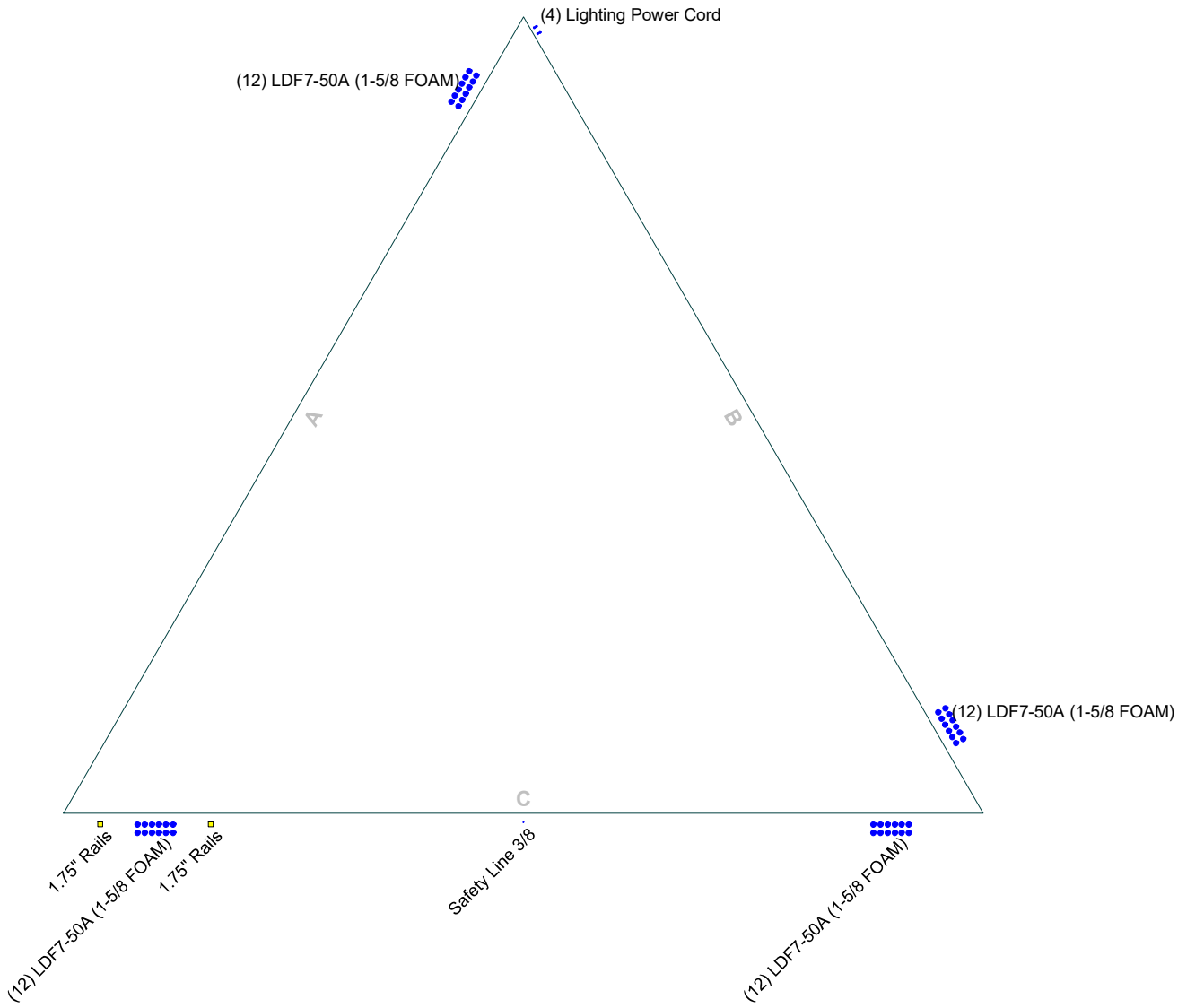


Valmont Industries, Inc. Global Telecom
1545 Pidco Drive
Plymouth, IN
Phone: (574) 936-4221
FAX: (574) 936-6458

Job: ***591478***		
Project: ***H-27' x 255' - US-KY-5152 Fountain Run, KY***		
Client: VB BTS II	Drawn by: js716466	App'd:
Code: TIA-222-G	Date: 08/06/23	Scale: NTS
Path: \\PLYSTRFILE02\FileRoom\Documents\591\591478 VB BTS II - US-KY-5152 Fountain Run - 250' SST\02 Tower Calcs\591478 RevG.eri		Dwg No. E-7

Feed Line Plan

Round Flat App In Face App Out Face Truss-Leg



Valmont Industries, Inc. Global Telecom
1545 Pidco Drive
Plymouth, IN
Phone: (574) 936-4221
FAX: (574) 936-6458

Job: ***591478***		
Project: ***H-27' x 255' - US-KY-5152 Fountain Run, KY***		
Client: VB BTS II	Drawn by: js716466	App'd:
Code: TIA-222-G	Date: 08/06/23	Scale: NTS
Path: \\PLYSTRFILE02\FileRoom\Documents\591\591478 VB BTS II - US-KY-5152 Fountain Run - 250' SST\02 Tower Calcs\591478 RevG.eri		Dwg No. E-7

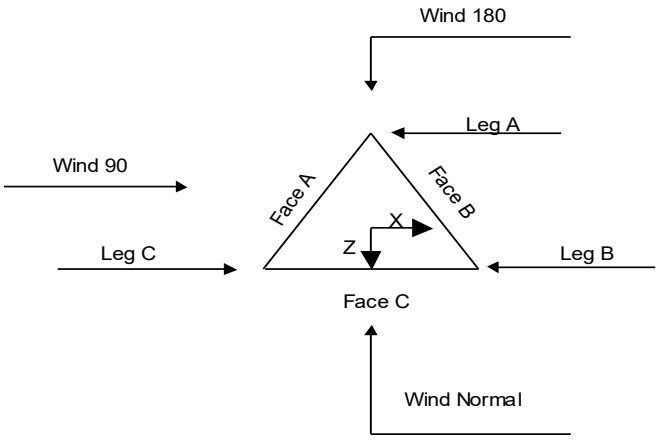
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 255.00 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 27.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Monroe County, Kentucky.
ASCE 7-10 Wind Data is used.
Basic wind speed of 105 mph.
Risk Category II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 30 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Considered one (1) 12 lines wave guide ladder to the top..
Tower design does not include safety climb ladder. Break-down legs are designed to act as climbing facility..
A KA factor of 0.82 has been applied to all EPA loading provided for shielding..
Design considers a 50' fall zone..
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	255.00-240.00		V-Series Leg	5.00	1	15.00
T2	240.00-220.00		V-Series Leg	5.00	1	20.00
T3	220.00-200.00		V-Series Leg	5.00	1	20.00
T4	200.00-180.00		V-Series Leg	7.00	1	20.00
T5	180.00-160.00		PiRod 12BDFH Truss Leg	9.00	1	20.00
T6	160.00-140.00		PiRod 12BDFH Truss Leg	11.00	1	20.00
T7	140.00-120.00		PiRod 12BDFH Truss Leg	13.00	1	20.00
T8	120.00-100.00		PiRod 12BDH2 Truss Leg	15.00	1	20.00
T9	100.00-80.00		PiRod 12BDH2 Truss Leg	17.00	1	20.00
T10	80.00-60.00		PiRod 12BDH2 Truss Leg	19.00	1	20.00
T11	60.00-40.00		PiRod 12BDH2 Truss Leg	21.00	1	20.00
T12	40.00-20.00		PiRod 12BDH2 Truss Leg	23.00	1	20.00
T13	20.00-0.00		PiRod 12BDH2 Truss Leg	25.00	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	255.00-240.00	5.00	X Brace	No	No	0.0000	0.0000
T2	240.00-220.00	5.00	X Brace	No	No	0.0000	0.0000
T3	220.00-200.00	6.67	X Brace	No	No	0.0000	0.0000
T4	200.00-180.00	6.67	X Brace	No	No	0.0000	0.0000
T5	180.00-160.00	10.00	X Brace	No	No	0.0000	0.0000
T6	160.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T7	140.00-120.00	10.00	X Brace	No	No	0.0000	0.0000
T8	120.00-100.00	20.00	X Brace	No	No	0.0000	0.0000
T9	100.00-80.00	20.00	X Brace	No	No	0.0000	0.0000
T10	80.00-60.00	20.00	X Brace	No	No	0.0000	0.0000
T11	60.00-40.00	20.00	X Brace	No	No	0.0000	0.0000
T12	40.00-20.00	20.00	X Brace	No	No	0.0000	0.0000
T13	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 255.00-240.00	Pipe	0033) 2.50" S - 15' - C - 0.75" conn - (Pirod 226169)	A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A572-50 (50 ksi)
T2 240.00-220.00	Pipe	0131) 3.00 to 5" TS - 20' - C - 0.75" conn - (Pirod 295584)	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A572-50 (50 ksi)
T3 220.00-200.00	Pipe	0375) 5.00" to 4" S - 20' - C - 0.75" conn - (Pirod 226200)	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A572-50 (50 ksi)
T4 200.00-180.00	Pipe	0419) 6.00" to #12 S - 20' - C - 0.75" conn - (Pirod 229377)	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A572-50 (50 ksi)
T5 180.00-160.00	Truss Leg	#12ZG-58 - 1.75" - 1.00" conn.-TR1-(Pirod 195213)	A572-58 (58 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A572-50 (50 ksi)
T6 160.00-140.00	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)
T7 140.00-120.00	Truss Leg	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	A572-58 (58 ksi)	Equal Angle	L3x3x3/16	A572-50 (50 ksi)
T8 120.00-100.00	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)
T9 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)
T10 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)
T11 60.00-40.00	Truss Leg	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	A572-58 (58 ksi)	Double Equal Angle	2L3x3x3/16	A572-50 (50 ksi)
T12 40.00-20.00	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 20.00-0.00	Truss Leg	#12ZG-58 BASE - 2.50" - 0.875" conn.-TR4-(Pirod 281171)	A572-58 (58 ksi)	Double Equal Angle	2L3x3x1/4	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 255.00-240.00	0.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T2 240.00-220.00	0.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T3 220.00-200.00	0.00	0.3750	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T4 200.00-180.00	0.00	0.3750	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T5 180.00-160.00	0.00	0.5000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T6 160.00-140.00	0.00	0.5000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T7 140.00-120.00	0.00	0.5000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T8 120.00-100.00	0.00	0.6250	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T9 100.00-80.00	0.00	0.6250	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T10 80.00-60.00	0.00	0.6250	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T11 60.00-40.00	0.00	0.6250	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T12 40.00-20.00	0.00	0.6250	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T13 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)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] 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	Yes	Yes	1	1	1	1	1	1	1	1
255.00-240.00				1	1	1	1	1	1	1
T2	Yes	Yes	1	1	1	1	1	1	1	1
240.00-220.00				1	1	1	1	1	1	1
T3	Yes	Yes	1	1	1	1	1	1	1	1
220.00-200.00				1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1
200.00-180.00				1	1	1	1	1	1	1
T5	Yes	Yes	1	1	1	1	1	1	1	1
180.00-160.00				1	1	1	1	1	1	1
T6	Yes	Yes	1	1	1	1	1	1	1	1
160.00-140.00				1	1	1	1	1	1	1
T7	Yes	Yes	1	1	1	1	1	1	1	1
140.00-120.00				1	1	1	1	1	1	1
T8	Yes	Yes	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1
T9	Yes	Yes	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T10	Yes	Yes	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] 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
T11	Yes	Yes	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1
T12	Yes	Yes	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1
T13	Yes	Yes	1	1	1	1	1	1	1	1
20.00-0.00				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	1	0.5	0.7	1	0.5	0.7
180.00-160.00						
T6	1	0.5	0.7	1	0.5	0.7
160.00-140.00						
T7	1	0.5	0.7	1	0.5	0.7
140.00-120.00						
T8	1	0.5	0.7	1	0.5	0.7
120.00-100.00						
T9	1	0.5	0.7	1	0.5	0.7
100.00-80.00						
T10	1	0.5	0.7	1	0.5	0.7
80.00-60.00						
T11	1	0.5	0.7	1	0.5	0.7
60.00-40.00						
T12	1	0.5	0.7	1	0.5	0.7
40.00-20.00						
T13	1	0.5	0.7	1	0.5	0.7
20.00-0.00						

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1	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
255.00-240.00														
T2	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
240.00-220.00														

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
T3 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
T4 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
T5 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
T6 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
T7 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
T8 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
T9 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
T10 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
T11 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
T12 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
T13 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 255.00-240.00	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
T2 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
T3 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
T4 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
T5 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
T6 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
T7 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
T8 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
T9 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
T10 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
T11 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
T12 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
T13 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 255.00-240.00	5.0000	5.0000	5.0000	5.0000	0.0000	0.0000	0.0000	0.0000
T2 240.00-220.00	5.0000	5.0000	5.0000	5.0000	0.0000	0.0000	0.0000	0.0000
T3 220.00-200.00	5.0000	6.2500	5.0000	6.2500	0.0000	0.0000	0.0000	0.0000
T4 200.00-180.00	5.0000	6.2500	5.0000	6.2500	0.0000	0.0000	0.0000	0.0000
T5 180.00-160.00	5.0000	10.7500	5.0000	10.7500	0.0000	0.0000	0.0000	0.0000
T6 160.00-140.00	5.0000	10.7500	5.0000	10.7500	0.0000	0.0000	0.0000	0.0000
T7 140.00-120.00	5.0000	10.7500	5.0000	10.7500	0.0000	0.0000	0.0000	0.0000
T8 120.00-100.00	5.0000	11.5000	5.0000	11.5000	0.0000	0.0000	0.0000	0.0000
T9 100.00-80.00	5.0000	11.5000	5.0000	11.5000	0.0000	0.0000	0.0000	0.0000
T10 80.00-60.00	5.0000	11.5000	5.0000	11.5000	0.0000	0.0000	0.0000	0.0000
T11 60.00-40.00	5.0000	11.5000	5.0000	11.5000	0.0000	0.0000	0.0000	0.0000
T12 40.00-20.00	5.0000	11.5000	5.0000	11.5000	0.0000	0.0000	0.0000	0.0000
T13 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 255.00-240.00	Flange	0.7500 A325N	4	0.7500 A325N	1	0.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0	1.0000 A325N	0
T2 240.00-220.00	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 220.00-200.00	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 200.00-180.00	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 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
T6 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

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.
T7 140.00-120.00	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 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
T9 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
T10 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
T11 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
T12 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
T13 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)	255.00 - 0.00	3.0000	0	1	1	0.3750	0.3750		0.22
Lighting Power Cord	B	No	No	Ar (CaAa)	127.50 - 0.00	1.0000	-0.48	4	2	1.6300 0.0000	0.8700		0.15
Lighting Power Cord ****	B	No	No	Ar (CaAa)	255.00 - 127.50	1.0000	-0.48	1	1	1.6300 0.0000	0.8700		0.15
LDF7-50A (1-5/8 FOAM)	A	No	No	Ar (CaAa)	220.00 - 0.00	3.0000	0.4	12	6	0.5200 1.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	B	No	No	Ar (CaAa)	230.00 - 0.00	3.0000	0.4	12	6	0.5200 1.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	No	No	Ar (CaAa)	240.00 - 0.00	3.0000	0.4	12	6	0.5200 1.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM) ****	C	No	No	Ar (CaAa)	250.00 - 0.00	3.0000	-0.4	12	6	0.5200 1.0000	1.9800		0.82
1.75" Rails	C	No	No	Af (CaAa)	255.00 - 0.00	3.0000	0.46	1	1	17.2500 1.0000	1.7500		2.70
1.75" Rails ****	C	No	No	Af (CaAa)	255.00 - 0.00	3.0000	0.34	1	1	17.2500 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	255.00-240.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.305	0.000	0.00
		C	0.000	0.000	33.072	0.000	0.18
T2	240.00-220.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	25.500	0.000	0.10
		C	0.000	0.000	107.457	0.000	0.51
T3	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	107.457	0.000	0.51
T4	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	107.457	0.000	0.51
T5	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	107.457	0.000	0.51
T6	160.00-140.00	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	107.457	0.000	0.51
T7	140.00-120.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	51.218	0.000	0.20
		C	0.000	0.000	107.457	0.000	0.51
T8	120.00-100.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	54.480	0.000	0.21
		C	0.000	0.000	107.457	0.000	0.51
T9	100.00-80.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	54.480	0.000	0.21
		C	0.000	0.000	107.457	0.000	0.51
T10	80.00-60.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	54.480	0.000	0.21
		C	0.000	0.000	107.457	0.000	0.51
T11	60.00-40.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	54.480	0.000	0.21
		C	0.000	0.000	107.457	0.000	0.51
T12	40.00-20.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	54.480	0.000	0.21
		C	0.000	0.000	107.457	0.000	0.51
T13	20.00-0.00	A	0.000	0.000	47.520	0.000	0.20
		B	0.000	0.000	54.480	0.000	0.21
		C	0.000	0.000	107.457	0.000	0.51

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	255.00-240.00	A	1.835	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	6.810	0.000	0.09
		C		0.000	0.000	50.947	0.000	0.99
T2	240.00-220.00	A	1.821	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	34.102	0.000	0.66

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
		C		0.000	0.000	134.579	0.000	2.74
T3	220.00-200.00	A	1.805	0.000	0.000	50.043	0.000	1.06
		B		0.000	0.000	59.003	0.000	1.18
		C		0.000	0.000	134.162	0.000	2.72
T4	200.00-180.00	A	1.787	0.000	0.000	49.923	0.000	1.06
		B		0.000	0.000	58.811	0.000	1.18
		C		0.000	0.000	133.707	0.000	2.70
T5	180.00-160.00	A	1.767	0.000	0.000	49.792	0.000	1.05
		B		0.000	0.000	58.600	0.000	1.17
		C		0.000	0.000	133.206	0.000	2.68
T6	160.00-140.00	A	1.745	0.000	0.000	49.645	0.000	1.04
		B		0.000	0.000	58.366	0.000	1.16
		C		0.000	0.000	132.650	0.000	2.65
T7	140.00-120.00	A	1.720	0.000	0.000	49.480	0.000	1.03
		B		0.000	0.000	62.892	0.000	1.19
		C		0.000	0.000	132.023	0.000	2.62
T8	120.00-100.00	A	1.692	0.000	0.000	49.291	0.000	1.02
		B		0.000	0.000	70.485	0.000	1.25
		C		0.000	0.000	131.302	0.000	2.59
T9	100.00-80.00	A	1.658	0.000	0.000	49.068	0.000	1.01
		B		0.000	0.000	70.026	0.000	1.24
		C		0.000	0.000	130.452	0.000	2.55
T10	80.00-60.00	A	1.617	0.000	0.000	48.794	0.000	0.99
		B		0.000	0.000	69.464	0.000	1.21
		C		0.000	0.000	129.411	0.000	2.51
T11	60.00-40.00	A	1.564	0.000	0.000	48.439	0.000	0.97
		B		0.000	0.000	68.735	0.000	1.19
		C		0.000	0.000	128.059	0.000	2.45
T12	40.00-20.00	A	1.486	0.000	0.000	47.923	0.000	0.95
		B		0.000	0.000	67.674	0.000	1.15
		C		0.000	0.000	126.093	0.000	2.36
T13	20.00-0.00	A	1.331	0.000	0.000	46.902	0.000	0.89
		B		0.000	0.000	65.572	0.000	1.07
		C		0.000	0.000	122.194	0.000	2.20

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	255.00-240.00	3.6694	4.1542	0.5684	4.2708
T2	240.00-220.00	0.5424	7.7929	-0.6828	7.3713
T3	220.00-200.00	1.4674	0.1185	0.1730	1.9688
T4	200.00-180.00	1.8326	0.1377	0.2107	2.2797
T5	180.00-160.00	2.0276	0.1438	0.2033	2.0536
T6	160.00-140.00	2.3481	0.1616	0.2503	2.4069
T7	140.00-120.00	2.5409	-0.6995	0.3022	1.9270
T8	120.00-100.00	2.9547	-2.3278	0.4036	0.9984
T9	100.00-80.00	3.2583	-2.5701	0.4588	1.0237
T10	80.00-60.00	3.5021	-2.7597	0.5199	1.0272
T11	60.00-40.00	3.7804	-2.9820	0.5954	1.0087
T12	40.00-20.00	4.0487	-3.1965	0.6960	0.9432
T13	20.00-0.00	4.2758	-3.3752	0.9456	0.6816

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	240.00 - 255.00	0.6000	0.5707
T1	3	Lighting Power Cord	240.00 - 255.00	0.6000	0.5707
T1	8	LDF7-50A (1-5/8 FOAM)	240.00 - 250.00	0.6000	0.5707
T1	10	1.75" Rails	240.00 - 255.00	0.6000	0.5707
T1	11	1.75" Rails	240.00 - 255.00	0.6000	0.5707
T2	1	Safety Line 3/8	220.00 - 240.00	0.6000	0.5891
T2	3	Lighting Power Cord	220.00 - 240.00	0.6000	0.5891
T2	6	LDF7-50A (1-5/8 FOAM)	220.00 - 230.00	0.6000	0.5891
T2	7	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.5891
T2	8	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.5891
T2	10	1.75" Rails	220.00 - 240.00	0.6000	0.5891
T2	11	1.75" Rails	220.00 - 240.00	0.6000	0.5891
T3	1	Safety Line 3/8	200.00 - 220.00	0.6000	0.6000
T3	3	Lighting Power Cord	200.00 - 220.00	0.6000	0.6000
T3	5	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.6000
T3	6	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.6000
T3	7	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.6000
T3	8	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.6000
T3	10	1.75" Rails	200.00 - 220.00	0.6000	0.6000
T3	11	1.75" Rails	200.00 - 220.00	0.6000	0.6000
T4	1	Safety Line 3/8	180.00 - 200.00	0.6000	0.6000
T4	3	Lighting Power Cord	180.00 - 200.00	0.6000	0.6000
T4	5	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.6000
T4	6	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.6000
T4	7	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.6000
T4	8	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.6000
T4	10	1.75" Rails	180.00 - 200.00	0.6000	0.6000
T4	11	1.75" Rails	180.00 - 200.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	1	Safety Line 3/8	160.00 - 180.00	0.6000	0.5618
T5	3	Lighting Power Cord	160.00 - 180.00	0.6000	0.5618
T5	5	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5618
T5	6	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5618
T5	7	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5618
T5	8	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5618
T5	10	1.75" Rails	160.00 - 180.00	0.6000	0.5618
T5	11	1.75" Rails	160.00 - 180.00	0.6000	0.5618
T6	1	Safety Line 3/8	140.00 - 160.00	0.6000	0.6000
T6	3	Lighting Power Cord	140.00 - 160.00	0.6000	0.6000
T6	5	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.6000
T6	6	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.6000
T6	7	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.6000
T6	8	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.6000
T6	10	1.75" Rails	140.00 - 160.00	0.6000	0.6000
T6	11	1.75" Rails	140.00 - 160.00	0.6000	0.6000
T7	1	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T7	2	Lighting Power Cord	120.00 - 127.50	0.6000	0.6000
T7	3	Lighting Power Cord	127.50 - 140.00	0.6000	0.6000
T7	5	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T7	6	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T7	7	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T7	8	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T7	10	1.75" Rails	120.00 - 140.00	0.6000	0.6000
T7	11	1.75" Rails	120.00 - 140.00	0.6000	0.6000
T8	1	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T8	2	Lighting Power Cord	100.00 - 120.00	0.6000	0.6000
T8	5	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T8	6	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T8	7	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T8	8	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T8	10	1.75" Rails	100.00 - 120.00	0.6000	0.6000
T8	11	1.75" Rails	100.00 - 120.00	0.6000	0.6000
T9	1	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T9	2	Lighting Power Cord	80.00 - 100.00	0.6000	0.6000
T9	5	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T9	6	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T9	7	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T9	8	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T9	10	1.75" Rails	80.00 - 100.00	0.6000	0.6000
T9	11	1.75" Rails	80.00 - 100.00	0.6000	0.6000
T10	1	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T10	2	Lighting Power Cord	60.00 - 80.00	0.6000	0.6000
T10	5	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T10	6	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T10	7	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T10	8	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T10	10	1.75" Rails	60.00 - 80.00	0.6000	0.6000
T10	11	1.75" Rails	60.00 - 80.00	0.6000	0.6000
T11	1	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T11	2	Lighting Power Cord	40.00 - 60.00	0.6000	0.6000
T11	5	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T11	6	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T11	7	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T11	8	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T11	10	1.75" Rails	40.00 - 60.00	0.6000	0.6000
T11	11	1.75" Rails	40.00 - 60.00	0.6000	0.6000
T12	1	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T12	2	Lighting Power Cord	20.00 - 40.00	0.6000	0.6000
T12	5	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T12	6	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T12	7	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T12	8	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T12	10	1.75" Rails	20.00 - 40.00	0.6000	0.6000
T12	11	1.75" Rails	20.00 - 40.00	0.6000	0.6000
T13	1	Safety Line 3/8	0.00 - 20.00	0.6000	0.6000
T13	2	Lighting Power Cord	0.00 - 20.00	0.6000	0.6000
T13	5	LDF7-50A (1-5/8 FOAM)	0.00 - 20.00	0.6000	0.6000
T13	6	LDF7-50A (1-5/8 FOAM)	0.00 - 20.00	0.6000	0.6000
T13	7	LDF7-50A (1-5/8 FOAM)	0.00 - 20.00	0.6000	0.6000
T13	8	LDF7-50A (1-5/8 FOAM)	0.00 - 20.00	0.6000	0.6000
T13	10	1.75" Rails	0.00 - 20.00	0.6000	0.6000
T13	11	1.75" Rails	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
5/8" x 10' lightning rod	C	From Leg	0.00	0.0000	255.00	No Ice	0.63	0.63	0.02

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* °	*Placement* *ft*		*C_AA_A Front* *ft^2*	*C_AA_A Side* *ft^2*	*Weight* *K*
			0.00			1/2" Ice	1.63	1.63	0.03
			5.00			1" Ice	2.63	2.63	0.04
Beacon	B	From Leg	0.00	0.0000	255.00	No Ice	2.40	2.40	0.07
			0.00			1/2" Ice	2.67	2.67	0.10
			1.00			1" Ice	2.96	2.96	0.12
**									
OB light	A	From Leg	0.50	0.0000	127.50	No Ice	0.60	0.60	0.03
			0.00			1/2" Ice	0.72	0.72	0.04
			1.00			1" Ice	0.84	0.84	0.05
OB light	B	From Leg	0.50	0.0000	127.50	No Ice	0.60	0.60	0.03
			0.00			1/2" Ice	0.72	0.72	0.04
			1.00			1" Ice	0.84	0.84	0.05
OB light	C	From Leg	0.50	0.0000	127.50	No Ice	0.60	0.60	0.03
			0.00			1/2" Ice	0.72	0.72	0.04
			1.00			1" Ice	0.84	0.84	0.05
****									
40,000 sq in (277.78 sq ft EPA)	A	None		0.0000	250.00	No Ice	277.78	277.78	4.00
						1/2" Ice	347.23	347.23	5.00
						1" Ice	416.68	416.68	6.00
30,000 sq in (208.33 sq ft EPA)	B	None		0.0000	240.00	No Ice	208.33	208.33	3.00
						1/2" Ice	260.40	260.40	4.00
						1" Ice	312.47	312.47	5.00
30,000 sq in (208.33 sq ft EPA)	C	None		0.0000	230.00	No Ice	208.33	208.33	3.00
						1/2" Ice	260.40	260.40	4.00
						1" Ice	312.47	312.47	5.00
30,000 sq in (208.33 sq ft EPA)	C	None		0.0000	220.00	No Ice	208.33	208.33	3.00
						1/2" Ice	260.40	260.40	4.00
						1" Ice	312.47	312.47	5.00
****									

Truss-Leg Properties

Section Designation	*Area* *in^2*	*Area Ice* *in^2*	*Self Weight* *K*	*Ice Weight* *K*	*Equiv. Diameter* *in*	*Equiv. Diameter Ice* *in*	*Leg Area* *in^2*
#12ZG-58 - 1.75" - 1.00" conn.-TR1-(Pirod 195213)	2035.9652	6513.7356	0.79	1.28	7.0693	22.6171	7.2158
#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	2035.9652	6479.8102	0.79	1.26	7.0693	22.4993	7.2158
#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	2035.9652	6441.5396	0.79	1.23	7.0693	22.3665	7.2158
#12ZG-58 -2.00" - 0.875" conn.-TR3-(Pirod 195637)	2339.7677	5838.1026	1.00	1.23	8.1242	20.2712	9.4248
#12ZG-58 -2.00" -	2339.7677	5819.2118	1.00	1.19	8.1242	20.2056	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
0.875" conn. (Pirod 195639)							
#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	2475.7141	5868.0820	1.17	1.16	8.5962	20.3753	11.9282
#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	2475.7141	5838.0109	1.17	1.10	8.5962	20.2709	11.9282
#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	2475.7141	5794.2486	1.17	1.02	8.5962	20.1189	11.9282
#12ZG-58 BASE - 2.50" - 0.875" conn.-TR4-(Pirod 281171)	2548.5522	5713.1099	1.29	0.84	8.8491	19.8372	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	247.50	1.532	37	78.594	A	7.083	7.188	7.188	50.37	0.000	0.000
255.00-240.00					B	7.083	7.188		50.37	1.305	0.000
					C	7.083	7.188		50.37	33.072	0.000
T2	230.00	1.508	36	105.833	A	7.857	11.667	11.667	59.76	0.000	0.000
240.00-220.00					B	7.857	11.667		59.76	25.500	0.000
					C	7.857	11.667		59.76	107.457	0.000
T3	210.00	1.48	35	129.283	A	7.669	18.574	18.574	70.78	47.520	0.000
220.00-200.00					B	7.669	18.574		70.78	49.260	0.000
					C	7.669	18.574		70.78	107.457	0.000
T4	190.00	1.449	35	171.055	A	9.089	22.120	22.120	70.88	47.520	0.000
200.00-180.00					B	9.089	22.120		70.88	49.260	0.000
					C	9.089	22.120		70.88	107.457	0.000
T5	170.00	1.415	34	222.945	A	10.261	23.604	23.604	69.70	47.520	0.000
180.00-160.00					B	10.261	23.604		69.70	49.260	0.000
					C	10.261	23.604		69.70	107.457	0.000
T6	150.00	1.378	33	262.945	A	11.439	23.604	23.604	67.36	47.520	0.000
160.00-140.00					B	11.439	23.604		67.36	49.260	0.000
					C	11.439	23.604		67.36	107.457	0.000
T7	130.00	1.337	32	302.945	A	15.272	23.604	23.604	60.72	47.520	0.000
140.00-120.00					B	15.272	23.604		60.72	51.218	0.000
					C	15.272	23.604		60.72	107.457	0.000
T8	110.00	1.291	31	343.362	A	11.896	27.126	27.126	69.52	47.520	0.000
120.00-100.00					B	11.896	27.126		69.52	54.480	0.000
					C	11.896	27.126		69.52	107.457	0.000
T9	90.00	1.238	30	383.362	A	12.514	27.126	27.126	68.43	47.520	0.000
100.00-80.00					B	12.514	27.126		68.43	54.480	0.000
					C	12.514	27.126		68.43	107.457	0.000
T10	70.00	1.174	28	423.780	A	13.178	28.702	28.702	68.53	47.520	0.000
80.00-60.00					B	13.178	28.702		68.53	54.480	0.000
					C	13.178	28.702		68.53	107.457	0.000
T11	50.00	1.094	26	463.780	A	13.884	28.702	28.702	67.40	47.520	0.000
60.00-40.00					B	13.884	28.702		67.40	54.480	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
					C	13.884	28.702		67.40	107.457	0.000
T12	30.00	0.982	24	503.780	A	14.623	28.702	28.702	66.25	47.520	0.000
40.00-20.00					B	14.623	28.702		66.25	54.480	0.000
					C	14.623	28.702		66.25	107.457	0.000
T13 20.00-0.00	10.00	0.85	20	544.197	A	15.392	29.546	29.546	65.75	47.520	0.000
					B	15.392	29.546		65.75	54.480	0.000
					C	15.392	29.546		65.75	107.457	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	247.50	1.532	3	1.8348	83.181	A	7.083	28.629	16.362	45.82	0.000	0.000
255.00-240.00						B	7.083	28.629		45.82	6.810	0.000
						C	7.083	28.629		45.82	50.947	0.000
T2	230.00	1.508	3	1.8214	111.905	A	7.857	38.120	23.810	51.79	0.000	0.000
240.00-220.00						B	7.857	38.120		51.79	34.102	0.000
						C	7.857	38.120		51.79	134.579	0.000
T3	210.00	1.48	3	1.8049	135.307	A	7.669	44.470	30.627	58.74	50.043	0.000
220.00-200.00						B	7.669	44.470		58.74	59.003	0.000
						C	7.669	44.470		58.74	134.162	0.000
T4	190.00	1.449	3	1.7870	177.019	A	9.089	50.294	34.053	57.35	49.923	0.000
200.00-180.00						B	9.089	50.294		57.35	58.811	0.000
						C	9.089	50.294		57.35	133.707	0.000
T5	170.00	1.415	3	1.7672	228.843	A	10.261	90.023	75.516	75.30	49.792	0.000
180.00-160.00						B	10.261	90.023		75.30	58.600	0.000
						C	10.261	90.023		75.30	133.206	0.000
T6	150.00	1.378	3	1.7452	268.770	A	11.439	91.094	75.123	73.27	49.645	0.000
160.00-140.00						B	11.439	91.094		73.27	58.366	0.000
						C	11.439	91.094		73.27	132.650	0.000
T7	130.00	1.337	3	1.7204	308.687	A	15.272	92.195	74.679	69.49	49.480	0.000
140.00-120.00						B	15.272	92.195		69.49	62.892	0.000
						C	15.272	92.195		69.49	132.023	0.000
T8	110.00	1.291	3	1.6919	349.009	A	11.896	81.101	67.683	72.78	49.291	0.000
120.00-100.00						B	11.896	81.101		72.78	70.485	0.000
						C	11.896	81.101		72.78	131.302	0.000
T9 100.00-80.00	90.00	1.238	2	1.6583	388.897	A	12.514	81.298	67.464	71.91	49.068	0.000
						B	12.514	81.298		71.91	70.026	0.000
						C	12.514	81.298		71.91	130.452	0.000
T10 80.00-60.00	70.00	1.174	2	1.6171	429.177	A	13.178	82.238	68.031	71.30	48.794	0.000
						B	13.178	82.238		71.30	69.464	0.000
						C	13.178	82.238		71.30	129.411	0.000
T11 60.00-40.00	50.00	1.094	2	1.5636	468.998	A	13.884	82.155	67.682	70.47	48.439	0.000
						B	13.884	82.155		70.47	68.735	0.000
						C	13.884	82.155		70.47	128.059	0.000
T12 40.00-20.00	30.00	0.982	2	1.4858	508.738	A	14.623	81.659	67.175	69.77	47.923	0.000
						B	14.623	81.659		69.77	67.674	0.000
						C	14.623	81.659		69.77	126.093	0.000
T13 20.00-0.00	10.00	0.85	2	1.3312	548.640	A	15.392	79.894	66.234	69.51	46.902	0.000
						B	15.392	79.894		69.51	65.572	0.000
						C	15.392	79.894		69.51	122.194	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	247.50	1.532	12	78.594	A	7.083	7.188	7.188	50.37	0.000	0.000
255.00-240.00					B	7.083	7.188		50.37	1.305	0.000
					C	7.083	7.188		50.37	33.072	0.000
T2	230.00	1.508	12	105.833	A	7.857	11.667	11.667	59.76	0.000	0.000
240.00-220.00					B	7.857	11.667		59.76	25.500	0.000
					C	7.857	11.667		59.76	107.457	0.000
T3	210.00	1.48	12	129.283	A	7.669	18.574	18.574	70.78	47.520	0.000
220.00-200.00					B	7.669	18.574		70.78	49.260	0.000
					C	7.669	18.574		70.78	107.457	0.000
T4	190.00	1.449	11	171.055	A	9.089	22.120	22.120	70.88	47.520	0.000
200.00-180.00					B	9.089	22.120		70.88	49.260	0.000
					C	9.089	22.120		70.88	107.457	0.000
T5	170.00	1.415	11	222.945	A	10.261	23.604	23.604	69.70	47.520	0.000
180.00-160.00					B	10.261	23.604		69.70	49.260	0.000
					C	10.261	23.604		69.70	107.457	0.000
T6	150.00	1.378	11	262.945	A	11.439	23.604	23.604	67.36	47.520	0.000
160.00-140.00					B	11.439	23.604		67.36	49.260	0.000
					C	11.439	23.604		67.36	107.457	0.000
T7	130.00	1.337	10	302.945	A	15.272	23.604	23.604	60.72	47.520	0.000
140.00-120.00					B	15.272	23.604		60.72	51.218	0.000
					C	15.272	23.604		60.72	107.457	0.000
T8	110.00	1.291	10	343.362	A	11.896	27.126	27.126	69.52	47.520	0.000
120.00-100.00					B	11.896	27.126		69.52	54.480	0.000
					C	11.896	27.126		69.52	107.457	0.000
T9	90.00	1.238	10	383.362	A	12.514	27.126	27.126	68.43	47.520	0.000
100.00-80.00					B	12.514	27.126		68.43	54.480	0.000
					C	12.514	27.126		68.43	107.457	0.000
T10	70.00	1.174	9	423.780	A	13.178	28.702	28.702	68.53	47.520	0.000
80.00-60.00					B	13.178	28.702		68.53	54.480	0.000
					C	13.178	28.702		68.53	107.457	0.000
T11	50.00	1.094	9	463.780	A	13.884	28.702	28.702	67.40	47.520	0.000
60.00-40.00					B	13.884	28.702		67.40	54.480	0.000
					C	13.884	28.702		67.40	107.457	0.000
T12	30.00	0.982	8	503.780	A	14.623	28.702	28.702	66.25	47.520	0.000
40.00-20.00					B	14.623	28.702		66.25	54.480	0.000
					C	14.623	28.702		66.25	107.457	0.000
T13 20.00-0.00	10.00	0.85	7	544.197	A	15.392	29.546	29.546	65.75	47.520	0.000
					B	15.392	29.546		65.75	54.480	0.000
					C	15.392	29.546		65.75	107.457	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	0.18	0.53	A	0.182	2.659	37	1	1	11.190	1.43	95.09	C
255.00-240.00			B	0.182	2.659		1	1	11.190			
			C	0.182	2.659		1	1	11.190			

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
T2	0.61	1.01	A	0.184	2.649	36	1	1	14.253	2.87	143.69	C
240.00-220.00			B	0.184	2.649		1	1	14.253			
			C	0.184	2.649		1	1	14.253			
T3	0.90	1.28	A	0.203	2.586	35	1	1	16.336	3.45	172.65	C
220.00-200.00			B	0.203	2.586		1	1	16.336			
			C	0.203	2.586		1	1	16.336			
T4	0.90	1.62	A	0.182	2.656	35	1	1	18.731	3.60	180.13	C
200.00-180.00			B	0.182	2.656		1	1	18.731			
			C	0.182	2.656		1	1	18.731			
T5	0.90	2.84	A	0.152	2.765	34	1	1	23.662	3.97	198.57	C
180.00-160.00			B	0.152	2.765		1	1	23.662			
			C	0.152	2.765		1	1	23.662			
T6	0.90	3.07	A	0.133	2.834	33	1	1	24.800	4.01	200.25	C
160.00-140.00			B	0.133	2.834		1	1	24.800			
			C	0.133	2.834		1	1	24.800			
T7	0.91	3.08	A	0.128	2.853	32	1	1	28.624	4.22	210.94	C
140.00-120.00			B	0.128	2.853		1	1	28.624			
			C	0.128	2.853		1	1	28.624			
T8	0.91	4.10	A	0.114	2.91	31	1	1	27.217	4.04	202.20	C
120.00-100.00			B	0.114	2.91		1	1	27.217			
			C	0.114	2.91		1	1	27.217			
T9	0.91	4.16	A	0.103	2.95	30	1	1	27.825	3.95	197.49	C
100.00-80.00			B	0.103	2.95		1	1	27.825			
			C	0.103	2.95		1	1	27.825			
T10	0.91	4.76	A	0.099	2.969	28	1	1	29.376	3.87	193.43	C
80.00-60.00			B	0.099	2.969		1	1	29.376			
			C	0.099	2.969		1	1	29.376			
T11	0.91	4.82	A	0.092	2.997	26	1	1	30.077	3.67	183.48	C
60.00-40.00			B	0.092	2.997		1	1	30.077			
			C	0.092	2.997		1	1	30.077			
T12	0.91	4.89	A	0.086	3.021	24	1	1	30.816	3.35	167.73	C
40.00-20.00			B	0.086	3.021		1	1	30.816			
			C	0.086	3.021		1	1	30.816			
T13	0.91	5.76	A	0.083	3.035	20	1	1	32.061	2.98	148.80	C
20.00-0.00			B	0.083	3.035		1	1	32.061			
			C	0.083	3.035		1	1	32.061			
Sum Weight:	10.78	41.92						OTM	5632.97 kip-ft	45.41		

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	0.18	0.53	A	0.182	2.659	37	0.8	1	9.774	1.31	87.25	A
255.00-240.00			B	0.182	2.659		0.8	1	9.774			
			C	0.182	2.659		0.8	1	9.774			
T2	0.61	1.01	A	0.184	2.649	36	0.8	1	12.682	2.75	137.29	A
240.00-220.00			B	0.184	2.649		0.8	1	12.682			
			C	0.184	2.649		0.8	1	12.682			
T3	0.90	1.28	A	0.203	2.586	35	0.8	1	14.802	3.33	166.67	A
220.00-200.00			B	0.203	2.586		0.8	1	14.802			
			C	0.203	2.586		0.8	1	14.802			

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
T4	0.90	1.62	A	0.182	2.656	35	0.8	1	16.913	3.46	173.00	A
200.00-180.00			B	0.182	2.656		0.8	1	16.913			
			C	0.182	2.656		0.8	1	16.913			
T5	0.90	2.84	A	0.152	2.765	34	0.8	1	21.610	3.81	190.39	A
180.00-160.00			B	0.152	2.765		0.8	1	21.610			
			C	0.152	2.765		0.8	1	21.610			
T6	0.90	3.07	A	0.133	2.834	33	0.8	1	22.512	3.82	191.14	A
160.00-140.00			B	0.133	2.834		0.8	1	22.512			
			C	0.133	2.834		0.8	1	22.512			
T7	0.91	3.08	A	0.128	2.853	32	0.8	1	25.570	3.98	199.06	A
140.00-120.00			B	0.128	2.853		0.8	1	25.570			
			C	0.128	2.853		0.8	1	25.570			
T8	0.91	4.10	A	0.114	2.91	31	0.8	1	24.838	3.86	193.08	A
120.00-100.00			B	0.114	2.91		0.8	1	24.838			
			C	0.114	2.91		0.8	1	24.838			
T9	0.91	4.16	A	0.103	2.95	30	0.8	1	25.322	3.76	188.17	A
100.00-80.00			B	0.103	2.95		0.8	1	25.322			
			C	0.103	2.95		0.8	1	25.322			
T10	0.91	4.76	A	0.099	2.969	28	0.8	1	26.740	3.68	184.07	A
80.00-60.00			B	0.099	2.969		0.8	1	26.740			
			C	0.099	2.969		0.8	1	26.740			
T11	0.91	4.82	A	0.092	2.997	26	0.8	1	27.301	3.48	174.20	A
60.00-40.00			B	0.092	2.997		0.8	1	27.301			
			C	0.092	2.997		0.8	1	27.301			
T12	0.91	4.89	A	0.086	3.021	24	0.8	1	27.891	3.18	158.88	A
40.00-20.00			B	0.086	3.021		0.8	1	27.891			
			C	0.086	3.021		0.8	1	27.891			
T13	0.91	5.76	A	0.083	3.035	20	0.8	1	28.983	2.81	140.70	A
20.00-0.00			B	0.083	3.035		0.8	1	28.983			
			C	0.083	3.035		0.8	1	28.983			
Sum Weight:	10.78	41.92						OTM	5369.98 kip-ft	43.24		

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	0.18	0.53	A	0.182	2.659	37	0.85	1	10.128	1.28	85.50	B
255.00-240.00			B	0.182	2.659		0.85	1	10.128			
			C	0.182	2.659		0.85	1	10.128			
T2	0.61	1.01	A	0.184	2.649	36	0.85	1	13.075	2.67	133.40	A
240.00-220.00			B	0.184	2.649		0.85	1	13.075			
			C	0.184	2.649		0.85	1	13.075			
T3	0.90	1.28	A	0.203	2.586	35	0.85	1	15.185	3.26	162.78	B
220.00-200.00			B	0.203	2.586		0.85	1	15.185			
			C	0.203	2.586		0.85	1	15.185			
T4	0.90	1.62	A	0.182	2.656	35	0.85	1	17.367	3.39	169.51	B
200.00-180.00			B	0.182	2.656		0.85	1	17.367			
			C	0.182	2.656		0.85	1	17.367			
T5	0.90	2.84	A	0.152	2.765	34	0.85	1	22.123	3.75	187.28	B
180.00-160.00			B	0.152	2.765		0.85	1	22.123			
			C	0.152	2.765		0.85	1	22.123			

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
T6	0.90	3.07	A	0.133	2.834	33	0.85	1	23.084	3.77	188.40	B
160.00-140.00			B	0.133	2.834		0.85	1	23.084			
			C	0.133	2.834		0.85	1	23.084			
T7	0.91	3.08	A	0.128	2.853	32	0.85	1	26.334	3.95	197.65	A
140.00-120.00			B	0.128	2.853		0.85	1	26.334			
			C	0.128	2.853		0.85	1	26.334			
T8	0.91	4.10	A	0.114	2.91	31	0.85	1	25.433	3.84	191.92	A
120.00-100.00			B	0.114	2.91		0.85	1	25.433			
			C	0.114	2.91		0.85	1	25.433			
T9	0.91	4.16	A	0.103	2.95	30	0.85	1	25.948	3.74	187.20	A
100.00-80.00			B	0.103	2.95		0.85	1	25.948			
			C	0.103	2.95		0.85	1	25.948			
T10	0.91	4.76	A	0.099	2.969	28	0.85	1	27.399	3.67	183.28	A
80.00-60.00			B	0.099	2.969		0.85	1	27.399			
			C	0.099	2.969		0.85	1	27.399			
T11	0.91	4.82	A	0.092	2.997	26	0.85	1	27.995	3.47	173.60	A
60.00-40.00			B	0.092	2.997		0.85	1	27.995			
			C	0.092	2.997		0.85	1	27.995			
T12	0.91	4.89	A	0.086	3.021	24	0.85	1	28.622	3.17	158.47	A
40.00-20.00			B	0.086	3.021		0.85	1	28.622			
			C	0.086	3.021		0.85	1	28.622			
T13	0.91	5.76	A	0.083	3.035	20	0.85	1	29.752	2.81	140.46	A
20.00-0.00			B	0.083	3.035		0.85	1	29.752			
			C	0.083	3.035		0.85	1	29.752			
Sum Weight:	10.78	41.92						OTM	5287.22 kip-ft	42.76		

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	1.09	2.32	A	0.429	2.009	3	1	1	25.675	0.21	14.13	C
255.00-240.00			B	0.429	2.009		1	1	25.675			
			C	0.429	2.009		1	1	25.675			
T2	3.40	3.18	A	0.411	2.043	3	1	1	32.292	0.38	19.20	C
240.00-220.00			B	0.411	2.043		1	1	32.292			
			C	0.411	2.043		1	1	32.292			
T3	4.97	3.66	A	0.385	2.094	3	1	1	35.686	0.46	23.11	C
220.00-200.00			B	0.385	2.094		1	1	35.686			
			C	0.385	2.094		1	1	35.686			
T4	4.93	4.37	A	0.335	2.206	3	1	1	39.806	0.48	24.16	C
200.00-180.00			B	0.335	2.206		1	1	39.806			
			C	0.335	2.206		1	1	39.806			
T5	4.89	8.39	A	0.438	1.993	3	1	1	69.100	0.57	28.59	C
180.00-160.00			B	0.438	1.993		1	1	69.100			
			C	0.438	1.993		1	1	69.100			
T6	4.85	8.70	A	0.381	2.102	3	1	1	68.685	0.59	29.37	C
160.00-140.00			B	0.381	2.102		1	1	68.685			
			C	0.381	2.102		1	1	68.685			
T7	4.85	9.07	A	0.348	2.176	3	1	1	72.006	0.60	29.94	C
140.00-120.00			B	0.348	2.176		1	1	72.006			
			C	0.348	2.176		1	1	72.006			

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
T8	4.87	10.06	A	0.266	2.389	3	1	1	59.681	0.55	27.54	C
120.00-100.00			B	0.266	2.389		1	1	59.681			
			C	0.266	2.389		1	1	59.681			
T9	4.80	10.06	A	0.241	2.464	2	1	1	59.903	0.54	26.84	C
100.00-80.00			B	0.241	2.464		1	1	59.903			
			C	0.241	2.464		1	1	59.903			
T10	4.71	10.62	A	0.222	2.523	2	1	1	60.774	0.52	25.93	C
80.00-60.00			B	0.222	2.523		1	1	60.774			
			C	0.222	2.523		1	1	60.774			
T11	4.61	10.54	A	0.205	2.58	2	1	1	61.150	0.49	24.45	C
60.00-40.00			B	0.205	2.58		1	1	61.150			
			C	0.205	2.58		1	1	61.150			
T12	4.45	10.33	A	0.189	2.632	2	1	1	61.388	0.44	22.13	C
40.00-20.00			B	0.189	2.632		1	1	61.388			
			C	0.189	2.632		1	1	61.388			
T13	4.16	10.68	A	0.174	2.686	2	1	1	60.961	0.38	19.05	C
20.00-0.00			B	0.174	2.686		1	1	60.961			
			C	0.174	2.686		1	1	60.961			
Sum Weight:	56.57	101.98						OTM	779.60 kip-ft	6.22		

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	1.09	2.32	A	0.429	2.009	3	0.8	1	24.259	0.20	13.65	A
255.00-240.00			B	0.429	2.009		0.8	1	24.259			
			C	0.429	2.009		0.8	1	24.259			
T2	3.40	3.18	A	0.411	2.043	3	0.8	1	30.721	0.38	18.80	A
240.00-220.00			B	0.411	2.043		0.8	1	30.721			
			C	0.411	2.043		0.8	1	30.721			
T3	4.97	3.66	A	0.385	2.094	3	0.8	1	34.152	0.45	22.71	A
220.00-200.00			B	0.385	2.094		0.8	1	34.152			
			C	0.385	2.094		0.8	1	34.152			
T4	4.93	4.37	A	0.335	2.206	3	0.8	1	37.988	0.47	23.68	A
200.00-180.00			B	0.335	2.206		0.8	1	37.988			
			C	0.335	2.206		0.8	1	37.988			
T5	4.89	8.39	A	0.438	1.993	3	0.8	1	67.048	0.56	28.11	A
180.00-160.00			B	0.438	1.993		0.8	1	67.048			
			C	0.438	1.993		0.8	1	67.048			
T6	4.85	8.70	A	0.381	2.102	3	0.8	1	66.397	0.58	28.82	A
160.00-140.00			B	0.381	2.102		0.8	1	66.397			
			C	0.381	2.102		0.8	1	66.397			
T7	4.85	9.07	A	0.348	2.176	3	0.8	1	68.952	0.58	29.20	A
140.00-120.00			B	0.348	2.176		0.8	1	68.952			
			C	0.348	2.176		0.8	1	68.952			
T8	4.87	10.06	A	0.266	2.389	3	0.8	1	57.302	0.54	26.93	A
120.00-100.00			B	0.266	2.389		0.8	1	57.302			
			C	0.266	2.389		0.8	1	57.302			
T9	4.80	10.06	A	0.241	2.464	2	0.8	1	57.400	0.52	26.21	A
100.00-80.00			B	0.241	2.464		0.8	1	57.400			
			C	0.241	2.464		0.8	1	57.400			

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
T10	4.71	10.62	A	0.222	2.523	2	0.8	1	58.138	0.51	25.28	A
80.00-60.00			B	0.222	2.523		0.8	1	58.138			
			C	0.222	2.523		0.8	1	58.138			
T11	4.61	10.54	A	0.205	2.58	2	0.8	1	58.373	0.48	23.80	A
60.00-40.00			B	0.205	2.58		0.8	1	58.373			
			C	0.205	2.58		0.8	1	58.373			
T12	4.45	10.33	A	0.189	2.632	2	0.8	1	58.463	0.43	21.50	A
40.00-20.00			B	0.189	2.632		0.8	1	58.463			
			C	0.189	2.632		0.8	1	58.463			
T13	4.16	10.68	A	0.174	2.686	2	0.8	1	57.883	0.37	18.47	A
20.00-0.00			B	0.174	2.686		0.8	1	57.883			
			C	0.174	2.686		0.8	1	57.883			
Sum Weight:	56.57	101.98						OTM	762.69 kip-ft	6.08		

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	1.09	2.32	A	0.429	2.009	3	0.85	1	24.613	0.20	13.48	B
255.00-240.00			B	0.429	2.009		0.85	1	24.613			
			C	0.429	2.009		0.85	1	24.613			
T2	3.40	3.18	A	0.411	2.043	3	0.85	1	31.113	0.37	18.46	A
240.00-220.00			B	0.411	2.043		0.85	1	31.113			
			C	0.411	2.043		0.85	1	31.113			
T3	4.97	3.66	A	0.385	2.094	3	0.85	1	34.536	0.45	22.37	B
220.00-200.00			B	0.385	2.094		0.85	1	34.536			
			C	0.385	2.094		0.85	1	34.536			
T4	4.93	4.37	A	0.335	2.206	3	0.85	1	38.442	0.47	23.37	B
200.00-180.00			B	0.335	2.206		0.85	1	38.442			
			C	0.335	2.206		0.85	1	38.442			
T5	4.89	8.39	A	0.438	1.993	3	0.85	1	67.561	0.56	27.83	B
180.00-160.00			B	0.438	1.993		0.85	1	67.561			
			C	0.438	1.993		0.85	1	67.561			
T6	4.85	8.70	A	0.381	2.102	3	0.85	1	66.969	0.57	28.55	B
160.00-140.00			B	0.381	2.102		0.85	1	66.969			
			C	0.381	2.102		0.85	1	66.969			
T7	4.85	9.07	A	0.348	2.176	3	0.85	1	69.715	0.58	29.04	A
140.00-120.00			B	0.348	2.176		0.85	1	69.715			
			C	0.348	2.176		0.85	1	69.715			
T8	4.87	10.06	A	0.266	2.389	3	0.85	1	57.897	0.54	26.83	A
120.00-100.00			B	0.266	2.389		0.85	1	57.897			
			C	0.266	2.389		0.85	1	57.897			
T9	4.80	10.06	A	0.241	2.464	2	0.85	1	58.026	0.52	26.13	A
100.00-80.00			B	0.241	2.464		0.85	1	58.026			
			C	0.241	2.464		0.85	1	58.026			
T10	4.71	10.62	A	0.222	2.523	2	0.85	1	58.797	0.50	25.22	A
80.00-60.00			B	0.222	2.523		0.85	1	58.797			
			C	0.222	2.523		0.85	1	58.797			
T11	4.61	10.54	A	0.205	2.58	2	0.85	1	59.067	0.48	23.75	A
60.00-40.00			B	0.205	2.58		0.85	1	59.067			
			C	0.205	2.58		0.85	1	59.067			

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
T12	4.45	10.33	A	0.189	2.632	2	0.85	1	59.194	0.43	21.47	A
40.00-20.00			B	0.189	2.632		0.85	1	59.194			
			C	0.189	2.632		0.85	1	59.194			
T13	4.16	10.68	A	0.174	2.686	2	0.85	1	58.653	0.37	18.45	A
20.00-0.00			B	0.174	2.686		0.85	1	58.653			
			C	0.174	2.686		0.85	1	58.653			
Sum Weight:	56.57	101.98						OTM	755.20 kip-ft	6.03		

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	0.18	0.53	A	0.182	2.659	12	1	1	11.190	0.47	31.05	C
255.00-240.00			B	0.182	2.659		1	1	11.190			
			C	0.182	2.659		1	1	11.190			
T2	0.61	1.01	A	0.184	2.649	12	1	1	14.529	0.95	47.29	C
240.00-220.00			B	0.184	2.649		1	1	14.529			
			C	0.184	2.649		1	1	14.529			
T3	0.90	1.28	A	0.203	2.586	12	1	1	18.214	1.18	58.77	C
220.00-200.00			B	0.203	2.586		1	1	18.214			
			C	0.203	2.586		1	1	18.214			
T4	0.90	1.62	A	0.182	2.656	11	1	1	20.995	1.23	61.72	C
200.00-180.00			B	0.182	2.656		1	1	20.995			
			C	0.182	2.656		1	1	20.995			
T5	0.90	2.84	A	0.152	2.765	11	1	1	23.662	1.30	64.84	C
180.00-160.00			B	0.152	2.765		1	1	23.662			
			C	0.152	2.765		1	1	23.662			
T6	0.90	3.07	A	0.133	2.834	11	1	1	24.800	1.31	65.39	C
160.00-140.00			B	0.133	2.834		1	1	24.800			
			C	0.133	2.834		1	1	24.800			
T7	0.91	3.08	A	0.128	2.853	10	1	1	28.624	1.38	68.88	C
140.00-120.00			B	0.128	2.853		1	1	28.624			
			C	0.128	2.853		1	1	28.624			
T8	0.91	4.10	A	0.114	2.91	10	1	1	27.217	1.32	66.02	C
120.00-100.00			B	0.114	2.91		1	1	27.217			
			C	0.114	2.91		1	1	27.217			
T9	0.91	4.16	A	0.103	2.95	10	1	1	27.825	1.29	64.49	C
100.00-80.00			B	0.103	2.95		1	1	27.825			
			C	0.103	2.95		1	1	27.825			
T10	0.91	4.76	A	0.099	2.969	9	1	1	29.376	1.26	63.16	C
80.00-60.00			B	0.099	2.969		1	1	29.376			
			C	0.099	2.969		1	1	29.376			
T11	0.91	4.82	A	0.092	2.997	9	1	1	30.077	1.20	59.91	C
60.00-40.00			B	0.092	2.997		1	1	30.077			
			C	0.092	2.997		1	1	30.077			
T12	0.91	4.89	A	0.086	3.021	8	1	1	30.816	1.10	54.77	C
40.00-20.00			B	0.086	3.021		1	1	30.816			
			C	0.086	3.021		1	1	30.816			
T13	0.91	5.76	A	0.083	3.035	7	1	1	32.061	0.97	48.59	C
20.00-0.00			B	0.083	3.035		1	1	32.061			
			C	0.083	3.035		1	1	32.061			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
Sum Weight:	10.78	41.92						OTM	1862.10 kip-ft	14.94		

Tower Forces - Service - 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 ft^2	F K	w plf	Ctrl. Face
T1	0.18	0.53	A	0.182	2.659	12	0.8	1	9.774	0.43	28.49	A
255.00-240.00			B	0.182	2.659		0.8	1	9.774			
			C	0.182	2.659		0.8	1	9.774			
T2	0.61	1.01	A	0.184	2.649	12	0.8	1	12.958	0.90	45.20	A
240.00-220.00			B	0.184	2.649		0.8	1	12.958			
			C	0.184	2.649		0.8	1	12.958			
T3	0.90	1.28	A	0.203	2.586	12	0.8	1	16.680	1.14	56.82	A
220.00-200.00			B	0.203	2.586		0.8	1	16.680			
			C	0.203	2.586		0.8	1	16.680			
T4	0.90	1.62	A	0.182	2.656	11	0.8	1	19.177	1.19	59.39	A
200.00-180.00			B	0.182	2.656		0.8	1	19.177			
			C	0.182	2.656		0.8	1	19.177			
T5	0.90	2.84	A	0.152	2.765	11	0.8	1	21.610	1.24	62.17	A
180.00-160.00			B	0.152	2.765		0.8	1	21.610			
			C	0.152	2.765		0.8	1	21.610			
T6	0.90	3.07	A	0.133	2.834	11	0.8	1	22.512	1.25	62.41	A
160.00-140.00			B	0.133	2.834		0.8	1	22.512			
			C	0.133	2.834		0.8	1	22.512			
T7	0.91	3.08	A	0.128	2.853	10	0.8	1	25.570	1.30	65.00	A
140.00-120.00			B	0.128	2.853		0.8	1	25.570			
			C	0.128	2.853		0.8	1	25.570			
T8	0.91	4.10	A	0.114	2.91	10	0.8	1	24.838	1.26	63.05	A
120.00-100.00			B	0.114	2.91		0.8	1	24.838			
			C	0.114	2.91		0.8	1	24.838			
T9	0.91	4.16	A	0.103	2.95	10	0.8	1	25.322	1.23	61.44	A
100.00-80.00			B	0.103	2.95		0.8	1	25.322			
			C	0.103	2.95		0.8	1	25.322			
T10	0.91	4.76	A	0.099	2.969	9	0.8	1	26.740	1.20	60.10	A
80.00-60.00			B	0.099	2.969		0.8	1	26.740			
			C	0.099	2.969		0.8	1	26.740			
T11	0.91	4.82	A	0.092	2.997	9	0.8	1	27.301	1.14	56.88	A
60.00-40.00			B	0.092	2.997		0.8	1	27.301			
			C	0.092	2.997		0.8	1	27.301			
T12	0.91	4.89	A	0.086	3.021	8	0.8	1	27.891	1.04	51.88	A
40.00-20.00			B	0.086	3.021		0.8	1	27.891			
			C	0.086	3.021		0.8	1	27.891			
T13	0.91	5.76	A	0.083	3.035	7	0.8	1	28.983	0.92	45.94	A
20.00-0.00			B	0.083	3.035		0.8	1	28.983			
			C	0.083	3.035		0.8	1	28.983			
Sum Weight:	10.78	41.92						OTM	1776.22 kip-ft	14.23		

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	0.18	0.53	A	0.182	2.659	12	0.85	1	10.128	0.42	27.92	B
255.00-240.00			B	0.182	2.659		0.85	1	10.128			
			C	0.182	2.659		0.85	1	10.128			
T2	0.61	1.01	A	0.184	2.649	12	0.85	1	13.351	0.88	43.93	A
240.00-220.00			B	0.184	2.649		0.85	1	13.351			
			C	0.184	2.649		0.85	1	13.351			
T3	0.90	1.28	A	0.203	2.586	12	0.85	1	17.064	1.11	55.55	B
220.00-200.00			B	0.203	2.586		0.85	1	17.064			
			C	0.203	2.586		0.85	1	17.064			
T4	0.90	1.62	A	0.182	2.656	11	0.85	1	19.631	1.16	58.25	B
200.00-180.00			B	0.182	2.656		0.85	1	19.631			
			C	0.182	2.656		0.85	1	19.631			
T5	0.90	2.84	A	0.152	2.765	11	0.85	1	22.123	1.22	61.15	B
180.00-160.00			B	0.152	2.765		0.85	1	22.123			
			C	0.152	2.765		0.85	1	22.123			
T6	0.90	3.07	A	0.133	2.834	11	0.85	1	23.084	1.23	61.52	B
160.00-140.00			B	0.133	2.834		0.85	1	23.084			
			C	0.133	2.834		0.85	1	23.084			
T7	0.91	3.08	A	0.128	2.853	10	0.85	1	26.334	1.29	64.54	A
140.00-120.00			B	0.128	2.853		0.85	1	26.334			
			C	0.128	2.853		0.85	1	26.334			
T8	0.91	4.10	A	0.114	2.91	10	0.85	1	25.433	1.25	62.67	A
120.00-100.00			B	0.114	2.91		0.85	1	25.433			
			C	0.114	2.91		0.85	1	25.433			
T9	0.91	4.16	A	0.103	2.95	10	0.85	1	25.948	1.22	61.13	A
100.00-80.00			B	0.103	2.95		0.85	1	25.948			
			C	0.103	2.95		0.85	1	25.948			
T10	0.91	4.76	A	0.099	2.969	9	0.85	1	27.399	1.20	59.85	A
80.00-60.00			B	0.099	2.969		0.85	1	27.399			
			C	0.099	2.969		0.85	1	27.399			
T11	0.91	4.82	A	0.092	2.997	9	0.85	1	27.995	1.13	56.69	A
60.00-40.00			B	0.092	2.997		0.85	1	27.995			
			C	0.092	2.997		0.85	1	27.995			
T12	0.91	4.89	A	0.086	3.021	8	0.85	1	28.622	1.03	51.75	A
40.00-20.00			B	0.086	3.021		0.85	1	28.622			
			C	0.086	3.021		0.85	1	28.622			
T13	0.91	5.76	A	0.083	3.035	7	0.85	1	29.752	0.92	45.86	A
20.00-0.00			B	0.083	3.035		0.85	1	29.752			
			C	0.083	3.035		0.85	1	29.752			
Sum Weight:	10.78	41.92						OTM	1749.20 kip-ft	14.08		

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	255.00-240.00	0	Wind Normal	1.43	0.00	-1.43	-352.71	-0.04	0.44
		30	Wind 90	1.28	0.64	-1.11	-274.55	-158.74	0.63
		60	Wind 60	1.14	0.99	-0.57	-140.94	-244.71	0.48

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	1.12	1.12	0.00	0.33	-276.04	0.39
		120	Wind Normal	1.26	1.09	0.63	156.15	-269.93	0.38
		150	Wind 90	1.28	0.64	1.11	275.21	-158.74	0.07
		180	Wind 60	1.31	0.00	1.31	324.25	-0.04	-0.44
		210	Wind 90	1.28	-0.64	1.11	275.21	158.67	-0.63
		240	Wind Normal	1.26	-1.09	0.63	156.15	269.86	-0.48
		270	Wind 90	1.12	-1.12	0.00	0.33	275.97	-0.39
		300	Wind 60	1.14	-0.99	-0.57	-140.94	244.64	-0.38
		330	Wind 90	1.28	-0.64	-1.11	-274.55	158.67	-0.07
T2	240.00-220.00	0	Wind Normal	2.87	0.00	-2.87	-659.95	-0.04	0.13
		30	Wind 90	2.67	1.33	-2.31	-530.41	-306.86	1.64
		60	Wind 60	2.25	1.95	-1.13	-257.93	-448.55	1.81
		90	Wind 90	2.01	2.01	0.00	1.01	-462.16	1.30
		120	Wind Normal	2.22	1.92	1.11	255.74	-441.24	1.35
		150	Wind 90	2.50	1.25	2.17	499.63	-287.92	1.23
		180	Wind 60	2.75	0.00	2.75	632.54	-0.04	-0.13
		210	Wind 90	2.67	-1.33	2.31	532.44	306.77	-1.64
		240	Wind Normal	2.38	-2.06	1.19	274.68	473.96	-1.81
		270	Wind 90	2.01	-2.01	0.00	1.01	462.07	-1.30
		300	Wind 60	2.09	-1.81	-1.04	-238.99	415.66	-1.35
		330	Wind 90	2.50	-1.25	-2.17	-497.60	287.83	-1.23
T3	220.00-200.00	0	Wind Normal	3.45	0.00	-3.45	-724.49	-0.21	0.42
		30	Wind 90	3.26	1.63	-2.82	-591.43	-342.05	2.24
		60	Wind 60	3.01	2.61	-1.51	-315.42	-547.67	1.83
		90	Wind 90	2.93	2.93	0.00	0.65	-616.03	0.03
		120	Wind Normal	3.13	2.71	1.56	329.29	-569.44	-0.14
		150	Wind 90	3.26	1.63	2.82	592.73	-342.05	0.62
		180	Wind 60	3.33	0.00	3.33	700.66	-0.21	-0.42
		210	Wind 90	3.26	-1.63	2.82	592.73	341.62	-2.24
		240	Wind Normal	3.13	-2.71	1.56	329.29	569.01	-1.83
		270	Wind 90	2.93	-2.93	0.00	0.65	615.60	-0.03
		300	Wind 60	3.01	-2.61	-1.51	-315.42	547.25	0.14
		330	Wind 90	3.26	-1.63	-2.82	-591.43	341.62	-0.62
T4	200.00-180.00	0	Wind Normal	3.60	0.00	-3.60	-683.66	-0.28	0.55
		30	Wind 90	3.39	1.70	-2.94	-557.01	-322.35	2.83
		60	Wind 60	3.14	2.72	-1.57	-297.81	-517.54	2.33
		90	Wind 90	3.07	3.07	0.00	0.83	-584.30	0.04
		120	Wind Normal	3.29	2.85	1.64	313.01	-541.01	-0.25
		150	Wind 90	3.39	1.70	2.94	558.66	-322.35	0.71
		180	Wind 60	3.46	0.00	3.46	658.22	-0.28	-0.55
		210	Wind 90	3.39	-1.70	2.94	558.66	321.78	-2.83
		240	Wind Normal	3.29	-2.85	1.64	313.01	540.44	-2.33
		270	Wind 90	3.07	-3.07	0.00	0.83	583.73	-0.04
		300	Wind 60	3.14	-2.72	-1.57	-297.81	516.97	0.25
		330	Wind 90	3.39	-1.70	-2.94	-557.01	321.78	-0.71
T5	180.00-160.00	0	Wind Normal	3.97	0.00	-3.97	-674.15	-0.36	0.67
		30	Wind 90	3.75	1.87	-3.24	-550.45	-318.73	3.38
		60	Wind 60	3.50	3.03	-1.75	-296.38	-515.44	2.80
		90	Wind 90	3.44	3.44	0.00	1.00	-584.57	0.04
		120	Wind Normal	3.66	3.17	1.83	312.30	-539.55	-0.34
		150	Wind 90	3.75	1.87	3.24	552.45	-318.73	0.79
		180	Wind 60	3.81	0.00	3.81	648.31	-0.36	-0.67
		210	Wind 90	3.75	-1.87	3.24	552.45	318.02	-3.38
		240	Wind Normal	3.66	-3.17	1.83	312.30	538.84	-2.80
		270	Wind 90	3.44	-3.44	0.00	1.00	583.86	-0.04
		300	Wind 60	3.50	-3.03	-1.75	-296.38	514.73	0.34
		330	Wind 90	3.75	-1.87	-3.24	-550.45	318.02	-0.79
T6	160.00-140.00	0	Wind Normal	4.01	0.00	-4.01	-599.58	-0.43	0.78
		30	Wind 90	3.77	1.88	-3.26	-488.30	-283.03	3.90
		60	Wind 60	3.52	3.05	-1.76	-262.96	-457.92	3.24
		90	Wind 90	3.47	3.47	0.00	1.18	-520.47	0.05

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	3.70	3.21	1.85	278.98	-481.59	-0.43
		150	Wind 90	3.77	1.88	3.26	490.66	-283.03	0.87
		180	Wind 60	3.82	0.00	3.82	574.60	-0.43	-0.78
		210	Wind 90	3.77	-1.88	3.26	490.66	282.17	-3.90
		240	Wind Normal	3.70	-3.21	1.85	278.98	480.74	-3.24
		270	Wind 90	3.47	-3.47	0.00	1.18	519.62	-0.05
		300	Wind 60	3.52	-3.05	-1.76	-262.96	457.06	0.43
		330	Wind 90	3.77	-1.88	-3.26	-488.30	282.17	-0.87
T7	140.00-120.00	0	Wind Normal	4.22	0.00	-4.22	-547.12	-0.50	0.89
		30	Wind 90	3.95	1.98	-3.42	-443.71	-257.44	4.24
		60	Wind 60	3.70	3.20	-1.85	-239.10	-416.92	3.42
		90	Wind 90	3.66	3.66	0.00	1.32	-476.41	-0.21
		120	Wind Normal	3.93	3.40	1.96	256.56	-442.58	-0.68
		150	Wind 90	3.94	1.97	3.41	444.56	-256.40	0.87
		180	Wind 60	3.98	0.00	3.98	518.87	-0.50	-0.89
		210	Wind 90	3.95	-1.98	3.42	446.36	256.44	-4.24
		240	Wind Normal	3.94	-3.41	1.97	257.19	442.68	-3.42
		270	Wind 90	3.66	-3.66	0.00	1.32	475.41	0.21
		300	Wind 60	3.69	-3.19	-1.84	-238.46	414.82	0.68
		330	Wind 90	3.94	-1.97	-3.41	-441.91	255.40	-0.87
T8	120.00-100.00	0	Wind Normal	4.04	0.00	-4.04	-443.39	-0.57	1.00
		30	Wind 90	3.84	1.92	-3.32	-364.21	-211.68	4.43
		60	Wind 60	3.60	3.12	-1.80	-196.82	-343.97	3.36
		90	Wind 90	3.56	3.56	0.00	1.45	-391.77	-0.69
		120	Wind Normal	3.76	3.26	1.88	208.35	-358.94	-1.05
		150	Wind 90	3.80	1.90	3.29	363.17	-209.41	0.80
		180	Wind 60	3.86	0.00	3.86	426.23	-0.57	-1.00
		210	Wind 90	3.84	-1.92	3.32	367.10	210.54	-4.43
		240	Wind Normal	3.79	-3.28	1.89	209.73	360.19	-3.36
		270	Wind 90	3.56	-3.56	0.00	1.45	390.62	0.69
		300	Wind 60	3.58	-3.10	-1.79	-195.43	340.43	1.05
		330	Wind 90	3.80	-1.90	-3.29	-360.28	208.27	-0.80
T9	100.00-80.00	0	Wind Normal	3.95	0.00	-3.95	-353.87	-0.64	1.07
		30	Wind 90	3.74	1.87	-3.24	-290.20	-169.12	4.74
		60	Wind 60	3.52	3.05	-1.76	-156.66	-274.78	3.61
		90	Wind 90	3.47	3.47	0.00	1.61	-313.27	-0.74
		120	Wind Normal	3.68	3.19	1.84	167.18	-287.43	-1.15
		150	Wind 90	3.70	1.85	3.21	290.34	-167.34	0.84
		180	Wind 60	3.76	0.00	3.76	340.31	-0.64	-1.07
		210	Wind 90	3.74	-1.87	3.24	293.42	167.83	-4.74
		240	Wind Normal	3.70	-3.21	1.85	168.27	288.02	-3.61
		270	Wind 90	3.47	-3.47	0.00	1.61	311.98	0.74
		300	Wind 60	3.49	-3.03	-1.75	-155.58	271.61	1.15
		330	Wind 90	3.70	-1.85	-3.21	-287.12	166.06	-0.84
T10	80.00-60.00	0	Wind Normal	3.87	0.00	-3.87	-269.03	-0.71	1.13
		30	Wind 90	3.67	1.83	-3.17	-220.44	-129.01	4.97
		60	Wind 60	3.45	2.99	-1.72	-118.90	-209.73	3.79
		90	Wind 90	3.41	3.41	0.00	1.78	-239.36	-0.78
		120	Wind Normal	3.61	3.13	1.81	128.21	-219.70	-1.23
		150	Wind 90	3.63	1.81	3.14	221.72	-127.70	0.86
		180	Wind 60	3.68	0.00	3.68	259.47	-0.71	-1.13
		210	Wind 90	3.67	-1.83	3.17	223.99	127.58	-4.97
		240	Wind Normal	3.64	-3.15	1.82	129.01	219.65	-3.79
		270	Wind 90	3.41	-3.41	0.00	1.78	237.93	0.78
		300	Wind 60	3.42	-2.97	-1.71	-118.10	206.91	1.23
		330	Wind 90	3.63	-1.81	-3.14	-218.16	126.27	-0.86
T11	60.00-40.00	0	Wind Normal	3.67	0.00	-3.67	-181.54	-0.79	1.16
		30	Wind 90	3.47	1.74	-3.01	-148.40	-87.59	5.07
		60	Wind 60	3.27	2.83	-1.63	-79.72	-142.23	3.87
		90	Wind 90	3.23	3.23	0.00	1.94	-162.45	-0.80
		120	Wind Normal	3.43	2.97	1.72	87.71	-149.34	-1.27

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	3.44	1.72	2.98	150.77	-86.71	0.86
		180	Wind 60	3.48	0.00	3.48	176.14	-0.79	-1.16
		210	Wind 90	3.47	-1.74	3.01	152.29	86.02	-5.07
		240	Wind Normal	3.45	-2.99	1.73	88.24	148.69	-3.87
		270	Wind 90	3.23	-3.23	0.00	1.94	160.87	0.80
		300	Wind 60	3.25	-2.81	-1.62	-79.19	139.73	1.27
		330	Wind 90	3.44	-1.72	-2.98	-146.89	85.14	-0.86
T12	40.00-20.00	0	Wind Normal	3.35	0.00	-3.35	-98.53	-0.86	1.13
		30	Wind 90	3.17	1.58	-2.74	-80.24	-48.40	4.95
		60	Wind 60	2.98	2.58	-1.49	-42.63	-78.34	3.78
		90	Wind 90	2.95	2.95	0.00	2.11	-89.50	-0.79
		120	Wind Normal	3.14	2.72	1.57	49.21	-82.44	-1.25
		150	Wind 90	3.14	1.57	2.72	83.63	-47.93	0.82
		180	Wind 60	3.18	0.00	3.18	97.43	-0.86	-1.13
		210	Wind 90	3.17	-1.58	2.74	84.45	46.68	-4.95
		240	Wind Normal	3.16	-2.74	1.58	49.49	81.22	-3.78
		270	Wind 90	2.95	-2.95	0.00	2.11	87.79	0.79
		300	Wind 60	2.96	-2.57	-1.48	-42.34	76.12	1.25
		330	Wind 90	3.14	-1.57	-2.72	-79.42	46.21	-0.82
T13	20.00-0.00	0	Wind Normal	2.98	0.00	-2.98	-27.49	-0.93	1.06
		30	Wind 90	2.81	1.40	-2.43	-22.06	-14.97	4.63
		60	Wind 60	2.64	2.29	-1.32	-10.95	-23.83	3.53
		90	Wind 90	2.62	2.62	0.00	2.27	-27.16	-0.74
		120	Wind Normal	2.79	2.42	1.40	16.22	-25.09	-1.18
		150	Wind 90	2.78	1.39	2.41	26.36	-14.84	0.76
		180	Wind 60	2.81	0.00	2.81	30.41	-0.93	-1.06
		210	Wind 90	2.81	-1.40	2.43	26.60	13.12	-4.63
		240	Wind Normal	2.81	-2.43	1.40	16.31	23.38	-3.53
		270	Wind 90	2.62	-2.62	0.00	2.27	25.31	0.74
		300	Wind 60	2.63	-2.28	-1.31	-10.87	21.83	1.18
		330	Wind 90	2.78	-1.39	-2.41	-21.82	12.98	-0.76

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	-45.41	-5615.50	-6.36	10.43
30	21.38	-37.03	-4561.40	-2649.97	47.66
60	34.41	-19.86	-2416.21	-4221.63	37.83
90	38.95	0.00	17.47	-4743.49	-2.92
120	36.02	20.80	2558.91	-4408.26	-7.26
150	21.18	36.69	4549.89	-2623.15	10.09
180	0.00	43.24	5387.45	-6.36	-10.43
210	-21.38	37.03	4596.34	2637.25	-47.66
240	-36.29	20.95	2582.66	4436.67	-37.83
270	-38.95	0.00	17.47	4730.77	2.92
300	-34.14	-19.71	-2392.47	4167.78	7.26
330	-21.18	-36.69	-4514.94	2610.43	-10.09

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	255.00-240.00	0	Wind Normal	0.21	0.00	-0.21	-50.91	-0.33	0.01
		30	Wind 90	0.20	0.10	-0.18	-41.79	-25.36	0.05
		60	Wind 60	0.19	0.17	-0.10	-22.17	-41.43	0.06
		90	Wind 90	0.19	0.19	0.00	1.56	-47.17	0.07
		120	Wind Normal	0.20	0.17	0.10	26.19	-42.99	0.07
		150	Wind 90	0.20	0.10	0.18	44.90	-25.36	0.04
		180	Wind 60	0.20	0.00	0.20	52.23	-0.33	-0.01
		210	Wind 90	0.20	-0.10	0.18	44.90	24.70	-0.05
		240	Wind Normal	0.20	-0.17	0.10	26.19	42.33	-0.06
		270	Wind 90	0.19	-0.19	0.00	1.56	46.51	-0.07
		300	Wind 60	0.19	-0.17	-0.10	-22.17	40.77	-0.07
		330	Wind 90	0.20	-0.10	-0.18	-41.79	24.70	-0.04
T2	240.00-220.00	0	Wind Normal	0.38	0.00	-0.38	-83.13	-0.43	-0.02
		30	Wind 90	0.37	0.18	-0.32	-68.34	-42.88	0.15
		60	Wind 60	0.34	0.29	-0.17	-33.49	-67.42	0.21
		90	Wind 90	0.32	0.32	0.00	5.19	-73.19	0.19
		120	Wind Normal	0.33	0.29	0.17	43.28	-66.40	0.20
		150	Wind 90	0.36	0.18	0.31	76.09	-41.36	0.17
		180	Wind 60	0.38	0.00	0.38	91.66	-0.43	0.02
		210	Wind 90	0.37	-0.18	0.32	78.72	42.02	-0.15
		240	Wind Normal	0.34	-0.30	0.17	44.80	68.17	-0.21
		270	Wind 90	0.32	-0.32	0.00	5.19	72.33	-0.19
		300	Wind 60	0.32	-0.28	-0.16	-31.97	63.93	-0.20
		330	Wind 90	0.36	-0.18	-0.31	-65.71	40.50	-0.17
T3	220.00-200.00	0	Wind Normal	0.46	0.00	-0.46	-93.93	-1.38	0.01
		30	Wind 90	0.45	0.22	-0.39	-78.25	-48.36	0.19
		60	Wind 60	0.43	0.37	-0.21	-41.80	-79.20	0.19
		90	Wind 90	0.42	0.42	0.00	3.13	-89.81	0.07
		120	Wind Normal	0.44	0.38	0.22	48.89	-80.64	0.06
		150	Wind 90	0.45	0.22	0.39	84.51	-48.36	0.11
		180	Wind 60	0.45	0.00	0.45	98.53	-1.38	-0.01
		210	Wind 90	0.45	-0.22	0.39	84.51	45.60	-0.19
		240	Wind Normal	0.44	-0.38	0.22	48.89	77.88	-0.19
		270	Wind 90	0.42	-0.42	0.00	3.13	87.05	-0.07
		300	Wind 60	0.43	-0.37	-0.21	-41.80	76.44	-0.06
		330	Wind 90	0.45	-0.22	-0.39	-78.25	45.60	-0.11
T4	200.00-180.00	0	Wind Normal	0.48	0.00	-0.48	-87.88	-1.83	0.01
		30	Wind 90	0.47	0.23	-0.40	-72.97	-46.23	0.24
		60	Wind 60	0.45	0.39	-0.22	-38.60	-75.50	0.24
		90	Wind 90	0.44	0.44	0.00	3.93	-85.72	0.08
		120	Wind Normal	0.46	0.40	0.23	47.38	-77.09	0.07
		150	Wind 90	0.47	0.23	0.40	80.82	-46.23	0.13
		180	Wind 60	0.47	0.00	0.47	93.90	-1.83	-0.01
		210	Wind 90	0.47	-0.23	0.40	80.82	42.56	-0.24
		240	Wind Normal	0.46	-0.40	0.23	47.38	73.43	-0.24
		270	Wind 90	0.44	-0.44	0.00	3.93	82.05	-0.08
		300	Wind 60	0.45	-0.39	-0.22	-38.60	71.83	-0.07
		330	Wind 90	0.47	-0.23	-0.40	-72.97	42.56	-0.13
T5	180.00-160.00	0	Wind Normal	0.57	0.00	-0.57	-92.50	-2.28	0.01
		30	Wind 90	0.56	0.28	-0.48	-77.25	-49.60	0.27
		60	Wind 60	0.54	0.47	-0.27	-41.07	-81.57	0.27
		90	Wind 90	0.53	0.53	0.00	4.71	-92.90	0.09
		120	Wind Normal	0.55	0.47	0.27	51.30	-82.99	0.07
		150	Wind 90	0.56	0.28	0.48	86.66	-49.60	0.14
		180	Wind 60	0.56	0.00	0.56	100.27	-2.28	-0.01
		210	Wind 90	0.56	-0.28	0.48	86.66	45.04	-0.27
		240	Wind Normal	0.55	-0.47	0.27	51.30	78.42	-0.27
		270	Wind 90	0.53	-0.53	0.00	4.71	88.34	-0.09
		300	Wind 60	0.54	-0.47	-0.27	-41.07	77.00	-0.07
		330	Wind 90	0.56	-0.28	-0.48	-77.25	45.04	-0.14
T6	160.00-140.00	0	Wind Normal	0.59	0.00	-0.59	-82.65	-2.73	0.01

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
		30	Wind 90	0.57	0.29	-0.49	-68.71	-45.55	0.33
		60	Wind 60	0.55	0.48	-0.28	-35.92	-74.41	0.33
		90	Wind 90	0.55	0.55	0.00	5.46	-84.69	0.11
		120	Wind Normal	0.56	0.49	0.28	47.68	-75.85	0.08
		150	Wind 90	0.57	0.29	0.49	79.64	-45.55	0.17
		180	Wind 60	0.58	0.00	0.58	91.92	-2.73	-0.01
		210	Wind 90	0.57	-0.29	0.49	79.64	40.09	-0.33
		240	Wind Normal	0.56	-0.49	0.28	47.68	70.39	-0.33
		270	Wind 90	0.55	-0.55	0.00	5.46	79.23	-0.11
		300	Wind 60	0.55	-0.48	-0.28	-35.92	68.96	-0.08
		330	Wind 90	0.57	-0.29	-0.49	-68.71	40.09	-0.17
T7	140.00-120.00	0	Wind Normal	0.60	0.00	-0.60	-72.04	-3.19	0.02
		30	Wind 90	0.58	0.29	-0.50	-59.58	-40.94	0.35
		60	Wind 60	0.56	0.49	-0.28	-30.70	-66.43	0.34
		90	Wind 90	0.56	0.56	0.00	5.81	-75.60	0.09
		120	Wind Normal	0.58	0.50	0.29	43.19	-67.93	0.07
		150	Wind 90	0.58	0.29	0.50	71.04	-40.84	0.18
		180	Wind 60	0.58	0.00	0.58	81.75	-3.19	-0.02
		210	Wind 90	0.58	-0.29	0.50	71.21	34.57	-0.35
		240	Wind Normal	0.58	-0.50	0.29	43.29	61.73	-0.34
		270	Wind 90	0.56	-0.56	0.00	5.81	69.23	-0.09
		300	Wind 60	0.56	-0.49	-0.28	-30.60	59.89	-0.07
		330	Wind 90	0.58	-0.29	-0.50	-59.41	34.47	-0.18
T8	120.00-100.00	0	Wind Normal	0.55	0.00	-0.55	-54.80	-3.65	0.02
		30	Wind 90	0.54	0.27	-0.46	-45.33	-33.17	0.36
		60	Wind 60	0.52	0.45	-0.26	-22.78	-53.15	0.32
		90	Wind 90	0.51	0.51	0.00	5.80	-60.15	0.04
		120	Wind Normal	0.53	0.46	0.26	34.83	-53.94	0.04
		150	Wind 90	0.53	0.27	0.46	56.54	-32.95	0.17
		180	Wind 60	0.54	0.00	0.54	65.05	-3.65	-0.02
		210	Wind 90	0.54	-0.27	0.46	56.92	25.86	-0.36
		240	Wind Normal	0.53	-0.46	0.27	35.04	47.01	-0.32
		270	Wind 90	0.51	-0.51	0.00	5.80	52.85	-0.04
		300	Wind 60	0.52	-0.45	-0.26	-22.56	45.47	-0.04
		330	Wind 90	0.53	-0.27	-0.46	-44.95	25.65	-0.17
T9	100.00-80.00	0	Wind Normal	0.54	0.00	-0.54	-41.97	-4.09	0.02
		30	Wind 90	0.52	0.26	-0.45	-34.37	-27.60	0.38
		60	Wind 60	0.51	0.44	-0.25	-16.41	-43.52	0.34
		90	Wind 90	0.50	0.50	0.00	6.35	-49.13	0.04
		120	Wind Normal	0.51	0.45	0.26	29.52	-44.21	0.03
		150	Wind 90	0.52	0.26	0.45	46.78	-27.43	0.18
		180	Wind 60	0.52	0.00	0.52	53.53	-4.09	-0.02
		210	Wind 90	0.52	-0.26	0.45	47.08	19.43	-0.38
		240	Wind Normal	0.52	-0.45	0.26	29.69	36.33	-0.34
		270	Wind 90	0.50	-0.50	0.00	6.35	40.95	-0.04
		300	Wind 60	0.50	-0.43	-0.25	-16.24	35.05	-0.03
		330	Wind 90	0.52	-0.26	-0.45	-34.08	19.26	-0.18
T10	80.00-60.00	0	Wind Normal	0.52	0.00	-0.52	-29.44	-4.51	0.02
		30	Wind 90	0.50	0.25	-0.44	-23.70	-22.16	0.40
		60	Wind 60	0.49	0.42	-0.24	-10.22	-34.11	0.35
		90	Wind 90	0.48	0.48	0.00	6.87	-38.35	0.04
		120	Wind Normal	0.50	0.43	0.25	24.29	-34.69	0.03
		150	Wind 90	0.50	0.25	0.43	37.22	-22.04	0.19
		180	Wind 60	0.51	0.00	0.51	42.26	-4.51	-0.02
		210	Wind 90	0.50	-0.25	0.44	37.44	13.14	-0.40
		240	Wind Normal	0.50	-0.43	0.25	24.41	25.88	-0.35
		270	Wind 90	0.48	-0.48	0.00	6.87	29.32	-0.04
		300	Wind 60	0.48	-0.42	-0.24	-10.10	24.87	-0.03
		330	Wind 90	0.50	-0.25	-0.43	-23.49	13.01	-0.19
T11	60.00-40.00	0	Wind Normal	0.49	0.00	-0.49	-17.13	-4.93	0.02
		30	Wind 90	0.48	0.24	-0.41	-13.24	-16.80	0.41

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
		60	Wind 60	0.46	0.40	-0.23	-4.17	-24.84	0.36
		90	Wind 90	0.46	0.46	0.00	7.33	-27.70	0.04
		120	Wind Normal	0.47	0.41	0.23	19.06	-25.26	0.03
		150	Wind 90	0.47	0.24	0.41	27.75	-16.72	0.19
		180	Wind 60	0.48	0.00	0.48	31.13	-4.93	-0.02
		210	Wind 90	0.48	-0.24	0.41	27.89	6.95	-0.41
		240	Wind Normal	0.47	-0.41	0.24	19.15	15.55	-0.36
		270	Wind 90	0.46	-0.46	0.00	7.33	17.85	-0.04
		300	Wind 60	0.46	-0.40	-0.23	-4.09	14.84	-0.03
		330	Wind 90	0.47	-0.24	-0.41	-13.10	6.87	-0.19
T12	40.00-20.00	0	Wind Normal	0.44	0.00	-0.44	-5.60	-5.31	0.03
		30	Wind 90	0.43	0.21	-0.37	-3.48	-11.75	0.39
		60	Wind 60	0.42	0.36	-0.21	1.44	-16.11	0.35
		90	Wind 90	0.41	0.41	0.00	7.67	-17.67	0.03
		120	Wind Normal	0.43	0.37	0.21	14.05	-16.36	0.02
		150	Wind 90	0.43	0.21	0.37	18.75	-11.71	0.18
		180	Wind 60	0.43	0.00	0.43	20.58	-5.31	-0.03
		210	Wind 90	0.43	-0.21	0.37	18.83	1.13	-0.39
		240	Wind Normal	0.43	-0.37	0.21	14.10	5.81	-0.35
		270	Wind 90	0.41	-0.41	0.00	7.67	7.04	-0.03
		300	Wind 60	0.41	-0.36	-0.21	1.49	5.41	-0.02
		330	Wind 90	0.43	-0.21	-0.37	-3.40	1.08	-0.18
T13	20.00-0.00	0	Wind Normal	0.38	0.00	-0.38	3.91	-5.61	0.03
		30	Wind 90	0.37	0.18	-0.32	4.53	-7.45	0.37
		60	Wind 60	0.36	0.31	-0.18	5.94	-8.70	0.32
		90	Wind 90	0.35	0.35	0.00	7.72	-9.15	0.02
		120	Wind Normal	0.37	0.32	0.18	9.55	-8.78	0.01
		150	Wind 90	0.37	0.18	0.32	10.90	-7.44	0.15
		180	Wind 60	0.37	0.00	0.37	11.42	-5.61	-0.03
		210	Wind 90	0.37	-0.18	0.32	10.92	-3.76	-0.37
		240	Wind Normal	0.37	-0.32	0.18	9.57	-2.42	-0.32
		270	Wind 90	0.35	-0.35	0.00	7.72	-2.07	-0.02
		300	Wind 60	0.35	-0.31	-0.18	5.95	-2.54	-0.01
		330	Wind 90	0.37	-0.18	-0.32	4.55	-3.78	-0.15

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	-6.22	-708.07	-40.27	0.18
30	3.02	-5.22	-582.49	-417.86	3.88
60	5.02	-2.90	-289.96	-666.39	3.68
90	5.72	0.00	71.53	-751.22	0.92
120	5.12	2.96	439.21	-677.10	0.78
150	3.00	5.19	721.62	-415.59	1.99
180	0.00	6.08	834.22	-40.27	-0.18
210	-3.02	5.22	725.55	337.33	-3.88
240	-5.15	2.97	441.48	600.50	-3.68
270	-5.72	0.00	71.53	670.69	-0.92
300	-4.99	-2.88	-287.69	581.93	-0.78
330	-3.00	-5.19	-578.55	335.06	-1.99

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	255.00-240.00	0	Wind Normal	0.47	0.00	-0.47	-114.95	-0.04	0.14
		30	Wind 90	0.42	0.21	-0.36	-89.43	-51.86	0.21
		60	Wind 60	0.37	0.32	-0.19	-45.80	-79.93	0.16
		90	Wind 90	0.36	0.36	0.00	0.33	-90.16	0.13
		120	Wind Normal	0.41	0.36	0.21	51.21	-88.16	0.12
		150	Wind 90	0.42	0.21	0.36	90.09	-51.86	0.02
		180	Wind 60	0.43	0.00	0.43	106.10	-0.04	-0.14
		210	Wind 90	0.42	-0.21	0.36	90.09	51.79	-0.21
		240	Wind Normal	0.41	-0.36	0.21	51.21	88.09	-0.16
		270	Wind 90	0.36	-0.36	0.00	0.33	90.09	-0.13
		300	Wind 60	0.37	-0.32	-0.19	-45.80	79.86	-0.12
		330	Wind 90	0.42	-0.21	-0.36	-89.43	51.79	-0.02
T2	240.00-220.00	0	Wind Normal	0.95	0.00	-0.95	-216.50	-0.04	0.04
		30	Wind 90	0.88	0.44	-0.76	-173.97	-101.07	0.54
		60	Wind 60	0.74	0.64	-0.37	-84.38	-147.96	0.59
		90	Wind 90	0.66	0.66	0.00	1.01	-152.63	0.43
		120	Wind Normal	0.73	0.63	0.37	85.03	-145.57	0.44
		150	Wind 90	0.82	0.41	0.71	165.29	-94.89	0.40
		180	Wind 60	0.90	0.00	0.90	208.92	-0.04	-0.04
		210	Wind 90	0.88	-0.44	0.76	176.00	100.98	-0.54
		240	Wind Normal	0.78	-0.68	0.39	91.22	156.19	-0.59
		270	Wind 90	0.66	-0.66	0.00	1.01	152.54	-0.43
		300	Wind 60	0.69	-0.60	-0.34	-78.20	137.16	-0.44
		330	Wind 90	0.82	-0.41	-0.71	-163.26	94.80	-0.40
T3	220.00-200.00	0	Wind Normal	1.18	0.00	-1.18	-246.18	-0.21	0.14
		30	Wind 90	1.11	0.56	-0.96	-201.38	-116.86	0.73
		60	Wind 60	1.03	0.89	-0.52	-107.58	-187.68	0.60
		90	Wind 90	1.01	1.01	0.00	0.65	-211.35	0.01
		120	Wind Normal	1.07	0.93	0.53	112.99	-194.79	-0.05
		150	Wind 90	1.11	0.56	0.96	202.69	-116.86	0.20
		180	Wind 60	1.14	0.00	1.14	239.28	-0.21	-0.14
		210	Wind 90	1.11	-0.56	0.96	202.69	116.43	-0.73
		240	Wind Normal	1.07	-0.93	0.53	112.99	194.36	-0.60
		270	Wind 90	1.01	-1.01	0.00	0.65	210.92	-0.01
		300	Wind 60	1.03	-0.89	-0.52	-107.58	187.25	0.05
		330	Wind 90	1.11	-0.56	-0.96	-201.38	116.43	-0.20
T4	200.00-180.00	0	Wind Normal	1.23	0.00	-1.23	-233.70	-0.28	0.18
		30	Wind 90	1.16	0.58	-1.01	-190.87	-110.96	0.92
		60	Wind 60	1.08	0.94	-0.54	-102.20	-178.73	0.76
		90	Wind 90	1.06	1.06	0.00	0.83	-202.00	0.01
		120	Wind Normal	1.13	0.98	0.57	108.27	-186.39	-0.08
		150	Wind 90	1.16	0.58	1.01	192.52	-110.96	0.23
		180	Wind 60	1.19	0.00	1.19	226.51	-0.28	-0.18
		210	Wind 90	1.16	-0.58	1.01	192.52	110.39	-0.92
		240	Wind Normal	1.13	-0.98	0.57	108.27	185.82	-0.76
		270	Wind 90	1.06	-1.06	0.00	0.83	201.43	-0.01
		300	Wind 60	1.08	-0.94	-0.54	-102.20	178.16	0.08
		330	Wind 90	1.16	-0.58	-1.01	-190.87	110.39	-0.23
T5	180.00-160.00	0	Wind Normal	1.30	0.00	-1.30	-219.45	-0.36	0.22
		30	Wind 90	1.22	0.61	-1.06	-179.06	-104.32	1.10
		60	Wind 60	1.14	0.99	-0.57	-96.10	-168.55	0.91
		90	Wind 90	1.12	1.12	0.00	1.00	-191.12	0.01
		120	Wind Normal	1.20	1.04	0.60	102.65	-176.42	-0.11
		150	Wind 90	1.22	0.61	1.06	181.07	-104.32	0.26
		180	Wind 60	1.24	0.00	1.24	212.37	-0.36	-0.22
		210	Wind 90	1.22	-0.61	1.06	181.07	103.60	-1.10
		240	Wind Normal	1.20	-1.04	0.60	102.65	175.71	-0.91
		270	Wind 90	1.12	-1.12	0.00	1.00	190.41	-0.01

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	1.14	-0.99	-0.57	-96.10	167.84	0.11
		330	Wind 90	1.22	-0.61	-1.06	-179.06	103.60	-0.26
T6	160.00-140.00	0	Wind Normal	1.31	0.00	-1.31	-194.99	-0.43	0.26
		30	Wind 90	1.23	0.62	-1.07	-158.65	-92.70	1.27
		60	Wind 60	1.15	1.00	-0.57	-85.07	-149.81	1.06
		90	Wind 90	1.13	1.13	0.00	1.18	-170.24	0.02
		120	Wind Normal	1.21	1.05	0.60	91.89	-157.54	-0.14
		150	Wind 90	1.23	0.62	1.07	161.01	-92.70	0.28
		180	Wind 60	1.25	0.00	1.25	188.42	-0.43	-0.26
		210	Wind 90	1.23	-0.62	1.07	161.01	91.85	-1.27
		240	Wind Normal	1.21	-1.05	0.60	91.89	156.69	-1.06
		270	Wind 90	1.13	-1.13	0.00	1.18	169.38	-0.02
		300	Wind 60	1.15	-1.00	-0.57	-85.07	148.96	0.14
		330	Wind 90	1.23	-0.62	-1.07	-158.65	91.85	-0.28
T7	140.00-120.00	0	Wind Normal	1.38	0.00	-1.38	-177.76	-0.50	0.29
		30	Wind 90	1.29	0.65	-1.12	-143.99	-84.40	1.38
		60	Wind 60	1.21	1.05	-0.60	-77.18	-136.47	1.12
		90	Wind 90	1.20	1.20	0.00	1.32	-155.90	-0.07
		120	Wind Normal	1.28	1.11	0.64	84.67	-144.85	-0.22
		150	Wind 90	1.29	0.64	1.11	146.05	-84.06	0.28
		180	Wind 60	1.30	0.00	1.30	170.32	-0.50	-0.29
		210	Wind 90	1.29	-0.65	1.12	146.64	83.40	-1.38
		240	Wind Normal	1.29	-1.11	0.64	84.87	144.21	-1.12
		270	Wind 90	1.20	-1.20	0.00	1.32	154.90	0.07
		300	Wind 60	1.20	-1.04	-0.60	-76.97	135.12	0.22
		330	Wind 90	1.29	-0.64	-1.11	-143.40	83.06	-0.28
T8	120.00-100.00	0	Wind Normal	1.32	0.00	-1.32	-143.81	-0.57	0.33
		30	Wind 90	1.25	0.63	-1.09	-117.95	-69.51	1.45
		60	Wind 60	1.18	1.02	-0.59	-63.29	-112.70	1.10
		90	Wind 90	1.16	1.16	0.00	1.45	-128.31	-0.23
		120	Wind Normal	1.23	1.06	0.61	69.01	-117.59	-0.34
		150	Wind 90	1.24	0.62	1.07	119.56	-68.76	0.26
		180	Wind 60	1.26	0.00	1.26	140.15	-0.57	-0.33
		210	Wind 90	1.25	-0.63	1.09	120.84	68.36	-1.45
		240	Wind Normal	1.24	-1.07	0.62	69.46	117.23	-1.10
		270	Wind 90	1.16	-1.16	0.00	1.45	127.17	0.23
		300	Wind 60	1.17	-1.01	-0.58	-62.84	110.78	0.34
		330	Wind 90	1.24	-0.62	-1.07	-116.67	67.62	-0.26
T9	100.00-80.00	0	Wind Normal	1.29	0.00	-1.29	-114.46	-0.64	0.35
		30	Wind 90	1.22	0.61	-1.06	-93.67	-55.66	1.55
		60	Wind 60	1.15	0.99	-0.57	-50.07	-90.16	1.18
		90	Wind 90	1.13	1.13	0.00	1.61	-102.72	-0.24
		120	Wind Normal	1.20	1.04	0.60	55.68	-94.29	-0.38
		150	Wind 90	1.21	0.60	1.05	95.89	-55.08	0.27
		180	Wind 60	1.23	0.00	1.23	112.21	-0.64	-0.35
		210	Wind 90	1.22	-0.61	1.06	96.90	54.37	-1.55
		240	Wind Normal	1.21	-1.05	0.60	56.03	93.61	-1.18
		270	Wind 90	1.13	-1.13	0.00	1.61	101.44	0.24
		300	Wind 60	1.14	-0.99	-0.57	-49.72	88.26	0.38
		330	Wind 90	1.21	-0.60	-1.05	-92.67	53.79	-0.27
T10	80.00-60.00	0	Wind Normal	1.26	0.00	-1.26	-86.65	-0.71	0.37
		30	Wind 90	1.20	0.60	-1.04	-70.78	-42.61	1.62
		60	Wind 60	1.13	0.97	-0.56	-37.63	-68.96	1.24
		90	Wind 90	1.11	1.11	0.00	1.78	-78.64	-0.26
		120	Wind Normal	1.18	1.02	0.59	43.06	-72.22	-0.40
		150	Wind 90	1.18	0.59	1.03	73.59	-42.18	0.28
		180	Wind 60	1.20	0.00	1.20	85.92	-0.71	-0.37
		210	Wind 90	1.20	-0.60	1.04	74.34	41.18	-1.62
		240	Wind Normal	1.19	-1.03	0.59	43.32	71.24	-1.24
		270	Wind 90	1.11	-1.11	0.00	1.78	77.21	0.26
		300	Wind 60	1.12	-0.97	-0.56	-37.37	67.08	0.40

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	1.18	-0.59	-1.03	-70.04	40.75	-0.28
T11	60.00-40.00	0	Wind Normal	1.20	0.00	-1.20	-57.97	-0.79	0.38
		30	Wind 90	1.13	0.57	-0.98	-47.15	-29.13	1.66
		60	Wind 60	1.07	0.92	-0.53	-24.72	-46.97	1.26
		90	Wind 90	1.06	1.06	0.00	1.94	-53.57	-0.26
		120	Wind Normal	1.12	0.97	0.56	29.95	-49.29	-0.41
		150	Wind 90	1.12	0.56	0.97	50.54	-28.84	0.28
		180	Wind 60	1.14	0.00	1.14	58.82	-0.79	-0.38
		210	Wind 90	1.13	-0.57	0.98	51.03	27.56	-1.66
		240	Wind Normal	1.13	-0.98	0.56	30.12	48.02	-1.26
		270	Wind 90	1.06	-1.06	0.00	1.94	52.00	0.26
		300	Wind 60	1.06	-0.92	-0.53	-24.55	45.10	0.41
		330	Wind 90	1.12	-0.56	-0.97	-46.66	27.27	-0.28
T12	40.00-20.00	0	Wind Normal	1.10	0.00	-1.10	-30.75	-0.86	0.37
		30	Wind 90	1.03	0.52	-0.90	-24.78	-16.38	1.62
		60	Wind 60	0.97	0.84	-0.49	-12.50	-26.16	1.23
		90	Wind 90	0.96	0.96	0.00	2.11	-29.80	-0.26
		120	Wind Normal	1.03	0.89	0.51	17.49	-27.50	-0.41
		150	Wind 90	1.02	0.51	0.89	28.73	-16.23	0.27
		180	Wind 60	1.04	0.00	1.04	33.23	-0.86	-0.37
		210	Wind 90	1.03	-0.52	0.90	28.99	14.67	-1.62
		240	Wind Normal	1.03	-0.89	0.52	17.58	25.94	-1.23
		270	Wind 90	0.96	-0.96	0.00	2.11	28.09	0.26
		300	Wind 60	0.97	-0.84	-0.48	-12.41	24.28	0.41
		330	Wind 90	1.02	-0.51	-0.89	-24.52	14.51	-0.27
T13	20.00-0.00	0	Wind Normal	0.97	0.00	-0.97	-7.45	-0.93	0.35
		30	Wind 90	0.92	0.46	-0.79	-5.67	-5.51	1.51
		60	Wind 60	0.86	0.75	-0.43	-2.05	-8.41	1.15
		90	Wind 90	0.86	0.86	0.00	2.27	-9.49	-0.24
		120	Wind Normal	0.91	0.79	0.46	6.83	-8.82	-0.39
		150	Wind 90	0.91	0.45	0.79	10.14	-5.47	0.25
		180	Wind 60	0.92	0.00	0.92	11.46	-0.93	-0.35
		210	Wind 90	0.92	-0.46	0.79	10.21	3.66	-1.51
		240	Wind Normal	0.92	-0.79	0.46	6.85	7.01	-1.15
		270	Wind 90	0.86	-0.86	0.00	2.27	7.64	0.24
		300	Wind 60	0.86	-0.74	-0.43	-2.02	6.50	0.39
		330	Wind 90	0.91	-0.45	-0.79	-5.60	3.61	-0.25

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	-14.94	-1844.62	-6.36	3.41
30	7.04	-12.19	-1497.38	-880.96	15.56
60	11.33	-6.54	-788.58	-1402.48	12.35
90	12.83	0.00	17.47	-1575.94	-0.95
120	11.86	6.85	858.71	-1463.43	-2.37
150	6.97	12.08	1517.15	-872.20	3.29
180	0.00	14.23	1793.69	-6.36	-3.41
210	-7.04	12.19	1532.32	868.24	-15.56
240	-11.95	6.90	866.46	1464.13	-12.35
270	-12.83	0.00	17.47	1563.21	0.95
300	-11.25	-6.49	-780.83	1376.33	2.37
330	-6.97	-12.08	-1482.21	859.48	-3.29

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_C Front ft^2	C_AA_C Side ft^2
5/8" x 10' lightning rod	240.0000	0.02	-2.50	1.44	260.00	1.548	37	0.63	0.63
Beacon	120.0000	0.07	2.50	1.44	256.00	1.543	37	2.40	2.40
OB light	0.0000	0.03	0.00	-8.73	128.50	1.334	32	0.60	0.60
OB light	120.0000	0.03	7.56	4.36	128.50	1.334	32	0.60	0.60
OB light	240.0000	0.03	-7.56	4.36	128.50	1.334	32	0.60	0.60
40,000 sq in (277.78 sq ft EPA)	0.0000	4.00	0.00	0.00	250.00	1.535	37	277.78	277.78
30,000 sq in (208.33 sq ft EPA)	0.0000	3.00	0.00	0.00	240.00	1.522	37	208.33	208.33
30,000 sq in (208.33 sq ft EPA)	0.0000	3.00	0.00	0.00	230.00	1.508	36	208.33	208.33
30,000 sq in (208.33 sq ft EPA)	0.0000	3.00	0.00	0.00	220.00	1.494	36	208.33	208.33
	Sum Weight:	13.20							

Discrete Appurtenance Vectors - No Ice

5/8" x 10' lightning rod - Elevation 260 - 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	-5.10	0.06	-0.05
30	0.02	0.01	0.01	-0.02	-4.41	-2.51	-0.03
60	0.02	0.00	0.02	-0.01	-2.53	-4.38	0.00
90	0.02	0.01	0.02	0.00	0.03	-5.07	0.03
120	0.01	0.02	0.02	0.01	2.60	-4.38	0.05
150	0.00	0.02	0.01	0.02	4.47	-2.51	0.06
180	0.01	0.02	0.00	0.02	5.16	0.06	0.05
210	0.02	0.01	-0.01	0.02	4.47	2.62	0.03
240	0.02	0.00	-0.02	0.01	2.60	4.50	0.00
270	0.02	0.01	-0.02	0.00	0.03	5.19	-0.03
300	0.01	0.02	-0.02	-0.01	-2.53	4.50	-0.05
330	0.00	0.02	-0.01	-0.02	-4.41	2.62	-0.06

Beacon - Elevation 256 - 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	-19.22	-0.18	0.19
30	0.00	0.08	0.04	-0.07	-16.63	-9.85	0.22
60	0.04	0.07	0.07	-0.04	-9.56	-16.92	0.19
90	0.07	0.04	0.08	0.00	0.11	-19.51	0.11
120	0.08	0.00	0.07	0.04	9.77	-16.92	0.00
150	0.07	0.04	0.04	0.07	16.84	-9.85	-0.11
180	0.04	0.07	0.00	0.08	19.43	-0.18	-0.19
210	0.00	0.08	-0.04	0.07	16.84	9.48	-0.22
240	0.04	0.07	-0.07	0.04	9.77	16.55	-0.19
270	0.07	0.04	-0.08	0.00	0.11	19.14	-0.11
300	0.08	0.00	-0.07	-0.04	-9.56	16.55	0.00

Beacon - Elevation 256 - 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
330	0.07	0.04	-0.04	-0.07	-16.63	9.48	0.11

OB light - Elevation 128.5 - 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	0.02	0.00	0.00	-0.02	-2.40	0.00	0.00
30	0.01	0.01	0.01	-0.01	-2.12	-1.05	-0.07
60	0.01	0.01	0.01	-0.01	-1.35	-1.82	-0.12
90	0.00	0.02	0.02	0.00	-0.30	-2.10	-0.14
120	0.01	0.01	0.01	0.01	0.75	-1.82	-0.12
150	0.01	0.01	0.01	0.01	1.52	-1.05	-0.07
180	0.02	0.00	0.00	0.02	1.80	0.00	0.00
210	0.01	0.01	-0.01	0.01	1.52	1.05	0.07
240	0.01	0.01	-0.01	0.01	0.75	1.82	0.12
270	0.00	0.02	-0.02	0.00	-0.30	2.10	0.14
300	0.01	0.01	-0.01	-0.01	-1.35	1.82	0.12
330	0.01	0.01	-0.01	-0.01	-2.12	1.05	0.07

OB light - Elevation 128.5 - 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	-0.02	-1.95	-0.26	0.12
30	0.00	0.02	0.01	-0.01	-1.67	-1.31	0.14
60	0.01	0.01	0.01	-0.01	-0.90	-2.08	0.12
90	0.01	0.01	0.02	0.00	0.15	-2.36	0.07
120	0.02	0.00	0.01	0.01	1.20	-2.08	0.00
150	0.01	0.01	0.01	0.01	1.97	-1.31	-0.07
180	0.01	0.01	0.00	0.02	2.25	-0.26	-0.12
210	0.00	0.02	-0.01	0.01	1.97	0.79	-0.14
240	0.01	0.01	-0.01	0.01	1.20	1.56	-0.12
270	0.01	0.01	-0.02	0.00	0.15	1.84	-0.07
300	0.02	0.00	-0.01	-0.01	-0.90	1.56	0.00
330	0.01	0.01	-0.01	-0.01	-1.67	0.79	0.07

OB light - Elevation 128.5 - 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	-0.02	-1.95	0.26	-0.12
30	0.01	0.01	0.01	-0.01	-1.67	-0.79	-0.07
60	0.02	0.00	0.01	-0.01	-0.90	-1.56	0.00
90	0.01	0.01	0.02	0.00	0.15	-1.84	0.07
120	0.01	0.01	0.01	0.01	1.20	-1.56	0.12
150	0.00	0.02	0.01	0.01	1.97	-0.79	0.14
180	0.01	0.01	0.00	0.02	2.25	0.26	0.12
210	0.01	0.01	-0.01	0.01	1.97	1.31	0.07
240	0.02	0.00	-0.01	0.01	1.20	2.08	0.00
270	0.01	0.01	-0.02	0.00	0.15	2.36	-0.07
300	0.01	0.01	-0.01	-0.01	-0.90	2.08	-0.12
330	0.00	0.02	-0.01	-0.01	-1.67	1.31	-0.14

40,000 sq in (277.78 sq ft EPA) - Elevation 250 - 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	7.13	0.00	0.00	-7.13	-1782.34	0.00	0.00
30	7.13	0.00	3.56	-6.17	-1543.55	-891.17	0.00
60	7.13	0.00	6.17	-3.56	-891.17	-1543.55	0.00
90	7.13	0.00	7.13	0.00	0.00	-1782.34	0.00
120	7.13	0.00	6.17	3.56	891.17	-1543.55	0.00
150	7.13	0.00	3.56	6.17	1543.55	-891.17	0.00
180	7.13	0.00	0.00	7.13	1782.34	0.00	0.00
210	7.13	0.00	-3.56	6.17	1543.55	891.17	0.00
240	7.13	0.00	-6.17	3.56	891.17	1543.55	0.00
270	7.13	0.00	-7.13	0.00	0.00	1782.34	0.00
300	7.13	0.00	-6.17	-3.56	-891.17	1543.55	0.00
330	7.13	0.00	-3.56	-6.17	-1543.55	891.17	0.00

30,000 sq in (208.33 sq ft EPA) - Elevation 240 - 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	5.30	0.00	0.00	-5.30	-1272.27	0.00	0.00
30	5.30	0.00	2.65	-4.59	-1101.82	-636.14	0.00
60	5.30	0.00	4.59	-2.65	-636.14	-1101.82	0.00
90	5.30	0.00	5.30	0.00	0.00	-1272.27	0.00
120	5.30	0.00	4.59	2.65	636.14	-1101.82	0.00
150	5.30	0.00	2.65	4.59	1101.82	-636.14	0.00
180	5.30	0.00	0.00	5.30	1272.27	0.00	0.00
210	5.30	0.00	-2.65	4.59	1101.82	636.14	0.00
240	5.30	0.00	-4.59	2.65	636.14	1101.82	0.00
270	5.30	0.00	-5.30	0.00	0.00	1272.27	0.00
300	5.30	0.00	-4.59	-2.65	-636.14	1101.82	0.00
330	5.30	0.00	-2.65	-4.59	-1101.82	636.14	0.00

30,000 sq in (208.33 sq ft EPA) - Elevation 230 - 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	5.25	0.00	0.00	-5.25	-1208.39	0.00	0.00
30	5.25	0.00	2.63	-4.55	-1046.49	-604.19	0.00
60	5.25	0.00	4.55	-2.63	-604.19	-1046.49	0.00
90	5.25	0.00	5.25	0.00	0.00	-1208.39	0.00
120	5.25	0.00	4.55	2.63	604.19	-1046.49	0.00
150	5.25	0.00	2.63	4.55	1046.49	-604.19	0.00
180	5.25	0.00	0.00	5.25	1208.39	0.00	0.00
210	5.25	0.00	-2.63	4.55	1046.49	604.19	0.00
240	5.25	0.00	-4.55	2.63	604.19	1046.49	0.00
270	5.25	0.00	-5.25	0.00	0.00	1208.39	0.00
300	5.25	0.00	-4.55	-2.63	-604.19	1046.49	0.00
330	5.25	0.00	-2.63	-4.55	-1046.49	604.19	0.00

30,000 sq in (208.33 sq ft EPA) - Elevation 220 - 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	5.20	0.00	0.00	-5.20	-1145.08	0.00	0.00
30	5.20	0.00	2.60	-4.51	-991.67	-572.54	0.00

30,000 sq in (208.33 sq ft EPA) - Elevation 220 - 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
60	5.20	0.00	4.51	-2.60	-572.54	-991.67	0.00
90	5.20	0.00	5.20	0.00	0.00	-1145.08	0.00
120	5.20	0.00	4.51	2.60	572.54	-991.67	0.00
150	5.20	0.00	2.60	4.51	991.67	-572.54	0.00
180	5.20	0.00	0.00	5.20	1145.08	0.00	0.00
210	5.20	0.00	-2.60	4.51	991.67	572.54	0.00
240	5.20	0.00	-4.51	2.60	572.54	991.67	0.00
270	5.20	0.00	-5.20	0.00	0.00	1145.08	0.00
300	5.20	0.00	-4.51	-2.60	-572.54	991.67	0.00
330	5.20	0.00	-2.60	-4.51	-991.67	572.54	0.00

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	-23.03	-5438.69	-0.13	0.14
30	11.52	-19.95	-4710.03	-2719.54	0.19
60	19.95	-11.52	-2719.28	-4710.29	0.19
90	23.03	0.00	0.14	-5438.96	0.14
120	19.95	11.52	2719.56	-4710.29	0.05
150	11.52	19.95	4710.31	-2719.54	-0.05
180	0.00	23.03	5438.97	-0.13	-0.14
210	-11.52	19.95	4710.31	2719.29	-0.19
240	-19.95	11.52	2719.56	4710.04	-0.19
270	-23.03	0.00	0.14	5438.71	-0.14
300	-19.95	-11.52	-2719.28	4710.04	-0.05
330	-11.52	-19.95	-4710.03	2719.29	0.05

Discrete Appurtenance Pressures - With 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_C Front ft^2	C_AA_C Side ft^2	t_z in
5/8" x 10' lightning rod	240.0000	0.08	-2.50	1.44	260.00	1.548	3	4.31	4.31	1.8439
Beacon	120.0000	0.16	2.50	1.44	256.00	1.543	3	3.40	3.40	1.8410
OB light	0.0000	0.05	0.00	-8.73	128.50	1.334	3	1.01	1.01	1.7184
OB light	120.0000	0.05	7.56	4.36	128.50	1.334	3	1.01	1.01	1.7184
OB light	240.0000	0.05	-7.56	4.36	128.50	1.334	3	1.01	1.01	1.7184
40,000 sq in (277.78 sq ft EPA)	0.0000	7.67	0.00	0.00	250.00	1.535	3	532.90	532.90	1.8367
30,000 sq in (208.33 sq ft EPA)	0.0000	6.66	0.00	0.00	240.00	1.522	3	398.82	398.82	1.8292
30,000 sq in (208.33 sq ft EPA)	0.0000	6.64	0.00	0.00	230.00	1.508	3	398.01	398.01	1.8214
30,000 sq in (208.33 sq ft EPA)	0.0000	6.63	0.00	0.00	220.00	1.494	3	397.17	397.17	1.8134
	Sum Weight:	28.01								

Discrete Appurtenance Vectors - With Ice

5/8" x 10' lightning rod - Elevation 260 - 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	-2.77	0.21	-0.03
30	0.01	0.01	0.01	-0.01	-2.38	-1.24	-0.02
60	0.01	0.00	0.01	-0.01	-1.33	-2.30	0.00
90	0.01	0.01	0.01	0.00	0.12	-2.68	0.02
120	0.01	0.01	0.01	0.01	1.56	-2.30	0.03
150	0.00	0.01	0.01	0.01	2.62	-1.24	0.03
180	0.01	0.01	0.00	0.01	3.01	0.21	0.03
210	0.01	0.01	-0.01	0.01	2.62	1.65	0.02
240	0.01	0.00	-0.01	0.01	1.56	2.71	0.00
270	0.01	0.01	-0.01	0.00	0.12	3.09	-0.02
300	0.01	0.01	-0.01	-0.01	-1.33	2.71	-0.03
330	0.00	0.01	-0.01	-0.01	-2.38	1.65	-0.03

Beacon - Elevation 256 - 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	0.01	0.00	-0.01	-2.00	-0.40	0.02
30	0.00	0.01	0.00	-0.01	-1.70	-1.52	0.03
60	0.00	0.01	0.01	-0.00	-0.88	-2.34	0.02
90	0.01	0.00	0.01	0.00	0.23	-2.64	0.01
120	0.01	0.00	0.01	0.00	1.35	-2.34	0.00
150	0.01	0.00	0.00	0.01	2.17	-1.52	-0.01
180	0.00	0.01	0.00	0.01	2.47	-0.40	-0.02
210	0.00	0.01	-0.00	0.01	2.17	0.71	-0.03
240	0.00	0.01	-0.01	0.00	1.35	1.53	-0.02
270	0.01	0.00	-0.01	0.00	0.23	1.83	-0.01
300	0.01	0.00	-0.01	-0.00	-0.88	1.53	0.00
330	0.01	0.00	-0.00	-0.01	-1.70	0.71	0.01

OB light - Elevation 128.5 - 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	-0.76	0.00	0.00
30	0.00	0.00	0.00	-0.00	-0.72	-0.14	-0.01
60	0.00	0.00	0.00	-0.00	-0.62	-0.25	-0.02
90	0.00	0.00	0.00	0.00	-0.47	-0.29	-0.02
120	0.00	0.00	0.00	0.00	-0.33	-0.25	-0.02
150	0.00	0.00	0.00	0.00	-0.22	-0.14	-0.01
180	0.00	0.00	0.00	0.00	-0.18	0.00	0.00
210	0.00	0.00	-0.00	0.00	-0.22	0.14	0.01
240	0.00	0.00	-0.00	0.00	-0.33	0.25	0.02
270	0.00	0.00	-0.00	0.00	-0.47	0.29	0.02
300	0.00	0.00	-0.00	-0.00	-0.62	0.25	0.02
330	0.00	0.00	0.00	-0.00	-0.72	0.14	0.01

OB light - Elevation 128.5 - 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

OB light - Elevation 128.5 - 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	-0.05	-0.41	0.02
30	0.00	0.00	0.00	-0.00	-0.01	-0.55	0.02
60	0.00	0.00	0.00	-0.00	0.09	-0.66	0.02
90	0.00	0.00	0.00	0.00	0.24	-0.70	0.01
120	0.00	0.00	0.00	0.00	0.38	-0.66	0.00
150	0.00	0.00	0.00	0.00	0.49	-0.55	-0.01
180	0.00	0.00	0.00	0.00	0.53	-0.41	-0.02
210	0.00	0.00	-0.00	0.00	0.49	-0.27	-0.02
240	0.00	0.00	-0.00	0.00	0.38	-0.16	-0.02
270	0.00	0.00	-0.00	0.00	0.24	-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	-0.01	-0.27	0.01

OB light - Elevation 128.5 - 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	-0.05	0.41	-0.02
30	0.00	0.00	0.00	-0.00	-0.01	0.27	-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	0.24	0.12	0.01
120	0.00	0.00	0.00	0.00	0.38	0.16	0.02
150	0.00	0.00	0.00	0.00	0.49	0.27	0.02
180	0.00	0.00	0.00	0.00	0.53	0.41	0.02
210	0.00	0.00	-0.00	0.00	0.49	0.55	0.01
240	0.00	0.00	-0.00	0.00	0.38	0.66	0.00
270	0.00	0.00	-0.00	0.00	0.24	0.70	-0.01
300	0.00	0.00	-0.00	-0.00	0.09	0.66	-0.02
330	0.00	0.00	-0.00	-0.00	-0.01	0.55	-0.02

40,000 sq in (277.78 sq ft EPA) - Elevation 250 - 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	1.12	0.00	0.00	-1.12	-279.12	0.00	0.00
30	1.12	0.00	0.56	-0.97	-241.73	-139.56	0.00
60	1.12	0.00	0.97	-0.56	-139.56	-241.73	0.00
90	1.12	0.00	1.12	0.00	0.00	-279.12	0.00
120	1.12	0.00	0.97	0.56	139.56	-241.73	0.00
150	1.12	0.00	0.56	0.97	241.73	-139.56	0.00
180	1.12	0.00	0.00	1.12	279.12	0.00	0.00
210	1.12	0.00	-0.56	0.97	241.73	139.56	0.00
240	1.12	0.00	-0.97	0.56	139.56	241.73	0.00
270	1.12	0.00	-1.12	0.00	0.00	279.12	0.00
300	1.12	0.00	-0.97	-0.56	-139.56	241.73	0.00
330	1.12	0.00	-0.56	-0.97	-241.73	139.56	0.00

30,000 sq in (208.33 sq ft EPA) - Elevation 240 - 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	0.83	0.00	0.00	-0.83	-198.83	0.00	0.00
30	0.83	0.00	0.41	-0.72	-172.19	-99.41	0.00
60	0.83	0.00	0.72	-0.41	-99.41	-172.19	0.00

30,000 sq in (208.33 sq ft EPA) - Elevation 240 - 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
90	0.83	0.00	0.83	0.00	0.00	-198.83	0.00
120	0.83	0.00	0.72	0.41	99.41	-172.19	0.00
150	0.83	0.00	0.41	0.72	172.19	-99.41	0.00
180	0.83	0.00	0.00	0.83	198.83	0.00	0.00
210	0.83	0.00	-0.41	0.72	172.19	99.41	0.00
240	0.83	0.00	-0.72	0.41	99.41	172.19	0.00
270	0.83	0.00	-0.83	0.00	0.00	198.83	0.00
300	0.83	0.00	-0.72	-0.41	-99.41	172.19	0.00
330	0.83	0.00	-0.41	-0.72	-172.19	99.41	0.00

30,000 sq in (208.33 sq ft EPA) - Elevation 230 - 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	0.82	0.00	0.00	-0.82	-188.46	0.00	0.00
30	0.82	0.00	0.41	-0.71	-163.21	-94.23	0.00
60	0.82	0.00	0.71	-0.41	-94.23	-163.21	0.00
90	0.82	0.00	0.82	0.00	0.00	-188.46	0.00
120	0.82	0.00	0.71	0.41	94.23	-163.21	0.00
150	0.82	0.00	0.41	0.71	163.21	-94.23	0.00
180	0.82	0.00	0.00	0.82	188.46	0.00	0.00
210	0.82	0.00	-0.41	0.71	163.21	94.23	0.00
240	0.82	0.00	-0.71	0.41	94.23	163.21	0.00
270	0.82	0.00	-0.82	0.00	0.00	188.46	0.00
300	0.82	0.00	-0.71	-0.41	-94.23	163.21	0.00
330	0.82	0.00	-0.41	-0.71	-163.21	94.23	0.00

30,000 sq in (208.33 sq ft EPA) - Elevation 220 - 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	0.81	0.00	0.00	-0.81	-178.21	0.00	0.00
30	0.81	0.00	0.41	-0.70	-154.33	-89.10	0.00
60	0.81	0.00	0.70	-0.41	-89.10	-154.33	0.00
90	0.81	0.00	0.81	0.00	0.00	-178.21	0.00
120	0.81	0.00	0.70	0.41	89.10	-154.33	0.00
150	0.81	0.00	0.41	0.70	154.33	-89.10	0.00
180	0.81	0.00	0.00	0.81	178.21	0.00	0.00
210	0.81	0.00	-0.41	0.70	154.33	89.10	0.00
240	0.81	0.00	-0.70	0.41	89.10	154.33	0.00
270	0.81	0.00	-0.81	0.00	0.00	178.21	0.00
300	0.81	0.00	-0.70	-0.41	-89.10	154.33	0.00
330	0.81	0.00	-0.41	-0.70	-154.33	89.10	0.00

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	-3.60	-850.25	-0.20	-0.01
30	1.80	-3.12	-736.29	-425.50	0.01
60	3.12	-1.80	-424.95	-736.84	0.02

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
90	3.60	0.00	0.35	-850.80	0.03
120	3.12	1.80	425.65	-736.84	0.03
150	1.80	3.12	737.00	-425.50	0.02
180	0.00	3.60	850.96	-0.20	0.01
210	-1.80	3.12	737.00	425.10	-0.01
240	-3.12	1.80	425.65	736.45	-0.02
270	-3.60	0.00	0.35	850.41	-0.03
300	-3.12	-1.80	-424.95	736.45	-0.03
330	-1.80	-3.12	-736.29	425.10	-0.02

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 ft^2	C_AA_C Side ft^2
5/8" x 10' lightning rod	240.0000	0.02	-2.50	1.44	260.00	1.548	12	0.63	0.63
Beacon	120.0000	0.07	2.50	1.44	256.00	1.543	12	2.40	2.40
OB light	0.0000	0.03	0.00	-8.73	128.50	1.334	10	0.60	0.60
OB light	120.0000	0.03	7.56	4.36	128.50	1.334	10	0.60	0.60
OB light	240.0000	0.03	-7.56	4.36	128.50	1.334	10	0.60	0.60
40,000 sq in (277.78 sq ft EPA)	0.0000	4.00	0.00	0.00	250.00	1.535	12	277.78	277.78
30,000 sq in (208.33 sq ft EPA)	0.0000	3.00	0.00	0.00	240.00	1.522	12	208.33	208.33
30,000 sq in (208.33 sq ft EPA)	0.0000	3.00	0.00	0.00	230.00	1.508	12	208.33	208.33
30,000 sq in (208.33 sq ft EPA)	0.0000	3.00	0.00	0.00	220.00	1.494	12	208.33	208.33
	Sum Weight:	13.20							

Discrete Appurtenance Vectors - Service

5/8" x 10' lightning rod - Elevation 260 - 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	-1.64	0.06	-0.02
30	0.01	0.00	0.00	-0.01	-1.42	-0.78	-0.01
60	0.01	0.00	0.01	-0.00	-0.80	-1.39	0.00
90	0.01	0.00	0.01	0.00	0.03	-1.62	0.01
120	0.00	0.01	0.01	0.00	0.87	-1.39	0.02
150	0.00	0.01	0.00	0.01	1.48	-0.78	0.02
180	0.00	0.01	0.00	0.01	1.71	0.06	0.02
210	0.01	0.00	-0.00	0.01	1.48	0.89	0.01
240	0.01	0.00	-0.01	0.00	0.87	1.51	0.00
270	0.01	0.00	-0.01	0.00	0.03	1.73	-0.01
300	0.00	0.01	-0.01	-0.00	-0.80	1.51	-0.02
330	0.00	0.01	-0.00	-0.01	-1.42	0.89	-0.02

Beacon - Elevation 256 - 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	0.02	0.00	-0.02	-6.21	-0.18	0.06
30	0.00	0.02	0.01	-0.02	-5.36	-3.34	0.07
60	0.01	0.02	0.02	-0.01	-3.05	-5.65	0.06
90	0.02	0.01	0.02	0.00	0.11	-6.49	0.04
120	0.02	0.00	0.02	0.01	3.26	-5.65	0.00
150	0.02	0.01	0.01	0.02	5.57	-3.34	-0.04
180	0.01	0.02	0.00	0.02	6.42	-0.18	-0.06
210	0.00	0.02	-0.01	0.02	5.57	2.97	-0.07
240	0.01	0.02	-0.02	0.01	3.26	5.28	-0.06
270	0.02	0.01	-0.02	0.00	0.11	6.13	-0.04
300	0.02	0.00	-0.02	-0.01	-3.05	5.28	0.00
330	0.02	0.01	-0.01	-0.02	-5.36	2.97	0.04

OB light - Elevation 128.5 - 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	-0.99	0.00	0.00
30	0.00	0.00	0.00	-0.00	-0.89	-0.34	-0.02
60	0.00	0.00	0.00	-0.00	-0.64	-0.59	-0.04
90	0.00	0.01	0.01	0.00	-0.30	-0.68	-0.05
120	0.00	0.00	0.00	0.00	0.04	-0.59	-0.04
150	0.00	0.00	0.00	0.00	0.29	-0.34	-0.02
180	0.01	0.00	0.00	0.01	0.38	0.00	0.00
210	0.00	0.00	-0.00	0.00	0.29	0.34	0.02
240	0.00	0.00	-0.00	0.00	0.04	0.59	0.04
270	0.00	0.01	-0.01	0.00	-0.30	0.68	0.05
300	0.00	0.00	-0.00	-0.00	-0.64	0.59	0.04
330	0.00	0.00	-0.00	-0.00	-0.89	0.34	0.02

OB light - Elevation 128.5 - 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	-0.01	-0.53	-0.26	0.04
30	0.00	0.01	0.00	-0.00	-0.44	-0.60	0.05
60	0.00	0.00	0.00	-0.00	-0.19	-0.85	0.04
90	0.00	0.00	0.01	0.00	0.15	-0.95	0.02
120	0.01	0.00	0.00	0.00	0.49	-0.85	0.00
150	0.00	0.00	0.00	0.00	0.74	-0.60	-0.02
180	0.00	0.00	0.00	0.01	0.84	-0.26	-0.04
210	0.00	0.01	-0.00	0.00	0.74	0.08	-0.05
240	0.00	0.00	-0.00	0.00	0.49	0.33	-0.04
270	0.00	0.00	-0.01	0.00	0.15	0.42	-0.02
300	0.01	0.00	-0.00	-0.00	-0.19	0.33	0.00
330	0.00	0.00	-0.00	-0.00	-0.44	0.08	0.02

OB light - Elevation 128.5 - 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	-0.01	-0.53	0.26	-0.04
30	0.00	0.00	0.00	-0.00	-0.44	-0.08	-0.02
60	0.01	0.00	0.00	-0.00	-0.19	-0.33	0.00
90	0.00	0.00	0.01	0.00	0.15	-0.42	0.02

OB light - Elevation 128.5 - 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	0.49	-0.33	0.04
150	0.00	0.01	0.00	0.00	0.74	-0.08	0.05
180	0.00	0.00	0.00	0.01	0.84	0.26	0.04
210	0.00	0.00	-0.00	0.00	0.74	0.60	0.02
240	0.01	0.00	-0.00	0.00	0.49	0.85	0.00
270	0.00	0.00	-0.01	0.00	0.15	0.95	-0.02
300	0.00	0.00	-0.00	-0.00	-0.19	0.85	-0.04
330	0.00	0.01	-0.00	-0.00	-0.44	0.60	-0.05

40,000 sq in (277.78 sq ft EPA) - Elevation 250 - 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	2.33	0.00	0.00	-2.33	-581.99	0.00	0.00
30	2.33	0.00	1.16	-2.02	-504.02	-290.99	0.00
60	2.33	0.00	2.02	-1.16	-290.99	-504.02	0.00
90	2.33	0.00	2.33	0.00	0.00	-581.99	0.00
120	2.33	0.00	2.02	1.16	290.99	-504.02	0.00
150	2.33	0.00	1.16	2.02	504.02	-290.99	0.00
180	2.33	0.00	0.00	2.33	581.99	0.00	0.00
210	2.33	0.00	-1.16	2.02	504.02	290.99	0.00
240	2.33	0.00	-2.02	1.16	290.99	504.02	0.00
270	2.33	0.00	-2.33	0.00	0.00	581.99	0.00
300	2.33	0.00	-2.02	-1.16	-290.99	504.02	0.00
330	2.33	0.00	-1.16	-2.02	-504.02	290.99	0.00

30,000 sq in (208.33 sq ft EPA) - Elevation 240 - 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	1.73	0.00	0.00	-1.73	-415.44	0.00	0.00
30	1.73	0.00	0.87	-1.50	-359.78	-207.72	0.00
60	1.73	0.00	1.50	-0.87	-207.72	-359.78	0.00
90	1.73	0.00	1.73	0.00	0.00	-415.44	0.00
120	1.73	0.00	1.50	0.87	207.72	-359.78	0.00
150	1.73	0.00	0.87	1.50	359.78	-207.72	0.00
180	1.73	0.00	0.00	1.73	415.44	0.00	0.00
210	1.73	0.00	-0.87	1.50	359.78	207.72	0.00
240	1.73	0.00	-1.50	0.87	207.72	359.78	0.00
270	1.73	0.00	-1.73	0.00	0.00	415.44	0.00
300	1.73	0.00	-1.50	-0.87	-207.72	359.78	0.00
330	1.73	0.00	-0.87	-1.50	-359.78	207.72	0.00

30,000 sq in (208.33 sq ft EPA) - Elevation 230 - 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	1.72	0.00	0.00	-1.72	-394.58	0.00	0.00
30	1.72	0.00	0.86	-1.49	-341.71	-197.29	0.00
60	1.72	0.00	1.49	-0.86	-197.29	-341.71	0.00
90	1.72	0.00	1.72	0.00	0.00	-394.58	0.00
120	1.72	0.00	1.49	0.86	197.29	-341.71	0.00
150	1.72	0.00	0.86	1.49	341.71	-197.29	0.00
180	1.72	0.00	0.00	1.72	394.58	0.00	0.00

30,000 sq in (208.33 sq ft EPA) - Elevation 230 - 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
210	1.72	0.00	-0.86	1.49	341.71	197.29	0.00
240	1.72	0.00	-1.49	0.86	197.29	341.71	0.00
270	1.72	0.00	-1.72	0.00	0.00	394.58	0.00
300	1.72	0.00	-1.49	-0.86	-197.29	341.71	0.00
330	1.72	0.00	-0.86	-1.49	-341.71	197.29	0.00

30,000 sq in (208.33 sq ft EPA) - Elevation 220 - 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	1.70	0.00	0.00	-1.70	-373.90	0.00	0.00
30	1.70	0.00	0.85	-1.47	-323.81	-186.95	0.00
60	1.70	0.00	1.47	-0.85	-186.95	-323.81	0.00
90	1.70	0.00	1.70	0.00	0.00	-373.90	0.00
120	1.70	0.00	1.47	0.85	186.95	-323.81	0.00
150	1.70	0.00	0.85	1.47	323.81	-186.95	0.00
180	1.70	0.00	0.00	1.70	373.90	0.00	0.00
210	1.70	0.00	-0.85	1.47	323.81	186.95	0.00
240	1.70	0.00	-1.47	0.85	186.95	323.81	0.00
270	1.70	0.00	-1.70	0.00	0.00	373.90	0.00
300	1.70	0.00	-1.47	-0.85	-186.95	323.81	0.00
330	1.70	0.00	-0.85	-1.47	-323.81	186.95	0.00

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	-7.52	-1775.81	-0.13	0.05
30	3.76	-6.51	-1537.88	-888.10	0.06
60	6.51	-3.76	-887.83	-1538.14	0.06
90	7.52	0.00	0.14	-1776.07	0.04
120	6.51	3.76	888.11	-1538.14	0.02
150	3.76	6.51	1538.15	-888.10	-0.02
180	0.00	7.52	1776.08	-0.13	-0.05
210	-3.76	6.51	1538.15	887.85	-0.06
240	-6.51	3.76	888.11	1537.89	-0.06
270	-7.52	0.00	0.14	1775.82	-0.04
300	-6.51	-3.76	-887.83	1537.89	-0.02
330	-3.76	-6.51	-1537.88	887.85	0.02

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	30.56					
Bracing Weight	11.36					
Total Member Self-Weight	41.92			17.61	-6.49	

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*
Total Weight	65.90			17.61	-6.49	
Wind 0 deg - No Ice		0.00	-68.45	-11054.20	-6.49	10.57
Wind 30 deg - No Ice		32.90	-56.98	-9271.43	-5369.51	47.85
Wind 60 deg - No Ice		54.35	-31.38	-5135.49	-8931.92	38.02
Wind 90 deg - No Ice		61.98	0.00	17.61	-10182.45	-2.78
Wind 120 deg - No Ice		55.97	32.32	5278.47	-9118.56	-7.21
Wind 150 deg - No Ice		32.70	56.64	9260.20	-5342.69	10.03
Wind 180 deg - No Ice		0.00	66.27	10826.42	-6.49	-10.57
Wind 210 deg - No Ice		-32.90	56.98	9306.65	5356.54	-47.85
Wind 240 deg - No Ice		-56.24	32.47	5302.21	9146.71	-38.02
Wind 270 deg - No Ice		-61.98	0.00	17.61	10169.48	2.78
Wind 300 deg - No Ice		-54.09	-31.23	-5111.75	8877.82	7.21
Wind 330 deg - No Ice		-32.70	-56.64	-9224.97	5329.72	-10.03
Member Ice	60.06					
Total Weight Ice	186.56			71.88	-40.47	
Wind 0 deg - Ice		0.00	-9.82	-1558.32	-40.47	0.18
Wind 30 deg - Ice		4.82	-8.34	-1318.78	-843.37	3.88
Wind 60 deg - Ice		8.14	-4.70	-714.91	-1403.24	3.70
Wind 90 deg - Ice		9.32	0.00	71.88	-1602.02	0.95
Wind 120 deg - Ice		8.24	4.76	864.86	-1413.95	0.81
Wind 150 deg - Ice		4.80	8.31	1458.61	-841.10	2.01
Wind 180 deg - Ice		0.00	9.68	1685.18	-40.47	-0.18
Wind 210 deg - Ice		-4.82	8.34	1462.55	762.44	-3.88
Wind 240 deg - Ice		-8.27	4.77	867.13	1336.95	-3.70
Wind 270 deg - Ice		-9.32	0.00	71.88	1521.09	-0.95
Wind 300 deg - Ice		-8.11	-4.68	-712.64	1318.37	-0.81
Wind 330 deg - Ice		-4.80	-8.31	-1314.85	760.16	-2.01
Total Weight	65.90			17.61	-6.49	
Wind 0 deg - Service		0.00	-22.46	-3637.90	-0.13	3.45
Wind 30 deg - Service		10.80	-18.70	-3052.73	-1762.70	15.62
Wind 60 deg - Service		17.85	-10.30	-1693.89	-2934.26	12.41
Wind 90 deg - Service		20.35	0.00	0.14	-3345.65	-0.91
Wind 120 deg - Service		18.37	10.61	1729.35	-2995.20	-2.35
Wind 150 deg - Service		10.73	18.59	3037.83	-1753.94	3.28
Wind 180 deg - Service		0.00	21.75	3552.30	-0.13	-3.45
Wind 210 deg - Service		-10.80	18.70	3053.00	1762.45	-15.62
Wind 240 deg - Service		-18.46	10.66	1737.10	3008.38	-12.41
Wind 270 deg - Service		-20.35	0.00	0.14	3345.40	0.91
Wind 300 deg - Service		-17.76	-10.25	-1686.13	2920.58	2.35
Wind 330 deg - Service		-10.73	-18.59	-3037.56	1753.69	-3.28

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

Comb. No.	Description
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	255 - 240	Leg	Max Tension	15	12.86	-0.01	-0.01
			Max. Compression	10	-16.28	-0.21	-0.11
			Max. Mx	20	-1.77	-0.39	0.05
			Max. My	22	-8.98	-0.05	-0.35
			Max. Vy	8	-2.48	-0.08	-0.13
			Max. Vx	2	2.52	0.01	0.17
		Diagonal	Max Tension	12	4.22	0.00	0.00
			Max. Compression	12	-4.04	0.00	0.00
			Max. Mx	14	-0.03	-0.05	-0.00
			Max. My	20	-4.03	-0.00	0.02
			Max. Vy	14	0.02	0.00	0.00
			Max. Vx	20	0.01	-0.00	0.02
		Top Girt	Max Tension	22	1.12	0.00	0.00
			Max. Compression	2	-1.24	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	26	0.03	-0.06	0.00
			Max. My	16	-0.23	0.00	0.00
			Max. Vy	26	-0.05	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
T2	240 - 220	Leg	Max Tension	15	87.34	-0.01	0.29
			Max. Compression	2	-95.47	-0.00	0.17
			Max. Mx	6	-48.37	1.37	-0.09
			Max. My	14	-50.00	0.59	1.22
			Max. Vy	8	-1.85	-0.15	-0.26
			Max. Vx	2	1.93	0.01	0.31
		Diagonal	Max Tension	8	10.44	0.07	0.01
			Max. Compression	8	-10.85	0.00	0.00
			Max. Mx	17	-5.20	-0.10	-0.01
			Max. My	8	-9.85	-0.04	-0.04
			Max. Vy	16	0.04	0.00	0.00
			Max. Vx	8	-0.01	0.00	0.00
T3	220 - 200	Leg	Max Tension	15	155.69	-0.33	-0.00
			Max. Compression	2	-168.10	2.49	-0.01
			Max. Mx	2	-121.10	3.96	-0.02
			Max. My	16	-6.72	-0.02	3.14
			Max. Vy	22	-1.02	2.06	-0.05
			Max. Vx	20	-1.05	0.10	2.23
		Diagonal	Max Tension	7	8.91	0.06	-0.01
			Max. Compression	18	-9.45	0.00	0.00
			Max. Mx	16	6.95	0.07	0.00
			Max. My	8	-8.98	-0.05	-0.03
			Max. Vy	31	-0.03	0.04	0.00
			Max. Vx	8	0.01	0.00	0.00
T4	200 - 180	Leg	Max Tension	15	204.57	-3.54	0.00
			Max. Compression	2	-220.29	-4.83	-0.02
			Max. Mx	2	-220.29	-4.83	-0.02
			Max. My	16	-8.06	-0.06	2.61
			Max. Vy	2	1.36	3.87	-0.01
			Max. Vx	16	0.50	0.08	1.24
		Diagonal	Max Tension	18	7.34	0.00	0.00
			Max. Compression	6	-7.37	0.00	0.00
			Max. Mx	16	3.53	0.05	-0.00
			Max. My	6	-7.36	-0.00	-0.02
			Max. Vy	33	0.03	0.03	0.00
			Max. Vx	6	0.00	0.00	0.00
T5	180 - 160	Leg	Max Tension	15	235.01	-6.73	-0.05
			Max. Compression	2	-252.65	11.92	-0.09
			Max. Mx	2	-235.49	15.19	-0.06
			Max. My	16	-9.57	0.08	11.05
			Max. Vy	2	-2.41	15.19	-0.06
			Max. Vx	16	-1.57	0.08	11.05
		Diagonal	Max Tension	6	6.75	0.00	0.00
			Max. Compression	24	-7.71	0.00	0.00
			Max. Mx	2	4.33	0.08	-0.00
			Max. My	35	0.18	0.05	0.01
			Max. Vy	33	0.04	0.06	-0.01
			Max. Vx	35	-0.00	0.00	0.00
T6	160 - 140	Leg	Max Tension	15	268.29	-5.02	-0.04
			Max. Compression	2	-290.14	8.91	-0.04
			Max. Mx	2	-272.31	11.45	-0.05
			Max. My	16	-11.92	-0.16	9.83
			Max. Vy	2	-0.85	11.45	-0.05
			Max. Vx	4	0.54	-0.16	-9.81
		Diagonal	Max Tension	18	6.46	0.00	0.00
			Max. Compression	24	-7.25	0.00	0.00
			Max. Mx	2	5.85	0.10	-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. My	35	0.09	0.07	0.01
			Max. Vy	33	0.06	0.09	-0.01
			Max. Vx	35	0.00	0.00	0.00
T7	140 - 120	Leg	Max Tension	15	298.79	-5.93	-0.04
			Max. Compression	2	-324.70	7.72	-0.13
			Max. Mx	2	-306.24	11.65	-0.03
			Max. My	16	-13.59	0.07	7.76
			Max. Vy	2	-0.90	11.65	-0.03
			Max. Vx	4	0.66	0.07	-7.76
		Diagonal	Max Tension	18	7.51	0.00	0.00
			Max. Compression	18	-7.84	0.00	0.00
			Max. Mx	14	5.08	0.12	0.00
			Max. My	6	-7.55	-0.00	-0.03
			Max. Vy	33	0.07	0.11	0.01
			Max. Vx	6	0.00	0.00	0.00
T8	120 - 100	Leg	Max Tension	15	316.35	0.27	-0.04
			Max. Compression	2	-343.65	14.78	-0.18
			Max. Mx	3	-338.97	14.80	-0.18
			Max. My	16	-15.33	-0.27	13.91
			Max. Vy	14	1.00	-14.72	0.19
			Max. Vx	16	-0.91	-0.27	13.91
		Diagonal	Max Tension	7	10.19	0.00	0.00
			Max. Compression	18	-11.60	0.00	0.00
			Max. Mx	33	0.53	-0.30	-0.05
			Max. My	6	-8.18	-0.04	0.08
			Max. Vy	33	-0.12	-0.30	-0.05
			Max. Vx	29	-0.01	0.00	0.00
T9	100 - 80	Leg	Max Tension	15	345.38	1.76	-0.07
			Max. Compression	2	-377.43	15.16	-0.17
			Max. Mx	2	-377.43	15.16	-0.17
			Max. My	12	-15.81	-0.66	-9.64
			Max. Vy	2	-1.12	15.16	-0.17
			Max. Vx	16	0.45	-0.64	9.40
		Diagonal	Max Tension	18	9.69	0.00	0.00
			Max. Compression	24	-10.82	0.00	0.00
			Max. Mx	33	1.43	-0.35	0.06
			Max. My	29	1.67	-0.31	0.06
			Max. Vy	33	-0.13	-0.35	0.06
			Max. Vx	30	0.01	0.00	0.00
T10	80 - 60	Leg	Max Tension	15	369.11	-1.50	-0.06
			Max. Compression	2	-406.73	12.13	-0.16
			Max. Mx	3	-400.96	12.19	-0.16
			Max. My	16	-19.65	-0.40	11.47
			Max. Vy	14	0.78	-12.06	0.16
			Max. Vx	4	0.84	-0.40	-11.45
		Diagonal	Max Tension	24	9.31	0.00	0.00
			Max. Compression	24	-10.28	0.00	0.00
			Max. Mx	33	0.33	-0.41	0.07
			Max. My	35	-0.75	-0.40	-0.07
			Max. Vy	33	-0.15	-0.41	0.07
			Max. Vx	35	-0.01	0.00	0.00
T11	60 - 40	Leg	Max Tension	15	392.30	-0.53	-0.04
			Max. Compression	2	-434.78	13.60	-0.13
			Max. Mx	2	-434.78	13.60	-0.13
			Max. My	12	-19.86	-0.66	-6.55
			Max. Vy	2	-0.89	13.60	-0.13
			Max. Vx	16	0.35	-0.64	6.39
		Diagonal	Max Tension	7	9.83	0.00	0.00
			Max. Compression	18	-11.10	0.00	0.00
			Max. Mx	33	1.68	-0.44	0.06
			Max. My	29	1.73	-0.44	0.06

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	33	-0.16	-0.44	0.06
			Max. Vx	35	-0.01	0.00	0.00
T12	40 - 20	Leg	Max Tension	15	416.22	-1.64	-0.05
			Max. Compression	2	-464.11	9.87	-0.14
			Max. Mx	14	410.90	-10.40	0.15
			Max. My	16	-24.44	-0.54	14.69
			Max. Vy	14	0.66	-10.40	0.15
			Max. Vx	16	-0.92	-0.54	14.69
		Diagonal	Max Tension	18	10.12	0.00	0.00
			Max. Compression	24	-10.43	0.00	0.00
			Max. Mx	33	-0.25	-0.52	-0.08
			Max. My	34	-2.17	-0.51	-0.09
			Max. Vy	33	-0.17	-0.52	-0.08
			Max. Vx	34	-0.01	0.00	0.00
T13	20 - 0	Leg	Max Tension	15	435.68	-2.16	-0.01
			Max. Compression	2	-488.57	5.89	-0.08
			Max. Mx	2	-488.57	5.89	-0.08
			Max. My	12	-24.54	-0.77	-9.95
			Max. Vy	2	-0.40	5.89	-0.08
			Max. Vx	16	0.66	-0.76	9.93
		Diagonal	Max Tension	7	10.98	0.00	0.00
			Max. Compression	18	-12.65	0.00	0.00
			Max. Mx	32	2.08	-0.61	0.09
			Max. My	35	1.71	-0.60	-0.09
			Max. Vy	32	-0.20	-0.61	0.09
			Max. Vx	35	-0.01	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	482.80	37.67	-20.80
	Max. H_x	18	482.80	37.67	-20.80
	Max. H_z	7	-423.99	-33.39	18.34
	Min. Vert	7	-423.99	-33.39	18.34
	Min. H_x	7	-423.99	-33.39	18.34
	Min. H_z	18	482.80	37.67	-20.80
Leg B	Max. Vert	10	481.33	-37.03	-21.54
	Max. H_x	23	-421.51	32.73	19.08
	Max. H_z	23	-421.51	32.73	19.08
	Min. Vert	23	-421.51	32.73	19.08
	Min. H_x	10	481.33	-37.03	-21.54
	Min. H_z	10	481.33	-37.03	-21.54
Leg A	Max. Vert	2	503.39	0.23	45.15
	Max. H_x	21	19.21	2.25	1.32
	Max. H_z	2	503.39	0.23	45.15
	Min. Vert	15	-446.42	-0.23	-40.26
	Min. H_x	9	19.21	-2.24	1.32
	Min. H_z	15	-446.42	-0.23	-40.26

Tower Mast Reaction Summary

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	65.90	-0.00	-0.00	17.52	-6.46	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	79.08	-0.00	-68.44	-11154.26	-8.04	10.65
0.9 Dead+1.0 Wind 0 deg - No Ice	59.31	-0.00	-68.44	-11133.01	-6.06	10.63
1.2 Dead+1.0 Wind 30 deg - No Ice	79.08	32.90	-56.98	-9353.25	-5425.25	48.25
0.9 Dead+1.0 Wind 30 deg - No Ice	59.31	32.90	-56.98	-9336.18	-5410.18	48.21
1.2 Dead+1.0 Wind 60 deg - No Ice	79.08	54.35	-31.38	-5180.37	-9018.50	38.24
0.9 Dead+1.0 Wind 60 deg - No Ice	59.31	54.35	-31.38	-5173.16	-8994.72	38.18
1.2 Dead+1.0 Wind 90 deg - No Ice	79.08	61.98	0.00	18.37	-10280.66	-2.74
0.9 Dead+1.0 Wind 90 deg - No Ice	59.31	61.98	0.00	13.10	-10253.85	-2.80
1.2 Dead+1.0 Wind 120 deg - No Ice	79.08	55.97	32.31	5331.99	-9205.86	-7.02
0.9 Dead+1.0 Wind 120 deg - No Ice	59.31	55.97	32.31	5313.90	-9181.86	-7.07
1.2 Dead+1.0 Wind 150 deg - No Ice	79.08	32.70	56.64	9353.12	-5391.16	10.31
0.9 Dead+1.0 Wind 150 deg - No Ice	59.31	32.70	56.64	9325.29	-5376.36	10.30
1.2 Dead+1.0 Wind 180 deg - No Ice	79.08	-0.00	66.27	10932.23	-8.02	-10.64
0.9 Dead+1.0 Wind 180 deg - No Ice	59.31	-0.00	66.27	10900.64	-6.04	-10.62
1.2 Dead+1.0 Wind 210 deg - No Ice	79.08	-32.90	56.98	9400.23	5402.08	-48.25
0.9 Dead+1.0 Wind 210 deg - No Ice	59.31	-32.90	56.98	9372.29	5391.17	-48.21
1.2 Dead+1.0 Wind 240 deg - No Ice	79.08	-56.23	32.47	5356.34	9231.47	-38.27
0.9 Dead+1.0 Wind 240 deg - No Ice	59.31	-56.23	32.47	5338.18	9211.32	-38.21
1.2 Dead+1.0 Wind 270 deg - No Ice	79.08	-61.98	0.00	18.37	10264.98	2.74
0.9 Dead+1.0 Wind 270 deg - No Ice	59.31	-61.98	0.00	13.10	10242.11	2.80
1.2 Dead+1.0 Wind 300 deg - No Ice	79.08	-54.09	-31.23	-5156.74	8961.11	7.04
0.9 Dead+1.0 Wind 300 deg - No Ice	59.31	-54.09	-31.23	-5149.58	8941.38	7.08
1.2 Dead+1.0 Wind 330 deg - No Ice	79.08	-32.70	-56.64	-9306.66	5382.06	-10.30
0.9 Dead+1.0 Wind 330 deg - No Ice	59.31	-32.70	-56.64	-9289.69	5370.99	-10.30
1.2 Dead+1.0 Ice+1.0 Temp	199.74	-0.00	-0.00	76.99	-42.53	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	199.74	-0.00	-9.82	-1592.76	-42.62	0.24
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	199.74	4.82	-8.34	-1347.45	-865.27	4.02
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	199.74	8.14	-4.70	-728.81	-1439.01	3.86
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	199.74	9.32	-0.00	77.38	-1642.72	1.10
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	199.74	8.24	4.76	889.87	-1449.89	0.91
1.2 Dead+1.0 Wind 150	199.74	4.80	8.31	1498.22	-862.93	2.03

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
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	199.74	-0.00	9.68	1730.33	-42.62	-0.24
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	199.74	-4.82	8.34	1502.24	780.01	-4.02
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	199.74	-8.27	4.77	892.19	1368.67	-3.86
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	199.74	-9.32	-0.00	77.38	1557.48	-1.10
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	199.74	-8.11	-4.68	-726.49	1349.75	-0.91
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	199.74	-4.80	-8.31	-1343.43	777.72	-2.03
Dead+Wind 0 deg - Service	65.90	-0.00	-22.46	-3648.98	-6.54	3.47
Dead+Wind 30 deg - Service	65.90	10.80	-18.70	-3059.30	-1783.16	15.69
Dead+Wind 60 deg - Service	65.90	17.85	-10.30	-1689.78	-2964.12	12.48
Dead+Wind 90 deg - Service	65.90	20.35	0.00	17.72	-3378.79	-0.85
Dead+Wind 120 deg - Service	65.90	18.37	10.61	1760.69	-3025.38	-2.30
Dead+Wind 150 deg - Service	65.90	10.73	18.59	3079.59	-1774.22	3.30
Dead+Wind 180 deg - Service	65.90	-0.00	21.75	3598.09	-6.54	-3.47
Dead+Wind 210 deg - Service	65.90	-10.80	18.70	3094.88	1769.97	-15.69
Dead+Wind 240 deg - Service	65.90	-18.46	10.66	1768.52	3025.85	-12.48
Dead+Wind 270 deg - Service	65.90	-20.35	0.00	17.71	3365.73	0.85
Dead+Wind 300 deg - Service	65.90	-17.76	-10.25	-1681.99	2937.51	2.31
Dead+Wind 330 deg - Service	65.90	-10.73	-18.59	-3044.03	1761.26	-3.30

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	-65.90	0.00	0.00	65.90	0.00	0.001%
2	0.00	-79.08	-68.45	0.00	79.08	68.44	0.002%
3	0.00	-59.31	-68.45	0.00	59.31	68.44	0.002%
4	32.90	-79.08	-56.98	-32.90	79.08	56.98	0.003%
5	32.90	-59.31	-56.98	-32.90	59.31	56.98	0.003%
6	54.35	-79.08	-31.38	-54.35	79.08	31.38	0.003%
7	54.35	-59.31	-31.38	-54.35	59.31	31.38	0.003%
8	61.98	-79.08	0.00	-61.98	79.08	-0.00	0.003%
9	61.98	-59.31	0.00	-61.98	59.31	-0.00	0.003%
10	55.97	-79.08	32.32	-55.97	79.08	-32.31	0.002%
11	55.97	-59.31	32.32	-55.97	59.31	-32.31	0.002%
12	32.70	-79.08	56.64	-32.70	79.08	-56.64	0.003%
13	32.70	-59.31	56.64	-32.70	59.31	-56.64	0.003%
14	0.00	-79.08	66.27	0.00	79.08	-66.27	0.003%
15	0.00	-59.31	66.27	0.00	59.31	-66.27	0.003%
16	-32.90	-79.08	56.98	32.90	79.08	-56.98	0.003%
17	-32.90	-59.31	56.98	32.90	59.31	-56.98	0.003%
18	-56.24	-79.08	32.47	56.23	79.08	-32.47	0.002%
19	-56.24	-59.31	32.47	56.23	59.31	-32.47	0.002%
20	-61.98	-79.08	0.00	61.98	79.08	-0.00	0.003%
21	-61.98	-59.31	0.00	61.98	59.31	-0.00	0.003%
22	-54.09	-79.08	-31.23	54.09	79.08	31.23	0.003%
23	-54.09	-59.31	-31.23	54.09	59.31	31.23	0.003%
24	-32.70	-79.08	-56.64	32.70	79.08	56.64	0.003%
25	-32.70	-59.31	-56.64	32.70	59.31	56.64	0.003%
26	0.00	-199.74	0.00	0.00	199.74	0.00	0.000%
27	0.00	-199.74	-9.82	0.00	199.74	9.82	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
28	4.82	-199.74	-8.34	-4.82	199.74	8.34	0.000%
29	8.14	-199.74	-4.70	-8.14	199.74	4.70	0.000%
30	9.32	-199.74	0.00	-9.32	199.74	0.00	0.000%
31	8.24	-199.74	4.76	-8.24	199.74	-4.76	0.000%
32	4.80	-199.74	8.31	-4.80	199.74	-8.31	0.000%
33	0.00	-199.74	9.68	0.00	199.74	-9.68	0.000%
34	-4.82	-199.74	8.34	4.82	199.74	-8.34	0.000%
35	-8.27	-199.74	4.77	8.27	199.74	-4.77	0.000%
36	-9.32	-199.74	0.00	9.32	199.74	0.00	0.000%
37	-8.11	-199.74	-4.68	8.11	199.74	4.68	0.000%
38	-4.80	-199.74	-8.31	4.80	199.74	8.31	0.000%
39	0.00	-65.90	-22.46	0.00	65.90	22.46	0.001%
40	10.80	-65.90	-18.70	-10.80	65.90	18.70	0.001%
41	17.85	-65.90	-10.30	-17.85	65.90	10.30	0.001%
42	20.35	-65.90	0.00	-20.35	65.90	-0.00	0.001%
43	18.37	-65.90	10.61	-18.37	65.90	-10.61	0.001%
44	10.73	-65.90	18.59	-10.73	65.90	-18.59	0.001%
45	0.00	-65.90	21.75	0.00	65.90	-21.75	0.001%
46	-10.80	-65.90	18.70	10.80	65.90	-18.70	0.001%
47	-18.46	-65.90	10.66	18.46	65.90	-10.66	0.001%
48	-20.35	-65.90	0.00	20.35	65.90	-0.00	0.001%
49	-17.76	-65.90	-10.25	17.76	65.90	10.25	0.001%
50	-10.73	-65.90	-18.59	10.73	65.90	18.59	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	7	0.00000001	0.00013921
2	Yes	13	0.00003558	0.00009850
3	Yes	13	0.00003063	0.00008551
4	Yes	13	0.00003916	0.00010668
5	Yes	13	0.00003395	0.00009323
6	Yes	13	0.00004187	0.00011310
7	Yes	13	0.00003645	0.00009925
8	Yes	13	0.00003911	0.00010653
9	Yes	13	0.00003391	0.00009309
10	Yes	13	0.00003573	0.00009882
11	Yes	13	0.00003077	0.00008580
12	Yes	13	0.00003915	0.00010665
13	Yes	13	0.00003394	0.00009320
14	Yes	13	0.00004196	0.00011337
15	Yes	13	0.00003654	0.00009950
16	Yes	13	0.00003916	0.00010669
17	Yes	13	0.00003395	0.00009323
18	Yes	13	0.00003572	0.00009880
19	Yes	13	0.00003076	0.00008578
20	Yes	13	0.00003911	0.00010653
21	Yes	13	0.00003391	0.00009309
22	Yes	13	0.00004185	0.00011306
23	Yes	13	0.00003643	0.00009921
24	Yes	13	0.00003914	0.00010665
25	Yes	13	0.00003394	0.00009319
26	Yes	10	0.00000001	0.00012633
27	Yes	13	0.00000001	0.00012846
28	Yes	13	0.00000001	0.00013022

29	Yes	13	0.00000001	0.00013206
30	Yes	13	0.00000001	0.00013260
31	Yes	13	0.00000001	0.00013408
32	Yes	13	0.00000001	0.00013656
33	Yes	13	0.00000001	0.00013787
34	Yes	13	0.00000001	0.00013542
35	Yes	13	0.00000001	0.00013171
36	Yes	13	0.00000001	0.00012936
37	Yes	13	0.00000001	0.00012885
38	Yes	13	0.00000001	0.00012816
39	Yes	13	0.00000001	0.00009353
40	Yes	13	0.00000001	0.00009592
41	Yes	13	0.00000001	0.00009805
42	Yes	13	0.00000001	0.00009579
43	Yes	13	0.00000001	0.00009357
44	Yes	13	0.00000001	0.00009592
45	Yes	13	0.00000001	0.00009824
46	Yes	13	0.00000001	0.00009594
47	Yes	13	0.00000001	0.00009357
48	Yes	13	0.00000001	0.00009578
49	Yes	13	0.00000001	0.00009801
50	Yes	13	0.00000001	0.00009589

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	255 - 240	16.939	39	0.7103	0.0523
T2	240 - 220	14.703	39	0.6979	0.0504
T3	220 - 200	11.859	39	0.6133	0.0448
T4	200 - 180	9.290	39	0.5095	0.0363
T5	180 - 160	7.287	39	0.4149	0.0284
T6	160 - 140	5.454	39	0.3526	0.0225
T7	140 - 120	3.979	39	0.2877	0.0182
T8	120 - 100	2.815	39	0.2231	0.0138
T9	100 - 80	1.871	39	0.1764	0.0108
T10	80 - 60	1.169	39	0.1306	0.0081
T11	60 - 40	0.645	39	0.0952	0.0058
T12	40 - 20	0.280	39	0.0606	0.0036
T13	20 - 0	0.062	39	0.0265	0.0015

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
255.00	5/8" x 10' lightning rod	39	16.939	0.7103	0.0523	72944
250.00	40,000 sq in (277.78 sq ft EPA)	39	16.189	0.7095	0.0518	72944
240.00	30,000 sq in (208.33 sq ft EPA)	39	14.703	0.6979	0.0504	25934
230.00	30,000 sq in (208.33 sq ft EPA)	39	13.259	0.6628	0.0481	26505
220.00	30,000 sq in (208.33 sq ft EPA)	39	11.859	0.6133	0.0448	24770
127.50	OB light	39	3.224	0.2456	0.0154	21023

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	255 - 240	51.810	2	2.1759	0.1612
T2	240 - 220	44.952	2	2.1393	0.1553
T3	220 - 200	36.236	2	1.8790	0.1383
T4	200 - 180	28.371	2	1.5591	0.1119
T5	180 - 160	22.247	2	1.2684	0.0876
T6	160 - 140	16.651	2	1.0773	0.0693
T7	140 - 120	12.148	2	0.8787	0.0561
T8	120 - 100	8.595	2	0.6812	0.0425
T9	100 - 80	5.714	2	0.5387	0.0332
T10	80 - 60	3.567	2	0.3987	0.0251
T11	60 - 40	1.969	2	0.2907	0.0178
T12	40 - 20	0.856	2	0.1851	0.0110
T13	20 - 0	0.189	2	0.0810	0.0046

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
255.00	5/8" x 10' lightning rod	2	51.810	2.1759	0.1612	24046
250.00	40,000 sq in (277.78 sq ft EPA)	2	49.507	2.1737	0.1596	24046
240.00	30,000 sq in (208.33 sq ft EPA)	2	44.952	2.1393	0.1553	8544
230.00	30,000 sq in (208.33 sq ft EPA)	2	40.526	2.0318	0.1483	8681
220.00	30,000 sq in (208.33 sq ft EPA)	2	36.236	1.8790	0.1383	8068
127.50	OB light	2	9.842	0.7498	0.0473	6857

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	255	Leg	A325N	0.7500	4	3.21	29.82	0.108 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	4.22	7.46	0.566 ✔	1	Member Block Shear
T2	240	Leg	A325N	0.7500	6	14.56	29.82	0.488 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	10.44	11.20	0.932 ✔	1	Member Block Shear
T3	220	Leg	A325N	0.7500	8	19.46	29.82	0.653 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	8.91	11.20	0.796 ✔	1	Member Block Shear
T4	200	Leg	A325N	1.0000	6	34.09	53.01	0.643 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	7.34	11.20	0.656 ✔	1	Member Block Shear
T5	180	Leg	A325N	1.2500	6	39.17	82.83	0.473 ✔	1	Bolt Tension

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
		Diagonal	A325N	1.0000	1	6.75	13.03	0.518 ✔	1	Member Block Shear
T6	160	Leg	A325N	1.2500	6	44.71	82.83	0.540 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	6.46	17.37	0.372 ✔	1	Member Block Shear
T7	140	Leg	A325N	1.2500	6	49.80	82.83	0.601 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	7.51	14.17	0.530 ✔	1	Member Block Shear
T8	120	Leg	A325N	1.0000	12	26.36	53.01	0.497 ✔	1	Bolt Tension
		Diagonal	A325N	0.8750	1	10.19	24.68	0.413 ✔	1	Member Block Shear
T9	100	Leg	A325N	1.0000	12	28.78	53.01	0.543 ✔	1	Bolt Tension
		Diagonal	A325N	0.8750	1	9.69	24.68	0.392 ✔	1	Member Block Shear
T10	80	Leg	A325N	1.0000	12	30.76	53.01	0.580 ✔	1	Bolt Tension
		Diagonal	A325N	0.8750	1	9.31	24.68	0.377 ✔	1	Member Block Shear
T11	60	Leg	A325N	1.0000	12	32.69	53.01	0.617 ✔	1	Bolt Tension
		Diagonal	A325N	0.8750	1	9.83	24.68	0.398 ✔	1	Member Block Shear
T12	40	Leg	A325N	1.0000	12	34.68	53.01	0.654 ✔	1	Bolt Tension
		Diagonal	A325N	0.8750	1	10.12	24.68	0.410 ✔	1	Member Block Shear
T13	20	Leg	F1554-105	1.7500	4	108.92	169.12	0.644 ✔	1	Bolt Tension
		Diagonal	A325N	0.8750	1	10.98	32.91	0.334 ✔	1	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	255 - 240	0033) 2.50" S - 15' - C - 0.75" conn - (Pirod 226169)	15.00	5.00	63.3 K=1.00	1.7040	-16.28	57.19	0.285 [1] ✔
T2	240 - 220	0131) 3.00 to 5" TS - 20' - C - 0.75" conn - (Pirod 295584)	20.00	5.00	52.8 K=1.00	3.0159	-95.47	110.69	0.863 [1] ✔
T3	220 - 200	0375) 5.00" to 4" S - 20' - C - 0.75" conn - (Pirod 226200)	20.03	6.68	42.7 K=1.00	4.2999	-168.10	169.37	0.993 [1] ✔
T4	200 - 180	0419) 6.00" to #12 S - 20' - C - 0.75" conn - (Pirod 229377)	20.03	6.68	35.7 K=1.00	5.5813	-220.29	228.83	0.963 [1] ✔
T5	180 - 160	#12ZG-58 - 1.75" - 1.00" conn.-TR1-(Pirod 195213)	20.03	10.02	30.6 K=1.00	7.2158	-252.65	347.96	0.726 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T6	160 - 140	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	20.03	10.02	30.6 K=1.00	7.2158	-290.14	347.96	0.834 [1] ✔
T7	140 - 120	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	20.03	10.02	30.6 K=1.00	7.2158	-324.70	347.96	0.933 [1] ✔
T8	120 - 100	#12ZG-58 -2.00" - 0.875" conn.-TR3-(Pirod 195637)	20.03	20.03	48.8 K=1.00	9.4248	-343.65	401.94	0.855 [1] ✔
T9	100 - 80	#12ZG-58 -2.00" - 0.875" conn. (Pirod 195639)	20.03	20.03	48.8 K=1.00	9.4248	-377.43	401.94	0.939 [1] ✔
T10	80 - 60	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	20.03	20.03	48.8 K=1.00	11.9282	-406.73	508.98	0.799 [1] ✔
T11	60 - 40	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	20.03	20.03	48.8 K=1.00	11.9282	-434.78	508.98	0.854 [1] ✔
T12	40 - 20	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	20.03	20.03	48.8 K=1.00	11.9282	-464.11	508.98	0.912 [1] ✔
T13	20 - 0	#12ZG-58 BASE - 2.50" - 0.875" conn.-TR4-(Pirod 281171)	20.03	20.03	48.7 K=1.00	14.7262	-488.57	628.76	0.777 [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	180 - 160	0.5	1.40	94.4	376.67	0.1963	2.41	4.61	0.524 ✔
T6	160 - 140	0.5	1.40	94.4	376.67	0.1963	0.85	4.61	0.185 ✔
T7	140 - 120	0.5	1.40	94.4	376.67	0.1963	0.90	4.61	0.196 ✔
T8	120 - 100	0.5	1.39	93.2	491.97	0.1963	0.94	4.67	0.216 ✔
T9	100 - 80	0.5	1.39	93.2	491.97	0.1963	1.12	4.67	0.239 ✔
T10	80 - 60	0.5	1.38	92.4	622.65	0.1963	0.83	4.71	0.189 ✔
T11	60 - 40	0.5	1.38	92.4	622.65	0.1963	0.89	4.71	0.190 ✔
T12	40 - 20	0.5	1.38	92.4	622.65	0.1963	0.92	4.71	0.197 ✔
T13	20 - 0	0.5	1.34	90.2	768.71	0.1963	0.67	4.87	0.138 ✔

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	255 - 240	L2x2x1/8	5.89	2.76	92.5 K=1.11	0.4844	-4.04	10.83	0.373 [1] ✔
T2	240 - 220	L2x2x3/16	5.89	2.76	93.0 K=1.11	0.7150	-10.85	17.09	0.635 [1] ✔
T3	220 - 200	L2x2x3/16	7.66	3.85	118.0 K=1.01	0.7150	-8.79	11.59	0.758 [1] ✔
T4	200 - 180	L2x2x3/16	9.60	4.80	146.1 K=1.00	0.7150	-7.37	7.56	0.975 [1] ✔
T5	180 - 160	L2 1/2x2 1/2x3/16	12.65	6.42	155.5 K=1.00	0.9020	-7.71	8.42	0.915 [1] ✔
T6	160 - 140	L2 1/2x2 1/2x1/4	14.10	7.12	174.1 K=1.00	1.1900	-7.10	8.87	0.801 [1] ✔
T7	140 - 120	L3x3x3/16	15.67	7.90	159.0 K=1.00	1.0900	-7.58	9.74	0.778 [1] ✔
T8	120 - 100	2L3x3x3/16	23.79	12.47	159.4 K=1.00	2.1800	-11.60	19.38	0.599 [1] ✔
T9	100 - 80	2L3x3x3/16	25.03	13.04	166.7 K=1.00	2.1800	-10.82	17.73	0.610 [1] ✔
T10	80 - 60	2L3x3x3/16	26.36	13.67	174.7 K=1.00	2.1800	-10.28	16.14	0.637 [1] ✔
T11	60 - 40	2L3x3x3/16	27.77	14.35	183.4 K=1.00	2.1800	-11.10	14.65	0.758 [1] ✔
T12	40 - 20	2L3x3x3/16	29.25	15.07	192.5 K=1.00	2.1800	-10.43	13.29	0.785 [1] ✔
T13	20 - 0	2L3x3x1/4	30.78	15.82	204.0 K=1.00	2.8750	-12.65	15.60	0.810 [1] ✔
		KL/R > 200 (C) - 187							

[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	255 - 240	L3x3x1/4	5.00	4.76	108.2 K=1.12	1.4400	-1.24	25.18	0.049 [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	255 - 240	0033) 2.50" S - 15' - C - 0.75" conn - (Pirod 226169)	15.00	5.00	63.3	1.7040	12.86	76.68	0.168 [1] ✔
T2	240 - 220	0131) 3.00 to 5" TS - 20' - C - 0.75" conn - (Pirod 295584)	20.00	5.00	52.8	3.0159	87.34	135.72	0.644 [1] ✔
T3	220 - 200	0375) 5.00" to 4" S - 20' - C - 0.75" conn - (Pirod 226200)	20.03	6.68	42.7	4.2999	155.69	193.49	0.805 [1] ✔
T4	200 - 180	0419) 6.00" to #12 S - 20' - C - 0.75" conn - (Pirod 229377)	20.03	6.68	35.7	5.5813	204.57	251.16	0.814 [1] ✔
T5	180 - 160	#12ZG-58 - 1.75" - 1.00" conn.-TR1-(Pirod 195213)	20.03	10.02	30.6	7.2158	235.01	376.67	0.624 [1] ✔
T6	160 - 140	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	20.03	10.02	30.6	7.2158	268.29	376.67	0.712 [1] ✔
T7	140 - 120	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	20.03	10.02	30.6	7.2158	298.80	376.67	0.793 [1] ✔
T8	120 - 100	#12ZG-58 -2.00" - 0.875" conn.-TR3-(Pirod 195637)	20.03	20.03	48.8	9.4248	316.35	491.97	0.643 [1] ✔
T9	100 - 80	#12ZG-58 -2.00" - 0.875" conn. (Pirod 195639)	20.03	20.03	48.8	9.4248	345.38	491.97	0.702 [1] ✔
T10	80 - 60	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	20.03	20.03	48.8	11.9282	369.11	622.65	0.593 [1] ✔
T11	60 - 40	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	20.03	20.03	48.8	11.9282	392.30	622.65	0.630 [1] ✔
T12	40 - 20	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	20.03	20.03	48.8	11.9282	416.22	622.65	0.668 [1] ✔
T13	20 - 0	#12ZG-58 BASE - 2.50" - 0.875" conn.-TR4-(Pirod 281171)	20.03	20.03	48.7	14.7262	435.68	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	180 - 160	0.5	1.40	94.4	376.67	0.1963	2.41	4.61	0.524 ✔
T6	160 - 140	0.5	1.40	94.4	376.67	0.1963	0.85	4.61	0.185 ✔
T7	140 - 120	0.5	1.40	94.4	376.67	0.1963	0.90	4.61	0.196 ✔
T8	120 - 100	0.5	1.39	93.2	491.97	0.1963	0.94	4.67	0.216 ✔
T9	100 - 80	0.5	1.39	93.2	491.97	0.1963	1.12	4.67	0.239 ✔
T10	80 - 60	0.5	1.38	92.4	622.65	0.1963	0.83	4.71	0.189 ✔
T11	60 - 40	0.5	1.38	92.4	622.65	0.1963	0.89	4.71	0.190 ✔

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
T12	40 - 20	0.5	1.38	92.4	622.65	0.1963	0.92	4.71	0.197 ✔
T13	20 - 0	0.5	1.34	90.2	768.71	0.1963	0.67	4.87	0.138 ✔

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	255 - 240	L2x2x1/8	5.89	2.76	56.5	0.2813	4.22	13.71	0.308 [1] ✔
T2	240 - 220	L2x2x3/16	5.89	2.76	57.3	0.4132	10.44	20.14	0.518 [1] ✔
T3	220 - 200	L2x2x3/16	7.24	3.66	74.8	0.4132	8.91	20.14	0.442 [1] ✔
T4	200 - 180	L2x2x3/16	9.60	4.80	97.0	0.4132	7.34	20.14	0.364 [1] ✔
T5	180 - 160	L2 1/2x2 1/2x3/16	12.65	6.42	102.2	0.5183	6.75	25.27	0.267 [1] ✔
T6	160 - 140	L2 1/2x2 1/2x1/4	14.10	7.12	114.4	0.6816	6.46	33.23	0.194 [1] ✔
T7	140 - 120	L3x3x3/16	15.67	7.90	103.6	0.6593	7.51	32.14	0.234 [1] ✔
T8	120 - 100	2L3x3x3/16	23.79	12.47	161.5	1.3537	10.19	66.00	0.154 [1] ✔
T9	100 - 80	2L3x3x3/16	25.03	13.04	168.8	1.3537	9.69	66.00	0.147 [1] ✔
T10	80 - 60	2L3x3x3/16	26.36	13.67	176.8	1.3537	9.31	66.00	0.141 [1] ✔
T11	60 - 40	2L3x3x3/16	27.77	14.35	185.5	1.3537	9.83	66.00	0.149 [1] ✔
T12	40 - 20	2L3x3x3/16	29.25	15.07	194.7	1.3537	10.12	66.00	0.153 [1] ✔
T13	20 - 0	2L3x3x1/4	30.78	15.82	206.2	1.7813	10.98	86.84	0.126 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	255 - 240	L3x3x1/4	5.00	4.76	61.4	1.4400	1.12	46.66	0.024 [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	255 - 240	Leg	0033) 2.50" S - 15' - C - 0.75" conn - (Pirod 226169)	2	-16.28	57.19	28.5	Pass
T2	240 - 220	Leg	0131) 3.00 to 5" TS - 20' - C - 0.75" conn - (Pirod 295584)	27	-95.47	110.69	86.3	Pass
T3	220 - 200	Leg	0375) 5.00" to 4" S - 20' - C - 0.75" conn - (Pirod 226200)	54	-168.10	169.37	99.3	Pass
T4	200 - 180	Leg	0419) 6.00" to #12 S - 20' - C - 0.75" conn - (Pirod 229377)	75	-220.29	228.83	96.3	Pass
T5	180 - 160	Leg	#12ZG-58 - 1.75" - 1.00" conn.-TR1-(Pirod 195213)	96	-252.65	347.96	72.6	Pass
T6	160 - 140	Leg	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	111	-290.14	347.96	83.4	Pass
T7	140 - 120	Leg	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	126	-324.70	347.96	93.3	Pass
T8	120 - 100	Leg	#12ZG-58 -2.00" - 0.875" conn.-TR3-(Pirod 195637)	141	-343.65	401.94	85.5	Pass
T9	100 - 80	Leg	#12ZG-58 -2.00" - 0.875" conn. (Pirod 195639)	150	-377.43	401.94	93.9	Pass
T10	80 - 60	Leg	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	159	-406.73	508.98	79.9	Pass
T11	60 - 40	Leg	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	168	-434.78	508.98	85.4	Pass
T12	40 - 20	Leg	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	177	-464.11	508.98	91.2	Pass
T13	20 - 0	Leg	#12ZG-58 BASE - 2.50" - 0.875" conn.-TR4-(Pirod 281171)	186	-488.57	628.76	77.7	Pass
T1	255 - 240	Diagonal	L2x2x1/8	15	-4.04	10.83	37.3 56.6 (b)	Pass
T2	240 - 220	Diagonal	L2x2x3/16	29	-10.85	17.09	63.5 93.2 (b)	Pass
T3	220 - 200	Diagonal	L2x2x3/16	61	-8.79	11.59	75.8 79.6 (b)	Pass
T4	200 - 180	Diagonal	L2x2x3/16	77	-7.37	7.56	97.5	Pass
T5	180 - 160	Diagonal	L2 1/2x2 1/2x3/16	100	-7.71	8.42	91.5	Pass
T6	160 - 140	Diagonal	L2 1/2x2 1/2x1/4	115	-7.10	8.87	80.1	Pass
T7	140 - 120	Diagonal	L3x3x3/16	128	-7.58	9.74	77.8	Pass
T8	120 - 100	Diagonal	2L3x3x3/16	142	-11.60	19.38	59.9	Pass
T9	100 - 80	Diagonal	2L3x3x3/16	154	-10.82	17.73	61.0	Pass
T10	80 - 60	Diagonal	2L3x3x3/16	163	-10.28	16.14	63.7	Pass
T11	60 - 40	Diagonal	2L3x3x3/16	169	-11.10	14.65	75.8	Pass
T12	40 - 20	Diagonal	2L3x3x3/16	181	-10.43	13.29	78.5	Pass
T13	20 - 0	Diagonal	2L3x3x1/4	187	-12.65	15.60	81.0	Pass
T1	255 - 240	Top Girt	L3x3x1/4	4	-1.24	25.18	4.9	Pass
							Summary	
						Leg (T3)	99.3	Pass
						Diagonal (T4)	97.5	Pass
						Top Girt (T1)	4.9	Pass
						Bolt Checks	93.2	Pass
						RATING =	**99.3**	**Pass**

Valmont Industries, Inc. Global Telecom
1545 Pidco Drive
Plymouth, IN
Phone: (574) 936-4221
FAX: (574) 936-6458

SELF-SUPPORT TOWER FOUNDATION DESIGN SUMMARY

VB BTS II **V- 27 255** V 2.8
US-KY-5152 Fountain Run **A- 591478**

Pier Dimensions

Pier diameter, d_i:	3.00	ft
Depth, D:	17.0	ft
Ext. above grade, E:	0.50	ft
Bell diameter, b_d:	none	ft
Volume, V_c:	4.58	cy / leg

Reinforcement Design

Rebar	$m\__c$:	14	verticals
	size, $s\__c$:	8	equally spaced in 2.5' cage
Ties	size, $s\__t$:	4	default hook
	$m\__t$:	35	tie qty

* Rebar quantites shown above are per pier

Anchor Bolts

P/N: 262330 72" long, 1.75" diameter

Soil Information Per:

Soil report by Delta Oaks, report # GEO23-18848-08 dated 05/02/2023

Site Parameters

Ultimate Bearing, B_c:	0.000	ksf
Ultimate Pp:	4.679	kcf
Ult. Skin Friction, SF:	4.292	ksf
Seismic Design Cat.:	C	
Depth neglected, N:	3.00	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)*

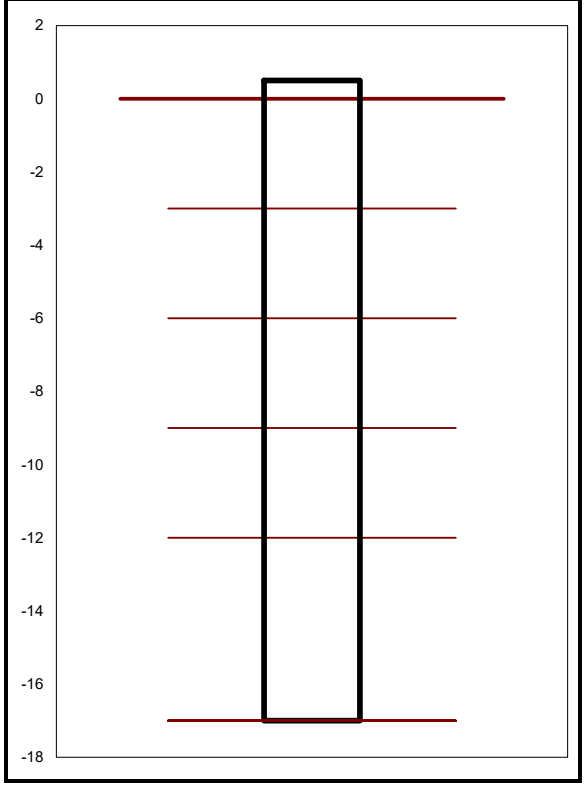
Foundation Loading

Max Corner Reactions stress ratio: 99.3% mark up: 0.7%

Shear/Leg, S:	45.00 kips	x 1.007 =	45.32 kips
Moment/Leg, M:	0.00 ft-kips	x 1.007 =	0.00 ft-kips
Compression/Leg, C:	503.00 kips	x 1.007 =	506.52 kips
Uplift/Leg, U:	446.00 kips	x 1.007 =	449.12 kips

View of Foundation

(not to scale)



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	GRADE THE SITE TO DRAIN AWAY FROM FOUNDATION.
3	PROVISIONS SHALL BE MADE TO PROTECT THE SUBGRADE FROM EXCESS MOISTURE.
4	SEE GEOTECHNICAL REPORT FOR ADDITIONAL CONSTRUCTION RECOMMENDATIONS, BACKFILL COMPACTION DETAIL, SUBGRADE PREPARATION, ETC.
5	A TEMPORARY, FULL LENGTH STEEL CASING MAY BE REQUIRED DURING INSTALLATION.
6	DRILLING SLURRY AND TREMIE METHODS OF CONCRETE PLACEMENT MAY BE REQUIRED DURING INSTALLATION.
7	DIFFICULT DRILLING AND/OR ROCK CORING IS TO BE EXPECTED BELOW A DEPTH OF 12 FT. THE DRILLING CONTRACTOR SHOULD BE PREPARED TO REMOVE ROCK AND/OR ROCK CORES FROM THE EXCAVATION.
8	THE DRILLED PIER MUST BE FULLY SOCKETED IN THE ROCK LAYER. THIS SHOULD BE VERIFIED DURING CONSTRUCTION.

SST DRILLED PIER FOUNDATION

VB BTS II **V- 27.0 255** v 2.8

US-KY-5152 Fountain Run **A- 591478**

Design Summary		
Pier diameter:	**3.00**	ft
Design depth:	**17.0**	ft
Concrete volume:	**4.58**	cu.yd. each

Maximum Loading		
Max. Uplift, U_{max}:	**449.12**	kips/leg
Max. Comp., C_{max}:	**510.56**	kips/leg
Max. Shear, S_{max}:	**45.32**	kips/leg

Soil per: **Soil report by Delta Oaks, report # GEO23-18848-08 dated 05/02/2023**

Use #4 circular ties.
Min. concrete compressive strength to be 4500 psi.
Use anchor bolt p/n 135616

Ultimate bearing: **0.000** ksf
Ultimate S F (uplift): **4.292** ksf
Ultimate S F (comp.): **4.292** 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	3.00	3.00	3.00	1.400	0.000	105.0	0.315	0.158	0.000	0.00	2.78	2.78	0.000	0.00	-
2	3.00	6.00	3.00	3.00	2.800	0.000	110.0	0.645	0.480	1.155	32.66	2.39	35.04	1.155	32.66	-
3	6.00	9.00	3.00	3.00	2.750	0.000	115.0	0.990	0.818	1.133	32.02	2.39	34.41	1.133	32.02	-
4	9.00	12.00	3.00	3.00	2.950	0.000	115.0	1.335	1.163	1.215	34.35	2.39	36.74	1.215	34.35	-
5	12.00	17.00	5.00	3.00	8.000	0.000	150.0	2.085	1.710	8.843	416.69	3.98	420.67	8.843	416.69	0.00
	Lateral pressure coefficient =			0.7							Total Uplift Capacity (kips) =		529.64	Total friction capacity (kips) =		515.72
													OK	Factored Tip capacity (kips) =		0.00
										Weighted Average Skin Friction (ultimate) =	uplift	4.292 ksf		Total Comp. Capacity (kips) =	515.72
											compression	4.292 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) **
14	8	0.79	5.73	11.06	5.09	4.679	6.51

Moment Check (ft-k)	
Induced *	168.76
φ Capacity ***	178.25
	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	3.00	0.00	y	1.400	0.00
2	3.00	6.00	3.00	n	2.800	8.40
3	6.00	9.00	3.00	n	2.750	8.25
4	9.00	12.00	3.00	n	2.950	8.85
5	12.00	17.00	5.00	n	8.000	40.00
6	17.00	17.00	0.00	n	8.000	0.00
7	17.00	17.00	0.00	n	8.000	0.00
8	17.00	17.00	0.00	n	8.000	0.00
9	17.00	17.00	0.00	n	8.000	0.00
10	17.00	17.00	0.00	n	8.000	0.00
11	17.00	17.00	0.00	n	8.000	0.00
12	17.00	17.00	0.00	n	8.000	0.00
13	17.00	17.00	0.00	n	8.000	0.00
14	17.00	17.00	0.00	n	8.000	0.00
15	17.00	17.00	0.00	n	8.000	0.00
16	17.00	17.00	0.00	n	8.000	0.00
17	17.00	17.00	0.00	n	8.000	0.00
18	17.00	17.00	0.00	n	8.000	0.00
19	17.00	17.00	0.00	n	8.000	0.00
20	17.00	17.00	0.00	n	8.000	0.00
Bell	17.00	17.00	0.00	n	8.000	0.00
		Total =	14.00		Total =	65.50

Weighted Average Equivalent Cohesion = 4.68 (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, di:	**3.00**	ft		
Extension above grade, E:	**0.50**	ft		
Neglect at ground surface, N:	**3.00**	ft		
Ultimate Passive Pressure, P_p:	**4.679**	kcf	LC **45.32**	**0**
Reduction Factor, f:	**0.75**			
Nominal Passive Pressure (P_p*f), P_{pa}:	3.509	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 **0.36**

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 **2.65**

Minimum length of pier, L (ft)

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

LC **6.51**

Minimum length req'd, **L**: **6.51** 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 **168.76**

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

Loading (negative for compression)		
Axial load =	449.12	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 =	14	

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		

458.04

Seismic	
SDC=	C
Are hooks required?	no

Minimum Area of Steel

Required area of steel =	5.09	in^2	
Actual area of steel =	11.00	in^2	OK
Bar spacing =	5.73	in	

Axial Loading

Load factor =	1.00	
Reduction factor =	0.65575	(per ACI 9.3.1 & 2)
Factored axial load =	449.12	kips

Neutral Axis

Distance from extreme edge to neutral axis =	3.53	in	
Equivalent compression zone factor =	0.825		(per ACI 10.2.7.3)
Distance from extreme edge to Equivalent compression zone factor =	2.91	in	
Distance from centroid to neutral axis =	14.47	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 =	33.04	deg	
Area of concrete in compression =	38.75	in^2	
Force in concrete = 0.85 * f`c * (Acc - steel in comp zone) =	148.23	kips	(per ACI 10.3.6.2)
Total reinforcement forces =	-597.35	kips	
Factored axial load =	449.12	kips	
Force in concrete =	-148.23	kips	
Sum of the forces in concrete =	0.00	kips	OK

Maximum Moment

First moment of the concrete area in compression about the centoid =			630.19	in^3
Distance between centroid of concrete in compression and centroid of pier =			16.26	in
Moment of concrete in compression =	2410.48	in-kips		
Total reinforcement moment =	851.48	in-kips		
Nominal moment strength of column =	3261.96	in-kips		
Factored moment strength of column =	2139.02	in-kips	178.25	ft-kips

Maximum allowable moment of the pier =	**178.25**	**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	-14.47	-15.09	-0.0123	0.00	-47.12	0.00
2	25.71	6.07	-8.40	-9.01	-0.00714	0.00	-47.12	-286.25
3	51.43	10.95	-3.53	-4.14	-0.003	0.00	-47.12	-515.80
4	77.14	13.65	-0.82	-1.44	-0.0007	0.00	-15.93	-217.45
5	102.86	13.65	-0.82	-1.44	-0.0007	0.00	-15.93	-217.45
6	128.57	10.95	-3.53	-4.14	-0.003	0.00	-47.12	-515.80
7	154.29	6.07	-8.40	-9.01	-0.00714	0.00	-47.12	-286.25
8	180.00	0.00	-14.47	-15.09	-0.0123	0.00	-47.12	0.00
9	205.71	-6.07	-20.55	-21.16	-0.01747	0.00	-47.12	286.25
10	231.43	-10.95	-25.42	-26.03	-0.02161	0.00	-47.12	515.80
11	257.14	-13.65	-28.12	-28.74	-0.02391	0.00	-47.12	643.19
12	282.86	-13.65	-28.12	-28.74	-0.02391	0.00	-47.12	643.19
13	308.57	-10.95	-25.42	-26.03	-0.02161	0.00	-47.12	515.80
14	334.29	-6.07	-20.55	-21.16	-0.01747	0.00	-47.12	286.25

DEVELOPMENT LENGTH CHECK OF PIER REINFORCEMENT

Foundation:	Pier diameter =	3.0	ft	Cover between side of pier and cage =	3.00	in.
	Cage diameter =	2.5	ft	Cover between top of pier and cage =	3.00	in.
	Rebar size =	8		Compressive strength of concrete =	4500	psi
	Number of bars =	14		Rebar yield strength =	60000	psi
	Clear spacing =	5.73	in.			
	Are there hooks?	n				
	Check Compression?	n				
Anchor Steel:	Part number:	262330		Actual Bending Moment =	168.76	ft-kips
	Embedment length =	61.5	in.	Allowable Bending Moment =	178.25	ft-kips
	Bolt Diameter =	1.75		Excess Reinforcement Ratio =	0.947	
Anchor Plate:	Part number:	281262				
	Plate width =	19.25	in.			

Required development length (compression) =	999.00	in.	
Required development length (tension) =	26.83	in.	
Required development length (tension) =	25.40	in.	(reduced)
Available development length =	50.625	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 =	2.5	ft	Minimum cover between A/S and cage =	3.00	in.
Anchor Steel:	Part number:	262330		Angle of anchor steel in foundation =	0	degrees
	Embedment length =	61.5	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 =	30	in.			

OK

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

UNIT BASE FOUNDATION SUMMARY

VB BTS II **V- 27.0 255** V 4.9
US-KY-5152 Fountain Run **A- 591478**

Foundation Dimensions

Pad width, **W**:	**35.00**	ft
Depth, **D**:	**5.50**	ft
Ext. above grade, **E**:	**0.50**	ft
Pier diameter, d_i:	**3.00**	ft
Pad thickness, **T**:	**1.75**	ft
Depth neglected, **N**:	**5.50**	ft
Volume, V_o:	**82.74**	cy

Reinforcement Design

pad rebar qty., $m_{\_p}$:	**40**	bars *
size, $s_{\_p}$:	**9**	
pier vertical qty, $m_{\_c}$:	**11**	verticals/pier
size, $s_{\_c}$:	**9**	**2.5' cage**
pier tie qty., $m_{\_t}$:	**11**	ties/pier
size, $s_{\_t}$:	**4**	**default hook**

* Rebar to be equally spaced, both ways, top & bottom, for a total of 160 bars
* Use standees to support top rebar above bottom rebar in mat

Soil Information Per:

Soil report by Delta Oaks, report # GEO23-18848-08 dated 05/02/2023

Soil Parameters

Soil unit weight, **γ**:	**110**	pcf
Ultimate Bearing, B_c:	**17.500**	ksf
Cohesion, C_o:	**0.000**	ksf
Friction angle, **f**:	**0.0**	degrees
Ult. Passive P., P_p:	**0.110**	pcf
Base sliding, **μ**:	**0.30**	
Seismic Design Cat.:	**C**	
Water at:	**none**	ft

Anchor Steel Selection

Part Number, **P/N**:	**262330**	Dia = 1.75 Length = 72"

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:	**12**	in
Compaction:	**98**	%
Standard Proctor:	ASTM	**D698**

Tower design conforms to the following:

** International Building Code (IBC)*

** ANSI TIA-222-G*

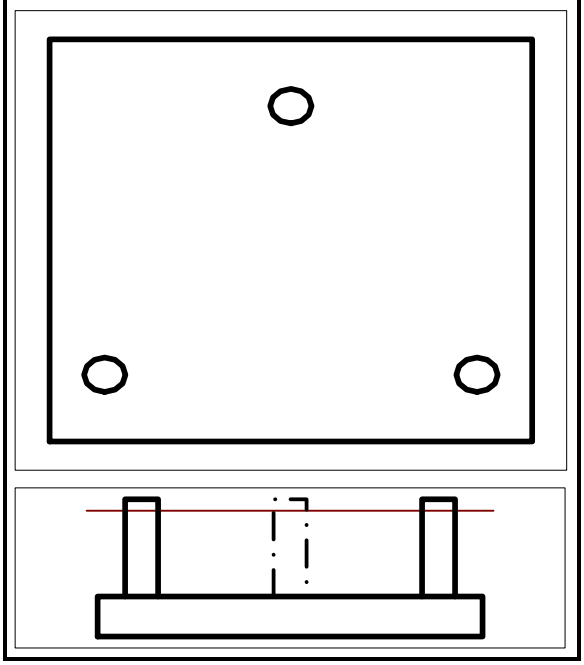
** Building Code Requirements for Reinforced Concrete (ACI 318-14)*

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

Foundation Loading

			stress ratio: 99.3%	mark up: 0.7%
Shear (Per Leg), S_i:	45.00 kips	x 1.01 =	45.32 kips
Shear (total), **S**:	68.00 kips	x 1.01 =	68.48 kips
Moment, **M**:	11154.00 ft-kips	x 1.01 =	11232.08 ft-kips
Compression/Leg, **C**:	503.00 kips	x 1.01 =	506.52 kips
Uplift/Leg, **U**:	446.00 kips	x 1.01 =	449.12 kips
Tower Weight, W_t:	79.00 kips	=	79.00 kips

Views of Foundation (not to scale)



STATE OF KENTUCKY
JEFFREY E. GRASSMAN
21939
LICENSED PROFESSIONAL ENGINEER

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. GRADE THE SITE TO DRAIN AWAY FROM FOUNDATION.
3. PROVISIONS SHALL BE MADE TO PROTECT THE SUBGRADE FROM EXCESS MOISTURE.
4. SEE GEOTECHNICAL REPORT FOR ADDITIONAL CONSTRUCTION RECOMMENDATIONS, BACKFILL COMPACTION DETAIL, SUBGRADE PREPARATION, ETC.

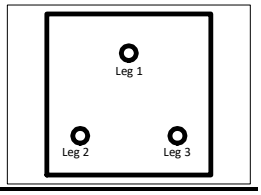
UNIT BASE FOUNDATION (DL - 1.2)

VB BTS II **V- 27.0 255** v 4.9

US-KY-5152 Fountain Run **A- 591478**

Reactions		stress ratio	99.3%		mark up:	0.7%
Shear (Per Leg), S_i:	45.00 kips		x 1.01	=	45.32 kips	
Shear (total), **S**:	68.00 kips		x 1.01	=	68.48 kips	
Moment, **M**:	11154.00 ft-kips		x 1.01	=	11232.08 ft-kips	
Compression / leg, **C**:	503.00 kips		x 1.01	=	506.52 kips	
Uplift / leg, **U**:	446.00 kips		x 1.01	=	449.12 kips	
Tower weight, W_t:	79.00 kips			=	79.00 kips	

Soil per: Soil report by Delta Oaks, report # GEO23-18848-08 dated 05/02/2023



Physical Parameters:

Concrete volume:	$V = T * W^2 + 3 * (di^2 / 4 * \pi) * (D + E - T)$	$V =$	82.7	cy
Concrete weight:	$W_c = V * \delta$	$W_c =$	335.1	kips
Soil weight:	$W_s = (D - T) * (W^2 - 3 * (di^2 / 4 * \pi)) * \gamma$	$W_s =$	496.6	kips
Total weight:	$P = Wc + Ws + Wt$	$P =$	910.65	kips

Passive Pressure:

Pp coefficient:	$K_p = TAN(45 + \varphi / 2)^2$	$K_p =$	1.000	
	$P_{pn} = Kp * \gamma * N + 2 * Co * \sqrt{(Kp)}$	$P_{pn} =$	0.605	ksf
	$P_{pt} = Kp * \gamma * (D - T) + 2 * Co * \sqrt{(Kp)}$	$P_{pt} =$	0.413	ksf
	$P_{pb} = Kp * \gamma * D + 2 * Co * \sqrt{(Kp)}$	$P_{pb} =$	0.605	ksf
	$P_{ptop} = IF(N < (D - T), Ppt, Ppn)$	$P_{ptop} =$	0.6	ksf
	$Pp' = (Pptop + Ppb) / 2$	$Pp' =$	0.605	ksf
Shear area:	$T_{pp} = 0$	$T_{pp} =$	0.0	ft
	$A_{pp} = Tpp * W$	$A_{pp} =$	0.00	ft^2
Shear Capacity: *φr = 0.75*	$S_{actual} = (Pp' * App + \mu * P) * \varphi r$	$S_{actual} =$	204.895	kips

Check $S_{actual} =$ 204.90 kips **>=** $S =$ 68.48 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:	$O = (W - 0.866 * w') / 2$	$O =$	5.809	ft
Additional offset of Wt:	$O_a = W / 2 - (1 / 3 * 0.866 * w' + O)$	$O_a =$	3.897	ft
Resisting moments:	$M_{rwt} = P * W / 2 - Wt * Oa$	$M_{rwt} =$	15628.45	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: *φr = 0.75*	$M_{rt} = (Mrwt + Mrp + Mrsw) * \varphi r$	$M_{rt} =$	11721.34	ft-kips
Total overturning:	$M_o = M + S * (D + E)$	$M_o =$	11642.93	ft-kips

Check $M_{rt} =$ 11721.34 ft-kips **>=** $M_o =$ 11642.93 ft-kips **OK**

Bearing Resistance due to Pressure Distribution

Area of mat:	$area = W^2$	$area =$	1225.0	ft^2
Section modulus:	$SM = W^3 / 6$	$SM =$	7145.8	ft^3
Factored total weight:	$P' = (Wt / 1.2 + Wc + Ws) * 1.2$	$P' =$	1077.0	kip
Pressure exerted:	$P_{pos} = P' / area + Mo / SM$	$P_{max} =$	2.508	ksf
	$P_{neg} = P' / area - Mo / SM$	$P_{min} =$	-0.750	ksf

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

Load eccentricity:	$e_c = Mo / P'$	$e_c =$	10.81	ft
In Parallel Direction	$P_{adj} = 2 * P' / (3 * W * (W / 2 - ec))$	$P_{adj} =$	3.1	ksf
In Diagonal Direction	P_{adj_diag} *see Diagonal Bearing Sheet (attached)*	$P_{adj\_diag} =$	3.5	ksf
Adj. applied pressure:	$q_a = IF(Pneg >= 0, Ppos, Padj)$	$q_a =$	3.067	ksf
Overburden Pressure: (factored)	$q_{obp} = D * \gamma$	$q_{obp} =$	0.605	ksf
φr = 0.75	***Check*** $q_a - q_{obp} =$ 2.462 ksf **<=**	$B_c * \varphi r =$	13.125	ksf **OK**

Concrete Shear Strength:
One way beam action at d_i from tower

Effective depth:	$d_c = T - cc - db\_p / 2$	$d_c =$	17.436	in
Distance from edge of pad to pier face:	$d' = O - di / 2$	$d' =$	4.309	ft
Distance from edge of pad to dc	$d'' = d' - dc$	$d'' =$	2.856	ft
Bearing Pressure Slop	$q_s = qa / Weff$	$q_s =$	0.153	kcf
Required shear:	$V_{n1} = [(qa - d'' * qs) + (d'' * qs / 2)] * d'' * W - [1.2 * (D - T) * \gamma * d'' * W]$	$V_{n1} =$	235.25	kips
Available shear: *[ACI 22.5.5.1] φs = 0.75 [ACI 21.2.1]*	$V_{c1} = \varphi s * 2 * \lambda * \sqrt{(F'c)} * W * dc$	$V_{c1} =$	736.87	kips

Check $V_{c1} =$ 736.87 kips **>=** $V_{n1} =$ 235.25 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} =	20.07	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 =	72.67	in	
	Width:	b_2 = (dc + deq + W - SIN(60) * w\) / 2			b_2 =	94.37	in	
	Perimeter:	b_o = b1 + b2			b_o =	167.04	in	
	Centroid	c = (b1 * dc * b1 / 2) / (b1* dc + b2 * dc)			c =	15.807	ft	
	Eccentricity:	e_c = (deq + dc) / 2 - c			e_c =	8.86305328	in	
	Polar MOI	J_c = [(dc * b1^3 / 12) + (b1 * dc^3 / 12) + (b1 * dc * (b1 / 2 - c)^2] + (b1			J_c =	1.535E+06	in^4	
Moment Fraction transferred by	*flexure:*	γ_f = 1 / (1 + 2 / 3 * √ (b1 / b2))			γ_f =	0.63		
	eccentricity of shear:	γ_v = 1 - γf			γ_v =	0.37		
Bearing Pressure Slope:		q_s = qa / Weff			q_s =	0.153	kcf	
Average Bearing Pressure:		$q_{a.pl}$ = ((Weff - b1) * qs + qa) / 2			$q_{a.pl}$ =	2.604	ksf	
Shear Force at Section:		V_{n_pier} 0			V_{n_pier} =	382.504	kips	
Slab Moment:		M_{sc} = Sl * (D - T + E) + Vn_pier * e			M_{sc} =	475.10	ft-kips	
Required shear: φs = 0.75 [ACI 21.2.1]		= (Vn_pier / b0 * dc) + (γv * Msc* c / Jc)				153.00	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} =	153.00	psi	**OK**
Moment transfered: (Pier 1)		M_{n1} = γf * Msc			M_{n1} =	218.390	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}' =	2.783	in^2	
		a_{p1} = Ast_p1' * Fy / (β * F'c * weff1)			a_{p1} =	0.474	in	
Required steel:		$A_{st\_p\_st1}$ = Mn1 / (Fy * (dc - ap1 / 2))			$A_{st\_p\_st1}$ =	2.540	in^2	
Required steel in entire mat:		$A_{st\_p\_ste1}$ = Ast_p_st1 * W / weff1			$A_{st\_p\_ste1}$ =	11.239	in^2	
Moment transfered: (Pier 2 or 3)		M_{n2} = γf * Msc (Controlling Case: Corner.)			M_{n2} =	299.747	ft-kips	
Effective Beam Width:		w_{eff2} = deq + 1.5 * T + MIN(1.5 * T , (W - w\ - deq) / 2)			w_{eff2} =	7.909	ft	
		A_{st_p2}' = Mn2 / (0.9 * Fy * dc)			A_{st_p2}' =	3.820	in^2	
		a_{p2} = Ast_p2' * Fy / (β * F'c * weff2)			a_{p2} =	0.651	in	
Required steel:		$A_{st\_p\_st2}$ = Mn2 / (Fy * (dc - ap2 / 2))			$A_{st\_p\_st2}$ =	3.504	in^2	
Required steel in entire mat:		$A_{st\_p\_ste2}$ = Ast_p_st2 * W / weff2			$A_{st\_p\_ste2}$ =	15.505	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	d_{i_T} =di -2*cc-2*db_t - 1*db_c			d_{i_T} =	27.872	in	
Eq. Square Column (ACI 8.10.1.3 & 22.6.4.1.2)	d_{eq_T} =dprebar / 2 * √π			d_{eq_T} =	24.70	in	
Critical Section Length:	b_{1_T} = deq_T + dc			b_{1_T} =	42.137	in	
Critical Section Perimeter:	b_{o_T} = 4 * (deq + dc)			b_{o_T} =	168.55	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} =	906875.220	in^4	
Shear Force at Section:	$V_{n\_pier\_T}$ = U			$V_{n\_pier\_T}$ =	449.122	kips	
Required shear: φs = 0.75 [ACI 21.2.1]	= (Vn_pier_T / b1_T * dc) + (γv * Msc* c_T / Jc_T)				174.301	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} =	174.30	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 =	506.52	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 * 0.005			A_{st_c} =	5.09	in^2	
Cage circle:	d_o = di - 2 * cc - db_c - 2 * db_t			d_o =	27.87	in	
Rebar:	s_c = 9	d_{b_c} = 1.128 in					
	m_c = 11	A_{b_c} = 1 in^2					
	A_{s_c} = Ab_c * m_c			A_{s_c} =	11.00	in^2	
	Check	A_{s_c} = 11.00 in^2	**>=**	A_{st_c} =	5.09	in^2	**OK**
Actual moment:	M_{max} = (D - T + E) * S / 2			M_{max} =	145.51	ft-kips	
Pier moment capacity:	M_{allow} *per Maxmomnt.xls (see attached)*			M_{allow} =	177.70	ft-kips	
	Check	M_{allow} = 177.70 ft-kips	**>=**	M_{max} =	145.51	ft-kips	**OK**
Bar separation:	B_{s_c} = (do * π) / m_c - db_c			B_{s_c} =	6.83	in	
	Check	16.87 **>=** B_{s_c} = 6.83 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				$c_{\_c}$ =	3.56	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 =	Mmax / Mallow				$R_{\_c}$ =	0.82		
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				$L_{dt}'_{\_c}$ =	32.22	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} =	32.22	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))				$L_{dc}'_{\_c}$ =	16.52	in	
	$L_{dc}''_{\_c}$ =	0.0003 * db_c * Fy * ψr_c * R_c				$L_{dc}''_{\_c}$ =	16.63	in	
Development length:	L_{dc_c} =	MAX(8, Ldc'_c, Ldc''_c)				L_{dc_c} =	16.63	in	
Length available in pier:	L_{vc} =	D - T + E - cc				L_{vc} =	48.0	in	
	Check	L_{vc} =	48.0	in	**>=**	L_{dt_c} =	32.2	in	**OK**
	Check	L_{vc} =	48.0	in	**>=**	L_{dc_c} =	16.6	in	**OK**
Length available in pad:	L_{vp} =	T - cc				L_{vp} =	18.0	in	
	Check	L_{vp} =	18.0	in	**>=**	L_{dt_c} =	32.2	in	**HOOKS**
	Check	L_{vp} =	18.0	in	**>=**	L_{dc_c} =	16.6	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_{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}' =	11.6	in	
Minimum length: [ACI 25.4.3.1]	L_{dh_min}	the larger of: 8 * db or 6 in				L_{dh_min} =	9.0	in	
Development length:	L_{dh} =	MAX(Ldh_min, Ldh')				L_{dh} =	11.6	in	
	Check	L_{vp} =	18.0	in	**>=**	L_{dh} =	11.6	in	**OK**
Hook tail length:	L_{h_tail}	12 * db beyond the bend radius				L_{h_tail} =	19.2	in	
Length available in pad:	L_{h_pad} =	(W - w' - di) / 2				L_{h_pad} =	30	in	
	Check	L_{h_pad} =	30.0	in	**>=**	L_{dh_tail} =	19.2	in	**OK**

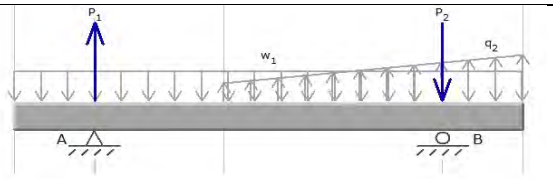
Pier Ties:

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 = 11	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				$B_{s\_t\_max1}$ =	9.024	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)				$B_{s\_t\_max}$ =	9	in
	m_{t_min} = (D - T + E) / Bs_t_max + 2				m_{t_min} =	7.7	
	Check	m_t =	11.0	**>=**	m_{t_min} =	7.7	**OK**

Anchor Steel:

A/S parameters:	P_{as} = 262330			L_{as} =	72	in	
	d_{as} = 1.75 in			E_{as} =	61.50	in	
Development available:	L_{das} *per Anchor Bolts (see attached)*				L_{das} =	51.69	in
Required development:	L_{das_min} *per Anchor Bolts (see attached)*				L_{das_min} =	32.22	in
	Check	L_{das} =	51.69 in	**>=**	L_{das_min} =	32.22 in	**OK**
To bottom rebar grid:	E_{as_max} =D + E - cc - 2 * db_p				E_{as_max} =	66.744	in
	Check	E_{as} =	61.50 in	**<=**	E_{as_max} =	66.74 in	**OK**
To top rebar grid:	rebar @ = D + E - T + cc				rebar @	54.00	in
	Check	54 + 6 in	**>=**	E_{as} =	61.50 in	**or** **<=**	54 in **OK**
Min. cage dia:	d_{o_min} *per ancsteel.xls (see attached)*				d_{o_min} =	25.25	in
	Check	d_o =	27.87 in	**>=**	d_{o_min} =	25.25 in	**OK**

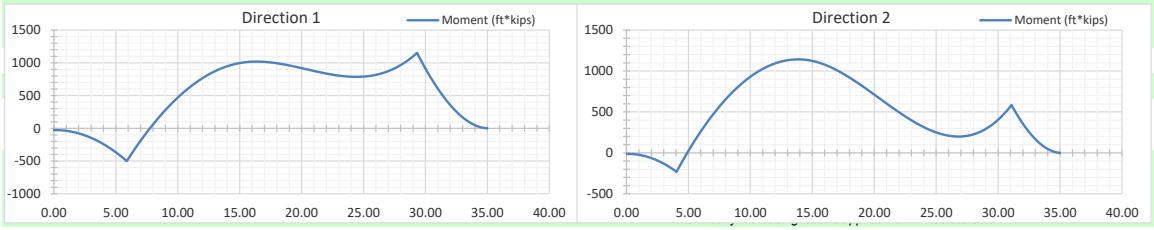
Pad Reinforcement:



Effective length in bearing: 20.07 ft

Effective length not bearing: 14.93 ft

Direction 1				
Total Beam Length:	B_{L1_1} =W	B_{L1_1}=	35	ft
Location of Left Support:	S_{L1_1} =O	S_{L1_1}=	5.809	ft
Location of Right Support:	S_{R1_1} =W-O	S_{R1_1}=	29.19	ft
Direction 2				
Total Beam Length:	B_{L1_2} =W	B_{L1_2}=	35.0	ft
Location of Left Support:	S_{L1_2} =(W - w\) / 2	S_{L1_2}=	4.00	ft
Location of Right Support:	S_{R1_2} =S_{L1_2} + w\	S_{R1_2}=	31.00	ft



Direction 1:	M_{max1_1} =M_{max1_1}	M_{max1_1}=	1151.53	ft*kips
Direction 2:	M_{max1_2} =M_{max1_2}	M_{max1_2}=	1142.38	ft*kips
Diagonal :	M_{max1_diag} =M_{max1_diag}	M_{max1_diag}=	2240.20	ft*kips
Max moment:	M_{maxp} =Max(Mmax1_1,Mmax1_2, Mmax1_diag)	M_{maxp}=	2240.20	ft*kips
Required moment: *φt = 0.9 [ACI 21.2.2.2]*	M_n = Mmaxp / φt	M_n =	2489.115	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 =	35.000	ft	
	A_{st_p}' = Mn / (0.9 * Fy * dc)						A_{st_p}' =	31.724	in^2	
	a_p = Ast_p' * Fy / (β * F'c * We)						a_p =	1.22	in	
Required steel:	$A_{st\_p\_st}$ = Mn / (Fy * (dc - ap / 2)) * (W / We)						$A_{st\_p\_st}$ =	29.587	in^2	
Shrinkage:	r_{sh} = IF(Fy >= 60000, 0.0018, 0.002)						r_{sh} =	0.0018		
	$A_{st\_p\_sh}$ = ρsh * W * T / 2						$A_{st\_p\_sh}$ =	7.938	in^2	
	A_{st_p} = MAX(Ast_p_st, Ast_p_sh, Ast_p_ste1, Ast_p_ste2)						A_{st_p} =	29.587	in^2	
Rebar:	s_p = 9	*Equally spaced, top and*		d_{b_p} =	1.128	in				
	m_p = 40	*bottom, both directions.*		A_{b_p} =	1	in^2				
	A_{s_p} = Ab_p * m_p						A_{s_p} =	40.00	in^2	
		Check	A_{s_p} =	40.00	in^2	**>=**	A_{st_p} =	29.59	in^2	**OK**
Bar separation:	B_{s_p} = (W - 2 * cc - db_p) / (m_p - 1) - db_p						B_{s_p} =	9.46	in	
		Check	16.87	**>=**	B_{s_p} =	9.46 in		**>=**	4"	**OK**

Pad Development Length:

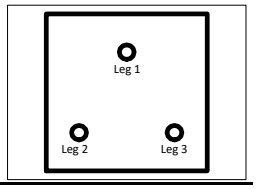
Reinforcement location: *[ACI 25.4.2.4]*	ψ_{t_p} = if the space under the rebar > 12 in, use 1.3, else use 1.0	ψ_{t_p} =	1.3			
Epoxy coating: *[ACI 25.4.2.4]*	ψ_{e_p} = if epoxy-coated bars are not used, use 1.0; but if epoxy-coated bars are used, then if Bs < 6 * db or cc < 3 * db, use 1.5, else 1.2	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 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 =	3.56	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 = Ast_p / As_p	R_p =	0.74			
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}' =	29.1	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} =	29.1	in		
Length available in pad:	L_{pad} = (W / 2 - w' / 2) - cc	L_{pad} =	45.0	in		
	Check	L_{pad} = 45.00 in	**>=**	L_{dp} =	29.10	in **OK**

UNIT BASE FOUNDATION (DL - 0.9)

VB BTS II **V- 27.0 255** V 4.9
US-KY-5152 Fountain Run **A- 591478**

Reactions		stress ratio	99.3%	mark up:	0.7%
Shear (Per Leg), S_i:	45.00 kips	x 1.01 =	45.32 kips		
Shear (total), **S**:	68.00 kips	x 1.01 =	68.48 kips		
Moment, **M**:	11154.00 ft-kips	x 1.01 =	11232.08 ft-kips		
Compression / leg, **C**:	503.00 kips	x 1.01 =	506.52 kips		
Uplift / leg, **U**:	446.00 kips	x 1.01 =	449.12 kips		
Tower weight, W_t:	79.00 kips	=	79.00 kips		

Soil per: Soil report by Delta Oaks, report # GEO23-18848-08 dated 05/02/2023



Physical Parameters:

Concrete volume:	$V = T * W^2 + 3 * (di^2 / 4 * \pi) * (D + E - T)$	$V =$	82.7	cy
Concrete weight:	$W_c = V * \delta$	$W_c =$	335.1	kips
Soil weight:	$W_s = (D - T) * (W^2 - 3 * (di^2 / 4 * \pi)) * \gamma$	$W_s =$	496.6	kips
Total weight:	$P = Wc + Ws + Wt$	$P =$	910.65	kips

Passive Pressure:

Pp coefficient:	$K_p = TAN(45 + \varphi / 2)^2$	$K_p =$	1.000	
	$P_{pn} = Kp * \gamma * N + 2 * Co * \sqrt{(Kp)}$	$P_{pn} =$	0.605	ksf
	$P_{pt} = Kp * \gamma * (D - T) + 2 * Co * \sqrt{(Kp)}$	$P_{pt} =$	0.413	ksf
	$P_{pb} = Kp * \gamma * D + 2 * Co * \sqrt{(Kp)}$	$P_{pb} =$	0.605	ksf
	$P_{ptop} = IF(N < (D - T), Ppt, Ppn)$	$P_{ptop} =$	0.6	ksf
	$Pp' = (Pptop + Ppb) / 2$	$Pp' =$	0.605	ksf
Shear area:	$T_{pp} = 0$	$T_{pp} =$	0.0	ft
	$A_{pp} = Tpp * W$	$A_{pp} =$	0.00	ft^2
Shear Capacity: *φr = 0.75*	$S_{actual} = (Pp' * App + \mu * P) * \varphi r$	$S_{actual} =$	204.895	kips

Check $S_{actual} =$ 204.90 kips **>=** $S =$ 68.48 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:	$O = (W - 0.866 * w') / 2$	$O =$	5.809	ft
Additional offset of Wt:	$O_a = W / 2 - (1 / 3 * 0.866 * w' + O)$	$O_a =$	3.897	ft
Resisting moments:	$M_{rwt} = P * W / 2 - Wt * Oa$	$M_{rwt} =$	15628.45	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: *φr = 0.75*	$M_{rt} = (Mrwt + Mrp + Mrsw) * \varphi r$	$M_{rt} =$	11721.34	ft-kips
Total overturning:	$M_o = M + S * (D + E)$	$M_o =$	11642.93	ft-kips

Check $M_{rt} =$ 11721.34 ft-kips **>=** $M_o =$ 11642.93 ft-kips **OK**

Bearing Resistance due to Pressure Distribution

Area of mat:	$area = W^2$	$area =$	1225.0	ft^2
Section modulus:	$SM = W^3 / 6$	$SM =$	7145.8	ft^3
Factored total weight:	$P' = (Wt / 1.2 + Wc + Ws) * 0.9$	$P' =$	807.7	kip
Pressure exerted:	$P_{pos} = P' / area + Mo / SM$	$P_{max} =$	2.289	ksf
	$P_{neg} = P' / area - Mo / SM$	$P_{min} =$	-0.970	ksf

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

Load eccentricity:	$e_c = Mo / P'$	$e_c =$	14.41	ft
In Parallel Direction	$P_{adj} = 2 * P' / (3 * W * (W / 2 - ec))$	$P_{adj} =$	4.986	ksf
In Diagonal Direction	P_{adj_diag} *see Diagonal Bearing Sheet (attached)*	$P_{adj\_diag} =$	5.067	ksf
Adj. applied pressure:	$q_a = IF(Pneg >= 0, Ppos, Padj)$	$q_a =$	4.986	ksf
Overburden Pressure: (factored)	$q_{obp} = D * \gamma$	$q_{obp} =$	0.605	ksf

φr = 0.75

Check $q_a - q_{obp} =$ 4.381 ksf **<=** $B_c * \varphi r =$ 13.125 ksf **OK**

Concrete Shear Strength:

One way beam action at d_i from tower

Effective depth:	$d_c = T - cc - db\_p / 2$	$d_c =$	17.436	in
Distance from edge of pad to pier face:	$d' = O - di / 2$	$d' =$	4.309	ft
Distance from edge of pad to dc	$d'' = d' - dc$	$d'' =$	2.856	ft
Bearing Pressure Slop	$q_s = qa / Weff$	$q_s =$	0.5386	kcf
Required shear:	$V_{n1} = [(qa - d'' * qs)+(d'' * qs /2)]*d''*W - [0.9*(D - T)*\gamma*d''*W]$	$V_{n1} =$	384.42	kips
Available shear: *[ACI 22.5.5.1] φs = 0.75 [ACI 21.2.1]*	$V_{c1} = \varphi s * 2 * \lambda * \sqrt{(F'c)} * W * dc$	$V_{c1} =$	736.87	kips

Check $V_{c1} =$ 736.87 kips **>=** $V_{n1} =$ 384.42 kips **OK**

Two way beam action at d_i / 2 from tower (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} =	9.256924	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 = deq + dc	b_1 =	49.34	in	
Critical Section — *Width:*	b_2 = b1	b_2 =	49.34	in	
Critical Section — *Perimeter:*	b_o = 2 * (b1 + b2)	b_o =	197.36	in	
Critical Section — *Centroid*	c = b1 / 2	c =	24.670	ft	
Critical Section — *Eccentricity:*	e_c = 0	e_c =	0	in	
Critical Section — *Polar MOI*	J_c = (b1^3 * dc / 6)+ (b1 * d ^3 / 6)+(dc * b2 * b1^2 / 2)	J_c =	1.440E+06	in^4	
Moment Fraction transferred by — *flexure:*	γ_f = 1 / (1 + 2 / 3 * √ (b1 / b2))	γ_f =	0.60		
Moment Fraction transferred by — *eccentricity of shear:*	γ_v = 1 - γf	γ_v =	0.40		
Bearing Pressure Slope:	q_s = qa / Weff	q_s =	0.539	kcf	
Average Bearing Pressure:	$q_{a.pl}$ = (Weff - O) * qs	$q_{a.pl}$ =	1.857	ksf	
Shear Force at Section:	V_{n_pier} = C - qa.pl * (b1 * b2)	V_{n_pier} =	475.124	kips	
Slab Moment:	M_{sc} = Sl * (D - T + E)	M_{sc} =	192.59	ft-kips	
Required shear: φs = 0.75 [ACI 21.2.1]	= (Vn_pier / b0 * dc) + (γv * Msc* c / Jc)		153.91	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} =	153.91	psi	**OK**
Moment transfered: (Pier 1)	M_{n1} = γf * Msc	M_{n1} =	178.034	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}' =	2.269	in^2	
	a_{p1} = Ast_p1' * Fy / (β * F'c * weff1)	a_{p1} =	0.386	in	
Required steel:	$A_{st\_p\_st1}$ = Mn1 / (Fy * (dc - ap1 / 2))	$A_{st\_p\_st1}$ =	2.065	in^2	
Required steel in entire mat:	$A_{st\_p\_ste1}$ = Ast_p_st1 * W / weff1	$A_{st\_p\_ste1}$ =	9.139	in^2	
Moment transfered: (Pier 2 or 3)	M_{n2} = γf * Msc (Controlling Case: Corner.)	M_{n2} =	283.076	ft-kips	
Effective Beam Width:	w_{eff2} = deq + 1.5 * T + MIN(1.5 * T , (W - w\ - deq) / 2)	w_{eff2} =	7.909	ft	
	A_{st_p2}' = Mn2 / (0.9 * Fy * dc)	A_{st_p2}' =	3.608	in^2	
	a_{p2} = Ast_p2' * Fy / (β * F'c * weff2)	a_{p2} =	0.614	in	
Required steel:	$A_{st\_p\_st2}$ = Mn2 / (Fy * (dc - ap2 / 2))	$A_{st\_p\_st2}$ =	3.305	in^2	
Required steel in entire mat:	$A_{st\_p\_ste2}$ = Ast_p_st2 * W / weff2	$A_{st\_p\_ste2}$ =	14.627	in^2	
		Controlling Case			*Pier 1: Interior*

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 =	27.872	in	
Eq. Square Column (ACI 8.10.1.3 & 22.6.4.1.2)	d_{eq_T} =dprebar / 2 * √π	d_{eq_T} =	24.70	in	
Critical Section Length:	b_{1_T} = deq_T + dc	b_{1_T} =	42.137	in	
Critical Section Perimeter:	b_{o_T} = 4 * (deq + dc)	b_{o_T} =	168.55	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} =	906875.220	in^4	
Shear Force at Section:	$V_{n\_pier\_T}$ = U	$V_{n\_pier\_T}$ =	449.122	kips	
Required shear: φs = 0.75 [ACI 21.2.1]	= (Vn_pier_T / b1_T * dc) + (γv * Msc* c_T / Jc_T)		174.301	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} =	174.30	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 =	506.52	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 * 0.005	A_{st_c} =	5.09	in^2	
Cage circle:	d_o = di - 2 * cc - db_c - 2 * db_t	d_o =	27.87	in	
Rebar:	s_c = 9 ; d_{b_c} = 1.128 in				
	m_c = 11 ; A_{b_c} = 1 in^2				
	A_{s_c} = Ab_c * m_c	A_{s_c} =	11.00	in^2	
	Check A_{s_c} = 11.00 in^2 **>=**	A_{st_c} =	5.09	in^2	**OK**
Actual moment:	M_{max} = (D - T + E) * S / 2	M_{max} =	145.51	ft-kips	
Pier moment capacity:	M_{allow} *per Maxmomnt.xls (see attached)*	M_{allow} =	177.70	ft-kips	
	Check M_{allow} = 177.70 ft-kips **>=**	M_{max} =	145.51	ft-kips	**OK**
Bar separation:	B_{s_c} = (do * π) / m_c - db_c	B_{s_c} =	6.83	in	
	Check 16.87 **>=** B_{s_c} = 6.83 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	$c_{\_c}$ =	3.56	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 = Mmax / Mallow	$R_{\_c}$ =	0.82		
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	$L_{dt}'_{\_c}$ =	32.22	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} =	32.22	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))	$L_{dc}'_{\_c}$ =	16.52	in	
	$L_{dc}"_{\_c}$ = 0.0003 * db_c * Fy * ψr_c * R_c	$L_{dc}"_{\_c}$ =	16.63	in	
Development length:	L_{dc_c} = MAX(8, Ldc'_c, Ldc"_c)	L_{dc_c} =	16.63	in	
Length available in pier:	L_{vc} = D - T + E - cc	L_{vc} =	48.0	in	
	Check L_{vc} = 48.0 in **>=** L_{dt_c} =		32.2	in	**OK**
	Check L_{vc} = 48.0 in **>=** L_{dc_c} =		16.6	in	**OK**
Length available in pad:	L_{vp} = T - cc	L_{vp} =	18.0	in	
	Check L_{vp} = 18.0 in **>=** L_{dt_c} =		32.2	in	**HOOKS**
	Check L_{vp} = 18.0 in **>=** L_{dc_c} =		16.6	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_{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}' =	11.6	in	
Minimum length: [ACI 25.4.3.1]	L_{dh_min} the larger of: 8 * db or 6 in	L_{dh_min} =	9.0	in	
Development length:	L_{dh} = MAX(Ldh_min, Ldh')	L_{dh} =	11.6	in	
	Check L_{vp} = 18.0 in **>=** L_{dh} =		11.6	in	**OK**
Hook tail length:	L_{h_tail} 12 * db beyond the bend radius	L_{h_tail} =	19.2	in	
Length available in pad:	L_{h_pad} = (W - w' - di) / 2	L_{h_pad} =	30	in	
	Check L_{h_pad} = 30.0 in **>=** L_{dh_tail} =		19.2	in	**OK**

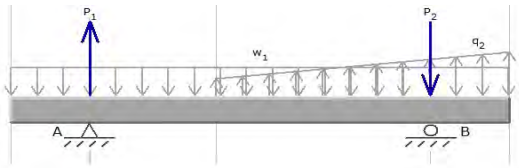
Pier Ties:

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 = 11	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				$B_{s\_t\_max1}$ =	9.024	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)				$B_{s\_t\_max}$ =	9	in
	m_{t_min} = (D - T + E) / Bs_t_max + 2				m_{t_min} =	7.7	
	Check	m_t =	11.0	>=	m_{t_min} =	7.7	OK

Anchor Steel:

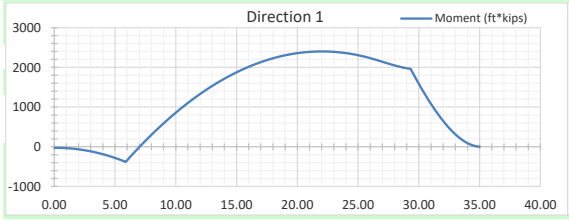
A/S parameters:	P_{as} = 262330		L_{as} =	72	in		
	d_{as} = 1.75 in		E_{as} =	61.50	in		
Development available:	L_{das} *per Anchor Bolts (see attached)*				L_{das} =	51.69	in
Required development:	L_{das_min} *per Anchor Bolts (see attached)*				L_{das_min} =	32.22	in
	Check	L_{das} =	51.69	in >=	L_{das_min} =	32.22	in OK
To bottom rebar grid:	E_{as_max} =D + E - cc - 2 * db_p				E_{as_max} =	66.744	in
	Check	E_{as} =	61.50	in <=	E_{as_max} =	66.74	in OK
To top rebar grid:	rebar @ = D + E - T + cc				rebar @	54.00	in
	Check	54 + 6 in	>=	E_{as} = 61.50	in **or** <=	54 in	OK
Min. cage dia:	d_{o_min} *per ancsteel.xls (see attached)*				d_{o_min} =	25.25	in
	Check	d_o =	27.87	in >=	d_{o_min} =	25.25	in OK

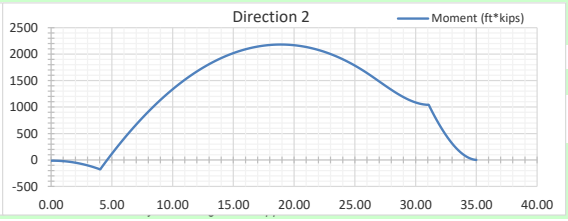
Pad Reactions:



Effective length in bearing: 9.26 ft
Effective length not bearing: 25.74 ft

Total Beam Length:	B_{L2_1} =W	B_{L2_1}=	35	ft
Location of Left Support:	S_{L2_1} =O	S_{L2_1}=	5.809	ft
Location of Right Support:	S_{R2_1} =W-O	S_{R2_1}=	29.19	ft
MDSolids Geometry Input (Option 2)				
Total Beam Length:	B_{L2_2} =W	B_{L2_2}=	35.0	ft
Location of Left Support:	S_{L2_2} =(W - w\) / 2	S_{L2_2}=	4.00	ft
Location of Right Support:	S_{R2_2} =S_{L1_2} + w\	S_{R2_2}=	31.00	ft





MDSolids Design Result

Direction 1:	M_{max2_1} =M_{max2_1}	M_{max2_1}=	2402.31	ft*kips
Direction 2:	M_{max2_2} =M_{max2_2}	M_{max2_2}=	2182.37	ft*kips
Diagonal :	M_{max2_diag} =M_{max1_diag}	M_{max2_diag}=	2970.20	ft*kips
Max moment:	M_{maxp} =Max(Mmax2_1,Mmax2_2, Mmax2_diag)	M_{maxp}=	2970.20	ft*kips
Required moment:	M_n = Mmaxp / φt	M_n =	3300.22	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 =	35.000	ft
	A_{st_p}' = Mn / (0.9 * Fy * dc)					A_{st_p}' =	42.061	in^2
	a_p = Ast_p' * Fy / (β * F'c * We)					a_p =	1.62	in
Required steel:	$A_{st\_p\_st}$ = Mn / (Fy * (dc - ap / 2)) * (W / We)					$A_{st\_p\_st}$ =	39.698	in^2
Shrinkage:	r_{sh} = IF(Fy >= 60000, 0.0018, 0.002)					r_{sh} =	0.0018	
	$A_{st\_p\_sh}$ = ρsh * W * T / 2					$A_{st\_p\_sh}$ =	7.938	in^2
	A_{st_p} = MAX(Ast_p_st, Ast_p_sh, Ast_p_ste1, Ast_p_ste2)					A_{st_p} =	39.698	in^2
Rebar:	$s_{\_p}$ = 9	*Equally spaced, top and*		d_{b_p} =	1.128 in			
	$m_{\_p}$ = 40	*bottom, both directions.*		A_{b_p} =	1 in^2			
	A_{s_p} = Ab_p * m_p					A_{s_p} =	40.00	in^2
		Check	A_{s_p} = 40.00 in^2		>=	A_{st_p} =	39.70	in^2 OK
Bar separation:	B_{s_p} = (W - 2 * cc - db_p) / (m_p - 1) - db_p					B_{s_p} =	9.46	in
		Check	16.87 >=	B_{s_p} = 9.46 in		>=	4"	OK

Pad Development Length:

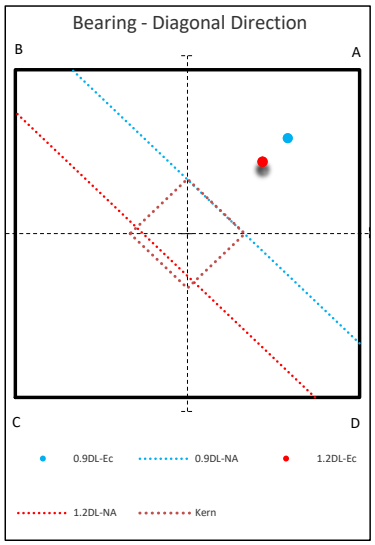
Reinforcement location: *[ACI 25.4.2.4]*	ψ_{t_p} = if the space under the rebar > 12 in, use 1.3, else use 1.0	ψ_{t_p} =	1.3		
Epoxy coating: *[ACI 25.4.2.4]*	ψ_{e_p} = if epoxy-coated bars are not used, use 1.0; but if epoxy-coated bars are used, then if Bs < 6 * db or cc < 3 * db, use 1.5, else 1.2	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]*	$\lambda_{\_p}$ = if lightwieght concrete is used, 0.75, else use 1.0	$\lambda_{\_p}$ =	1.0		
Spacing/cover: *[ACI 25.4.2.4]*	$c_{\_p}$ = the smaller of: half the bar spacing or the concrete edge distace	$c_{\_p}$ =	3.56	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 = Ast_p / As_p	$R_{\_p}$ =	0.99		
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}' =	39.1	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} =	39.1	in	
Length available in pad:	L_{pad} = (W / 2 - w' / 2) - cc	L_{pad} =	45.0	in	
	Check L_{pad} = 45.00 in	>=	L_{dp} =	39.05	in OK

UNIT BASE FOUNDATION DIAGONAL BEARING CHECK

VB BTS II **V- 27.0 255**

US-KY-5152 Fountain Run **A- 591478**

		Load Case - DL 1.2	Load Case - DL 0.9	
Moment of Inertia of Mat	MOI	125052.08	125052.08	ft^4
Total Factored Weight	P'	1076.98	807.73	kips
Load Eccentricity	e	10.81	14.41	ft
Bearing at Corner A	B_{c_a}	3.18	2.96	ksf
Bearing at Corner B	B_{c_b}	0.88	0.66	ksf
Bearing at Corner C	B_{c_c}	-1.43	-1.64	ksf
Bearing at Corner D	B_{c_d}	0.88	0.66	ksf
Initial Location of Neutral Axis from C	NA_{c_ini}	15.31	17.67	ft
Calculated Location of Neutral Axis from C	NA_{c_cal}	21.55	28.83	ft
MOI for Effective Bearing Area	MOI	101686.02	30416.29	ft^4
Distance to Point Load from NA	$L_{p'}$	14.01	10.33	ft
Effective Length in Bearing along AB & AD	W_{eff}	35.00	29.23	ft
Total Vol.	Vol_{tot}	1076.98	807.73	kips
Difference		-0.0002	0.0000	kips
		ok	ok	
Adjusted Bearing at A	$B_{c\_a\_adj}$	4.1481	5.6723	ksf
Adjusted Bearing at B & D	$B_{c\_bd\_adj}$	0.48	0.00	ksf
Overburden Pressure	q_{obp}	0.6050	0.6050	ksf
Maximum Diagonal Bearing Pressure	$B_{c\_dia\_max}$	3.5431	5.0673	ksf
Bearing Available	$B_c * \varphi r$	13.1250	13.1250	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 =	449.12	kips

Foundation		
Concrete		
Pier diameter =	3.00	ft
Pier area =	1017.9	in^2
Reinforcement		
Clear cover =	3.00	in
Cage diameter =	2.32	ft
Bar size =	9	
Bar diameter =	1.128	in
Bar area =	0.999	in^2
Number of bars =	11	

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		

458.04

Seismic	
SDC =	C
Are hooks required?	no

Minimum Area of Steel

Required area of steel =	5.09	in^2	
Actual area of steel =	10.99	in^2	OK
Bar spacing =	7.44	in	

Axial Loading

Load factor =	1.00		
Reduction factor =	0.65575	(per ACI 9.3.1 & 2)	0.6557471
Factored axial load =	449.12	kips	

Neutral Axis

Distance from extreme edge to neutral axis =	3.55	in	
Equivalent compression zone factor =	0.825		(per ACI 10.2.7.3)
Distance from extreme edge to Equivalent compression zone factor =	2.93	in	
Distance from centroid to neutral axis =	14.45	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 =	33.16	deg	
Area of concrete in compression =	39.16	in^2	39.159234
Force in concrete = 0.85 * f`c * (Acc - steel in comp zone) =	149.78	kips	(per ACI 10.3.6.2)
Total reinforcement forces =	-598.91	kips	
Factored axial load =	449.12	kips	
Force in concrete =	-149.78	kips	
Sum of the forces in concrete =	0.00	kips	OK

Maximum Moment

First moment of the concrete area in compression about the centoid =			636.32	in^3
Distance between centroid of concrete in compression and centroid of pier =			16.25	in
Moment of concrete in compression =	2433.94	in-kips		
Total reinforcement moment =	818.01	in-kips		
Nominal moment strength of column =	3251.95	in-kips		
Factored moment strength of column =	2132.46	in-kips	177.70	ft-kips

Maximum allowable moment of the pier =	**177.70**	**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	-14.45	-15.07	-0.0122	0.00	-59.96	0.00
2	32.73	7.53	-6.91	-7.53	-0.00584	0.00	-59.96	-451.76
3	65.45	12.68	-1.77	-2.39	-0.00149	0.00	-43.31	-548.97
4	98.18	13.79	-0.65	-1.27	-0.00055	0.00	-15.96	-220.20
5	130.91	10.53	-3.91	-4.54	-0.0033	0.00	-59.96	-631.50
6	163.64	3.93	-10.52	-11.14	-0.00888	0.00	-59.96	-235.42
7	196.36	-3.93	-18.37	-18.99	-0.01551	0.00	-59.96	235.42
8	229.09	-10.53	-24.98	-25.60	-0.02109	0.00	-59.96	631.50
9	261.82	-13.79	-28.24	-28.86	-0.02384	0.00	-59.96	827.09
10	294.55	-12.68	-27.12	-27.75	-0.0229	0.00	-59.96	760.09
11	327.27	-7.53	-21.98	-22.60	-0.01856	0.00	-59.96	451.76

DEVELOPMENT LENGTH CHECK OF PIER REINFORCEMENT

Foundation:	Pier diameter =	3.0	ft	Cover between side of pier and cage =	3.00	in.
	Cage diameter =	2.32	ft	Cover between top of pier and cage =	3.00	in.
	Rebar size =	9		Compressive strength of concrete =	4500	psi
	Number of bars =	11		Rebar yield strength =	60000	psi
	Clear spacing =	6.83	in.			
	Are there hooks?	n				
	Check Compression?	n				
Anchor Steel:	Part number:	262330		Actual Bending Moment =	145.51	ft-kips
	Embedment length =	61.5	in.	Allowable Bending Moment =	177.70	ft-kips
	Bolt Diameter =	1.75		Excess Reinforcement Ratio =	0.819	
Anchor Plate:	Part number:	281262				
	Plate width =	19.25	in.			

Required development length (compression) =	999.00	in.	
Required development length (tension) =	39.35	in.	
Required development length (tension) =	32.22	in.	(reduced)
Available development length =	51.689	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 =	2.322667	ft	Minimum cover between A/S and cage =	3.00	in.
Anchor Steel:	Part number:	262330		Angle of anchor steel in foundation =	0	degrees
	Embedment length =	61.5	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 =	27.872	in.

OK

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

GEOTECHNICAL REPORT

**[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK,
GEOTECHNICAL REPORT BEGINS ON NEXT PAGE]**

May 5, 2023

VB BTS II, LLC
Paulette Hyder750 Park of Commerce Drive - Suite 200
Boca Raton, FL 33487

RE: Geotechnical Investigation Summary Letter
US-KY-5152 Fountain Run
Fountain Run Rd and Arterburn Rd, Kentucky 42133 Monroe County

Dear Ms. Hyder:

Future plans by VB BTS II, LLC, include the development of the target property with a self-supporting tower measuring 270' within a lease area.

Lotis, on behalf of VB BTS II, LLC, hired Delta Oaks Group (DOG), to conduct a Geotechnical Investigation at the target property. DOG completed the field work on April 27, 2023, which included one mechanical soil test boring (B-1) to the termination depth of 50 feet below ground surface (bags). Samples were obtained at selected intervals in accordance with ASTM D 1586. The boring was performed at the staked tower centerline.

At the time of drilling, subsurface water was not encountered during the subsurface investigation. However, subsurface water elevations can fluctuate throughout the year due to variations in climate, hydraulic parameters, nearby construction activity and other factors.

The residual soil encountered in the subsurface field investigation began at the existing ground surface in the boring and consisted of lean clay. The materials ranged from a medium stiff to very stiff consistency. Fill material was not encountered during the subsurface field investigation. Rock was encountered during the subsurface field investigation (limestone). Auger advancement refusal was encountered at a depth of 12.2 feet bags during the subsurface investigation.

In consideration of the provided tower parameters and the determined soil characteristics, DOG recommends utilizing a shallow foundation and drilled shaft foundation for the proposed structure.

This document is only a brief summary of the information presented in DOG's report and Lotis recommends that the entire report be reviewed by the reader.

Please feel free to reach out to Lotis with any questions regarding the geotechnical investigation.

David N. Robinson, P.E.

President/CEO

Geotechnical Investigation Report

(716)580-7000 www.thelotisgroup.com Lotis Environmental, LLC 8899 Main Street, Suite 107
Williamsville, NY 14221

GEOTECHNICAL INVESTIGATION REPORT

May 2, 2023

Prepared For:

The Lotis Environmental Group

Fountain Run
US-KY-5152
Proposed Self-Supporting Tower
Fountain Run Rd and Arterburn Rd, Fountain Run (Monroe County), Kentucky 42133
Latitude N 36º 41' 56.3" Longitude W 85º 50' 29.8"

Delta Oaks Group Project GEO23-18848-08
Revision 0
geotech@deltaoaksgroup.com

Performed By:

Jason Lafollette, E.I.

Reviewed By:

Joseph V. Borrelli, Jr., P.E.

DocuSigned by:
Joseph Borrelli
2CA6B6CF7AE64C1...

COMMONWEALTH OF KENTUCKY
JOSEPH V. BORRELLI
30809
LICENSED
PROFESSIONAL ENGINEER
5/2/2023

INTRODUCTION

This geotechnical investigation report has been completed for the proposed self-supporting tower located at Fountain Run Rd and Arterburn Rd in Fountain Run (Monroe County), Kentucky. The purpose of this investigation was to provide engineering recommendations and subsurface condition data at the proposed tower location. A geotechnical engineering interpretation of the collected information was completed and utilized to suggest design parameters regarding the adequacy of the structure's proposed foundation capacity under various loading conditions. This report provides the scope of the geotechnical investigation; geologic material identification; results of the geotechnical laboratory testing; and design parameter recommendations for use in the design of the telecommunication facility's foundation and site development.

SITE CONDITION SUMMARY

The proposed tower and compound are located on a property description exhibiting a gradually sloping topography from the west to east across the tower compound and subject property.

REFERENCES

- TIA Standard (TIA-222-H), dated October 2017

SUBSURFACE FIELD INVESTIGATION SUMMARY

The subsurface field investigation was conducted through the advancement of one mechanical soil test boring to the auger refusal depth of 17.2 feet bgs. Samples were obtained at selected intervals in accordance with ASTM D 1586. The sampling was conducted at the staked centerline of the proposed tower. Upon encountering auger refusal 5.0 feet of rock coring was conducted in accordance with ASTM D 2113. Soil and rock samples were transported to our laboratory and classified by a geotechnical engineer in accordance with ASTM D 2487. A detailed breakdown of the material encountered in our subsurface field investigation can be found in the boring log presented in the Appendix of this report.

Additional testing was performed on selected samples in accordance with ASTM D 7012 (Unconfined Compressive Strength – Rock). Laboratory data can be found in the Appendix of this report.

A boring plan portraying the spatial location of the boring in relation to the proposed tower, tower compound and immediate surrounding area can be found in the Appendix.

SUBSURFACE CONDITION SUMMARY

The following provides a general overview of the site's subsurface conditions based on the data obtained during our field investigation.

FILL

Fill material was not encountered during the subsurface field investigation.

SOIL

The residual soil encountered in the subsurface field investigation began at the existing ground surface in the boring and consisted of lean clay. The materials ranged from a medium stiff to very stiff consistency.

Auger advancement refusal was encountered during the subsurface field investigation at a depth of 12.2 feet bgs.

ROCK

Rock was encountered during the subsurface investigation at a depth of 12.2 feet bgs. The rock can be described as highly fractured, moderately weathered, limestone.

SUBSURFACE WATER

At the time of drilling, subsurface water was not encountered during the subsurface investigation. However, subsurface water elevations can fluctuate throughout the year due to variations in climate, hydraulic parameters, nearby construction activity and other factors.

FROST PENETRATION

The frost penetration depth for Monroe County, Kentucky is 20 inches (1.7 feet).

CORROSIVITY

Soil resistivity was performed in accordance with ASTM G187 with a test result of 4,110 ohms-cm.

FOUNDATION DESIGN SUMMARY

In consideration of the provided tower parameters and the determined soil characteristics, Delta Oaks Group recommends utilizing a shallow foundation and/or drilled shaft foundation for the proposed structure. The strength parameters presented in the following sections can be utilized for design of the foundation.

GENERAL SUBSURFACE STRENGTH PARAMETERS

Boring	Depth (bgs)	USCS	Moist/Buoyant Unit Weight (pcf)	Phi Angle (degrees)	Cohesion (psf)
B-1	0.0-3.5	CL	105	0	1,400
	3.5-6.0	CL	110	0	2,800
	6.0-8.5	CL	115	0	2,750
	8.5-12.2	CL	115	0	2,950
	12.2-17.2	Limestone	150	0	8,000

- The unit weight provided assumes overburden soil was compacted to a minimum of 95% of the maximum dry density as obtained by the standard Proctor method (ASTM D 698) and maintained a moisture content within 3 percent of optimum
- The values provided for phi angle and cohesion should be considered ultimate.

SUBSURFACE STRENGTH PARAMETERS – SHALLOW FOUNDATION

Boring	Dimensions (feet)	Depth (feet bgs)	Net Ultimate Bearing Capacity (psf)
B-1	5.0 x 5.0	3.0	9,670
		4.0	19,680
		5.0	20,350
		6.0	21,030
	10.0 x 10.0	3.0	9,150
		4.0	18,320
		5.0	18,660
		6.0	19,000
	15.0 x 15.0	3.0	8,980
		4.0	17,870
		5.0	18,090
		6.0	18,320
	20.0 x 20.0	3.0	8,890
		4.0	17,640
		5.0	17,810
		6.0	17,980
	25.0 x 25.0	3.0	8,840
		4.0	17,500
		5.0	17,640
		6.0	17,780

- Delta Oaks Group recommends the foundation bear a minimum of 3.0 feet bgs.
- A sliding friction factor of 0.30 can be utilized along the base of the proposed foundation.
- An Ultimate Passive Pressure Table with a reduction due to frost penetration to a depth of 1.7 feet bgs is presented on the following page.
- Delta Oaks Group recommends an appropriate factor of safety be utilized for the design of the foundation.

ULTIMATE PASSIVE PRESSURE VS. DEPTH - TOWER FOUNDATION

Soil Layers (feet)		Moist Unit Weight	Phi Angle	Cohesion	PV	KP	Ph
Top	0.0	105	0	1400	0.00	1.00	1400.00
Bottom	1.7	105	0	1400	178.50	1.00	1489.25
Top	1.7	105	0	1400	178.50	1.00	2978.50
Bottom	3.5	105	0	1400	367.50	1.00	3167.50
Top	3.5	110	0	2800	367.50	1.00	5967.50
Bottom	6.0	110	0	2800	642.50	1.00	6242.50
Top	6.0	115	0	2750	642.50	1.00	6142.50
Bottom	8.5	115	0	2750	930.00	1.00	6430.00
Top	8.5	115	0	2950	930.00	1.00	6830.00
Bottom	12.2	115	0	2950	1355.50	1.00	7255.50
Top	12.2	150	0	8000	1355.50	1.00	17355.50
Bottom	17.2	150	0	8000	2105.50	1.00	18105.50

SUBSURFACE STRENGTH PARAMETERS - DRILLED SHAFT FOUNDATION

Boring	Depth (bgs)	Net Ultimate Bearing Capacity (psf)	Ultimate Skin Friction - Compression (psf)	Ultimate Skin Friction - Uplift (psf)
B-1	0.0-3.0	-	-	-
	3.0-6.0	12,630	1,540	1,540
	6.0-9.0	58,820	1,510	1,510
	9.0-12.0	60,000	1,620	1,620
	12.0-17.0	N/A*	11,790**	11,790**

*Based on Kulhawy (1983) if the computed settlement is less than 0.4 inches, the side resistance will dominate and no load can be expected to reach the base of the foundation.

**The side frictional resistance provided is assuming that a drilled shaft is fully socketed in the rock at this depth. This should be verified during construction.

- The top 3.0 feet of soil should be ignored due to the frost penetration, the potential soil disturbance during construction, and the presence of fill material.
- The values presented assume the concrete is cast-in-place against earth walls and any casing utilized during construction of the foundation was removed.
- Delta Oaks Group recommends an appropriate factor of safety be utilized for the design of the foundation.

SEISMIC DESIGN CONSIDERATIONS

Period (seconds)	Site Coefficients	Mapped Spectral Acceleration Parameters	Adjusted Spectral Acceleration Parameters	Design Spectral Acceleration Parameters
0.2	1.3 (F_a)	S_s = 0.203	S_{ms} = 0.263	S_{Ds} = 0.176
1.0	1.5 (F_v)	S_1 = 0.111	S_{m1} = 0.166	S_{D1} = 0.111

- The site soils should be characterized as Seismic Site Class C
- Design considerations are based on the 2018 International Building Code and the subgrade conditions encountered during this investigation.

CONSTRUCTION

SITE DEVELOPMENT

The proposed access road and tower compound should be evaluated by a Geotechnical Engineer, or their representative, after the removal or "cutting" of the areas to design elevation but prior to the placement of any structural fill material to verify the presence of unsuitable or weak material. Unsuitable or weak materials should be undercut to a suitable base material as determined by a Geotechnical Engineer, or their representative. Backfill of any undercut area(s) should be conducted in accordance with the recommendations provided in the *STRUCTURAL FILL PLACEMENT* section of this report.

Excavations should be sloped or shored in accordance and compliance with OSHA 29 CFR Part 1926, Excavation Trench Safety Standards as well as any additional local, state and federal regulations.

STRUCTURAL FILL PLACEMENT

Structural fill materials should be verified, prior to utilization, to have a minimum unit weight of 110 pcf (pounds per cubic foot) when compacted to a minimum of 95% of its maximum dry density and within plus or minus 3 percentage points of optimum moisture. Materials utilized should not contain more than 5 percent by weight of organic matter, waste, debris or any otherwise deleterious materials. The Liquid Limit should be no greater than 40 with a Plasticity Index no greater than 20. Structural fill material should contain a maximum particle size of 4 inches with 20 percent or less of the material having a particle size between 2 and 4 inches. Backfill should be placed in thin horizontal lifts not to exceed 8 inches (loose) in large grading areas and 4 inches (loose) where small handheld or walk-behind compaction equipment will be utilized. The potential suitability of on-site materials to be utilized as fill should be evaluated by a Geotechnical Engineer, or their representative just prior to construction.

During construction structural fill placement should be monitored and tested. This should include at minimum, visual observation as well as a sufficient amount of in-place field density tests by a Geotechnical Engineer, or their representative. Materials should be compacted to a minimum of 95% of the maximum dry density as determined by ASTM D 698 (standard Proctor method). Moisture contents should be maintained to within plus or minus 3 percentage points of the optimum moisture content.

SHALLOW FOUNDATIONS

Foundation excavation(s) should be evaluated by a Geotechnical Engineer, or their representative, prior to reinforcing steel and concrete placement. This evaluation should include visual observation to verify a level bearing surface; vertical side-walls with no protrusions, sloughing or caving; and the exposed bearing surface is free of deleterious material, loose soil and standing water. Excavation dimensions should be verified and testing performed on the exposed bearing surface to verify compliance with design recommendations. Bearing testing should be conducted in accordance with ASTM STP399 (Dynamic Cone Penetrometer). A 6-inch layer of compacted crushed stone should be installed prior to reinforcing steel and concrete placement. If subsurface water is encountered during excavation dewatering methods such as sump pumps or well points may be required.

DRILLED SHAFT FOUNDATIONS

Drilled shaft foundations (caissons) are typically installed utilizing an earth auger to reach the design depth of the foundation. Specialized roller bits or core bits can be utilized to penetrate boulders or rock. The equipment utilized should have cutting teeth to result in an excavation with little or no soil smeared or caked on the excavation sides with spiral-like corrugated walls. The drilled shaft design diameter should be maintained throughout the excavation with a plumbness tolerance of 2 percent of the length and an eccentricity tolerance of 3 inches from plan location. A removable steel casing can be installed in the shaft to prevent caving of the excavation sides due to soil relaxation. Upon completion of the drilling and casing placement, loose soils and subsurface water greater than 3-inches in depth should be removed from the bottom of the excavation for the "dry" installation method. The drilled shaft installation should be evaluated by a Geotechnical Engineer, or their representative, to verify suitable end bearing conditions, design diameter and bottom cleanliness. The evaluation should be conducted immediately prior to as well as during concrete placement operations.

The drilled shaft should be concreted as soon as reasonably practical after excavation to reduce the deterioration of the supporting soils to prevent potential caving and water intrusion. A concrete mix design with a slump of 6 to 8 inches employed in conjunction with the design concrete compressive strength should be utilized for placement. Super plasticizer may be required to obtain the recommended slump range. During placement, the concrete may fall freely through the open area in the reinforcing steel cage provided it does not strike the reinforcing steel and/or the casing prior to reaching the bottom of the excavation. The removable steel casing should be extracted as concrete is placed. During steel casing removal a head of concrete should be maintained above the bottom of the casing to prevent soil and water intrusion into the concrete below the bottom of the casing.

If subsurface water is anticipated and/or weak soil layers are encountered drilled shafts are typically installed utilizing the "wet" method by excavating beneath a drilling mud slurry. The drilling mud slurry is added to the drilled shaft excavation after groundwater has been encountered and/or the sides of the excavation are observed to be caving or sloughing. Additional inspection by a Geotechnical Engineer, or their representative, during the "wet" method should consist of verifying maintenance of sufficient slurry head, monitoring the specific gravity, pH and sand content of the drilling slurry, and monitoring any changes in the depth of the excavation between initial approval and just prior to concreting.

Concrete placement utilizing the "wet" method is conducted through a tremie pipe at the bottom of the excavation with the drilling mud slurry level maintained at a minimum of 5 feet or one shaft diameter, whichever is greater, above the ground water elevation. The bottom of the tremie should be set one tremie pipe diameter above the excavation. A closure flap at the bottom of the tremie or a sliding plug introduced into the tremie before the concrete is recommended to reduce the potential contamination of the concrete by the drilling mud slurry. The bottom of the tremie must be maintained in the concrete during placement. Additional concrete should be placed through the tremie causing the slurry to overflow from the excavation in order to reduce the potential for the development of "slurry pockets" remaining in the drilled shaft.

QUALIFICATIONS

The design parameters and conclusions provided in this report have been determined in accordance with generally accepted geotechnical engineering practices and are considered applicable to a rational degree of engineering certainty based on the data available at the time of report preparation and our practice in this geographic region. All recommendations and supporting calculations were prepared based on the data available at the time of report preparation and knowledge of typical geotechnical parameters in the applicable geographic region.

The subsurface conditions used in the determination of the design recommendations contained in this report are based on interpretation of subsurface data obtained at specific boring locations. Irrespective of the thoroughness of the subsurface investigation, the potential exists that conditions between borings will differ from those at the specific boring locations, that conditions are not as anticipated during the original analysis, or that the construction process has altered the soil conditions. That potential is significantly increased in locations where existing fill materials are encountered. Additionally, the nature and extent of these variations may not be evident until the commencement of construction. Therefore, a geotechnical engineer, or their representative, should observe construction practices to confirm that the site conditions do not differ from those conditions anticipated in design. If such variations are encountered, Delta Oaks Group should be contacted immediately in order to provide revisions and/or additional site exploration as necessary

Samples obtained during our subsurface field investigation will be retained by Delta Oaks Group for a period of 30 days unless otherwise instructed by The Lotis Environmental Group. No warranty, expressed or implied, is presented.

Delta Oaks Group appreciates the opportunity to be of service for this Geotechnical Investigation Report. Please do not hesitate to contact Delta Oaks Group with any questions or should you require additional service on this project.

APPENDIX

BORING PLAN

PROJECT NAME Fountain Run
PROJECT NUMBER US-KY-5152
PROJECT LOCATION Fountain Run, Kentucky

CLIENT The Lotis Group

Boring No.: B-1

DATE DRILLED : 4/27/2023
DRILLING METHOD : Hollow Stem Auger & Rock Coring
GROUND ELEVATION :
BORING DEPTH (ft) : 22.2

GROUND WATER LEVELS:
AT TIME OF DRILLING : --- Not Encountered
AT END OF DRILLING : --- Not Encountered
AFTER DRILLING : --- Not Encountered

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE	MATERIAL CLASSIFICATION	Pocket Penetrometer (tsf)	BLOWS 1st	BLOWS 2nd	BLOWS 3rd	N VALUE
0	Medium stiff, brown, lean CLAY (CL), trace sand, moist		CL		3	4	3	7
	to stiff		CL		4	6	8	14
5								
	to very stiff		CL		6	7	10	17
					8	10	12	22
10								
	to stiff		CL		6	7	6	13
15								
	Gray, fine to medium grained, LIMESTONE, moderately weathered, highly fractured, moist			REC=91.6%RQD=75.0%				
20								
	Unconfined Compressive Strength: 17,820 psi							

▲ SPT N VALUE ▲
10 20 30 40 50 60 70 80 90

Refusal at 17.2 feet.
Bottom of borehole at 22.2 feet.

TOWER FALL ZONE ENGINEERING LETTER

**[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK,
FALL ZONE LETTER BEGINS ON NEXT PAGE]**

Date: 8/6/2023

Vertical Bridge

Attn: To Whom It May Concern

SUBJECT: Project Number: 591478
Site Name: US-KY-5152 Fountain Run, KY
Structure: 255-ft Self-Supporting Tower
Designed within a Theoretical Fall Radius of 0 ft

Communication structures designed by Valmont are sized in accordance with the latest governing revision of the ANSI/TIA 222 standard unless otherwise requested by our customer or the governing jurisdiction. This standard has been approved by ANSI/ASCE, which has dealt with the design of antenna support structures since the late 1950s. The TIA standard, based on provisions of this nationally known specification, has a long history of reliability. Its core philosophy is first and foremost to safeguard and maintain the health and welfare of the public.

Valmont's communication structures have proven to be very reliable products. We use the latest standards, wind speed information, and sophisticated analytical tools to ensure that we continue providing high quality structures.

This structure is designed to the following criteria:

- Exposure Category C
- Topographical Category 1 and a Crest height of 0 feet
- Risk Category II
- Site Elevation 927 feet
- 105 MPH Ultimate Wind Speed (no ice) per ASCE 7-16
- 30 MPH with 0.75 inches ice per ANSI/TIA-222G

The theoretical failure point is at the structure midpoint or above by purposely over designing the structural components below this point. The predicted mode of wind induced failure would be local buckling of the tower legs at or above the midpoint with the upper section(s) folding over onto the intact lower tower legs.

I hope these comments address any questions or concerns relative to the anticipated performance of this structure; please reach out directly should you have any questions or comments.

Sincerely,

Jainesh Shah
Senior Engineer
jainesh.shah@Valmont.com

TAB #6

NOTIFICATION LIST OF PROPERTY OWNERS WITHIN 500' OF THE PROPOSED TOWER SUBJECT PARCEL MAP# 25-13 PROVIDED BY THE PROPERTY VALUATION ADMINISTRATOR'S RECORDS OF MONROE COUNTY, KY

Rebekah McPherson – Map # 25-14
139 County House Road
Tompkinsville, KY 42167

Tony Blythe – Map # 25-14.01
6050 Fountain Run Road
Gamaliel, KY 42140

Shane McPherson – Map # 25-01.01
747 County House Road
Tompkinsville, KY 42167

Daniel Kaufmann – Map # 18-50A & 18-50A.01
6511 Fountain Run Road
Gamaliel, KY 42140

Jimmy Craig – Map # 25-15
5133 Fountain Run Road
Gamaliel, KY 42140

Divie Arterburn – Map # 25-12
202 Arterburn Road
Gamaliel, KY 42140

Freddie Jennings – Map # 25-12.01
244 Arterburn Road
Gamaliel, KY 42140

Hagan's Indian Creek Farm – Map # 25-01
c/o Becky McPherson
139 County House Road
Tompkinsville, KY 42167

Stephen Marc Burnett – Map # 25-11 & 25-11.01 & 25-13
9180 Fountain Run Road
Fountain Run, KY 42133

NOTIFICATION LETTER AND CERTIFIED MAILINGS TO PROPERTY OWNERS WITHIN 500' OF PARCEL MAP# 23-13

**[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK,
NOTIFICATION LETTER AND CERTIFIED MAILINGS BEGINS ON NEXT PAGE]**

Friday, November 3, 2023

VIA CERTIFIED MAIL

Daniel Kaufmann
6511 Fountain Run Road
Gamaliel, KY 42140

RE: Notice of Intent to Construct a Cellular Antenna Tower
Subject Parcel Address: Arterburn Road, Fountain City, KY 42133
Latitude: 36.698969 / **Longitude:** -85.841622
Parcel/Map ID: 25-13
Case Number: 2023-00356

Dear Property Owner:

This letter is being sent on behalf of VB BTS II, LLC ("Vertical Bridge") to provide notice that VB BTS II, LLC ("Vertical Bridge") plans to construct a new cellular antenna tower ("Tower") on a portion of the above-referenced property ("Subject Parcel"). This notice is required by KRS 100.9865 of Chapter 100 of the Kentucky Revised Statutes.

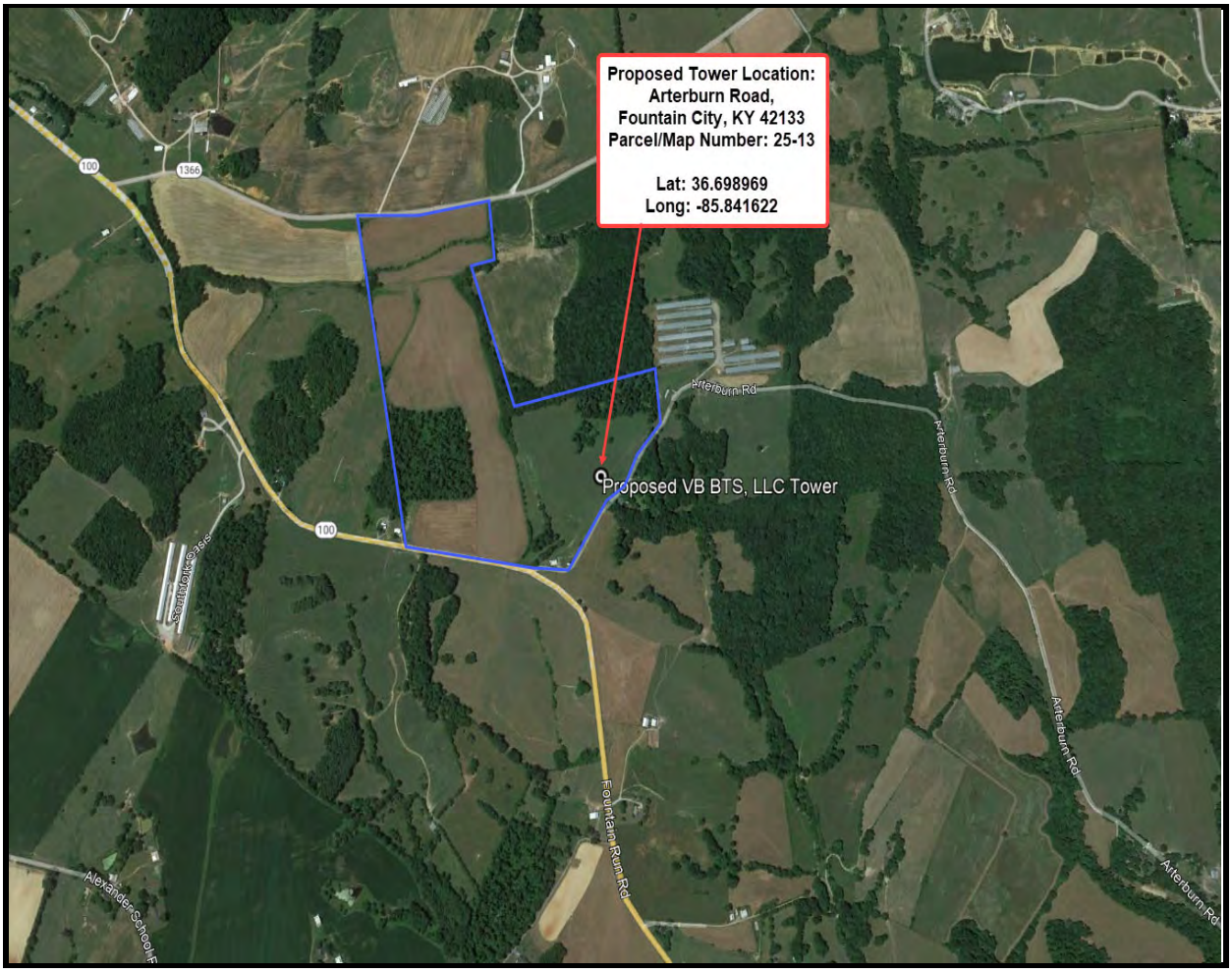
You are being provided this notice because the property valuation administrator for Monroe County, KY indicated that you are the owner(s) of property located within 500 feet of the proposed Tower or own property contiguous to the site upon which the tower is proposed to be constructed. A map of the proposed location and the contact information of the Kentucky Public Service Commission are located below. Per KRS 100.9865, you are hereby informed of your right to participate in the Commission's proceedings on the application. The Kentucky Public Service Commission contact information is as follows:

Kentucky Public Service Commission
Attn: Linda Bridwell-Executive Director
211 Sower Boulevard
Frankfort, KY 40602-4636
(502) 564-3940

If you have any questions regarding this notice, please do not hesitate to contact me at (317) 220-3864 or email at bblackhurst@ffi.net

Sincerely,

Brett Blackhurst
Fortune Wireless, Inc.
5511 W. 79th Street
Indianapolis, IN 46278
Cell: 317-220-3864



5511 W. 79th Street | Indianapolis, IN 46268 | PH: 317-532-1374 | Fax: 317-471-1234

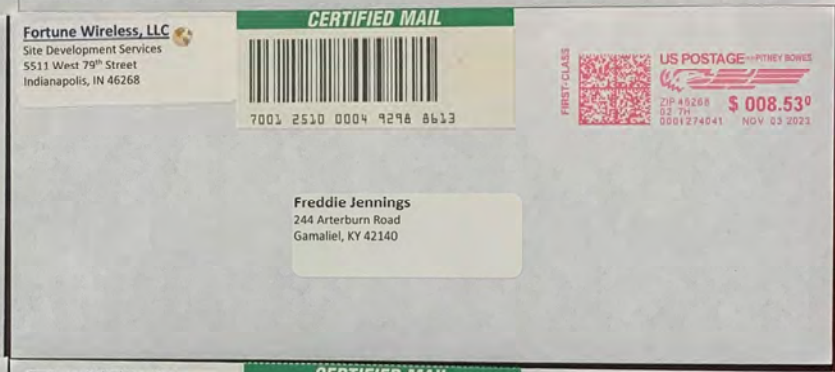

Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268
CERTIFIED MAIL
7001 2510 0004 9298 8675
US POSTAGE PITNEY BOWES
$ 008.53
NOV 03 2023
Tony Blythe
6050 Fountain Run Road
Gamaliel, KY 42140


Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268
CERTIFIED MAIL
7001 2510 0004 9298 8590
US POSTAGE PITNEY BOWES
$ 008.53
NOV 03 2023
Daniel Kaufmann
6511 Fountain Run Road
Gamaliel, KY 42140


Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268
CERTIFIED MAIL
7001 2510 0004 9298 8668
US POSTAGE PITNEY BOWES
$ 008.53
NOV 03 2023
Stephen Marc Burnett
9180 Fountain Run Road
Fountain Run, KY 42133


Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268
CERTIFIED MAIL
7001 2510 0004 9298 8651
US POSTAGE PITNEY BOWES
$ 008.53
NOV 03 2023
Shane McPherson
747 County House Road
Tompkinsville, KY 42167

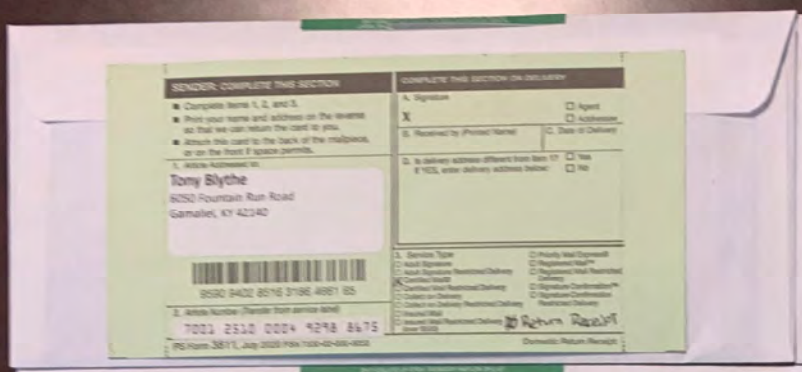

Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268
CERTIFIED MAIL
7001 2510 0004 9298 8637
US POSTAGE PITNEY BOWES
$ 008.53
NOV 03 2023
Jimmy Craig
5133 Fountain Run Road
Gamaliel, KY 42140

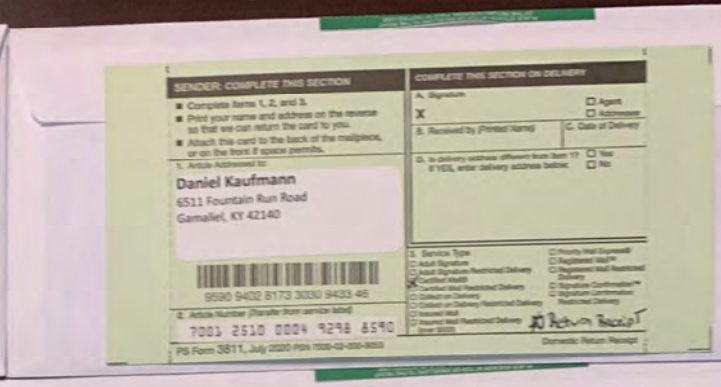

Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268
CERTIFIED MAIL
7001 2510 0004 9298 8613
US POSTAGE PITNEY BOWES
$ 008.53
NOV 03 2023
Freddie Jennings
244 Arterburn Road
Gamaliel, KY 42140

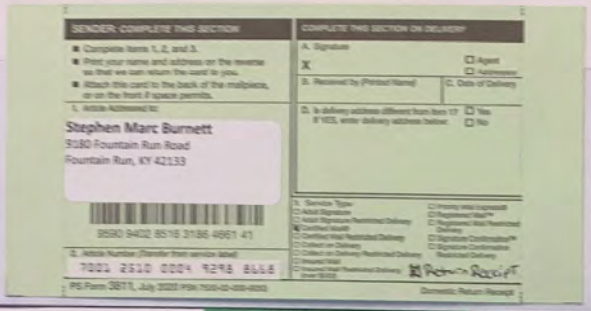

Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268
CERTIFIED MAIL
7001 2510 0004 9298 8606
US POSTAGE PITNEY BOWES
$ 008.53
NOV 03 2023
Divie Arterburn
202 Arterburn Road
Gamaliel, KY 42140

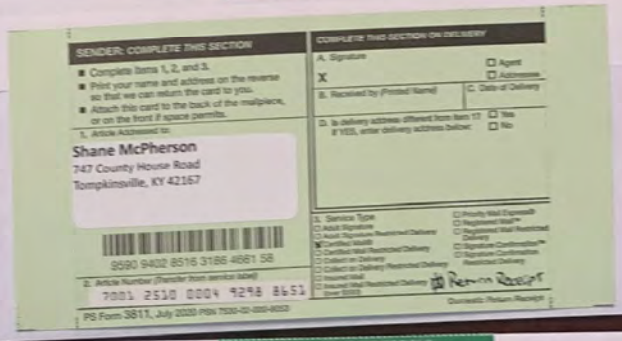

Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268
CERTIFIED MAIL
7001 2510 0004 9298 8620
US POSTAGE PITNEY BOWES
$ 008.53
NOV 03 2023
Hagan's Indian Creek Farm
c/o Becky McPherson
139 County House Road
Tompkinsville, KY 42167

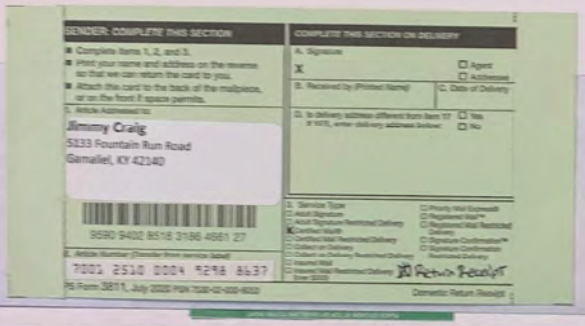

Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268
CERTIFIED MAIL
7001 2510 0004 9298 8644
US POSTAGE PITNEY BOWES
$ 008.53
NOV 03 2023
Rebekah McPherson
139 County House Road
Tompkinsville, KY 42167

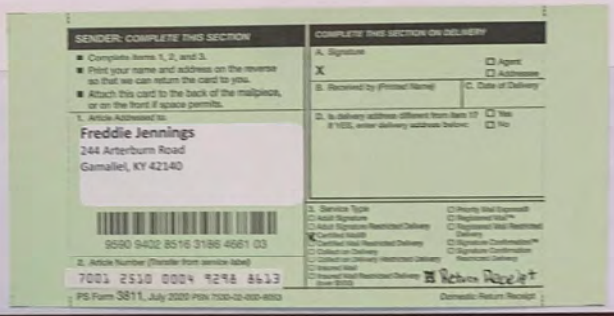

SENDER: COMPLETE THIS SECTION
Tony Blythe
6050 Fountain Run Road
Gamaliel, KY 42140
9590 9402 8516 3186 4661 65
7001 2510 0004 9298 8676
PS Form 3811, July 2020

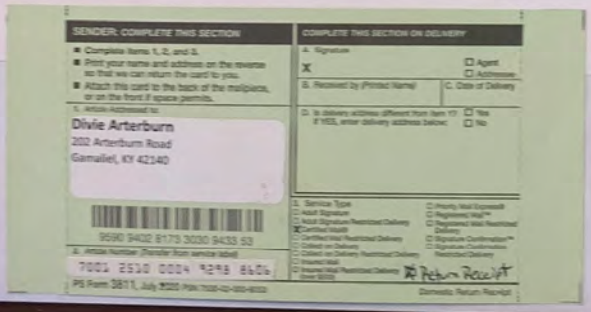

SENDER: COMPLETE THIS SECTION
Daniel Kaufmann
6511 Fountain Run Road
Gamaliel, KY 42140
9590 9402 8173 3030 9433 46
7001 2510 0004 9298 8590
PS Form 3811, July 2020

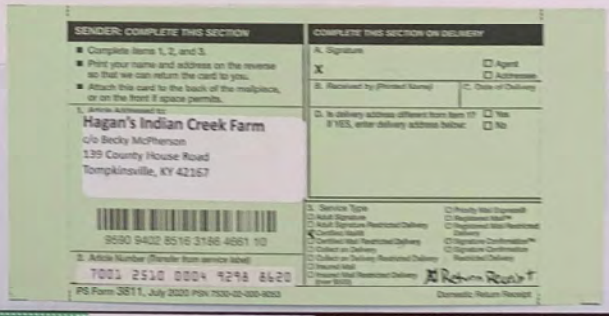

SENDER: COMPLETE THIS SECTION
Stephen Marc Burnett
9180 Fountain Run Road
Fountain Run, KY 42133
9590 9402 8516 3186 4661 41
7001 2510 0004 9298 8668
PS Form 3811, July 2020

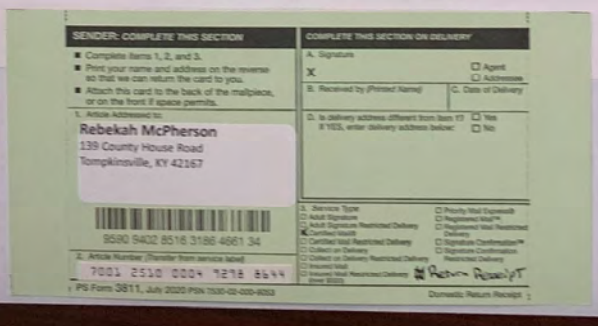

SENDER: COMPLETE THIS SECTION
Shane McPherson
747 County House Road
Tompkinsville, KY 42167
9590 9402 8516 3186 4661 58
7001 2510 0004 9298 8651
PS Form 3811, July 2020


SENDER: COMPLETE THIS SECTION
Jimmy Craig
5233 Fountain Run Road
Gamaliel, KY 42140
9590 9402 8516 3186 4661 27
7001 2510 0004 9298 8637
PS Form 3811, July 2020


SENDER: COMPLETE THIS SECTION
Freddie Jennings
244 Arterburn Road
Gamaliel, KY 42140
9590 9402 8516 3186 4661 03
7001 2510 0004 9298 8613
PS Form 3811, July 2020

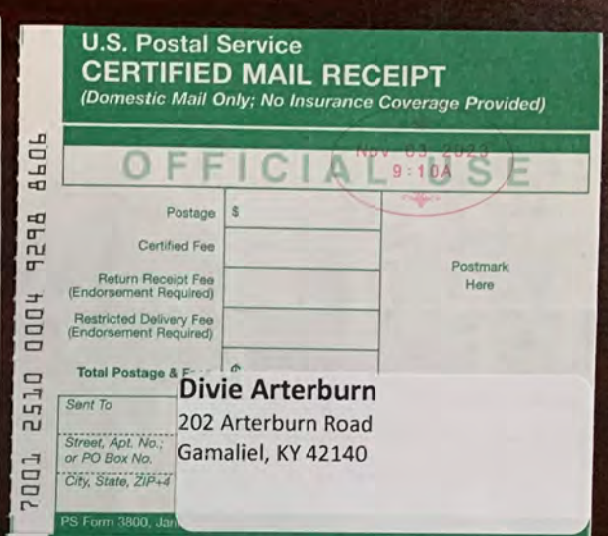

SENDER: COMPLETE THIS SECTION
Divie Arterburn
202 Arterburn Road
Gamaliel, KY 42140
9590 9402 8173 3030 9433 53
7001 2510 0004 9298 8620
PS Form 3811, July 2020


SENDER: COMPLETE THIS SECTION
Hagan's Indian Creek Farm
c/o Becky McPherson
139 County House Road
Tompkinsville, KY 42167
9590 9402 8516 3186 4661 10
7001 2510 0004 9298 8620
PS Form 3811, July 2020


SENDER: COMPLETE THIS SECTION
Rebekah McPherson
139 County House Road
Tompkinsville, KY 42167
9590 9402 8516 3186 4661 34
7001 2510 0004 9298 8644
PS Form 3811, July 2020


U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
OFFICIAL USE
NOV 03 2023
9:09A
Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Postmark Here
7001 2510 0004 9298 8637
Sent To
Street, Apt. No.; or PO Box No.
City, State, ZIP+4
PS Form 3800, Janu
Jimmy Craig
5133 Fountain Run Road
Gamaliel, KY 42140


U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
OFFICIAL USE
NOV 03 2023
9:09A
Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Postmark Here
7001 2510 0004 9298 8590
Sent To
Street, Apt. No.; or PO Box No.
City, State, ZIP+4
PS Form 3800, Ja
Daniel Kaufmann
6511 Fountain Run Road
Gamaliel, KY 42140


U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
OFFICIAL USE
NOV 03 2023
9:10A
Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Postmark Here
7001 2510 0004 9298 8606
Sent To
Street, Apt. No.; or PO Box No.
City, State, ZIP+4
PS Form 3800, Jan
Divie Arterburn
202 Arterburn Road
Gamaliel, KY 42140


U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
OFFICIAL USE
NOV 03 2023
9:10A
Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Postmark Here
7001 2510 0004 9298 8675
Sent To
Street, Apt. No.; or PO Box No.
City, State, ZIP+
PS Form 3800, J
Tony Blythe
6050 Fountain Run Road
Gamaliel, KY 42140


U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
OFFICIAL USE
NOV 03 2023
9:10A
Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Postmark Here
7001 2510 0004 9298 8620
Sent To
Street, Apt. No.; or PO Box No.
City, State, ZIP+4
PS Form 3800, Janu
Hagan's Indian Creek Farm
c/o Becky McPherson
139 County House Road
Tompkinsville, KY 42167


U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
OFFICIAL USE
NOV 03 2023
9:10A
Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Postmark Here
7001 2510 0004 9298 8613
Sent To
Street, Apt. No.; or PO Box No.
City, State, ZIP+4
PS Form 3800, Janu
Freddie Jennings
244 Arterburn Road
Gamaliel, KY 42140


U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
OFFICIAL USE
NOV 03 2023
9:09A
Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Postmark Here
7001 2510 0004 9298 8668
Sent To
Street, Apt. No.; or PO Box No.
City, State, ZIP+
PS Form 3800, Ja
Stephen Marc Burnett
9180 Fountain Run Road
Fountain Run, KY 42133


U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
OFFICIAL USE
NOV 03 2023
9:10A
Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Postmark Here
7001 2510 0004 9298 8644
Sent To
Street, Apt. No.; or PO Box No.
City, State, ZIP+4
PS Form 3800, Janu
Rebekah McPherson
139 County House Road
Tompkinsville, KY 42167


U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
OFFICIAL USE
NOV 03 2023
9:10A
Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Postmark Here
7001 2510 0004 9298 8651
Sent To
Street, Apt. No.; or PO Box No.
City, State, ZIP+4
PS Form 3800, Jan
Shane McPherson
747 County House Road
Tompkinsville, KY 42167

NOTIFICATION LIST OF MONROE COUNTY JUDGE EXECUTIVE AND DISTRICT MAGISTRATES

Mitchell Page
Monroe County Judge Executive
200 N. Main Street, Suite C
Tompkinsville, KY 42167

Jamie Veach
Monroe County Magistrate-District 1
200 N. Main Street, Suite C
Tompkinsville, KY 42167

Roger Deckard
Monroe County Magistrate-District 2
200 N. Main Street, Suite C
Tompkinsville, KY 42167

Ricky Bartley
Monroe County Magistrate-District 3
200 N. Main Street, Suite C
Tompkinsville, KY 42167

Ricky Graves
Monroe County Magistrate-District 4
200 N. Main Street, Suite C
Tompkinsville, KY 42167

Mark Williams
Monroe County Magistrate-District 5
200 N. Main Street, Suite C
Tompkinsville, KY 42167

NOTIFICATION LETTER AND CERTIFIED MAILINGS TO MONROE COUNTY JUDGE EXECUTIVE AND DISTRICT MAGISTRATES

**[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK,
NOTIFICATION LETTER AND CERTIFIED MAILINGS BEGINS ON NEXT PAGE]**

Friday November 3, 2023

VIA CERTIFIED MAIL

Mitchell Page
Monroe County Judge Executive
200 N. Main Street, Suite C
Tompkinsville, KY 42167

RE: Notice of Intent to Construct a Cellular Antenna Tower
Subject Parcel Address: Arterburn Road, Fountain City, KY 42133
Latitude: 36.698969 / **Longitude:** -85.841622
Parcel/Map ID: 25-13
Case Number: 2023-00356

Dear Judge Executive:

This letter is being sent on behalf of VB BTS II, LLC ("Vertical Bridge") to provide notice that VB BTS II, LLC ("Vertical Bridge") plans to construct a new cellular antenna tower ("Tower") on a portion of the above-referenced property. This notice is required by KRS 100.9865 of Chapter 100 of the Kentucky Revised Statutes.

You are being provided this notice because public records indicate that you are the chief executive officer (County Judge Executive) of the Monroe County, KY governmental body. I have also included a map below of the proposed location for your reference.

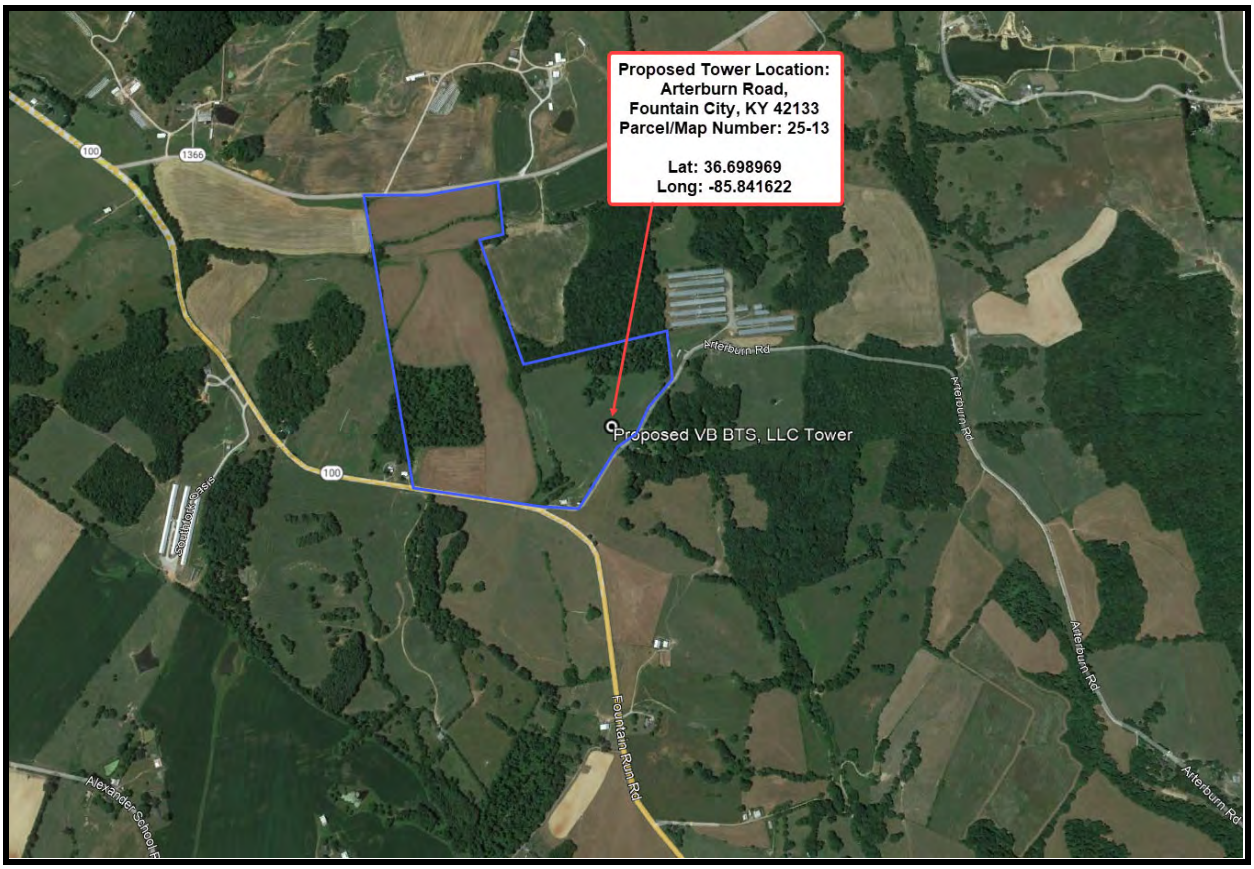
If you have any questions regarding this notice, please do not hesitate to contact me at (317) 220-3864 or email at bblackhurst@ffi.net.

Sincerely,

Brett Blackhurst
Site Development Services
Fortune Wireless, Inc.
5511 W. 79th Street
Indianapolis, IN 46278
Cell: 317-220-3864
bblackhurst@ffi.net

verticalbridge

Fortune Wireless, Inc.



Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268

CERTIFIED MAIL
7001 2510 0004 9298 8682

FIRST-CLASS
US POSTAGE PITNEY BOWES
ZIP 46268
02 7H
0001274041
$ 008.53⁰
NOV 03 2023

Mitchell Page
Monroe County Judge Executive
200 N. Main Street, Suite C
Tompkinsville, KY 42167

Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268

CERTIFIED MAIL
7001 2510 0004 9298 8712

FIRST-CLASS
US POSTAGE PITNEY BOWES
ZIP 46268
02 7H
0001274041
$ 008.53⁰
NOV 03 2023

Ricky Bartley
Monroe Co Magistrate-District 3
200 N. Main Street, Suite C
Tompkinsville, KY 42167

Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268

CERTIFIED MAIL
7001 2510 0004 9298 8699

FIRST-CLASS
US POSTAGE PITNEY BOWES
ZIP 46268
02 7H
0001274041
$ 008.53⁰
NOV 03 2023

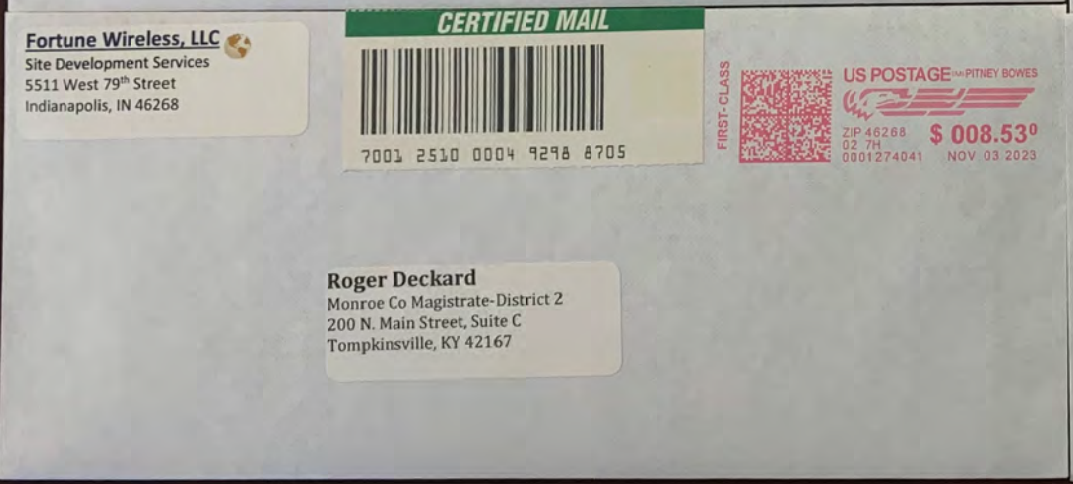
Jamie Veach
Monroe Co Magistrate-District 1
200 N. Main Street, Suite C
Tompkinsville, KY 42167

Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268

CERTIFIED MAIL®
7017 1450 0000 4471 8647

FIRST-CLASS
US POSTAGE PITNEY BOWES
ZIP 46268
02 7H
0001274041
$ 008.53⁰
NOV 03 2023

Ricky Graves
Monroe Co Magistrate-District 4
200 N. Main Street, Suite C
Tompkinsville, KY 42167



Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268

CERTIFIED MAIL
7001 2510 0004 9298 8705

FIRST-CLASS
US POSTAGE PITNEY BOWES
ZIP 46268
02 7H
0001274041
$ 008.53⁰
NOV 03 2023

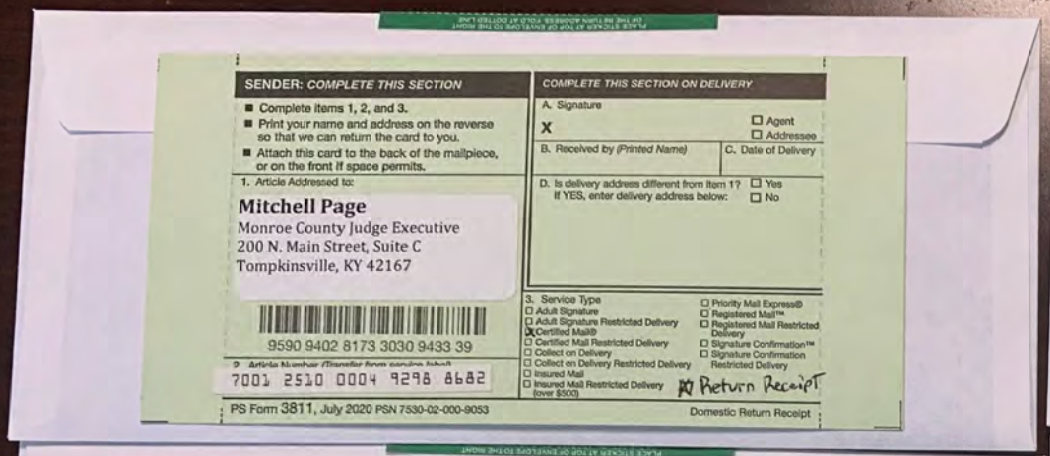
Roger Deckard
Monroe Co Magistrate-District 2
200 N. Main Street, Suite C
Tompkinsville, KY 42167

Fortune Wireless, LLC
Site Development Services
5511 West 79th Street
Indianapolis, IN 46268

CERTIFIED MAIL®
7017 1450 0000 4471 8630

FIRST-CLASS
US POSTAGE PITNEY BOWES
ZIP 46268
02 7H
0001274041
$ 008.53⁰
NOV 03 2023

Mark Williams
Monroe Co Magistrate-District 5
200 N. Main Street, Suite C
Tompkinsville, KY 42167



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:

Mitchell Page
Monroe County Judge Executive
200 N. Main Street, Suite C
Tompkinsville, KY 42167

9590 9402 8173 3030 9433 39

2. Article Number (Transfer from service label)
7001 2510 0004 9298 8682

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

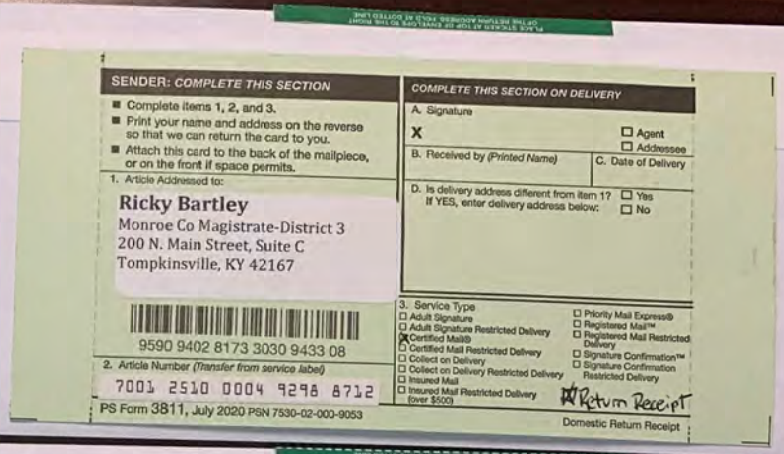
B. Received by (Printed Name) C. Date of Delivery

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

3. Service Type
☐ Adult Signature ☐ Priority Mail Express®
☐ Adult Signature Restricted Delivery ☐ Registered Mail™
☒ Certified Mail® ☐ Registered Mail Restricted Delivery
☐ Certified Mail Restricted Delivery ☐ Signature Confirmation™
☐ Collect on Delivery ☐ Signature Confirmation Restricted Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)

☒ Return Receipt

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:

Ricky Bartley
Monroe Co Magistrate-District 3
200 N. Main Street, Suite C
Tompkinsville, KY 42167

9590 9402 8173 3030 9433 08

2. Article Number (Transfer from service label)
7001 2510 0004 9298 8712

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

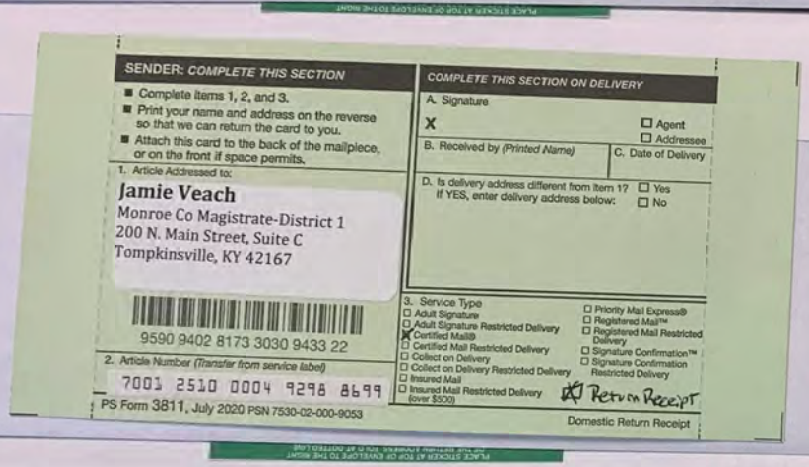
B. Received by (Printed Name) C. Date of Delivery

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

3. Service Type
☐ Adult Signature ☐ Priority Mail Express®
☐ Adult Signature Restricted Delivery ☐ Registered Mail™
☒ Certified Mail® ☐ Registered Mail Restricted Delivery
☐ Certified Mail Restricted Delivery ☐ Signature Confirmation™
☐ Collect on Delivery ☐ Signature Confirmation Restricted Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)

☒ Return Receipt

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:

Jamie Veach
Monroe Co Magistrate-District 1
200 N. Main Street, Suite C
Tompkinsville, KY 42167

9590 9402 8173 3030 9433 22

2. Article Number (Transfer from service label)
7001 2510 0004 9298 8699

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

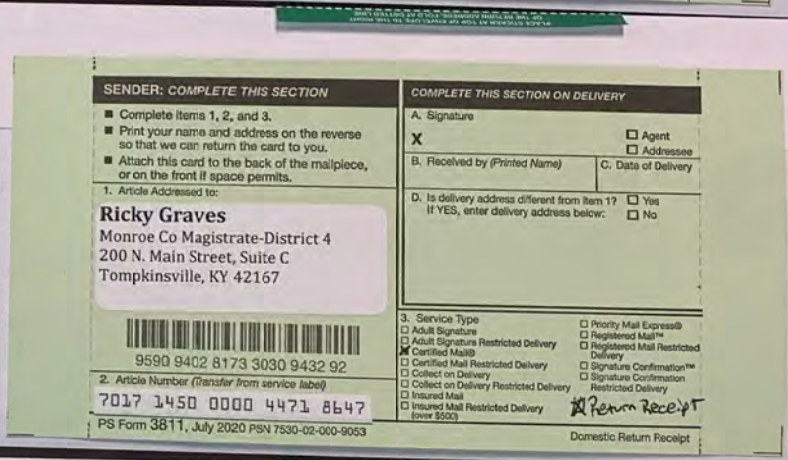
B. Received by (Printed Name) C. Date of Delivery

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

3. Service Type
☐ Adult Signature ☐ Priority Mail Express®
☐ Adult Signature Restricted Delivery ☐ Registered Mail™
☒ Certified Mail® ☐ Registered Mail Restricted Delivery
☐ Certified Mail Restricted Delivery ☐ Signature Confirmation™
☐ Collect on Delivery ☐ Signature Confirmation Restricted Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)

☒ Return Receipt

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:

Ricky Graves
Monroe Co Magistrate-District 4
200 N. Main Street, Suite C
Tompkinsville, KY 42167

9590 9402 8173 3030 9432 92

2. Article Number (Transfer from service label)
7017 1450 0000 4471 8647

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

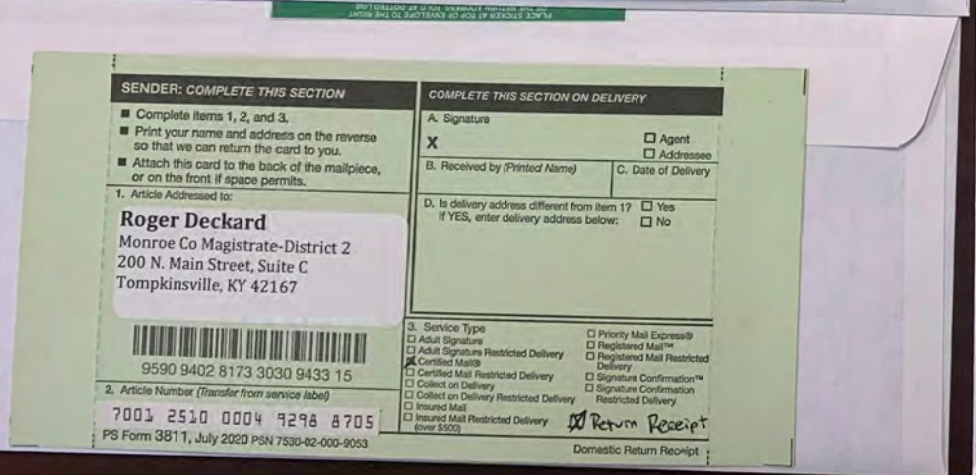
B. Received by (Printed Name) C. Date of Delivery

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

3. Service Type
☐ Adult Signature ☐ Priority Mail Express®
☐ Adult Signature Restricted Delivery ☐ Registered Mail™
☒ Certified Mail® ☐ Registered Mail Restricted Delivery
☐ Certified Mail Restricted Delivery ☐ Signature Confirmation™
☐ Collect on Delivery ☐ Signature Confirmation Restricted Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)

☒ Return Receipt

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:

Roger Deckard
Monroe Co Magistrate-District 2
200 N. Main Street, Suite C
Tompkinsville, KY 42167

9590 9402 8173 3030 9433 15

2. Article Number (Transfer from service label)
7001 2510 0004 9298 8705

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

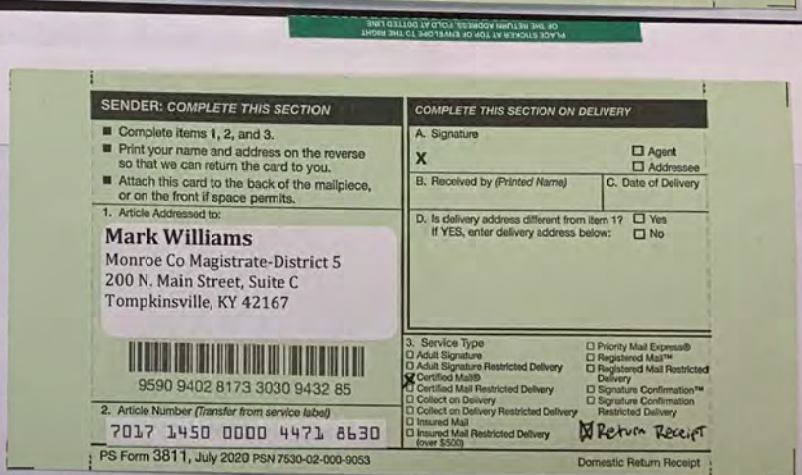
B. Received by (Printed Name) C. Date of Delivery

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

3. Service Type
☐ Adult Signature ☐ Priority Mail Express®
☐ Adult Signature Restricted Delivery ☐ Registered Mail™
☒ Certified Mail® ☐ Registered Mail Restricted Delivery
☐ Certified Mail Restricted Delivery ☐ Signature Confirmation™
☐ Collect on Delivery ☐ Signature Confirmation Restricted Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)

☒ Return Receipt

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:

Mark Williams
Monroe Co Magistrate-District 5
200 N. Main Street, Suite C
Tompkinsville, KY 42167

9590 9402 8173 3030 9432 85

2. Article Number (Transfer from service label)
7017 1450 0000 4471 8630

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ 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 ☐ Priority Mail Express®
☐ Adult Signature Restricted Delivery ☐ Registered Mail™
☒ Certified Mail® ☐ Registered Mail Restricted Delivery
☐ Certified Mail Restricted Delivery ☐ Signature Confirmation™
☐ Collect on Delivery ☐ Signature Confirmation Restricted Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)

☒ Return Receipt

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

7001 2510 0004 9298 8682

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE
NOV 03 2023
9:10A

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Sent To
Street, Apt. No.; or PO Box No.
City, State, ZIP+4

Mitchell Page
Monroe County Judge Executive
200 N. Main Street, Suite C
Tompkinsville, KY 42167

PS Form 3800, Jan

7001 2510 0004 9298 8712

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE
NOV 03 2023
9:10A

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage

Postmark Here

Sent To
Street, Apt. No., or PO Box No.
City, State, ZIP+

Ricky Bartley
Monroe Co Magistrate-District 3
200 N. Main Street, Suite C
Tompkinsville, KY 42167

PS Form 3800, January 2001 — See Reverse for Instructions

7001 2510 0004 9298 8699

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE
NOV 03 2023
9:10A

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Sent To
Street, Apt. No.; or PO Box No.
City, State, ZIP+4

Jamie Veach
Monroe Co Magistrate-District 1
200 N. Main Street, Suite C
Tompkinsville, KY 42167

PS Form 3800, Jan

7017 1450 0000 4471 8647

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

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

OFFICIAL USE
NOV 03 2023
9:10A

Certified Mail Fee
$
Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$
Total Postage and
$
Sent To
Street and Apt. No
City, State, ZIP+4

Postmark Here

Ricky Graves
Monroe Co Magistrate-District 4
200 N. Main Street, Suite C
Tompkinsville, KY 42167

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

7001 2510 0004 9298 8705

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE
NOV 03 2023
9:10A

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & F

Postmark Here

Sent To
Street, Apt. No.; or PO Box No.
City, State, ZIP+4

Roger Deckard
Monroe Co Magistrate-District 2
200 N. Main Street, Suite C
Tompkinsville, KY 42167

PS Form 3800, Jan

7017 1450 0000 4471 8630

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

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

OFFICIAL USE
NOV 03 2023
9:10A

Certified Mail Fee
$
Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$
Total Postage and
$
Sent To
Street and Apt. No.
City, State, ZIP+4

Postmark Here

Mark Williams
Monroe Co Magistrate-District 5
200 N. Main Street, Suite C
Tompkinsville, KY 42167

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

NOTICE OF THE LOCATION OF THE PROPOSED CONSTRUCTION HAS BEEN PUBLISHED IN NEWSPAPER OF GENERAL CIRCULATION IN MONROE COUNTY IN WHICH THE CONSTRUCTION IS PROPOSED

FOLLOWING IS THE PUBLIC NOTICE IN THE NEWSPAPER OF GENERAL CIRCULATION WITH TOMPKINSVILLE NEWS:

LEGAL NOTICE ADVERTISEMENT

VB BTS II, LLC (VERTICAL BRIDGE) HAS FILED AN APPLICATION WITH THE KENTUCKY PUBLIC SERVICE COMMISSION ("PSC") TO CONSTRUCT A NEW WIRELESS COMMUNICATIONS FACILITY ON A SITE LOCATED ON ARTERBURN ROAD, FOUNTAIN RUN, KY 42133 (NORTH LATITUDE: 36.698969, WEST LONGITUDE: 85.841622). THE PROPOSED FACILITY WILL INCLUDE A 255-FOOT TALL ANTENNA TOWER, PLUS A 10-FOOT LIGHTNING ARRESTOR, FOR A TOTAL HEIGHT OF 265 FEET WITH RELATED GROUND FACILITIES. YOU HAVE A RIGHT TO SUBMIT COMMENTS TO THE PSC OR TO REQUEST INTERVENTION IN THE PSC'S PRCEEDINGS 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 2023-00356 IN ANY CORRESPONDENCE SENT IN CONNECTION WITH THIS MATTER.

Tompkinsville News
SERVING MONROE COUNTY SINCE 1903

AFFIDAVIT OF PUBLICATION OF

I, Kathy Merrett, hereby certify that I am the Manager of the Tompkinsville News, and that said newspaper is the newspaper having the largest bona fide circulation which is published in the City of Tompkinsville, Monroe County, Kentucky, and that said newspaper is meeting the requirements of Sections 424.110 and 424.120 of the Kentucky Revised Statutes for official publications required to be made by the

VB BTS II, LLC (Vertical Bridge)

I certify that the attached copy of:

Notice of Application filed with Kentucky Public Service Commission to construct a new wireless communication facility @ Arterburn Rd, Fountain Run KY 42133

is a true copy of said Notice as published in said newspaper on the following date(s):

November 16, 2023

IN TESTIMONY WHEREOF, witness my signature this 20 day of November 2023.

TOMPKINSVILLE NEWS

By Linda Elam

Subscribed and sworn to before me on this 20th day of November, 2023.

My commission expires: July 16, 2024

NOTARY PUBLIC

THE WAY IT WAS

As Published In The Tompkinsville News

50 YEARS AGO NOV. 15, 1973

Cudahy Packing Company in Tompkinsville, honored Alvin Strode during a recent dinner for his 20 years of continuous service for the company. Also, recognition was given to Ralph Curtis, Stanley Howard and Plant Manager Hoyt Sims for being with the company for over 20 years/ The cheese plant has received the Safety Award presented by the National Safety Council and also the Sanitation Award presented by the American Sanitation Institute.

Leslie Rae Crabtree, daughter of Dr, and Mrs. K.R. Crabtree was crowned "Tiny Miss Gamaliel at the recent Fireman's Frolic in Gamaliel She is 5 1/2 years old. Rita Collins was second place winner and is the daughter of Mr. and Mrs. Carmen Collins. Angela Taylor, daughter of Mr. and Mrs. Terry Taylor was last year's Tiny Miss.

Sportsman club officers for 1974 are Robert Boyle, secretary and treasurer, George Emberton, president and Damon Turner vice president.

There was a lot of action in the Tompkinsville Jaycees basketball league this past week. Red Cap lost to a strong-rebounding Burkesville team. Bobby Watson of Red Cap had 14 points. Other action saw Fountain Run be beaten by Deposit Bank, 72 to 65. Eddie Proffitt led the Deposit Bank with 24 points and Ronnie Stinson had 17 for the losers. Louis Carter of the Deposit Bank team was chosen the most valuable player for the first week. Deposit Bank had two games the first week and Lewis averaged 20 points and 20 rebounds and six assists in those two games .

25 YEARS AGO NOV. 12, 1998

The Fountain Run City Commission has purchased the Duke property on Main Street near City Hall. Mayor Eldon Veach told the city commissioners during their monthly meeting that the .968 acre site had been purchased at auction for the city for $15,500. Purchase of the property which has been an interest to the city government for several years was approved by the commissioners. The city commissioner also voted to leave the tax rate at the current rate of $.30 per hundred dollar value on real estate and motor vehicles.

Eight of the ten children of the late Dewey and alta Head attended the recent family reunion at a Old Mulkey State Park, those attending were Betty Butler, Cecil Brown, Georgie Myatt, Edward Head, Eva Bledsoe, Paul Head, Isa Helen Richardson and Jackie Head. Eight of the 10 children attended David union, which was in that get together health since the death of their parents 34 years ago.

Birthday card showers that were announced and this issue was for Addieville Martin who will celebrate her 89th birthday on November 22 and Inell Copas Coffelt will celebrate her 67th birthday on November 17 and Gladys Bartley will celebrate her 93rd birthday on November 25.

Amanda Birge received a degree in practical nursing from Tennessee tech center at Livingston Tennessee. She will be licensed in Kentucky and Tennessee. She is a daughter of Willie Coe and Carolyn Short of Tompkinsville and the wife of Randy Birge. She is presently employed with a primary care physicians at the doctors park in Glasgow.

A newly formed vocal group cruise control will perform at Mount Herman's community clubhouse on November 14. Members of the group are Anthony Ballou, Gary Gearlds and Jerry Ford.

The Monroe County bass club has a tournament at dale hollow lake in October. The first place team winners were Tommy Hunter and Sonny Turner. Guy Wisehart and Jerry Turner took second place.

Dr. Jamison J.Heffron recently joined the optometric staff at Dr. Fowler Ross and Dr. Stephen Birge office in Tompkinsville.

NOTICE

VB BTS II, LLC (VERTICAL BRIDGE) has filed an application with the Kentucky Public Service Commission ("PCS) to construct a new wireless communications facility on a site located on Arterburn Road, Fountain Run, KY 42133 (North Latitude: 36.698969, West Longitude: 85.841622). The proposed facility will include a 255-foot tall antenna tower, plus a 10-foot lightning arrestor, for a total height of 265 feet with 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 2023-00356 in any correspondence sent in connection with this matter.

CLASSIFIEDS

STATEWIDE CLASSIFIEDS

ANIMALS/PETS

When veterinary care is unavailable or unaffordable, ask for Happy Jack® equine and canine animal health products. At Tractor Supply® (www.happyjackinc.com)

Are you a pet owner? Do you want to get up to 100% back on Vet Bills? Physicians Mutual Insurance Company has pet coverage that can help! Call 1-844-770-5259 to get a free quote or visit insurebarkmeow.com/kypa

CABLE/UTILITIES

DIRECTV OVER INTERNET - Get your favorite live TV, sports and local channels. 99% signal reliability! CHOICE Package, $84.99/mo for 12 months. HBO Max and Premium Channels included for 3 mos (w/CHOICE Package or higher.) No annual contract, no hidden fees! Some restrictions apply. Call IVS 1-888-340-6138

DirecTV Satellite TV Service Starting at $64.99/mo For 24 mos, Free Installation! 165+ Channels Available. Call Now For The Most Sports & Entertainment On TV! 855-695-7008

Switch to DISH and get up to a $300 gift card! Plus get the Multisport pack included for a limited time! Hurry, call for details: 1-855-633-4574

DIRECTV Sports Pack – 3 Months on Us! Watch pro and college sports LIVE. Plus over 40 regional and specialty networks included. NFL, College Football, MLB, NBA, NHL, Golf and more. Some restrictions apply. Call DIRECTV 1-866-292-5435

CELLULAR

DURACELL. The #1 trusted battery brand now offering the M150 Portable Power Station. When fully charged the M150 provides enough power to charge all your devices– laptops, phones, tablets, earbuds and more for work and fun. Give the gift of portable power this holiday season only $199. Go to portablepower.info/134

Switch and save up to $250/year on your talk, text and data. No contract and no hidden fees. Unlimited talk and text with flexible data plans. Premium nationwide coverage. 100% U.S. based customer service. For more information, call 1-833-353-2982

DONATIONS (VEHICLES)

Make a tax-savvy move this holiday season and year-end! Donate your car, truck, boat, RV, and more to champion our veterans. Arrange a swift, no-cost vehicle pickup and secure a generous year-end tax deduction. Call Veteran Car Donations at 1-833-984-2146 today!

FINANCIAL

Wesley Financial Group, LLC Timeshare Cancellation Experts Over $50,000,000 in timeshare debt and fees cancelled in 2019. Get free informational package and learn how to get rid of your timeshare! Free consultations. Over 450 positive reviews. Call 855-977-4979

Inflation is at 40 year highs. Interest rates are way up. Credit Cards. Medical Bills. Car Loans. Do you have $10k or more in debt? Call NATIONAL DEBT RELIEF and find out how to pay off your debt for significantly less than what you owe! FREE quote: Call 1-844-262-5602

GROCERY

ENJOY 100% guaranteed, delivered-to-the-door Omaha Steaks! Get 8 FREE Omaha Steaks Burgers! Order The All-Time Grilling Faves! ONLY $99.99. Call 1-844-317-8031 and mention code 73375STS or visit www.omahasteaks.com/GrillFaves5233

HOME IMPROVEMENT

Replace your roof with the best looking and longest lasting material -steel from Erie Metal Roofs! Three styles and multiple colors available. Guaranteed to last a lifetime! Limited Time Offer -up to 50% off installation + Additional 10% off install (for military, health workers & 1st responders.) Call Erie Metal Roofs: 1-888-306-0302

BEAUTIFY YOUR HOME with energy efficient new windows! They will increase your home's value & decrease your energy bills. Replace all or a few! Call now to get your free, no-obligation quote. 833-442-1714

Eliminate gutter cleaning forever! LeafFilter, the most advanced debris-blocking gutter protection. Schedule a FREE LeafFilter estimate today. 20% off Entire Purchase. Plus 10% Senior & Military Discounts. Call 1-866-329-2415

Safe Step. North America's #1 Walk-In Tub. Comprehensive lifetime warranty. Top-of-the-line installation and service. Now featuring our FREE shower package and $1600 Off for a limited time! Call today! Financing available. Call Safe Step 1-888-302-4539

BATH & SHOWER UPDATES in as little as ONE DAY! Affordable prices - No payments for 18 months! Lifetime warranty & professional installs. Senior & Military Discounts available. Call: 855-980-4857

HOME SERVICES

Prepare for power outages today with a GENERAC home standby generator $0 Money Down + Low Monthly Payment Options Request a FREE Quote – Call now before the next power outage: 1-844-688-8576

Don't Pay For Covered Home Repairs Again! American Residential Warranty covers ALL MAJOR SYSTEMS AND APPLIANCES. 30 DAY RISK FREE/ $100OFF POPULAR PLANS Call 877-420-5722 Monday-Friday 8:30am to 8:00pm EST

ATTENTION HOMEOWNERS!! YOU CAN PROTECT YOUR APPLIANCES AND SYSTEMS. For just a little more than a $1.00/day. Call now for First month free, $75.00/off 1st year. 1-855-536-7294

INTERNET OFFERS

FREE high speed internet for those that qualify. Government program for recipients of select programs incl. Medicaid, SNAP, Housing Assistance, WIC, Veterans Pension, Survivor Benefits, Lifeline, Tribal. 15 GB internet service. Bonus offer: Android tablet FREE with one-time $20 copay. Free shipping & handling. Call Maxsip Telecom today! 1-888-335-0109

Shop w/ A Viasat Expert For High Speed Satellite Internet. New Customer Deals In Your Area. Nationwide Service. New Service For 2023. 833-383-1496

Choose EarthLink Fiber Internet for speeds up to 5 Gigs, no data caps, no throttling. Prices starting at $54.95. Plus, a $100 gift card when you make the switch. Call 1-833-974-4780RNET OFFERS

Connect to the best wireless home internet with EarthLink. Enjoy speeds from 5G and 4G LTE networks, no contracts, easy installation, and data plans up to 300 GB. Call 855-610-2098

HughesNet Satellite Internet –Call Today for speeds up to 25mbps as low as $59.99/mo! Finally, no hard data limits! $75 gift card, terms apply. 1-866-481-29844G

4G LTE Home Internet Now Available! Get GotW3 with lightning fast speeds plus take your service with you when you travel! As low as $109.99/mo! 1-877-706-4439

INSURANCE SERVICES

DENTAL INSURANCE from Physicians Mutual Insurance Company. Coverage for 350 plus procedures. Real dental insurance - NOT just a discount plan. Do not wait! Call now! Get your FREE Dental Information Kit with all the details! 1-855-900-7392 www.dental50plus.com/26 #6258

Up to $15,000.00 of GUARANTEED Life Insurance! No medical exam or health questions. Cash to help pay funeral and other final expenses. Call Physicians Life Insurance Company- 844-950-2448 or visit www.Life55plus.info/kypress

MEDICAL

Portable Oxygen Concentrator May Be Covered by Medicare! Reclaim independence and mobility with the compact design and long-lasting battery of Inogen One. Free information kit! Call 888-982-0374

Stroke and Cardiovascular disease are leading causes of death, according to the American Heart Association. Screenings can provide peace of mind or early detection! Contact Life Line Screening to schedule your screening. Special offer - 5 screenings for just $149. Call 1-877-465-1309

MISCELLANEOUS

PAYING TOP CA$H FOR MEN'S SPORT WATCHES! Rolex, Breitling, Omega, Patek Philippe, Heuer, Daytona, GMT, Submariner and Speedmaster. Call 866-256-1169

MUSICAL INSTRUMENTS

TOP CA$H PAID FOR OLD GUITARS! 1920-1980 Gibson, Martin, Fender, Gretsch, Epiphone, Guild, Mosrite, Rickenbacker, Prairie State, D'Angelico, Stromberg. And Gibson Mandolins / Banjos. 866-812-4393

PROFESSIONAL SERVICE

Become a Published Author. We want to Read Your Book! Dorrance Publishing-Trusted by Authors Since 1920 Book manuscript submissions currently being reviewed. Comprehensive Services: Consultation, Production, Promotion and Distribution Call for Your Free Author`s Guide 1-855-209-2951 or visit dorranceinfo.com/Kentucky

SOCIAL SECURITY

Denied Social Security Disability? Appeal! If you're 50+, filed for SSD and denied, Our attorneys can help get you approved! No money out of pockets! Call 1-866-590-6443

TWO WRITTEN 2' X 4' NOTICE SIGNS, ONE IN A VISIBLE LOCATION ON THE PROPOSED SITE AND ONE AT THE NEAREST PUBLIC ROAD HAVE BEEN, AND WILL REMAIN, POSTED FOR AT LEAST TWO WEEKS AFTER THIS APPLICATION HAS BEEN FILED.

THE NOTICE SIGNS INCLUDE THE FOLLOWING INFORMATION WITH THE WORD **"TOWER"** BEING AT LEAST 4 INCHES HIGH

NOTICE SIGN POSTED ON SITE:

VB BTS II, LLC (Vertical Bridge) proposes to construct a telecommunications TOWER on this site.
If you have questions, please contact
VB BTS II, LLC (Vertical Bridge)
750 Park of Commerce Drive, Suite 200
Boca Raton, FL 33487, or
Executive Director, Public Service Commission
211 Sower Boulevard, P.O. Box 615
Frankfort, KY 40602
Please refer to case number 2023-00356 in your correspondence

NOTICE SIGN POSTED AT NEAREST PUBLIC ROAD:

VB BTS II, LLC (Vertical Bridge) proposes to construct a telecommunications TOWER near this site.
If you have questions, please contact
VB BTS II, LLC (Vertical Bridge)
750 Park of Commerce Drive, Suite 200
Boca Raton, FL 33487, or
Executive Director, Public Service Commission
211 Sower Boulevard, P.O. Box 615
Frankfort, KY 40602
Please refer to case number 2023-00356 in your correspondence

VB BTS II, LLC (Vertical Bridge) proposes to construct a

telecommunications **TOWER** on this site.

If you have questions, please contact
VB BTS II, LLC (Vertical Bridge)
750 Park of Commerce Drive, Suite 200
Boca Raton, FL 33487, or
Executive Director, Public Service Commission
211 Sower Boulevard, P.O. Box 615
Frankfort, KY 40602
Please refer to case number 2023-00356 in your correspondence

VB BTS II, LLC (Vertical Bridge) proposes to construct a

telecommunications **TOWER** near this site.

If you have questions, please contact
VB BTS II, LLC (Vertical Bridge)
750 Park of Commerce Drive, Suite 200
Boca Raton, FL 33487, or
Executive Director, Public Service Commission
211 Sower Boulevard, P.O. Box 615
Frankfort, KY 40602

Please refer to case number 2023-00356 in your correspondence


VB BTS II, LLC (Vertical Bridge) proposes to construct a
telecommunications TOWER near this site.
If you have questions, please contact
VB BTS II, LLC (Vertical Bridge)
750 Park of Commerce Drive, Suite 200
Boca Raton, FL 33487, or
Executive Director, Public Service Commission
211 Sower Boulevard, P.O. Box 615
Frankfort, KY 40602
Please refer to case number 2023-00356 in your correspondence

TAB #7

FAA APPLICATION DATA AND DETERMINATION RESULT LETTER

**[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK,
FAA APPLICATION DATA AND DETERMINATION LETTER BEGINS ON NEXT PAGE]**

Federal Aviation Administration

« OE/AAA

Proposed Case for : 2023-ASO-8220-OE

For information only.
This proposal has not yet been studied. Study outcomes will be posted at a later date.
Public comments are not requested, and will not be considered at this time.

Overview

Study (ASN): 2023-ASO-8220-OE
Prior Study: 2023-ASO-11773-OE
Status: Work In Progress

Received Date: 03/06/2023
Entered Date: 03/06/2023
Map: View Map

Construction Info

Notice Of: CONSTR
Duration: PERM (Months: 0 Days: 0)
Work Schedule:

Structure Summary

Structure Type: Antenna Tower
Structure Name: US-KY-5152 Fountain Run
FCC Number:

Structure Details

Latitude (NAD 83): 36° 41' 56.29" N
Longitude (NAD 83): 85° 50' 29.84" W
Datum: NAD 83
City: Flippin
State: KY
Nearest County: Monroe

Height and Elevation

	Proposed
Site Elevation:	926
Structure Height:	270
Total Height (AMSL):	1196

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	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W

929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W
3700	3980	MHz	3280	W

Previous Back to Search Result Next

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

Aeronautical Study No.
2023-ASO-8220-OE
Prior Study No.
2023-ASO-11773-OE

Issued Date: 09/29/2023

Richard Hickey
VB BTS II, LLC
750 Park of Commerce Dr, Suite 200
Boca Raton, FL 33487

**** 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 US-KY-5152 Fountain Run
Location:	Flippin, KY
Latitude:	36-41-56.29N NAD 83
Longitude:	85-50-29.84W
Heights:	926 feet site elevation (SE)
	270 feet above ground level (AGL)
	1196 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 Air Missions (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 03/29/2025 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, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

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

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

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

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

If we can be of further assistance, please contact our office at (718) 553-2611, or angelique.eersteling@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2023-ASO-8220-OE.

Signature Control No: 575102758-600638689 (DNE)
Angelique Eersteling
Technician

Attachment(s)

Additional Information
Case Description
Frequency Data
Map(s)

cc: FCC

BASIS FOR DECISION

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.

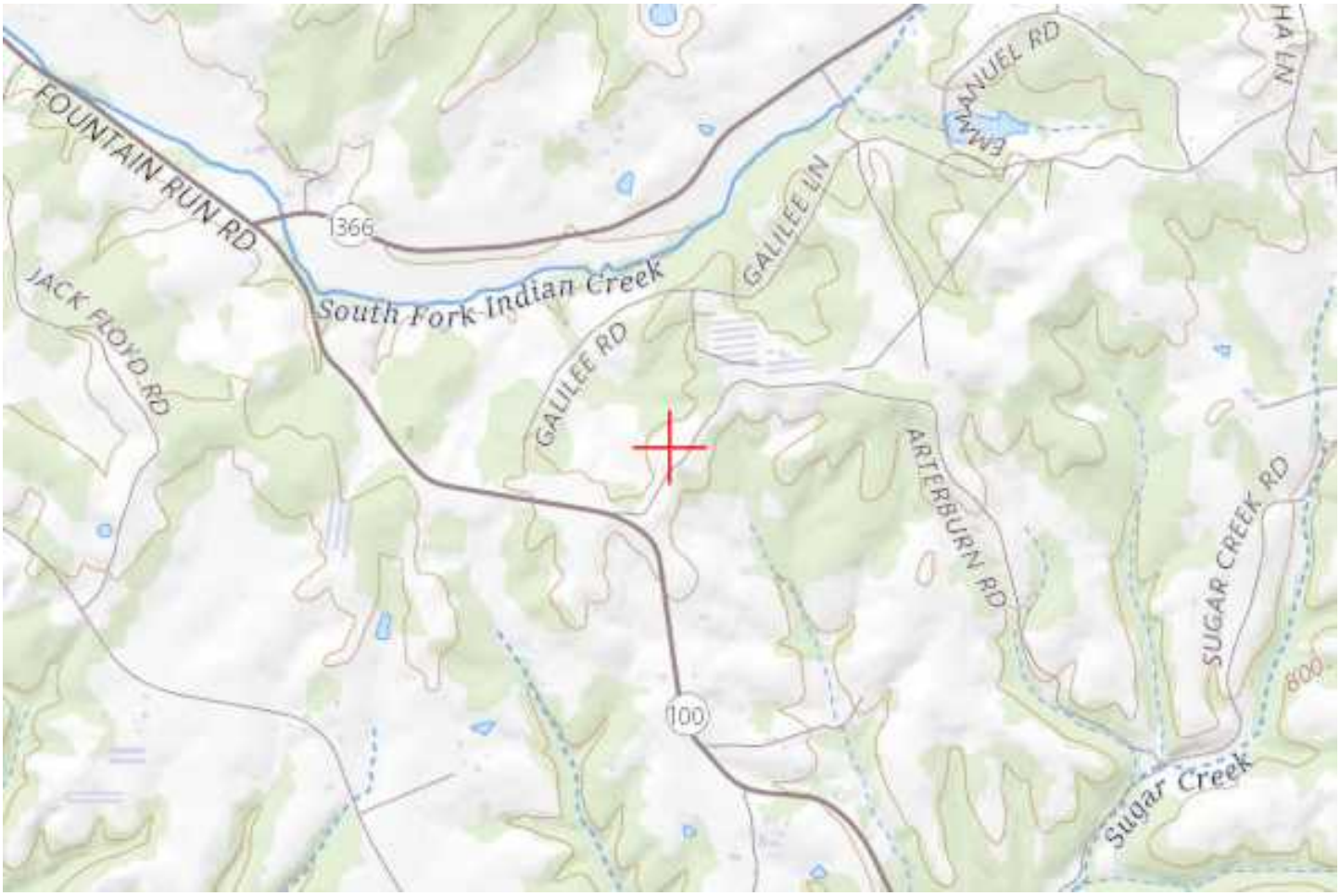
Any future changes that are not consistent with the parameters listed in the FAA 5G C band compatibility evaluation process will void this determination of no hazard.

New Cell Tower

Frequency Data for ASN 2023-ASO-8220-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	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W
3700	3980	MHz	3280	W

TOPO Map for ASN 2023-ASO-8220-OE



Sectional Map for ASN 2023-ASO-8220-OE

KENTUCKY AIRPORT ZONING COMMISSION APPLICATION AND APPROVAL

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK,
KAZC APPLICATION AND APPROVAL LETTER BEGINS ON NEXT PAGE]

TEAM KENTUCKY TRANSPORTATION CABINET

KENTUCKY TRANSPORTATION CABINET

KENTUCKY AIRPORT ZONING COMMISSION

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

JURISDICTION

602 KAR 50:030

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

(1) 100 to one (1) for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each public use airport and military airport with at least one (1) runway 3,200 feet or more in length; or

(2) fifty (50) to one (1) for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each public use and military airport with its longest runway less than 3,200 feet in length.

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

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

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

Section 5. The owner or person who has control over a structure which penetrates or will penetrate the airspace over which the Commission has Jurisdiction shall apply for a permit from the Commission in accordance with 602 KAR 50:090.

INSTRUCTIONS

1. "Alteration" means to increase or decrease the height of a structure or change the obstruction marking and lighting.
2. "Applicant" means the person who will own or have control over the completed structure.
3. "Certification by Applicant" shall be made by the individual who will own or control the completed structure; or a partner in a partnership; or the president or authorized officer of a corporation company, or association; or the authorized official of a body politic; or the legally designated representative of a trustee, receiver, or assignee.
4. Prepare the application and forward to the Kentucky Dept. of Aviation, ATTN: Airport Zoning Commission, 90 Airport Drive, Frankfort KY 40601. For questions, telephone 502-782-4043.
5. The statutes applicable to the Kentucky Airport Commission are KRS 183.861 to 183.990 and the administrative regulations are 602 KAR Chapter 50.
6. When applicable, attach the following appendices to the application:

Appendix A. A 7.5 minute quadrangle topographical map prepared by the U.S. Geological Survey and the Kentucky Geological Survey with the exact location of the structure which is the subject of the application indicated thereon. (*The 7.5 minute quadrangle map may be obtained from the Kentucky Geological Survey, Department of Mines and Minerals, Lexington, KY 40506.*)

Appendix B. For structures on or very near to property of a public use airport, a copy of the airport layout drawing (ALP) with the exact location of the structure which is the subject of this application indicated thereon. (*The ALP may be obtained from the Chairperson of the local airport board or the Kentucky Airport Zoning Commission.*)

Appendix C. Copies of Federal Aviation Administration Applications (*FFA Form 7460-1*) or any orders issued by the manager, Air Traffic Division, FAA regional office.

Appendix D. If the applicant has indicated in item number 7 of the application that the structure will not be marked or lighted in accordance with the regulations of the Commission, the applicant shall attach a written request for a determination by the commission that the marking and lighting are not necessary. The applicant shall specifically state the reasons that the absence of marking and lighting will not impair the safety of air navigation.

Appendix E. The overall height in feet of the overhead transmission line or static wire above ground level or mean water level with span length 1,000 feet and over shall be depicted on a blueprint profile map.

PENALTIES

1. Persons failing to comply with the Airport Zoning Commission statutes and regulations are liable for a fine or imprisonment as set forth in KRS 183.990(3).
2. Applicants are cautioned: Noncompliance with Federal Aviation Administration Regulations may provide for further penalties.

TEAM KENTUCKY TRANSPORTATION CABINET

KENTUCKY TRANSPORTATION CABINET

KENTUCKY AIRPORT ZONING COMMISSION

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

APPLICANT (*name*) VB BTS II, LLC (Vertical Bridge)	**PHONE** 561-948-6367	**FAX**	**KY AERONAUTICAL STUDY #**	
ADDRESS (*street*) 750 Park of Commerce Drive, Suite 200	**CITY** Boca Raton		**STATE** FL	**ZIP** 33487
APPLICANT'S REPRESENTATIVE (*name*) Brett Blackhurst-Vertical Bridge Agent	**PHONE** 317-220-3864	**FAX**		
ADDRESS (*street*) 5511 W. 79th Street	**CITY** Indianapolis		**STATE** IN	**ZIP** 46268
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 X Dual- red & medium intensity white ☐ Dual- red & high intensity white ☐ Other			
LATITUDE 36°41'56.29"	**LONGITUDE** -85°50'29.84"		**DATUM** ☒ NAD83 ☐ NAD27 ☐ Other	
NEAREST KENTUCKY City Gamaliel County Monroe	**NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT** Tompkinsville/Monroe County Airport			
SITE ELEVATION (AMSL, *feet*) 925.5	**TOTAL STRUCTURE HEIGHT** (AGL, *feet*) 255		**CURRENT** (*FAA aeronautical study #*) 2023-ASO-8220-OE	
OVERALL HEIGHT (*site elevation plus total structure height, feet*) 1,180.5			**PREVIOUS** (*FAA aeronautical study #*)	
DISTANCE (*from nearest Kentucky public use or Military airport to structure*) 9.3 nm			**PREVIOUS** (*KY aeronautical study #*)	
DIRECTION (*from nearest Kentucky public use or Military airport to structure*) West				

DESCRIPTION OF LOCATION (*Attach USGS 7.5 minute quadrangle map or an airport layout drawing with the precise site marked and any certified survey.*)
Off Arterburn Road, Fountain City, KY 42133. Approx. 0.17 miles NE of Fountain Run Road & Arterburn Road intersection. See USGS 7.5 minute quadrangle map below and sealed survey attached.

DESCRIPTION OF PROPOSAL
Proposing the construction of a new 255' self-support lattice Wireless Communications Tower

FAA Form 7460-1 (*Has the "Notice of Construction or Alteration" been filed with the Federal Aviation Administration?*)
☐ No ☒ Yes, when? 3/6/2023

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**
Johnnie Whitfield	Project Director		9/19/2023

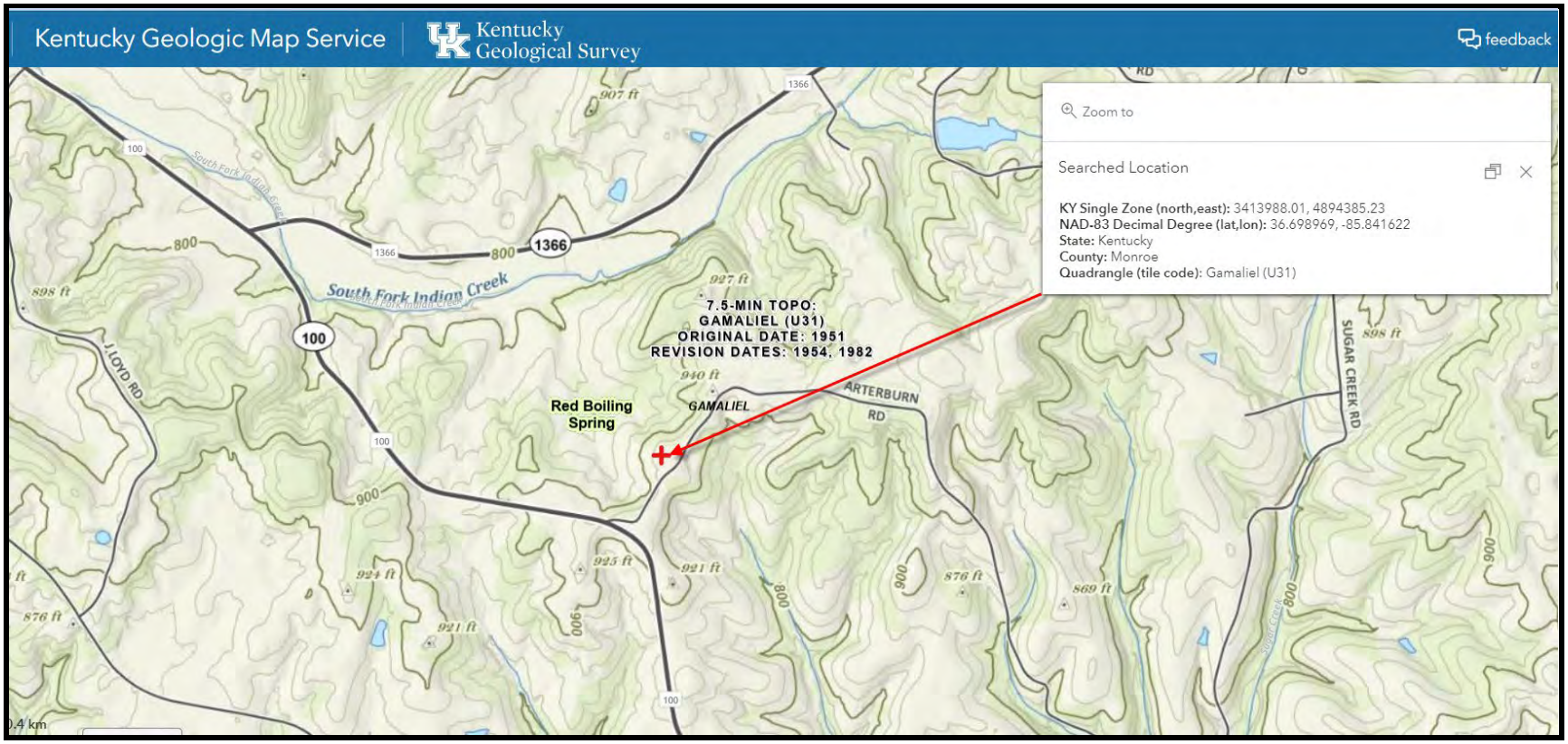
COMMISSION ACTION

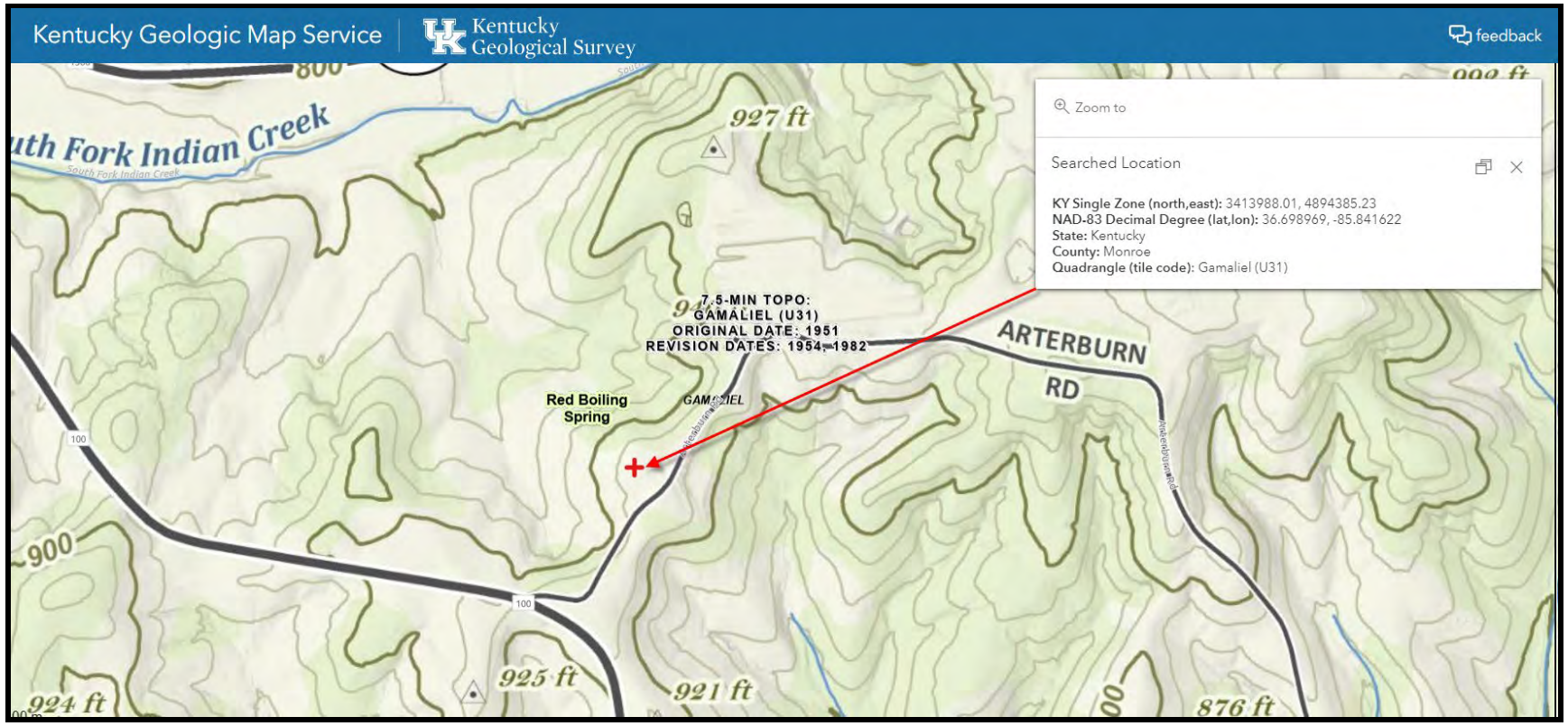
☐ Chairperson, KAZC
☐ Administrator, KAZC

☐ Approved
☐ Disapproved

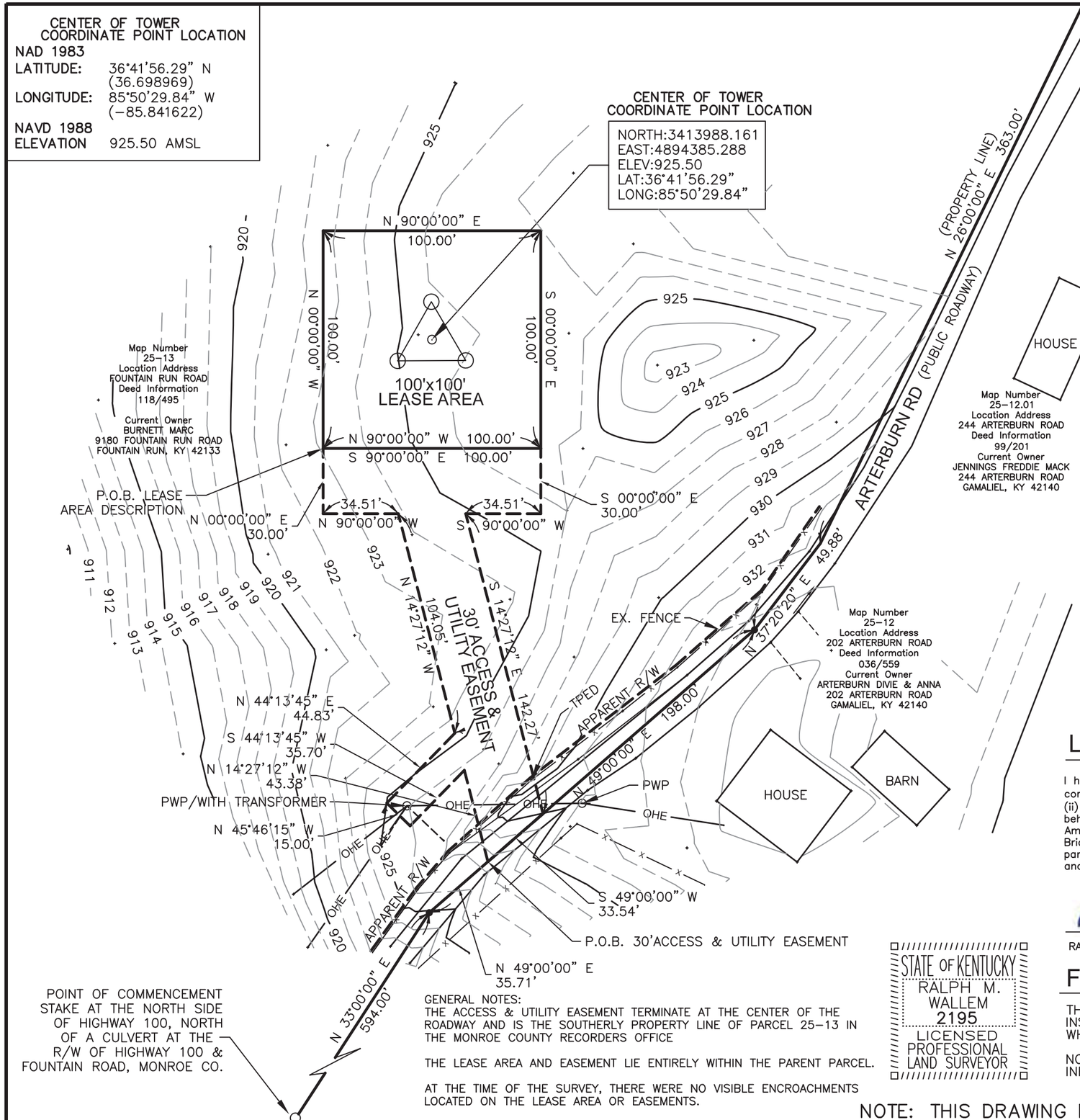
SIGNATURE **DATE**

KENTUCKY GEOLOGICAL SURVEY / USGS 7.5 MIN TOPOGRAPHICAL MAP (WITH PROPOSED TOWER LOCATION MARKED)




Kentucky Geologic Map Service
Kentucky Geological Survey
feedback
Zoom to
Searched Location
KY Single Zone (north,east): 3413988.01, 4894385.23
NAD-83 Decimal Degree (lat,lon): 36.698969, -85.841622
State: Kentucky
County: Monroe
Quadrangle (tile code): Gamaliel (U31)
7.5-MIN TOPO:
GAMALIEL (U31)
ORIGINAL DATE: 1951
REVISION DATES: 1954, 1982
Red Boiling Spring
ARTERBURN RD
927 ft
925 ft
924 ft
921 ft
876 ft
900
100
South Fork Indian Creek

CENTER OF TOWER
COORDINATE POINT LOCATION
NAD 1983
LATITUDE: 36°41'56.29" N (36.698969)
LONGITUDE: 85°50'29.84" W (−85.841622)
NAVD 1988
ELEVATION 925.50 AMSL



LEGEND

- PK NAIL (FOUND)
- RAILROAD SPIKE (FOUND)
- IRON PIPE (FOUND)
- IRON PIN (FOUND)
- TELEPHONE PEDESTAL
- POWER POLE
- GUY WIRE
- STORM INLET
- OHE — OVERHEAD ELECTRIC
- x—x— EXISTING FENCE
- SUBJECT PROPERTY BOUNDARY
- MH — MANHOLE
- W — WATER VALVE
- LIGHT POLE

GRID NORTH BY G.P.S. OBSERVATION +/− 10 SECONDS

SCALE: 1"=50'
(11"X17" PLOT)

NORTH IS BASED ON KENTUCKY STATE PLANE SINGLE COORDINATE SYSTEM AND WAS DETERMINED BY COMPUTATION FROM G.P.S. OBSERVATION ON FEBRUARY 9, 2023

0 50 100

GENERAL NOTES:
THE ACCESS & UTILITY EASEMENT TERMINATE AT THE CENTER OF THE ROADWAY AND IS THE SOUTHERLY PROPERTY LINE OF PARCEL 25-13 IN THE MONROE COUNTY RECORDERS OFFICE

THE LEASE AREA AND EASEMENT LIE ENTIRELY WITHIN THE PARENT PARCEL.

AT THE TIME OF THE SURVEY, THERE WERE NO VISIBLE ENCROACHMENTS LOCATED ON THE LEASE AREA OR EASEMENTS.

STATE OF KENTUCKY
RALPH M. WALLEM
2195
LICENSED PROFESSIONAL LAND SURVEYOR

LAND SURVEYOR'S CERTIFICATE

I hereby certify to: Vertical Bridge REIT, LLC, a Delaware limited liability company, its subsidiaries, and their respective successors and/or assigns; and (ii) Toronto Dominion (Texas) LLC, as Administrative Agent, for itself and on behalf of the lenders parties from time to time to that certain Second Amended and Restated Loan Agreement dated June 17, 2016 with Vertical Bridge Holdco, LLC, as borrower, and Vertical Bridge Holdco Parent, LLC, as parent, as may be amended, restated, modified or renewed, their successors and assigns as their interests may appear; and Tower Title, LLC

RALPH M. WALLEM PLS NO. KY LS#2195

FLOOD DATA

THIS PROPERTY APPEARS TO BE IN ZONE "X" OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 21171C01150A WHICH HAS AN EFFECTIVE DATE OF JULY 12, 2012.

NOTE: FLOOD ZONE INFORMATION SHOWN HEREON IS BASED ON INFORMATION FROM A FEMA SCALED MAP AND GPS OBSERVATION.

NOTE: THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.

FORTUNE WIRELESS INC.
6402 CORPORATE DRIVE
INDIANAPOLIS, IN 46278
(317) 822-6222

verticalbridge

T-Mobile

BENCHMARK SERVICES, INC.
Consulting Engineers
Land Surveyors
318 North Main Street
Huntingburg, IN 47542
(812) 683-3049
benchmark@mw.twcbc.com

SITE NUMBER: US-KY-5152

SITE NAME: FOUNTAIN RUN-(BURNETT)

PARCEL ID NUMBER: 25-13

LANDOWNER:
BURNETT, MARC
9180 FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133

SITE ADDRESS:
FOUNTAIN RUN RD
FOUNTAIN RUN, KY 42133

LEASE AREA: 10000 SQ. FT.

DEED BOOK-PAGE DB 118, PG 495

COUNTY: MONROE COUNTY

LATITUDE: 36°41'56.29"N
LONGITUDE: 85°50'29.84"W

DWG BY:	CHKD BY:	DATE:
GVW	RMW	3.2.23

NO.	REVISION/ISSUE	DATE:
1	REVIEW	3.23.23
2	FINAL	6.23.23

TITLE: SURVEY PLAN

SHEET: 1 OF 2

DESCRIPTION OF LEASE AREA

A PART OF A PARCEL OF LAND RECORDED IN THE MONROE COUNTY RECORDERS OFFICE AS PARCEL 25–13, CURRENT OWNER STEPHEN MARC BURNETT AS RECORDED IN DEED BOOK 118, PAGE 495, AND FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A STAKE (BY DEED) AT THE NORTH SIDE OF HIGHWAY 100, NORTH OF A CULVERT AT THE RIGHT OF WAY OF FOUNTAIN ROAD AND SAID HIGHWAY 100; THENCE ALONG THE SOUTH PROPERTY LINE NORTH 33 DEGREES 00 MINUTES 00 SECONDS EAST 594.00 FEET; THENCE NORTH 49 DEGREES 00 MINUTES 00 SECONDS EAST 35.71 FEET; THENCE NORTH 14 DEGREES 27 MINUTES 12 SECONDS WEST 43.38 FEET; THENCE SOUTH 44 DEGREES 13 MINUTES 45 SECONDS WEST 35.70 FEET; THENCE NORTH 45 DEGREES 46 MINUTES 15 SECONDS WEST 15.00 FEET; THENCE NORTH 44 DEGREES 13 MINUTES 45 SECONDS EAST 44.83 FEET; THENCE NORTH 14 DEGREES 27 MINUTES 12 SECONDS WEST 104.05 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS WEST 34.51 FEET; THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS EAST 30.00 FEET TO THE SOUTHWEST LEASE CORNER AND BEING THE TRUE PLACE OF BEGINNING OF THIS LEASE AREA DESCRIPTION; THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS WEST 100.00 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS EAST 100.00 FEET; SOUTH 00 DEGREES 00 MINUTES 00 SECONDS EAST 100.00 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS WEST 100.00 FEET TO THE TRUE PLACE OF BEGINNING AND CONTAINING 10,000 SQUARE FEET, (0.23 ACRES), MORE OR LESS.

DESCRIPTION OF NON-EXCLUSIVE 30' ACCESS & UTILITY EASEMENT

A PART OF A PARCEL OF LAND RECORDED IN THE MONROE COUNTY RECORDERS OFFICE AS PARCEL 25–13, CURRENT OWNER STEPHEN MARC BURNETT AS RECORDED IN DEED BOOK 118, PAGE 495, AND FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A STAKE (BY DEED) AT THE NORTH SIDE OF HIGHWAY 100, NORTH OF A CULVERT AT THE RIGHT OF WAY OF FOUNTAIN ROAD AND SAID HIGHWAY 100; THENCE ALONG THE SOUTH PROPERTY LINE NORTH 33 DEGREES 00 MINUTES 00 SECONDS EAST 594.00 FEET; THENCE NORTH 49 DEGREES 00 MINUTES 00 SECONDS EAST 35.71 FEET TO THE TRUE PLACE OF BEGINNING OF THIS ACCESS AND UTILITY EASEMENT; THENCE NORTH 14 DEGREES 27 MINUTES 12 SECONDS WEST 43.38 FEET; THENCE SOUTH 44 DEGREES 13 MINUTES 45 SECONDS WEST 35.70 FEET; THENCE NORTH 45 DEGREES 46 MINUTES 15 SECONDS WEST 15.00 FEET; THENCE NORTH 44 DEGREES 13 MINUTES 45 SECONDS EAST 44.83 FEET; THENCE NORTH 14 DEGREES 27 MINUTES 12 SECONDS WEST 104.05 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS WEST 34.51 FEET; THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS EAST 30.00 FEET TO THE SOUTHWEST LEASE CORNER; THENCE ALONG THE SOUTH LINE OF SAID LEASE BEARING SOUTH 90 DEGREES 00 MINUTES 00 SECONDS EAST 100.00 FEET TO THE SOUTHEAST LEASE CORNER; THENCE SOUTH 00 DEGREES 00 MINUTES 00 SECONDS EAST 30.00 FEET; THENCE SOUTH 90 DEGREES 00 MINUTES 00 SECONDS WEST 34.51 FEET; THNECE SOUTH 14 DEGREES 27 MINUTES 12 SECONDS EAST 142.27 FEET TO A POINT ON THE SOUTH PROPERTY LINE (BY DEED) THENCE SOUTH 49 DEGREES 00 MINUTES 00 SECONDS WEST 33.54 FEET TO THE TRUE PLACE OF BEGINNING AND CONTAINING 8,213 SQUARE FEET, (0.19 ACRES), MORE OR LESS.

THE ABOVE DESCRIBED PARCELS ARE SUBJECT TO ALL LEGAL RIGHTS OF WAYS AND EASEMENTS OF RECORD.

TITLE COMMITMENT

WESTCOR LAND TITLE INSURANCE COMPANY
ALTA COMMITMENT FOR TITLE INSURANCE
Issuing Office: Tower Title, LLC
ALTA® Universal ID: RI1044

Client File Number: US-KY-5152
Commitment Number: VTB-146550-C
Property Address: 0 Fountain Run Road, Fountain Run, KY 42133
SCHEDULE A
1. Commitment Date: January 31, 2023

SURVEYOR CERTIFICATION

I hereby certify to: Vertical Bridge REIT, LLC, a Delaware limited liability company, its subsidiaries, and their respective successors and/or assigns; and (ii) Toronto Dominion (Texas) LLC, as Administrative Agent, for itself and on behalf of the lenders parties from time to time to that certain Second Amended and Restated Loan Agreement dated June 17, 2016 with Vertical Bridge Holdco, LLC, as borrower, and Vertical Bridge Holdco Parent, LLC, as parent, as may be amended, restated, modified or renewed, their successors and assigns as their interests may appear; and Tower Title, LLC

SCHEDULE B–SECTION II

I CERTIFY THAT THIS PLAT AND SURVEY WERE MADE UNDER MY SUPERVISION, AND THAT THE ANGULAR AND LINEAR MEASUREMENTS, AS WITNESSED BY MONUMENTS SHOWN HEREON, ARE TRUE AND CORRECT TO THE BEST OF MY ABILITY AND BELIEF.
THIS SURVEY AND PLAT MEETS OR EXCEEDS THE MINIMUM STANDARDS OF THE GOVERNING AUTHORITIES.

SURVEYOR STATEMENT–MY COMMENTS ARE BASED SOLELY ON THE TITLE DOCUMENT THAT HAVE BEEN SUPPIED TO ME BY THE TITLE COMPANY . SINCE THE TITLE DOCUMENTS ARE FURNISHED FOR THE PARENT TRACT, OUR TOPOGRAPHIC SURVEY IS OF A PORTION OF THAT TRACT. MY COMMENTS ARE RESTRICTED TO EXCLUSIONS THAT I CAN DETERMINE AFFECT ONLY OUR PORTION OF THE PARENT TRACT. NO BOUNDARY SURVEY WAS PERFORMED ON THE PARENT TRACT, THUS IT IS NOT POSSIBLE TO DETERMINE WITH CERTAINTY EXCLUSIONS REFERENCING THE PARENT TRACT.

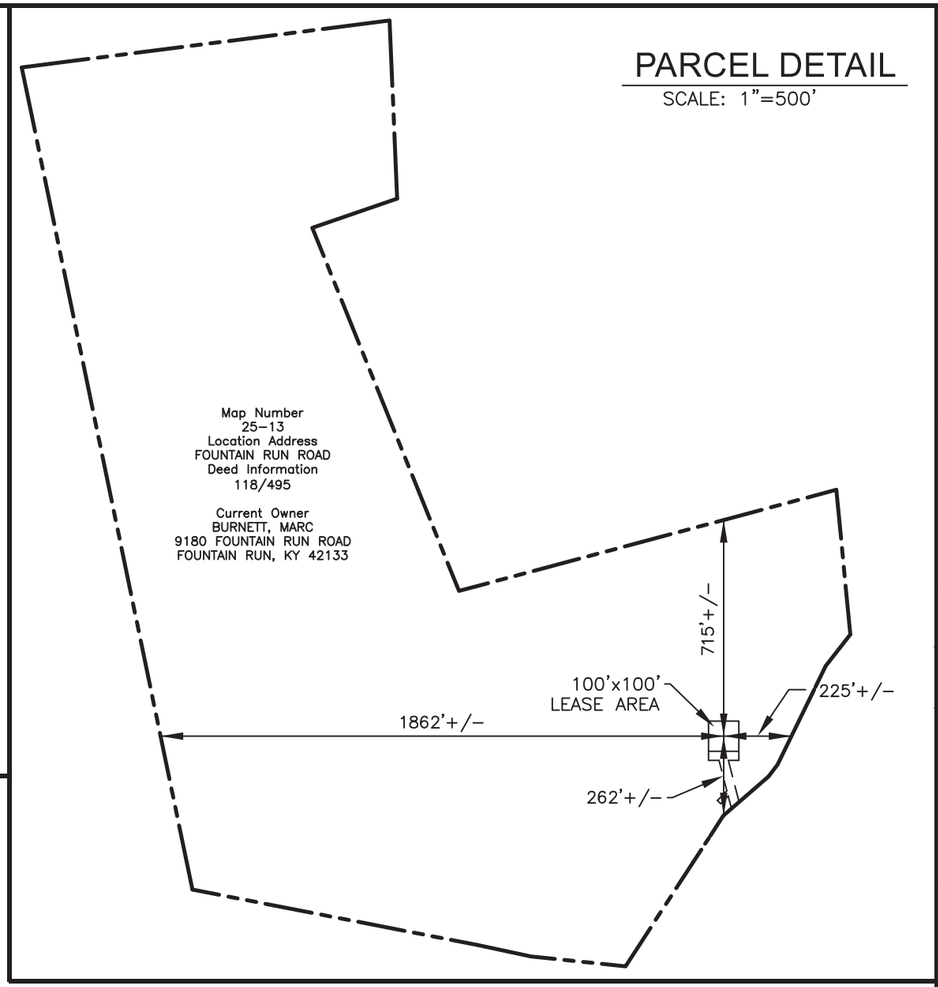
SCHEDULE "B" SECTION II EXCEPTIONS

1. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I–Requirements are met. (NOT A SURVEYOR RELATED ITEM)
2. Rights or claims of parties in possession not shown by the public records. (NOT A SURVEYOR RELATED ITEM)
3. Easements or claims of easements not shown by the public records. (NOT A SURVEYOR RELATED ITEM)
4. Discrepancies, conflicts in boundary lines, encroachments, overlaps, variations or shortage in area or content, party walls and any other matters that would be disclosed by a correct survey and/or physical inspection of the land. (BENCHMARK SERVICES, INC., DID NOT PERFORM A BOUNDARY SURVEY. BSI DID CREATE AN ACCESS & UTILITY EASEMENT AND LEASE EASEMENT)
5. Any lien, or right to lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public record. (NOT A SURVEYOR RELATED ITEM)
6. Any water or well rights, or rights or title to water or claims thereof, in, on or under the land. (NOT A SURVEYOR RELATED ITEM)
7. Unpatented mining claims, reservations or exceptions in patents or in the Acts authorizing the issuance of said patents. (NOT A SURVEYOR RELATED ITEM)
8. All taxes, assessments, levies and charges which constitute liens or are due or payable including unredeemed tax sales. (NOT A SURVEYOR RELATED ITEM)

Additionally, the policy will not insure against loss or damage resulting from the terms and provisions of any lease or easement identified in Schedule A, and will include the following Specific Exceptions unless cleared to the satisfaction of the Company: (NOT A SURVEYOR RELATED ITEM)

PARCEL DETAIL

SCALE: 1"=500'



9. Rights of fee simple owners in and to the subject property. (NOT A SURVEYOR RELATED ITEM)
10. Deed between Carlos Burnette and his wife, Banna Burnette; and Monroe County Water District, dated August 27, 1986 and recorded February 9, 1993 in (book) 74 (page) 220, in Monroe County, Kentucky. (NOT A SURVEYOR RELATED ITEM)

END OF SCHEDULE B

RALPH M. WALLEM PLS NO. KY LS 2195

STATE OF KENTUCKY
RALPH M. WALLEM
2195
LICENSED PROFESSIONAL LAND SURVEYOR

PARENT PARCEL
LEGAL DESCRIPTION-EXHIBIT "A" TITLE REPORT

The following described real property located in Monroe County, Kentucky, to–wit:
Parcel One
Beginning at a stake on the North side, in the right–of–way of Highway 100, North of culvert; thence with the right–of–way S78 E 11 P and 5 feet to a side road; thence with the side road S 84 E 19 P, N 33 E 36 P, N 49 E 12 P, N 26 E 22 P, N 38 E 8 P to a stone and sassafras, Arterburn's corner; thence with his line N 5–1/2 W 31 P to a stone; thence S 75 W 76–1/4 P to a stone, Hagan's corner; thence N 22 W 78–1/2 P to a stone on the South side of an old road; thence N 71 E 18 P to a stone on West side of said road; thence with a ditch N 11 W 35–1/2 P to the road right–of–way of Highway 1366; thence with the right–of–way W 75 P to Ford's line; thence with his line S 12 E 186–1/2 P to the right–of–way of 100; thence with the right–of–way S 79 E 58–1/4 P to the beginning, containing 112 acres, more or less.
Parcel ID: 25–13
This being a portion of the same property conveyed to Marc Burnett, a single person by a Deed from Carlos Burnett and wife, Banna Burnett dated 1/19/2012 and recorded 3/24/2012 in Book D118 Page 498 and Instrument 85225 in the County of Monroe, State of Kentucky.

FORTUNE WIRELESS INC.
6402 CORPORATE DRIVE
INDIANAPOLIS, IN 46278
(317) 822–6222

verticalbridge

T··Mobile·

BENCHMARK SERVICES, INC.
Consulting Engineers
Land Surveyors
318 North Main Street
Huntingburg, IN 47542
(812) 683-3049
benchmark@mw.twcbc.com

SITE NUMBER: US–KY–5152

SITE NAME: FOUNTAIN RUN–(BURNETT)

PARCEL ID NUMBER: 25–13

LANDOWNER:
BURNETT, MARC
9180 FOUNTAIN RUN ROAD
FOUNTAIN RUN, KY 42133

SITE ADDRESS:
FOUNTAIN RUN RD
FOUNTAIN RUN, KY 42133

LEASE AREA: 10000 SQ. FT.

DEED BOOK–PAGE DB 118, PG 495

COUNTY: MONROE COUNTY

LATITUDE: 36°41'56.29"N
LONGITUDE: 85°50'29.84"W

DWG BY:	CHKD BY:	DATE:
GVW	RMW	3.2.23

NO.	REVISION/ISSUE	DATE:
1	REVIEW	3.23.23
2	FINAL	6.23.23

TITLE: SURVEY PLAN

SHEET: 2 OF 2

KENTUCKY AIRPORT ZONING COMMISSION

ANDY BESHEAR
Governor

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

JIM GRAY
Secretary

APPROVAL OF APPLICATION

Thursday, October 12, 2023

VB BTS II, LLC
750 Park of Commerce Drive, Suite 200
Boca Raton, FL 33487

AS-2023-069-TZV	**Tompkinsville-Monroe County Airport**
APPLICANTS NAME:	Vertical Bridge LLC
NEAREST CITY:	Gamaliel
LATITUDE/LONGITUDE:	36°41'56.29" N, 85°50'29.84" W
HEIGHT (In Feet):	255' AGL/1,181' AMSL
CONSTRUCTION PROPOSED:	Telecommunications Tower

NOTES: The tower is located approx 9 nm W of TZV. It exceeds 200 ft AGL and penetrates no protected air surfaces.

FAA DETERMINATION: 2023-ASO-8220-OE. No Hazard/No Impact to Air Navigation. Must be marked/lighted IAW FAA AC 70/7460-1 M.

This letter is to notify you that the Kentucky Airport Zoning Commission approved your permit application for the construction of Structures at the Location, Coordinates, and Height as indicated above. Construction must comply with requirements, if any, listed in the FAA Determination.

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

An email of this letter was also sent to your representative, Brett Blackhurst, at bblackhurst@ffi.net. If you have any questions, please contact us.

Respectfully,

Anthony Adams

Airport Zoning Commission Administrator
KY Department of Aviation
502-564-0151 Office
AirportZoning@ky.gov

FEDERAL COMMUNICATIONS COMMISSION ASR REGISTRATION

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK,
FEDERAL COMMUNICATIONS COMMISSION ASR REGISTRATION BEGINS ON NEXT PAGE]

ASR Registration Search

Registration 1326072

Map Registration

Registration Detail

Reg Number	1326072	Status	Granted
File Number	A1239580	Constructed	
EMI	No	Dismantled	
NEPA			

Antenna Structure

Structure Type: LTOWER - Lattice Tower

Location (in NAD83 Coordinates)

Lat/Long	36-41-56.3 N 085-50-30.0 W	Address	9180 Fountain Run, KY-5152
City, State	Flippin , KY		
Zip	42133	County	MONROE
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
282.1	82.3
Overall Height Above Mean Sea Level	**Overall Height Above Ground w/o Appurtenances**
364.4	79.3

Painting and Lighting Specifications

FAA Chapters 4, 8, 15
Paint and Light in Accordance with FAA Circular Number 70/7460-1M

FAA Notification

FAA Study	2023-ASO-8220-OE	FAA Issue Date	09/29/2023

Owner & Contact Information

FRN	0032604886	Owner Entity Type	Limited Liability Company

Owner

Vertical Bridge REIT LLC
Attention To: Richard Hickey
750 park of commerce drive
boca raton , FL 33487

P: (561)406-4015
F:
E: Richard.Hickey@Verticalbridge.com

Contact

Hickey , Richard
Attention To: Richard Hickey
750 park of commerce drive
boca raton , FL 33487

P: (561)406-4015
F:
E: Richard.Hickey@Verticalbridge.com

Last Action Status

Status	Granted	Received	10/02/2023
Purpose	Amendment	Entered	10/02/2023
Mode	Interactive		

Related Applications

10/02/2023 A1239580 - Amendment (AM)

Comments

Comments

None

History

Date	Event

None

Pleadings

Pleading Type	Filer Name	Description	Date Entered

None

Automated Letters

None

CLOSE WINDOW