



Proposed New Cellular Antenna Tower Application

Presented To: Kentucky Public Service Commission

Filing Date: 2/14/2024

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-5178 / Matney Road

Proposed Tower Location:

Edmonton Road
Greensburg, KY 42743

Parcel #:	55.09-01
Latitude:	37.156392
Longitude:	-85.540427



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TAB #1

ERIN CONNOLLY
Direct Dial: 404-221-6525
E-Mail Address: econnolly@bakerdonelson.com

February 14, 2024

VIA ELECTRONIC FILING

Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, KY 40602-0615

Re: Letter of Intent – Application for Authorization to Construct a New Cellular Antenna Tower near Edmonton Road, Greensburg, KY 42743 with the tower located at Latitude/Longitude: 37.156392, -85.540427

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 construct a new 300' self-support tower with a 75' x 75' fenced compound located at 37.156392, -85.540427.

Vertical Bridge is seeking authorization to construct a new cellular tower as required by the Kentucky Revised Statutes (KRS) 100.985 and 100.987, from the Kentucky Public Service Commission. The parcel on which the proposed new cellular antenna tower would be placed is currently being used for agricultural purposes. The proposed site is approximately 0.1-mile northeast along Edmonton Road from the Matney Road and Edmonton Road intersection, and approximately 160 feet southeast off Edmonton Road. This Letter of Intent will address the requirements set forth in the KRS regarding placement and construction of new cell towers within Green County.

Vertical Bridge is trying to expand its infrastructure so wireless communication carriers can enhance their networks to bring more reliable, higher speed data and voice services to the residents, farmers, and travelers in the area, specifically along Edmonton Road and in the rural areas of Green County. T-Mobile will be the anchor tenant on the proposed new tower, with space available for at least two additional carriers to collocate. In an effort to meet T-Mobile's, and future carriers' goals of enhancing their networks, we are requesting that the Kentucky Public Services Commission approve the placement and installation of the proposed new 300' self-support tower.

The communication facility will not affect current traffic as this is an unmanned facility and may only be visited once a month, or as needed, for servicing. Access to the facility will come from Edmonton Road via a proposed access driveway. The communication facility will operate in a clean and quiet manner 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 that may be 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 application package.

807 KAR 5:063 Filing Requirements and procedures for proposal to construct antenna towers

Section 1:

- b) A copy of the utility's applications to the Federal Aviation Administration and Kentucky Airport Zoning Commission and written authorizations from these agencies as soon as they are available.**
 - Please see the Determination of No Hazard and Kentucky Airport Zoning Commission Application located in Tab 8 below.
- c) A copy of the utility's application to, and authorization from, the Federal Communications Commission, if applicable;**
 - Please see FCC Antenna Structure Registration located in Tab 8 below.
- d) A geotechnical investigation report, signed and sealed by a professional engineer registered in Kentucky, that includes boring logs and foundation design recommendations, and a finding as to the proximity of the proposed site to flood hazard areas, except that the utility may file findings prepared by a land surveyor as to the proximity of the proposed site to flood hazard areas;**
 - Please see the Geotechnical Report located in Tab 6 below.
- e) 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 see directions to the site located in Tab 3 below.
- f) 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;**
 - Please see the Option and Easement Agreement in Tab 4 below.
- g) The identity and qualifications of each person directly responsible for the design and construction of the proposed tower;**
 - Nathan M. Anderson, P.E., S.I., nanderson@buildingandearth.com
 - Malcolm D. Barrett, P.E., P.G., mhinchion@buildingandearth.com
 - Travis Shields, Professional Land Surveyor, travis.shields@thelandconsultants.com
 - Stephen E. Hunt, P.E., Stephen.hunt@telecadeng.com
 - Nathan Ross, P.E., Nathan.Ross@valmont.com
- h) A site development plan or survey, signed and sealed by a professional engineer registered in Kentucky, that should 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 located in Tab 6 below.
- i) 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, pg. Z7, located in Tab 6 below.
- j) 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 and Foundation Drawings, located in Tab 6 below.

- k) A map, drawn to 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, pgs. Z2 and Z3, located in Tab 6 below.
- l) 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 has been:**
 - **Notified by certified mail, return receipt requested, of the proposed construction;**
 - I affirm that every person who, according to the records of the property valuation administrator, owns property within five hundred (500) feet of the proposed tower has been notified by certified mail, return receipt requested, of the proposed construction. The letters and receipts are located in Tab 7 below.
 - **Given the commission docket number under which the application will be processed; and**
 - I affirm that every person who, according to the records of the property valuation administrator, owns property within five hundred (500) feet of the proposed tower has been notified by certified mail, return receipt requested, of the proposed construction and given the commission docket number under which the application will be processed. The letters and receipts are located in Tab 7 below.
 - **Informed of his right to request intervention;**
 - I affirm that every person who, according to the records of the property valuation administrator, owns property within five hundred (500) feet of the proposed tower has been notified by certified mail, return receipt requested, of the proposed construction and given the commission docket number under which the application will be processed and informed of his right to request intervention. The letters and receipts are located in Tab 7 below.
- m) 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 notice and copies of the letters that were sent located in Tab 7 below.
- n) A statement that the county judge executive has been:**
 - **Notified by certified mail, return receipt requested, of the proposed construction;**
 - I affirm that the county judge executive has been notified by certified mail, return receipt requested, of the proposed construction. The letter and receipt are located in Tab 7 below.
 - **Given the commission docket number under which the application will be processed; and**
 - I affirm that the county judge executive has been notified by certified mail, return receipt requested, of the proposed construction and given the docket number under which the application will be processed. The letter and receipt are located in Tab 7 below.
 - **Informed of his right to request intervention;**
 - I affirm that the county judge executive has been notified by certified mail, return receipt requested, of the proposed construction and given the docket number under which the application will be processed and informed of his right to request intervention. The letter and receipt are located in Tab 7 below.

- o) **A copy of the notice sent to the county judge executive;**
 - o Please see a copy of the notice sent to the county judge executive in Tab 7 below.
- p) **A statement that:**
 - o **Two (2) written notices meeting the requirements of subsection (2) of this section have been posted, one (1) in a visible location on the proposed site and one (1) on the nearest public road; and**
 - o I affirm that two written notices have been posted; one in a visible location on the proposed site and one on the nearest public road. Please see images of such postings in Tab 7 below.
 - o **The notices shall remain posted for at least two (2) weeks after the application has been filed;**
 - o I affirm that the posted notices will remain for at least two weeks after the application has been filed.
 - o **Section 2(a): The notices required by subsection (1)(p) of this section shall:**
 - i. **Be at least two (2) feet by four (4) feet in size; and**
 - ii. **Except as provided by paragraph (b) of this subsection, state the following: “(Name of utility) proposes to construct a telecommunications (“tower” or “monopole”) on this site. If you have questions, please contact (name and address of utility) or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to (assigned docket number) in your correspondence.”**
 - o I affirm that the posted signs are at least two feet by four feet and state the following: “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 the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to 2024-00014 in your correspondence.” Please see images of posted signs in Tab 7 below.
 - o **Section 2(b): The notice posted on the nearest public road shall state the following: “(Name of utility) proposes to construct a telecommunications (“tower” or “monopole”) on this site. If you have questions, please contact (name and address of utility) or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to (assigned docket number) in your correspondence.”**
 - o I affirm that the posted sign on the nearest public road is at least two feet by four feet and states the following: “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 the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to 2024-00014 in your correspondence.” Please see images of posted signs in Tab 7 below.
 - o **Section 2(c): In both posted notices, the word “tower” or “monopole” shall be printed in letters at least four (4) inches high.**
 - o I affirm that in both posted notices, the word “tower” is printed in letters at least four inches high. Please see images of posted signs in Tab 7 below.

- q) **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.**
- o I affirm that notice of the location of the proposed construction has been published in a newspaper of general circulation in Green County, KY, the county in which construction is proposed. Please see the newspaper posting located in Tab 7 below.
- r) **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;**
- o The parcel on which the proposed tower will sit is a 71-acre field located off Edmonton Road in Green County, KY. The proposed tower site is mainly surrounded by land used for agricultural purposes, with two existing residential dwellings located northwest and northeast of the proposed tower location across Edmonton Road.
- s) **A statement that the utility has considered the likely effects of the installation on nearby land uses and values and has concluded that there is no more suitable location reasonable available from which adequate service to the area can be provided, and that there is no reasonable available opportunity to co-locate, including documentation of attempts to co-locate, if any, with supporting radio frequency analysis, where applicable, and a statement indicating that the utility attempted to co-locate on towers designed to host multiple wireless service providers' facilities or existing structures, such as a telecommunications tower, or another suitable structure capable of supporting the utility's facilities; and**
- o 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 Edmonton Road in Green 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 343' to the northwest of the proposed tower site, across Edmonton Road from the proposed tower location. The other residential structure is located northeast of the proposed tower approximately 466' away, also located across Edmonton 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.

Regarding existing towers in the area and whether co-location was or was not pursued, the nearest tower to the proposed tower location is a 255' tower approximately 5.4 miles to the northeast from the proposed tower and is shorter than the desired need for

T-Mobile's network as well as outside the targeted coverage area. 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 0.75 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 Green County mainly along Edmonton 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. There is no more suitable location for the proposed tower.

- t) **A map of the area in which the tower is proposed to be located, that is drawn to scale and that clearly depicts the necessary search area within which a site should, pursuant to radio frequency requirements, be located.**
- o Please see 1-Mile Search Ring document located in Tab 2 below.

Sincerely,



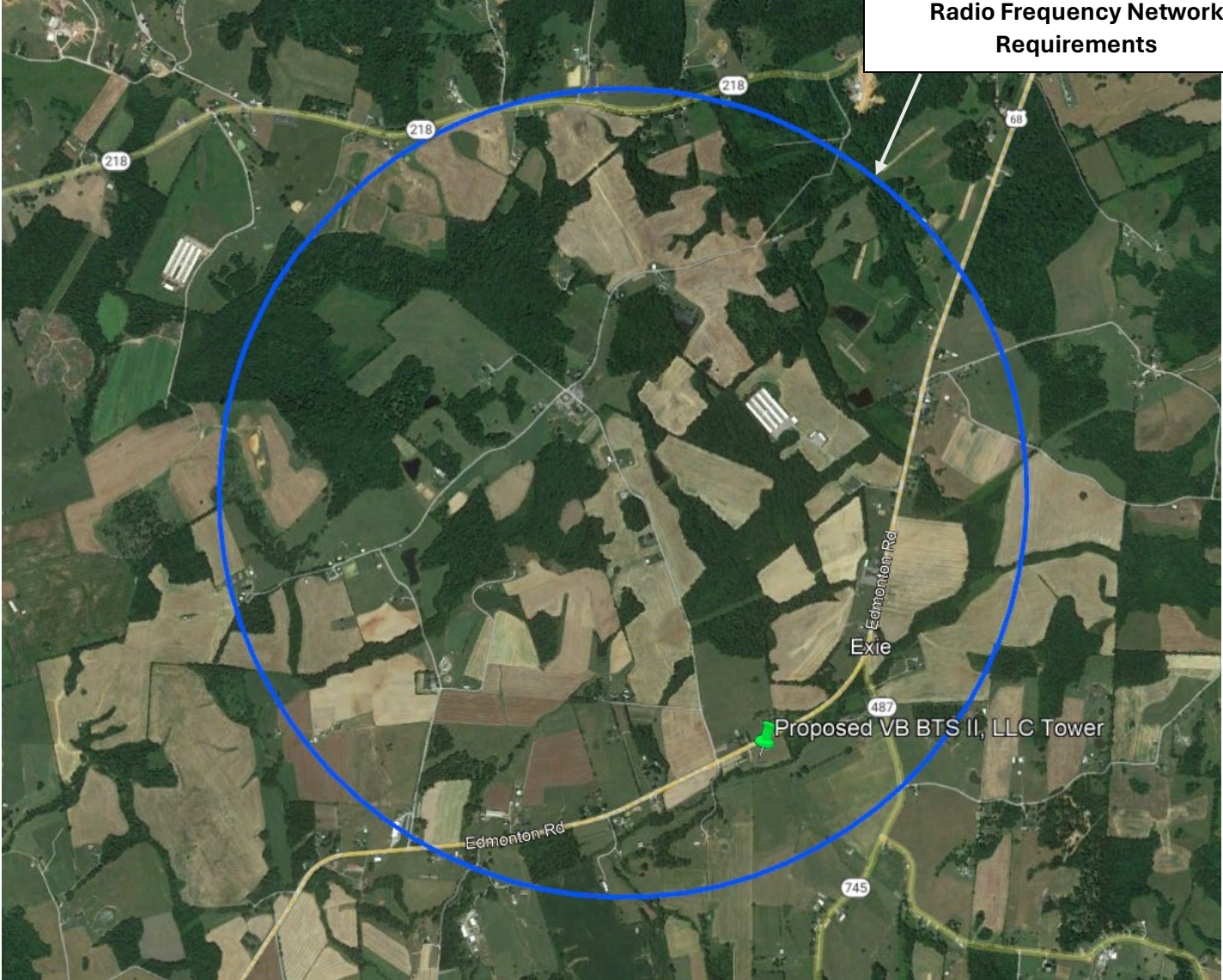
Erin Connolly

Enclosure

TAB #2

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

**1-Mile Search Ring Per T-Mobile's
Radio Frequency Network
Requirements**



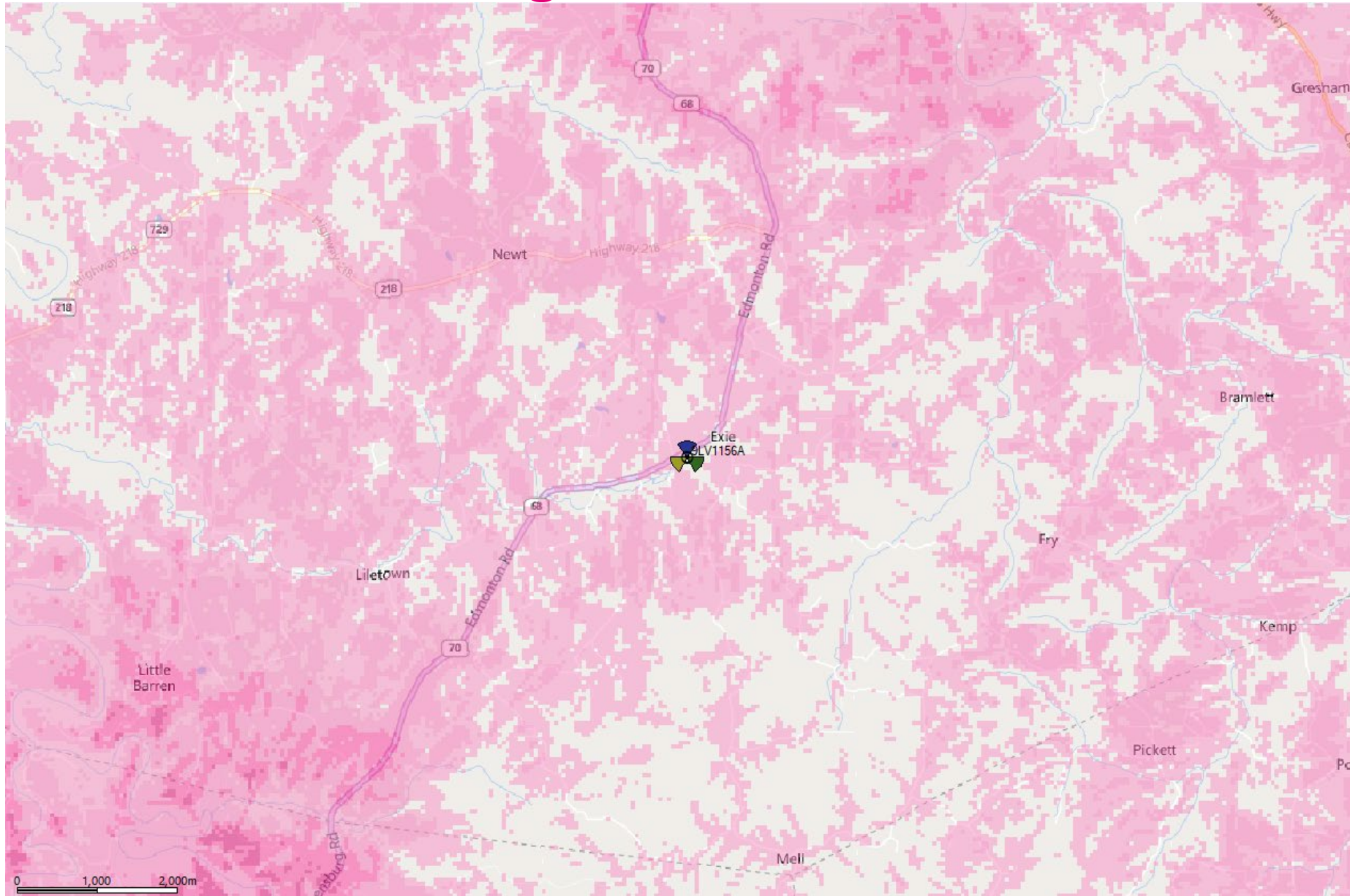
PARCEL MAP







GENERAL INFORMATION (STATEMENT OF NEED)

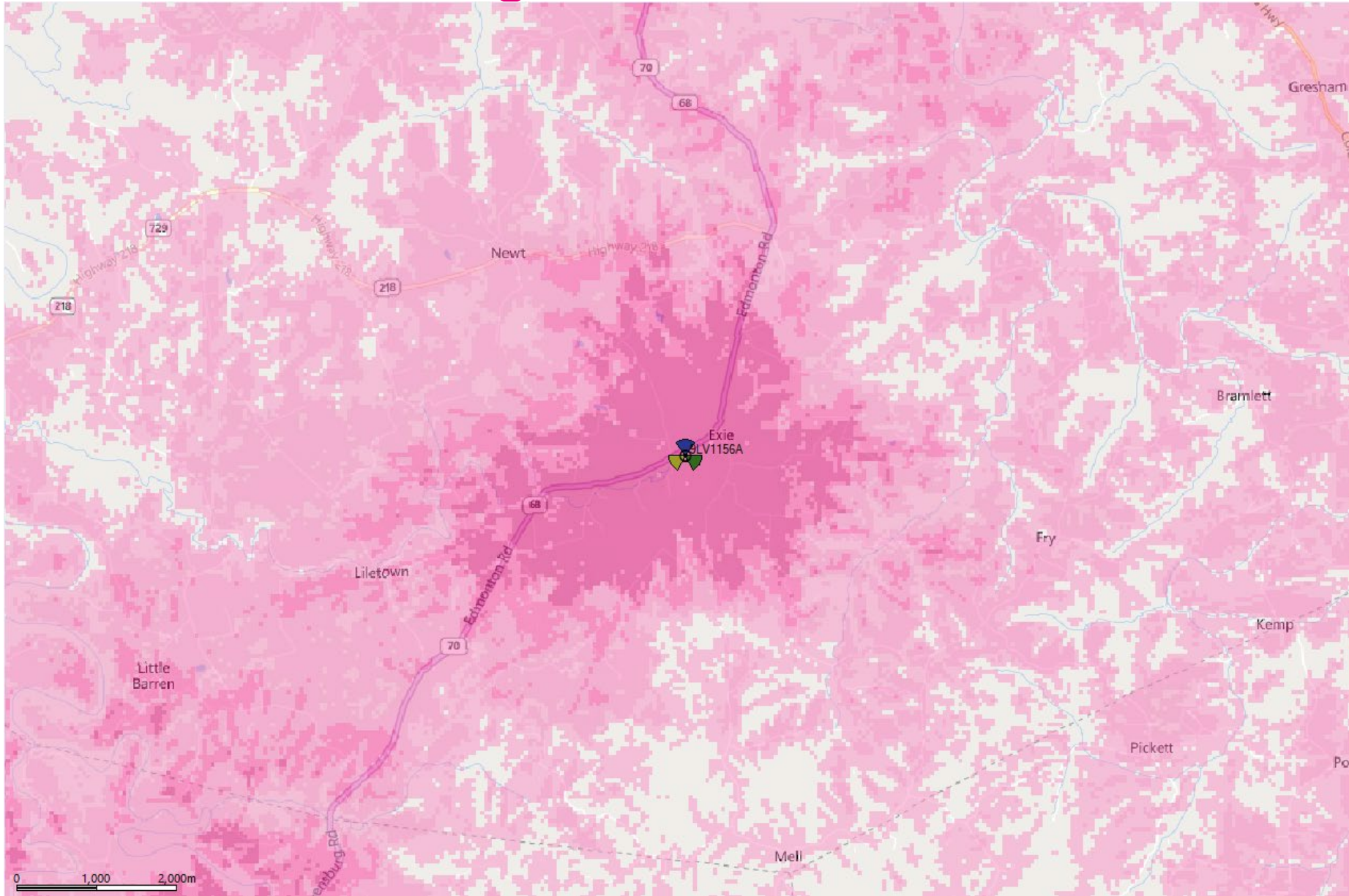
General Information	Please provide input for each question. Your input will be cut/pasted into the NLG Justification Package for submission. Thank you!
<ul style="list-style-type: none"> Site 	9LV1156A
<ul style="list-style-type: none"> Purpose of the Agreement 	New Build
<ul style="list-style-type: none"> Risk if agreement not executed now 	Without this site, we will have poor coverage along Edmonton Road in Greensburg, KY. That area also includes residential homes in Greensburg. With poor coverage, calls in this area will drop.
<ul style="list-style-type: none"> Reason for Recommendation 	Site 9LV1156A will not only improve coverage to this rural part of KY in Greensburg, but it will also provide 5G coverage to this area.
<ul style="list-style-type: none"> RF, please include any additional documentation. Screenshots help limit size <1MB. (Attaching a coverage map improves 'approval' success.) 	Given below the Present and Future coverage maps.





Present Coverage



	Min	Max	Legend
	-88	0	IBC
	-93	-88	IBR
	-101	-93	In-Vehicle
	-108	-101	Outdoor

Future Coverage with 9LV1156A



	Min	Max	Legend
	-88	0	IBC
	-93	-88	IBR
	-101	-93	In-Vehicle
	-108	-101	Outdoor

TAB #3

DIRECTIONS TO PROPOSED SITE FROM GREEN COUNTY SEAT

Directions Prepared by Emily Smith-Gonzalez, Telecad Wireless – Phone: 423-280-3361

From 203 W Court St, Greensburg, KY 42743 (Green County Seat) to 37.156392 N, - 85.540427 W / Edmonton Road, Greensburg, KY 42743 (Proposed Tower Location) – 14 min (9.3 miles)



Head southeast on W Court St toward N 1st St/Stone Quarry St
148 ft



Turn right at the 1st cross street onto S 1st St/Stone Quarry St
0.1 mi



Turn left at the 2nd cross street onto W Columbia Ave
417 ft



Turn right onto US-68 W/S Main St
Continue to follow US-68 W
9.1 mi

Site location will be on the left.

TAB #4

Prepared by and when recorded return to:

VB BTS II, LLC
750 Park of Commerce Drive, Suite 200
Boca Raton, FL 33487
Attn: Daniel Marinberg

Site ID: US-KY-5178
Site Name: Matney Rd
Parcel No.: 55.09-01
Commitment #: VTB-143588-C

(Above Space For Recorder's Use Only)

**OPTION AND EASEMENT AGREEMENT
AND RESTRICTIVE COVENANTS**

THIS OPTION AND EASEMENT AGREEMENT AND RESTRICTIVE COVENANTS (this "**Agreement**") is made as of this 15th day of June, 2023 ("**Effective Date**"), by and between **Joseph F. Clark**, a single man, as to a 1/3 undivided fee simple interest, **Wayne A. Clark**, a single man, as to a 1/3 undivided fee simple interest and **Douglas N. Clark** and his wife, **Janice M. Clark**, as to a 1/3 undivided fee simple interest, having an address at 1591 Clark Bagby Rd, Greensburg, KY 42743 ("**Grantor**"), and **VB BTS II, LLC**, a Delaware limited liability company, having an address at 750 Park of Commerce Drive, Suite 200, Boca Raton, FL 33487 ("**Grantee**").

WHEREAS, Grantor is currently the fee owner of that certain improved real property more particularly described on **Exhibit A** attached hereto and incorporated herein (the "**Burdened Property**");

WHEREAS, Grantee wishes to develop, construct and operate a telecommunications tower and related systems and improvements (collectively, the "**Tower**") on the Burdened Property;

WHEREAS, in order for Grantee to develop, construct and operate the Tower, Grantor wishes to grant to Grantee, and Grantee wishes to accept from Grantor, certain easements, rights and interest with respect to the Burdened Property, as more particularly set forth herein.

NOW, THEREFORE, in consideration of the mutual agreements and covenants hereinafter set forth, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Grantor and Grantee, intending to be legally bound, hereby agree as follows:

1. Option to Acquire Easement.

(a) Grantor grants to Grantee the exclusive option (the "**Option**") to acquire the Easements (defined below) for a period of twelve (12) months following the Effective Date (the "**Initial Option Period**") in consideration of the sum set forth on **Exhibit B** attached hereto and incorporated herein, and such sum shall be paid within thirty (30) days of the full execution of this Agreement. The Initial Option Period may be renewed for an additional twelve (12) month period (the "**Final Option Period**," and,

collectively, with the Initial Option Period, the "**Option Period**") upon payment to Grantor of the sum set forth on **Exhibit B** no later than ten (10) days prior to the expiration of the Initial Option Period.

(b) Grantee may exercise the Option and acquire the Easements at any time during the Option Period by delivery of written notice to Grantor (the "**Notice of Exercise of Option**"). The Notice of Exercise of Option shall set forth the commencement date (the "**Commencement Date**") of this Agreement. If Grantee 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.

(c) During the Option Period (and any time during the duration of this Agreement in the event Grantee exercises its right to acquire the Easements) Grantee and its agents, engineers, surveyors, consultants and representatives shall have the right to enter upon the Burdened Property to inspect, examine, conduct soil borings, drainage testing, material sampling and other geological or engineering tests or studies of the Burdened Property (collectively, the "**Tests**"). to apply for and obtain licenses, permits, approvals, or other relief required of, or deemed necessary or appropriate in Grantee's discretion, for its use of the Benefited Property which include, without limitation, applications for zoning variances, zoning ordinances, amendments, special use permits, and construction permits (collectively, the "**Government Approvals**"), initiate the ordering and/or scheduling of necessary utilities, and otherwise to do those things on or off the Burdened Property that, in the opinion of Grantee, are necessary to determine the physical condition of the Benefited Property, the environmental history of the Benefited Property, Grantor's title to the Burdened Property and the feasibility or suitability of the Benefited Property for Grantee's intended use, all at Grantee's expense. Grantee shall be authorized to apply for Government Approvals on behalf of Grantor and Grantor agrees to reasonably cooperate with Grantee in the preparation, completion, filing and acceptance of such applications. Grantee shall not be liable to Grantor or any third party on account of any pre-existing defect or condition on or with respect to the Burdened Property and Benefited Property, whether or not such defect or condition is disclosed by Grantee's inspection. Grantee shall restore the Benefited Property to its condition as it existed at the commencement of the Option Period, reasonable wear and tear and casualty not caused by Grantee excepted. In addition, Grantee shall indemnify, defend and hold Grantor harmless from and against any and all injury, loss, damage or claims arising directly out of Grantee's Tests.

2. Grant of the Easements. In the event Grantee delivers the Notice of Exercise of Option, and thereafter pays Grantor within thirty (30) days after the date of the Notice of Exercise of Option the sum set forth in Exhibit B as and for consideration for the Easements, Grantor, for itself, its heirs, personal representatives, successors and assigns, hereby grants to Grantee, its heirs, personal representatives, successors, assigns, lessees, licensees, customers, agents, and any other party claiming by or through Grantee ("Grantee Parties"), the following easements, to which Easements the Grantee Parties shall have free and unfettered access seven (7) days per week, twenty-four (24) hours per day:

(a) an exclusive perpetual easement (the "**Tower Easement**") for the purposes of developing, constructing, accessing, operating, and using the Tower and conducting business activities related to the Tower, including but not limited to, construction, installation, improvement, reconstruction, modification, supplementation, maintenance, operation and/or removal of the Tower and construction of any additional towers, on, across and under that portion of the Burdened Property shown on **Exhibit C** attached hereto and incorporated herein (the "**Tower Easement Premises**") and freely leasing, subleasing, or licensing space on the Tower to tenants, subtenants, or licensees from time to time. Grantee shall have full authority to prohibit entry to any party upon the Tower Easement Premises. In connection with the exclusive nature of the Tower Easement, Grantor shall, at Grantee's election, provide security fencing or other security features to control the exclusivity of the Tower Easement Premises to the Grantee Parties; provided, the cost of any such security measures shall be at Grantee's sole cost and expense, and, at

Grantee's election, Grantee may perform and contract for the permitting and installation of such security measures on behalf of Grantor.

(b) an exclusive perpetual easement for the duration of this Agreement (the "**Utility and Access Easement**") and additional easements as needed for ingress, egress and public utilities, including but not limited to installing, operating, maintaining, repairing, replacing, accessing and supplying utility services to the Tower and locating, relocating, erecting, constructing, reconstructing, installing, operating, maintaining, patrolling, inspecting, repairing, replacing, altering, extending, and/or removing one or more overhead and/or underground telecommunication cables and lines for communication, microwave, fiber, backhaul, and/or electricity and any necessary manholes, handholes, equipment, poles, appurtenances and attachments incidental thereto for all the above purposes, within, along, under, across and through that portion of the Burdened Property shown on **Exhibit C** attached hereto and incorporated herein (the "**Utility and Access Easement Premises**").

(c) The Tower Easement, and the Utility and Access Easement are sometimes referred to herein individually and collectively as the "**Easement**" or "**Easements**." The Tower Easement Premises, and the Utility and Access Easement Premises are sometimes referred to herein individually and collectively as the "**Benefited Property**."

3. Duration. Grantor and Grantee acknowledge and agree that the Easements will be perpetual and irrevocable from the Commencement Date. Notwithstanding the foregoing, in the event that Grantee abandons the use of the Easements, upon thirty (30) days prior written notice to Grantee by Grantor of such abandonment, in the event Grantee has not recommenced or reacknowledged its use of the Easements, the Easements shall terminate and Grantee shall dismantle and remove the Tower. For purposes of this Agreement, Grantor may presume abandonment by Grantee has occurred if no equipment or antennas are installed on any Tower and neither Grantee nor any party claiming by, through, or under Grantee, has taken any noticeable or affirmative actions to use or enjoy the Easements for a period of five (5) consecutive years.

4. Maintenance. Grantor shall be responsible for, and shall pay the cost of, all repairs and maintenance with respect to the Burdened Property and the Benefited Property, including without limitation trees and Grantor owned buildings and improvements located thereon; *provided, however*, that Grantee shall be responsible for and shall pay the cost of all repairs to the Tower Easement Premises, the Tower and any buildings and improvements owned by Grantee or Grantee's tenants, as well as repairs necessary for appurtenant uses of such Tower, buildings or improvements and all road maintenance and repair of the Utility and Access Easement Premises. However, in the event Grantor (or Grantor's invitees, employees, contractors, etc.) uses the road and such use causes damage to same, then Grantor shall be responsible for any repairs required to repair the Utility and Access Easement Premises.

5. Taxes. Grantee shall pay when due any and all personal property taxes assessed against the communication facilities located on the Tower Easement Premises to the extent such personal property taxes are invoiced directly to Grantee by the governmental authority with jurisdiction over the communication facilities located on the Tower Easement Premises. Grantor shall pay when due any and all property taxes and all other taxes, fees and assessments attributable to the Burdened Property and the improvements thereon. In addition, if Grantor's real property taxes on the Burdened Property shall increase due to the installation of Grantee's communication facilities on the Benefited Property, Grantee will pay to Grantor any difference in taxes directly attributable to said installation after receiving written request from Grantor to Grantee and providing documentation substantiating such increase from Grantor (such increase, the "**Grantor Tax Reimbursement**"). In addition, Grantee shall not have the obligation to pay or reimburse Grantor for the Grantor Tax Reimbursement if Grantor has not provided proof of such amount and request therefor within one (1) year of the date such amount is due and payable by Grantor. Grantor agrees to

defend, indemnify and hold harmless Grantee, its heirs, successors and assigns, from and against any and all claims, demands, causes of action, suits, proceedings, liabilities, damages, losses, costs and expenses, including attorneys' fees arising out of Grantor's failure to pay such taxes it is obligated to pay. Grantor shall provide written proof of payment of all real property taxes on the Burdened Property to Grantee no later than thirty (30) days after the dates any such payments are due.

6. Security Lien. Grantor consents to the granting by Grantee of a lien, security interest and mortgage in Grantee's interest in the Easement and all of Grantee's personal property and fixtures attached to the real property described herein, and furthermore consents to the exercise by any mortgagee of Grantee ("Lender") of its rights of foreclosure with respect to any such liens and security interests. Grantor hereby agrees to give Lender written notice of any breach or default of the terms of the Easement Agreement or any claim that Grantee has abandoned the Easements, within fifteen (15) days after the occurrence thereof, at such address as may be specified from time to time by Grantee or Lender. Grantor agrees that no default under this Agreement shall be deemed to have occurred unless notice of such default is given to Lender as provided herein. Lender shall have the right, for a period of ninety (90) days following receipt of notice from Grantor of a default, with the same effect as the Grantee, to cure or correct any such default whether the same shall consist of the failure to pay amounts due or the failure to perform, and Grantor agrees to accept such payment or performance on the part of the Lender as though the same had been made or performed by the Grantee.

7. Use and Access Restrictions. The uses and operation of the Burdened Property and any equipment or facilities thereon (the "**Burdened Property Uses**") shall not interfere electrically or with the communications systems on any Tower now existing or hereafter constructed on the Benefited Property. Notwithstanding anything in this Agreement to the contrary, if the Burdened Property Uses shall interfere with communications systems or equipment or the operation of any Tower located on the Benefited Property, Grantor shall upon reasonable written request immediately suspend its Burdened Property Uses causing the interference and take such further actions as Grantee deems reasonably necessary, at Grantor's expense, to eliminate or remedy such interference or otherwise rectify the situation to the reasonable satisfaction of Grantee. Grantor and Grantee shall use good faith efforts to resolve any interference issues.

8. Grantor's Cooperation. Grantor hereby authorizes Grantee and its employees, representatives, agents and consultants to prepare, execute, submit, file and present on behalf of Grantor building, permitting, zoning or land-use applications with the appropriate local, state and/or federal agencies necessary to obtain land use changes, special exceptions, zoning variances, conditional use permits, special use permits, administrative permits, construction permits, operation permits and/or building permits in connection with the use of the Benefited Property pursuant to this Agreement. Grantor understands that any such applications and/or the satisfaction of any requirements thereof may require Grantor's cooperation, which Grantor hereby agrees to provide, including signing any such necessary documentation and, if required, attendance at hearings in front of applicable local authorities.

9. Agent and Attorney-in-Fact. Grantee is hereby appointed Grantor's attorney-in-fact solely for the purposes outlined in this Agreement in the performance of the grants and obligations created by this Agreement, including but not limited to establishing Grantee's right and authority in this Agreement and to sign applications, documents, permits, or other documents required by local governmental authorities in connection with the use of the Benefited Property pursuant to this Agreement. The appointment of Grantee as Grantor's attorney-in-fact hereunder is fully revocable.

10. Ownership. The Tower shall at all times remain the property of Grantee. Grantee shall have the right to remove the Tower or any part thereof, at any time. Provided however, that Grantee's ownership and right to remove the Tower are subject to applicable state law liens and principles of abandonment.

11. Survey. If a survey has not already been prepared and attached as an exhibit to this Agreement, Grantor agrees to cooperate with Grantee in obtaining a survey of the Burdened Property and the Benefited Property, at Grantee's cost. Upon completion, such survey will be attached as an exhibit to this Agreement.

12. Amendment; Termination. Any amendment to this Agreement must be in writing and executed by Grantor and Grantee. Subject to Sections 3 and 22, and except as otherwise may be expressly set forth herein, this Agreement and the Easement may be abandoned or terminated solely by Grantee. Any such amendment, abandonment or termination shall be in writing, executed and acknowledged by Grantee, and duly recorded in the land records of the municipality where the Burdened Property is located.

13. Assignment. Grantee reserves the right to assign, transfer, mortgage or otherwise encumber the Tower and Grantee's rights in this Agreement without notice to or consent of Grantor. If Grantee assigns this Agreement: (a) such assignee agrees to assume all of Grantee's obligations hereunder; (b) Grantee may provide notice of such assignment to Grantor; and (c) except as otherwise set forth in Section 26 below, Grantee shall be fully released of any liability and responsibility under this Agreement. Grantor 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 24.

14. No Dedication for Public Use. The provisions hereof are not intended to and do not constitute a dedication for public use, and the rights herein created are private and for the benefit only of the parties hereto, the successors, assigns, tenants, subtenants, employees, invitees and licensees, and the guests and invitees of such tenants and subtenants.

15. Runs with the Land. This Agreement shall run with the land so as to bind the successors and assigns of the Burdened Property (including any future owners in fee or leasehold) and to benefit the successors and assigns of the Grantee, including, in each case, interests of tenants and subtenants and other users of the Burdened Property and the Benefited Property.

16. Representations, Warranties, and Additional Covenants.

(a) Grantor represents and warrants that it is the fee simple owner of the Burdened Property and the Easements granted herein, and that Grantee shall peaceably and quietly hold and enjoy the Easements without interference, hindrance, or obstruction by any party whatsoever.

(b) Unless the Easements already constitute separate tax parcels or tracts, Grantor shall not subdivide or cause to be separately subdivided or assessed by any governmental authority any of the Easements. If any such subdivision, creation of separate tax parcels or tracts, or separate assessment shall be desired by Grantee in its sole discretion, Grantor shall cooperate with Grantee in obtaining any approvals and effectuating Grantee's rights under this Section.

(c) Grantor shall not create, grant, or permit any claim, lien, liability, encumbrance, easement charge or restriction on title to the Easements that would adversely affect Grantee's use and enjoyment of the Easements, or the rights granted under this Agreement.

(d) Grantor hereby agrees to indemnify, defend and hold harmless Grantee Parties from and against all losses, claims, damages and liabilities incurred by such parties arising from or relating to: (1) to the extent the laws of the state in which the Burdened Property is located do not exclude easement holders from liability under federal and state environmental, health and safety laws, any violation or responsibility under such laws, to the extent that any such violation or responsibility arises solely from the actions or

inactions of Grantor; and (2) any breach by Grantor of any of its representations, warranties, or covenants under this Agreement.

17. Entire Agreement. The unenforceability of any provision hereof shall not affect the remaining provisions of this Agreement, but rather such provision shall be severed, and the remainder of this Agreement shall remain in full force and effect.

18. Compliance with Law; No Waiver. This Agreement and the rights and obligations created hereunder are subject to, and governed by the laws, decisions, rules and regulations of any federal, state, or local regulatory authority charged with the administration of the transactions contemplated hereby. Waiver of a breach of any provision hereof under any circumstances will not constitute a waiver of any subsequent breach of such provision, or of a breach of any other provision of this Agreement.

19. Attorneys' Fees. In the event that either Grantor or Grantee should bring suit for the recovery of any sum due under this Agreement, or for enforcement of this Agreement, or because of the breach of any provision of this Agreement or for any other relief against the other, then all costs and expenses, including reasonable attorneys' fees, incurred by the prevailing party therein shall be paid by the other party, which obligation on the part of the other party shall be deemed to have accrued on the date of the commencement of such action and shall be enforceable whether or not the action is prosecuted to judgment.

20. Governing Law. This Agreement shall be construed and enforced in accordance with the laws of the state or commonwealth in which the Burdened Property is located.

21. Counterparts. This Agreement may be executed in counterparts with the same effect as if both parties hereto had executed the same document. Both counterparts shall be construed together and shall constitute a single document. Delivery of a copy of this Agreement bearing an original signature by facsimile transmission (whether directly from one facsimile device to another by means of a dial-up connection or whether mediated by the worldwide web), by electronic mail in "portable document format" (".pdf") form, or by any other electronic means intended to preserve the original graphic and pictorial appearance of a document, will have the same effect as physical delivery of the paper document bearing the original signature. For the purposes of this Section, "original signature" means or refers to a signature that has not been mechanically or electronically reproduced.

22. Rule against Perpetuities. If the Benefited Property is located in a state or commonwealth where the grant of the perpetual Easements hereunder would or could violate the rule against perpetuities or any similar law limiting or restricting the duration of real property interests and the Easements specifically, then the Easements shall be effective only from the date hereof until one day less than twenty-one (21) years following the death of the last surviving person born in the state or commonwealth where the Benefited Property is located in the month this Agreement is recorded. If the provisions of this Section become or are applicable, Grantor agrees to reasonably cooperate with Grantee to execute a new grant of the Easements on substantially the same terms as this Agreement immediately upon termination of this Agreement.

23. Restrictive Covenants. Grantor acknowledges and agrees that the Easements and the rights granted herein to Grantee are integral to the monetary consideration paid by Grantee to Grantor, and that Grantee would not have paid such monetary consideration to Grantor if Grantor were to create circumstances that would compete with the rights of Grantee and its intended business operations. Accordingly, Grantor agrees that, for so long as this Agreement is in effect, Grantor shall not:

(a) permit any lessee, licensee, or other party granted any rights in or to the Burdened Property, to grant a lease, license, easement, management agreement, or any other property or contractual interest to any third party for the ownership, operation, leasing, licensing, marketing, or management of wireless communications or broadcast towers or structures or fiber optic backhaul services;

(b) transfer the fee simple or leasehold title interest in the Burdened Property, or the rights to enforce or manage Grantor's rights and the obligation to perform Grantor's covenants hereunder, to any third party whose primary business is owning, operating, leasing, licensing, marketing, or managing wireless communications or broadcast towers or structures, providing fiber optic backhaul services, or purchasing and aggregating property and contractual interests under owners, operators, or managers of wireless communications, broadcast towers or fiber optic backhaul services: or

(c) construct or permit the construction of any wireless communications or broadcast towers or structures on the Burdened Property (other than any construction by Grantee on the Benefited Property).

24. Right of First Refusal. In the event that Grantor 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 Grantor if Grantor is an entity, which interest underlies or affects any or all of the Benefited Property (the "**ROFR Property**") to any third party, Grantor shall offer Grantee a right of first refusal to purchase the Benefited Property (or such larger portion of Grantor's property that encompasses the Benefited Property, if applicable). In accordance with Section 25 below, Grantor shall provide a copy of any offer to purchase, or any executed purchase agreement or letter of intent ("**Offer**"), to Grantee which copy shall include, at a minimum, the purchase price, proposed closing date, and financing terms ("**Minimum Terms**"). Within thirty (30) days of receipt of such Offer, Grantee shall provide written notice to Grantor of Grantee's election to purchase the ROFR Property on the same Minimum Terms or more beneficial terms to Grantor; provided however, Grantee shall not be responsible for payment of any broker fees associated with an exercise of Grantee's rights to acquire the ROFR Property. In such event, Grantor agrees to sell the ROFR Property to Grantee subject to Grantee's payment of the purchase price and compliance with a purchase and sale agreement to be negotiated in good faith between Grantor and Grantee. If Grantee provides written notice that it does not elect to exercise its rights of first refusal to purchase the ROFR Property, or if Grantee does not provide notice of its election within the thirty (30) day period, Grantee 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 Grantee's continuing right of first refusal hereunder), and Grantor shall be permitted to consummate the sale of the ROFR Property in accordance with the strict terms of the Offer ("**Permitted Sale**"). If Grantor does not consummate the Permitted Sale within ninety (90) days of the date of Grantee's waiver of its rights of first refusal, such Offer shall be deemed to have lapsed.

25. 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 Grantor:

Joseph F. Clark
Wayne A. Clark
Douglas N. Clark &
Janice M. Clark
1591 Clark Bagby Rd
Greensburg, KY 42743

If to Grantee:

VB BTS II, LLC
750 Park of Commerce Drive, Suite 200
Boca Raton, FL 33487
Ref: US-KY-5178
Attn: VP of Asset Management

With a copy to: General Counsel

26. Hazardous Materials. Grantee shall not use, nor permit the use, of the Benefited Property, nor any portion of the Burdened Property, for the generation, transportation, treatment, handling, storage, or disposal of any Hazardous Materials (as defined below), and Grantee shall, at all times, further keep and maintain the Benefited Property in compliance with all applicable environmental laws. Further, Grantee shall promptly, and in full compliance with all applicable environmental laws, clean up all Hazardous Materials introduced, if any, by Grantee or Grantee's agents, employees or representatives upon discovery, and shall provide Grantor, and appropriate governmental authorities, with prompt notice, upon Grantee's obtaining knowledge, of the release of any Hazardous Materials, or the threat of release of same, upon the Benefited Property or any portion of the Burdened Property. Grantee shall notify Grantor of any and all claims, or potential claims, of which Grantee may be aware, of any third party relating to any loss or injury from Hazardous Materials in, from, or on the Benefited Property, and Grantee shall forthwith deliver to Grantor copies of any documents relating to any governmental proceeding relating to Hazardous Materials.

The foregoing notwithstanding, Grantee agrees, unconditionally and absolutely, to defend, indemnify, and hold harmless the Grantor, and its employees, and agents from and against any and all damages, diminution in value, penalties, fines, losses, liabilities, cause of action, suits, claims, demands, costs and expenses (including reasonable out of pocket legal fees and costs relating to any court or administrative proceeding, and the cost and related expense of any cleanup) of any nature, directly or indirectly, resulting from Grantee's (or Grantee's agents, employees, or representatives) violation of any environmental law, or of the provisions of this Section 26. For the purposes of this Agreement, the term "**Hazardous Materials**" shall mean asbestos or any hazardous substance, waste or material as defined in any federal, state or local environmental or safety law or regulation including, without limitation, the Resource Conservation and Recovery Act of 1976, as amended, and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended.

Grantee's duty to indemnify and liability hereunder shall survive and remain in full force and effect, even subsequent to any amendment, abandonment, termination or assignment by Grantee to any third party and notwithstanding Section 13 hereinabove.

27. Memorandum of Easement Agreement. Grantor and Grantee agree to execute the Memorandum of Easement Agreement attached hereto as **Exhibit D** that may be recorded at Grantee's sole discretion.

28. Authority to Enter into Agreement. Grantee and Grantor each represent and warrant that they have full power and authority to execute, deliver, and perform their respective obligations under this Agreement.

**THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK, SIGNATURES
BEGIN ON NEXT PAGE**

(Grantor Signature Page to Easement)

IN WITNESS WHEREOF, the undersigned have executed this Agreement as of the date first written above.

Witnesses:

[Signature]
Name: Russell Gaff

[Signature]
Name: Brynn Turcotte

Grantor:
[Signature]
Joseph F. Clark

Date: 4-20-23

[Signature]
Wayne A. Clark

Date: 4-20-23

[Signature]
Douglas N. Clark

Date: 4-20-23

Janice M. Clark

Date: [Signature]
4-20-23

STATE OF Kentucky

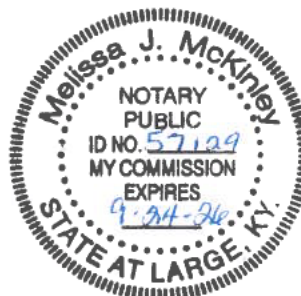
COUNTY OF Green

The foregoing instrument was acknowledged before me this April 20
20 23 by Joseph F. Clark, Wayne A. Clark, Douglas N. Clark and Janice M. Clark, his wife.

[Signature]
Notary Public

Print Name: Melissa McKinley

My Commission Expires: 9-24-26



(Grantee Signature Page to Easement)

Witnesses:

Grantee:

[Signature]
Name: Christopher Anton
[Signature]
Name: Alex Greenberg

VB BTS II, LLC
a Delaware limited liability company
By: [Signature]
Name: Ariel Rubin
Title: Vice President of Tower Development
Date: 6/1/23

STATE OF FLORIDA

LEGAL ^{DS} 18

COUNTY OF PALM BEACH

The foregoing instrument was acknowledged before me this June 1st, 2023
by Ariel Rubin (name of signatory), VP TOWER DEV
(title of signatory) of VB BTS II, LLC, a Delaware limited liability company, on behalf of the company.

Jeanne M Bruning
Notary Public

Print Name: Jeanne M Bruning

My Commission Expires: 4/20/24



EXHIBIT A

LEGAL DESCRIPTION OF BURDENED PROPERTY

(may be updated by Grantee upon receipt of legal descriptions from surveyor and/or title)

Situated in Green County, Kentucky:

Tract #2 consisting of 71.5321 acres as per Plat of record in Plat Cabinet 1, Page 12, in the Green County Court Clerk's Office, Kentucky,

Parcel ID#: 55.09-01

This being the same property conveyed to Joseph F. Clark, a single person, Wayne A. Clark, a single person, and Doug Clark and Janice Clark, husband and wife, one-third undivided interest to each of them from Joseph F. Clark, single, and Wayne A. Clark, single, in a deed dated January 11, 2005 and recorded January 12, 2005, in Book 210 Page 26, of the Green County Kentucky Records.

EXHIBIT B

CONSIDERATION

Initial Option Period: [REDACTED]

Final Option Period: [REDACTED]

Easements: [REDACTED]

EXHIBIT C

DESCRIPTION OF LOCATION OF EXCLUSIVE TOWER EASEMENT, AND EXCLUSIVE ACCESS AND UTILITY EASEMENT

(may be replaced by Grantee with legal descriptions from survey and/or title)

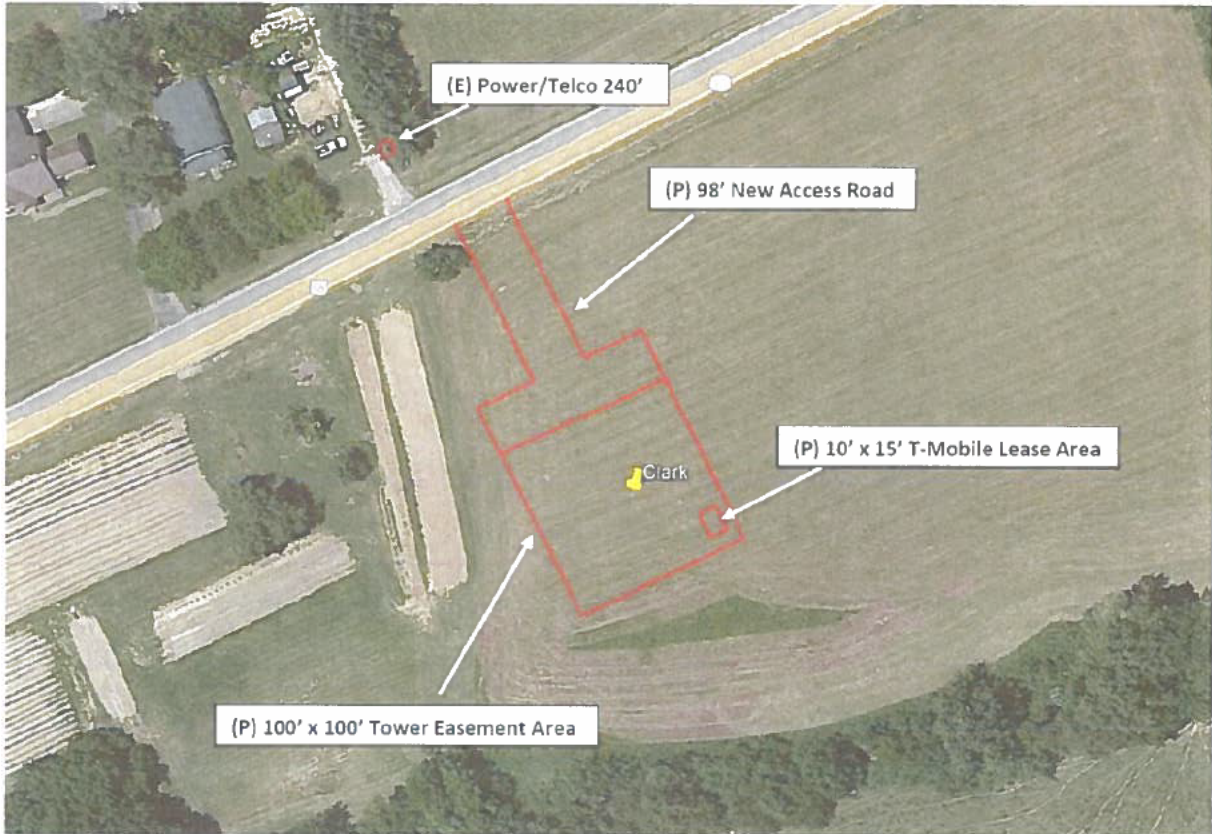


EXHIBIT D

MEMORANDUM OF EASEMENT AGREEMENT

(Above 3" Space for Recorder's Use Only)

Prepared by and upon recording return to:

VB BTS II, LLC
750 Park of Commerce Drive, Suite 200
Boca Raton, FL 33487
Attn: Daniel Marinberg, Esq.

Site Name: Matney Rd
Site Number: US-KY-5178
Commitment #: VTB-143588-C

MEMORANDUM OF EASEMENT AGREEMENT

This Memorandum of Easement Agreement ("Memorandum") evidences an Option and Easement Agreement (the "Easement Agreement") dated the 1st day of JUNE, 2023 that was recorded on _____, 20____ in the Official Records, _____ of Green County, by and between **Joseph F. Clark**, a single man, as to a 1/3 undivided fee simple interest, **Wayne A. Clark**, a single man, as to a 1/3 undivided fee simple interest and **Douglas N. Clark** and his wife, **Janice M. Clark**, as to a 1/3 undivided fee simple interest (collectively, the "Grantor"), whose address is 1591 Clark Bagby Rd, Greensburg, KY 42743, and **VB BTS II, LLC**, a Delaware limited liability company, whose mailing address is 750 Park of Commerce Drive, Suite 200, Boca Raton, FL 33487 ("Grantee").

Grantor is the fee owner of the Burdened Property more particularly described in **Exhibit 1**, attached hereto and incorporated herein. Grantee has exercised the Option set forth in the Easement Agreement whereby Grantee accepted from Grantor the Benefitted Property as shown on **Exhibit 2**, attached hereto and incorporated herein.

Any term not defined herein shall have the meaning ascribed to it in the Easement Agreement.

Grantor hereby ratifies, restates and confirms the Easement Agreement. The Commencement Date of the Easement Agreement is _____, 20____.

**THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK,
SIGNATURES BEGIN ON NEXT PAGE**

(Grantor Signature Page to Memorandum of Easement Agreement)

IN WITNESS WHEREOF, the undersigned have executed this Memorandum of Easement Agreement as of the date first written above.

Witnesses:

[Signature]
Name: Russell Goff

[Signature]
Name: Brynn Turcotte

Grantor:

[Signature]
Joseph F. Clark

Date: 4-20-23

[Signature]
Wayne A. Clark

Date: 4-20-23

[Signature]
Douglas N. Clark

Date: 4-20-23

[Signature]
Janice M. Clark

Date: 4-20-23

STATE OF Kentucky

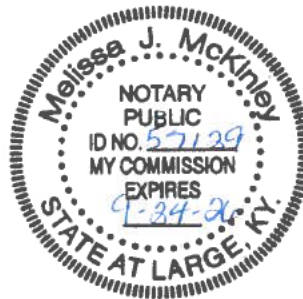
COUNTY OF Green

The foregoing instrument was acknowledged before me this April 2023 by Joseph F. Clark, Wayne A. Clark, Douglas N. Clark and Janice M. Clark, his wife.

[Signature]
Notary Public

Print Name: Melissa McKinley

My Commission Expires: 9-24-26



(Grantee Signature Page to Memorandum of Easement Agreement)

Witnesses:

[Signature]
Name: Christopher Antoin
[Signature]
Name: Alex Greenberg

Grantee:

VB BTS II, LLC
a Delaware limited liability company
By: [Signature]
Name: Ariel Rubin
Title: Vice President of Tower Development
Date: 6/1/23

STATE OF FLORIDA

LEGAL ^{DS} 19

COUNTY OF PALM BEACH

The foregoing instrument was acknowledged before me this June 1st, 2023
by Ariel Rubin (name of signatory), VP TOWER DEV
(title of signatory) of VB BTS II, LLC, a Delaware limited liability company, on behalf of the company.

[Signature]
Notary Public

Print Name: Jeanne M Bruning

My Commission Expires: 4/20/24



EXHIBIT 1

LEGAL DESCRIPTION OF BURDENED PROPERTY

(may be updated by Grantee upon receipt of legal description from surveyor and/or title)

Situated in Green County, Kentucky:

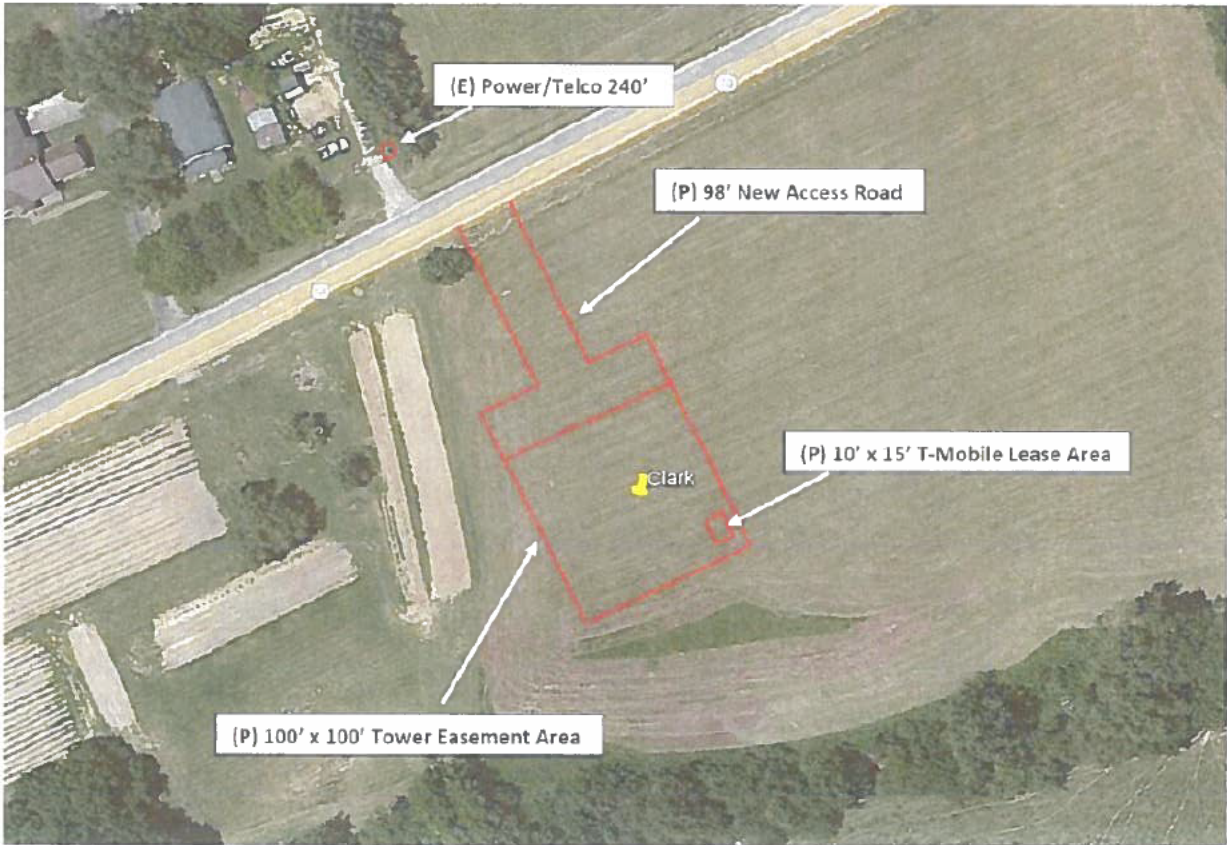
Tract #2 consisting of 71.5321 acres as per Plat of record in Plat Cabinet 1, Page 12, in the Green County Court Clerk's Office, Kentucky.

Parcel ID#: 55.09-01

This being the same property conveyed to Joseph F. Clark, a single person, Wayne A. Clark, a single person, and Doug Clark and Janice Clark, husband and wife, one-third undivided interest to each of them from Joseph F. Clark, single, and Wayne A. Clark, single, in a deed dated January 11, 2005 and recorded January 12, 2005, in Book 210 Page 26, of the Green County Kentucky Records.

EXHIBIT 2

LEGAL DESCRIPTION OF BENEFITTED PROPERTY
(may be updated by Grantee upon receipt of completed legal description)



TAB #5

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.




Jeffrey W. Bullock, Secretary of State

6844426 8300

SR# 20233880630

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

Authentication: 204507112

Date: 11-02-23

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

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

TAB #6

PROJECT SUMMARY

SITE NAME: MATNEY RD
SITE ADDRESS: ±TBD EDMONTON RD
 GREENSBURG, KY 42743

COUNTY: GREEN
JURISDICTION: GREEN COUNTY
LAND USE: AGRICULTURAL
PARCEL ID: 55.09-01

SITE COORDINATES: 1A
LATITUDE: 37° 09' 23.01" N (NAD83)
LATITUDE: 37.156392°
LONGITUDE: 85° 32' 25.54" W (NAD83)
LONGITUDE: -85.540427°
ELEVATION: 785.5' AMSL (NAVD88)

T-MOBILE SITE NAME: MATNEY RD
T-MOBILE SITE ID: 9LV1156A

PROPERTY OWNER: JOSEPH & WAYNE CLARK
 1591 CLARK BAGBY RD
 GREENSBURG, KY 42743

PROPERTY OWNER CONTACT: JOSEPH CLARK
 (270) 405-4107

TOWER OWNER: VB BTS, LLC
 750 PARK OF COMMERCE DR., SUITE 200
 BOCA RATON, FL 33487

TOWER OWNER CONTACT: PAULETTE HYDER
 (214) 669-7978

STRUCTURE TYPE: SELF SUPPORT TOWER
TOWER HEIGHT: 300'-0"
ENVIRONMENTAL REQ. : N/A
OCCUPANCY : UNMANNED
SITE TYPE : RAWLAND

POWER COMPANY : LG&E KU
CONTACT : TBD
PHONE : (502) 627-3313

COMMUNICATIONS: KINETIC
PHONE : (833) 492-4064

FIRE DEPARTMENT : GREEN COUNTY FIRE & RESCUE
PHONE : (270) 932-4999

POLICE DEPARTMENT : GREEN COUNTY SHERIFF'S OFFICE
PHONE : (270) 932-5641

DIRECTIONS FROM GREEN COUNTY DISTRICT COURTHOUSE:
 HEAD SOUTHWEST ON S 1ST ST TOWARD 1ST ALLEY S (302 FT), TURN LEFT ONTO 1ST ALLEY S (423 FT), TURN RIGHT ONTO US-68 W / KY-70 / KY-61 / S MAIN ST (9.2 MI). ARRIVE AT US-68 W / KY-70 / EDMONTON RD ON THE LEFT. THE LAST INTERSECTION BEFORE YOUR DESTINATION IS KY-487 / MELL RD. IF YOU REACH MATNEY RD, YOU'VE GONE TOO FAR.

STRUCTURAL REVIEW

CONTRACTOR SHALL ATTAIN AND VERIFY STRUCTURAL EVALUATION REPORT OF EXISTING TOWER FOR EXACT PLACEMENT OF ANTENNAS AND COAX CABLES. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE STRUCTURAL EVALUATION REPORT AND NOTIFY VERIZON'S CONSTRUCTION MANAGER IN THE CASE OF ANY DISCREPANCIES. ANY STRUCTURAL MODIFICATION, IF REQUIRED, SHALL BE DONE PRIOR TO THE INSTALLATION OF ANTENNAS.



VERTICAL BRIDGE SITE NUMBER: US-KY-5178
VERTICAL BRIDGE SITE NAME: MATNEY RD
TOWER TYPE: SELF SUPPORT
TOWER HEIGHT: 300.0'

T-MOBILE SITE ID: 9LV1156A
T-MOBILE SITE NAME: MATNEY RD
T-MOBILE PROJECT TYPE: NEW TOWER
T-MOBILE CONFIGURATION: COVERAGE

APPLICABLE CODES

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

2018 KENTUCKY BUILDING CODE (2015 INTERNATIONAL BUILDING CODE)
 2012 INTERNATIONAL ENERGY CONSERVATION CODE (COMMERCIAL)
 2009 INTERNATIONAL ENERGY CONSERVATION CODE (RESIDENTIAL)
 2012 INTERNATIONAL FIRE CODE
 2015 INTERNATIONAL MECHANICAL CODE
 2015 INTERNATIONAL RESIDENTIAL CODE

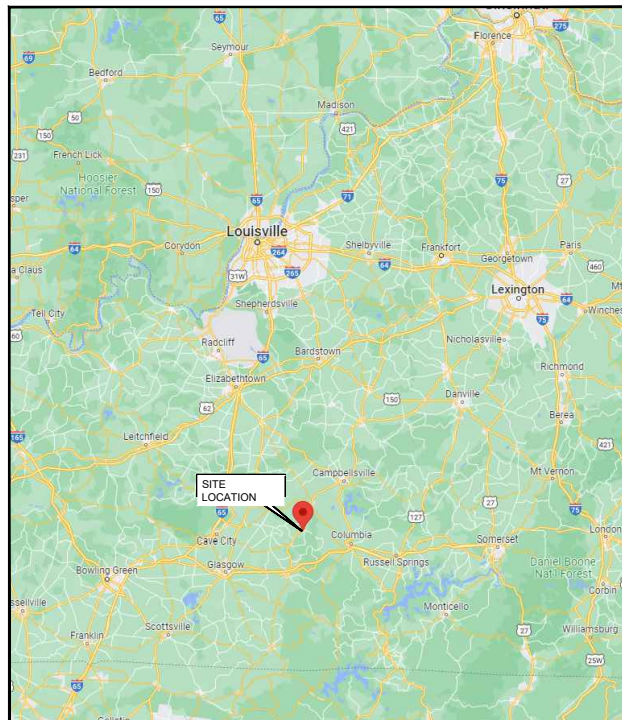
ACCESSIBILITY REQUIREMENTS:
 FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH THE 2015 IBC BUILDING CODE.

SCOPE OF WORK

- INSTALL A NEW 300'-0" SELF SUPPORT TOWER WITH 10'-0" LIGHTNING ROD (OVERALL 310'-0")
- INSTALL A NEW 75' X 75' CHAINLINK FENCED COMPOUND WITHIN A 100' X 100' LEASE AREA
- INSTALL A NEW UTILITY H-FRAME WITHIN THE NEW FENCED COMPOUND
- INSTALL A NEW TOWER, COMPOUND AND EQUIPMENT GROUNDING SYSTEM
- INSTALL NEW ANTENNAS, LINES, COAX, GPS AND RADIO EQUIPMENT
- INSTALL NEW UNDERGROUND POWER AND FIBER CONDUITS WITHIN THE DESIGNATED UTILITY EASEMENT TO NEW UTILITY H-FRAME
- INSTALL A NEW 11'-6"X19'-6" CONCRETE EQUIPMENT PAD

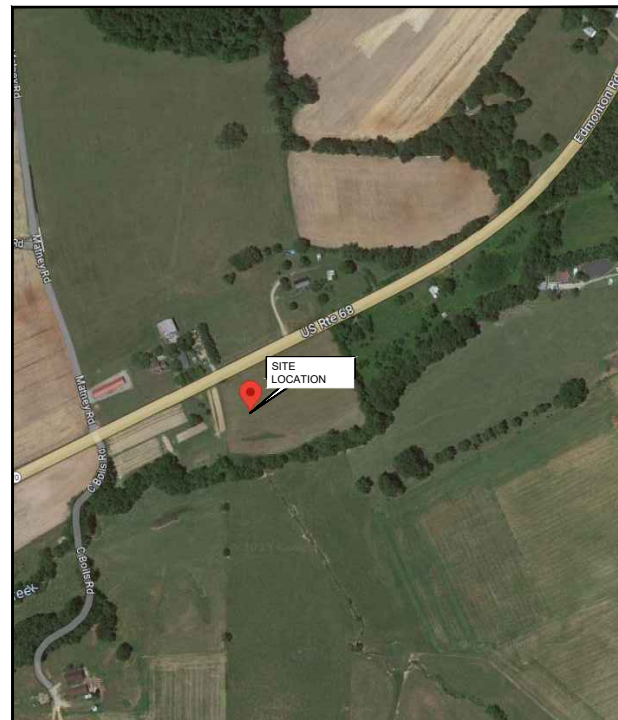
ALL WORK MUST BE DONE IN ACCORDANCE TO THE DRAWINGS.

VICINITY MAP



NOT TO SCALE

LOCATION MAP

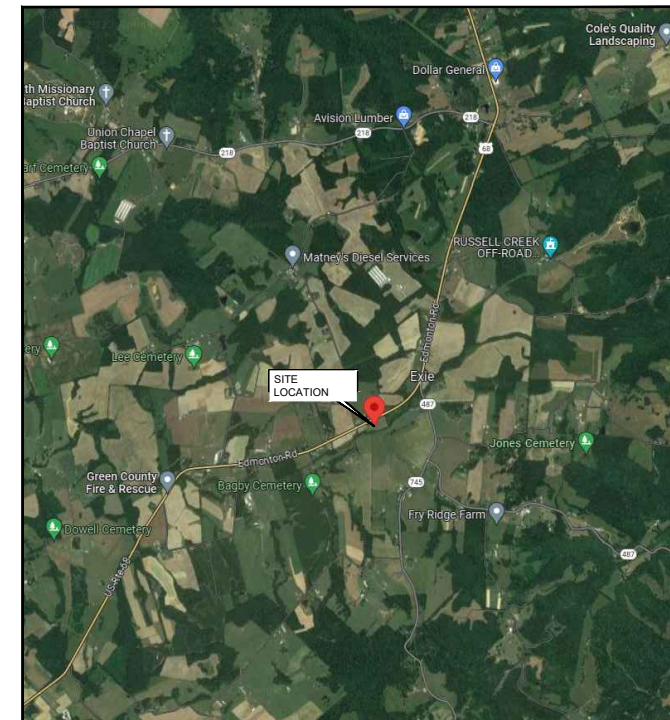


NOT TO SCALE

SHEET INDEX

NO.	DESCRIPTION
T1	TITLE SHEET
S1	SURVEY - COVER SHEET
S2	SURVEY - OVERVIEW MAP
S3	SURVEY - SITE SURVEY
S4	SURVEY - SITE SURVEY
Z1	COUNTY TOWER MAP
Z2	OVERALL SITE PLAN WITH AERIAL OVERLAY
Z3	OVERALL SITE PLAN WITHOUT AERIAL OVERLAY
Z4	SITE PLAN
Z5	EROSION CONTROL SITE PLAN
Z6	DIMENSION SITE PLAN
Z7	TOWER ELEVATION
Z8	SITE DETAILS
Z9	SITE DETAILS

AERIAL MAP



NOT TO SCALE

CALL 811
1 (800) 752-6007

www.kentucky811.com
 CONTRACTOR TO CALL KENTUCKY ONE-CALL SYSTEMS AT LEAST (2) FULL WORKING DAYS PRIOR TO DIGGING.

SHEET SCALE FACTOR:

PLOT SIZE:
 11" x 17": TO SCALE

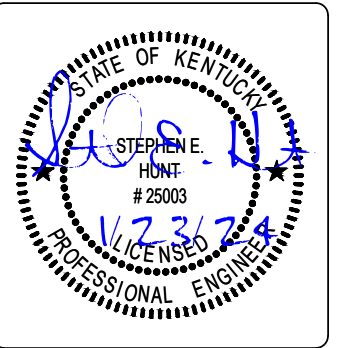


1961 NORTHPOINT BLVD.
 SUITE 130
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 FAX : 423-843-9509

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REVISIONS			
#	DATE	BY	DESCRIPTION
0	01/23/24	MJB	ZONING ISSUE
A	07/28/23	MJB	ZONING ISSUE



SITE NAME : MATNEY RD

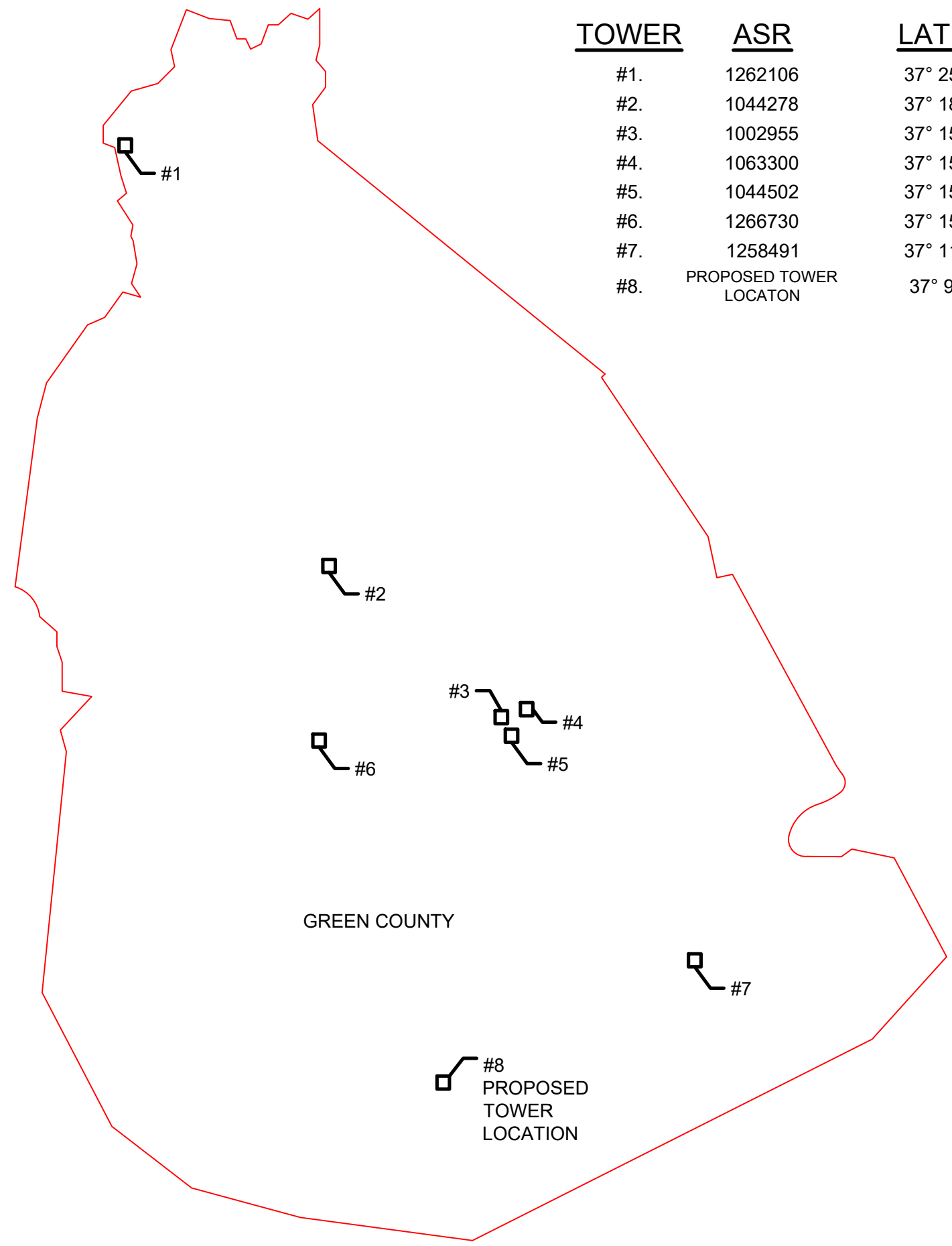
SITE NUMBER : US-KY-5178

SITE ADDRESS : ±TBD EDMONTON RD
 GREENSBURG, KY 42743

SITE TYPE: RAWLAND

SHEET TITLE : TITLE SHEET

DRAWING # :	REVISION :
T1	0



<u>TOWER</u>	<u>ASR</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
#1.	1262106	37° 25' 41.00" N	85° 39' 31.80" W
#2.	1044278	37° 18' 20.10" N	85° 35' 0.60" W
#3.	1002955	37° 15' 22.00" N	85° 31' 12.00" W
#4.	1063300	37° 15' 34.00" N	85° 30' 57.00" W
#5.	1044502	37° 15' 16.20" N	85° 31' 9.90" W
#6.	1266730	37° 15' 19.80" N	85° 35' 11.90" W
#7.	1258491	37° 11' 24.90" N	85° 26' 58.60" W
#8.	PROPOSED TOWER LOCATON	37° 9' 23.01" N	85° 32' 25.54" W

TOWER OWNERS

CELLCO PARTNERSHIP
 TENNESSEE GAS COMPANY LLC
 GLOBAL TOWER, LLC. THROUGH AMERICAN TOWERS, LLC
 FIRST CORBIN REALTY, LLC
 EAST KENTUCKY POWER COOPERATIVE, INC
 CELLCO PARTNERSHIP
 CELLCO PARTNERSHIP
 VB BTS II, LLC

TeleCAD
Wireless

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FOR REFERENCE



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SITE NUMBER :
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GREENSBURG, KY 42743

SITE TYPE:
RAWLAND

SHEET TITLE :
COUNTY TOWER MAP

DRAWING # :	REVISION :
Z1	0



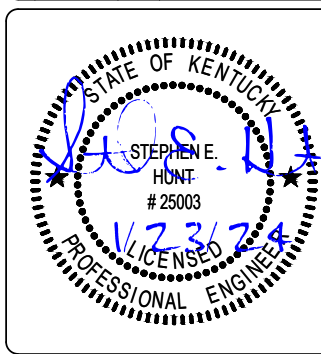
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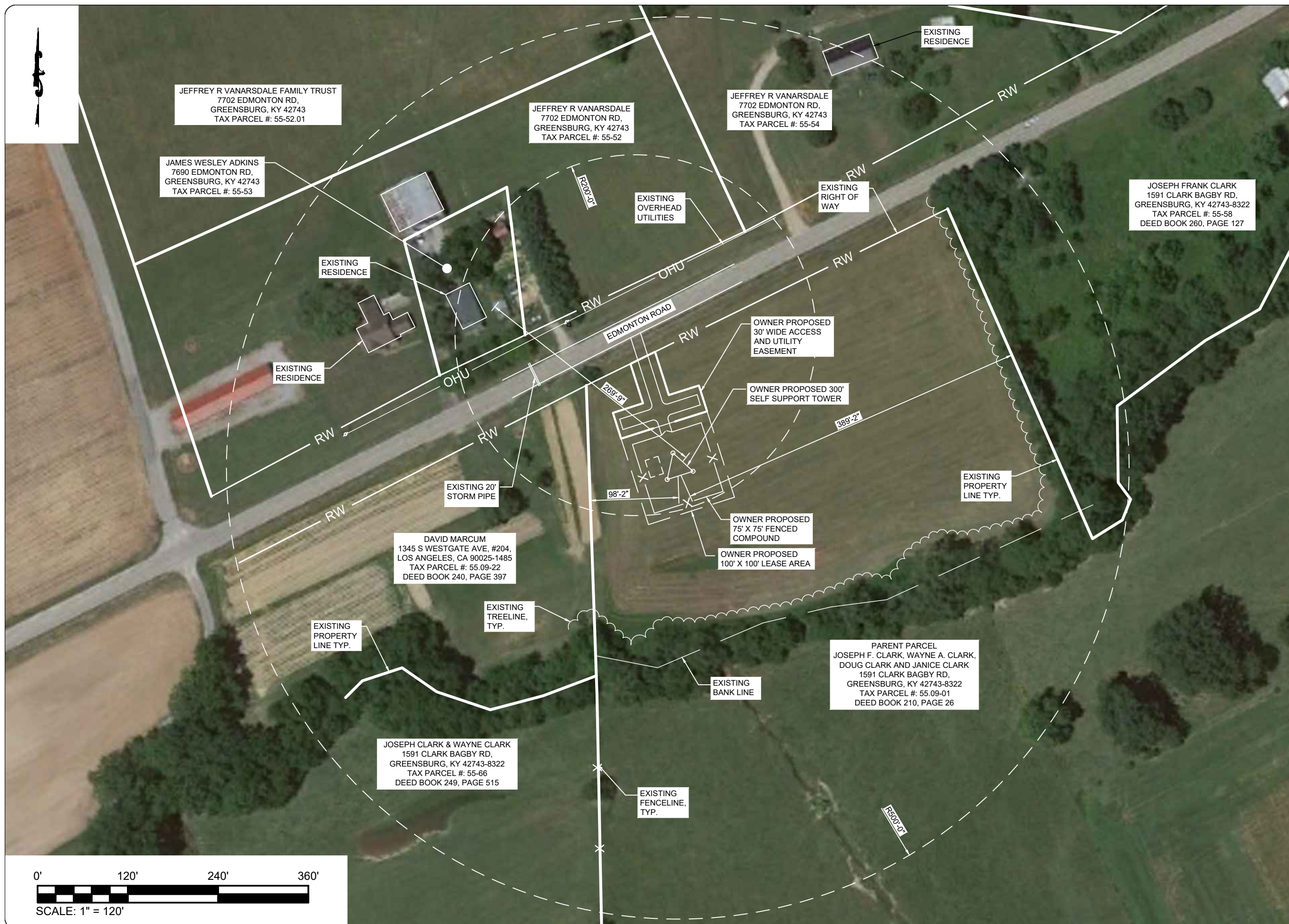
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US-KY-5178

SITE ADDRESS :
±TBD EDMONTON RD
GREENSBURG, KY 42743

SITE TYPE:
RAWLAND

SHEET TITLE :
OVERALL SITE LAYOUT
WITH AERIAL OVERLAY

DRAWING # :	REVISION :
Z2	0





JEFFREY R VANARSDALE FAMILY TRUST
7702 EDMONTON RD,
GREENSBURG, KY 42743
TAX PARCEL #: 55-52.01

JAMES WESLEY ADKINS
7690 EDMONTON RD,
GREENSBURG, KY 42743
TAX PARCEL #: 55-53

JEFFREY R VANARSDALE
7702 EDMONTON RD,
GREENSBURG, KY 42743
TAX PARCEL #: 55-52

JEFFREY R VANARSDALE
7702 EDMONTON RD,
GREENSBURG, KY 42743
TAX PARCEL #: 55-54

JOSEPH FRANK CLARK
1591 CLARK BAGBY RD,
GREENSBURG, KY 42743-8322
TAX PARCEL #: 55-58
DEED BOOK 260, PAGE 127

DAVID MARCUM
1345 S WESTGATE AVE, #204,
LOS ANGELES, CA 90025-1485
TAX PARCEL #: 55.09-22
DEED BOOK 240, PAGE 397

JOSEPH CLARK & WAYNE CLARK
1591 CLARK BAGBY RD,
GREENSBURG, KY 42743-8322
TAX PARCEL #: 55-66
DEED BOOK 249, PAGE 515

PARENT PARCEL
JOSEPH F. CLARK, WAYNE A. CLARK,
DOUG CLARK AND JANICE CLARK
1591 CLARK BAGBY RD,
GREENSBURG, KY 42743-8322
TAX PARCEL #: 55.09-01
DEED BOOK 210, PAGE 26

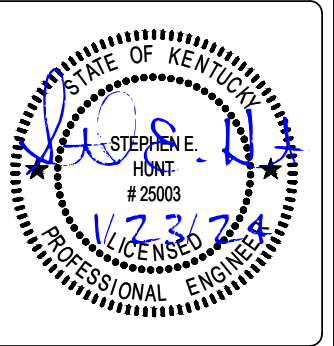


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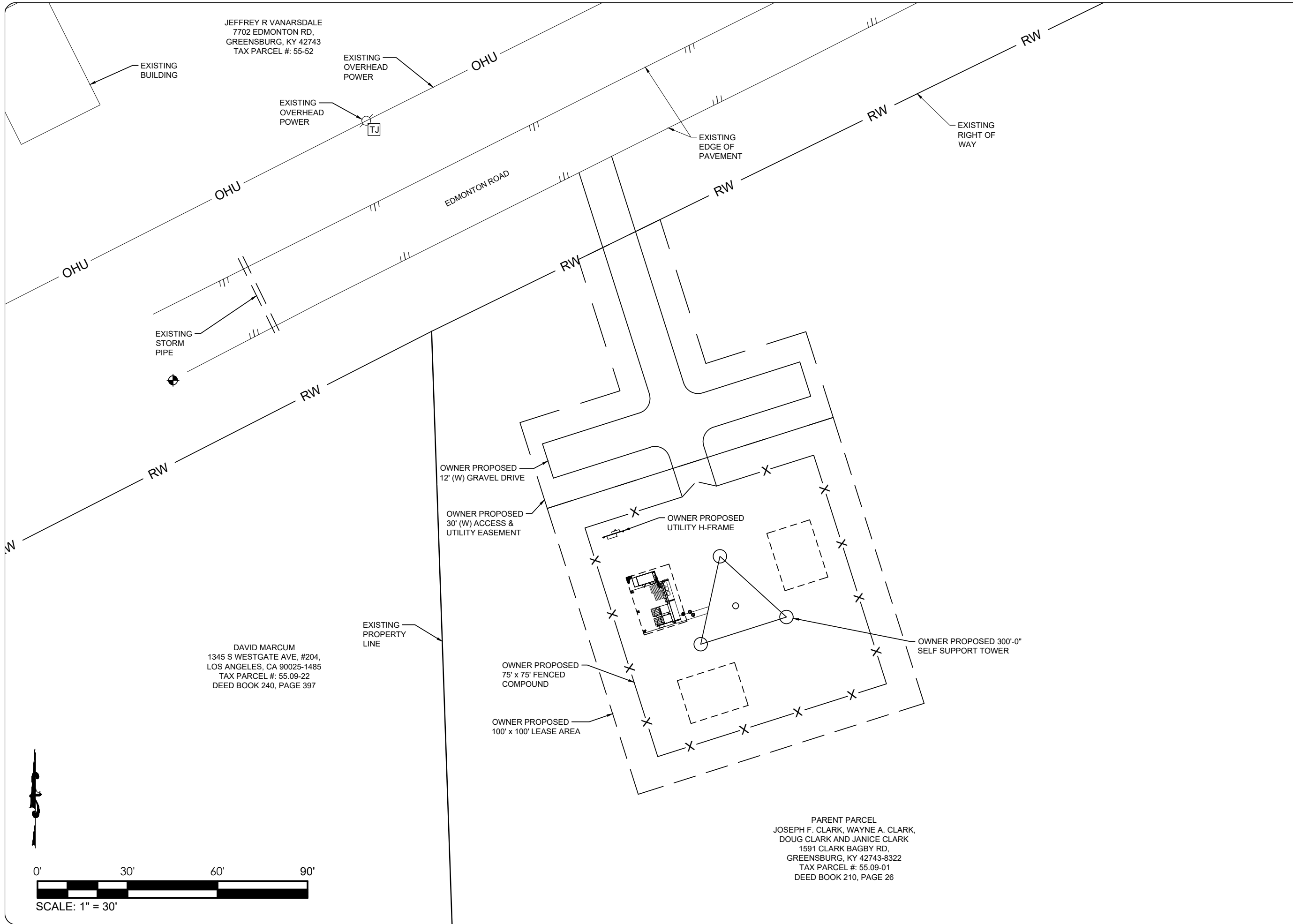
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US-KY-5178

SITE ADDRESS :
± TBD EDMONTON RD
GREENSBURG, KY 42743

SITE TYPE:
RAWLAND

SHEET TITLE :
OVERALL SITE LAYOUT
WITHOUT AERIAL OVERLAY

DRAWING # :	REVISION :
Z3	0



JEFFREY R VANARSDALE
7702 EDMONTON RD,
GREENSBURG, KY 42743
TAX PARCEL #: 55-52

EXISTING BUILDING

EXISTING OVERHEAD POWER

EXISTING OVERHEAD POWER

EXISTING EDGE OF PAVEMENT

EXISTING RIGHT OF WAY

EXISTING STORM PIPE

DAVID MARCUM
1345 S WESTGATE AVE, #204,
LOS ANGELES, CA 90025-1485
TAX PARCEL #: 55.09-22
DEED BOOK 240, PAGE 397

EXISTING PROPERTY LINE

OWNER PROPOSED 12' (W) GRAVEL DRIVE

OWNER PROPOSED 30' (W) ACCESS & UTILITY EASEMENT

OWNER PROPOSED UTILITY H-FRAME

OWNER PROPOSED 300'-0" SELF SUPPORT TOWER

OWNER PROPOSED 75' x 75' FENCED COMPOUND

OWNER PROPOSED 100' x 100' LEASE AREA

PARENT PARCEL
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DOUG CLARK AND JANICE CLARK
1591 CLARK BAGBY RD,
GREENSBURG, KY 42743-8322
TAX PARCEL #: 55.09-01
DEED BOOK 210, PAGE 26

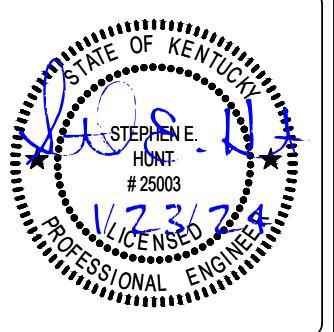


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MATNEY RD

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US-KY-5178

SITE ADDRESS :
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GREENSBURG, KY 42743

SITE TYPE:
RAWLAND

SHEET TITLE :
SITE PLAN

DRAWING # :	REVISION :
Z4	0

JEFFREY R VANARSDALE
7702 EDMONTON RD,
GREENSBURG, KY 42743
TAX PARCEL #: 55-52

EXISTING BUILDING

EXISTING OVERHEAD POWER

EXISTING OVERHEAD POWER

EXISTING EDGE OF PAVEMENT

EXISTING RIGHT OF WAY

EXISTING STORM PIPE

EDMONTON ROAD

DAVID MARCUM
1345 S WESTGATE AVE, #204,
LOS ANGELES, CA 90025-1485
TAX PARCEL #: 55.09-22
DEED BOOK 240, PAGE 397

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1591 CLARK BAGBY RD,
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TAX PARCEL #: 55.09-01
DEED BOOK 210, PAGE 26

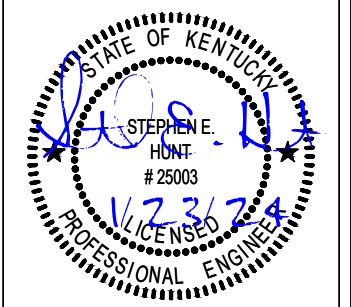


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US-KY-5178

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GREENSBURG, KY 42743

SITE TYPE:
RAWLAND

SHEET TITLE :
EROSION CONTROL SITE PLAN

DRAWING # :	REVISION :
Z5	0





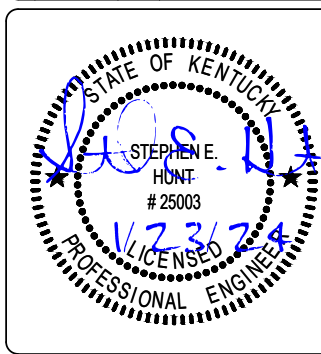
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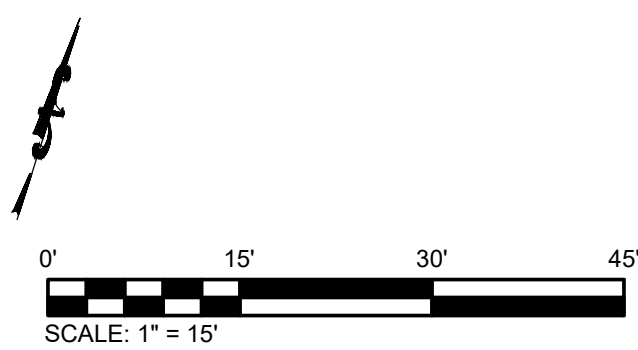
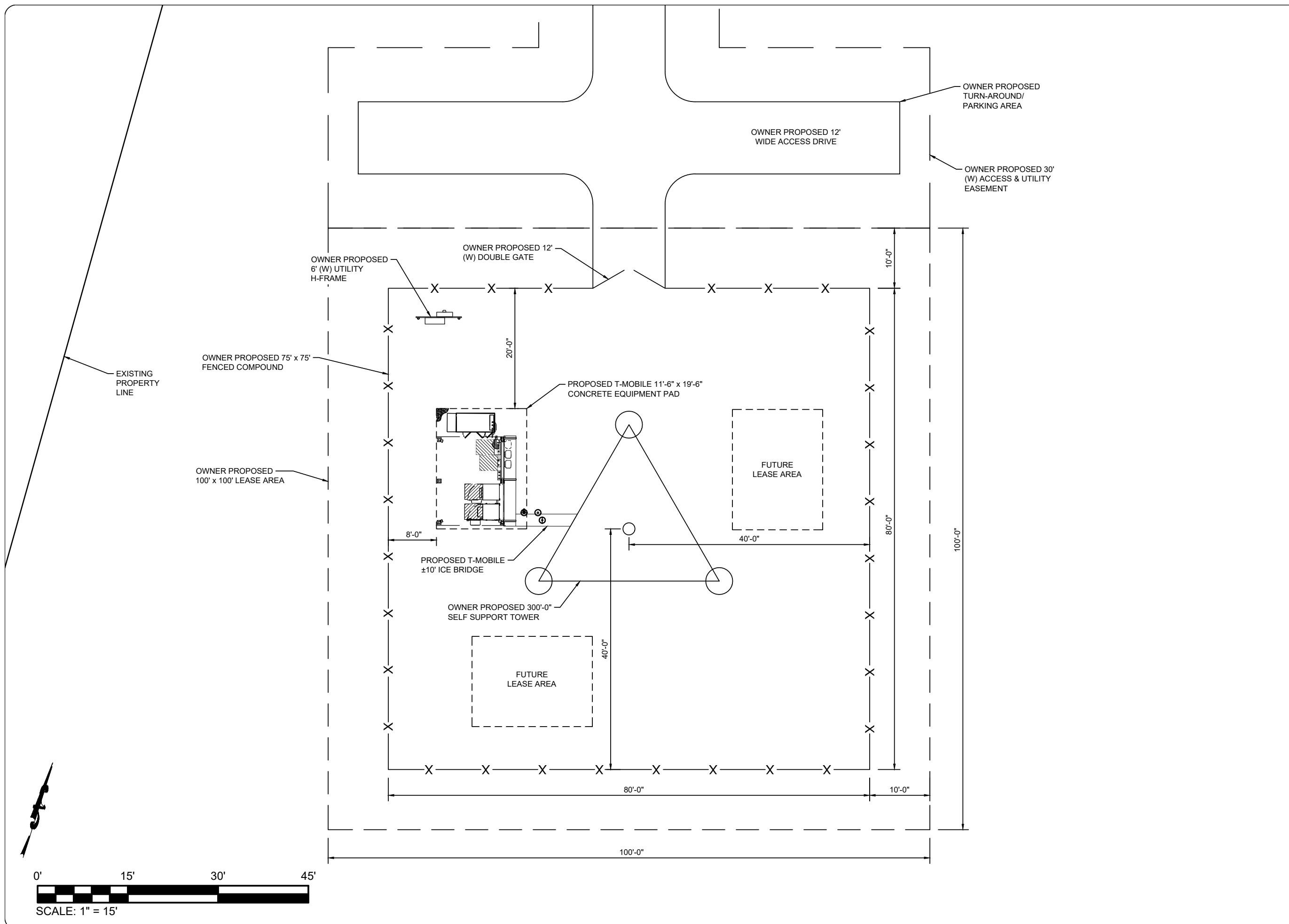
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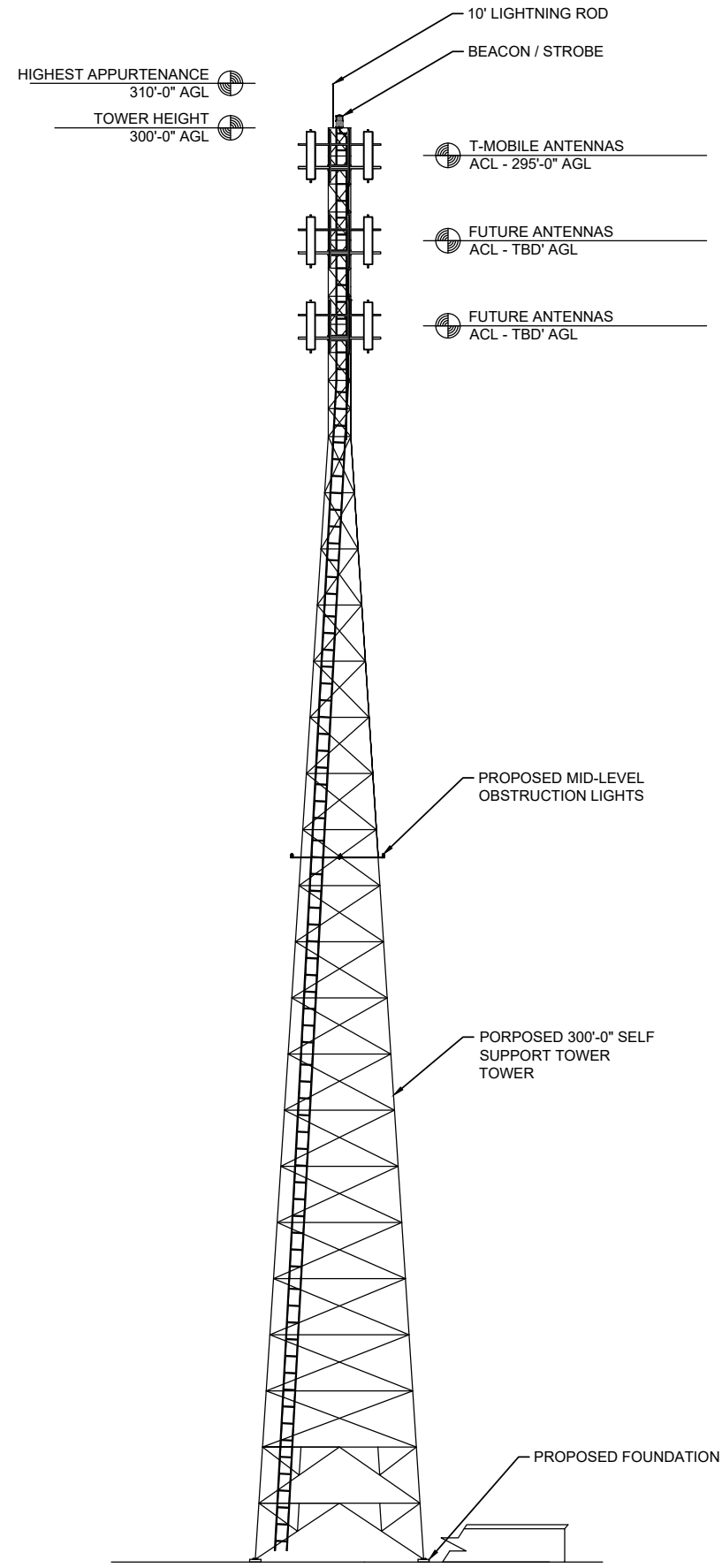
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±TBD EDMONTON RD
GREENSBURG, KY 42743

SITE TYPE:
RAWLAND

SHEET TITLE :
DIMENSION SITE PLAN

DRAWING # :	REVISION :
Z6	0





TOWER ELEVATION
NTS

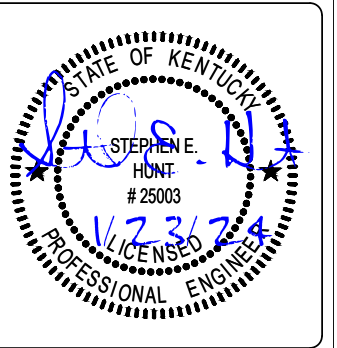


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MATNEY RD

SITE NUMBER :
US-KY-5178

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±TBD EDMONTON RD
GREENSBURG, KY 42743

SITE TYPE:
RAWLAND

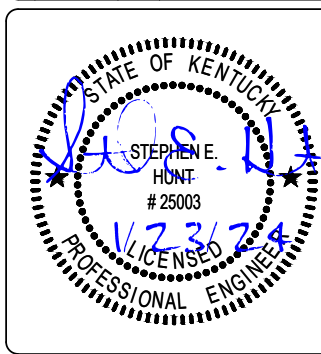
SHEET TITLE :
TOWER
ELEVATION

DRAWING # :	REVISION :
Z7	0

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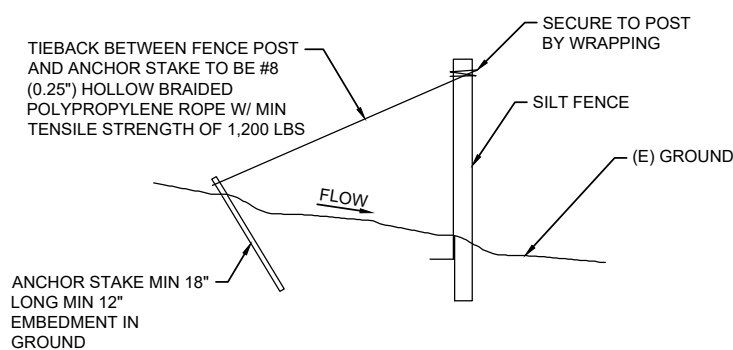
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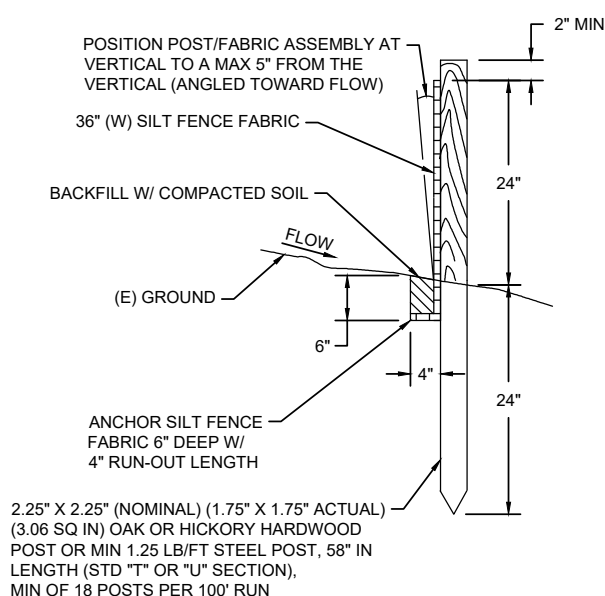
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SITE DETAILS

DRAWING # :	REVISION :
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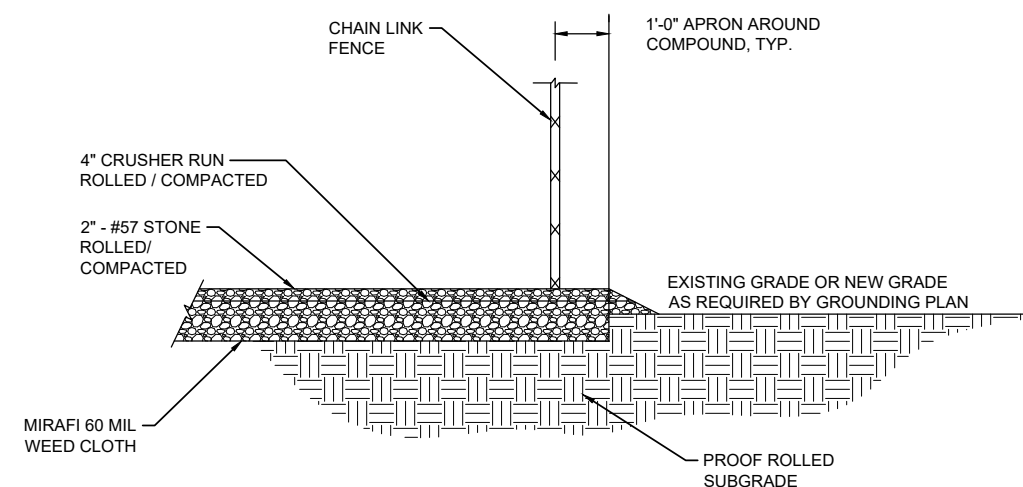


SILT FENCE TIEBACK FOR STEEL OR WOOD POSTS

SILT FENCE DETAIL ①
NTS



SECTIONAL VIEW



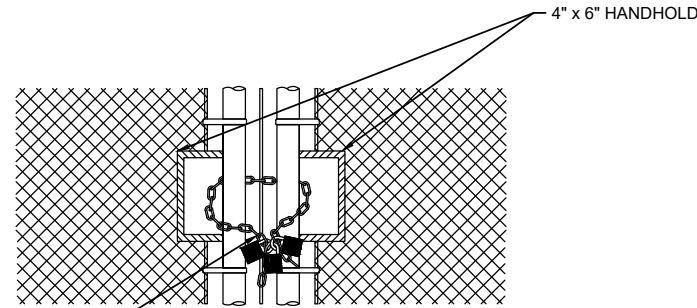
COMPOUND SURFACING ②
NTS

TYPICAL WOVEN WIRE FENCING NOTES:

(INSTALL FENCING PER ASTM F-567, SWING GATES PER ASTM F-900)

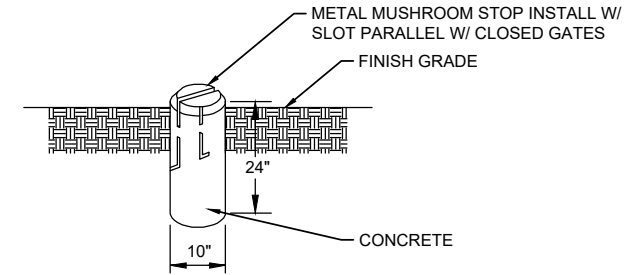
- GATE POST, CORNER, TERMINAL OR PULL POST SHALL BE 3"Ø SCHEDULE 40 FOR GATE WIDTHS UP THRU 7 FEET OR 14 FEET FOR DOUBLE SWING GATE PER ASTM-F1083.
- LINE POST: 2"Ø SCHEDULE 40 PIPE PER ASTM-F1083. INSTALL EVERY 8'-0" ALONG FENCE LINE.
- GATE FRAME: 1-1/2"Ø SCHEDULE 40 PIPE, STEEL, HOT-DIPPED ZINC COATED (GALVANIZED) WELDED STEEL PIPE PER ASTM-F1083.
- TOP RAIL & BRACE RAIL: 1-5/8"Ø SCHEDULE 40 PIPE PER ASTM-F1083.
- CHAIN LINK FABRIC: 9 GA. MIN. CORE WIRE SIZE 2" MESH, CONFORMING TO ASTM-A392.
- TIE WIRE: MINIMUM 11 GA. GALVANIZED STEEL INSTALL A SINGLE WRAP TIE WIRE AT POSTS AND RAILS AT MAX. 24" INTERVALS. INSTALL HOG RINGS ON TENSION WIRE AT 24" INTERVALS.
- TENSION WIRE: 7 GA. GALVANIZED STEEL
- BARBED WIRE: DOUBLE STRAND 12-1/2" GA. TWISTED WIRE, 4 PT. BARBS SPACED ON APPROXIMATELY 5" CENTERS. (IF USED)
- GATE LATCH: 1-3/8" OD PLUNGER ROD W/ MUSHROOM TYPE CATCH AND LOCK (KEYED ALIKE FOR ALL SITES OR COMBINATION AS SPECIFIED BY OWNER)
- LOCAL ORDINANCE FOR BARBED WIRE PERMIT SHALL GOVERN INSTALLATION.
- HEIGHT= 8' VERTICAL + 1' BARBED WIRE VERTICAL DIMENSION. WORK WITH SPECIFICATION 2831.

CHECK LOCAL CODES FOR BARBED WIRE REQUIREMENTS.

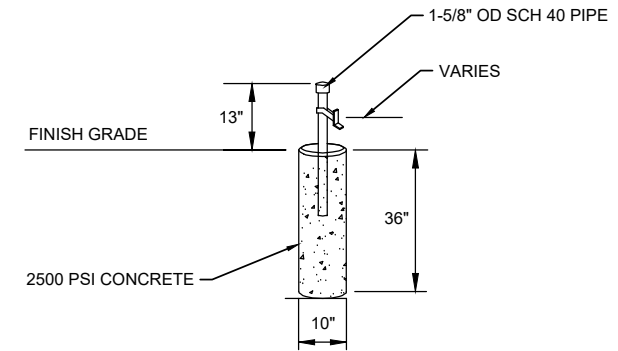


FENCE LOCK DETAIL
NTS

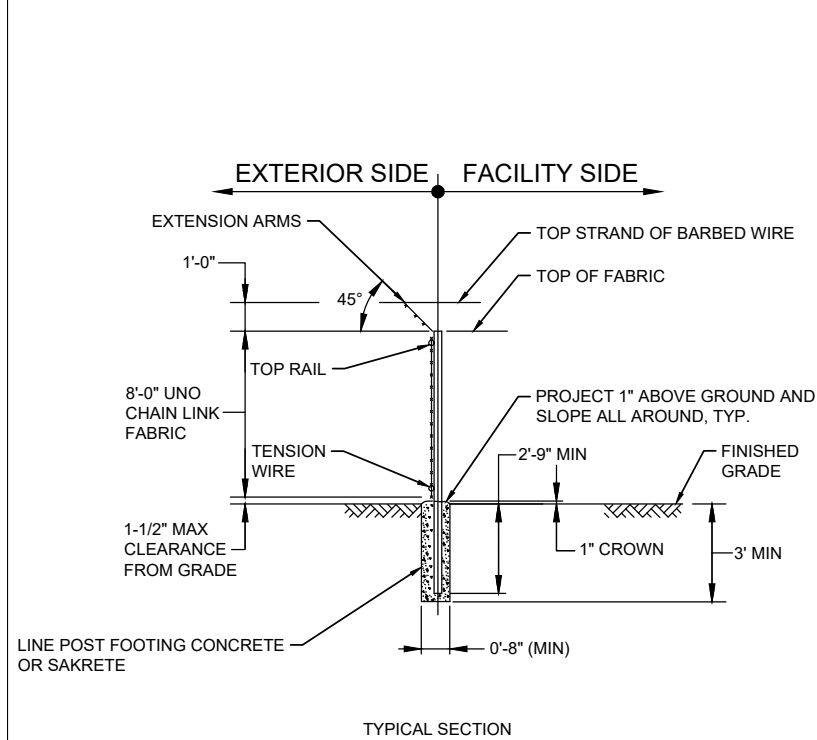
CONTRACTOR TO SUPPLY & INSTALL A 3/8" x 36" FORGED ZINC COATED CHAIN W/ A FOUR DIGIT COMBO MASTER LOCK W/ ELONGATED SHANK



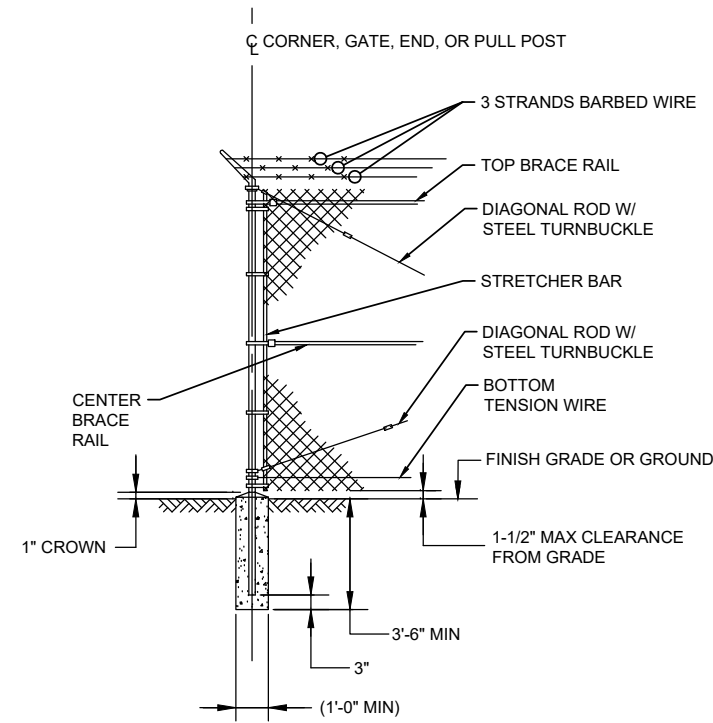
MUSHROOM STOP
NTS



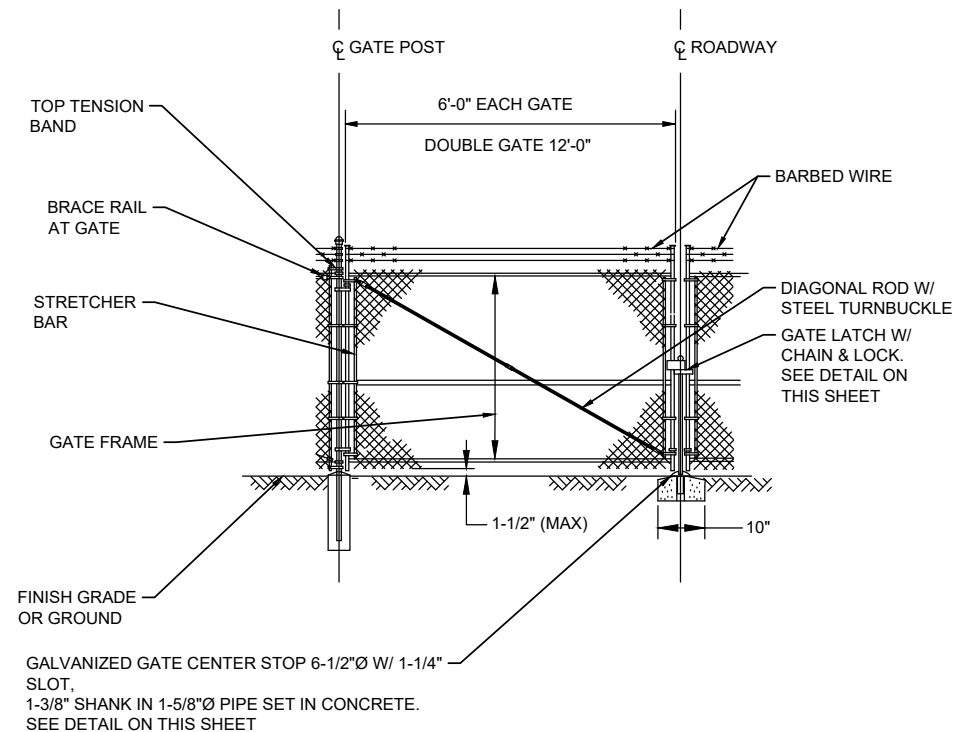
GATE STOP DETAIL
NTS



WOVEN WIRE FENCE ①
NTS



WOVEN WIRE CORNER, GATE, END OR PULL POST ②
NTS



WOVEN WIRE DOUBLE GATE ③
NTS

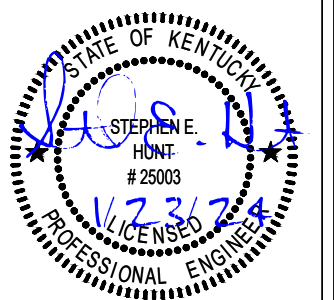


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SITE NAME : MATNEY RD
SITE NUMBER : US-KY-5178

SITE ADDRESS : ±TBD EDMONTON RD
GREENSBURG, KY 42743

SITE TYPE : RAWLAND

SHEET TITLE : SITE DETAILS

DRAWING # :	REVISION :
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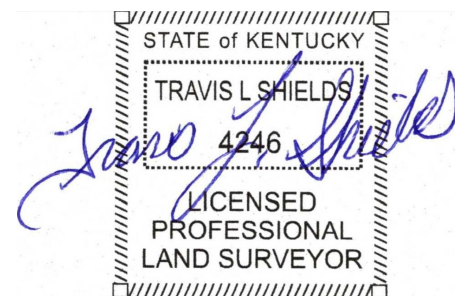
GENERAL NOTES:

- This Survey is prepared exclusively to show site conditions and/or for use in support of instruments related to Leases and Easements as may be shown hereon. Any property boundary information shown hereon is a composite of information gathered from current or previous Surveys, Plat & Deed Description and/or Assessor's Tax Maps as may be referenced hereon. This Survey is not a Boundary Survey of any Tax Parcels or Deed Tracts, and does not create, combine, or divide any existing properties.
- Survey shown hereon was performed under the supervision of a state-registered Land Surveyor and conforms to all applicable State Board Requirements.
- Instruments Used: One or more of: Topcon Total Station, Topcon Hiperlite Plus GPS, Carlson Surveyor Data Collector, DJI UAV.
- Where shown, improvements (utilities, buildings, trees, fences, etc.) are based on field Survey and/or aerial mapping.
- Any Underground Utilities shown according to surface markings made by others, found at time of survey. Additional marked utilities outside the area covered by this survey map may be shown in provided CAD Files. Utility Markings may not be comprehensive: this survey does not relieve design and construction personnel of the responsibility to determine the locations of underground utilities prior to land disturbance activities.
- This Survey is presented in the format required by Clients. Clients are advised that Official Jurisdictions may require the Survey to be presented in another format with additional notes and certifications. In the event other formats, notes or certifications are requested by applicable jurisdictions, it is the responsibility of the Client to request same be prepared by Surveyor. Survey as published is not intended to be suitable for recording as a Subdivision Plat.
- This survey may have been reduced or enlarged in size due to subsequent reproduction. This should be taken into consideration when obtaining scaled data.
- Geographic Coordinates, if published, meet FAA Accuracy Code 1A, and are accurate to within ± 20 feet horizontally and to within ± 3 feet vertically.
- Any Flood Zone information presented hereon is according to current FEMA Flood Map information as may be referenced hereon. No Flood Elevation Survey of Certification performed.
- This survey is not valid without the original signature seal of a State-Licensed Land Surveyor, and is not complete without the total of sheets as specified in Survey Title Blocks.
- Unless indicated otherwise by reference to Record Instruments, any Lessee's Leases, Premises or Easements shown hereon are NOT YET OF RECORD and may be subject to change pending review and approval by Carrier, applicable jurisdictions and/or other involved parties.
- Any Survey Markers placed as required by Standards of Practice and/or Client request represent the Leases and/or Easements as requested or designed by Clients at the time of this survey issue and may not reflect changes to site design which have not been communicated to Surveyor in the form of a Survey revision request. Surveyor shall not be liable for any circumstance arising as a result of revisions to Site Design (which may invalidate existing survey markers) occurring after the date of this Survey issue.

SURVEYOR'S 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:

I hereby certify (or state) that all parts of this survey and drawing have been completed in accordance with the current requirements of the Standards of Practice for Surveying in the State of Kentucky to the best of my knowledge, information, and belief.



Travis L. Shields
Kentucky PLS
License No. 4246

PROPOSED TOWER LOCATION DATA

Latitude: NORTH: 37.156392° 37° 09' 23.01"
Longitude: WEST: 85.540427° 85° 32' 25.54"
Ground Elev: 785.5 FEET AMSL (NAVD88)
Benchmark: DH7217 KYCP

PARENT TAX PARCEL

JOSEPH F. CLARK,
WAYNE A. CLARK,
DOUG CLARK AND JANICE CLARK
TAX PARCEL: 55.09-01

NORTH ORIENTATION

KENTUCKY SOUTH STATE PLANE COORDINATE SYSTEM
Based on GPS Survey relative to NGS CORS Network, NAD83 (2011)
ELEVATION DATUM: NAVD88, GEOID 12B
DATE OF SURVEY: 05-31-2023
Method: RTK (CORS); Confidence Level: 95%
Positional Accuracy: HZ ± 0.10'
EPOCH 2010.0000

FLOOD DATA

FEMA FLOOD MAP PANEL: 21087C0200C, Effective Date: 05-03-2010
Surveyed Area appears to lie within: ZONE X (Areas of Minimal Flood Hazard) & ZONE A (Areas subject to 1% Annual Flood Hazard)

TITLE EXAMINATION:

Not available

ADDITIONAL NOTES

The Lessee's Access & Utility Easement extends to the Public R/W.

The Lessee's Premises lies entirely within the Parent Tax Parcel.

No visible potential encroachments were observed at the time of the survey.

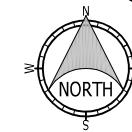
Address on Mell Road is address of Tax Parcel (no number assigned) and is provided on Survey at client request. No separate address has been assigned to SITE at time of survey. SITE is accessed by way of Edmonton Road (US Highway 68) as shown hereon.

SURVEY ISSUE DATA

#	DETAILS	DATE	DRAWN	APP
0	Original Survey Issue	06-16-2023	NB	TLS

LOCATION MAP

NOT TO SCALE



LEGEND

- ☐ CONCRETE MONUMENT FOUND
- UTILITY POLE
- ▣ TELECOM JUNCTION
- * PROPOSED TOWER CENTER
- ⊕ SITE BENCHMARK

- R/W RIGHT-OF-WAY
- C/L CENTER LINE
- AU ACCESS & UTILITY
- ESMT EASEMENT
- P.O.C. POINT OF COMMENCEMENT
- P.O.B. POINT OF BEGINNING
- Sq Ft SQUARE FEET

- PAVEMENT EDGE
- OHU OVERHEAD UTILITY LINES
- == == STORMWATER PIPE
- ~~~~~ TREE LINE
- 5' CONTOURS
- 1' CONTOURS
- RW PUBLIC R/W
- TAX PARCEL LINE
- TIE LINE
- ===== LESSEE'S PREMISES
- LESSEE'S EASEMENTS
- FZ FLOOD ZONE LIMIT

THE
LAND CONSULTANTS
LLC
5449 HIGHWAY 41
JASPER, TN 37347
423-304-6722

PREPARED FOR

verticalbridge
VB BTS II, LLC
750 Park of Commerce Drive,
Boca Raton, FL 33487

(Not a Boundary Survey of Parent Lands. Not intended for fee simple Land Transfer)

SITE SURVEY
MATNEY ROAD
 Site Number: US-KY-5178
 Mell Road, Greensburg, KY 42743
 Community of Exie
 Green County, Kentucky

COVER SHEET

DWG#: 23150
ISSUE #: 0
ISSUE DATE: 06-16-2023
SEE SHEET #1

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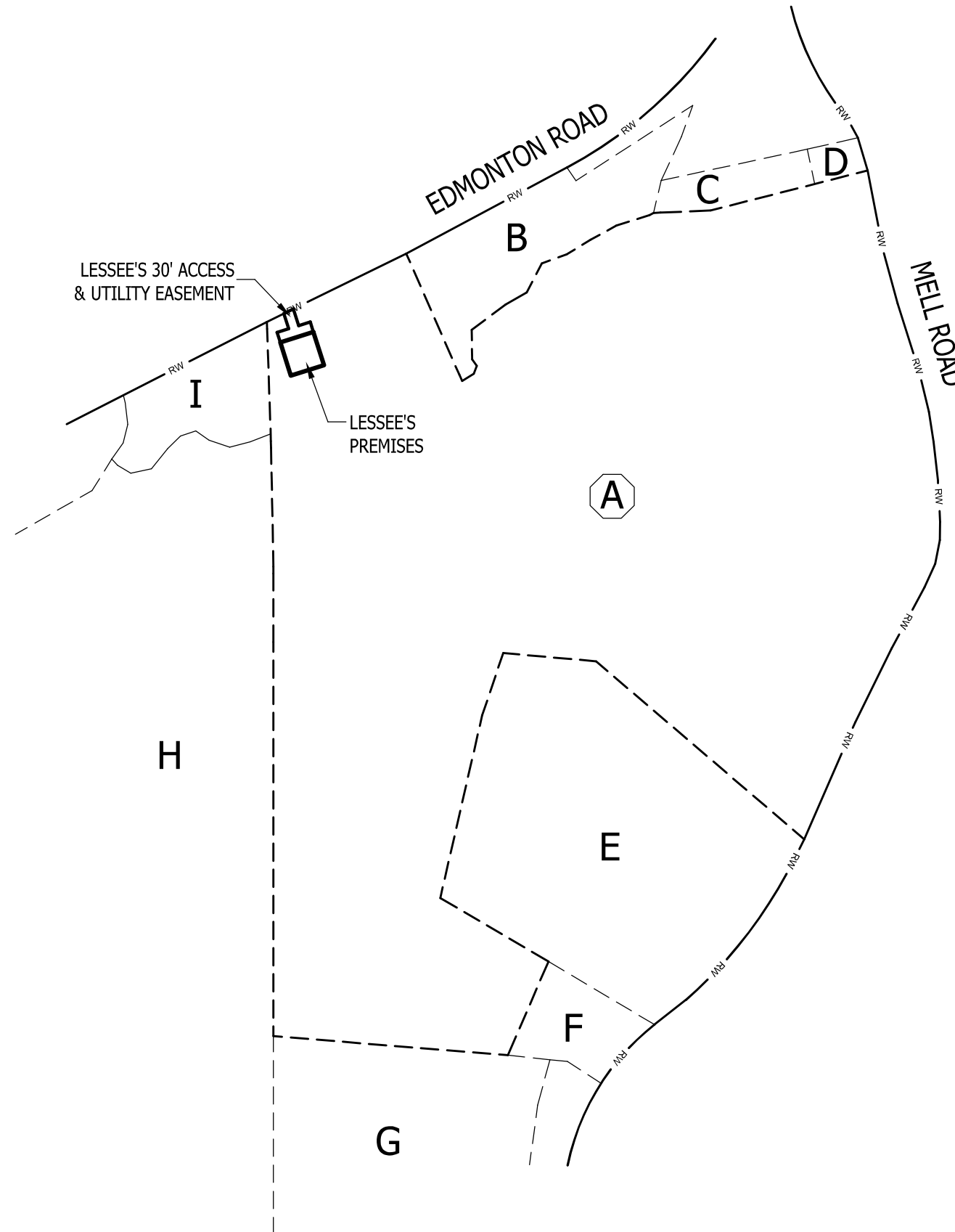
PROPERTY INFORMATION

PARENT TAX PARCEL

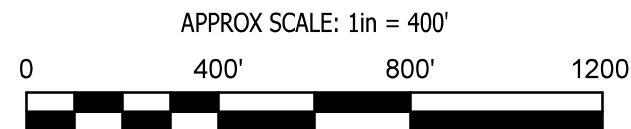
A. JOSEPH F. CLARK,
WAYNE A. CLARK,
DOUG CLARK AND JANICE CLARK
TAX PARCEL: 55.09-01
DEED BOOK 210, PAGE 26

ADJOINING TAX PARCELS

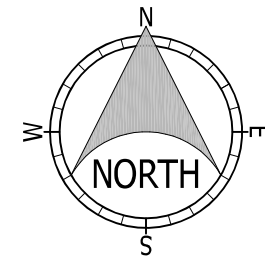
- B. JOSEPH FRANK CLARK
TAX PARCEL: 55-58
DEED BOOK 260, PAGE 127
- C. VICTOR ROSE ...
TAX PARCEL: 55-59.02
DEED BOOK 265, PAGE 779
- D. VICTOR ROSE ...
TAX PARCEL: 55-59.01
DEED BOOK 222, PAGE 5
- E. JONATHAN RAY HOUK ...
TAX PARCEL: 55.09-08
DEED BOOK 219, PAGE 42
- F. JOSEPH CLARK & WAYNE CLARK
TAX PARCEL: 55.09-11
DEED BOOK 219, PAGE 458
- G. DONNIE D. WRIGHT ...
TAX PARCEL: 55.09-17
DEED BOOK 165, PAGE 38
- H. JOSEPH CLARK & WAYNE CLARK
TAX PARCEL: 55-66
DEED BOOK 249, PAGE 515
- I. DAVID MARCUM
TAX PARCEL: 55.09-22
DEED BOOK 240, PAGE 397



- RW — PUBLIC R/W
- - - - - VESTING LAND
- - - - - ADJOINING TAX PARCEL
- LESSEE'S PREMISES
- LESSEES EASEMENT(S)



OVERVIEW MAP CAVEAT:
OVERVIEW MAP IS NOT A SURVEY BUT A VICINITY / LOCATION MAP INTENDED ONLY TO SHOW SURVEYED PROPERTY IN RELATION TO SURROUNDING AREA. VESTING AND ADJOINING PARCEL BOUNDARIES ARE NOT INCLUDED IN OR CERTIFIED BY THIS SURVEY. BOUNDARY LINES ARE A COMPOSITE OF DEED, PLAT AND/OR TAX MAP INFORMATION



THE LAND CONSULTANTS LLC
5449 HIGHWAY 41
JASPER, TN 37347
423.304.6722

PREPARED FOR



VB BTS II, LLC

750 Park of Commerce Drive,
Boca Raton, FL 33487

(Not a Boundary Survey of Parent Lands. Not intended for fee simple Land Transfer)

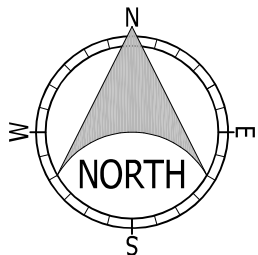
SITE SURVEY MATNEY ROAD

Site Number: US-KY-5178
Mell Road, Greensburg, KY 42743
Community of Exie
Green County, Kentucky

OVERVIEW MAP

DWG#: 23150
ISSUE #: 0
ISSUE DATE: 06-16-2023
SEE SHEET #1

SHEET
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OF
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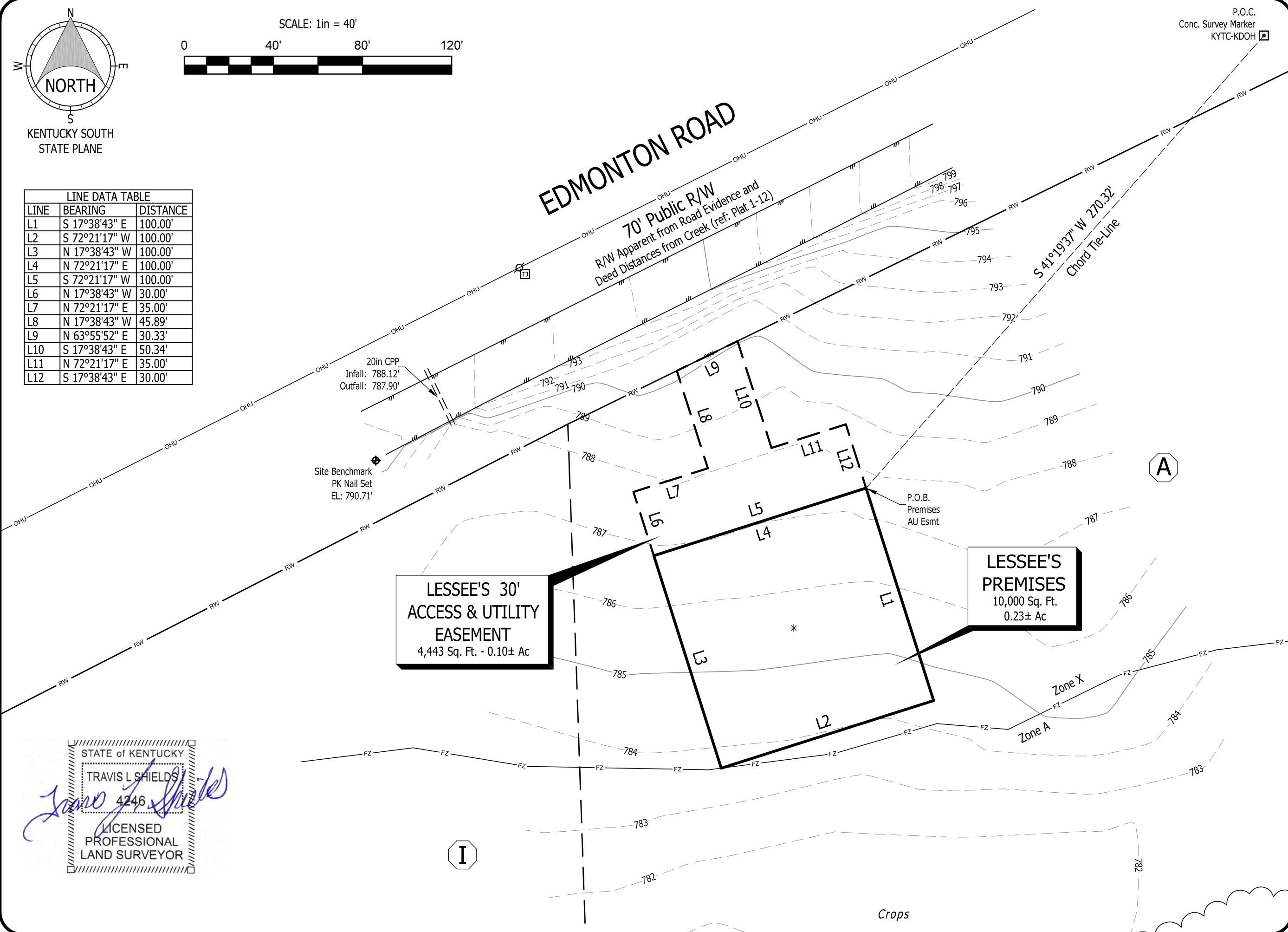


KENTUCKY SOUTH
STATE PLANE

SCALE: 1in = 40'



LINE DATA TABLE		
LINE	BEARING	DISTANCE
L1	S 17°38'43" E	100.00'
L2	S 72°21'17" W	100.00'
L3	N 17°38'43" W	100.00'
L4	N 72°21'17" E	100.00'
L5	S 72°21'17" W	100.00'
L6	N 17°38'43" W	30.00'
L7	N 72°21'17" E	35.00'
L8	N 17°38'43" W	45.89'
L9	N 63°55'52" E	30.33'
L10	S 17°38'43" E	50.34'
L11	N 72°21'17" E	35.00'
L12	S 17°38'43" E	30.00'



**LESSEE'S 30'
ACCESS & UTILITY
EASEMENT**
4,443 Sq. Ft. - 0.10± Ac

**LESSEE'S
PREMISES**
10,000 Sq. Ft.
0.23± Ac

STATE of KENTUCKY
TRAVIS L SHIELDS
4246
LICENSED
PROFESSIONAL
LAND SURVEYOR

THE LAND CONSULTANTS LLC
5449 HIGHWAY 41
JASPER, TN 37347
423-304-6722

PREPARED FOR
verticalbridge
VB BTS II, LLC
750 Park of Commerce Drive,
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(Not a Boundary Survey of Parent Lands. Not intended for fee simple Land Transfer)

**SITE SURVEY
MATNEY ROAD**
Site Number: US-KY-5178
Mell Road, Greensburg, KY 42743
Community of Exie
Green County, Kentucky

SITE SURVEY

DWG#: 23150
ISSUE #: 0
ISSUE DATE: 06-16-2023
SEE SHEET #1

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OF
4

LESSEE'S PREMISES

All that tract or parcel of land lying and being in Green County, Kentucky, and being a portion of the property of Joseph F. Clark, Wayne A. Clark, and Doug Clark & Janice Clark, of record in Deed Book 210, Page 26, Green County Court Clerk's Office, Green County, Kentucky, and being more particularly described as follows:

COMMENCE at a Concrete Survey Marker, stamped "KYTC-KDOH"; Thence along a Chord Line having a Bearing of S 41°19'37" W, a distance of 270.32 feet to the POINT OF BEGINNING.

Thence S 17°38'43" E, a distance of 100.00 feet;
Thence S 72°21'17" W, a distance of 100.00 feet;
Thence N 17°38'43" W, a distance of 100.00 feet;
Thence N 72°21'17" E, a distance of 100.00 feet to the POINT OF BEGINNING.

Said Premises contains 0.23 Acres (10,000 Square Feet), more or less.

LESSEE'S 30' ACCESS & UTILITY EASEMENT

All that tract or parcel of land lying and being in Green County, Kentucky, and being a portion of the property of Joseph F. Clark, Wayne A. Clark, and Doug Clark & Janice Clark, of record in Deed Book 210, Page 26, Green County Court Clerk's Office, Green County, Kentucky, and being more particularly described as follows:

COMMENCE at a Concrete Survey Marker, stamped "KYTC-KDOH"; Thence along a Chord Line having a Bearing of S 41°19'37" W, a distance of 270.32 feet to the POINT OF BEGINNING.

Thence S 72°21'17" W, a distance of 100.00 feet;
Thence N 17°38'43" W, a distance of 30.00 feet;
Thence N 72°21'17" E, a distance of 35.00 feet;
Thence N 17°38'43" W, a distance of 45.89 feet, to a point on the South Right-of-Way Line of Edmonton Road;
Thence N 63°55'52" E, along said Right-of-Way Line, a distance of 30.33 feet;
Thence S 17°38'43" E, leaving said Right-of-Way Line, a distance of 50.34 feet;
Thence N 72°21'17" E, a distance of 35.00 feet;
Thence S 17°38'43" E, a distance of 30.00 feet to the POINT OF BEGINNING.

Said Easement contains 0.10 Acres (4,443 Square Feet), more or less

TITLE EXAMINATION

Surveyor's treatment of Title Examination Items is limited to the scope described in ALTA/NSPS 2021 requirements, Section 6. C. ii., and is limited to determination of the extent of land, that Title Items may influence, if any. "Extent of Property" may be: Blanket in nature for a Parcel or Parcels (not subject to mapping, but assumed to also apply to Lessee's Areas (if any) insofar as these may lie on Parcel(s) influenced by instrument); specifically described by instrument (mapped and shown only if within the Surveyed Area). Determination of physical location may not be possible if: instrument is illegible; instrument lacks sufficient descriptive information; or instrument refers to other instruments which were not included in the title exam and not otherwise available to surveyor. Factors beyond physical location, such as the type of influence that "Restrictions, Covenants, Terms or Conditions" contained in instruments may impart upon Parcels or Lessee's Site or Easements are not evaluated by Land Surveyor. Review by Title Attorney may be warranted. Land Surveyors may not practice Law.)

Reference: Commitment for Title Insurance prepared by Westcor Land Title Insurance Company and Tower Title, LLC, Commitment Number: VTB-143588-C, Commitment Date: January 19, 2022, Schedule B, Part II, Exceptions.

Item 1 - 9: General Items (no record instruments listed) or Taxes, not addressed by Survey.

Item 10: Plat Book 1, Page 12: Plat of larger vesting lands inclusive of current Parent Tax Parcel. Shows no relevant matters.

LEGAL DESCRIPTION OF PARENT PARCEL

Situated in Green County, Kentucky:

Tract #2 consisting of 71.5321 acres as per Plat of record in Plat Cabinet 1, Page 12, in the Green County Court Clerk's Office, Kentucky.

Parcel ID#: 55.09-01

This being the same property conveyed to Joseph F. Clark, a single person, Wayne A. Clark, a single person, and Doug Clark and Janice Clark, husband and wife, one-third undivided interest to each of them from Joseph F. Clark, single, and Wayne A. Clark, single, in a deed dated January 11, 2005 and recorded January 12, 2005, in Book 210 Page 26, of the Green County Kentucky Records.



THE LAND CONSULTANTS LLC
5449 HIGHWAY 41
JASPER, TN 37347
423-304-6722

PREPARED FOR



VB BTS II, LLC

750 Park of Commerce Drive,
Boca Raton, FL 33487

(Not a Boundary Survey of Parent Lands. Not intended for fee simple Land Transfer)

**SITE SURVEY
MATNEY ROAD**

Site Number: US-KY-5178
Mell Road, Greensburg, KY 42743
Community of Exie
Green County, Kentucky

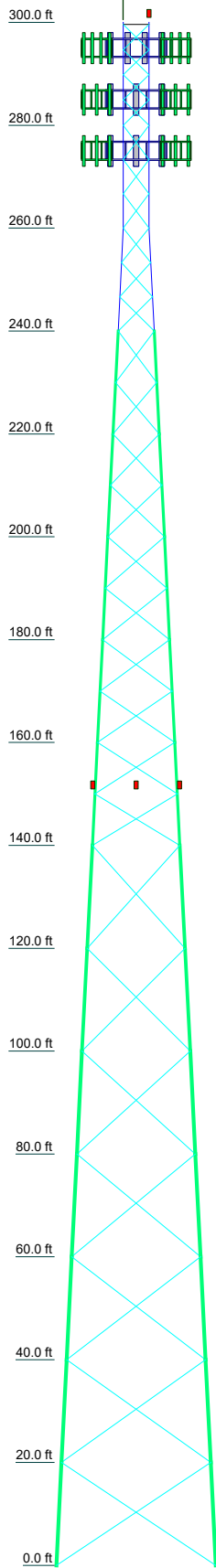
DESCRIPTIONS

DWG#: 23150
ISSUE #: 0
ISSUE DATE: 06-16-2023
SEE SHEET #1

SHEET
4
OF
4



Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	
Legs	A	B	C	D	E	F	G	H	I	J						
Leg Grade	A572-50															
Diagonals	L2 1/2x2 1/2x1/4															
Diagonal Grade	A572-50															
Top Girts	L3x3x1/4															
Face Width (ft)	5	7	9	11	13	15	17	19	21	23	25	27	29	31		
# Panels @ (ft)	4 @ 4.89583	6 @ 6.66667	10 @ 10	10 @ 10	10 @ 10	10 @ 10	10 @ 10	10 @ 10	10 @ 10	10 @ 10	10 @ 10	10 @ 10	10 @ 10	10 @ 10	10 @ 10	10 @ 10
Weight (K)	0.7	1.5	1.6	2.3	2.3	3.2	3.2	4.2	4.2	4.8	4.9	5.0	5.5	6.3	52.6	



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
5/8" x 7'-6" lightning rod	300	30,000 sq.in. (208.3 sq.ft. EPA)	275
Beacon	300	OB light	150
40,000 sq.in. (277.78 sq.ft. EPA)	295	OB light	150
30,000 sq.in. (208.3 sq.ft. EPA)	285	OB light	150

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	0049) 2.50" S - 20' - C - 0.75" conn - (Pirod 226160)	F	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)
B	0299) 4.00 to 6" TS - 20' - C - 0.75" conn - (Pirod 295612)	G	#12ZG-58 - 2.00" - 0.875" conn.-TR3-(Pirod 195637)
C	0419) 6.00" to #12 S - 20' - C - 0.75" conn - (Pirod 229377)	H	#12ZG-58 - 2.00" - 0.875" conn. (Pirod 195639)
D	#12ZG-58 - 1.50" - 1.00" conn. (Pirod 194651)	I	#12ZG-58 BASE - 2.50" - 0.875" conn.-TR4-(Pirod 281171)
E	#12ZG-58 - 1.75" - 1.00" conn.-TR1-(Pirod 195213)	J	2L3 1/2x3 1/2x1/4

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

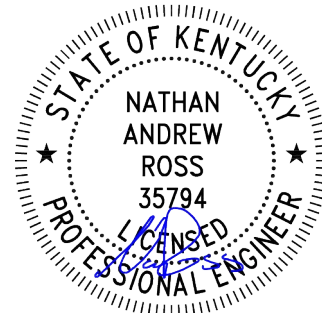
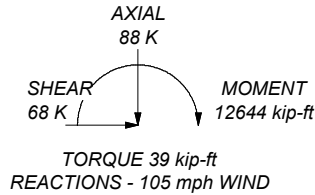
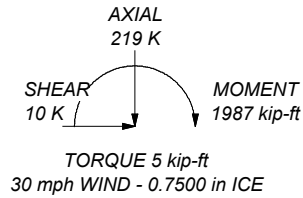
1. Tower is located in Green County, Kentucky.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 105 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 30 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness 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. A KA factor of 0.82 has been applied to the EPA loading.
9. Considered One(1) 12-Line wave guide ladder to the top of the tower.
10. Tower design does not include Climbing Ladder. Break-down legs are designed to act as climbing facility.
11. The tower is designed to have a theoretical zero fall zone radius.
12. Tower designed to comply with both TIA-G and H
13. TOWER RATING: 96.3%

ALL REACTIONS
ARE FACTORED

MAX. CORNER REACTIONS AT BASE:

DOWN: 500 K
SHEAR: 45 K

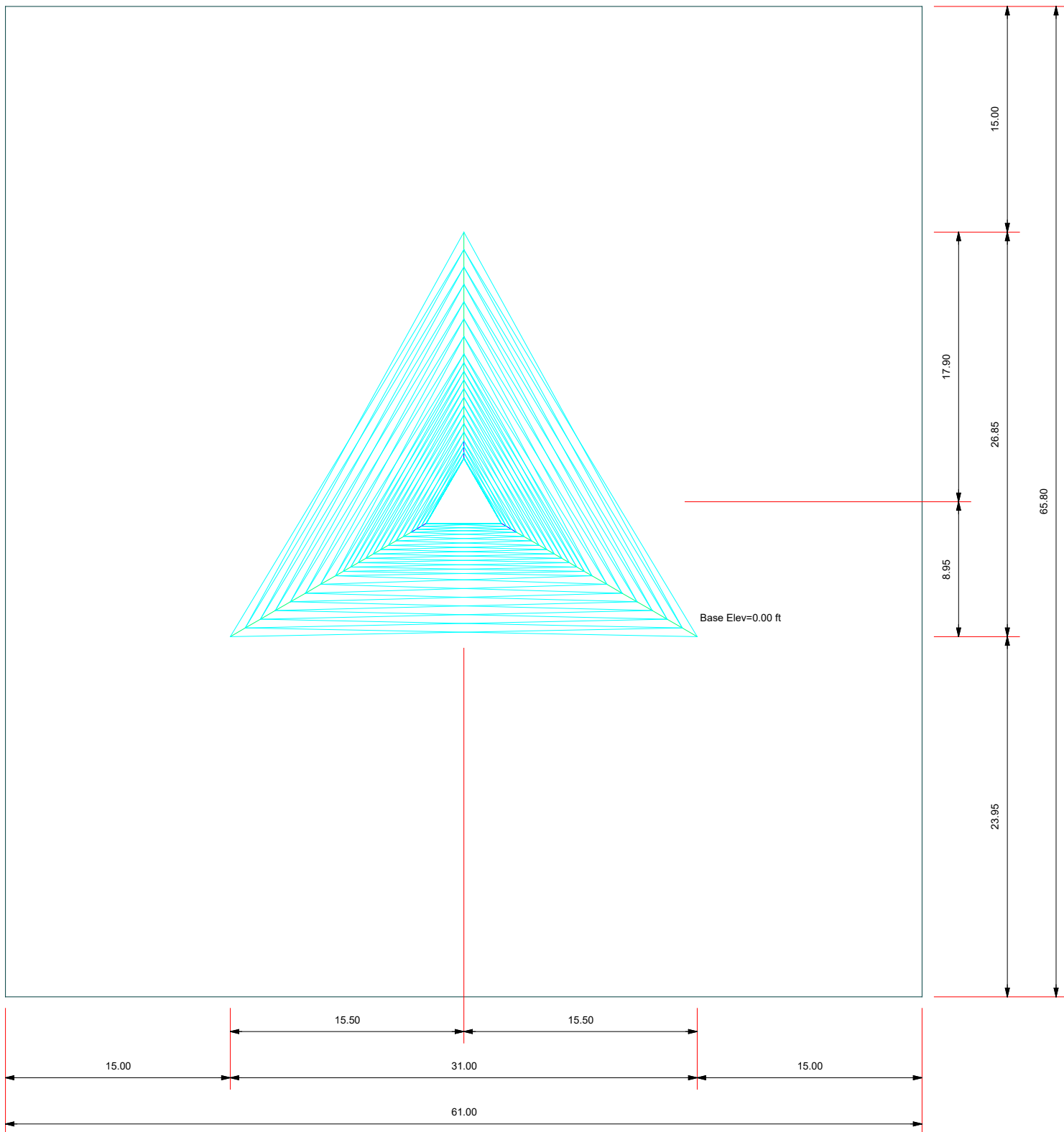
UPLIFT: -433 K
SHEAR: 39 K



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

Job: 604200	Project: H31' x 300' - US-KY-5178 Matney Rd, KY	
Client: VB BTS II, LLC	Drawn by: NS	App'd:
Code: TIA-222-G	Date: 02/01/24	Scale: NTS
Path: F:\604200\VB BTS II - US-KY-5178 Matney Rd - 300' SST02 Tower Calc\604200-G.dwg	Dwg No. E-1	

Plot Plan
Total Area - 0.09 Acres

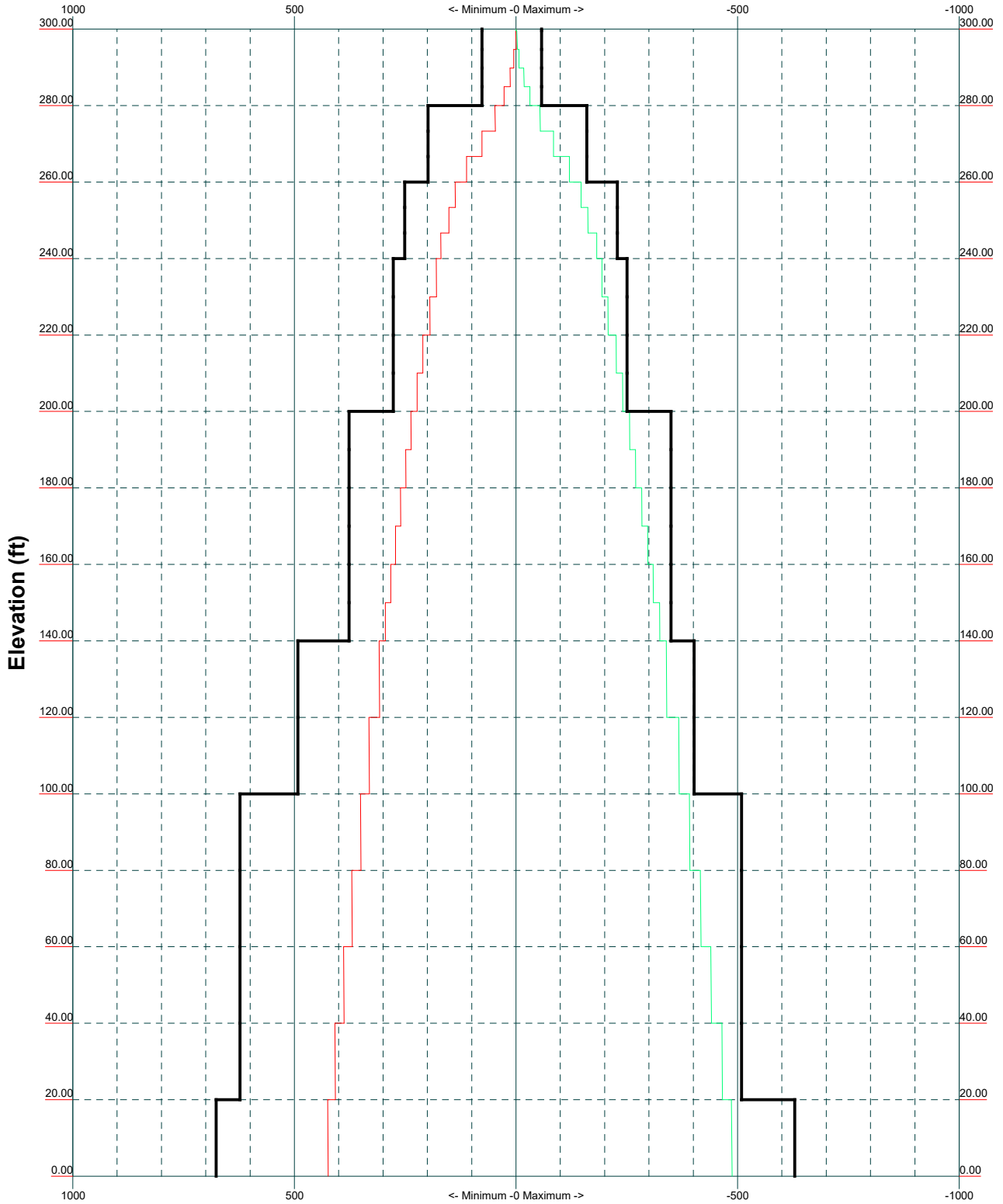


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Code: TIA-222-G	Date: 02/01/24	Scale: NTS
Path: F:\604\604200\VB BTS II - US-KY-5178 Matney Rd - 300' SST\02 Tower Calc\604200-G.dwg		Dwg No. E-2

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

Leg Capacity ———
Leg Compression (K)



<p style="margin: 0;">1545 Pidco Drive STRUCTURES Plymouth, IN Valmont Industries, Inc. Global Telecom Phone: (574) 936-4221 FAX: (574) 936-6458</p>	Job: 604200		
	Project: H31' x 300' - US-KY-5178 Matney Rd, KY		
	Client: VB BTS II, LLC	Drawn by: NS	App'd:
	Code: TIA-222-G	Date: 02/01/24	Scale: NTS
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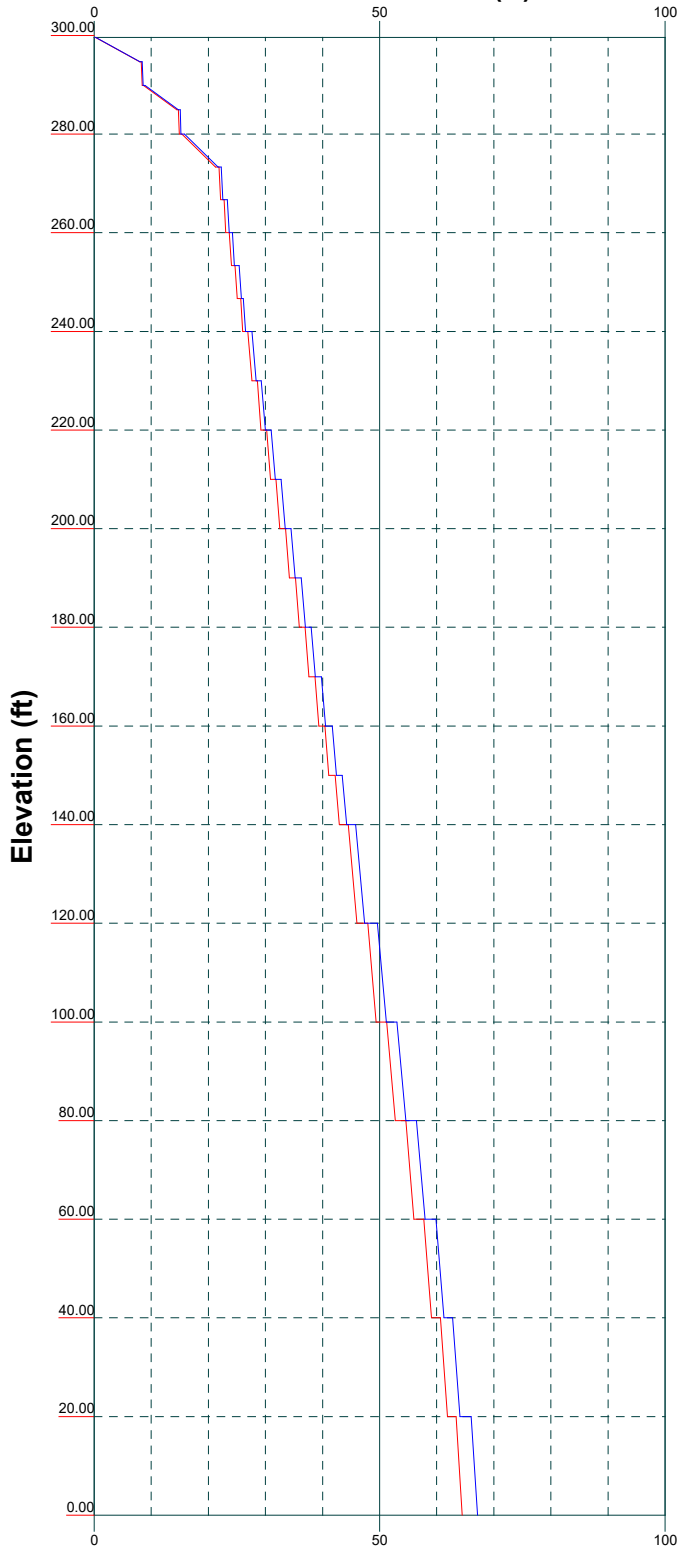
Vx

Vz

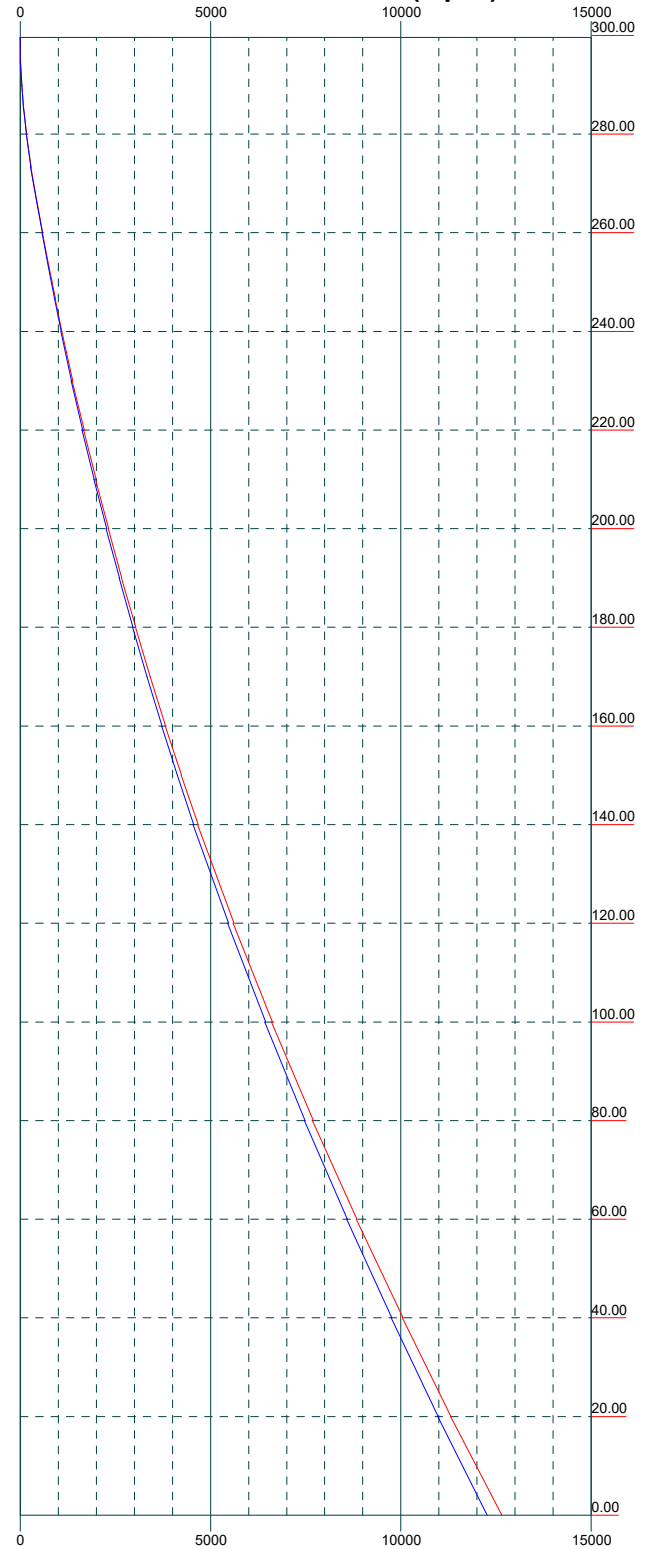
Mx

Mz

Global Mast Shear (K)

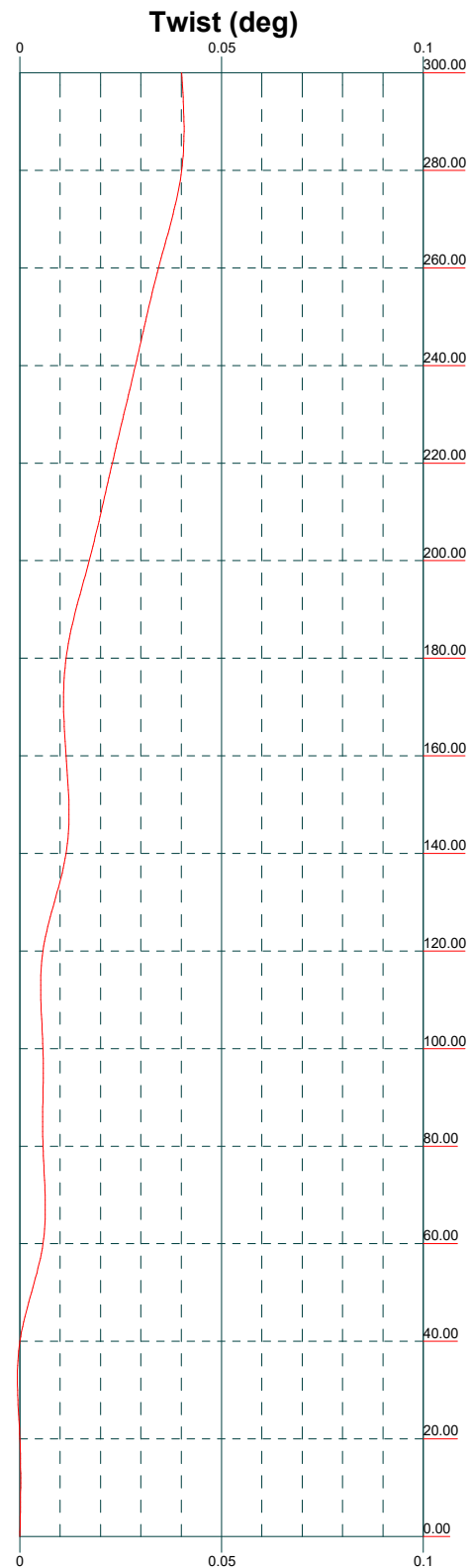
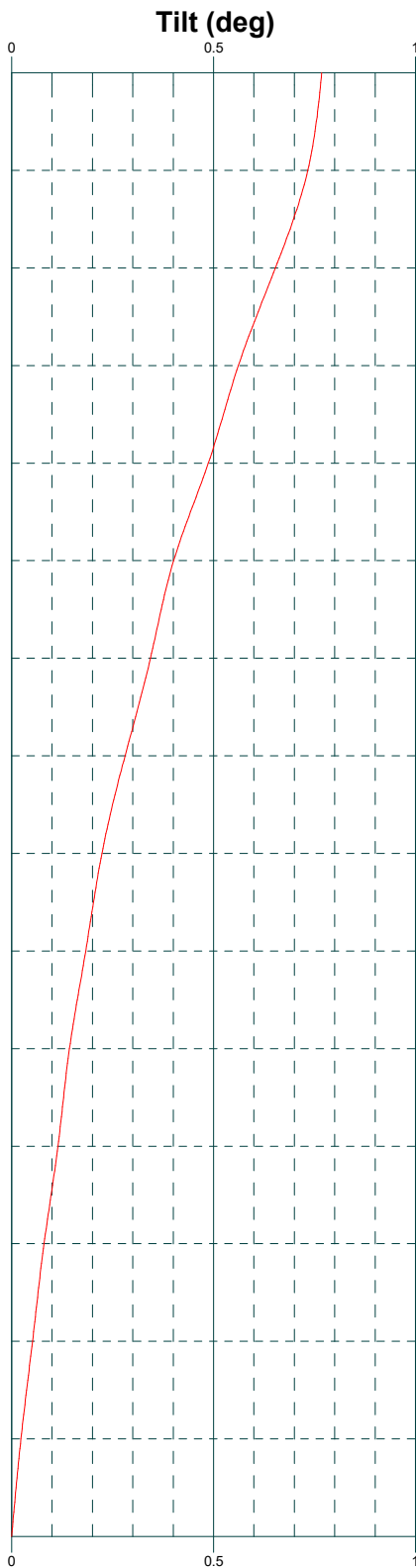
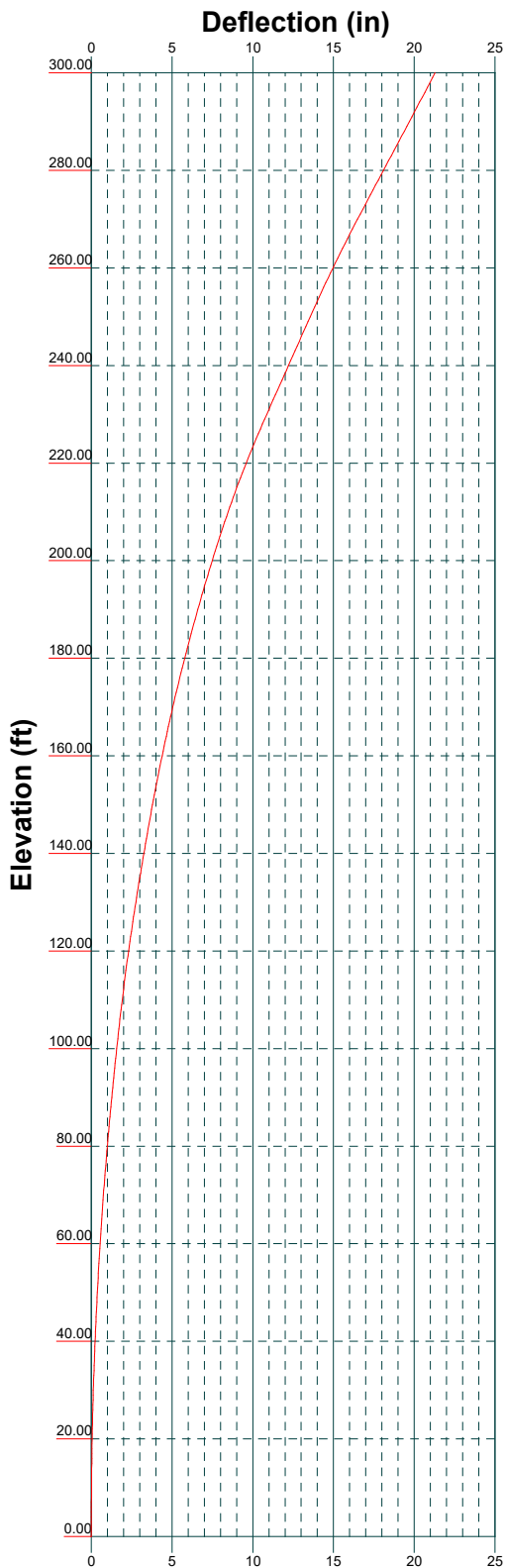


Global Mast Moment (kip-ft)



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Code: TIA-222-G	Date: 02/01/24	Scale: NTS
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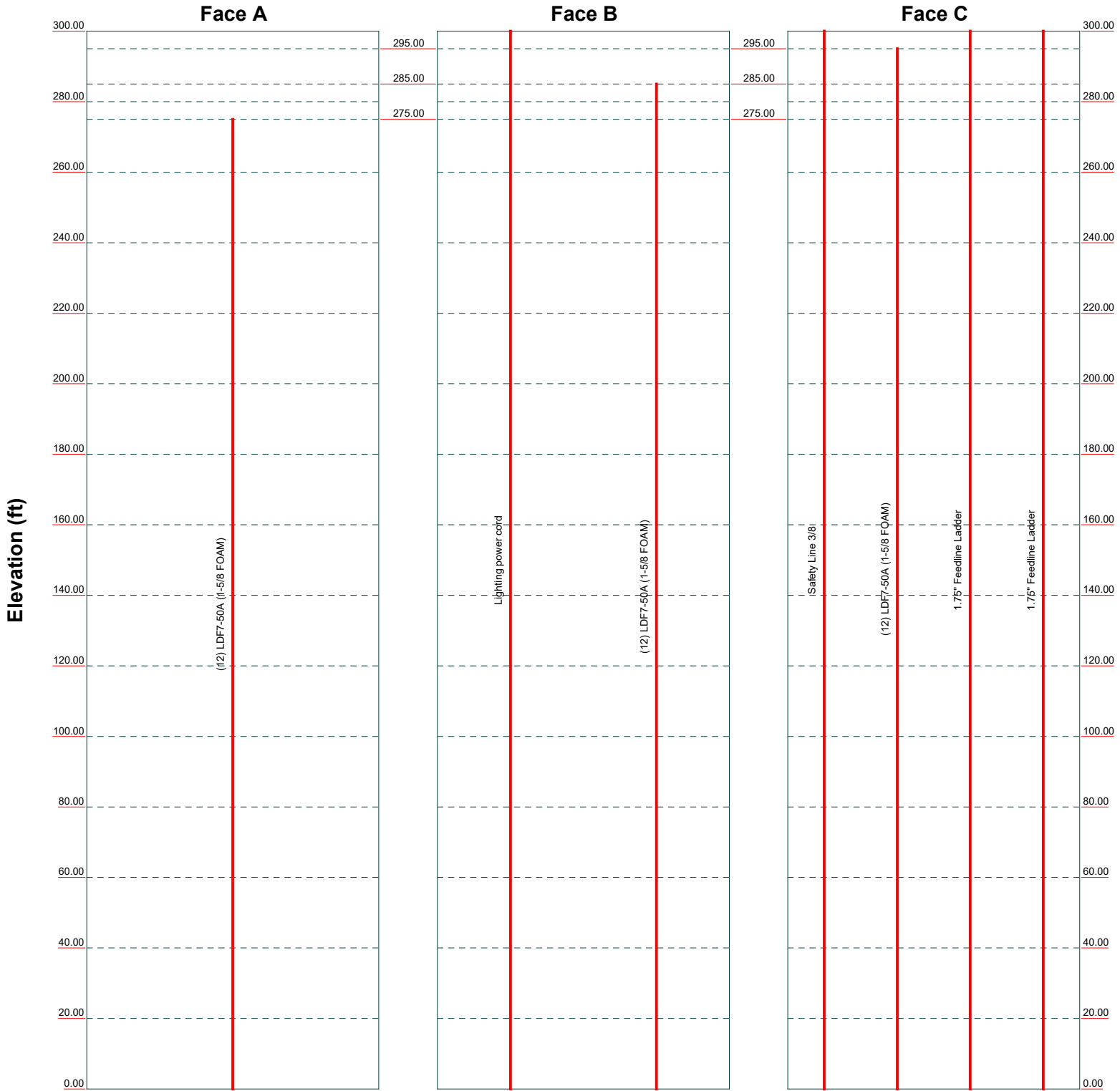


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Code: TIA-222-G	Date: 02/01/24	Scale: NTS
Path: F:\604\604200\VB BTS II - US-KY-5178 Matney Rd - 300' SST\02 Tower Calc\604200-G.dwg		Dwg No. E-5

Feed Line Distribution Chart 0' - 300'

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

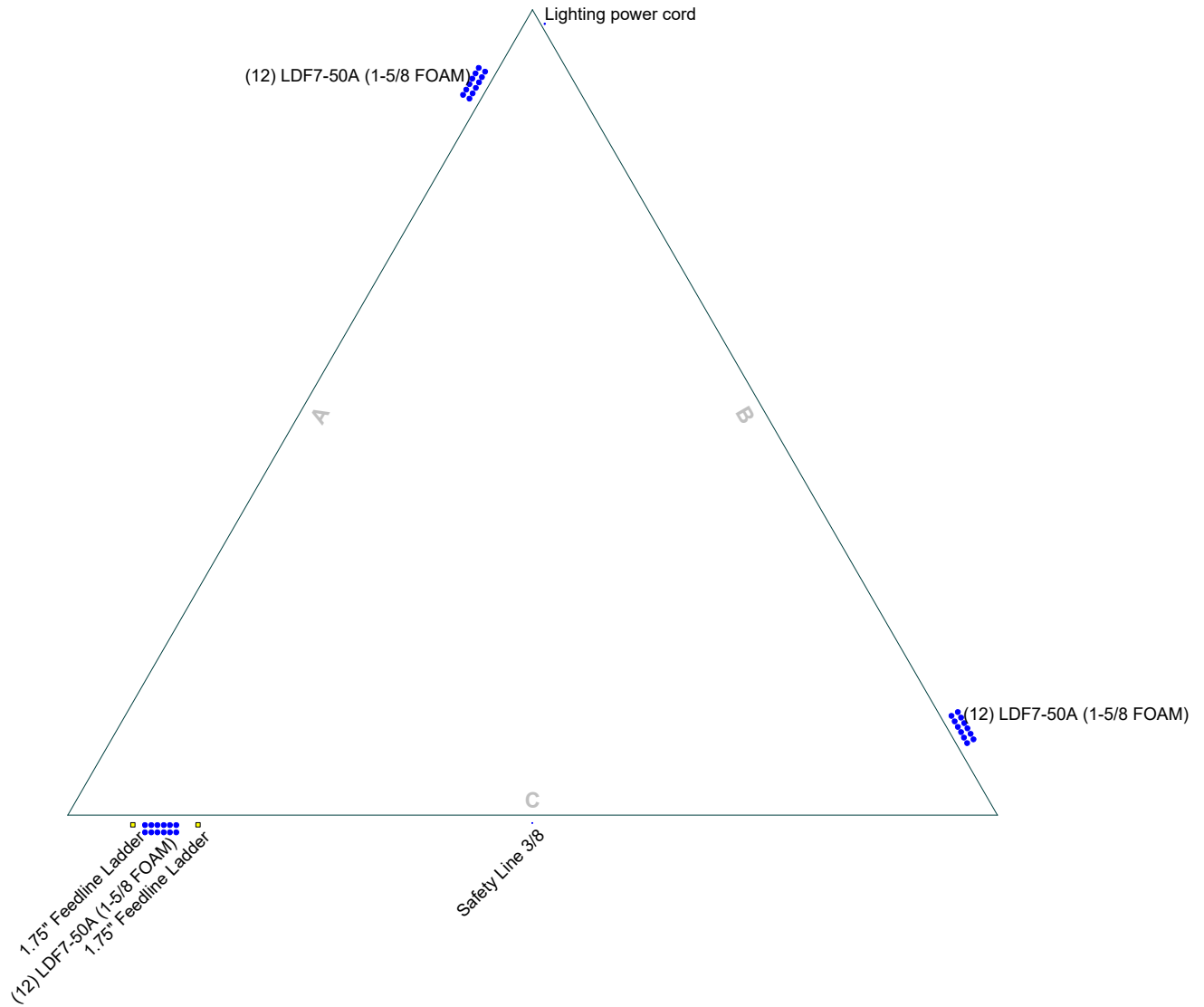


valmont 1545 Pidco Drive
 STRUCTURES Plymouth, IN
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 FAX: (574) 936-6458

Job: 604200		
Project: H31' x 300' - US-KY-5178 Matney Rd, KY		
Client: VB BTS II, LLC	Drawn by: NS	App'd:
Code: TIA-222-G	Date: 02/01/24	Scale: NTS
Path: F:\604604200\VB BTS II - US-KY-5178 Matney Rd - 300' SST02 Tower Calc\604200-G.dwg		Dwg No. E-7

Feed Line Plan

— Round
 — Flat
 — App In Face
 — App Out Face
 — Truss-Leg



<p>valmont STRUCTURES</p>	1545 Pidco Drive Plymouth, IN	
	Valmont Industries, Inc. Global Telecom Phone: (574) 936-4221	
	FAX: (574) 936-6458	

Job: 604200		
Project: H31' x 300' - US-KY-5178 Matney Rd, KY		
Client: VB BTS II, LLC	Drawn by: NS	App'd:
Code: TIA-222-G	Date: 02/01/24	Scale: NTS
Path: F:\604\604200\VB BTS II - US-KY-5178 Matney Rd - 300' SST02 Tower Calc\604200-G.dwg		Dwg No. E-7

Valmont 1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458	Job 604200	Page 1 of 66
	Project H31' x 300' - US-KY-5178 Matney Rd, KY	Date 19:01:00 02/01/24
	Client VB BTS II, LLC	Designed by NS

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 300.00 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 5.00 ft at the top and 31.00 ft at the base.

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

The following design criteria apply:

Tower is located in Green 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.

A KA factor of 0.82 has been applied to the EPA loading..

Considered One(1) 12-Line wave guide ladder to the top of the tower..

Tower design does not include Climbing Ladder. Break-down legs are designed to act as climbing facility..

The tower is designed to have a theoretical zero fall zone radius..

Tower designed to comply with both TIA-G and H.

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

Pressures are calculated at each section.

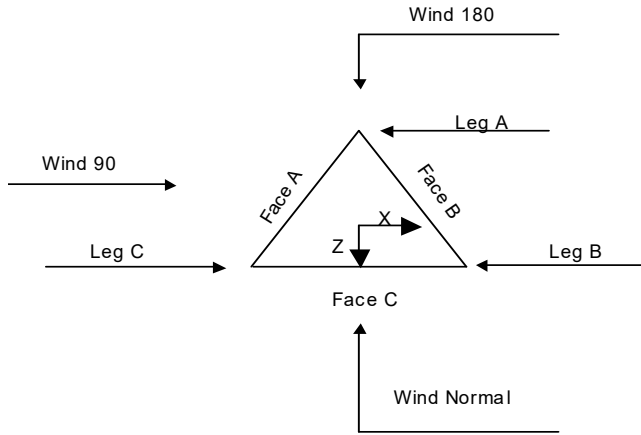
Stress ratio used in tower member design is 1.

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

Options

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

Tower Section Geometry

Tower Section	Tower Elevation <i>ft</i>	Assembly Database	Description	Section Width <i>ft</i>	Number of Sections	Section Length <i>ft</i>
T1	300.00-280.00		V-Series Leg	5.00	1	20.00
T2	280.00-260.00		V-Series Leg	5.00	1	20.00
T3	260.00-240.00		V-Series Leg	5.00	1	20.00
T4	240.00-220.00		PiRod 12BDFH Truss Leg	7.00	1	20.00
T5	220.00-200.00		PiRod 12BDFH Truss Leg	9.00	1	20.00
T6	200.00-180.00		PiRod 12BDFH Truss Leg	11.00	1	20.00
T7	180.00-160.00		PiRod 12BDFH Truss Leg	13.00	1	20.00
T8	160.00-140.00		PiRod 12BDFH Truss Leg	15.00	1	20.00
T9	140.00-120.00		PiRod 12BDH2 Truss Leg	17.00	1	20.00
T10	120.00-100.00		PiRod 12BDH2 Truss Leg	19.00	1	20.00
T11	100.00-80.00		PiRod 12BDH2 Truss Leg	21.00	1	20.00
T12	80.00-60.00		PiRod 12BDH2 Truss Leg	23.00	1	20.00
T13	60.00-40.00		PiRod 12BDH2 Truss Leg	25.00	1	20.00
T14	40.00-20.00		PiRod 12BDH2 Truss Leg	27.00	1	20.00
T15	20.00-0.00		PiRod 12BDH2 Truss Leg	29.00	1	20.00

Tower Section Geometry (cont'd)

Valmont 1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458	Job	604200	Page	3 of 66	
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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	300.00-280.00	4.90	X Brace	No	No	5.0000	0.0000
T2	280.00-260.00	6.67	X Brace	No	No	0.0000	0.0000
T3	260.00-240.00	6.67	X Brace	No	No	0.0000	0.0000
T4	240.00-220.00	10.00	X Brace	No	No	0.0000	0.0000
T5	220.00-200.00	10.00	X Brace	No	No	0.0000	0.0000
T6	200.00-180.00	10.00	X Brace	No	No	0.0000	0.0000
T7	180.00-160.00	10.00	X Brace	No	No	0.0000	0.0000
T8	160.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T9	140.00-120.00	20.00	X Brace	No	No	0.0000	0.0000
T10	120.00-100.00	20.00	X Brace	No	No	0.0000	0.0000
T11	100.00-80.00	20.00	X Brace	No	No	0.0000	0.0000
T12	80.00-60.00	20.00	X Brace	No	No	0.0000	0.0000
T13	60.00-40.00	20.00	X Brace	No	No	0.0000	0.0000
T14	40.00-20.00	20.00	X Brace	No	No	0.0000	0.0000
T15	20.00-0.00	20.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 300.00-280.00	Pipe	0049) 2.50" S - 20' - C - 0.75" conn - (Pirod 226160)	A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A572-50 (50 ksi)
T2 280.00-260.00	Pipe	0299) 4.00 to 6" TS - 20' - C - 0.75" conn - (Pirod 295612)	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A572-50 (50 ksi)
T3 260.00-240.00	Pipe	0419) 6.00" to #12 S - 20' - C - 0.75" conn - (Pirod 229377)	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A572-50 (50 ksi)
T4 240.00-220.00	Truss Leg	#12ZG-58 - 1.50" - 1.00" conn. (Pirod 194651)	A572-58 (58 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A572-50 (50 ksi)
T5 220.00-200.00	Truss Leg	#12ZG-58 - 1.50" - 1.00" conn. (Pirod 194651)	A572-58 (58 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A572-50 (50 ksi)
T6 200.00-180.00	Truss Leg	#12ZG-58 - 1.75" - 1.00" conn.-TR1-(Pirod 195213)	A572-58 (58 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A572-50 (50 ksi)
T7 180.00-160.00	Truss Leg	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	A572-58 (58 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A572-50 (50 ksi)
T8 160.00-140.00	Truss Leg	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	A572-58 (58 ksi)	Equal Angle	L3x3x3/16	A572-50 (50 ksi)
T9 140.00-120.00	Truss Leg	#12ZG-58 -2.00" - 0.875" conn.-TR3-(Pirod 195637)	A572-58 (58 ksi)	Double Equal Angle	2L3x3x3/16	A572-50 (50 ksi)
T10 120.00-100.00	Truss Leg	#12ZG-58 -2.00" - 0.875" conn. (Pirod 195639)	A572-58 (58 ksi)	Double Equal Angle	2L3x3x3/16	A572-50 (50 ksi)
T11 100.00-80.00	Truss Leg	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	A572-58 (58 ksi)	Double Equal Angle	2L3x3x3/16	A572-50 (50 ksi)
T12 80.00-60.00	Truss Leg	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	A572-58 (58 ksi)	Double Equal Angle	2L3x3x3/16	A572-50 (50 ksi)
T13 60.00-40.00	Truss Leg	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	A572-58 (58 ksi)	Double Equal Angle	2L3x3x3/16	A572-50 (50 ksi)
T14 40.00-20.00	Truss Leg	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	A572-58 (58 ksi)	Double Equal Angle	2L3x3x1/4	A572-50 (50 ksi)
T15 20.00-0.00	Truss Leg	#12ZG-58 BASE - 2.50" - 0.875" conn.-TR4-(Pirod 281171)	A572-58 (58 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4	A572-50 (50 ksi)

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Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	<i>K Factors¹</i>								
			Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace	
			X Y	X Y	X Y	X Y	X Y	X Y	X Y	X Y	
T1	Yes	Yes	1	1	1	1	1	1	1	1	1
300.00-280.00				1	1	1	1	1	1	1	1
T2	Yes	Yes	1	1	1	1	1	1	1	1	1
280.00-260.00				1	1	1	1	1	1	1	1
T3	Yes	Yes	1	1	1	1	1	1	1	1	1
260.00-240.00				1	1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1	1
240.00-220.00				1	1	1	1	1	1	1	1
T5	Yes	Yes	1	1	1	1	1	1	1	1	1
220.00-200.00				1	1	1	1	1	1	1	1
T6	Yes	Yes	1	1	1	1	1	1	1	1	1
200.00-180.00				1	1	1	1	1	1	1	1
T7	Yes	Yes	1	1	1	1	1	1	1	1	1
180.00-160.00				1	1	1	1	1	1	1	1
T8	Yes	Yes	1	1	1	1	1	1	1	1	1
160.00-140.00				1	1	1	1	1	1	1	1
T9	Yes	Yes	1	1	1	1	1	1	1	1	1
140.00-120.00				1	1	1	1	1	1	1	1
T10	Yes	Yes	1	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1	1
T11	Yes	Yes	1	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1	1
T12	Yes	Yes	1	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1	1
T13	Yes	Yes	1	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1	1
T14	Yes	Yes	1	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1	1
T15	Yes	Yes	1	1	1	1	1	1	1	1	1
20.00-0.00				1	1	1	1	1	1	1	1

¹Note: 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	<i>Truss-Leg K Factors</i>					
	<i>Truss-Legs Used As Leg Members</i>			<i>Truss-Legs Used As Inner Members</i>		
	Leg Panels	X Brace Diagonals	Z Brace Diagonals	Leg Panels	X Brace Diagonals	Z Brace Diagonals
T4	1	0.5	0.7	1	0.5	0.7
240.00-220.00						
T5	1	0.5	0.7	1	0.5	0.7
220.00-200.00						
T6	1	0.5	0.7	1	0.5	0.7
200.00-180.00						
T7	1	0.5	0.7	1	0.5	0.7
180.00-160.00						
T8	1	0.5	0.7	1	0.5	0.7
160.00-140.00						
T9	1	0.5	0.7	1	0.5	0.7
140.00-120.00						

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	<p>Client</p> <p>VB BTS II, LLC</p>	<p>Designed by</p> <p>NS</p>

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 300.00-280.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 280.00-260.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 260.00-240.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 240.00-220.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 220.00-200.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 200.00-180.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 180.00-160.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 160.00-140.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 140.00-120.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 120.00-100.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 100.00-80.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 80.00-60.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 60.00-40.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 40.00-20.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 20.00-0.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry (cont'd)

Tower Elevation ft	Connection Offsets							
	Diagonal				K-Bracing			
	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.
	in	in	in	in	in	in	in	in
T1 300.00-280.00	5.0000	5.0000	5.0000	5.0000	0.0000	0.0000	0.0000	0.0000
T2 280.00-260.00	5.0000	5.0000	5.0000	5.0000	0.0000	0.0000	0.0000	0.0000
T3 260.00-240.00	5.0000	6.2500	5.0000	6.2500	0.0000	0.0000	0.0000	0.0000
T4 240.00-220.00	5.0000	10.7500	5.0000	10.7500	0.0000	0.0000	0.0000	0.0000
T5 220.00-200.00	5.0000	10.7500	5.0000	10.7500	0.0000	0.0000	0.0000	0.0000
T6 200.00-180.00	5.0000	10.7500	5.0000	10.7500	0.0000	0.0000	0.0000	0.0000

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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.
T14 40.00-20.00	Flange	1.0000	12	0.8750	1	0.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T15 20.00-0.00	Flange	1.7500	4	0.8750	1	0.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0
		F1554-105		A325N		A325N		A325N		A325N		A325N		A325N	

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8 **	C	No	No	Ar (CaAa)	300.00 - 0.00	3.0000	0	1	1	0.3750	0.3750		0.22
Lighting power cord ****	B	No	No	Ar (CaAa)	300.00 - 0.00	1.0000	-0.48	1	1	0.3800 1.0000	0.7860		0.43
LDF7-50A (1-5/8 FOAM)	C	No	No	Ar (CaAa)	295.00 - 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)	285.00 - 0.00	3.0000	0.4	12	6	0.5200 1.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM) ****	A	No	No	Ar (CaAa)	275.00 - 0.00	3.0000	0.4	12	6	0.5200 1.0000	1.9800		0.82
1.75" Feedline Ladder	C	No	No	Af (CaAa)	300.00 - 0.00	3.0000	0.43	1	1	32.2500 1.0000	1.7500		2.70
1.75" Feedline Ladder *****	C	No	No	Af (CaAa)	300.00 - 0.00	3.0000	0.36	1	1	32.2500 1.0000	1.7500		2.70

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _{AA} 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} In Face ft ²	C _{AA} Out Face ft ²	Weight K
T1	300.00-280.00	A	0.000	0.000	0.000	0.000	0.00

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	<p>Client</p> <p>VB BTS II, LLC</p>	<p>Designed by</p> <p>NS</p>

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
T2	280.00-260.00	B	0.000	0.000	13.452	0.000	0.06
		C	0.000	0.000	48.057	0.000	0.26
		A	0.000	0.000	35.640	0.000	0.15
T3	260.00-240.00	B	0.000	0.000	49.092	0.000	0.21
		C	0.000	0.000	59.937	0.000	0.31
		A	0.000	0.000	47.520	0.000	0.20
T4	240.00-220.00	B	0.000	0.000	49.092	0.000	0.21
		C	0.000	0.000	59.937	0.000	0.31
		A	0.000	0.000	47.520	0.000	0.20
T5	220.00-200.00	B	0.000	0.000	49.092	0.000	0.21
		C	0.000	0.000	59.937	0.000	0.31
		A	0.000	0.000	47.520	0.000	0.20
T6	200.00-180.00	B	0.000	0.000	49.092	0.000	0.21
		C	0.000	0.000	59.937	0.000	0.31
		A	0.000	0.000	47.520	0.000	0.20
T7	180.00-160.00	B	0.000	0.000	49.092	0.000	0.21
		C	0.000	0.000	59.937	0.000	0.31
		A	0.000	0.000	47.520	0.000	0.20
T8	160.00-140.00	B	0.000	0.000	49.092	0.000	0.21
		C	0.000	0.000	59.937	0.000	0.31
		A	0.000	0.000	47.520	0.000	0.20
T9	140.00-120.00	B	0.000	0.000	49.092	0.000	0.21
		C	0.000	0.000	59.937	0.000	0.31
		A	0.000	0.000	47.520	0.000	0.20
T10	120.00-100.00	B	0.000	0.000	49.092	0.000	0.21
		C	0.000	0.000	59.937	0.000	0.31
		A	0.000	0.000	47.520	0.000	0.20
T11	100.00-80.00	B	0.000	0.000	49.092	0.000	0.21
		C	0.000	0.000	59.937	0.000	0.31
		A	0.000	0.000	47.520	0.000	0.20
T12	80.00-60.00	B	0.000	0.000	49.092	0.000	0.21
		C	0.000	0.000	59.937	0.000	0.31
		A	0.000	0.000	47.520	0.000	0.20
T13	60.00-40.00	B	0.000	0.000	49.092	0.000	0.21
		C	0.000	0.000	59.937	0.000	0.31
		A	0.000	0.000	47.520	0.000	0.20
T14	40.00-20.00	B	0.000	0.000	49.092	0.000	0.21
		C	0.000	0.000	59.937	0.000	0.31
		A	0.000	0.000	47.520	0.000	0.20
T15	20.00-0.00	B	0.000	0.000	49.092	0.000	0.21
		C	0.000	0.000	59.937	0.000	0.31
		A	0.000	0.000	47.520	0.000	0.20

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} In Face ft ²	C_{AA} Out Face ft ²	Weight K
T1	300.00-280.00	A	1.864	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	21.638	0.000	0.40
		C		0.000	0.000	72.614	0.000	1.44
T2	280.00-260.00	A	1.851	0.000	0.000	37.762	0.000	0.81
		B		0.000	0.000	59.324	0.000	1.21
		C		0.000	0.000	84.976	0.000	1.70
T3	260.00-240.00	A	1.837	0.000	0.000	50.254	0.000	1.08
		B		0.000	0.000	59.173	0.000	1.20

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	<p>Client</p> <p>VB BTS II, LLC</p>	<p>Designed by</p> <p>NS</p>

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
T4	240.00-220.00	C		0.000	0.000	84.711	0.000	1.69
		A	1.821	0.000	0.000	50.153	0.000	1.07
		B		0.000	0.000	59.010	0.000	1.19
		C		0.000	0.000	84.427	0.000	1.67
T5	220.00-200.00	A	1.805	0.000	0.000	50.043	0.000	1.06
		B		0.000	0.000	58.835	0.000	1.19
		C		0.000	0.000	84.119	0.000	1.66
T6	200.00-180.00	A	1.787	0.000	0.000	49.923	0.000	1.06
		B		0.000	0.000	58.643	0.000	1.18
		C		0.000	0.000	83.783	0.000	1.65
T7	180.00-160.00	A	1.767	0.000	0.000	49.792	0.000	1.05
		B		0.000	0.000	58.432	0.000	1.17
		C		0.000	0.000	83.415	0.000	1.63
T8	160.00-140.00	A	1.745	0.000	0.000	49.645	0.000	1.04
		B		0.000	0.000	58.198	0.000	1.16
		C		0.000	0.000	83.005	0.000	1.61
T9	140.00-120.00	A	1.720	0.000	0.000	49.480	0.000	1.03
		B		0.000	0.000	57.934	0.000	1.15
		C		0.000	0.000	82.542	0.000	1.59
T10	120.00-100.00	A	1.692	0.000	0.000	49.291	0.000	1.02
		B		0.000	0.000	57.631	0.000	1.13
		C		0.000	0.000	82.011	0.000	1.57
T11	100.00-80.00	A	1.658	0.000	0.000	49.068	0.000	1.01
		B		0.000	0.000	57.273	0.000	1.12
		C		0.000	0.000	81.384	0.000	1.55
T12	80.00-60.00	A	1.617	0.000	0.000	48.794	0.000	0.99
		B		0.000	0.000	56.835	0.000	1.10
		C		0.000	0.000	80.617	0.000	1.51
T13	60.00-40.00	A	1.564	0.000	0.000	48.439	0.000	0.97
		B		0.000	0.000	56.266	0.000	1.07
		C		0.000	0.000	79.620	0.000	1.47
T14	40.00-20.00	A	1.486	0.000	0.000	47.923	0.000	0.95
		B		0.000	0.000	55.439	0.000	1.04
		C		0.000	0.000	78.169	0.000	1.42
T15	20.00-0.00	A	1.331	0.000	0.000	46.902	0.000	0.89
		B		0.000	0.000	53.798	0.000	0.97
		C		0.000	0.000	75.293	0.000	1.31

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
T1	300.00-280.00	-6.6340	4.9854	-6.0056	4.8571
T2	280.00-260.00	-3.9966	-0.1183	-3.7505	1.2984
T3	260.00-240.00	-4.5767	-1.8706	-4.3412	0.0336
T4	240.00-220.00	-5.4982	-2.1239	-4.4603	0.0061
T5	220.00-200.00	-6.5872	-2.4683	-5.8386	-0.0175
T6	200.00-180.00	-7.5625	-2.7781	-6.4473	-0.0417
T7	180.00-160.00	-8.4784	-3.0735	-7.2698	-0.0690
T8	160.00-140.00	-8.8280	-3.1903	-7.8495	-0.0974
T9	140.00-120.00	-10.3365	-3.6536	-9.4953	-0.1445
T10	120.00-100.00	-11.2410	-3.9481	-10.2987	-0.1878
T11	100.00-80.00	-11.9115	-4.1591	-11.0202	-0.2379
T12	80.00-60.00	-12.7281	-4.4273	-11.7472	-0.3000
T13	60.00-40.00	-13.5103	-4.6854	-12.4381	-0.3800
T14	40.00-20.00	-14.2597	-4.9338	-13.0894	-0.4950

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Section	Elevation	CP _x	CP _z	CP _x Ice	CP _z Ice
	ft	in	in	in	in
T15	20.00-0.00	-14.1181	-4.9002	-13.2335	-0.7687

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	1	Safety Line 3/8	280.00 - 300.00	0.6000	0.5775
T1	3	Lighting power cord	280.00 - 300.00	0.6000	0.5775
T1	5	LDF7-50A (1-5/8 FOAM)	280.00 - 295.00	0.6000	0.5775
T1	6	LDF7-50A (1-5/8 FOAM)	280.00 - 285.00	0.6000	0.5775
T1	11	1.75" Feedline Ladder	280.00 - 300.00	0.6000	0.5775
T1	12	1.75" Feedline Ladder	280.00 - 300.00	0.6000	0.5775
T2	1	Safety Line 3/8	260.00 - 280.00	0.6000	0.5639
T2	3	Lighting power cord	260.00 - 280.00	0.6000	0.5639
T2	5	LDF7-50A (1-5/8 FOAM)	260.00 - 280.00	0.6000	0.5639
T2	6	LDF7-50A (1-5/8 FOAM)	260.00 - 280.00	0.6000	0.5639
T2	7	LDF7-50A (1-5/8 FOAM)	260.00 - 275.00	0.6000	0.5639
T2	11	1.75" Feedline Ladder	260.00 - 280.00	0.6000	0.5639
T2	12	1.75" Feedline Ladder	260.00 - 280.00	0.6000	0.5639
T3	1	Safety Line 3/8	240.00 - 260.00	0.6000	0.5768
T3	3	Lighting power cord	240.00 - 260.00	0.6000	0.5768
T3	5	LDF7-50A (1-5/8 FOAM)	240.00 - 260.00	0.6000	0.5768
T3	6	LDF7-50A (1-5/8 FOAM)	240.00 - 260.00	0.6000	0.5768
T3	7	LDF7-50A (1-5/8 FOAM)	240.00 - 260.00	0.6000	0.5768
T3	11	1.75" Feedline Ladder	240.00 - 260.00	0.6000	0.5768
T3	12	1.75" Feedline Ladder	240.00 - 260.00	0.6000	0.5768
T4	1	Safety Line 3/8	220.00 - 240.00	0.6000	0.5294
T4	3	Lighting power cord	220.00 - 240.00	0.6000	0.5294
T4	5	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.5294
T4	6	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.5294
T4	7	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.5294

Valmont

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T4	11	1.75" Feedline Ladder	240.00 - 220.00	0.6000	0.5294
T4	12	1.75" Feedline Ladder	240.00 - 220.00	0.6000	0.5294
T5	1	Safety Line 3/8	200.00 - 220.00	0.6000	0.6000
T5	3	Lighting power cord	200.00 - 220.00	0.6000	0.6000
T5	5	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.6000
T5	6	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.6000
T5	7	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.6000
T5	11	1.75" Feedline Ladder	200.00 - 220.00	0.6000	0.6000
T5	12	1.75" Feedline Ladder	200.00 - 220.00	0.6000	0.6000
T6	1	Safety Line 3/8	180.00 - 200.00	0.6000	0.6000
T6	3	Lighting power cord	180.00 - 200.00	0.6000	0.6000
T6	5	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.6000
T6	6	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.6000
T6	7	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.6000
T6	11	1.75" Feedline Ladder	180.00 - 200.00	0.6000	0.6000
T6	12	1.75" Feedline Ladder	180.00 - 200.00	0.6000	0.6000
T7	1	Safety Line 3/8	160.00 - 180.00	0.6000	0.6000
T7	3	Lighting power cord	160.00 - 180.00	0.6000	0.6000
T7	5	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.6000
T7	6	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.6000
T7	7	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.6000
T7	11	1.75" Feedline Ladder	160.00 - 180.00	0.6000	0.6000
T7	12	1.75" Feedline Ladder	160.00 - 180.00	0.6000	0.6000
T8	1	Safety Line 3/8	140.00 - 160.00	0.6000	0.6000
T8	3	Lighting power cord	140.00 - 160.00	0.6000	0.6000
T8	5	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.6000
T8	6	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.6000
T8	7	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.6000
T8	11	1.75" Feedline Ladder	140.00 - 160.00	0.6000	0.6000
T8	12	1.75" Feedline Ladder	140.00 - 160.00	0.6000	0.6000
T9	1	Safety Line 3/8	120.00 -	0.6000	0.6000

Valmont

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	3	Lighting power cord	140.00 - 120.00	0.6000	0.6000
T9	5	LDF7-50A (1-5/8 FOAM)	140.00 - 120.00	0.6000	0.6000
T9	6	LDF7-50A (1-5/8 FOAM)	140.00 - 120.00	0.6000	0.6000
T9	7	LDF7-50A (1-5/8 FOAM)	140.00 - 120.00	0.6000	0.6000
T9	11	1.75" Feedline Ladder	140.00 - 120.00	0.6000	0.6000
T9	12	1.75" Feedline Ladder	140.00 - 120.00	0.6000	0.6000
T10	1	Safety Line 3/8	120.00 - 100.00	0.6000	0.6000
T10	3	Lighting power cord	120.00 - 100.00	0.6000	0.6000
T10	5	LDF7-50A (1-5/8 FOAM)	120.00 - 100.00	0.6000	0.6000
T10	6	LDF7-50A (1-5/8 FOAM)	120.00 - 100.00	0.6000	0.6000
T10	7	LDF7-50A (1-5/8 FOAM)	120.00 - 100.00	0.6000	0.6000
T10	11	1.75" Feedline Ladder	120.00 - 100.00	0.6000	0.6000
T10	12	1.75" Feedline Ladder	120.00 - 100.00	0.6000	0.6000
T11	1	Safety Line 3/8	100.00 - 80.00	0.6000	0.6000
T11	3	Lighting power cord	100.00 - 80.00	0.6000	0.6000
T11	5	LDF7-50A (1-5/8 FOAM)	100.00 - 80.00	0.6000	0.6000
T11	6	LDF7-50A (1-5/8 FOAM)	100.00 - 80.00	0.6000	0.6000
T11	7	LDF7-50A (1-5/8 FOAM)	100.00 - 80.00	0.6000	0.6000
T11	11	1.75" Feedline Ladder	100.00 - 80.00	0.6000	0.6000
T11	12	1.75" Feedline Ladder	100.00 - 80.00	0.6000	0.6000
T12	1	Safety Line 3/8	80.00 - 60.00	0.6000	0.6000
T12	3	Lighting power cord	80.00 - 60.00	0.6000	0.6000
T12	5	LDF7-50A (1-5/8 FOAM)	80.00 - 60.00	0.6000	0.6000
T12	6	LDF7-50A (1-5/8 FOAM)	80.00 - 60.00	0.6000	0.6000
T12	7	LDF7-50A (1-5/8 FOAM)	80.00 - 60.00	0.6000	0.6000
T12	11	1.75" Feedline Ladder	80.00 - 60.00	0.6000	0.6000
T12	12	1.75" Feedline Ladder	80.00 - 60.00	0.6000	0.6000
T13	1	Safety Line 3/8	60.00 - 40.00	0.6000	0.6000
T13	3	Lighting power cord	60.00 - 40.00	0.6000	0.6000
T13	5	LDF7-50A (1-5/8 FOAM)	60.00 - 40.00	0.6000	0.6000
T13	6	LDF7-50A (1-5/8 FOAM)	60.00 - 40.00	0.6000	0.6000
T13	7	LDF7-50A (1-5/8 FOAM)	60.00 - 40.00	0.6000	0.6000
T13	11	1.75" Feedline Ladder	60.00 - 40.00	0.6000	0.6000
T13	12	1.75" Feedline Ladder	60.00 - 40.00	0.6000	0.6000
T14	1	Safety Line 3/8	40.00 - 20.00	0.6000	0.6000
T14	3	Lighting power cord	40.00 - 20.00	0.6000	0.6000
T14	5	LDF7-50A (1-5/8 FOAM)	40.00 - 20.00	0.6000	0.6000
T14	6	LDF7-50A (1-5/8 FOAM)	40.00 - 20.00	0.6000	0.6000
T14	7	LDF7-50A (1-5/8 FOAM)	40.00 - 20.00	0.6000	0.6000
T14	11	1.75" Feedline Ladder	40.00 - 20.00	0.6000	0.6000
T14	12	1.75" Feedline Ladder	40.00 - 20.00	0.6000	0.6000
T15	1	Safety Line 3/8	20.00 - 0.00	0.6000	0.6000
T15	3	Lighting power cord	20.00 - 0.00	0.6000	0.6000
T15	5	LDF7-50A (1-5/8 FOAM)	20.00 - 0.00	0.6000	0.6000
T15	6	LDF7-50A (1-5/8 FOAM)	20.00 - 0.00	0.6000	0.6000
T15	7	LDF7-50A (1-5/8 FOAM)	20.00 - 0.00	0.6000	0.6000
T15	11	1.75" Feedline Ladder	20.00 - 0.00	0.6000	0.6000
T15	12	1.75" Feedline Ladder	20.00 - 0.00	0.6000	0.6000

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Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _A Front	C _A A _A Side	Weight	
			Horz Lateral	Vert						
			ft	ft	°	ft	ft ²	ft ²	K	
5/8" x 7'-6" lightning rod	C	From Leg	0.00	0.00	0.0000	300.00	No Ice	0.47	0.47	0.02
			0.00	0.00			1/2" Ice	1.22	1.22	0.03
			2.50	0.00			1" Ice	1.97	1.97	0.04
Beacon	B	From Leg	0.00	0.00	0.0000	300.00	No Ice	2.40	2.40	0.07
			0.00	0.00			1/2" Ice	2.67	2.67	0.10
			1.00	0.00			1" Ice	2.96	2.96	0.12

OB light	C	From Leg	0.50	0.00	0.0000	150.00	No Ice	0.50	0.50	0.03
			0.00	0.00			1/2" Ice	0.60	0.60	0.04
			1.00	0.00			1" Ice	0.70	0.70	0.04
OB light	B	From Leg	0.50	0.00	0.0000	150.00	No Ice	0.50	0.50	0.03
			0.00	0.00			1/2" Ice	0.60	0.60	0.04
			1.00	0.00			1" Ice	0.70	0.70	0.04
OB light	A	From Leg	0.50	0.00	0.0000	150.00	No Ice	0.50	0.50	0.03
			0.00	0.00			1/2" Ice	0.60	0.60	0.04
			1.00	0.00			1" Ice	0.70	0.70	0.04

40,000 sq.in. (277.78 sq.ft. EPA)	C	None			0.0000	295.00	No Ice	277.78	277.78	4.00
							1/2" Ice	347.23	347.23	5.00
							1" Ice	416.67	416.67	6.00
30,000 sq.in. (208.3 sq.ft. EPA)	B	None			0.0000	285.00	No Ice	208.30	208.30	3.00
							1/2" Ice	260.38	260.38	3.75
							1" Ice	312.45	312.45	4.50
30,000 sq.in. (208.3 sq.ft. EPA)	A	None			0.0000	275.00	No Ice	208.30	208.30	3.00
							1/2" Ice	260.38	260.38	3.75
							1" Ice	312.45	312.45	4.50

Truss-Leg Properties

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
#12ZG-58 - 1.50" - 1.00" conn. (Pirod 194651)	2014.6235	5698.2891	0.62	1.30	6.9952	19.7857	5.3014
#12ZG-58 - 1.50" - 1.00" conn. (Pirod 194651)	2014.6235	5689.0191	0.62	1.28	6.9952	19.7535	5.3014

<p style="text-align: center;">Valmont</p> <p style="text-align: center;">1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458</p>	<p style="text-align: center;">Job</p> <p style="text-align: center;">604200</p>	<p style="text-align: center;">Page</p> <p style="text-align: center;">16 of 66</p>
	<p style="text-align: center;">Project</p> <p style="text-align: center;">H31' x 300' - US-KY-5178 Matney Rd, KY</p>	<p style="text-align: center;">Date</p> <p style="text-align: center;">19:01:00 02/01/24</p>
	<p style="text-align: center;">Client</p> <p style="text-align: center;">VB BTS II, LLC</p>	<p style="text-align: center;">Designed by</p> <p style="text-align: center;">NS</p>

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
#12ZG-58 - 1.75" - 1.00" conn.-TR1-(Pirod 195213)	2040.3061	6544.2416	0.79	1.31	7.0844	22.7231	7.2158
#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	2040.3061	6513.7356	0.79	1.29	7.0844	22.6171	7.2158
#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	2040.3061	6479.8102	0.79	1.27	7.0844	22.4993	7.2158
#12ZG-58 -2.00" - 0.875" conn.-TR3-(Pirod 195637)	2344.3313	5854.1205	1.00	1.27	8.1400	20.3268	9.4248
#12ZG-58 -2.00" - 0.875" conn. (Pirod 195639)	2344.3313	5838.1026	1.00	1.24	8.1400	20.2712	9.4248
#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	2480.3246	5891.2118	1.17	1.22	8.6122	20.4556	11.9282
#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	2480.3246	5868.0820	1.17	1.17	8.6122	20.3753	11.9282
#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	2480.3246	5838.0109	1.17	1.11	8.6122	20.2709	11.9282
#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	2480.3246	5794.2486	1.17	1.02	8.6122	20.1189	11.9282
#12ZG-58 BASE - 2.50" - 0.875" conn.-TR4-(Pirod 281171)	2553.7842	5713.1099	1.29	0.85	8.8673	19.8372	14.7262

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation	z	K _Z	q _z	A _G	F _a	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face	C _A A _A Out Face
ft	ft		psf	ft ²	c	ft ²	ft ²	ft ²		ft ²	ft ²
T1 300.00-280.00	290.00	1.584	38	104.792	A	8.949	9.583	9.583	51.71	0.000	0.000
					B	8.949	9.583	51.71	13.452	0.000	
					C	8.949	9.583	51.71	48.057	0.000	
T2 280.00-260.00	270.00	1.56	37	107.500	A	8.961	15.000	15.000	62.60	35.640	0.000
					B	8.961	15.000	62.60	49.092	0.000	
					C	8.961	15.000	62.60	59.937	0.000	
T3 260.00-240.00	250.00	1.535	37	131.055	A	9.587	22.120	22.120	69.76	47.520	0.000
					B	9.587	22.120	69.76	49.092	0.000	
					C	9.587	22.120	69.76	59.937	0.000	
T4 240.00-220.00	230.00	1.508	36	182.527	A	9.235	23.356	23.356	71.66	47.520	0.000
					B	9.235	23.356	71.66	49.092	0.000	
					C	9.235	23.356	71.66	59.937	0.000	
T5 220.00-200.00	210.00	1.48	35	222.527	A	10.261	23.356	23.356	69.48	47.520	0.000
					B	10.261	23.356	69.48	49.092	0.000	

Valmont 1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458	Job 604200	Page 17 of 66
	Project H31' x 300' - US-KY-5178 Matney Rd, KY	Date 19:01:00 02/01/24
	Client VB BTS II, LLC	Designed by NS

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft ²	F a c e	A_F ft ²	A_R ft ²	A_{leg} ft ²	Leg %	C_{AA} In Face ft ²	C_{AA} Out Face ft ²
T6 200.00-180.00	190.00	1.449	35	262.944	C	10.261	23.356	23.654	69.48	59.937	0.000
					A	11.439	23.654		67.40	47.520	0.000
					B	11.439	23.654		67.40	49.092	0.000
T7 180.00-160.00	170.00	1.415	34	302.944	C	11.439	23.654	23.654	67.40	59.937	0.000
					A	12.727	23.654		65.02	47.520	0.000
					B	12.727	23.654		65.02	49.092	0.000
T8 160.00-140.00	150.00	1.378	33	342.944	C	12.727	23.654	23.654	65.02	59.937	0.000
					A	16.913	23.654		58.31	47.520	0.000
					B	16.913	23.654		58.31	49.092	0.000
T9 140.00-120.00	130.00	1.337	32	383.361	C	16.913	23.654	23.654	58.31	59.937	0.000
					A	12.514	27.179		68.47	47.520	0.000
					B	12.514	27.179		68.47	49.092	0.000
T10 120.00-100.00	110.00	1.291	31	423.361	C	12.514	27.179	27.179	68.47	59.937	0.000
					A	13.178	27.179		67.35	47.520	0.000
					B	13.178	27.179		67.35	49.092	0.000
T11 100.00-80.00	90.00	1.238	30	463.778	C	13.178	27.179	27.179	67.35	59.937	0.000
					A	13.884	28.755		67.44	47.520	0.000
					B	13.884	28.755		67.44	49.092	0.000
T12 80.00-60.00	70.00	1.174	28	503.778	C	13.884	28.755	28.755	67.44	59.937	0.000
					A	14.623	28.755		66.29	47.520	0.000
					B	14.623	28.755		66.29	49.092	0.000
T13 60.00-40.00	50.00	1.094	26	543.778	C	14.623	28.755	28.755	66.29	59.937	0.000
					A	15.392	28.755		65.13	47.520	0.000
					B	15.392	28.755		65.13	49.092	0.000
T14 40.00-20.00	30.00	0.982	24	583.778	C	15.392	28.755	28.755	65.13	59.937	0.000
					A	16.187	28.755		63.98	47.520	0.000
					B	16.187	28.755		63.98	49.092	0.000
T15 20.00-0.00	10.00	0.85	20	624.196	C	16.187	28.755	29.607	63.98	59.937	0.000
					A	19.836	29.607		59.88	47.520	0.000
					B	19.836	29.607		59.88	49.092	0.000
					C	19.836	29.607		59.88	59.937	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 ft ²	F a c e	A_F ft ²	A_R ft ²	A_{leg} ft ²	Leg %	C_{AA} In Face ft ²	C_{AA} Out Face ft ²
T1 300.00-280.00	290.00	1.584	3	1.8641	111.005	A	8.949	37.954	22.011	46.93	0.000	0.000
						B	8.949	37.954		46.93	21.638	0.000
						C	8.949	37.954		46.93	72.614	0.000
T2 280.00-260.00	270.00	1.56	3	1.8509	113.670	A	8.961	40.607	27.339	55.15	37.762	0.000
						B	8.961	40.607		55.15	59.324	0.000
						C	8.961	40.607		55.15	84.976	0.000
T3 260.00-240.00	250.00	1.535	3	1.8367	137.185	A	9.587	48.471	34.385	59.23	50.254	0.000
						B	9.587	48.471		59.23	59.173	0.000
						C	9.587	48.471		59.23	84.711	0.000
T4 240.00-220.00	230.00	1.508	3	1.8214	188.606	A	9.235	79.519	66.062	74.43	50.153	0.000
						B	9.235	79.519		74.43	59.010	0.000
						C	9.235	79.519		74.43	84.427	0.000
T5 220.00-200.00	210.00	1.48	3	1.8049	228.551	A	10.261	80.771	65.955	72.45	50.043	0.000
						B	10.261	80.771		72.45	58.835	0.000
						C	10.261	80.771		72.45	84.119	0.000
T6	190.00	1.449	3	1.7870	268.908	A	11.439	92.223	75.870	73.19	49.923	0.000

Valmont

1545 Pidco Drive
Plymouth, IN
Phone: (574) 936-4221
FAX: (574) 936-6458

Job	604200	Page	18 of 66
Project	H31' x 300' - US-KY-5178 Matney Rd, KY	Date	19:01:00 02/01/24
Client	VB BTS II, LLC	Designed by	NS

Section Elevation	z	K _Z	q _z	t _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face	C _A A _A Out Face	
ft	ft		psf	in	ft ²		ft ²	ft ²	ft ²		ft ²	ft ²	
200.00-180.00						B	11.439	92.223		73.19	58.643	0.000	
						C	11.439	92.223		73.19	83.783	0.000	
T7	170.00	1.415	3	1.7672	308.842	A	12.727	93.509	75.516	71.08	49.792	0.000	
180.00-160.00						B	12.727	93.509		71.08	58.432	0.000	
						C	12.727	93.509		71.08	83.415	0.000	
T8	150.00	1.378	3	1.7452	348.769	A	16.913	94.801	75.123	67.25	49.645	0.000	
160.00-140.00						B	16.913	94.801		67.25	58.198	0.000	
						C	16.913	94.801		67.25	83.005	0.000	
T9	130.00	1.337	3	1.7204	389.103	A	12.514	82.221	67.869	71.64	49.480	0.000	
140.00-120.00						B	12.514	82.221		71.64	57.934	0.000	
						C	12.514	82.221		71.64	82.542	0.000	
T10	110.00	1.291	3	1.6919	429.008	A	13.178	82.548	67.683	70.70	49.291	0.000	
120.00-100.00						B	13.178	82.548		70.70	57.631	0.000	
						C	13.178	82.548		70.70	82.011	0.000	
T11	90.00	1.238	2	1.6583	469.313	A	13.884	83.648	68.299	70.03	49.068	0.000	
100.00-80.00						B	13.884	83.648		70.03	57.273	0.000	
						C	13.884	83.648		70.03	81.384	0.000	
T12	80.00-60.00	70.00	1.174	2	1.6171	509.176	A	14.623	83.796	68.031	69.12	48.794	0.000
						B	14.623	83.796		69.12	56.835	0.000	
						C	14.623	83.796		69.12	80.617	0.000	
T13	60.00-40.00	50.00	1.094	2	1.5636	548.997	A	15.392	83.727	67.682	68.28	48.439	0.000
						B	15.392	83.727		68.28	56.266	0.000	
						C	15.392	83.727		68.28	79.620	0.000	
T14	40.00-20.00	30.00	0.982	2	1.4858	588.737	A	16.187	83.208	67.175	67.58	47.923	0.000
						B	16.187	83.208		67.58	55.439	0.000	
						C	16.187	83.208		67.58	78.169	0.000	
T15	20.00-0.00	10.00	0.85	2	1.3312	628.639	A	19.836	81.323	66.234	65.47	46.902	0.000
						B	19.836	81.323		65.47	53.798	0.000	
						C	19.836	81.323		65.47	75.293	0.000	

Tower Pressure - Service

$$G_H = 0.850$$

Section Elevation	z	K _Z	q _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face	C _A A _A Out Face
ft	ft		psf	ft ²		ft ²	ft ²	ft ²		ft ²	ft ²
T1	290.00	1.584	12	104.792	A	8.949	9.583	9.583	51.71	0.000	0.000
300.00-280.00					B	8.949	9.583		51.71	13.452	0.000
					C	8.949	9.583		51.71	48.057	0.000
T2	270.00	1.56	12	107.500	A	8.961	15.000	15.000	62.60	35.640	0.000
280.00-260.00					B	8.961	15.000		62.60	49.092	0.000
					C	8.961	15.000		62.60	59.937	0.000
T3	250.00	1.535	12	131.055	A	9.587	22.120	22.120	69.76	47.520	0.000
260.00-240.00					B	9.587	22.120		69.76	49.092	0.000
					C	9.587	22.120		69.76	59.937	0.000
T4	230.00	1.508	12	182.527	A	9.235	23.356	23.356	71.66	47.520	0.000
240.00-220.00					B	9.235	23.356		71.66	49.092	0.000
					C	9.235	23.356		71.66	59.937	0.000
T5	210.00	1.48	12	222.527	A	10.261	23.356	23.356	69.48	47.520	0.000
220.00-200.00					B	10.261	23.356		69.48	49.092	0.000
					C	10.261	23.356		69.48	59.937	0.000
T6	190.00	1.449	11	262.944	A	11.439	23.654	23.654	67.40	47.520	0.000
200.00-180.00					B	11.439	23.654		67.40	49.092	0.000

<p>Valmont</p> <p>1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458</p>	<p>Job</p> <p>604200</p>	<p>Page</p> <p>19 of 66</p>
	<p>Project</p> <p>H31' x 300' - US-KY-5178 Matney Rd, KY</p>	<p>Date</p> <p>19:01:00 02/01/24</p>
	<p>Client</p> <p>VB BTS II, LLC</p>	<p>Designed by</p> <p>NS</p>

Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
T7 180.00-160.00	170.00	1.415	11	302.944	C	11.439	23.654	23.654	67.40	59.937	0.000
					A	12.727	23.654			47.520	0.000
					B	12.727	23.654			49.092	0.000
T8 160.00-140.00	150.00	1.378	11	342.944	C	12.727	23.654	23.654	58.31	59.937	0.000
					A	16.913	23.654			47.520	0.000
					B	16.913	23.654			49.092	0.000
T9 140.00-120.00	130.00	1.337	10	383.361	C	16.913	23.654	27.179	58.31	59.937	0.000
					A	12.514	27.179			47.520	0.000
					B	12.514	27.179			49.092	0.000
T10 120.00-100.00	110.00	1.291	10	423.361	C	12.514	27.179	27.179	68.47	59.937	0.000
					A	13.178	27.179			47.520	0.000
					B	13.178	27.179			49.092	0.000
T11 100.00-80.00	90.00	1.238	10	463.778	C	13.178	27.179	28.755	67.35	59.937	0.000
					A	13.884	28.755			47.520	0.000
					B	13.884	28.755			49.092	0.000
T12 80.00-60.00	70.00	1.174	9	503.778	C	13.884	28.755	28.755	66.29	59.937	0.000
					A	14.623	28.755			47.520	0.000
					B	14.623	28.755			49.092	0.000
T13 60.00-40.00	50.00	1.094	9	543.778	C	14.623	28.755	28.755	65.13	59.937	0.000
					A	15.392	28.755			47.520	0.000
					B	15.392	28.755			49.092	0.000
T14 40.00-20.00	30.00	0.982	8	583.778	C	15.392	28.755	28.755	63.98	59.937	0.000
					A	16.187	28.755			47.520	0.000
					B	16.187	28.755			49.092	0.000
T15 20.00-0.00	10.00	0.85	7	624.196	C	16.187	28.755	29.607	63.98	59.937	0.000
					A	19.836	29.607			47.520	0.000
					B	19.836	29.607			49.092	0.000
					C	19.836	29.607		59.88	59.937	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T1 300.00-280.00	0.32	0.68	A	0.177	2.675	38	1	1	14.420	2.08	103.76	C
			B	0.177	2.675				14.420			
			C	0.177	2.675				14.420			
T2 280.00-260.00	0.66	1.49	A	0.223	2.521	37	1	1	16.680	2.85	142.65	C
			B	0.223	2.521				16.680			
			C	0.223	2.521				16.680			
T3 260.00-240.00	0.71	1.64	A	0.242	2.462	37	1	1	20.000	3.12	155.90	C
			B	0.242	2.462				20.000			
			C	0.242	2.462				20.000			
T4 240.00-220.00	0.71	2.29	A	0.179	2.669	36	1	1	22.573	3.40	170.13	C
			B	0.179	2.669				22.573			
			C	0.179	2.669				22.573			
T5 220.00-200.00	0.71	2.34	A	0.151	2.768	35	1	1	23.519	3.48	174.20	C
			B	0.151	2.768				23.519			
			C	0.151	2.768				23.519			
T6 200.00-180.00	0.71	2.90	A	0.133	2.833	35	1	1	24.829	3.57	178.33	C
			B	0.133	2.833				24.829			
			C	0.133	2.833				24.829			
T7 180.00-160.00	0.71	3.15	A	0.12	2.885	34	1	1	26.095	3.63	181.32	C
			B	0.12	2.885				26.095			
			C	0.12	2.885				26.095			
T8	0.71	3.16	A	0.118	2.892	33	1	1	30.279	3.88	193.86	C

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	Project H31' x 300' - US-KY-5178 Matney Rd, KY	Date 19:01:00 02/01/24
	Client VB BTS II, LLC	Designed by NS

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
160.00-140.00			B	0.118	2.892		1	1	30.279			
			C	0.118	2.892		1	1	30.279			
T9	0.71	4.16	A	0.104	2.95	32	1	1	27.855	3.62	180.76	C
140.00-120.00			B	0.104	2.95		1	1	27.855			
			C	0.104	2.95		1	1	27.855			
T10	0.71	4.23	A	0.095	2.983	31	1	1	28.514	3.57	178.31	C
120.00-100.00			B	0.095	2.983		1	1	28.514			
			C	0.095	2.983		1	1	28.514			
T11	0.71	4.83	A	0.092	2.997	30	1	1	30.108	3.55	177.46	C
100.00-80.00			B	0.092	2.997		1	1	30.108			
			C	0.092	2.997		1	1	30.108			
T12	0.71	4.89	A	0.086	3.021	28	1	1	30.846	3.44	171.84	C
80.00-60.00			B	0.086	3.021		1	1	30.846			
			C	0.086	3.021		1	1	30.846			
T13	0.71	4.97	A	0.081	3.041	26	1	1	31.615	3.27	163.40	C
60.00-40.00			B	0.081	3.041		1	1	31.615			
			C	0.081	3.041		1	1	31.615			
T14	0.71	5.53	A	0.077	3.058	24	1	1	32.411	2.99	149.73	C
40.00-20.00			B	0.077	3.058		1	1	32.411			
			C	0.077	3.058		1	1	32.411			
T15	0.71	6.33	A	0.079	3.049	20	1	1	36.540	2.80	140.22	C
20.00-0.00			B	0.079	3.049		1	1	36.540			
			C	0.079	3.049		1	1	36.540			
Sum Weight:	10.23	52.59						OTM	7245.10 kip-ft	49.24		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T1	0.32	0.68	A	0.177	2.675	38	0.8	1	12.630	1.92	96.03	A
300.00-280.00			B	0.177	2.675		0.8	1	12.630			
			C	0.177	2.675		0.8	1	12.630			
T2	0.66	1.49	A	0.223	2.521	37	0.8	1	14.888	2.71	135.46	C
280.00-260.00			B	0.223	2.521		0.8	1	14.888			
			C	0.223	2.521		0.8	1	14.888			
T3	0.71	1.64	A	0.242	2.462	37	0.8	1	18.082	2.97	148.52	C
260.00-240.00			B	0.242	2.462		0.8	1	18.082			
			C	0.242	2.462		0.8	1	18.082			
T4	0.71	2.29	A	0.179	2.669	36	0.8	1	20.726	3.25	162.55	C
240.00-220.00			B	0.179	2.669		0.8	1	20.726			
			C	0.179	2.669		0.8	1	20.726			
T5	0.71	2.34	A	0.151	2.768	35	0.8	1	21.467	3.31	165.63	C
220.00-200.00			B	0.151	2.768		0.8	1	21.467			
			C	0.151	2.768		0.8	1	21.467			
T6	0.71	2.90	A	0.133	2.833	35	0.8	1	22.541	3.38	168.76	C
200.00-180.00			B	0.133	2.833		0.8	1	22.541			
			C	0.133	2.833		0.8	1	22.541			
T7	0.71	3.15	A	0.12	2.885	34	0.8	1	23.550	3.41	170.72	C
180.00-160.00			B	0.12	2.885		0.8	1	23.550			
			C	0.12	2.885		0.8	1	23.550			
T8	0.71	3.16	A	0.118	2.892	33	0.8	1	26.897	3.60	180.11	C

<p>Valmont</p> <p>1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458</p>	<p>Job</p> <p>604200</p>	<p>Page</p> <p>21 of 66</p>
	<p>Project</p> <p>H31' x 300' - US-KY-5178 Matney Rd, KY</p>	<p>Date</p> <p>19:01:00 02/01/24</p>
	<p>Client</p> <p>VB BTS II, LLC</p>	<p>Designed by</p> <p>NS</p>

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
160.00-140.00			B	0.118	2.892		0.8	1	26.897			
			C	0.118	2.892		0.8	1	26.897			
T9	0.71	4.16	A	0.104	2.95	32	0.8	1	25.352	3.41	170.69	C
140.00-120.00			B	0.104	2.95		0.8	1	25.352			
			C	0.104	2.95		0.8	1	25.352			
T10	0.71	4.23	A	0.095	2.983	31	0.8	1	25.879	3.36	167.96	C
120.00-100.00			B	0.095	2.983		0.8	1	25.879			
			C	0.095	2.983		0.8	1	25.879			
T11	0.71	4.83	A	0.092	2.997	30	0.8	1	27.331	3.34	166.96	C
100.00-80.00			B	0.092	2.997		0.8	1	27.331			
			C	0.092	2.997		0.8	1	27.331			
T12	0.71	4.89	A	0.086	3.021	28	0.8	1	27.921	3.23	161.27	C
80.00-60.00			B	0.086	3.021		0.8	1	27.921			
			C	0.086	3.021		0.8	1	27.921			
T13	0.71	4.97	A	0.081	3.041	26	0.8	1	28.537	3.06	152.96	C
60.00-40.00			B	0.081	3.041		0.8	1	28.537			
			C	0.081	3.041		0.8	1	28.537			
T14	0.71	5.53	A	0.077	3.058	24	0.8	1	29.173	2.80	139.81	C
40.00-20.00			B	0.077	3.058		0.8	1	29.173			
			C	0.077	3.058		0.8	1	29.173			
T15	0.71	6.33	A	0.079	3.049	20	0.8	1	32.573	2.59	129.74	C
20.00-0.00			B	0.079	3.049		0.8	1	32.573			
			C	0.079	3.049		0.8	1	32.573			
Sum Weight:	10.23	52.59						OTM	6838.87 kip-ft	46.34		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T1	0.32	0.68	A	0.177	2.675	38	0.85	1	13.077	1.93	96.52	A
300.00-280.00			B	0.177	2.675		0.85	1	13.077			
			C	0.177	2.675		0.85	1	13.077			
T2	0.66	1.49	A	0.223	2.521	37	0.85	1	15.336	2.77	138.68	A
280.00-260.00			B	0.223	2.521		0.85	1	15.336			
			C	0.223	2.521		0.85	1	15.336			
T3	0.71	1.64	A	0.242	2.462	37	0.85	1	18.562	3.01	150.36	C
260.00-240.00			B	0.242	2.462		0.85	1	18.562			
			C	0.242	2.462		0.85	1	18.562			
T4	0.71	2.29	A	0.179	2.669	36	0.85	1	21.188	3.29	164.44	C
240.00-220.00			B	0.179	2.669		0.85	1	21.188			
			C	0.179	2.669		0.85	1	21.188			
T5	0.71	2.34	A	0.151	2.768	35	0.85	1	21.980	3.36	167.77	C
220.00-200.00			B	0.151	2.768		0.85	1	21.980			
			C	0.151	2.768		0.85	1	21.980			
T6	0.71	2.90	A	0.133	2.833	35	0.85	1	23.113	3.42	171.15	C
200.00-180.00			B	0.133	2.833		0.85	1	23.113			
			C	0.133	2.833		0.85	1	23.113			
T7	0.71	3.15	A	0.12	2.885	34	0.85	1	24.186	3.47	173.37	C
180.00-160.00			B	0.12	2.885		0.85	1	24.186			
			C	0.12	2.885		0.85	1	24.186			
T8	0.71	3.16	A	0.118	2.892	33	0.85	1	27.742	3.67	183.55	C

<p>Valmont</p> <p>1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458</p>	<p>Job</p> <p>604200</p>	<p>Page</p> <p>22 of 66</p>
	<p>Project</p> <p>H31' x 300' - US-KY-5178 Matney Rd, KY</p>	<p>Date</p> <p>19:01:00 02/01/24</p>
	<p>Client</p> <p>VB BTS II, LLC</p>	<p>Designed by</p> <p>NS</p>

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
160.00-140.00			B	0.118	2.892		0.85	1	27.742			
			C	0.118	2.892		0.85	1	27.742			
T9	0.71	4.16	A	0.104	2.95	32	0.85	1	25.978	3.46	173.21	C
140.00-120.00			B	0.104	2.95		0.85	1	25.978			
			C	0.104	2.95		0.85	1	25.978			
T10	0.71	4.23	A	0.095	2.983	31	0.85	1	26.538	3.41	170.55	C
120.00-100.00			B	0.095	2.983		0.85	1	26.538			
			C	0.095	2.983		0.85	1	26.538			
T11	0.71	4.83	A	0.092	2.997	30	0.85	1	28.025	3.39	169.58	C
100.00-80.00			B	0.092	2.997		0.85	1	28.025			
			C	0.092	2.997		0.85	1	28.025			
T12	0.71	4.89	A	0.086	3.021	28	0.85	1	28.653	3.28	163.91	C
80.00-60.00			B	0.086	3.021		0.85	1	28.653			
			C	0.086	3.021		0.85	1	28.653			
T13	0.71	4.97	A	0.081	3.041	26	0.85	1	29.306	3.11	155.57	C
60.00-40.00			B	0.081	3.041		0.85	1	29.306			
			C	0.081	3.041		0.85	1	29.306			
T14	0.71	5.53	A	0.077	3.058	24	0.85	1	29.983	2.85	142.29	C
40.00-20.00			B	0.077	3.058		0.85	1	29.983			
			C	0.077	3.058		0.85	1	29.983			
T15	0.71	6.33	A	0.079	3.049	20	0.85	1	33.565	2.65	132.36	C
20.00-0.00			B	0.079	3.049		0.85	1	33.565			
			C	0.079	3.049		0.85	1	33.565			
Sum Weight:	10.23	52.59						OTM	6939.74 kip-ft	47.07		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T1	1.84	3.03	A	0.423	2.021	3	1	1	33.478	0.31	15.38	C
300.00-280.00			B	0.423	2.021		1	1	33.478			
			C	0.423	2.021		1	1	33.478			
T2	3.72	3.93	A	0.436	1.997	3	1	1	35.460	0.39	19.25	C
280.00-260.00			B	0.436	1.997		1	1	35.460			
			C	0.436	1.997		1	1	35.460			
T3	3.96	4.45	A	0.423	2.02	3	1	1	40.927	0.42	21.16	C
260.00-240.00			B	0.423	2.02		1	1	40.927			
			C	0.423	2.02		1	1	40.927			
T4	3.94	7.78	A	0.471	1.941	3	1	1	62.478	0.50	24.75	C
240.00-220.00			B	0.471	1.941		1	1	62.478			
			C	0.471	1.941		1	1	62.478			
T5	3.91	7.92	A	0.398	2.067	3	1	1	61.592	0.52	26.24	C
220.00-200.00			B	0.398	2.067		1	1	61.592			
			C	0.398	2.067		1	1	61.592			
T6	3.88	8.77	A	0.385	2.093	3	1	1	69.547	0.56	27.85	C
200.00-180.00			B	0.385	2.093		1	1	69.547			
			C	0.385	2.093		1	1	69.547			
T7	3.85	9.13	A	0.344	2.186	3	1	1	70.125	0.56	28.07	C
180.00-160.00			B	0.344	2.186		1	1	70.125			
			C	0.344	2.186		1	1	70.125			
T8	3.81	9.56	A	0.32	2.243	3	1	1	74.315	0.58	28.83	C

Valmont 1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458	Job 604200	Page 23 of 66
	Project H31' x 300' - US-KY-5178 Matney Rd, KY	Date 19:01:00 02/01/24
	Client VB BTS II, LLC	Designed by NS

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
160.00-140.00			B	0.32	2.243		1	1	74.315			
			C	0.32	2.243		1	1	74.315			
T9	3.77	10.41	A	0.243	2.457	3	1	1	60.484	0.52	25.91	C
140.00-120.00			B	0.243	2.457		1	1	60.484			
			C	0.243	2.457		1	1	60.484			
T10	3.72	10.45	A	0.223	2.521	3	1	1	60.966	0.51	25.50	C
120.00-100.00			B	0.223	2.521		1	1	60.966			
			C	0.223	2.521		1	1	60.966			
T11	3.67	11.07	A	0.208	2.57	2	1	1	62.056	0.50	24.98	C
100.00-80.00			B	0.208	2.57		1	1	62.056			
			C	0.208	2.57		1	1	62.056			
T12	3.60	11.05	A	0.193	2.619	2	1	1	62.667	0.48	24.07	C
80.00-60.00			B	0.193	2.619		1	1	62.667			
			C	0.193	2.619		1	1	62.667			
T13	3.52	10.97	A	0.181	2.662	2	1	1	63.229	0.45	22.72	C
60.00-40.00			B	0.181	2.662		1	1	63.229			
			C	0.181	2.662		1	1	63.229			
T14	3.40	11.24	A	0.169	2.703	2	1	1	63.592	0.41	20.58	C
40.00-20.00			B	0.169	2.703		1	1	63.592			
			C	0.169	2.703		1	1	63.592			
T15	3.16	11.64	A	0.161	2.732	2	1	1	66.088	0.36	18.20	C
20.00-0.00			B	0.161	2.732		1	1	66.088			
			C	0.161	2.732		1	1	66.088			
Sum Weight:	53.74	131.40						OTM	1051.58 kip-ft	7.07		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T1	1.84	3.03	A	0.423	2.021	3	0.8	1	31.688	0.30	14.90	A
300.00-280.00			B	0.423	2.021		0.8	1	31.688			
			C	0.423	2.021		0.8	1	31.688			
T2	3.72	3.93	A	0.436	1.997	3	0.8	1	33.668	0.38	18.79	C
280.00-260.00			B	0.436	1.997		0.8	1	33.668			
			C	0.436	1.997		0.8	1	33.668			
T3	3.96	4.45	A	0.423	2.02	3	0.8	1	39.010	0.41	20.66	C
260.00-240.00			B	0.423	2.02		0.8	1	39.010			
			C	0.423	2.02		0.8	1	39.010			
T4	3.94	7.78	A	0.471	1.941	3	0.8	1	60.631	0.49	24.30	C
240.00-220.00			B	0.471	1.941		0.8	1	60.631			
			C	0.471	1.941		0.8	1	60.631			
T5	3.91	7.92	A	0.398	2.067	3	0.8	1	59.540	0.51	25.71	C
220.00-200.00			B	0.398	2.067		0.8	1	59.540			
			C	0.398	2.067		0.8	1	59.540			
T6	3.88	8.77	A	0.385	2.093	3	0.8	1	67.259	0.55	27.27	C
200.00-180.00			B	0.385	2.093		0.8	1	67.259			
			C	0.385	2.093		0.8	1	67.259			
T7	3.85	9.13	A	0.344	2.186	3	0.8	1	67.580	0.55	27.41	C
180.00-160.00			B	0.344	2.186		0.8	1	67.580			
			C	0.344	2.186		0.8	1	67.580			
T8	3.81	9.56	A	0.32	2.243	3	0.8	1	70.933	0.56	27.96	C

<p>Valmont</p> <p>1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458</p>	<p>Job</p> <p>604200</p>	<p>Page</p> <p>24 of 66</p>
	<p>Project</p> <p>H31' x 300' - US-KY-5178 Matney Rd, KY</p>	<p>Date</p> <p>19:01:00 02/01/24</p>
	<p>Client</p> <p>VB BTS II, LLC</p>	<p>Designed by</p> <p>NS</p>

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
160.00-140.00			B	0.32	2.243		0.8	1	70.933			
			C	0.32	2.243		0.8	1	70.933			
T9	3.77	10.41	A	0.243	2.457	3	0.8	1	57.981	0.50	25.23	C
140.00-120.00			B	0.243	2.457		0.8	1	57.981			
			C	0.243	2.457		0.8	1	57.981			
T10	3.72	10.45	A	0.223	2.521	3	0.8	1	58.331	0.50	24.79	C
120.00-100.00			B	0.223	2.521		0.8	1	58.331			
			C	0.223	2.521		0.8	1	58.331			
T11	3.67	11.07	A	0.208	2.57	2	0.8	1	59.279	0.48	24.25	C
100.00-80.00			B	0.208	2.57		0.8	1	59.279			
			C	0.208	2.57		0.8	1	59.279			
T12	3.60	11.05	A	0.193	2.619	2	0.8	1	59.742	0.47	23.32	C
80.00-60.00			B	0.193	2.619		0.8	1	59.742			
			C	0.193	2.619		0.8	1	59.742			
T13	3.52	10.97	A	0.181	2.662	2	0.8	1	60.151	0.44	21.97	C
60.00-40.00			B	0.181	2.662		0.8	1	60.151			
			C	0.181	2.662		0.8	1	60.151			
T14	3.40	11.24	A	0.169	2.703	2	0.8	1	60.354	0.40	19.86	C
40.00-20.00			B	0.169	2.703		0.8	1	60.354			
			C	0.169	2.703		0.8	1	60.354			
T15	3.16	11.64	A	0.161	2.732	2	0.8	1	62.121	0.35	17.43	C
20.00-0.00			B	0.161	2.732		0.8	1	62.121			
			C	0.161	2.732		0.8	1	62.121			
Sum Weight:	53.74	131.40						OTM	1025.49 kip-ft	6.88		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T1	1.84	3.03	A	0.423	2.021	3	0.85	1	32.136	0.30	14.91	A
300.00-280.00			B	0.423	2.021		0.85	1	32.136			
			C	0.423	2.021		0.85	1	32.136			
T2	3.72	3.93	A	0.436	1.997	3	0.85	1	34.116	0.38	19.01	A
280.00-260.00			B	0.436	1.997		0.85	1	34.116			
			C	0.436	1.997		0.85	1	34.116			
T3	3.96	4.45	A	0.423	2.02	3	0.85	1	39.489	0.42	20.79	C
260.00-240.00			B	0.423	2.02		0.85	1	39.489			
			C	0.423	2.02		0.85	1	39.489			
T4	3.94	7.78	A	0.471	1.941	3	0.85	1	61.092	0.49	24.41	C
240.00-220.00			B	0.471	1.941		0.85	1	61.092			
			C	0.471	1.941		0.85	1	61.092			
T5	3.91	7.92	A	0.398	2.067	3	0.85	1	60.053	0.52	25.84	C
220.00-200.00			B	0.398	2.067		0.85	1	60.053			
			C	0.398	2.067		0.85	1	60.053			
T6	3.88	8.77	A	0.385	2.093	3	0.85	1	67.831	0.55	27.42	C
200.00-180.00			B	0.385	2.093		0.85	1	67.831			
			C	0.385	2.093		0.85	1	67.831			
T7	3.85	9.13	A	0.344	2.186	3	0.85	1	68.216	0.55	27.57	C
180.00-160.00			B	0.344	2.186		0.85	1	68.216			
			C	0.344	2.186		0.85	1	68.216			
T8	3.81	9.56	A	0.32	2.243	3	0.85	1	71.778	0.56	28.18	C

<p>Valmont</p> <p>1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458</p>	<p>Job</p> <p>604200</p>	<p>Page</p> <p>25 of 66</p>
	<p>Project</p> <p>H31' x 300' - US-KY-5178 Matney Rd, KY</p>	<p>Date</p> <p>19:01:00 02/01/24</p>
	<p>Client</p> <p>VB BTS II, LLC</p>	<p>Designed by</p> <p>NS</p>

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
160.00-140.00			B	0.32	2.243		0.85	1	71.778			
			C	0.32	2.243		0.85	1	71.778			
T9	3.77	10.41	A	0.243	2.457	3	0.85	1	58.607	0.51	25.40	C
140.00-120.00			B	0.243	2.457		0.85	1	58.607			
			C	0.243	2.457		0.85	1	58.607			
T10	3.72	10.45	A	0.223	2.521	3	0.85	1	58.990	0.50	24.97	C
120.00-100.00			B	0.223	2.521		0.85	1	58.990			
			C	0.223	2.521		0.85	1	58.990			
T11	3.67	11.07	A	0.208	2.57	2	0.85	1	59.973	0.49	24.43	C
100.00-80.00			B	0.208	2.57		0.85	1	59.973			
			C	0.208	2.57		0.85	1	59.973			
T12	3.60	11.05	A	0.193	2.619	2	0.85	1	60.473	0.47	23.51	C
80.00-60.00			B	0.193	2.619		0.85	1	60.473			
			C	0.193	2.619		0.85	1	60.473			
T13	3.52	10.97	A	0.181	2.662	2	0.85	1	60.921	0.44	22.16	C
60.00-40.00			B	0.181	2.662		0.85	1	60.921			
			C	0.181	2.662		0.85	1	60.921			
T14	3.40	11.24	A	0.169	2.703	2	0.85	1	61.164	0.40	20.04	C
40.00-20.00			B	0.169	2.703		0.85	1	61.164			
			C	0.169	2.703		0.85	1	61.164			
T15	3.16	11.64	A	0.161	2.732	2	0.85	1	63.113	0.35	17.63	C
20.00-0.00			B	0.161	2.732		0.85	1	63.113			
			C	0.161	2.732		0.85	1	63.113			
Sum Weight:	53.74	131.40						OTM	1031.94 kip-ft	6.93		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T1	0.32	0.68	A	0.177	2.675	12	1	1	14.420	0.68	33.88	C
300.00-280.00			B	0.177	2.675		1	1	14.420			
			C	0.177	2.675		1	1	14.420			
T2	0.66	1.49	A	0.223	2.521	12	1	1	17.644	0.96	47.84	C
280.00-260.00			B	0.223	2.521		1	1	17.644			
			C	0.223	2.521		1	1	17.644			
T3	0.71	1.64	A	0.242	2.462	12	1	1	21.782	1.06	53.15	C
260.00-240.00			B	0.242	2.462		1	1	21.782			
			C	0.242	2.462		1	1	21.782			
T4	0.71	2.29	A	0.179	2.669	12	1	1	22.573	1.11	55.55	C
240.00-220.00			B	0.179	2.669		1	1	22.573			
			C	0.179	2.669		1	1	22.573			
T5	0.71	2.34	A	0.151	2.768	12	1	1	23.519	1.14	56.88	C
220.00-200.00			B	0.151	2.768		1	1	23.519			
			C	0.151	2.768		1	1	23.519			
T6	0.71	2.90	A	0.133	2.833	11	1	1	24.829	1.16	58.23	C
200.00-180.00			B	0.133	2.833		1	1	24.829			
			C	0.133	2.833		1	1	24.829			
T7	0.71	3.15	A	0.12	2.885	11	1	1	26.095	1.18	59.21	C
180.00-160.00			B	0.12	2.885		1	1	26.095			
			C	0.12	2.885		1	1	26.095			
T8	0.71	3.16	A	0.118	2.892	11	1	1	30.279	1.27	63.30	C

Valmont 1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458	Job 604200	Page 26 of 66
	Project H31' x 300' - US-KY-5178 Matney Rd, KY	Date 19:01:00 02/01/24
	Client VB BTS II, LLC	Designed by NS

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
160.00-140.00			B	0.118	2.892		1	1	30.279			
			C	0.118	2.892		1	1	30.279			
T9	0.71	4.16	A	0.104	2.95	10	1	1	27.855	1.18	59.02	C
140.00-120.00			B	0.104	2.95		1	1	27.855			
			C	0.104	2.95		1	1	27.855			
T10	0.71	4.23	A	0.095	2.983	10	1	1	28.514	1.16	58.22	C
120.00-100.00			B	0.095	2.983		1	1	28.514			
			C	0.095	2.983		1	1	28.514			
T11	0.71	4.83	A	0.092	2.997	10	1	1	30.108	1.16	57.95	C
100.00-80.00			B	0.092	2.997		1	1	30.108			
			C	0.092	2.997		1	1	30.108			
T12	0.71	4.89	A	0.086	3.021	9	1	1	30.846	1.12	56.11	C
80.00-60.00			B	0.086	3.021		1	1	30.846			
			C	0.086	3.021		1	1	30.846			
T13	0.71	4.97	A	0.081	3.041	9	1	1	31.615	1.07	53.35	C
60.00-40.00			B	0.081	3.041		1	1	31.615			
			C	0.081	3.041		1	1	31.615			
T14	0.71	5.53	A	0.077	3.058	8	1	1	32.411	0.98	48.89	C
40.00-20.00			B	0.077	3.058		1	1	32.411			
			C	0.077	3.058		1	1	32.411			
T15	0.71	6.33	A	0.079	3.049	7	1	1	36.540	0.92	45.79	C
20.00-0.00			B	0.079	3.049		1	1	36.540			
			C	0.079	3.049		1	1	36.540			
Sum Weight:	10.23	52.59						OTM	2383.78 kip-ft	16.15		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T1	0.32	0.68	A	0.177	2.675	12	0.8	1	12.630	0.63	31.36	A
300.00-280.00			B	0.177	2.675		0.8	1	12.630			
			C	0.177	2.675		0.8	1	12.630			
T2	0.66	1.49	A	0.223	2.521	12	0.8	1	15.852	0.91	45.49	C
280.00-260.00			B	0.223	2.521		0.8	1	15.852			
			C	0.223	2.521		0.8	1	15.852			
T3	0.71	1.64	A	0.242	2.462	12	0.8	1	19.865	1.01	50.74	C
260.00-240.00			B	0.242	2.462		0.8	1	19.865			
			C	0.242	2.462		0.8	1	19.865			
T4	0.71	2.29	A	0.179	2.669	12	0.8	1	20.726	1.06	53.08	C
240.00-220.00			B	0.179	2.669		0.8	1	20.726			
			C	0.179	2.669		0.8	1	20.726			
T5	0.71	2.34	A	0.151	2.768	12	0.8	1	21.467	1.08	54.08	C
220.00-200.00			B	0.151	2.768		0.8	1	21.467			
			C	0.151	2.768		0.8	1	21.467			
T6	0.71	2.90	A	0.133	2.833	11	0.8	1	22.541	1.10	55.10	C
200.00-180.00			B	0.133	2.833		0.8	1	22.541			
			C	0.133	2.833		0.8	1	22.541			
T7	0.71	3.15	A	0.12	2.885	11	0.8	1	23.550	1.11	55.75	C
180.00-160.00			B	0.12	2.885		0.8	1	23.550			
			C	0.12	2.885		0.8	1	23.550			
T8	0.71	3.16	A	0.118	2.892	11	0.8	1	26.897	1.18	58.81	C

Valmont 1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458	Job 604200	Page 27 of 66
	Project H31' x 300' - US-KY-5178 Matney Rd, KY	Date 19:01:00 02/01/24
	Client VB BTS II, LLC	Designed by NS

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
160.00-140.00			B	0.118	2.892		0.8	1	26.897			
			C	0.118	2.892		0.8	1	26.897			
T9	0.71	4.16	A	0.104	2.95	10	0.8	1	25.352	1.11	55.74	C
140.00-120.00			B	0.104	2.95		0.8	1	25.352			
			C	0.104	2.95		0.8	1	25.352			
T10	0.71	4.23	A	0.095	2.983	10	0.8	1	25.879	1.10	54.84	C
120.00-100.00			B	0.095	2.983		0.8	1	25.879			
			C	0.095	2.983		0.8	1	25.879			
T11	0.71	4.83	A	0.092	2.997	10	0.8	1	27.331	1.09	54.52	C
100.00-80.00			B	0.092	2.997		0.8	1	27.331			
			C	0.092	2.997		0.8	1	27.331			
T12	0.71	4.89	A	0.086	3.021	9	0.8	1	27.921	1.05	52.66	C
80.00-60.00			B	0.086	3.021		0.8	1	27.921			
			C	0.086	3.021		0.8	1	27.921			
T13	0.71	4.97	A	0.081	3.041	9	0.8	1	28.537	1.00	49.95	C
60.00-40.00			B	0.081	3.041		0.8	1	28.537			
			C	0.081	3.041		0.8	1	28.537			
T14	0.71	5.53	A	0.077	3.058	8	0.8	1	29.173	0.91	45.65	C
40.00-20.00			B	0.077	3.058		0.8	1	29.173			
			C	0.077	3.058		0.8	1	29.173			
T15	0.71	6.33	A	0.079	3.049	7	0.8	1	32.573	0.85	42.36	C
20.00-0.00			B	0.079	3.049		0.8	1	32.573			
			C	0.079	3.049		0.8	1	32.573			
Sum Weight:	10.23	52.59						OTM	2251.13 kip-ft	15.20		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T1	0.32	0.68	A	0.177	2.675	12	0.85	1	13.077	0.63	31.52	A
300.00-280.00			B	0.177	2.675		0.85	1	13.077			
			C	0.177	2.675		0.85	1	13.077			
T2	0.66	1.49	A	0.223	2.521	12	0.85	1	16.300	0.93	46.54	A
280.00-260.00			B	0.223	2.521		0.85	1	16.300			
			C	0.223	2.521		0.85	1	16.300			
T3	0.71	1.64	A	0.242	2.462	12	0.85	1	20.344	1.03	51.34	C
260.00-240.00			B	0.242	2.462		0.85	1	20.344			
			C	0.242	2.462		0.85	1	20.344			
T4	0.71	2.29	A	0.179	2.669	12	0.85	1	21.188	1.07	53.70	C
240.00-220.00			B	0.179	2.669		0.85	1	21.188			
			C	0.179	2.669		0.85	1	21.188			
T5	0.71	2.34	A	0.151	2.768	12	0.85	1	21.980	1.10	54.78	C
220.00-200.00			B	0.151	2.768		0.85	1	21.980			
			C	0.151	2.768		0.85	1	21.980			
T6	0.71	2.90	A	0.133	2.833	11	0.85	1	23.113	1.12	55.89	C
200.00-180.00			B	0.133	2.833		0.85	1	23.113			
			C	0.133	2.833		0.85	1	23.113			
T7	0.71	3.15	A	0.12	2.885	11	0.85	1	24.186	1.13	56.61	C
180.00-160.00			B	0.12	2.885		0.85	1	24.186			
			C	0.12	2.885		0.85	1	24.186			
T8	0.71	3.16	A	0.118	2.892	11	0.85	1	27.742	1.20	59.93	C

Valmont 1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458	Job	604200	Page	28 of 66
	Project	H31' x 300' - US-KY-5178 Matney Rd, KY	Date	19:01:00 02/01/24
	Client	VB BTS II, LLC	Designed by	NS

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
160.00-140.00			B	0.118	2.892		0.85	1	27.742			
			C	0.118	2.892		0.85	1	27.742			
T9	0.71	4.16	A	0.104	2.95	10	0.85	1	25.978	1.13	56.56	C
140.00-120.00			B	0.104	2.95		0.85	1	25.978			
			C	0.104	2.95		0.85	1	25.978			
T10	0.71	4.23	A	0.095	2.983	10	0.85	1	26.538	1.11	55.69	C
120.00-100.00			B	0.095	2.983		0.85	1	26.538			
			C	0.095	2.983		0.85	1	26.538			
T11	0.71	4.83	A	0.092	2.997	10	0.85	1	28.025	1.11	55.37	C
100.00-80.00			B	0.092	2.997		0.85	1	28.025			
			C	0.092	2.997		0.85	1	28.025			
T12	0.71	4.89	A	0.086	3.021	9	0.85	1	28.653	1.07	53.52	C
80.00-60.00			B	0.086	3.021		0.85	1	28.653			
			C	0.086	3.021		0.85	1	28.653			
T13	0.71	4.97	A	0.081	3.041	9	0.85	1	29.306	1.02	50.80	C
60.00-40.00			B	0.081	3.041		0.85	1	29.306			
			C	0.081	3.041		0.85	1	29.306			
T14	0.71	5.53	A	0.077	3.058	8	0.85	1	29.983	0.93	46.46	C
40.00-20.00			B	0.077	3.058		0.85	1	29.983			
			C	0.077	3.058		0.85	1	29.983			
T15	0.71	6.33	A	0.079	3.049	7	0.85	1	33.565	0.86	43.22	C
20.00-0.00			B	0.079	3.049		0.85	1	33.565			
			C	0.079	3.049		0.85	1	33.565			
Sum Weight:	10.23	52.59						OTM	2284.06 kip-ft	15.44		

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	300.00-280.00	0	Wind Normal	2.08	0.00	-2.08	-601.30	0.38	-1.15
		30	Wind 90	1.93	0.97	-1.67	-484.31	-279.52	-0.12
		60	Wind 60	1.75	1.51	-0.87	-252.91	-438.52	0.56
		90	Wind 90	1.67	1.67	0.00	0.49	-484.20	0.69
		120	Wind Normal	1.82	1.57	0.91	263.78	-455.64	1.02
		150	Wind 90	1.84	0.92	1.60	463.58	-266.99	1.47
		180	Wind 60	1.92	0.00	1.92	557.44	0.38	1.15
		210	Wind 90	1.93	-0.97	1.67	485.29	280.28	0.12
		240	Wind Normal	1.90	-1.65	0.95	276.31	478.11	-0.56
		270	Wind 90	1.67	-1.67	0.00	0.49	484.95	-0.69
		300	Wind 60	1.66	-1.44	-0.83	-240.37	417.56	-1.02
		330	Wind 90	1.84	-0.92	-1.60	-462.59	267.74	-1.47
		T2	280.00-260.00	0	Wind Normal	2.85	0.00	-2.85	-770.00
30	Wind 90			2.77	1.39	-2.40	-648.23	-374.25	0.59
60	Wind 60			2.71	2.35	-1.35	-365.44	-633.31	0.95
90	Wind 90			2.69	2.69	0.00	0.31	-725.68	-0.03
120	Wind Normal			2.77	2.40	1.38	373.96	-647.01	0.03
150	Wind 90			2.69	1.34	2.33	628.92	-362.75	1.16
180	Wind 60			2.71	0.00	2.71	731.80	0.18	0.95
210	Wind 90			2.77	-1.39	2.40	648.84	374.61	-0.59
240	Wind Normal			2.85	-2.47	1.43	385.46	667.28	-0.95
270	Wind 90			2.69	-2.69	0.00	0.31	726.04	0.03
300	Wind 60			2.62	-2.27	-1.31	-353.94	613.76	-0.03

Valmont

1545 Pidco Drive
Plymouth, IN
Phone: (574) 936-4221
FAX: (574) 936-6458

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Project	H31' x 300' - US-KY-5178 Matney Rd, KY	Date	19:01:00 02/01/24
Client	VB BTS II, LLC	Designed by	NS

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
T3	260.00-240.00	330	Wind 90	2.69	-1.34	-2.33	-628.31	363.11	-1.16
		0	Wind Normal	3.12	0.00	-3.12	-779.32	0.25	-1.19
		30	Wind 90	3.01	1.50	-2.60	-650.89	-375.65	0.53
		60	Wind 60	2.97	2.57	-1.49	-371.09	-642.84	0.84
		90	Wind 90	3.01	3.01	0.00	0.20	-751.56	-0.47
		120	Wind Normal	3.12	2.70	1.56	389.96	-674.83	-0.38
		150	Wind 90	3.01	1.50	2.60	651.29	-375.65	1.20
		180	Wind 60	2.97	0.00	2.97	742.79	0.25	1.19
		210	Wind 90	3.01	-1.50	2.60	651.29	376.16	-0.53
		240	Wind Normal	3.12	-2.70	1.56	389.96	675.34	-0.84
		270	Wind 90	3.01	-3.01	0.00	0.20	752.07	0.47
		300	Wind 60	2.97	-2.57	-1.49	-371.09	643.35	0.38
T4	240.00-220.00	330	Wind 90	3.01	-1.50	-2.60	-650.89	376.16	-1.20
		0	Wind Normal	3.40	0.00	-3.40	-782.33	0.34	-1.56
		30	Wind 90	3.29	1.64	-2.85	-654.83	-377.87	0.64
		60	Wind 60	3.25	2.82	-1.63	-373.60	-647.20	1.09
		90	Wind 90	3.29	3.29	0.00	0.26	-756.09	-0.58
		120	Wind Normal	3.40	2.95	1.70	391.55	-677.40	-0.52
		150	Wind 90	3.29	1.64	2.85	655.34	-377.87	1.51
		180	Wind 60	3.25	0.00	3.25	747.97	0.34	1.56
		210	Wind 90	3.29	-1.64	2.85	655.34	378.55	-0.64
		240	Wind Normal	3.40	-2.95	1.70	391.55	678.08	-1.09
		270	Wind 90	3.29	-3.29	0.00	0.26	756.77	0.58
		300	Wind 60	3.25	-2.82	-1.63	-373.60	647.88	0.52
T5	220.00-200.00	330	Wind 90	3.29	-1.64	-2.85	-654.83	378.55	-1.51
		0	Wind Normal	3.48	0.00	-3.48	-731.33	0.42	-1.91
		30	Wind 90	3.36	1.68	-2.91	-609.94	-351.90	0.74
		60	Wind 60	3.31	2.87	-1.66	-347.52	-602.03	1.32
		90	Wind 90	3.36	3.36	0.00	0.31	-704.23	-0.69
		120	Wind Normal	3.48	3.02	1.74	366.13	-633.20	-0.64
		150	Wind 90	3.36	1.68	2.91	610.56	-351.90	1.81
		180	Wind 60	3.31	0.00	3.31	695.97	0.42	1.91
		210	Wind 90	3.36	-1.68	2.91	610.56	352.75	-0.74
		240	Wind Normal	3.48	-3.02	1.74	366.13	634.05	-1.32
		270	Wind 90	3.36	-3.36	0.00	0.31	705.08	0.69
		300	Wind 60	3.31	-2.87	-1.66	-347.52	602.88	0.64
T6	200.00-180.00	330	Wind 90	3.36	-1.68	-2.91	-609.94	352.75	-1.81
		0	Wind Normal	3.57	0.00	-3.57	-677.30	0.51	-2.25
		30	Wind 90	3.42	1.71	-2.96	-562.87	-324.68	0.83
		60	Wind 60	3.38	2.92	-1.69	-320.27	-554.85	1.54
		90	Wind 90	3.42	3.42	0.00	0.37	-649.86	-0.79
		120	Wind Normal	3.57	3.09	1.78	339.20	-586.36	-0.77
		150	Wind 90	3.42	1.71	2.96	563.61	-324.68	2.10
		180	Wind 60	3.38	0.00	3.38	641.64	0.51	2.25
		210	Wind 90	3.42	-1.71	2.96	563.61	325.70	-0.83
		240	Wind Normal	3.57	-3.09	1.78	339.20	587.38	-1.54
		270	Wind 90	3.42	-3.42	0.00	0.37	650.88	0.79
		300	Wind 60	3.38	-2.92	-1.69	-320.27	555.87	0.77
T7	180.00-160.00	330	Wind 90	3.42	-1.71	-2.96	-562.87	325.70	-2.10
		0	Wind Normal	3.63	0.00	-3.63	-616.05	0.60	-2.56
		30	Wind 90	3.47	1.73	-3.00	-510.06	-294.13	0.92
		60	Wind 60	3.41	2.96	-1.71	-289.80	-502.09	1.75
		90	Wind 90	3.47	3.47	0.00	0.42	-588.86	-0.89
		120	Wind Normal	3.63	3.14	1.81	308.66	-533.29	-0.88
		150	Wind 90	3.47	1.73	3.00	510.91	-294.13	2.36
		180	Wind 60	3.41	0.00	3.41	580.87	0.60	2.56
		210	Wind 90	3.47	-1.73	3.00	510.91	295.32	-0.92
		240	Wind Normal	3.63	-3.14	1.81	308.66	534.48	-1.75
		270	Wind 90	3.47	-3.47	0.00	0.42	590.05	0.89
		300	Wind 60	3.41	-2.96	-1.71	-289.80	503.28	0.88
330	Wind 90	3.47	-1.73	-3.00	-510.06	295.32	-2.36		

Valmont

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Plymouth, IN
Phone: (574) 936-4221
FAX: (574) 936-6458

Job	604200	Page	30 of 66
Project	H31' x 300' - US-KY-5178 Matney Rd, KY	Date	19:01:00 02/01/24
Client	VB BTS II, LLC	Designed by	NS

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F	V _x	V _z	OTM _x	OTM _z	Torque
				K	K	K	kip-ft	kip-ft	kip-ft
T8	160.00-140.00	0	Wind Normal	3.88	0.00	-3.88	-581.10	0.68	-2.85
		30	Wind 90	3.67	1.84	-3.18	-476.40	-274.65	1.00
		60	Wind 60	3.60	3.12	-1.80	-269.69	-467.27	1.94
		90	Wind 90	3.67	3.67	0.00	0.48	-549.97	-0.98
		120	Wind Normal	3.88	3.36	1.94	291.27	-502.98	-0.99
		150	Wind 90	3.67	1.84	3.18	477.36	-274.65	2.61
		180	Wind 60	3.60	0.00	3.60	540.82	0.68	2.85
		210	Wind 90	3.67	-1.84	3.18	477.36	276.01	-1.00
		240	Wind Normal	3.88	-3.36	1.94	291.27	504.34	-1.94
		270	Wind 90	3.67	-3.67	0.00	0.48	551.33	0.98
		300	Wind 60	3.60	-3.12	-1.80	-269.69	468.63	0.99
		330	Wind 90	3.67	-1.84	-3.18	-476.40	276.01	-2.61
		T9	140.00-120.00	0	Wind Normal	3.62	0.00	-3.62	-469.44
30	Wind 90			3.46	1.73	-3.00	-389.47	-224.40	1.07
60	Wind 60			3.41	2.96	-1.71	-221.36	-383.57	2.11
90	Wind 90			3.46	3.46	0.00	0.53	-449.57	-1.05
120	Wind Normal			3.62	3.13	1.81	235.52	-406.24	-1.08
150	Wind 90			3.46	1.73	3.00	390.54	-224.40	2.82
180	Wind 60			3.41	0.00	3.41	444.33	0.77	3.11
210	Wind 90			3.46	-1.73	3.00	390.54	225.93	-1.07
240	Wind Normal			3.62	-3.13	1.81	235.52	407.77	-2.11
270	Wind 90			3.46	-3.46	0.00	0.53	451.10	1.05
300	Wind 60			3.41	-2.96	-1.71	-221.36	385.10	1.08
330	Wind 90			3.46	-1.73	-3.00	-389.47	225.93	-2.82
T10	120.00-100.00			0	Wind Normal	3.57	0.00	-3.57	-391.70
		30	Wind 90	3.41	1.71	-2.95	-324.35	-186.75	1.13
		60	Wind 60	3.36	2.91	-1.68	-184.17	-319.16	2.26
		90	Wind 90	3.41	3.41	0.00	0.59	-374.36	-1.12
		120	Wind Normal	3.57	3.09	1.78	196.73	-338.88	-1.16
		150	Wind 90	3.41	1.71	2.95	325.53	-186.75	3.01
		180	Wind 60	3.36	0.00	3.36	370.10	0.85	3.34
		210	Wind 90	3.41	-1.71	2.95	325.53	188.46	-1.13
		240	Wind Normal	3.57	-3.09	1.78	196.73	340.58	-2.26
		270	Wind 90	3.41	-3.41	0.00	0.59	376.06	1.12
		300	Wind 60	3.36	-2.91	-1.68	-184.17	320.86	1.16
		330	Wind 90	3.41	-1.71	-2.95	-324.35	188.46	-3.01
		T11	100.00-80.00	0	Wind Normal	3.55	0.00	-3.55	-318.78
30	Wind 90			3.39	1.70	-2.94	-263.71	-151.69	1.18
60	Wind 60			3.34	2.89	-1.67	-149.62	-259.32	2.38
90	Wind 90			3.39	3.39	0.00	0.64	-304.31	-1.18
120	Wind Normal			3.55	3.07	1.77	160.35	-275.69	-1.23
150	Wind 90			3.39	1.70	2.94	264.99	-151.69	3.16
180	Wind 60			3.34	0.00	3.34	301.16	0.94	3.52
210	Wind 90			3.39	-1.70	2.94	264.99	153.56	-1.18
240	Wind Normal			3.55	-3.07	1.77	160.35	277.57	-2.38
270	Wind 90			3.39	-3.39	0.00	0.64	306.18	1.18
300	Wind 60			3.34	-2.89	-1.67	-149.62	261.20	1.23
330	Wind 90			3.39	-1.70	-2.94	-263.71	153.56	-3.16
T12	80.00-60.00			0	Wind Normal	3.44	0.00	-3.44	-239.88
		30	Wind 90	3.28	1.64	-2.84	-198.04	-113.72	1.21
		60	Wind 60	3.23	2.79	-1.61	-112.19	-194.51	2.46
		90	Wind 90	3.28	3.28	0.00	0.70	-228.46	-1.21
		120	Wind Normal	3.44	2.98	1.72	120.99	-207.33	-1.28
		150	Wind 90	3.28	1.64	2.84	199.43	-113.72	3.26
		180	Wind 60	3.23	0.00	3.23	226.47	1.02	3.65
		210	Wind 90	3.28	-1.64	2.84	199.43	115.76	-1.21
		240	Wind Normal	3.44	-2.98	1.72	120.99	209.37	-2.46
		270	Wind 90	3.28	-3.28	0.00	0.70	230.50	1.21
		300	Wind 60	3.23	-2.79	-1.61	-112.19	196.55	1.28
		330	Wind 90	3.28	-1.64	-2.84	-198.04	115.76	-3.26
		T13	60.00-40.00	0	Wind Normal	3.27	0.00	-3.27	-162.65

Valmont 1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458	Job 604200	Page 31 of 66
	Project H31' x 300' - US-KY-5178 Matney Rd, KY	Date 19:01:00 02/01/24
	Client VB BTS II, LLC	Designed by NS

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
T14	40.00-20.00	30	Wind 90	3.11	1.56	-2.69	-133.97	-76.68	1.21
		60	Wind 60	3.06	2.65	-1.53	-75.73	-131.36	2.48
		90	Wind 90	3.11	3.11	0.00	0.75	-154.46	-1.21
		120	Wind Normal	3.27	2.83	1.63	82.45	-140.40	-1.29
		150	Wind 90	3.11	1.56	2.69	135.48	-76.68	3.28
		180	Wind 60	3.06	0.00	3.06	153.71	1.11	3.68
		210	Wind 90	3.11	-1.56	2.69	135.48	78.89	-1.21
		240	Wind Normal	3.27	-2.83	1.63	82.45	142.61	-2.48
		270	Wind 90	3.11	-3.11	0.00	0.75	156.68	1.21
		300	Wind 60	3.06	-2.65	-1.53	-75.73	133.57	1.29
		330	Wind 90	3.11	-1.56	-2.69	-133.97	78.89	-3.28
		0	Wind Normal	2.99	0.00	-2.99	-89.03	1.19	-3.56
		30	Wind 90	2.85	1.42	-2.46	-73.13	-41.50	1.16
		60	Wind 60	2.80	2.42	-1.40	-41.14	-71.46	2.40
		90	Wind 90	2.85	2.85	0.00	0.81	-84.18	-1.17
T15	20.00-0.00	120	Wind Normal	2.99	2.59	1.50	45.73	-76.61	-1.25
		150	Wind 90	2.85	1.42	2.46	74.75	-41.50	3.16
		180	Wind 60	2.80	0.00	2.80	84.70	1.19	3.56
		210	Wind 90	2.85	-1.42	2.46	74.75	43.88	-1.16
		240	Wind Normal	2.99	-2.59	1.50	45.73	78.99	-2.40
		270	Wind 90	2.85	-2.85	0.00	0.81	86.57	1.17
		300	Wind 60	2.80	-2.42	-1.40	-41.14	73.84	1.25
		330	Wind 90	2.85	-1.42	-2.46	-73.13	43.88	-3.16
		0	Wind Normal	2.80	0.00	-2.80	-27.18	1.28	-3.30
		30	Wind 90	2.65	1.32	-2.29	-22.06	-11.96	1.07
		60	Wind 60	2.59	2.25	-1.30	-12.11	-21.19	2.22
		90	Wind 90	2.65	2.65	0.00	0.86	-25.20	-1.08
		120	Wind Normal	2.80	2.43	1.40	14.89	-23.01	-1.16
		150	Wind 90	2.65	1.32	2.29	23.79	-11.96	2.93
		180	Wind 60	2.59	0.00	2.59	26.81	1.28	3.30
210	Wind 90	2.65	-1.32	2.29	23.79	14.51	-1.07		
240	Wind Normal	2.80	-2.43	1.40	14.89	25.56	-2.22		
270	Wind 90	2.65	-2.65	0.00	0.86	27.75	1.08		
300	Wind 60	2.59	-2.25	-1.30	-12.11	23.75	1.16		
330	Wind 90	2.65	-1.32	-2.29	-22.06	14.51	-2.93		

Mast Totals - No Ice

Wind Azimuth °	V _x K	V _z K	OTM _x kip-ft	OTM _z kip-ft	Torque kip-ft
0	0.00	-49.24	-7237.39	10.51	-38.58
30	23.53	-40.76	-6002.27	-3459.36	13.19
60	39.98	-23.09	-3386.65	-5868.70	26.32
90	46.72	0.00	7.71	-6831.01	-11.76
120	42.34	24.45	3581.16	-6178.87	-11.59
150	23.45	40.61	5976.07	-3435.32	35.85
180	0.00	46.34	6846.59	10.51	38.58
210	-23.53	40.76	6017.70	3480.38	-13.19
240	-42.49	24.53	3605.19	6241.52	-26.32
270	-46.72	0.00	7.71	6852.02	11.76
300	-39.84	-23.00	-3362.61	5848.08	11.59
330	-23.45	-40.61	-5960.64	3456.34	-35.85

Valmont 1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458	Job 604200	Page 32 of 66
	Project H31' x 300' - US-KY-5178 Matney Rd, KY	Date 19:01:00 02/01/24
	Client VB BTS II, LLC	Designed by NS

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	300.00-280.00	0	Wind Normal	0.31	0.00	-0.31	-86.71	1.91	-0.15
		30	Wind 90	0.30	0.15	-0.26	-72.40	-41.32	-0.04
		60	Wind 60	0.28	0.25	-0.14	-38.76	-69.53	0.06
		90	Wind 90	0.28	0.28	0.00	2.48	-78.65	0.11
		120	Wind Normal	0.29	0.25	0.14	44.12	-70.22	0.16
		150	Wind 90	0.29	0.15	0.25	75.66	-40.34	0.20
		180	Wind 60	0.30	0.00	0.30	88.91	1.91	0.15
		210	Wind 90	0.30	-0.15	0.26	77.36	45.14	0.04
		240	Wind Normal	0.29	-0.25	0.15	45.11	75.74	-0.06
		270	Wind 90	0.28	-0.28	0.00	2.48	82.46	-0.11
		300	Wind 60	0.28	-0.24	-0.14	-37.78	71.64	-0.16
		330	Wind 90	0.29	-0.15	-0.25	-70.69	44.16	-0.20
T2	280.00-260.00	0	Wind Normal	0.39	0.00	-0.39	-102.52	0.82	-0.12
		30	Wind 90	0.38	0.19	-0.33	-87.47	-50.52	0.03
		60	Wind 60	0.38	0.33	-0.19	-49.29	-87.05	0.09
		90	Wind 90	0.37	0.37	0.00	1.44	-100.09	0.04
		120	Wind Normal	0.38	0.33	0.19	52.54	-87.69	0.06
		150	Wind 90	0.37	0.19	0.32	88.83	-49.64	0.15
		180	Wind 60	0.38	0.00	0.38	102.89	0.82	0.12
		210	Wind 90	0.38	-0.19	0.33	90.36	52.15	-0.03
		240	Wind Normal	0.39	-0.33	0.19	53.42	90.85	-0.09
		270	Wind 90	0.37	-0.37	0.00	1.44	101.72	-0.04
		300	Wind 60	0.37	-0.32	-0.18	-48.40	87.15	-0.06
		330	Wind 90	0.37	-0.19	-0.32	-85.94	51.27	-0.15
T3	260.00-240.00	0	Wind Normal	0.42	0.00	-0.42	-104.98	1.18	-0.15
		30	Wind 90	0.42	0.21	-0.36	-89.20	-50.79	0.01
		60	Wind 60	0.41	0.36	-0.21	-50.84	-88.30	0.07
		90	Wind 90	0.42	0.42	0.00	0.82	-102.76	0.00
		120	Wind Normal	0.42	0.37	0.21	53.71	-90.44	0.03
		150	Wind 90	0.42	0.21	0.36	90.83	-50.79	0.16
		180	Wind 60	0.41	0.00	0.41	104.14	1.18	0.15
		210	Wind 90	0.42	-0.21	0.36	90.83	53.15	-0.01
		240	Wind Normal	0.42	-0.37	0.21	53.71	92.80	-0.07
		270	Wind 90	0.42	-0.42	0.00	0.82	105.12	-0.00
		300	Wind 60	0.41	-0.36	-0.21	-50.84	90.66	-0.03
		330	Wind 90	0.42	-0.21	-0.36	-89.20	53.15	-0.16
T4	240.00-220.00	0	Wind Normal	0.50	0.00	-0.50	-112.84	1.56	-0.18
		30	Wind 90	0.49	0.24	-0.42	-96.24	-54.59	0.00
		60	Wind 60	0.49	0.42	-0.24	-54.88	-95.25	0.08
		90	Wind 90	0.49	0.49	0.00	1.02	-110.74	0.00
		120	Wind Normal	0.50	0.43	0.25	57.95	-97.04	0.04
		150	Wind 90	0.49	0.24	0.42	98.27	-54.59	0.19
		180	Wind 60	0.49	0.00	0.49	112.80	1.56	0.18
		210	Wind 90	0.49	-0.24	0.42	98.27	57.71	-0.00
		240	Wind Normal	0.50	-0.43	0.25	57.95	100.16	-0.08
		270	Wind 90	0.49	-0.49	0.00	1.02	113.87	-0.00
		300	Wind 60	0.49	-0.42	-0.24	-54.88	98.37	-0.04
		330	Wind 90	0.49	-0.24	-0.42	-96.24	57.71	-0.19
T5	220.00-200.00	0	Wind Normal	0.52	0.00	-0.52	-108.97	1.94	-0.26
		30	Wind 90	0.52	0.26	-0.45	-92.79	-52.34	0.00
		60	Wind 60	0.51	0.45	-0.26	-52.78	-91.59	0.11
		90	Wind 90	0.52	0.52	0.00	1.21	-106.61	-0.00
		120	Wind Normal	0.52	0.45	0.26	56.31	-93.49	0.05
		150	Wind 90	0.52	0.26	0.45	95.22	-52.34	0.26
		180	Wind 60	0.51	0.00	0.51	109.21	1.94	0.26
		210	Wind 90	0.52	-0.26	0.45	95.22	56.21	-0.00
		240	Wind Normal	0.52	-0.45	0.26	56.31	97.36	-0.11
		270	Wind 90	0.52	-0.52	0.00	1.21	110.48	0.00

Valmont

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Plymouth, IN
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Job	604200	Page	33 of 66
Project	H31' x 300' - US-KY-5178 Matney Rd, KY	Date	19:01:00 02/01/24
Client	VB BTS II, LLC	Designed by	NS

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
T6	200.00-180.00	300	Wind 60	0.51	-0.45	-0.26	-52.78	95.46	-0.05
		330	Wind 90	0.52	-0.26	-0.45	-92.79	56.21	-0.26
		0	Wind Normal	0.56	0.00	-0.56	-104.42	2.30	-0.30
		30	Wind 90	0.55	0.27	-0.47	-88.82	-49.79	-0.00
		60	Wind 60	0.55	0.47	-0.27	-50.41	-87.45	0.12
		90	Wind 90	0.55	0.55	0.00	1.41	-101.88	-0.00
		120	Wind Normal	0.56	0.48	0.28	54.32	-89.35	0.05
		150	Wind 90	0.55	0.27	0.47	91.63	-49.79	0.30
		180	Wind 60	0.55	0.00	0.55	105.04	2.30	0.30
		210	Wind 90	0.55	-0.27	0.47	91.63	54.39	0.00
		240	Wind Normal	0.56	-0.48	0.28	54.32	93.95	-0.12
		270	Wind 90	0.55	-0.55	0.00	1.41	106.48	0.00
T7	180.00-160.00	300	Wind 60	0.55	-0.47	-0.27	-50.41	92.05	-0.05
		330	Wind 90	0.55	-0.27	-0.47	-88.82	54.39	-0.30
		0	Wind Normal	0.56	0.00	-0.56	-93.83	2.65	-0.34
		30	Wind 90	0.55	0.28	-0.48	-79.60	-44.23	-0.00
		60	Wind 60	0.55	0.47	-0.27	-45.01	-78.06	0.14
		90	Wind 90	0.55	0.55	0.00	1.59	-91.10	-0.00
		120	Wind Normal	0.56	0.49	0.28	49.30	-79.99	0.05
		150	Wind 90	0.55	0.28	0.48	82.78	-44.23	0.34
		180	Wind 60	0.55	0.00	0.55	94.79	2.65	0.34
		210	Wind 90	0.55	-0.28	0.48	82.78	49.53	0.00
		240	Wind Normal	0.56	-0.49	0.28	49.30	85.29	-0.14
		270	Wind 90	0.55	-0.55	0.00	1.59	96.40	0.00
T8	160.00-140.00	300	Wind 60	0.55	-0.47	-0.27	-45.01	83.36	-0.05
		330	Wind 90	0.55	-0.28	-0.48	-79.60	49.53	-0.34
		0	Wind Normal	0.58	0.00	-0.58	-84.73	2.99	-0.38
		30	Wind 90	0.56	0.28	-0.49	-71.44	-39.28	-0.01
		60	Wind 60	0.56	0.48	-0.28	-40.17	-69.66	0.15
		90	Wind 90	0.56	0.56	0.00	1.77	-81.55	-0.00
		120	Wind Normal	0.58	0.50	0.29	45.02	-71.92	0.06
		150	Wind 90	0.56	0.28	0.49	74.98	-39.28	0.38
		180	Wind 60	0.56	0.00	0.56	85.66	2.99	0.38
		210	Wind 90	0.56	-0.28	0.49	74.98	45.26	0.01
		240	Wind Normal	0.58	-0.50	0.29	45.02	77.89	-0.15
		270	Wind 90	0.56	-0.56	0.00	1.77	87.52	0.00
T9	140.00-120.00	300	Wind 60	0.56	-0.48	-0.28	-40.17	75.63	-0.06
		330	Wind 90	0.56	-0.28	-0.49	-71.44	45.26	-0.38
		0	Wind Normal	0.52	0.00	-0.52	-65.43	3.31	-0.41
		30	Wind 90	0.51	0.25	-0.44	-55.25	-29.71	-0.01
		60	Wind 60	0.50	0.44	-0.25	-30.85	-53.49	0.16
		90	Wind 90	0.51	0.51	0.00	1.94	-62.73	-0.01
		120	Wind Normal	0.52	0.45	0.26	35.62	-55.04	0.06
		150	Wind 90	0.51	0.25	0.44	59.13	-29.71	0.41
		180	Wind 60	0.50	0.00	0.50	67.53	3.31	0.41
		210	Wind 90	0.51	-0.25	0.44	59.13	36.32	0.01
		240	Wind Normal	0.52	-0.45	0.26	35.62	61.65	-0.16
		270	Wind 90	0.51	-0.51	0.00	1.94	69.34	0.01
T10	120.00-100.00	300	Wind 60	0.50	-0.44	-0.25	-30.85	60.11	-0.06
		330	Wind 90	0.51	-0.25	-0.44	-55.25	36.32	-0.41
		0	Wind Normal	0.51	0.00	-0.51	-54.00	3.61	-0.44
		30	Wind 90	0.50	0.25	-0.43	-45.46	-23.85	-0.01
		60	Wind 60	0.50	0.43	-0.25	-25.16	-43.62	0.17
		90	Wind 90	0.50	0.50	0.00	2.10	-51.32	-0.01
		120	Wind Normal	0.51	0.44	0.26	30.15	-44.98	0.06
		150	Wind 90	0.50	0.25	0.43	49.67	-23.85	0.43
		180	Wind 60	0.50	0.00	0.50	56.63	3.61	0.44
		210	Wind 90	0.50	-0.25	0.43	49.67	31.07	0.01
		240	Wind Normal	0.51	-0.44	0.26	30.15	52.19	-0.17
		270	Wind 90	0.50	-0.50	0.00	2.10	58.53	0.01
300	Wind 60	0.50	-0.43	-0.25	-25.16	50.83	-0.06		

Valmont

1545 Pidco Drive
Plymouth, IN
Phone: (574) 936-4221
FAX: (574) 936-6458

Job	604200	Page	34 of 66
Project	H31' x 300' - US-KY-5178 Matney Rd, KY	Date	19:01:00 02/01/24
Client	VB BTS II, LLC	Designed by	NS

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
T11	100.00-80.00	330	Wind 90	0.50	-0.25	-0.43	-45.46	31.07	-0.43
		0	Wind Normal	0.50	0.00	-0.50	-42.72	3.88	-0.46
		30	Wind 90	0.49	0.24	-0.42	-35.83	-18.11	-0.01
		60	Wind 60	0.48	0.42	-0.24	-19.57	-33.92	0.18
		90	Wind 90	0.49	0.49	0.00	2.25	-40.09	-0.01
		120	Wind Normal	0.50	0.43	0.25	24.73	-35.06	0.06
		150	Wind 90	0.49	0.24	0.42	40.33	-18.11	0.45
		180	Wind 60	0.48	0.00	0.48	45.89	3.88	0.46
		210	Wind 90	0.49	-0.24	0.42	40.33	25.87	0.01
		240	Wind Normal	0.50	-0.43	0.25	24.73	42.82	-0.18
		270	Wind 90	0.49	-0.49	0.00	2.25	47.85	0.01
		T12	80.00-60.00	300	Wind 60	0.48	-0.42	-0.24	-19.57
330	Wind 90			0.49	-0.24	-0.42	-35.83	25.87	-0.45
0	Wind Normal			0.48	0.00	-0.48	-31.32	4.12	-0.47
30	Wind 90			0.47	0.24	-0.41	-26.13	-12.34	-0.01
60	Wind 60			0.47	0.40	-0.23	-13.95	-24.16	0.19
90	Wind 90			0.47	0.47	0.00	2.38	-28.79	-0.01
120	Wind Normal			0.48	0.42	0.24	19.22	-25.06	0.06
150	Wind 90			0.47	0.24	0.41	30.88	-12.34	0.46
180	Wind 60			0.47	0.00	0.47	35.02	4.12	0.47
210	Wind 90			0.47	-0.24	0.41	30.88	20.57	0.01
240	Wind Normal			0.48	-0.42	0.24	19.22	33.30	-0.19
T13	60.00-40.00			270	Wind 90	0.47	-0.47	0.00	2.38
		300	Wind 60	0.47	-0.40	-0.23	-13.95	32.39	-0.06
		330	Wind 90	0.47	-0.24	-0.41	-26.13	20.57	-0.46
		0	Wind Normal	0.45	0.00	-0.45	-20.24	4.30	-0.47
		30	Wind 90	0.44	0.22	-0.38	-16.71	-6.78	-0.01
		60	Wind 60	0.44	0.38	-0.22	-8.51	-14.73	0.19
		90	Wind 90	0.44	0.44	0.00	2.48	-17.86	-0.01
		120	Wind Normal	0.45	0.39	0.23	13.84	-15.37	0.05
		150	Wind 90	0.44	0.22	0.38	21.67	-6.78	0.46
		180	Wind 60	0.44	0.00	0.44	24.45	4.30	0.47
		210	Wind 90	0.44	-0.22	0.38	21.67	15.38	0.01
		240	Wind Normal	0.45	-0.39	0.23	13.84	23.98	-0.19
T14	40.00-20.00	270	Wind 90	0.44	-0.44	0.00	2.48	26.46	0.01
		300	Wind 60	0.44	-0.38	-0.22	-8.51	23.33	-0.05
		330	Wind 90	0.44	-0.22	-0.38	-16.71	15.38	-0.46
		0	Wind Normal	0.41	0.00	-0.41	-9.82	4.39	-0.45
		30	Wind 90	0.40	0.20	-0.35	-7.89	-1.63	-0.00
		60	Wind 60	0.40	0.34	-0.20	-3.43	-5.93	0.18
		90	Wind 90	0.40	0.40	0.00	2.53	-7.64	-0.02
		120	Wind Normal	0.41	0.36	0.21	8.70	-6.31	0.05
		150	Wind 90	0.40	0.20	0.35	12.94	-1.63	0.43
		180	Wind 60	0.40	0.00	0.40	14.44	4.39	0.45
		210	Wind 90	0.40	-0.20	0.35	12.94	10.40	0.00
		240	Wind Normal	0.41	-0.36	0.21	8.70	15.08	-0.18
T15	20.00-0.00	270	Wind 90	0.40	-0.40	0.00	2.53	16.41	0.02
		300	Wind 60	0.40	-0.34	-0.20	-3.43	14.71	-0.05
		330	Wind 90	0.40	-0.20	-0.35	-7.89	10.40	-0.43
		0	Wind Normal	0.36	0.00	-0.36	-1.20	4.20	-0.40
		30	Wind 90	0.35	0.18	-0.31	-0.62	2.44	0.01
		60	Wind 60	0.35	0.30	-0.17	0.69	1.18	0.17
		90	Wind 90	0.35	0.35	0.00	2.44	0.68	-0.02
		120	Wind Normal	0.36	0.32	0.18	4.26	1.05	0.03
		150	Wind 90	0.35	0.18	0.31	5.49	2.44	0.39
		180	Wind 60	0.35	0.00	0.35	5.92	4.20	0.40
		210	Wind 90	0.35	-0.18	0.31	5.49	5.97	-0.01
		240	Wind Normal	0.36	-0.32	0.18	4.26	7.36	-0.17
270	Wind 90	0.35	-0.35	0.00	2.44	7.73	0.02		
300	Wind 60	0.35	-0.30	-0.17	0.69	7.22	-0.03		
330	Wind 90	0.35	-0.18	-0.31	-0.62	5.97	-0.39		

Valmont 1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458	Job 604200	Page 35 of 66
	Project H31' x 300' - US-KY-5178 Matney Rd, KY	Date 19:01:00 02/01/24
	Client VB BTS II, LLC	Designed by NS

Mast Totals - With Ice

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.00	-7.07	-1023.74	43.14	-4.98
30	3.46	-6.00	-865.85	-472.83	-0.04
60	5.94	-3.43	-482.93	-841.54	2.07
90	6.90	0.00	27.84	-981.13	0.06
120	6.10	3.52	549.80	-860.91	0.86
150	3.46	5.99	918.30	-470.96	5.01
180	0.00	6.88	1053.33	43.14	4.98
210	-3.46	6.00	921.53	559.11	0.04
240	-6.11	3.53	551.67	950.43	-2.07
270	-6.90	0.00	27.84	1067.41	-0.06
300	-5.93	-3.43	-481.06	924.59	-0.86
330	-3.46	-5.99	-862.61	557.25	-5.01

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	300.00-280.00	0	Wind Normal	0.68	0.00	-0.68	-196.01	0.38	-0.37
		30	Wind 90	0.63	0.32	-0.55	-157.81	-91.02	-0.04
		60	Wind 60	0.57	0.49	-0.29	-82.25	-142.94	0.18
		90	Wind 90	0.55	0.55	0.00	0.49	-157.85	0.23
		120	Wind Normal	0.59	0.51	0.30	86.46	-148.53	0.33
		150	Wind 90	0.60	0.30	0.52	151.70	-86.93	0.48
		180	Wind 60	0.63	0.00	0.63	182.35	0.38	0.37
		210	Wind 90	0.63	-0.32	0.55	158.80	91.77	0.04
		240	Wind Normal	0.62	-0.54	0.31	90.56	156.37	-0.18
		270	Wind 90	0.55	-0.55	0.00	0.49	158.61	-0.23
		300	Wind 60	0.54	-0.47	-0.27	-78.16	136.60	-0.33
		330	Wind 90	0.60	-0.30	-0.52	-150.72	87.68	-0.48
T2	280.00-260.00	0	Wind Normal	0.96	0.00	-0.96	-258.04	0.18	-0.31
		30	Wind 90	0.93	0.47	-0.81	-217.36	-125.49	0.19
		60	Wind 60	0.91	0.79	-0.45	-122.53	-212.58	0.31
		90	Wind 90	0.90	0.90	0.00	0.31	-243.65	-0.01
		120	Wind Normal	0.93	0.80	0.46	125.72	-217.05	0.01
		150	Wind 90	0.90	0.45	0.78	211.47	-121.74	0.38
		180	Wind 60	0.91	0.00	0.91	245.98	0.18	0.31
		210	Wind 90	0.93	-0.47	0.81	217.97	125.85	-0.19
		240	Wind Normal	0.96	-0.83	0.48	129.48	223.91	-0.31
		270	Wind 90	0.90	-0.90	0.00	0.31	244.01	0.01
		300	Wind 60	0.88	-0.76	-0.44	-118.78	206.43	-0.01
		330	Wind 90	0.90	-0.45	-0.78	-210.86	122.10	-0.38
T3	260.00-240.00	0	Wind Normal	1.06	0.00	-1.06	-265.55	0.25	-0.39
		30	Wind 90	1.03	0.51	-0.89	-222.11	-128.10	0.17
		60	Wind 60	1.01	0.88	-0.51	-126.64	-219.45	0.27
		90	Wind 90	1.03	1.03	0.00	0.20	-256.45	-0.15
		120	Wind Normal	1.06	0.92	0.53	133.08	-229.89	-0.12
		150	Wind 90	1.03	0.51	0.89	222.51	-128.10	0.39
		180	Wind 60	1.01	0.00	1.01	253.89	0.25	0.39
		210	Wind 90	1.03	-0.51	0.89	222.51	128.61	-0.17

Valmont

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 Plymouth, IN
 Phone: (574) 936-4221
 FAX: (574) 936-6458

Job	604200	Page	36 of 66
Project	H31' x 300' - US-KY-5178 Matney Rd, KY	Date	19:01:00 02/01/24
Client	VB BTS II, LLC	Designed by	NS

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
T4	240.00-220.00	240	Wind Normal	1.06	-0.92	0.53	133.08	230.40	-0.27
		270	Wind 90	1.03	-1.03	0.00	0.20	256.96	0.15
		300	Wind 60	1.01	-0.88	-0.51	-126.64	219.96	0.12
		330	Wind 90	1.03	-0.51	-0.89	-222.11	128.61	-0.39
		0	Wind Normal	1.11	0.00	-1.11	-255.28	0.34	-0.51
		30	Wind 90	1.07	0.54	-0.93	-213.65	-123.16	0.21
		60	Wind 60	1.06	0.92	-0.53	-121.82	-211.10	0.35
		90	Wind 90	1.07	1.07	0.00	0.26	-246.66	-0.19
		120	Wind Normal	1.11	0.96	0.56	128.03	-220.96	-0.17
		150	Wind 90	1.07	0.54	0.93	214.16	-123.16	0.49
		180	Wind 60	1.06	0.00	1.06	244.41	0.34	0.51
		210	Wind 90	1.07	-0.54	0.93	214.16	123.84	-0.21
T5	220.00-200.00	240	Wind Normal	1.11	-0.96	0.56	128.03	221.64	-0.35
		270	Wind 90	1.07	-1.07	0.00	0.26	247.34	0.19
		300	Wind 60	1.06	-0.92	-0.53	-121.82	211.78	0.17
		330	Wind 90	1.07	-0.54	-0.93	-213.65	123.84	-0.49
		0	Wind Normal	1.14	0.00	-1.14	-238.59	0.42	-0.62
		30	Wind 90	1.10	0.55	-0.95	-198.95	-114.62	0.24
		60	Wind 60	1.08	0.94	-0.54	-113.27	-196.30	0.43
		90	Wind 90	1.10	1.10	0.00	0.31	-229.67	-0.23
		120	Wind Normal	1.14	0.99	0.57	119.76	-206.47	-0.21
		150	Wind 90	1.10	0.55	0.95	199.58	-114.62	0.59
		180	Wind 60	1.08	0.00	1.08	227.46	0.42	0.62
		210	Wind 90	1.10	-0.55	0.95	199.58	115.47	-0.24
T6	200.00-180.00	240	Wind Normal	1.14	-0.99	0.57	119.76	207.32	-0.43
		270	Wind 90	1.10	-1.10	0.00	0.31	230.52	0.23
		300	Wind 60	1.08	-0.94	-0.54	-113.27	197.15	0.21
		330	Wind 90	1.10	-0.55	-0.95	-198.95	115.47	-0.59
		0	Wind Normal	1.16	0.00	-1.16	-220.91	0.51	-0.73
		30	Wind 90	1.12	0.56	-0.97	-183.55	-105.67	0.27
		60	Wind 60	1.10	0.95	-0.55	-104.33	-180.83	0.50
		90	Wind 90	1.12	1.12	0.00	0.37	-211.86	-0.26
		120	Wind Normal	1.16	1.01	0.58	111.01	-191.12	-0.25
		150	Wind 90	1.12	0.56	0.97	184.28	-105.67	0.68
		180	Wind 60	1.10	0.00	1.10	209.76	0.51	0.73
		210	Wind 90	1.12	-0.56	0.97	184.28	106.69	-0.27
T7	180.00-160.00	240	Wind Normal	1.16	-1.01	0.58	111.01	192.14	-0.50
		270	Wind 90	1.12	-1.12	0.00	0.37	212.88	0.26
		300	Wind 60	1.10	-0.95	-0.55	-104.33	181.85	0.25
		330	Wind 90	1.12	-0.56	-0.97	-183.55	106.69	-0.68
		0	Wind Normal	1.18	0.00	-1.18	-200.88	0.60	-0.84
		30	Wind 90	1.13	0.57	-0.98	-166.27	-95.64	0.30
		60	Wind 60	1.11	0.97	-0.56	-94.35	-163.55	0.57
		90	Wind 90	1.13	1.13	0.00	0.42	-191.88	-0.29
		120	Wind Normal	1.18	1.03	0.59	101.07	-173.73	-0.29
		150	Wind 90	1.13	0.57	0.98	167.11	-95.64	0.77
		180	Wind 60	1.11	0.00	1.11	189.96	0.60	0.84
		210	Wind 90	1.13	-0.57	0.98	167.11	96.83	-0.30
T8	160.00-140.00	240	Wind Normal	1.18	-1.03	0.59	101.07	174.92	-0.57
		270	Wind 90	1.13	-1.13	0.00	0.42	193.07	0.29
		300	Wind 60	1.11	-0.97	-0.56	-94.35	164.74	0.29
		330	Wind 90	1.13	-0.57	-0.98	-166.27	96.83	-0.77
		0	Wind Normal	1.27	0.00	-1.27	-189.43	0.68	-0.93
		30	Wind 90	1.20	0.60	-1.04	-155.24	-89.22	0.33
		60	Wind 60	1.18	1.02	-0.59	-87.74	-152.12	0.63
		90	Wind 90	1.20	1.20	0.00	0.48	-179.12	-0.32
		120	Wind Normal	1.27	1.10	0.63	95.43	-163.78	-0.32
		150	Wind 90	1.20	0.60	1.04	156.19	-89.22	0.85
		180	Wind 60	1.18	0.00	1.18	176.92	0.68	0.93
		210	Wind 90	1.20	-0.60	1.04	156.19	90.58	-0.33
240	Wind Normal	1.27	-1.10	0.63	95.43	165.14	-0.63		

Valmont

1545 Pidco Drive
 Plymouth, IN
 Phone: (574) 936-4221
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Project	H31' x 300' - US-KY-5178 Matney Rd, KY	Date	19:01:00 02/01/24
Client	VB BTS II, LLC	Designed by	NS

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
T9	140.00-120.00	270	Wind 90	1.20	-1.20	0.00	0.48	180.48	0.32
		300	Wind 60	1.18	-1.02	-0.59	-87.74	153.48	0.32
		330	Wind 90	1.20	-0.60	-1.04	-155.24	90.58	-0.85
		0	Wind Normal	1.18	0.00	-1.18	-152.93	0.77	-1.02
		30	Wind 90	1.13	0.57	-0.98	-126.82	-72.76	0.35
		60	Wind 60	1.11	0.97	-0.56	-71.92	-124.73	0.69
		90	Wind 90	1.13	1.13	0.00	0.53	-146.28	-0.34
		120	Wind Normal	1.18	1.02	0.59	77.26	-132.13	-0.35
		150	Wind 90	1.13	0.57	0.98	127.88	-72.76	0.92
		180	Wind 60	1.11	0.00	1.11	145.44	0.77	1.02
T10	120.00-100.00	210	Wind 90	1.13	-0.57	0.98	127.88	74.29	-0.35
		240	Wind Normal	1.18	-1.02	0.59	77.26	133.67	-0.69
		270	Wind 90	1.13	-1.13	0.00	0.53	147.81	0.34
		300	Wind 60	1.11	-0.97	-0.56	-71.92	126.26	0.35
		330	Wind 90	1.13	-0.57	-0.98	-126.82	74.29	-0.92
		0	Wind Normal	1.16	0.00	-1.16	-127.51	0.85	-1.09
		30	Wind 90	1.11	0.56	-0.96	-105.52	-60.41	0.37
		60	Wind 60	1.10	0.95	-0.55	-59.74	-103.64	0.74
		90	Wind 90	1.11	1.11	0.00	0.59	-121.67	-0.37
		120	Wind Normal	1.16	1.01	0.58	64.63	-110.08	-0.38
T11	100.00-80.00	150	Wind 90	1.11	0.56	0.96	106.69	-60.41	0.98
		180	Wind 60	1.10	0.00	1.10	121.25	0.85	1.09
		210	Wind 90	1.11	-0.56	0.96	106.69	62.11	-0.37
		240	Wind Normal	1.16	-1.01	0.58	64.63	111.78	-0.74
		270	Wind 90	1.11	-1.11	0.00	0.59	123.37	0.37
		300	Wind 60	1.10	-0.95	-0.55	-59.74	105.34	0.38
		330	Wind 90	1.11	-0.56	-0.96	-105.52	62.11	-0.98
		0	Wind Normal	1.16	0.00	-1.16	-103.66	0.94	-1.15
		30	Wind 90	1.11	0.55	-0.96	-85.68	-48.90	0.39
		60	Wind 60	1.09	0.94	-0.55	-48.42	-84.05	0.78
T12	80.00-60.00	90	Wind 90	1.11	1.11	0.00	0.64	-98.74	-0.38
		120	Wind Normal	1.16	1.00	0.58	52.79	-89.39	-0.40
		150	Wind 90	1.11	0.55	0.96	86.96	-48.90	1.03
		180	Wind 60	1.09	0.00	1.09	98.77	0.94	1.15
		210	Wind 90	1.11	-0.55	0.96	86.96	50.77	-0.39
		240	Wind Normal	1.16	-1.00	0.58	52.79	91.26	-0.78
		270	Wind 90	1.11	-1.11	0.00	0.64	100.61	0.38
		300	Wind 60	1.09	-0.94	-0.55	-48.42	85.92	0.40
		330	Wind 90	1.11	-0.55	-0.96	-85.68	50.77	-1.03
		0	Wind Normal	1.12	0.00	-1.12	-77.86	1.02	-1.19
T13	60.00-40.00	30	Wind 90	1.07	0.54	-0.93	-64.19	-36.44	0.40
		60	Wind 60	1.05	0.91	-0.53	-36.16	-62.82	0.80
		90	Wind 90	1.07	1.07	0.00	0.70	-73.91	-0.39
		120	Wind Normal	1.12	0.97	0.56	39.98	-67.01	-0.42
		150	Wind 90	1.07	0.54	0.93	65.59	-36.44	1.06
		180	Wind 60	1.05	0.00	1.05	74.42	1.02	1.19
		210	Wind 90	1.07	-0.54	0.93	65.59	38.49	-0.40
		240	Wind Normal	1.12	-0.97	0.56	39.98	69.05	-0.80
		270	Wind 90	1.07	-1.07	0.00	0.70	75.95	0.39
		300	Wind 60	1.05	-0.91	-0.53	-36.16	64.87	0.42
T13	60.00-40.00	330	Wind 90	1.07	-0.54	-0.93	-64.19	38.49	-1.06
		0	Wind Normal	1.07	0.00	-1.07	-52.60	1.11	-1.20
		30	Wind 90	1.02	0.51	-0.88	-43.24	-24.29	0.40
		60	Wind 60	1.00	0.87	-0.50	-24.22	-42.15	0.81
		90	Wind 90	1.02	1.02	0.00	0.75	-49.69	-0.40
		120	Wind Normal	1.07	0.92	0.53	27.43	-45.10	-0.42
		150	Wind 90	1.02	0.51	0.88	44.75	-24.29	1.07
		180	Wind 60	1.00	0.00	1.00	50.70	1.11	1.20
T13	60.00-40.00	210	Wind 90	1.02	-0.51	0.88	44.75	26.51	-0.40
		240	Wind Normal	1.07	-0.92	0.53	27.43	47.31	-0.81
		270	Wind 90	1.02	-1.02	0.00	0.75	51.90	0.40

Valmont 1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458	Job 604200	Page 38 of 66
	Project H31' x 300' - US-KY-5178 Matney Rd, KY	Date 19:01:00 02/01/24
	Client VB BTS II, LLC	Designed by NS

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
T14	40.00-20.00	300	Wind 60	1.00	-0.87	-0.50	-24.22	44.36	0.42
		330	Wind 90	1.02	-0.51	-0.88	-43.24	26.51	-1.07
		0	Wind Normal	0.98	0.00	-0.98	-28.53	1.19	-1.16
		30	Wind 90	0.93	0.46	-0.80	-23.33	-12.75	0.38
		60	Wind 60	0.91	0.79	-0.46	-12.89	-22.53	0.78
		90	Wind 90	0.93	0.93	0.00	0.81	-26.69	-0.38
		120	Wind Normal	0.98	0.85	0.49	15.48	-24.21	-0.41
		150	Wind 90	0.93	0.46	0.80	24.95	-12.75	1.03
		180	Wind 60	0.91	0.00	0.91	28.20	1.19	1.16
		210	Wind 90	0.93	-0.46	0.80	24.95	15.13	-0.38
		240	Wind Normal	0.98	-0.85	0.49	15.48	26.60	-0.78
		270	Wind 90	0.93	-0.93	0.00	0.81	29.07	0.38
T15	20.00-0.00	300	Wind 60	0.91	-0.79	-0.46	-12.89	24.91	0.41
		330	Wind 90	0.93	-0.46	-0.80	-23.33	15.13	-1.03
		0	Wind Normal	0.92	0.00	-0.92	-8.29	1.28	-1.08
		30	Wind 90	0.86	0.43	-0.75	-6.62	-3.05	0.35
		60	Wind 60	0.85	0.73	-0.42	-3.37	-6.06	0.73
		90	Wind 90	0.86	0.86	0.00	0.86	-7.37	-0.35
		120	Wind Normal	0.92	0.79	0.46	5.44	-6.65	-0.38
		150	Wind 90	0.86	0.43	0.75	8.35	-3.05	0.96
		180	Wind 60	0.85	0.00	0.85	9.34	1.28	1.08
		210	Wind 90	0.86	-0.43	0.75	8.35	5.60	-0.35
		240	Wind Normal	0.92	-0.79	0.46	5.44	9.21	-0.73
		270	Wind 90	0.86	-0.86	0.00	0.86	9.92	0.35
300	Wind 60	0.85	-0.73	-0.42	-3.37	8.61	0.38		
330	Wind 90	0.86	-0.43	-0.75	-6.62	5.60	-0.96		

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	-16.15	-2376.06	10.51	-12.60
30	7.72	-13.37	-1970.34	-1131.52	4.31
60	13.12	-7.57	-1109.66	-1924.85	8.59
90	15.33	0.00	7.71	-2241.48	-3.84
120	13.89	8.02	1183.57	-2026.13	-3.78
150	7.69	13.32	1972.18	-1123.68	11.71
180	0.00	15.20	2258.84	10.51	12.60
210	-7.72	13.37	1985.77	1152.54	-4.31
240	-13.94	8.05	1191.42	2060.74	-8.59
270	-15.33	0.00	7.71	2262.50	3.84
300	-13.07	-7.55	-1101.81	1932.27	3.78
330	-7.69	-13.32	-1956.75	1144.69	-11.71

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 _A C _F Front ft ²	C _A C _S Side ft ²
5/8" x 7'-6" lightning rod	240.0000	0.02	-2.50	1.44	302.50	1.598	38	0.47	0.47
Beacon	120.0000	0.07	2.50	1.44	301.00	1.596	38	2.40	2.40

<p>Valmont</p> <p>1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458</p>	<p>Job</p> <p>604200</p>	<p>Page</p> <p>39 of 66</p>
	<p>Project</p> <p>H31' x 300' - US-KY-5178 Matney Rd, KY</p>	<p>Date</p> <p>19:01:00 02/01/24</p>
	<p>Client</p> <p>VB BTS II, LLC</p>	<p>Designed by</p> <p>NS</p>

Description	Aiming Azimuth °	Weight K	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AAc} Front ft ²	C _{AAc} Side ft ²
OB light	240.0000	0.03	-8.43	4.87	151.00	1.380	33	0.50	0.50
OB light	120.0000	0.03	8.43	4.87	151.00	1.380	33	0.50	0.50
OB light	0.0000	0.03	0.00	-9.74	151.00	1.380	33	0.50	0.50
40,000 sq.in. (277.78 sq.ft. EPA)	0.0000	4.00	0.00	0.00	295.00	1.589	38	277.78	277.78
30,000 sq.in. (208.3 sq.ft. EPA)	0.0000	3.00	0.00	0.00	285.00	1.578	38	208.30	208.30
30,000 sq.in. (208.3 sq.ft. EPA)	0.0000	3.00	0.00	0.00	275.00	1.566	38	208.30	208.30
Sum Weight:		10.18							

Discrete Appurtenance Vectors - No Ice

5/8" x 7'-6" lightning rod - Elevation 302.5 - 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	-4.59	0.05	-0.04		
30	0.01	0.01	0.01	-0.01	-3.97	-2.26	-0.02		
60	0.02	0.00	0.01	-0.01	-2.28	-3.95	0.00		
90	0.01	0.01	0.02	0.00	0.03	-4.57	0.02		
120	0.01	0.01	0.01	0.01	2.34	-3.95	0.04		
150	0.00	0.02	0.01	0.01	4.03	-2.26	0.04		
180	0.01	0.01	0.00	0.02	4.65	0.05	0.04		
210	0.01	0.01	-0.01	0.01	4.03	2.36	0.02		
240	0.02	0.00	-0.01	0.01	2.34	4.05	0.00		
270	0.01	0.01	-0.02	0.00	0.03	4.67	-0.02		
300	0.01	0.01	-0.01	-0.01	-2.28	4.05	-0.04		
330	0.00	0.02	-0.01	-0.01	-3.97	2.36	-0.04		

Beacon - Elevation 301 - 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	-23.41	-0.18	0.20		
30	0.00	0.08	0.04	-0.07	-20.26	-11.94	0.23		
60	0.04	0.07	0.07	-0.04	-11.65	-20.54	0.20		
90	0.07	0.04	0.08	0.00	0.11	-23.69	0.11		
120	0.08	0.00	0.07	0.04	11.86	-20.54	0.00		
150	0.07	0.04	0.04	0.07	20.47	-11.94	-0.11		
180	0.04	0.07	0.00	0.08	23.62	-0.18	-0.20		
210	0.00	0.08	-0.04	0.07	20.47	11.57	-0.23		
240	0.04	0.07	-0.07	0.04	11.86	20.18	-0.20		
270	0.07	0.04	-0.08	0.00	0.11	23.33	-0.11		
300	0.08	0.00	-0.07	-0.04	-11.65	20.18	0.00		
330	0.07	0.04	-0.04	-0.07	-20.26	11.57	0.11		

OB light - Elevation 151 - From Leg C									
Wind Azimuth °	F _a K	F _s K	V _x K	V _z K	OTM _x kip-ft	OTM _z kip-ft	Torque kip-ft		
0	0.01	0.01	0.00	-0.01	-1.98	0.25	-0.12		
30	0.01	0.01	0.01	-0.01	-1.69	-0.81	-0.07		

Valmont

1545 Pidco Drive
Plymouth, IN
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Project	H31' x 300' - US-KY-5178 Matney Rd, KY	Date	19:01:00 02/01/24
Client	VB BTS II, LLC	Designed by	NS

OB light - Elevation 151 - 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
60	0.01	0.00	0.01	-0.01	-0.92	-1.59	0.00
90	0.01	0.01	0.01	0.00	0.15	-1.87	0.07
120	0.01	0.01	0.01	0.01	1.21	-1.59	0.12
150	0.00	0.01	0.01	0.01	1.99	-0.81	0.14
180	0.01	0.01	0.00	0.01	2.27	0.25	0.12
210	0.01	0.01	-0.01	0.01	1.99	1.32	0.07
240	0.01	0.00	-0.01	0.01	1.21	2.09	0.00
270	0.01	0.01	-0.01	0.00	0.15	2.38	-0.07
300	0.01	0.01	-0.01	-0.01	-0.92	2.09	-0.12
330	0.00	0.01	-0.01	-0.01	-1.69	1.32	-0.14

OB light - Elevation 151 - From Leg B							
Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.01	0.01	0.00	-0.01	-1.98	-0.25	0.12
30	0.00	0.01	0.01	-0.01	-1.69	-1.32	0.14
60	0.01	0.01	0.01	-0.01	-0.92	-2.09	0.12
90	0.01	0.01	0.01	0.00	0.15	-2.38	0.07
120	0.01	0.00	0.01	0.01	1.21	-2.09	0.00
150	0.01	0.01	0.01	0.01	1.99	-1.32	-0.07
180	0.01	0.01	0.00	0.01	2.27	-0.25	-0.12
210	0.00	0.01	-0.01	0.01	1.99	0.81	-0.14
240	0.01	0.01	-0.01	0.01	1.21	1.59	-0.12
270	0.01	0.01	-0.01	0.00	0.15	1.87	-0.07
300	0.01	0.00	-0.01	-0.01	-0.92	1.59	0.00
330	0.01	0.01	-0.01	-0.01	-1.69	0.81	0.07

OB light - Elevation 151 - From Leg A							
Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.01	0.00	0.00	-0.01	-2.42	0.00	0.00
30	0.01	0.01	0.01	-0.01	-2.13	-1.06	-0.07
60	0.01	0.01	0.01	-0.01	-1.35	-1.84	-0.12
90	0.00	0.01	0.01	0.00	-0.29	-2.13	-0.14
120	0.01	0.01	0.01	0.01	0.77	-1.84	-0.12
150	0.01	0.01	0.01	0.01	1.55	-1.06	-0.07
180	0.01	0.00	0.00	0.01	1.83	0.00	0.00
210	0.01	0.01	-0.01	0.01	1.55	1.06	0.07
240	0.01	0.01	-0.01	0.01	0.77	1.84	0.12
270	0.00	0.01	-0.01	0.00	-0.29	2.13	0.14
300	0.01	0.01	-0.01	-0.01	-1.35	1.84	0.12
330	0.01	0.01	-0.01	-0.01	-2.13	1.06	0.07

40,000 sq.in. (277.78 sq.ft. EPA) - Elevation 295 - 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	7.38	0.00	0.00	-7.38	-2177.74	0.00	0.00
30	7.38	0.00	3.69	-6.39	-1885.98	-1088.87	0.00
60	7.38	0.00	6.39	-3.69	-1088.87	-1885.98	0.00
90	7.38	0.00	7.38	0.00	0.00	-2177.74	0.00
120	7.38	0.00	6.39	3.69	1088.87	-1885.98	0.00

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	Client	VB BTS II, LLC		Designed by	NS

40,000 sq.in. (277.78 sq.ft. EPA) - Elevation 295 - 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
150	7.38	0.00	3.69	6.39	1885.98	-1088.87	0.00
180	7.38	0.00	0.00	7.38	2177.74	0.00	0.00
210	7.38	0.00	-3.69	6.39	1885.98	1088.87	0.00
240	7.38	0.00	-6.39	3.69	1088.87	1885.98	0.00
270	7.38	0.00	-7.38	0.00	0.00	2177.74	0.00
300	7.38	0.00	-6.39	-3.69	-1088.87	1885.98	0.00
330	7.38	0.00	-3.69	-6.39	-1885.98	1088.87	0.00

30,000 sq.in. (208.3 sq.ft. EPA) - Elevation 285 - 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	5.50	0.00	0.00	-5.50	-1566.26	0.00	0.00
30	5.50	0.00	2.75	-4.76	-1356.42	-783.13	0.00
60	5.50	0.00	4.76	-2.75	-783.13	-1356.42	0.00
90	5.50	0.00	5.50	0.00	0.00	-1566.26	0.00
120	5.50	0.00	4.76	2.75	783.13	-1356.42	0.00
150	5.50	0.00	2.75	4.76	1356.42	-783.13	0.00
180	5.50	0.00	0.00	5.50	1566.26	0.00	0.00
210	5.50	0.00	-2.75	4.76	1356.42	783.13	0.00
240	5.50	0.00	-4.76	2.75	783.13	1356.42	0.00
270	5.50	0.00	-5.50	0.00	0.00	1566.26	0.00
300	5.50	0.00	-4.76	-2.75	-783.13	1356.42	0.00
330	5.50	0.00	-2.75	-4.76	-1356.42	783.13	0.00

30,000 sq.in. (208.3 sq.ft. EPA) - Elevation 275 - 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	5.45	0.00	0.00	-5.45	-1499.98	0.00	0.00
30	5.45	0.00	2.73	-4.72	-1299.02	-749.99	0.00
60	5.45	0.00	4.72	-2.73	-749.99	-1299.02	0.00
90	5.45	0.00	5.45	0.00	0.00	-1499.98	0.00
120	5.45	0.00	4.72	2.73	749.99	-1299.02	0.00
150	5.45	0.00	2.73	4.72	1299.02	-749.99	0.00
180	5.45	0.00	0.00	5.45	1499.98	0.00	0.00
210	5.45	0.00	-2.73	4.72	1299.02	749.99	0.00
240	5.45	0.00	-4.72	2.73	749.99	1299.02	0.00
270	5.45	0.00	-5.45	0.00	0.00	1499.98	0.00
300	5.45	0.00	-4.72	-2.73	-749.99	1299.02	0.00
330	5.45	0.00	-2.73	-4.72	-1299.02	749.99	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	-18.47	-5278.36	-0.13	0.16
30	9.23	-15.99	-4571.17	-2639.38	0.20
60	15.99	-9.23	-2639.11	-4571.44	0.20
90	18.47	0.00	0.14	-5278.62	0.13
120	15.99	9.23	2639.38	-4571.44	0.04

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Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
150	9.23	15.99	4571.44	-2639.38	-0.07
180	0.00	18.47	5278.63	-0.13	-0.16
210	-9.23	15.99	4571.44	2639.12	-0.20
240	-15.99	9.23	2639.38	4571.18	-0.20
270	-18.47	0.00	0.14	5278.36	-0.13
300	-15.99	-9.23	-2639.11	4571.18	-0.04
330	-9.23	-15.99	-4571.17	2639.12	0.07

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_{Ac} Front ft ²	C_{Ac} Side ft ²	t_z in
5/8" x 7'-6" lightning rod	240.0000	0.07	-2.50	1.44	302.50	1.598	3	2.97	2.97	1.8720
Beacon	120.0000	0.16	2.50	1.44	301.00	1.596	3	3.41	3.41	1.8711
OB light	240.0000	0.05	-8.43	4.87	151.00	1.380	3	0.85	0.85	1.7464
OB light	120.0000	0.05	8.43	4.87	151.00	1.380	3	0.85	0.85	1.7464
OB light	0.0000	0.05	0.00	-9.74	151.00	1.380	3	0.85	0.85	1.7464
40,000 sq.in. (277.78 sq.ft. EPA)	0.0000	7.73	0.00	0.00	295.00	1.589	3	537.13	537.13	1.8673
30,000 sq.in. (208.3 sq.ft. EPA)	0.0000	5.79	0.00	0.00	285.00	1.578	3	402.11	402.11	1.8609
30,000 sq.in. (208.3 sq.ft. EPA)	0.0000	5.78	0.00	0.00	275.00	1.566	3	401.42	401.42	1.8543
Sum Weight:		19.68								

Discrete Appurtenance Vectors - With Ice

5/8" x 7'-6" lightning rod - Elevation 302.5 - 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	0.01	0.00	-0.01	-2.29	0.17	-0.02	
30	0.01	0.00	0.00	-0.01	-1.97	-1.03	-0.01	
60	0.01	0.00	0.01	-0.00	-1.10	-1.90	0.00	
90	0.01	0.00	0.01	0.00	0.10	-2.22	0.01	
120	0.00	0.01	0.01	0.00	1.29	-1.90	0.02	
150	0.00	0.01	0.00	0.01	2.16	-1.03	0.02	
180	0.00	0.01	0.00	0.01	2.48	0.17	0.02	
210	0.01	0.00	-0.00	0.01	2.16	1.36	0.01	
240	0.01	0.00	-0.01	0.00	1.29	2.23	0.00	
270	0.01	0.00	-0.01	0.00	0.10	2.55	-0.01	
300	0.00	0.01	-0.01	-0.00	-1.10	2.23	-0.02	
330	0.00	0.01	-0.00	-0.01	-1.97	1.36	-0.02	

Beacon - Elevation 301 - 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	-2.49	-0.41	0.02	
30	0.00	0.01	0.00	-0.01	-2.13	-1.77	0.03	

Valmont

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Beacon - Elevation 301 - 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
60	0.00	0.01	0.01	-0.00	-1.13	-2.77	0.02
90	0.01	0.00	0.01	0.00	0.24	-3.14	0.01
120	0.01	0.00	0.01	0.00	1.60	-2.77	0.00
150	0.01	0.00	0.00	0.01	2.60	-1.77	-0.01
180	0.00	0.01	0.00	0.01	2.96	-0.41	-0.02
210	0.00	0.01	-0.00	0.01	2.60	0.96	-0.03
240	0.00	0.01	-0.01	0.00	1.60	1.96	-0.02
270	0.01	0.00	-0.01	0.00	0.24	2.32	-0.01
300	0.01	0.00	-0.01	-0.00	-1.13	1.96	0.00
330	0.01	0.00	-0.00	-0.01	-2.13	0.96	0.01

OB light - Elevation 151 - 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	-0.06	0.40	-0.02
30	0.00	0.00	0.00	-0.00	-0.02	0.25	-0.01
60	0.00	0.00	0.00	-0.00	0.08	0.15	0.00
90	0.00	0.00	0.00	0.00	0.23	0.11	0.01
120	0.00	0.00	0.00	0.00	0.38	0.15	0.02
150	0.00	0.00	0.00	0.00	0.49	0.25	0.02
180	0.00	0.00	0.00	0.00	0.53	0.40	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	0.23	0.69	-0.01
300	0.00	0.00	-0.00	-0.00	0.08	0.66	-0.02
330	0.00	0.00	-0.00	-0.00	-0.02	0.55	-0.02

OB light - Elevation 151 - 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	-0.06	-0.40	0.02
30	0.00	0.00	0.00	-0.00	-0.02	-0.55	0.02
60	0.00	0.00	0.00	-0.00	0.08	-0.66	0.02
90	0.00	0.00	0.00	0.00	0.23	-0.69	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	-0.40	-0.02
210	0.00	0.00	-0.00	0.00	0.49	-0.25	-0.02
240	0.00	0.00	-0.00	0.00	0.38	-0.15	-0.02
270	0.00	0.00	-0.00	0.00	0.23	-0.11	-0.01
300	0.00	0.00	-0.00	-0.00	0.08	-0.15	0.00
330	0.00	0.00	-0.00	-0.00	-0.02	-0.25	0.01

OB light - Elevation 151 - 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	-0.15	-0.01
60	0.00	0.00	0.00	-0.00	-0.61	-0.26	-0.02
90	0.00	0.00	0.00	0.00	-0.46	-0.29	-0.02
120	0.00	0.00	0.00	0.00	-0.31	-0.26	-0.02

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OB light - Elevation 151 - 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
150	0.00	0.00	0.00	0.00	-0.21	-0.15	-0.01
180	0.00	0.00	0.00	0.00	-0.17	0.00	0.00
210	0.00	0.00	-0.00	0.00	-0.21	0.15	0.01
240	0.00	0.00	-0.00	0.00	-0.31	0.26	0.02
270	0.00	0.00	-0.00	0.00	-0.46	0.29	0.02
300	0.00	0.00	-0.00	-0.00	-0.61	0.26	0.02
330	0.00	0.00	-0.00	-0.00	-0.72	0.15	0.01

40,000 sq.in. (277.78 sq.ft. EPA) - Elevation 295 - 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	1.17	0.00	0.00	-1.17	-343.76	0.00	0.00
30	1.17	0.00	0.58	-1.01	-297.70	-171.88	0.00
60	1.17	0.00	1.01	-0.58	-171.88	-297.70	0.00
90	1.17	0.00	1.17	0.00	0.00	-343.76	0.00
120	1.17	0.00	1.01	0.58	171.88	-297.70	0.00
150	1.17	0.00	0.58	1.01	297.70	-171.88	0.00
180	1.17	0.00	0.00	1.17	343.76	0.00	0.00
210	1.17	0.00	-0.58	1.01	297.70	171.88	0.00
240	1.17	0.00	-1.01	0.58	171.88	297.70	0.00
270	1.17	0.00	-1.17	0.00	0.00	343.76	0.00
300	1.17	0.00	-1.01	-0.58	-171.88	297.70	0.00
330	1.17	0.00	-0.58	-1.01	-297.70	171.88	0.00

30,000 sq.in. (208.3 sq.ft. EPA) - Elevation 285 - 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	0.87	0.00	0.00	-0.87	-246.82	0.00	0.00
30	0.87	0.00	0.43	-0.75	-213.76	-123.41	0.00
60	0.87	0.00	0.75	-0.43	-123.41	-213.76	0.00
90	0.87	0.00	0.87	0.00	0.00	-246.82	0.00
120	0.87	0.00	0.75	0.43	123.41	-213.76	0.00
150	0.87	0.00	0.43	0.75	213.76	-123.41	0.00
180	0.87	0.00	0.00	0.87	246.82	0.00	0.00
210	0.87	0.00	-0.43	0.75	213.76	123.41	0.00
240	0.87	0.00	-0.75	0.43	123.41	213.76	0.00
270	0.87	0.00	-0.87	0.00	0.00	246.82	0.00
300	0.87	0.00	-0.75	-0.43	-123.41	213.76	0.00
330	0.87	0.00	-0.43	-0.75	-213.76	123.41	0.00

30,000 sq.in. (208.3 sq.ft. EPA) - Elevation 275 - 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	0.86	0.00	0.00	-0.86	-235.97	0.00	0.00
30	0.86	0.00	0.43	-0.74	-204.36	-117.99	0.00
60	0.86	0.00	0.74	-0.43	-117.99	-204.36	0.00
90	0.86	0.00	0.86	0.00	0.00	-235.97	0.00
120	0.86	0.00	0.74	0.43	117.99	-204.36	0.00
150	0.86	0.00	0.43	0.74	204.36	-117.99	0.00
180	0.86	0.00	0.00	0.86	235.97	0.00	0.00
210	0.86	0.00	-0.43	0.74	204.36	117.99	0.00

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30,000 sq.in. (208.3 sq.ft. EPA) - Elevation 275 - 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
240	0.86	0.00	-0.74	0.43	117.99	204.36	0.00
270	0.86	0.00	-0.86	0.00	0.00	235.97	0.00
300	0.86	0.00	-0.74	-0.43	-117.99	204.36	0.00
330	0.86	0.00	-0.43	-0.74	-204.36	117.99	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	-2.91	-832.22	-0.24	0.00
30	1.46	-2.52	-720.68	-416.52	0.01
60	2.52	-1.46	-415.95	-721.25	0.02
90	2.91	0.00	0.33	-832.79	0.02
120	2.52	1.46	416.61	-721.25	0.02
150	1.46	2.52	721.34	-416.52	0.01
180	0.00	2.91	832.89	-0.24	-0.00
210	-1.46	2.52	721.34	416.04	-0.01
240	-2.52	1.46	416.61	720.77	-0.02
270	-2.91	0.00	0.33	832.31	-0.02
300	-2.52	-1.46	-415.95	720.77	-0.02
330	-1.46	-2.52	-720.68	416.04	-0.01

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_{Ac} Front ft ²	C_{Ac} Side ft ²
5/8" x 7'-6" lightning rod	240.0000	0.02	-2.50	1.44	302.50	1.598	13	0.47	0.47
Beacon	120.0000	0.07	2.50	1.44	301.00	1.596	13	2.40	2.40
OB light	240.0000	0.03	-8.43	4.87	151.00	1.380	11	0.50	0.50
OB light	120.0000	0.03	8.43	4.87	151.00	1.380	11	0.50	0.50
OB light	0.0000	0.03	0.00	-9.74	151.00	1.380	11	0.50	0.50
40,000 sq.in. (277.78 sq.ft. EPA)	0.0000	4.00	0.00	0.00	295.00	1.589	12	277.78	277.78
30,000 sq.in. (208.3 sq.ft. EPA)	0.0000	3.00	0.00	0.00	285.00	1.578	12	208.30	208.30
30,000 sq.in. (208.3 sq.ft. EPA)	0.0000	3.00	0.00	0.00	275.00	1.566	12	208.30	208.30
Sum Weight:		10.18							

Discrete Appurtenance Vectors - Service

5/8" x 7'-6" lightning rod - Elevation 302.5 - 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	-1.48	0.05	-0.01

Valmont

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5/8" x 7-6" lightning rod - Elevation 302.5 - 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
30	0.00	0.00	0.00	-0.00	-1.28	-0.70	-0.01
60	0.00	0.00	0.00	-0.00	-0.72	-1.25	0.00
90	0.00	0.00	0.00	0.00	0.03	-1.46	0.01
120	0.00	0.00	0.00	0.00	0.78	-1.25	0.01
150	0.00	0.00	0.00	0.00	1.34	-0.70	0.01
180	0.00	0.00	0.00	0.00	1.54	0.05	0.01
210	0.00	0.00	-0.00	0.00	1.34	0.81	0.01
240	0.00	0.00	-0.00	0.00	0.78	1.36	0.00
270	0.00	0.00	-0.00	0.00	0.03	1.56	-0.01
300	0.00	0.00	-0.00	-0.00	-0.72	1.36	-0.01
330	0.00	0.00	-0.00	-0.00	-1.28	0.81	-0.01

Beacon - Elevation 301 - 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	-0.03	-7.57	-0.18	0.06
30	0.00	0.03	0.01	-0.02	-6.54	-4.02	0.07
60	0.01	0.02	0.02	-0.01	-3.73	-6.83	0.06
90	0.02	0.01	0.03	0.00	0.11	-7.86	0.04
120	0.03	0.00	0.02	0.01	3.94	-6.83	0.00
150	0.02	0.01	0.01	0.02	6.75	-4.02	-0.04
180	0.01	0.02	0.00	0.03	7.78	-0.18	-0.06
210	0.00	0.03	-0.01	0.02	6.75	3.66	-0.07
240	0.01	0.02	-0.02	0.01	3.94	6.47	-0.06
270	0.02	0.01	-0.03	0.00	0.11	7.49	-0.04
300	0.03	0.00	-0.02	-0.01	-3.73	6.47	0.00
330	0.02	0.01	-0.01	-0.02	-6.54	3.66	0.04

OB light - Elevation 151 - 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	-0.55	0.25	-0.04
30	0.00	0.00	0.00	-0.00	-0.45	-0.09	-0.02
60	0.00	0.00	0.00	-0.00	-0.20	-0.35	0.00
90	0.00	0.00	0.00	0.00	0.15	-0.44	0.02
120	0.00	0.00	0.00	0.00	0.49	-0.35	0.04
150	0.00	0.00	0.00	0.00	0.75	-0.09	0.04
180	0.00	0.00	0.00	0.00	0.84	0.25	0.04
210	0.00	0.00	-0.00	0.00	0.75	0.60	0.02
240	0.00	0.00	-0.00	0.00	0.49	0.85	0.00
270	0.00	0.00	-0.00	0.00	0.15	0.95	-0.02
300	0.00	0.00	-0.00	-0.00	-0.20	0.85	-0.04
330	0.00	0.00	-0.00	-0.00	-0.45	0.60	-0.04

OB light - Elevation 151 - 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	-0.55	-0.25	0.04
30	0.00	0.00	0.00	-0.00	-0.45	-0.60	0.04
60	0.00	0.00	0.00	-0.00	-0.20	-0.85	0.04
90	0.00	0.00	0.00	0.00	0.15	-0.95	0.02

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Project	H31' x 300' - US-KY-5178 Matney Rd, KY	Date	19:01:00 02/01/24
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OB light - Elevation 151 - 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
120	0.00	0.00	0.00	0.00	0.49	-0.85	0.00
150	0.00	0.00	0.00	0.00	0.75	-0.60	-0.02
180	0.00	0.00	0.00	0.00	0.84	-0.25	-0.04
210	0.00	0.00	-0.00	0.00	0.75	0.09	-0.04
240	0.00	0.00	-0.00	0.00	0.49	0.35	-0.04
270	0.00	0.00	-0.00	0.00	0.15	0.44	-0.02
300	0.00	0.00	-0.00	-0.00	-0.20	0.35	0.00
330	0.00	0.00	-0.00	-0.00	-0.45	0.09	0.02

OB light - Elevation 151 - 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	-0.99	0.00	0.00
30	0.00	0.00	0.00	-0.00	-0.89	-0.35	-0.02
60	0.00	0.00	0.00	-0.00	-0.64	-0.60	-0.04
90	0.00	0.00	0.00	0.00	-0.29	-0.69	-0.04
120	0.00	0.00	0.00	0.00	0.05	-0.60	-0.04
150	0.00	0.00	0.00	0.00	0.31	-0.35	-0.02
180	0.00	0.00	0.00	0.00	0.40	0.00	0.00
210	0.00	0.00	-0.00	0.00	0.31	0.35	0.02
240	0.00	0.00	-0.00	0.00	0.05	0.60	0.04
270	0.00	0.00	-0.00	0.00	-0.29	0.69	0.04
300	0.00	0.00	-0.00	-0.00	-0.64	0.60	0.04
330	0.00	0.00	-0.00	-0.00	-0.89	0.35	0.02

40,000 sq.in. (277.78 sq.ft. EPA) - Elevation 295 - 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	2.41	0.00	0.00	-2.41	-711.10	0.00	0.00
30	2.41	0.00	1.21	-2.09	-615.83	-355.55	0.00
60	2.41	0.00	2.09	-1.21	-355.55	-615.83	0.00
90	2.41	0.00	2.41	0.00	0.00	-711.10	0.00
120	2.41	0.00	2.09	1.21	355.55	-615.83	0.00
150	2.41	0.00	1.21	2.09	615.83	-355.55	0.00
180	2.41	0.00	0.00	2.41	711.10	0.00	0.00
210	2.41	0.00	-1.21	2.09	615.83	355.55	0.00
240	2.41	0.00	-2.09	1.21	355.55	615.83	0.00
270	2.41	0.00	-2.41	0.00	0.00	711.10	0.00
300	2.41	0.00	-2.09	-1.21	-355.55	615.83	0.00
330	2.41	0.00	-1.21	-2.09	-615.83	355.55	0.00

30,000 sq.in. (208.3 sq.ft. EPA) - Elevation 285 - 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	1.79	0.00	0.00	-1.79	-511.43	0.00	0.00
30	1.79	0.00	0.90	-1.55	-442.91	-255.72	0.00
60	1.79	0.00	1.55	-0.90	-255.72	-442.91	0.00
90	1.79	0.00	1.79	0.00	0.00	-511.43	0.00
120	1.79	0.00	1.55	0.90	255.72	-442.91	0.00
150	1.79	0.00	0.90	1.55	442.91	-255.72	0.00
180	1.79	0.00	0.00	1.79	511.43	0.00	0.00

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30,000 sq.in. (208.3 sq.ft. EPA) - Elevation 285 - None B							
Wind Azimuth °	F_a K	F_s K	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
210	1.79	0.00	-0.90	1.55	442.91	255.72	0.00
240	1.79	0.00	-1.55	0.90	255.72	442.91	0.00
270	1.79	0.00	-1.79	0.00	0.00	511.43	0.00
300	1.79	0.00	-1.55	-0.90	-255.72	442.91	0.00
330	1.79	0.00	-0.90	-1.55	-442.91	255.72	0.00

30,000 sq.in. (208.3 sq.ft. EPA) - Elevation 275 - 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	1.78	0.00	0.00	-1.78	-489.79	0.00	0.00
30	1.78	0.00	0.89	-1.54	-424.17	-244.90	0.00
60	1.78	0.00	1.54	-0.89	-244.90	-424.17	0.00
90	1.78	0.00	1.78	0.00	0.00	-489.79	0.00
120	1.78	0.00	1.54	0.89	244.90	-424.17	0.00
150	1.78	0.00	0.89	1.54	424.17	-244.90	0.00
180	1.78	0.00	0.00	1.78	489.79	0.00	0.00
210	1.78	0.00	-0.89	1.54	424.17	244.90	0.00
240	1.78	0.00	-1.54	0.89	244.90	424.17	0.00
270	1.78	0.00	-1.78	0.00	0.00	489.79	0.00
300	1.78	0.00	-1.54	-0.89	-244.90	424.17	0.00
330	1.78	0.00	-0.89	-1.54	-424.17	244.90	0.00

Discrete Appurtenance Totals - Service

Wind Azimuth °	V_x K	V_z K	OTM_x kip-ft	OTM_z kip-ft	Torque kip-ft
0	0.00	-6.03	-1723.45	-0.13	0.05
30	3.02	-5.22	-1492.54	-861.92	0.07
60	5.22	-3.02	-861.66	-1492.80	0.06
90	6.03	0.00	0.14	-1723.72	0.04
120	5.22	3.02	861.93	-1492.80	0.01
150	3.02	5.22	1492.81	-861.92	-0.02
180	0.00	6.03	1723.72	-0.13	-0.05
210	-3.02	5.22	1492.81	861.66	-0.07
240	-5.22	3.02	861.93	1492.54	-0.06
270	-6.03	0.00	0.14	1723.46	-0.04
300	-5.22	-3.02	-861.66	1492.54	-0.01
330	-3.02	-5.22	-1492.54	861.66	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	37.31					
Bracing Weight	15.28					
Total Member Self-Weight	52.59			7.85	10.38	

<p style="text-align: center;">Valmont</p> <p style="text-align: center;">1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458</p>	<p style="text-align: center;">Job</p> <p style="text-align: center;">604200</p>	<p style="text-align: center;">Page</p> <p style="text-align: center;">49 of 66</p>
	<p style="text-align: center;">Project</p> <p style="text-align: center;">H31' x 300' - US-KY-5178 Matney Rd, KY</p>	<p style="text-align: center;">Date</p> <p style="text-align: center;">19:01:00 02/01/24</p>
	<p style="text-align: center;">Client</p> <p style="text-align: center;">VB BTS II, LLC</p>	<p style="text-align: center;">Designed by</p> <p style="text-align: center;">NS</p>

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	73.01			7.85	10.38	
Wind 0 deg - No Ice		0.00	-67.71	-12515.74	10.38	-38.42
Wind 30 deg - No Ice		32.77	-56.75	-10573.44	-6098.73	13.39
Wind 60 deg - No Ice		55.98	-32.32	-6025.76	-10440.13	26.52
Wind 90 deg - No Ice		65.19	0.00	7.85	-12109.63	-11.62
Wind 120 deg - No Ice		58.34	33.68	6220.54	-10750.31	-11.55
Wind 150 deg - No Ice		32.68	56.61	10547.51	-6074.70	35.78
Wind 180 deg - No Ice		0.00	64.81	12125.21	10.38	38.42
Wind 210 deg - No Ice		-32.77	56.75	10589.14	6119.49	-13.39
Wind 240 deg - No Ice		-58.48	33.77	6244.57	10812.70	-26.52
Wind 270 deg - No Ice		-65.19	0.00	7.85	12130.38	11.62
Wind 300 deg - No Ice		-55.83	-32.23	-6001.72	10419.26	11.55
Wind 330 deg - No Ice		-32.68	-56.61	-10531.81	6095.46	-35.78
Member Ice	78.81					
Total Weight Ice	204.83			28.18	42.90	
Wind 0 deg - Ice		0.00	-9.98	-1855.96	42.90	-4.98
Wind 30 deg - Ice		4.92	-8.52	-1586.53	-889.35	-0.02
Wind 60 deg - Ice		8.47	-4.89	-898.88	-1562.80	2.10
Wind 90 deg - Ice		9.81	0.00	28.18	-1813.92	0.08
Wind 120 deg - Ice		8.62	4.98	966.41	-1582.16	0.88
Wind 150 deg - Ice		4.91	8.51	1639.64	-887.48	5.02
Wind 180 deg - Ice		0.00	9.79	1886.22	42.90	4.98
Wind 210 deg - Ice		-4.92	8.52	1642.88	975.15	0.02
Wind 240 deg - Ice		-8.63	4.98	968.27	1671.20	-2.10
Wind 270 deg - Ice		-9.81	0.00	28.18	1899.72	-0.08
Wind 300 deg - Ice		-8.45	-4.88	-897.01	1645.37	-0.88
Wind 330 deg - Ice		-4.91	-8.51	-1583.29	973.28	-5.02
Total Weight	73.01			7.85	10.38	
Wind 0 deg - Service		0.00	-22.18	-4107.23	-0.13	-12.55
Wind 30 deg - Service		10.73	-18.59	-3470.59	-2003.96	4.37
Wind 60 deg - Service		18.34	-10.59	-1979.04	-3428.16	8.66
Wind 90 deg - Service		21.36	0.00	0.14	-3975.71	-3.80
Wind 120 deg - Service		19.11	11.03	2037.78	-3529.44	-3.77
Wind 150 deg - Service		10.71	18.54	3457.27	-1996.11	11.68
Wind 180 deg - Service		0.00	21.23	3974.85	-0.13	12.55
Wind 210 deg - Service		-10.73	18.59	3470.87	2003.70	-4.37
Wind 240 deg - Service		-19.16	11.06	2045.63	3542.77	-8.66
Wind 270 deg - Service		-21.36	0.00	0.14	3975.45	3.80
Wind 300 deg - Service		-18.29	-10.56	-1971.19	3414.30	3.77
Wind 330 deg - Service		-10.71	-18.54	-3457.00	1995.85	-11.68

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

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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.	Axial	Major Axis	Minor Axis
				Load	K	Moment	Moment
				Comb.		kip-ft	kip-ft
T1	300 - 280	Leg	Max Tension	15	26.66	0.02	0.04
			Max. Compression	18	-31.41	-0.18	0.11
			Max. Mx	20	-1.81	-0.63	0.02
			Max. My	2	-2.44	0.10	-0.58
			Max. Vy	20	-2.46	0.34	-0.13
			Max. Vx	2	-2.48	-0.02	0.42
		Diagonal	Max Tension	20	6.74	0.00	0.00
			Max. Compression	8	-7.22	0.00	0.00
			Max. Mx	2	0.78	0.07	-0.00
			Max. My	20	-7.22	-0.02	0.03
			Max. Vy	2	0.03	0.07	-0.00
			Max. Vx	20	0.01	0.00	0.00
		Top Girt	Max Tension	22	1.11	0.00	0.00
			Max. Compression	18	-1.29	0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft		
T2	280 - 260	Leg	Max. Mx	26	0.02	-0.06	0.00		
			Max. My	12	-0.26	0.00	0.00		
			Max. Vy	26	0.05	0.00	0.00		
			Max. Vx	12	-0.00	0.00	0.00		
			Max Tension	15	111.72	-0.03	1.52		
			Max. Compression	2	-120.53	-0.14	2.32		
			Max. Mx	18	-54.63	2.80	-1.58		
		Diagonal	Max. My	2	-54.77	-0.04	3.23		
			Max. Vy	20	-1.98	2.58	-1.09		
			Max. Vx	2	-2.14	-0.04	3.23		
			Max Tension	20	12.73	0.18	-0.02		
			Max. Compression	20	-13.48	0.00	0.00		
			Max. Mx	17	-5.91	-0.22	-0.02		
			Max. My	20	-12.51	-0.09	0.08		
T3	260 - 240	Leg	Max. Vy	16	0.07	0.00	0.00		
			Max. Vx	20	0.02	0.00	0.00		
			Max Tension	15	169.64	-4.44	0.02		
			Max. Compression	2	-182.20	-9.22	0.03		
			Max. Mx	2	-182.20	-9.22	0.03		
			Max. My	12	-6.02	-0.18	-5.33		
			Max. Vy	2	2.19	5.02	-0.00		
		Diagonal	Max. Vx	12	1.15	-0.18	-5.33		
			Max Tension	2	7.71	0.03	0.03		
			Max. Compression	14	-7.83	0.00	0.00		
			Max. Mx	16	2.09	0.16	0.01		
			Max. My	20	-7.25	-0.09	0.06		
			Max. Vy	16	0.05	0.00	0.00		
			Max. Vx	20	-0.01	0.00	0.00		
T4	240 - 220	Leg	Max Tension	15	194.31	-8.45	0.17		
			Max. Compression	2	-207.65	12.21	0.23		
			Max. Mx	2	-194.03	17.30	0.27		
			Max. My	12	-7.63	0.11	-12.65		
			Max. Vy	2	-3.03	17.30	0.27		
			Max. Vx	12	2.00	0.11	-12.65		
			Diagonal	Max Tension	14	5.87	0.00	0.00	
		Max. Compression		8	-7.35	0.00	0.00		
		Max. Mx		17	0.00	-0.11	0.00		
		Max. My		3	-2.68	-0.03	0.01		
		Max. Vy		35	-0.04	0.06	-0.01		
		Max. Vx		27	-0.00	0.00	0.00		
		T5		220 - 200	Leg	Max Tension	15	223.39	-5.34
			Max. Compression			2	-241.08	10.54	0.17
Max. Mx	2		-226.38			11.69	0.21		
Max. My	12		-8.76			-0.03	-10.01		
Max. Vy	3		-0.97			11.64	0.21		
Max. Vx	24		-0.41			-0.03	10.01		
Diagonal	Max Tension		14			5.38	0.00	0.00	
	Max. Compression		2		-6.23	0.00	0.00		
	Max. Mx		2		4.23	0.10	0.00		
	Max. My		36		0.45	0.06	0.01		
	Max. Vy		33		0.05	0.06	0.01		
	Max. Vx		27		-0.00	0.00	0.00		
	T6		200 - 180		Leg	Max Tension	15	248.66	-5.28
Max. Compression						2	-270.27	9.64	0.22
Max. Mx		2		-256.76		10.09	0.15		
Max. My		12		-10.66		-0.02	-8.22		
Max. Vy		2		-0.69		10.09	0.15		
Max. Vx		24		-0.40		-0.02	8.22		
Diagonal		Max Tension		2		5.29	0.00	0.00	
		Max. Compression		2	-5.92	0.00	0.00		
		Max. Mx		35	0.61	0.08	0.01		

<p>Valmont</p> <p>1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458</p>	<p>Job</p> <p>604200</p>	<p>Page</p> <p>52 of 66</p>
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	<p>Client</p> <p>VB BTS II, LLC</p>	<p>Designed by</p> <p>NS</p>

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T7	180 - 160	Leg	Max. My	27	0.01	0.07	0.01
			Max. Vy	33	0.05	0.08	0.01
			Max. Vx	27	0.00	0.00	0.00
			Max Tension	15	272.11	-4.89	0.08
			Max. Compression	2	-297.62	6.93	0.09
			Max. Mx	2	-284.05	8.73	0.12
			Max. My	12	-12.26	-0.15	-8.07
		Diagonal	Max. Vy	2	-0.46	8.73	0.12
			Max. Vx	24	-0.39	-0.15	8.07
			Max Tension	2	5.66	0.00	0.00
			Max. Compression	2	-6.09	0.00	0.00
			Max. Mx	35	0.84	0.11	0.01
			Max. My	27	0.07	0.10	0.02
			Max. Vy	33	0.07	0.11	0.02
T8	160 - 140	Leg	Max. Vx	27	0.00	0.00	0.00
			Max Tension	15	294.98	-5.76	0.09
			Max. Compression	2	-324.61	5.88	0.38
			Max. Mx	2	-310.04	9.37	0.05
			Max. My	16	-11.89	-0.18	6.82
			Max. Vy	2	-0.66	9.37	0.05
			Max. Vx	24	-0.51	-0.04	6.19
		Diagonal	Max Tension	2	6.84	0.00	0.00
			Max. Compression	2	-7.00	0.00	0.00
			Max. Mx	33	0.68	0.15	-0.02
			Max. My	14	-6.76	0.01	-0.03
			Max. Vy	33	0.08	0.15	-0.02
			Max. Vx	32	-0.00	0.00	0.00
			Max Tension	15	308.78	-0.36	0.05
T9	140 - 120	Leg	Max. Compression	2	-340.16	12.30	0.46
			Max. Mx	2	-340.16	12.30	0.46
			Max. My	12	-15.49	-0.07	-11.52
			Max. Vy	6	0.85	-11.89	-0.33
			Max. Vx	12	0.75	-0.07	-11.52
			Max Tension	15	8.90	0.00	0.00
			Max. Compression	2	-10.28	0.00	0.00
		Diagonal	Max. Mx	33	0.74	-0.36	0.06
			Max. My	14	-7.18	-0.07	0.07
			Max. Vy	33	-0.14	-0.36	0.06
			Max. Vx	33	0.01	0.00	0.00
			Max Tension	15	331.75	0.32	0.19
			Max. Compression	2	-368.17	11.99	0.45
			Max. Mx	2	-368.17	11.99	0.45
T10	120 - 100	Leg	Max. My	16	-15.99	-0.53	8.55
			Max. Vy	2	-0.89	11.99	0.45
			Max. Vx	12	-0.40	-0.52	-8.36
			Max Tension	2	8.93	0.00	0.00
			Max. Compression	8	-9.45	0.00	0.00
			Max. Mx	33	0.88	-0.42	-0.07
			Max. My	33	0.99	-0.37	0.07
		Diagonal	Max. Vy	33	-0.15	-0.42	-0.07
			Max. Vx	34	0.01	0.00	0.00
			Max Tension	15	350.81	-1.89	0.15
			Max. Compression	2	-392.40	11.35	0.42
			Max. Mx	2	-392.40	11.35	0.42
			Max. My	12	-19.63	0.16	-7.58
			Max. Vy	3	-0.73	11.31	0.42
T11	100 - 80	Leg	Max. Vx	24	-0.59	0.16	7.58
			Max Tension	15	8.66	0.00	0.00
			Max. Compression	2	-9.84	0.00	0.00
			Max. Mx	33	1.22	-0.47	-0.07
			Max. My	27	0.03	-0.46	-0.07

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	Client	VB BTS II, LLC	Designed by	NS

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T12	80 - 60	Leg	Max. Vy	33	-0.16	-0.47	-0.07
			Max. Vx	27	-0.01	0.00	0.00
			Max Tension	15	370.61	-1.47	0.11
			Max. Compression	2	-417.50	9.26	0.35
			Max. Mx	3	-410.82	9.31	0.35
			Max. My	12	-22.17	-0.29	-8.79
			Max. Vy	6	0.66	-9.27	-0.25
		Diagonal	Max. Vx	24	-0.50	-0.29	8.79
			Max Tension	2	9.04	0.00	0.00
			Max. Compression	2	-9.74	0.00	0.00
			Max. Mx	33	0.21	-0.54	0.08
			Max. My	27	-0.91	-0.54	-0.09
			Max. Vy	33	-0.18	-0.54	-0.08
			Max. Vx	27	-0.01	0.00	0.00
T13	60 - 40	Leg	Max Tension	15	389.23	-1.42	0.11
			Max. Compression	2	-441.07	11.29	0.39
			Max. Mx	2	-441.07	11.29	0.39
			Max. My	16	-22.02	-0.49	5.47
			Max. Vy	2	-0.73	11.29	0.39
			Max. Vx	12	-0.33	-0.48	-5.37
			Max Tension	15	9.37	0.00	0.00
		Diagonal	Max. Compression	2	-10.68	0.00	0.00
			Max. Mx	33	1.88	-0.58	-0.07
			Max. My	33	1.72	-0.58	0.08
			Max. Vy	33	-0.19	-0.58	-0.07
			Max. Vx	27	-0.01	0.00	0.00
			Max Tension	15	408.57	-2.80	0.03
			Max. Compression	2	-466.02	7.46	0.30
T14	40 - 20	Leg	Max. Mx	14	402.50	-7.94	-0.33
			Max. My	12	-26.79	-0.46	-12.16
			Max. Vy	35	-0.51	-3.52	-0.00
			Max. Vx	12	0.76	-0.46	-12.16
			Max Tension	2	9.98	0.00	0.00
			Max. Compression	14	-10.05	0.00	0.00
			Max. Mx	33	-0.75	-0.76	0.12
		Diagonal	Max. My	32	-2.65	-0.74	0.12
			Max. Vy	33	-0.22	-0.76	0.12
			Max. Vx	32	0.01	0.00	0.00
			Max Tension	15	424.68	-2.40	0.03
			Max. Compression	2	-487.74	4.05	0.18
			Max. Mx	2	-487.74	4.05	0.18
			Max. My	16	-27.00	-0.86	9.18
T15	20 - 0	Leg	Max. Vy	10	-0.31	4.04	0.04
			Max. Vx	12	-0.62	-0.85	-9.10
			Max Tension	15	10.72	0.00	0.00
			Max. Compression	2	-12.35	0.00	0.00
			Max. Mx	34	2.46	-0.84	-0.11
			Max. My	27	2.08	-0.84	-0.11
			Max. Vy	34	-0.25	-0.84	-0.11
		Diagonal	Max. Vx	27	-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	499.21	38.90	-21.89

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Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg B	Max. H _x	18	499.21	38.90	-21.89
	Max. H _z	7	-430.63	-33.86	18.97
	Min. Vert	7	-430.63	-33.86	18.97
	Min. H _x	7	-430.63	-33.86	18.97
	Min. H _z	18	499.21	38.90	-21.89
	Max. Vert	10	496.58	-38.44	-22.42
	Max. H _x	23	-429.43	33.40	19.54
	Max. H _z	23	-429.43	33.40	19.54
	Min. Vert	23	-429.43	33.40	19.54
	Min. H _x	10	496.58	-38.44	-22.42
Leg A	Min. H _z	10	496.58	-38.44	-22.42
	Max. Vert	2	500.16	-0.72	44.74
	Max. H _x	21	21.80	2.81	1.54
	Max. H _z	2	500.16	-0.72	44.74
	Min. Vert	15	-433.22	0.72	-38.94
	Min. H _x	9	21.80	-2.82	1.54
	Min. H _z	15	-433.22	0.72	-38.94

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	73.01	0.00	-0.00	7.71	10.24	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	87.61	0.00	-67.70	-12643.64	13.28	-38.57
0.9 Dead+1.0 Wind 0 deg - No Ice	65.71	0.00	-67.70	-12612.66	10.10	-38.53
1.2 Dead+1.0 Wind 30 deg - No Ice	87.61	32.77	-56.75	-10679.52	-6164.57	13.59
0.9 Dead+1.0 Wind 30 deg - No Ice	65.71	32.77	-56.75	-10653.59	-6151.18	13.58
1.2 Dead+1.0 Wind 60 deg - No Ice	87.61	55.98	-32.32	-6086.70	-10547.35	26.54
0.9 Dead+1.0 Wind 60 deg - No Ice	65.71	55.98	-32.32	-6072.86	-10522.38	26.53
1.2 Dead+1.0 Wind 90 deg - No Ice	87.61	65.19	0.00	5.00	-12233.54	-11.74
0.9 Dead+1.0 Wind 90 deg - No Ice	65.71	65.19	0.00	2.75	-12204.23	-11.75
1.2 Dead+1.0 Wind 120 deg - No Ice	87.61	58.33	33.68	6286.48	-10859.22	-11.36
0.9 Dead+1.0 Wind 120 deg - No Ice	65.71	58.33	33.68	6267.55	-10833.78	-11.41
1.2 Dead+1.0 Wind 150 deg - No Ice	87.61	32.68	56.60	10661.65	-6131.16	36.20
0.9 Dead+1.0 Wind 150 deg - No Ice	65.71	32.68	56.60	10630.88	-6118.15	36.14
1.2 Dead+1.0 Wind 180 deg - No Ice	87.61	0.00	64.81	12253.56	13.17	38.54
0.9 Dead+1.0 Wind 180 deg - No Ice	65.71	0.00	64.81	12218.50	10.00	38.50
1.2 Dead+1.0 Wind 210 deg - No Ice	87.61	-32.77	56.75	10703.60	6180.97	-13.59
0.9 Dead+1.0 Wind 210 deg - No Ice	65.71	-32.77	56.75	10672.70	6161.55	-13.58
1.2 Dead+1.0 Wind 240 deg - No Ice	87.61	-58.48	33.76	6311.20	10926.28	-26.57

<p style="text-align: center;">Valmont</p> <p style="text-align: center;">1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458</p>	<p style="text-align: center;">Job</p> <p style="text-align: center;">604200</p>	<p style="text-align: center;">Page</p> <p style="text-align: center;">55 of 66</p>
	<p style="text-align: center;">Project</p> <p style="text-align: center;">H31' x 300' - US-KY-5178 Matney Rd, KY</p>	<p style="text-align: center;">Date</p> <p style="text-align: center;">19:01:00 02/01/24</p>
	<p style="text-align: center;">Client</p> <p style="text-align: center;">VB BTS II, LLC</p>	<p style="text-align: center;">Designed by</p> <p style="text-align: center;">NS</p>

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
No Ice						
0.9 Dead+1.0 Wind 240 deg - No Ice	65.71	-58.48	33.77	6292.19	10894.37	-26.55
1.2 Dead+1.0 Wind 270 deg - No Ice	87.61	-65.19	0.00	4.99	12258.67	11.74
0.9 Dead+1.0 Wind 270 deg - No Ice	65.71	-65.19	0.00	2.74	12223.03	11.75
1.2 Dead+1.0 Wind 300 deg - No Ice	87.61	-55.83	-32.23	-6062.68	10530.13	11.37
0.9 Dead+1.0 Wind 300 deg - No Ice	65.71	-55.83	-32.23	-6048.93	10498.98	11.42
1.2 Dead+1.0 Wind 330 deg - No Ice	87.61	-32.68	-56.60	-10637.17	6165.71	-36.20
0.9 Dead+1.0 Wind 330 deg - No Ice	65.71	-32.68	-56.60	-10611.38	6146.07	-36.14
1.2 Dead+1.0 Ice+1.0 Temp	219.43	0.00	-0.00	30.47	45.80	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	219.43	0.00	-9.98	-1905.13	46.16	-5.07
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	219.43	4.92	-8.52	-1628.41	-911.75	-0.06
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	219.43	8.47	-4.89	-921.86	-1603.74	2.12
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	219.43	9.81	-0.00	30.69	-1861.70	0.15
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	219.43	8.62	4.98	994.64	-1623.45	0.99
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	219.43	4.91	8.51	1686.48	-909.79	5.13
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	219.43	0.00	9.79	1939.91	46.16	5.06
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	219.43	-4.92	8.52	1689.82	1004.04	0.06
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	219.43	-8.63	4.98	996.58	1719.10	-2.12
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	219.43	-9.81	-0.00	30.69	1954.00	-0.15
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	219.43	-8.45	-4.88	-919.93	1692.70	-0.99
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	219.43	-4.91	-8.51	-1625.06	1002.13	-5.13
Dead+Wind 0 deg - Service	73.01	0.00	-22.18	-4135.21	10.48	-12.58
Dead+Wind 30 deg - Service	73.01	10.73	-18.59	-3493.18	-2010.99	4.36
Dead+Wind 60 deg - Service	73.01	18.34	-10.59	-1988.59	-3447.65	8.67
Dead+Wind 90 deg - Service	73.01	21.36	0.00	7.86	-3999.90	-3.77
Dead+Wind 120 deg - Service	73.01	19.11	11.03	2063.28	-3549.53	-3.72
Dead+Wind 150 deg - Service	73.01	10.71	18.54	3495.37	-2002.92	11.74
Dead+Wind 180 deg - Service	73.01	0.00	21.23	4017.55	10.48	12.58
Dead+Wind 210 deg - Service	73.01	-10.73	18.59	3509.10	2031.78	-4.36
Dead+Wind 240 deg - Service	73.01	-19.16	11.06	2071.23	3584.18	-8.67
Dead+Wind 270 deg - Service	73.01	-21.36	0.00	7.87	4020.81	3.77
Dead+Wind 300 deg - Service	73.01	-18.29	-10.56	-1980.68	3454.82	3.72
Dead+Wind 330 deg - Service	73.01	-10.71	-18.54	-3479.43	2023.98	-11.74

Solution Summary

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	Client	VB BTS II, LLC	Designed by	NS

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-73.01	0.00	-0.00	73.01	0.00	0.001%
2	0.00	-87.61	-67.71	-0.00	87.61	67.70	0.002%
3	0.00	-65.71	-67.71	-0.00	65.71	67.70	0.002%
4	32.77	-87.61	-56.75	-32.77	87.61	56.75	0.002%
5	32.77	-65.71	-56.75	-32.77	65.71	56.75	0.002%
6	55.98	-87.61	-32.32	-55.98	87.61	32.32	0.002%
7	55.98	-65.71	-32.32	-55.98	65.71	32.32	0.002%
8	65.19	-87.61	-0.00	-65.19	87.61	-0.00	0.002%
9	65.19	-65.71	-0.00	-65.19	65.71	-0.00	0.002%
10	58.34	-87.61	33.68	-58.33	87.61	-33.68	0.002%
11	58.34	-65.71	33.68	-58.33	65.71	-33.68	0.002%
12	32.68	-87.61	56.61	-32.68	87.61	-56.60	0.002%
13	32.68	-65.71	56.61	-32.68	65.71	-56.60	0.002%
14	0.00	-87.61	64.81	-0.00	87.61	-64.81	0.002%
15	0.00	-65.71	64.81	-0.00	65.71	-64.81	0.002%
16	-32.77	-87.61	56.75	32.77	87.61	-56.75	0.002%
17	-32.77	-65.71	56.75	32.77	65.71	-56.75	0.002%
18	-58.48	-87.61	33.77	58.48	87.61	-33.76	0.002%
19	-58.48	-65.71	33.77	58.48	65.71	-33.77	0.002%
20	-65.19	-87.61	-0.00	65.19	87.61	-0.00	0.002%
21	-65.19	-65.71	-0.00	65.19	65.71	-0.00	0.002%
22	-55.83	-87.61	-32.23	55.83	87.61	32.23	0.002%
23	-55.83	-65.71	-32.23	55.83	65.71	32.23	0.002%
24	-32.68	-87.61	-56.61	32.68	87.61	56.60	0.002%
25	-32.68	-65.71	-56.61	32.68	65.71	56.60	0.002%
26	0.00	-219.43	0.00	-0.00	219.43	0.00	0.000%
27	0.00	-219.43	-9.98	-0.00	219.43	9.98	0.000%
28	4.92	-219.43	-8.52	-4.92	219.43	8.52	0.000%
29	8.47	-219.43	-4.89	-8.47	219.43	4.89	0.000%
30	9.81	-219.43	0.00	-9.81	219.43	0.00	0.000%
31	8.62	-219.43	4.98	-8.62	219.43	-4.98	0.000%
32	4.91	-219.43	8.51	-4.91	219.43	-8.51	0.000%
33	-0.00	-219.43	9.79	-0.00	219.43	-9.79	0.000%
34	-4.92	-219.43	8.52	4.92	219.43	-8.52	0.000%
35	-8.63	-219.43	4.98	8.63	219.43	-4.98	0.000%
36	-9.81	-219.43	0.00	9.81	219.43	0.00	0.000%
37	-8.45	-219.43	-4.88	8.45	219.43	4.88	0.000%
38	-4.91	-219.43	-8.51	4.91	219.43	8.51	0.000%
39	0.00	-73.01	-22.18	-0.00	73.01	22.18	0.001%
40	10.73	-73.01	-18.59	-10.73	73.01	18.59	0.001%
41	18.34	-73.01	-10.59	-18.34	73.01	10.59	0.001%
42	21.36	-73.01	0.00	-21.36	73.01	-0.00	0.001%
43	19.11	-73.01	11.03	-19.11	73.01	-11.03	0.001%
44	10.71	-73.01	18.54	-10.71	73.01	-18.54	0.001%
45	0.00	-73.01	21.23	-0.00	73.01	-21.23	0.001%
46	-10.73	-73.01	18.59	10.73	73.01	-18.59	0.001%
47	-19.16	-73.01	11.06	19.16	73.01	-11.06	0.001%
48	-21.36	-73.01	0.00	21.36	73.01	-0.00	0.001%
49	-18.29	-73.01	-10.56	18.29	73.01	10.56	0.001%
50	-10.71	-73.01	-18.54	10.71	73.01	18.54	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00010955

<p>Valmont</p> <p>1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458</p>	<p>Job</p> <p>604200</p>	<p>Page</p> <p>57 of 66</p>
	<p>Project</p> <p>H31' x 300' - US-KY-5178 Matney Rd, KY</p>	<p>Date</p> <p>19:01:00 02/01/24</p>
	<p>Client</p> <p>VB BTS II, LLC</p>	<p>Designed by</p> <p>NS</p>

2	Yes	15	0.00003441	0.00008218
3	Yes	15	0.00002997	0.00007214
4	Yes	15	0.00003684	0.00008728
5	Yes	15	0.00003221	0.00007691
6	Yes	15	0.00003874	0.00009137
7	Yes	15	0.00003396	0.00008072
8	Yes	15	0.00003680	0.00008719
9	Yes	15	0.00003218	0.00007683
10	Yes	15	0.00003442	0.00008219
11	Yes	15	0.00002998	0.00007215
12	Yes	15	0.00003685	0.00008729
13	Yes	15	0.00003221	0.00007691
14	Yes	15	0.00003876	0.00009143
15	Yes	15	0.00003398	0.00008077
16	Yes	15	0.00003684	0.00008729
17	Yes	15	0.00003221	0.00007691
18	Yes	15	0.00003441	0.00008219
19	Yes	15	0.00002997	0.00007214
20	Yes	15	0.00003680	0.00008719
21	Yes	15	0.00003218	0.00007683
22	Yes	15	0.00003872	0.00009132
23	Yes	15	0.00003394	0.00008068
24	Yes	15	0.00003684	0.00008729
25	Yes	15	0.00003221	0.00007691
26	Yes	10	0.00000001	0.00012467
27	Yes	15	0.00000001	0.00010301
28	Yes	15	0.00000001	0.00010269
29	Yes	15	0.00000001	0.00010299
30	Yes	15	0.00000001	0.00010275
31	Yes	15	0.00000001	0.00010339
32	Yes	15	0.00000001	0.00010489
33	Yes	15	0.00000001	0.00010641
34	Yes	15	0.00000001	0.00010632
35	Yes	15	0.00000001	0.00010588
36	Yes	15	0.00000001	0.00010557
37	Yes	15	0.00000001	0.00010535
38	Yes	15	0.00000001	0.00010406
39	Yes	15	0.00000001	0.00007753
40	Yes	15	0.00000001	0.00007904
41	Yes	15	0.00000001	0.00008040
42	Yes	15	0.00000001	0.00007896
43	Yes	15	0.00000001	0.00007749
44	Yes	15	0.00000001	0.00007904
45	Yes	15	0.00000001	0.00008047
46	Yes	15	0.00000001	0.00007906
47	Yes	15	0.00000001	0.00007752
48	Yes	15	0.00000001	0.00007897
49	Yes	15	0.00000001	0.00008036
50	Yes	15	0.00000001	0.00007902

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	300 - 280	21.297	39	0.7669	0.0405
T2	280 - 260	18.094	39	0.7357	0.0375
T3	260 - 240	14.963	39	0.6528	0.0323
T4	240 - 220	12.215	39	0.5619	0.0262
T5	220 - 200	9.592	39	0.4850	0.0211

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T6	200 - 180	7.490	39	0.4013	0.0172
T7	180 - 160	5.785	39	0.3414	0.0139
T8	160 - 140	4.387	47	0.2823	0.0114
T9	140 - 120	3.256	47	0.2249	0.0087
T10	120 - 100	2.310	47	0.1835	0.0071
T11	100 - 80	1.574	47	0.1432	0.0057
T12	80 - 60	0.993	47	0.1123	0.0043
T13	60 - 40	0.547	39	0.0819	0.0030
T14	40 - 20	0.237	39	0.0522	0.0017
T15	20 - 0	0.052	39	0.0229	0.0008

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
300.00	5/8" x 7'-6" lightning rod	39	21.297	0.7669	0.0405	385645
295.00	40,000 sq.in. (277.78 sq.ft. EPA)	39	20.498	0.7620	0.0399	385645
285.00	30,000 sq.in. (208.3 sq.ft. EPA)	39	18.898	0.7476	0.0384	128549
275.00	30,000 sq.in. (208.3 sq.ft. EPA)	39	17.290	0.7192	0.0364	38180
150.00	OB light	47	3.794	0.2520	0.0100	22124

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	300 - 280	65.108	2	2.3477	0.1251
T2	280 - 260	55.301	2	2.2525	0.1157
T3	260 - 240	45.719	2	1.9973	0.0998
T4	240 - 220	37.315	2	1.7181	0.0807
T5	220 - 200	29.303	2	1.4823	0.0655
T6	200 - 180	22.882	2	1.2263	0.0531
T7	180 - 160	17.671	2	1.0432	0.0426
T8	160 - 140	13.400	2	0.8625	0.0349
T9	140 - 120	9.944	2	0.6868	0.0268
T10	120 - 100	7.058	2	0.5605	0.0218
T11	100 - 80	4.808	2	0.4374	0.0174
T12	80 - 60	3.034	2	0.3428	0.0131
T13	60 - 40	1.672	2	0.2500	0.0091
T14	40 - 20	0.723	2	0.1595	0.0052
T15	20 - 0	0.160	2	0.0699	0.0024

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
300.00	5/8" x 7'-6" lightning rod	2	65.108	2.3477	0.1251	136096

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
295.00	40,000 sq.in. (277.78 sq.ft. EPA)	2	62.661	2.3333	0.1231	136096
285.00	30,000 sq.in. (208.3 sq.ft. EPA)	2	57.760	2.2895	0.1185	45366
275.00	30,000 sq.in. (208.3 sq.ft. EPA)	2	52.838	2.2018	0.1124	12464
150.00	OB light	2	11.589	0.7698	0.0307	7228

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	300	Leg	A325N	0.7500	4	6.67	29.82	0.224	✓	1 Bolt Tension
		Diagonal	A325N	0.7500	1	6.74	7.46	0.904	✓	1 Member Block Shear
		Top Girt	A325N	0.7500	1	1.11	14.14	0.078	✓	1 Member Bearing
T2	280	Leg	A325N	0.7500	8	13.97	29.82	0.468	✓	1 Bolt Tension
		Diagonal	A325N	0.7500	1	13.48	17.89	0.753	✓	1 Bolt Shear
T3	260	Leg	A325N	1.0000	6	28.27	53.01	0.533	✓	1 Bolt Tension
		Diagonal	A325N	0.7500	1	7.71	13.48	0.572	✓	1 Member Block Shear
T4	240	Leg	A325N	1.0000	6	32.39	53.01	0.611	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	1	5.87	13.03	0.450	✓	1 Member Block Shear
T5	220	Leg	A325N	1.0000	6	37.23	53.01	0.702	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	1	5.38	13.03	0.413	✓	1 Member Block Shear
T6	200	Leg	A325N	1.2500	6	41.44	82.83	0.500	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	1	5.29	13.03	0.406	✓	1 Member Block Shear
T7	180	Leg	A325N	1.2500	6	45.35	82.83	0.547	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	1	5.66	17.37	0.326	✓	1 Member Block Shear
T8	160	Leg	A325N	1.2500	6	49.16	82.83	0.593	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	1	6.84	14.17	0.483	✓	1 Member Block Shear
T9	140	Leg	A325N	1.0000	12	25.73	53.01	0.485	✓	1 Bolt Tension
		Diagonal	A325N	0.8750	1	8.90	24.68	0.360	✓	1 Member Block Shear
T10	120	Leg	A325N	1.0000	12	27.65	53.01	0.521	✓	1 Bolt Tension
		Diagonal	A325N	0.8750	1	8.93	24.68	0.362	✓	1 Member Block Shear
T11	100	Leg	A325N	1.0000	12	29.23	53.01	0.551	✓	1 Bolt Tension
		Diagonal	A325N	0.8750	1	8.66	24.68	0.351	✓	1 Member Block Shear
T12	80	Leg	A325N	1.0000	12	30.88	53.01	0.583	✓	1 Bolt Tension
		Diagonal	A325N	0.8750	1	9.04	24.68	0.366	✓	1 Member Block Shear
T13	60	Leg	A325N	1.0000	12	32.44	53.01	0.612	✓	1 Bolt Tension

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T14	40	Diagonal	A325N	0.8750	1	9.37	24.68	0.379 ✓	1	Member Block Shear
		Leg	A325N	1.0000	12	34.05	53.01	0.642 ✓	1	Bolt Tension
T15	20	Diagonal	A325N	0.8750	1	9.98	32.91	0.303 ✓	1	Member Block Shear
		Leg	F1554-105	1.7500	4	106.17	169.12	0.628 ✓	1	Bolt Tension
		Diagonal	A325N	0.8750	1	10.72	39.00	0.275 ✓	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 P _u / φP _n
T1	300 - 280	0049) 2.50" S - 20' - C - 0.75" conn - (Pirod 226160)	20.00	4.90	62.0 K=1.00	1.7040	-31.41	57.89	0.543 ¹ ✓
T2	280 - 260	0299) 4.00 to 6" TS - 20' - C - 0.75" conn - (Pirod 295612)	20.00	6.67	54.2 K=1.00	4.4074	-120.54	160.03	0.753 ¹ ✓
T3	260 - 240	0419) 6.00" to #12 S - 20' - C - 0.75" conn - (Pirod 229377)	20.03	6.68	35.7 K=1.00	5.5813	-182.20	228.83	0.796 ¹ ✓
T4	240 - 220	#12ZG-58 - 1.50" - 1.00" conn. (Pirod 194651)	20.03	10.02	34.4 K=1.00	5.3014	-207.65	250.28	0.830 ¹ ✓
T5	220 - 200	#12ZG-58 - 1.50" - 1.00" conn. (Pirod 194651)	20.03	10.02	34.4 K=1.00	5.3014	-241.08	250.28	0.963 ¹ ✓
T6	200 - 180	#12ZG-58 - 1.75" - 1.00" conn.-TR1-(Pirod 195213)	20.03	10.02	29.5 K=1.00	7.2158	-270.27	349.87	0.772 ¹ ✓
T7	180 - 160	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	20.03	10.02	29.5 K=1.00	7.2158	-297.62	349.87	0.851 ¹ ✓
T8	160 - 140	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	20.03	10.02	29.5 K=1.00	7.2158	-324.61	349.87	0.928 ¹ ✓
T9	140 - 120	#12ZG-58 -2.00" - 0.875" conn.-TR3-(Pirod 195637)	20.03	20.03	48.8 K=1.00	9.4248	-340.16	401.94	0.846 ¹ ✓
T10	120 - 100	#12ZG-58 -2.00" - 0.875" conn. (Pirod 195639)	20.03	20.03	48.8 K=1.00	9.4248	-368.17	401.94	0.916 ¹ ✓
T11	100 - 80	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	20.03	20.03	48.8 K=1.00	11.9282	-392.40	508.98	0.771 ¹ ✓
T12	80 - 60	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	20.03	20.03	48.8 K=1.00	11.9282	-417.50	508.98	0.820 ¹ ✓
T13	60 - 40	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	20.03	20.03	48.8 K=1.00	11.9282	-441.07	508.98	0.867 ¹ ✓
T14	40 - 20	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	20.03	20.03	48.8 K=1.00	11.9282	-466.02	508.98	0.916 ¹ ✓
T15	20 - 0	#12ZG-58 BASE - 2.50" -	20.03	20.03	48.7	14.7262	-487.74	628.76	0.776 ¹ ✓

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
		0.875" conn.-TR4-(Pirod 281171)			K=1.00				✓

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
T4	240 - 220	0.5	1.39	93.2	276.74	0.1963	3.03	4.75	0.638 ✓
T5	220 - 200	0.5	1.39	93.2	276.74	0.1963	0.97	4.75	0.204 ✓
T6	200 - 180	0.5	1.37	92.3	376.67	0.1963	0.69	4.79	0.146 ✓
T7	180 - 160	0.5	1.37	92.3	376.67	0.1963	0.46	4.79	0.098 ✓
T8	160 - 140	0.5	1.37	92.3	376.67	0.1963	0.66	4.79	0.139 ✓
T9	140 - 120	0.5	1.36	91.6	491.97	0.1963	0.83	4.82	0.185 ✓
T10	120 - 100	0.5	1.36	91.6	491.97	0.1963	0.89	4.82	0.186 ✓
T11	100 - 80	0.5	1.35	90.7	622.65	0.1963	0.73	4.86	0.153 ✓
T12	80 - 60	0.5	1.35	90.7	622.65	0.1963	0.61	4.86	0.141 ✓
T13	60 - 40	0.5	1.35	90.7	622.65	0.1963	0.74	4.86	0.154 ✓
T14	40 - 20	0.5	1.35	90.7	622.65	0.1963	0.75	4.86	0.168 ✓
T15	20 - 0	0.5	1.34	89.9	768.71	0.1963	0.58	4.90	0.133 ✓

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	300 - 280	L2x2x1/8	5.82	2.72	91.6 K=1.12	0.4844	-7.22	10.93	0.661 ¹ ✓
T2	280 - 260	L2 1/2x2 1/2x1/4	7.17	3.40	92.3 K=1.11	1.1900	-13.48	28.74	0.469 ¹ ✓
T3	260 - 240	L2 1/2x2 1/2x3/16	8.11	4.07	104.0 K=1.05	0.9020	-7.83	18.41	0.425 ¹ ✓
T4	240 - 220	L2 1/2x2 1/2x3/16	11.36	5.81	140.8 K=1.00	0.9020	-7.35	10.28	0.715 ¹ ✓

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T5	220 - 200	L2 1/2x2 1/2x3/16	12.65	6.42	155.5 K=1.00	0.9020	-6.23	8.42	0.739 ¹ ✓
T6	200 - 180	L2 1/2x2 1/2x3/16	14.10	7.12	172.7 K=1.00	0.9020	-5.92	6.83	0.866 ¹ ✓
T7	180 - 160	L2 1/2x2 1/2x1/4	15.67	7.90	193.0 K=1.00	1.1900	-6.07	7.22	0.841 ¹ ✓
T8	160 - 140	L3x3x3/16	17.33	8.72	175.6 K=1.00	1.0900	-6.79	7.99	0.850 ¹ ✓
T9	140 - 120	2L3x3x3/16	25.03	13.04	166.7 K=1.00	2.1800	-10.28	17.73	0.580 ¹ ✓
T10	120 - 100	2L3x3x3/16	26.36	13.67	174.7 K=1.00	2.1800	-9.45	16.14	0.586 ¹ ✓
T11	100 - 80	2L3x3x3/16	27.77	14.35	183.4 K=1.00	2.1800	-9.84	14.65	0.672 ¹ ✓
T12	80 - 60	2L3x3x3/16	29.25	15.07	192.5 K=1.00	2.1800	-9.74	13.29	0.733 ¹ ✓
T13	60 - 40	2L3x3x3/16	30.78	15.82	202.1 K=1.00	2.1800	-10.68	12.05	0.886 ¹ ✓
T14	40 - 20	KL/R > 200 (C) - 191 2L3x3x1/4	32.37	16.60	214.2 K=1.00	2.8800	-10.05	14.18	0.708 ¹ ✓
T15	20 - 0	KL/R > 200 (C) - 201 2L3 1/2x3 1/2x1/4	34.01	17.40	191.3 K=1.00	3.3750	-12.35	20.82	0.593 ¹ ✓

¹ P_u / φP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	L3x3x1/4	5.00	4.49	105.5 K=1.16	1.4400	-1.29	28.72	0.045 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	300 - 280	0049) 2.50" S - 20' - C -	20.00	4.90	62.0	1.7040	26.66	76.68	0.348 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T2	280 - 260	0.75" conn - (Pirod 226160) 0299) 4.00 to 6" TS - 20' - C - 0.75" conn - (Pirod 295612)	20.00	6.67	54.2	4.4074	111.72	198.34	0.563 ¹
T3	260 - 240	0419) 6.00" to #12 S - 20' - C - 0.75" conn - (Pirod 229377)	20.03	6.68	35.7	5.5813	169.64	251.16	0.675 ¹
T4	240 - 220	#12ZG-58 - 1.50" - 1.00" conn. (Pirod 194651)	20.03	10.02	34.4	5.3014	194.31	276.74	0.702 ¹
T5	220 - 200	#12ZG-58 - 1.50" - 1.00" conn. (Pirod 194651)	20.03	10.02	34.4	5.3014	223.39	276.74	0.807 ¹
T6	200 - 180	#12ZG-58 - 1.75" - 1.00" conn.-TR1-(Pirod 195213)	20.03	10.02	29.5	7.2158	248.66	376.67	0.660 ¹
T7	180 - 160	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	20.03	10.02	29.5	7.2158	272.11	376.67	0.722 ¹
T8	160 - 140	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	20.03	10.02	29.5	7.2158	294.96	376.67	0.783 ¹
T9	140 - 120	#12ZG-58 -2.00" - 0.875" conn.-TR3-(Pirod 195637)	20.03	20.03	48.8	9.4248	308.78	491.97	0.628 ¹
T10	120 - 100	#12ZG-58 -2.00" - 0.875" conn. (Pirod 195639)	20.03	20.03	48.8	9.4248	331.75	491.97	0.674 ¹
T11	100 - 80	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	20.03	20.03	48.8	11.9282	350.81	622.65	0.563 ¹
T12	80 - 60	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	20.03	20.03	48.8	11.9282	370.61	622.65	0.595 ¹
T13	60 - 40	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	20.03	20.03	48.8	11.9282	389.23	622.65	0.625 ¹
T14	40 - 20	#12ZG-58 -2.25" - 0.875" conn. (Pirod 195960)	20.03	20.03	48.8	11.9282	408.57	622.65	0.656 ¹
T15	20 - 0	#12ZG-58 BASE - 2.50" - 0.875" conn.-TR4-(Pirod 281171)	20.03	20.03	48.7	14.7262	424.68	768.71	0.552 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
T4	240 - 220	0.5	1.39	93.2	276.74	0.1963	3.03	4.75	0.638
T5	220 - 200	0.5	1.39	93.2	276.74	0.1963	0.97	4.75	0.204
T6	200 - 180	0.5	1.37	92.3	376.67	0.1963	0.69	4.79	0.146
T7	180 - 160	0.5	1.37	92.3	376.67	0.1963	0.46	4.79	0.098
T8	160 - 140	0.5	1.37	92.3	376.67	0.1963	0.66	4.79	0.139
T9	140 - 120	0.5	1.36	91.6	491.97	0.1963	0.83	4.82	0.185

<p>Valmont</p> <p>1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458</p>	<p>Job</p> <p>604200</p>	<p>Page</p> <p>64 of 66</p>
	<p>Project</p> <p>H31' x 300' - US-KY-5178 Matney Rd, KY</p>	<p>Date</p> <p>19:01:00 02/01/24</p>
	<p>Client</p> <p>VB BTS II, LLC</p>	<p>Designed by</p> <p>NS</p>

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
T10	120 - 100	0.5	1.36	91.6	491.97	0.1963	0.89	4.82	0.186
T11	100 - 80	0.5	1.35	90.7	622.65	0.1963	0.73	4.86	0.153
T12	80 - 60	0.5	1.35	90.7	622.65	0.1963	0.61	4.86	0.141
T13	60 - 40	0.5	1.35	90.7	622.65	0.1963	0.74	4.86	0.154
T14	40 - 20	0.5	1.35	90.7	622.65	0.1963	0.75	4.86	0.168
T15	20 - 0	0.5	1.34	89.9	768.71	0.1963	0.58	4.90	0.133


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	300 - 280	L2x2x1/8	5.82	2.72	55.8	0.2813	6.74	13.71	0.492 ¹
T2	280 - 260	L2 1/2x2 1/2x1/4	7.17	3.40	55.9	0.7284	12.73	35.51	0.359 ¹
T3	260 - 240	L2 1/2x2 1/2x3/16	8.11	4.07	65.6	0.5535	7.71	26.98	0.286 ¹
T4	240 - 220	L2 1/2x2 1/2x3/16	11.36	5.81	92.8	0.5183	5.87	25.27	0.232 ¹
T5	220 - 200	L2 1/2x2 1/2x3/16	12.65	6.42	102.2	0.5183	5.38	25.27	0.213 ¹
T6	200 - 180	L2 1/2x2 1/2x3/16	13.35	6.76	107.5	0.5183	5.29	25.27	0.210 ¹
T7	180 - 160	L2 1/2x2 1/2x1/4	15.67	7.90	126.5	0.6816	5.66	33.23	0.170 ¹
T8	160 - 140	L3x3x3/16	17.33	8.72	114.1	0.6593	6.84	32.14	0.213 ¹
T9	140 - 120	2L3x3x3/16	25.03	13.04	168.8	1.3537	8.90	66.00	0.135 ¹
T10	120 - 100	2L3x3x3/16	26.36	13.67	176.8	1.3537	8.93	66.00	0.135 ¹
T11	100 - 80	2L3x3x3/16	27.77	14.35	185.5	1.3537	8.66	66.00	0.131 ¹
T12	80 - 60	2L3x3x3/16	29.25	15.07	194.7	1.3537	9.04	66.00	0.137 ¹
T13	60 - 40	2L3x3x3/16	30.78	15.82	204.3	1.3537	9.37	66.00	0.142 ¹
T14	40 - 20	2L3x3x1/4	32.37	16.60	216.3	1.7850	9.98	87.02	0.115 ¹
T15	20 - 0	2L3 1/2x3 1/2x1/4	34.01	17.40	193.2	2.1563	10.72	105.12	0.102 ¹

Valmont 1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458	Job	604200	Page	65 of 66
	Project	H31' x 300' - US-KY-5178 Matney Rd, KY	Date	19:01:00 02/01/24
	Client	VB BTS II, LLC	Designed by	NS

¹ $P_u / \phi P_n$ 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	300 - 280	L3x3x1/4	5.00	4.49	61.4	0.9159	1.11	44.65	0.025 ¹ 

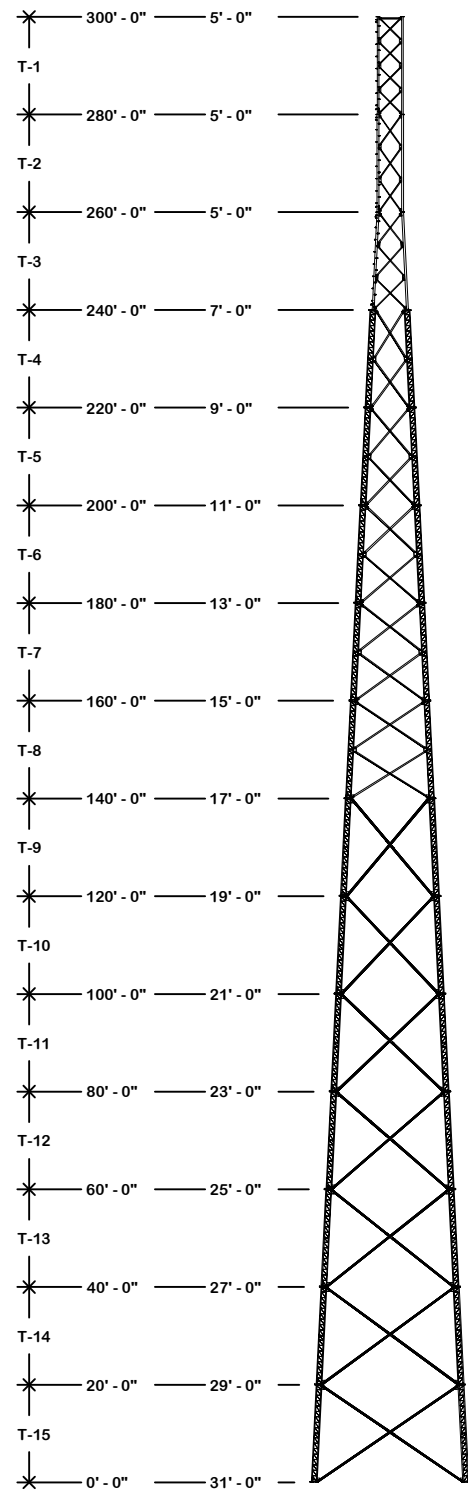
¹ $P_u / \phi P_n$ controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	300 - 280	Leg	0049) 2.50" S - 20' - C - 0.75" conn - (Pirod 226160)	1	-31.41	57.89	54.3	Pass
T2	280 - 260	Leg	0299) 4.00 to 6" TS - 20' - C - 0.75" conn - (Pirod 295612)	33	-120.54	160.03	75.3	Pass
T3	260 - 240	Leg	0419) 6.00" to #12 S - 20' - C - 0.75" conn - (Pirod 229377)	54	-182.20	228.83	79.6	Pass
T4	240 - 220	Leg	#12ZG-58 - 1.50" - 1.00" conn. (Pirod 194651)	75	-207.65	250.28	83.0	Pass
T5	220 - 200	Leg	#12ZG-58 - 1.50" - 1.00" conn. (Pirod 194651)	90	-241.08	250.28	96.3	Pass
T6	200 - 180	Leg	#12ZG-58 - 1.75" - 1.00" conn.-TR1-(Pirod 195213)	105	-270.27	349.87	77.2	Pass
T7	180 - 160	Leg	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	120	-297.62	349.87	85.1	Pass
T8	160 - 140	Leg	#12ZG-58 - 1.75" - 1.00" conn. (Pirod 195217)	135	-324.61	349.87	92.8	Pass
T9	140 - 120	Leg	#12ZG-58 - 2.00" - 0.875" conn.-TR3-(Pirod 195637)	150	-340.16	401.94	84.6	Pass
T10	120 - 100	Leg	#12ZG-58 - 2.00" - 0.875" conn. (Pirod 195639)	159	-368.17	401.94	91.6	Pass
T11	100 - 80	Leg	#12ZG-58 - 2.25" - 0.875" conn. (Pirod 195960)	168	-392.40	508.98	77.1	Pass
T12	80 - 60	Leg	#12ZG-58 - 2.25" - 0.875" conn. (Pirod 195960)	177	-417.50	508.98	82.0	Pass
T13	60 - 40	Leg	#12ZG-58 - 2.25" - 0.875" conn. (Pirod 195960)	186	-441.07	508.98	86.7	Pass
T14	40 - 20	Leg	#12ZG-58 - 2.25" - 0.875" conn. (Pirod 195960)	195	-466.02	508.98	91.6	Pass
T15	20 - 0	Leg	#12ZG-58 BASE - 2.50" - 0.875" conn.-TR4-(Pirod 281171)	204	-487.74	628.76	77.6	Pass
T1	300 - 280	Diagonal	L2x2x1/8	8	-7.22	10.93	66.1	Pass
T2	280 - 260	Diagonal	L2 1/2x2 1/2x1/4	34	-13.48	28.74	90.4 (b) 46.9	Pass
T3	260 - 240	Diagonal	L2 1/2x2 1/2x3/16	60	-7.83	18.41	75.3 (b) 42.5	Pass
T4	240 - 220	Diagonal	L2 1/2x2 1/2x3/16	77	-7.35	10.28	57.2 (b) 71.5	Pass
T5	220 - 200	Diagonal	L2 1/2x2 1/2x3/16	95	-6.23	8.42	73.9	Pass

<p>Valmont</p> <p>1545 Pidco Drive Plymouth, IN Phone: (574) 936-4221 FAX: (574) 936-6458</p>	<p>Job</p> <p>604200</p>	<p>Page</p> <p>66 of 66</p>
	<p>Project</p> <p>H31' x 300' - US-KY-5178 Matney Rd, KY</p>	<p>Date</p> <p>19:01:00 02/01/24</p>
	<p>Client</p> <p>VB BTS II, LLC</p>	<p>Designed by</p> <p>NS</p>

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	θP_{allow} K	% Capacity	Pass Fail	
T6	200 - 180	Diagonal	L2 1/2x2 1/2x3/16	110	-5.92	6.83	86.6	Pass	
T7	180 - 160	Diagonal	L2 1/2x2 1/2x1/4	122	-6.07	7.22	84.1	Pass	
T8	160 - 140	Diagonal	L3x3x3/16	141	-6.79	7.99	85.0	Pass	
T9	140 - 120	Diagonal	2L3x3x3/16	155	-10.28	17.73	58.0	Pass	
T10	120 - 100	Diagonal	2L3x3x3/16	161	-9.45	16.14	58.6	Pass	
T11	100 - 80	Diagonal	2L3x3x3/16	173	-9.84	14.65	67.2	Pass	
T12	80 - 60	Diagonal	2L3x3x3/16	182	-9.74	13.29	73.3	Pass	
T13	60 - 40	Diagonal	2L3x3x3/16	191	-10.68	12.05	88.6	Pass	
T14	40 - 20	Diagonal	2L3x3x1/4	201	-10.05	14.18	70.8	Pass	
T15	20 - 0	Diagonal	2L3 1/2x3 1/2x1/4	209	-12.35	20.82	59.3	Pass	
T1	300 - 280	Top Girt	L3x3x1/4	5	-1.29	28.72	4.5	Pass	
							7.8 (b)		
							Summary		
							Leg (T5)	96.3	Pass
							Diagonal (T1)	90.4	Pass
							Top Girt (T1)	7.8	Pass
							Bolt Checks	90.4	Pass
							RATING =	96.3	Pass



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: 37.156392
 Longitude: -85.540428

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)
 A500 Gr.B/C (tower legs min. Fy 50 ksi)

Angle A572 Gr.50

Plate A572 Gr.50

Bolts A-325/A-449 (leg & angle)

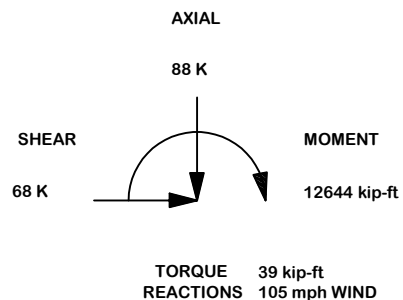
Anchor Bolt F1554 Grade 105 or A687

TOWER DESIGN CONFORMS TO BOTH TIA- G AND TIA-H

Finish: Tower & Hardware are hot dip galvanized

- 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).
- ALL BOLTS & NUTS MUST BE IN PLACE BEFORE ADJOINING SECTION(S) ARE INSTALLED.
- ALL STRUCTURAL BOLTS ARE TO BE TIGHTENED TO A SNUG TIGHT CONDITION AS DEFINED BY AISC & RCSC SPECIFICATION FOR STRUCTURAL JOINTS UNLESS NOTED OTHERWISE.
- ALL WELDING TO CONFORM TO AWS D1.1 SPECIFICATION. 5/16" MINIMUM WELD SIZE UNLESS NOTED OTHERWISE.
- MATERIAL LABELED AS ASTM A-572 GR. 58 OR 58 KSI YIELD STRENGTH ALSO CONFORMS TO ASTM A-572 GR. 50.
- ANALYSIS PERFORMED USING STEEL GRADES LISTED UNDER MATERIALS STRENGTHS SHOWN ON THIS PAGE.
- 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.
- THE CONTRACTOR MUST BE EXPERIENCED IN THE PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN.
- (VIBRATION DISCLAIMER) ALTHOUGH RARE, VIBRATIONS SEVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN STRUCTURES OF ALL TYPES, BECAUSE THEY ARE INFLUENCED BY MANY INTERACTING VARIABLES. VIBRATIONS ARE GENERALLY UNPREDICTABLE. THE USER'S MAINTENANCE PROGRAM SHOULD INCLUDE OBSERVATION FOR EXCESSIVE VIBRATION AND EXAMINATION FOR ANY STRUCTURAL DAMAGE OR BOLT LOOSENING. THE VALMONT WARRANTY SPECIFICALLY EXCLUDES FATIGUE FAILURE OR SIMILAR PHENOMENA RESULTING FROM INDUCED VIBRATION, HARMONIC OSCILLATION OR RESONANCE ASSOCIATED WITH MOVEMENT OF AIR CURRENTS AROUND THE PRODUCT.
- 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.
- 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.
- ANTENNAS, MOUNTS, MOUNT ACCESSORIES ETC. SHOULD NOT BE ATTACHED TO THE DIAGONALS SHOWN ON THIS DRAWING.

Maximum Base Reactions

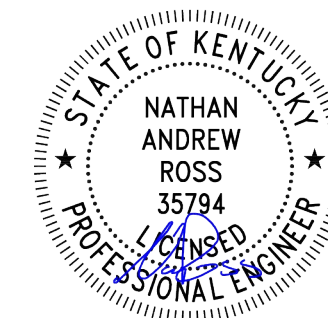


MAX. LEG REACTIONS:

DOWN: 500 K
 UPLIFT: -433 K
 SHEAR: 45 K

*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	HORIZONTAL BRACING SIZE	BRACING BOLT QTY & DIA	SECTION WEIGHT
T1	280' - 300'	5.0'	4	2.50"	V	4 x 3/4"	1/8" x 2" x 2"	1/4" x 3" x 3"	1 x 3/4 "	965.90
T2	260' - 280'	5.0'	3	4.00"	V	8 x 3/4"	1/4" x 2-1/2" x 2-1/2"		1 x 3/4 "	1805.46
T3	240' - 260'	7.0'	3	6.00"	V	6 x 1"	3/16" x 2-1/2" x 2-1/2"		1 x 3/4 "	2144.46
T4	220' - 240'	9.0'	2	1.50"	12BDFH	6 x 1"	3/16" x 2-1/2" x 2-1/2"		1 x 1 "	2327.61
T5	200' - 220'	11.0'	2	1.50"	12BDFH	6 x 1"	3/16" x 2-1/2" x 2-1/2"		1 x 1 "	2375.91
T6	180' - 200'	13.0'	2	1.75"	12BDFH	6 x 1 1/4"	3/16" x 2-1/2" x 2-1/2"		1 x 1 "	2869.77
T7	160' - 180'	15.0'	2	1.75"	12BDFH	6 x 1 1/4"	1/4" x 2-1/2" x 2-1/2"		1 x 1 "	3141.39
T8	140' - 160'	17.0'	2	1.75"	12BDFH	6 x 1 1/4"	3/16" x 3" x 3"		1 x 1 "	3154.11
T9	120' - 140'	19.0'	1	2.00"	12BDH2	12 x 1"	3/16" x 3" x 3"		1 x 7/8 "	4046.91
T10	100' - 120'	21.0'	1	2.00"	12BDH2	12 x 1"	3/16" x 3" x 3"		1 x 7/8 "	4169.22
T11	80' - 100'	23.0'	1	2.25"	12BDH2	12 x 1"	3/16" x 3" x 3"		1 x 7/8 "	4757.49
T12	60' - 80'	25.0'	1	2.25"	12BDH2	12 x 1"	3/16" x 3" x 3"		1 x 7/8 "	4826.73
T13	40' - 60'	27.0'	1	2.25"	12BDH2	12 x 1"	3/16" x 3" x 3"		1 x 7/8 "	4898.67
T14	20' - 40'	29.0'	1	2.25"	12BDH2	12 x 1"	1/4" x 3" x 3"		1 x 7/8 "	5461.77
T15	0' - 20'	31.0'	1	2.50"	12BDH2	4 x 1 3/4"	1/4" x 3-1/2" x 3-1/2"		1 x 7/8 "	6837.87



REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
REVISION HISTORY				
DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
CAM		NS	J_S	2/12/2024

SITE
US-KY-5178 MATNEY RD, KY VB BTS II, LLC H 31 X 300'
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DESCRIPTION
Tower View Page 1
ENG. FILE NO.
604200

valmont

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

STRUCTURES

DWG. NO. 296780T


PAGE 1 OF 17

DESIGNED APPURTENANCE LOADING	
TYPE	ELEVATION
(1) 5/8" X 7'-6" LIGHTNING ROD	300.0000'
(1) BEACON	300.0000'
(1) 40,000 SQ.IN. (277.78 SQ.FT. EPA)	295.0000'
(1) 30,000 SQ.IN. (208.3 SQ.FT. EPA)	285.0000'
(1) 30,000 SQ.IN. (208.3 SQ.FT. EPA)	275.0000'
(3) OB LIGHT	150.0000'

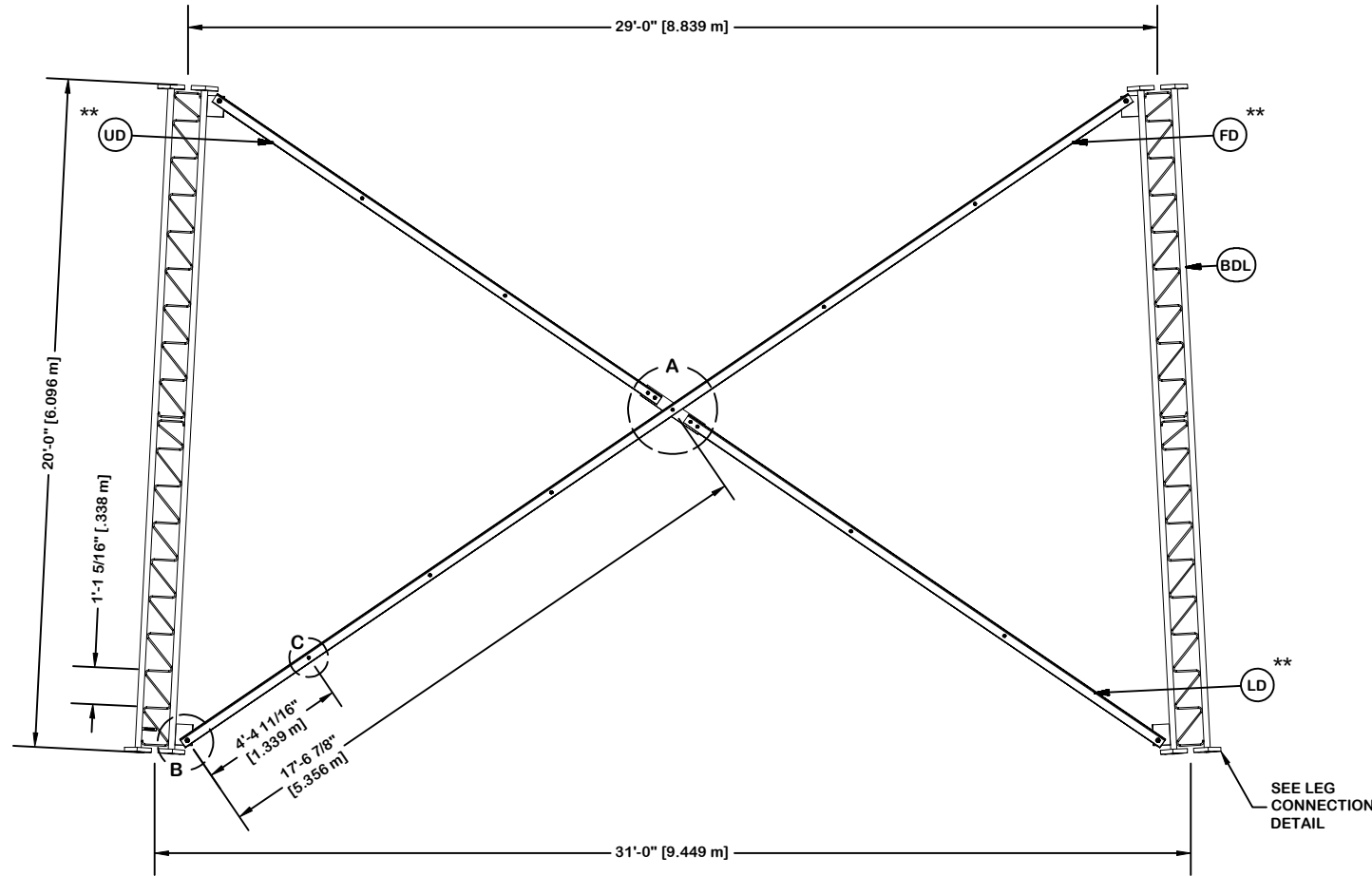


				SITE US-KY-5178 MATNEY RD, KY VB BTS II, LLC H 31 X 300' COPYRIGHT 2022		DESCRIPTION Tower View Page 2		 1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR			
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE							
REVISION HISTORY					PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.		ENG. FILE NO. 604200		DWG. NO. 296780T		
DRAWN BY CAM		APPROVED BY NS		DESIGNED BY J_S		APPROVED BY J_S		RELEASE DATE 2/12/2024		PAGE 2 OF 17	

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

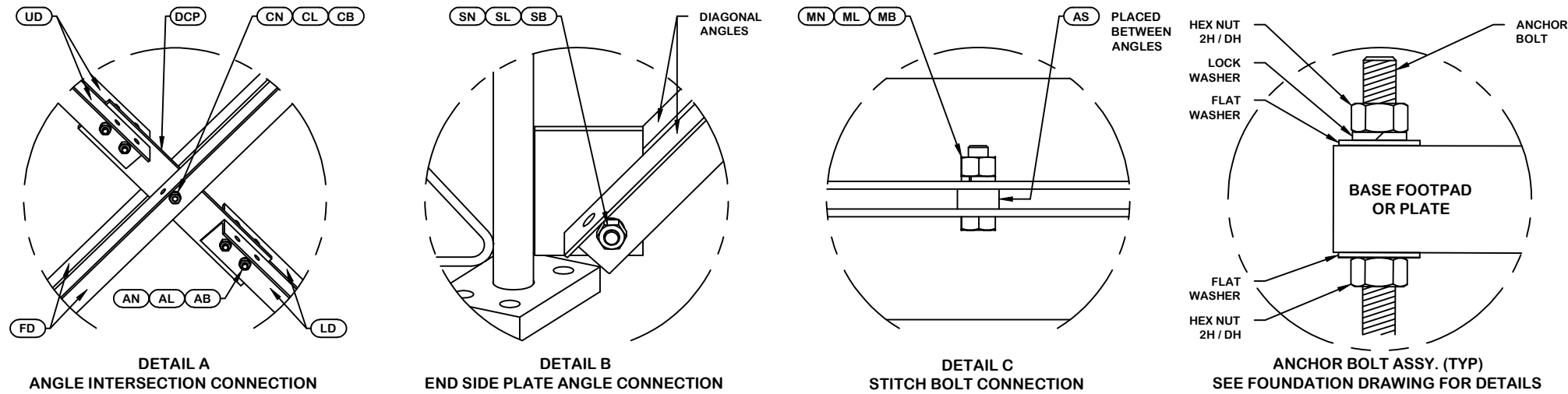
ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION
** DIAGONAL ANGLES MUST BE INSTALLED WITH THE NON-BOLTED FACE UP, 

* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES



PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	281171	#12 BASE SECTION - 2 1/2" LEG - 1/2" BRACE W/ (1)	1424.950	4274.850
UD	6	265817	U-31 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	97.370	584.220
LD	6	265816	U-31 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	104.620	627.720
FD	6	265815	U-31 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	208.520	1251.120
ML	27	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.540
MN	27	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	3.240
AS	27	237658	RING FILL SPACER 5/8" THICK 1.049" HOLE	0.090	2.430
MB	27	161895	5/8"-11 X 2 1/4" A-325 BOLT 1 1/4" THREAD	0.260	7.020
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				6837.87 lb [3104.45 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.



REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
REVISION HISTORY				
DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
CAM		NS	J_S	2/12/2024

SITE	US-KY-5178 MATNEY RD, KY VB BTS II, LLC H 31 X 300'
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DESCRIPTION	SECTION U-31.0 (0' - 20' ELEVATION)
ENG. FILE NO.	604200



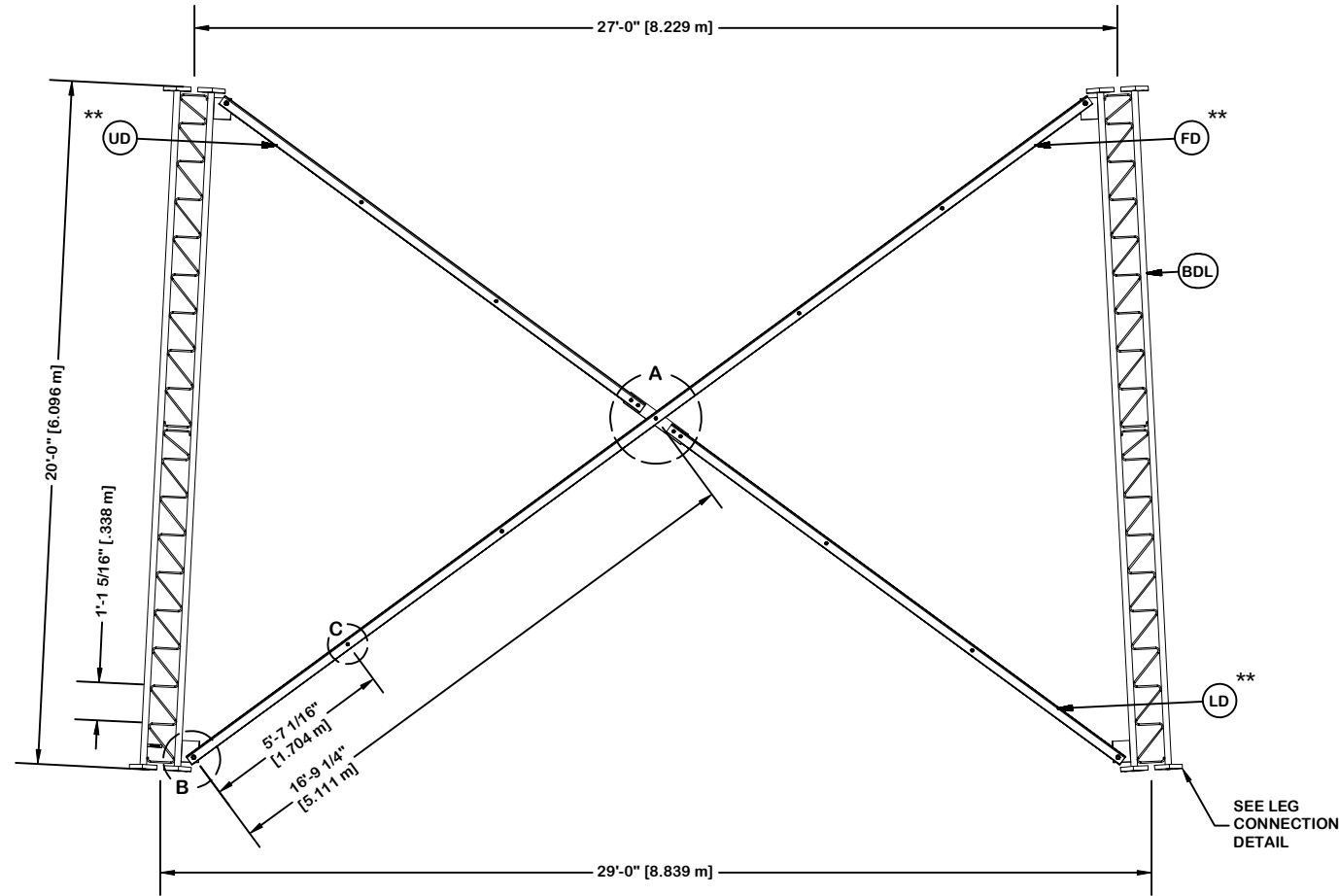
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DWG. NO.	296780T	PAGE	3 OF 17
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ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

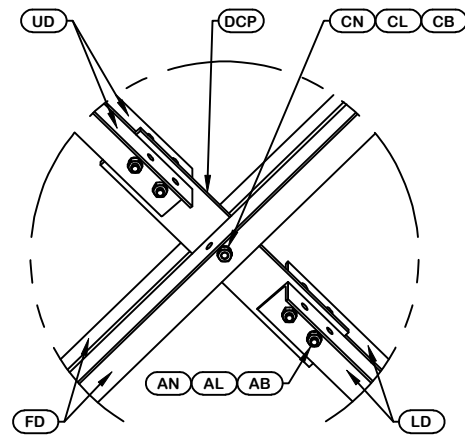
ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION
** DIAGONAL ANGLES MUST BE INSTALLED WITH THE NON-BOLTED FACE UP, 

* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES

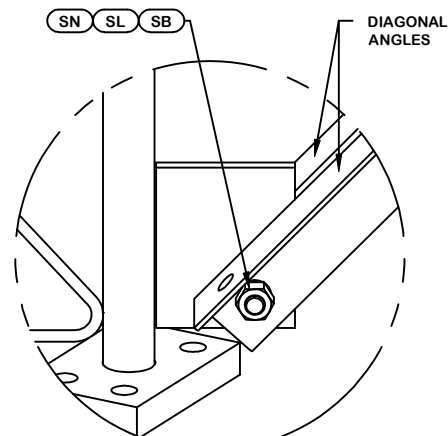


PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195960	#12 LEG SECTION - 2-1/4" LEG - 1/2" BRACE - 7/8" B	1100.520	3301.560
UD	6	295738	U-29 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	78.390	470.340
LD	6	295737	U-29 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	84.550	507.300
FD	6	295736	U-29 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	168.500	1011.000
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				5461.77 lb [2479.69 kg]	

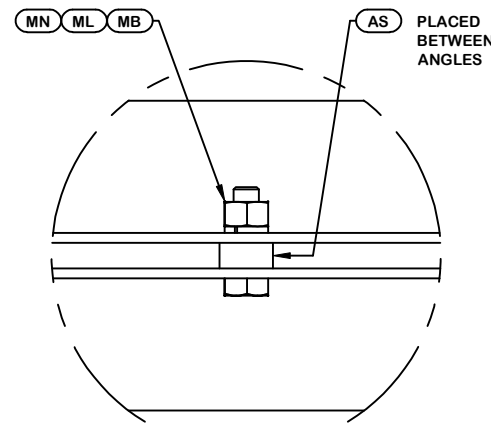
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



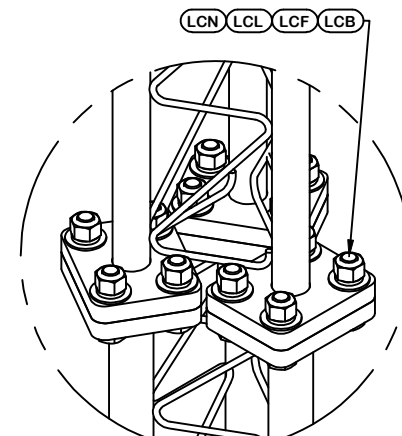
DETAIL A
ANGLE INTERSECTION CONNECTION



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				

DRAWN BY CAM	APPROVED BY	DESIGNED BY NS	APPROVED BY J_S	RELEASE DATE 2/12/2024
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SITE US-KY-5178 MATNEY RD, KY VB BTS II, LLC H 31 X 300'
PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION SECTION U-29.0 (20' - 40' ELEVATION)
ENG. FILE NO. 604200



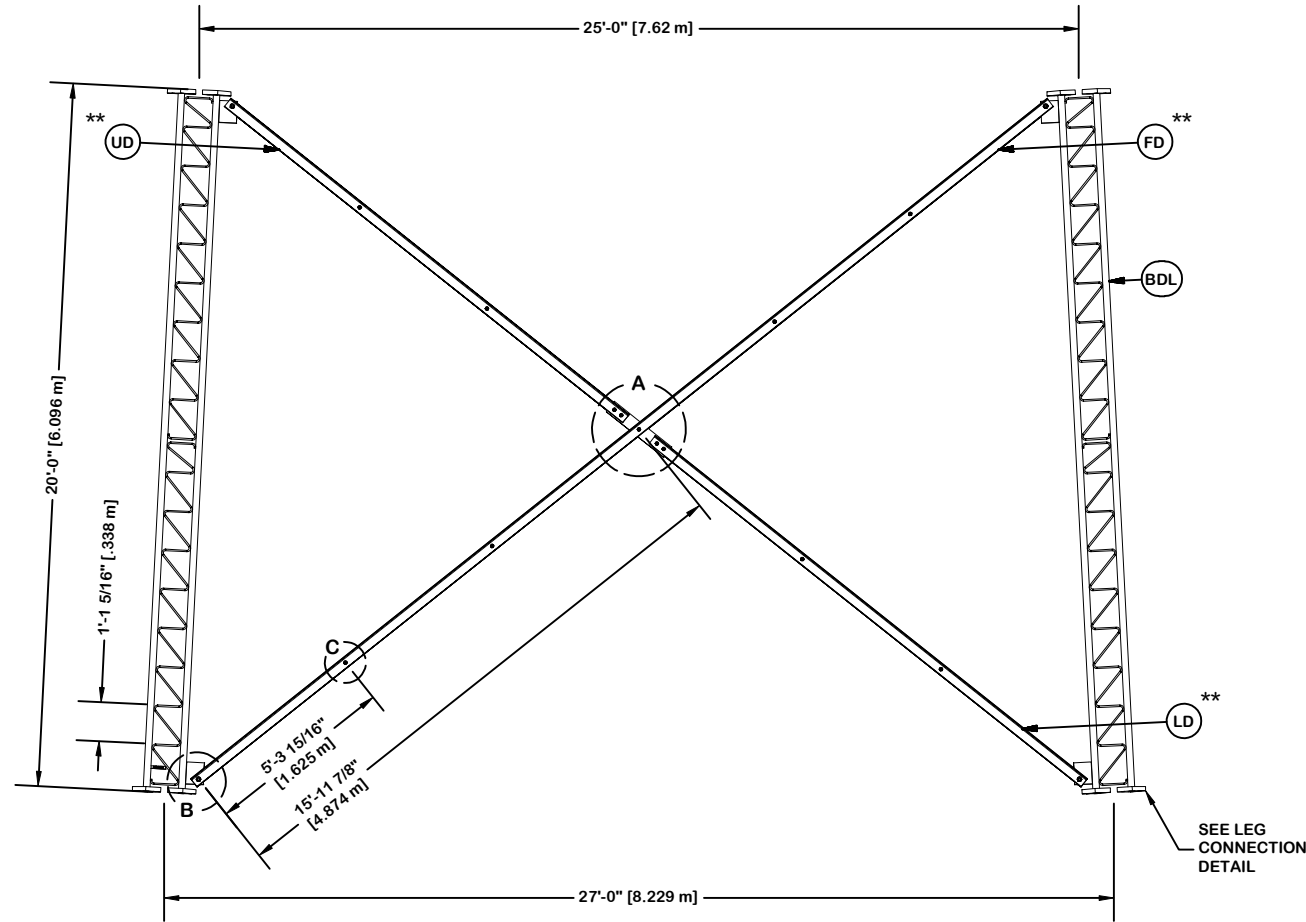
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

DWG. NO. 296780T	PAGE 4 OF 17
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ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

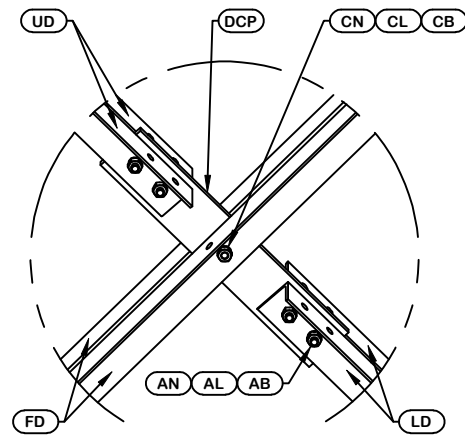
ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION
** DIAGONAL ANGLES MUST BE INSTALLED WITH THE NON-BOLTED FACE UP,

* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES

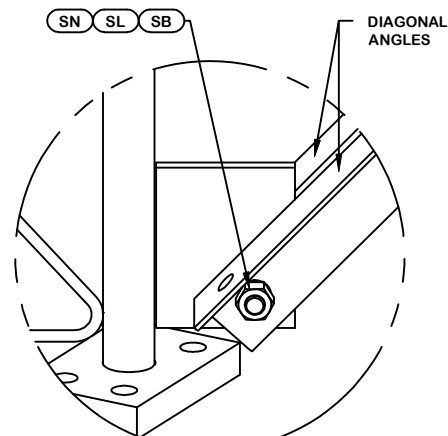


PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195960	#12 LEG SECTION - 2-1/4" LEG - 1/2" BRACE - 7/8" B	1100.520	3301.560
UD	6	265781	U-27 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	56.000	336.000
LD	6	265780	U-27 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	60.770	364.620
FD	6	265779	U-27 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	120.820	724.920
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				4898.67 lb [2224.04 kg]	

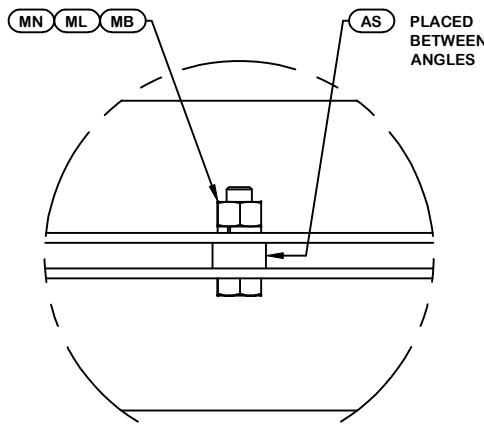
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW. PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



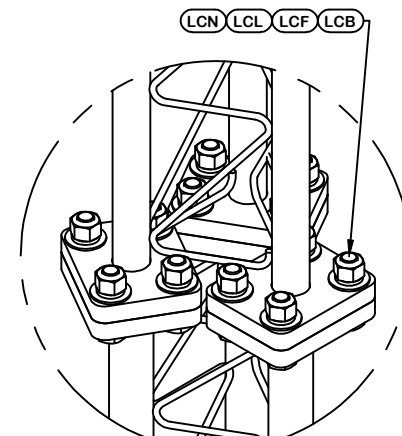
DETAIL A
ANGLE INTERSECTION CONNECTION



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				
DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
CAM		NS	J_S	2/12/2024

SITE
US-KY-5178 MATNEY RD, KY
VB BTS II, LLC
H 31 X 300'

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

ENG. FILE NO.
604200

valmont


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

STRUCTURES

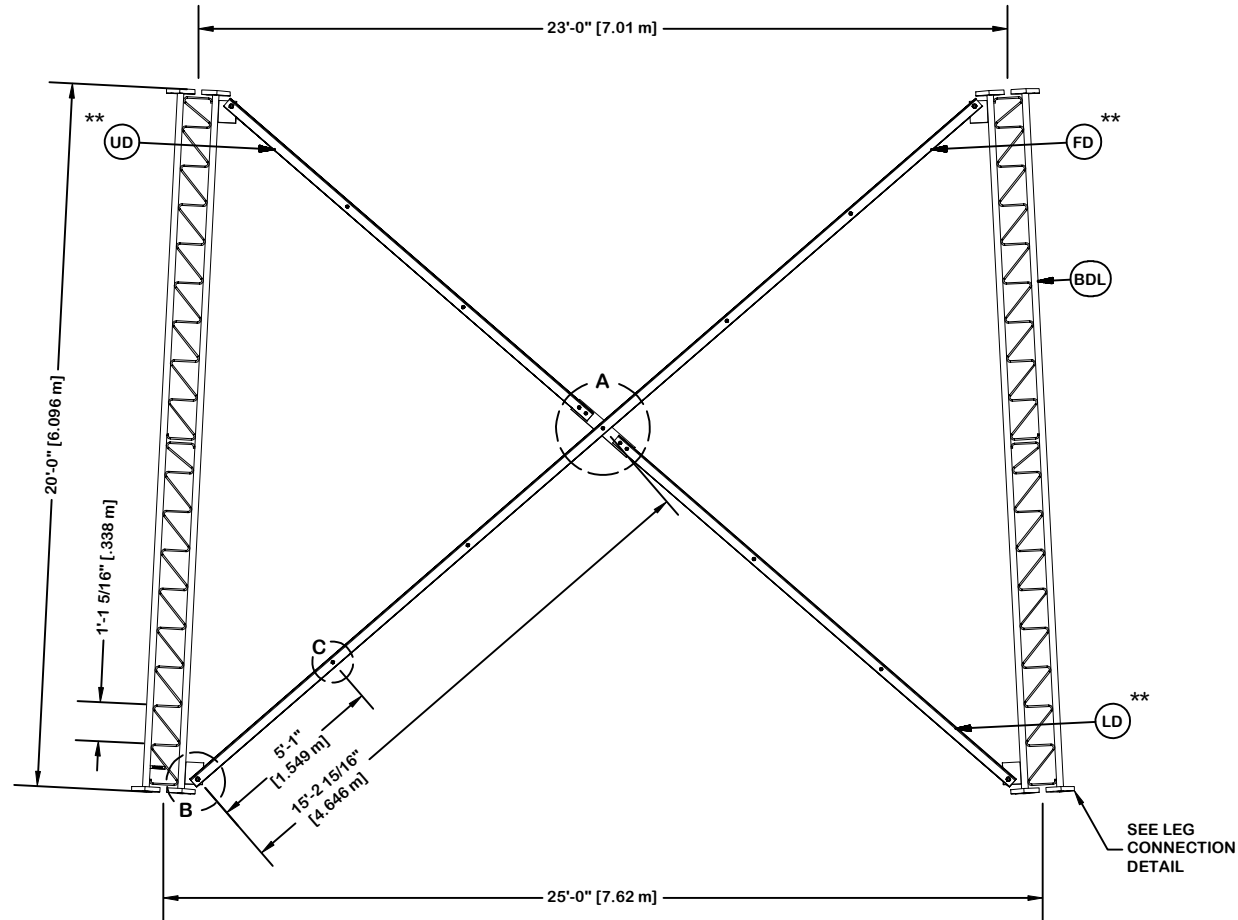
DWG. NO. **296780T**

PAGE **5 OF 17**

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

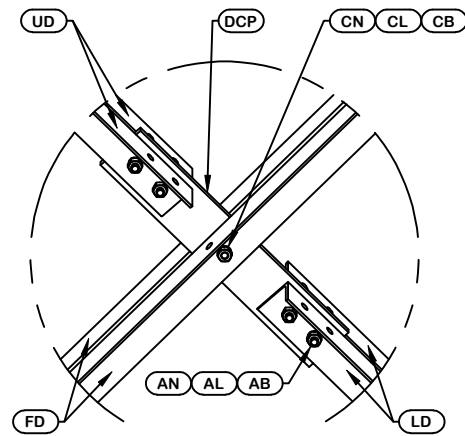
ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION
** DIAGONAL ANGLES MUST BE INSTALLED WITH THE NON-BOLTED FACE UP, 

* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES

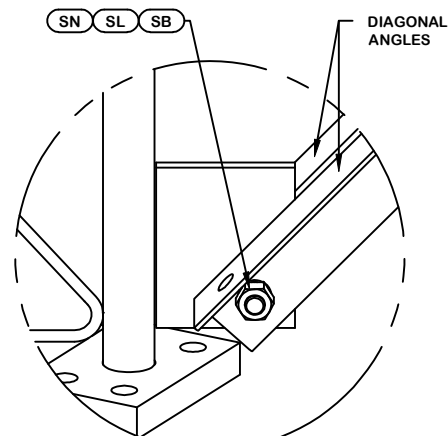


PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195960	#12 LEG SECTION - 2-1/4" LEG - 1/2" BRACE - 7/8" B	1100.520	3301.560
UD	6	265757	U-25 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	52.910	317.460
LD	6	265756	U-25 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	57.860	347.160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

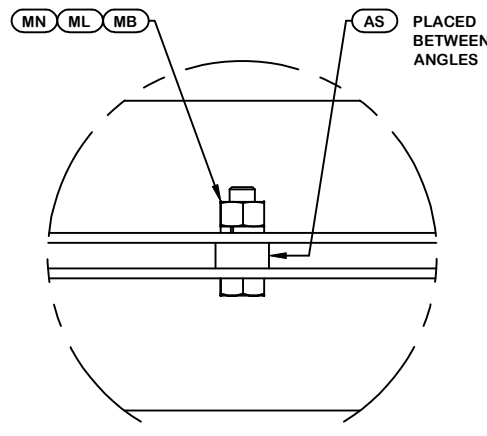
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW. PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



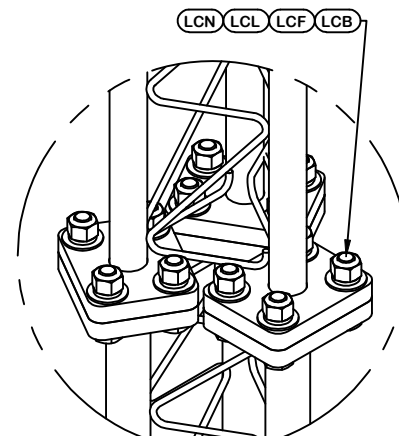
DETAIL A
ANGLE INTERSECTION CONNECTION



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				

DRAWN BY CAM	APPROVED BY	DESIGNED BY NS	APPROVED BY J_S	RELEASE DATE 2/12/2024
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SITE
**US-KY-5178 MATNEY RD, KY
VB BTS II, LLC
H 31 X 300'**

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

ENG. FILE NO.
604200

valmont 


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

STRUCTURES

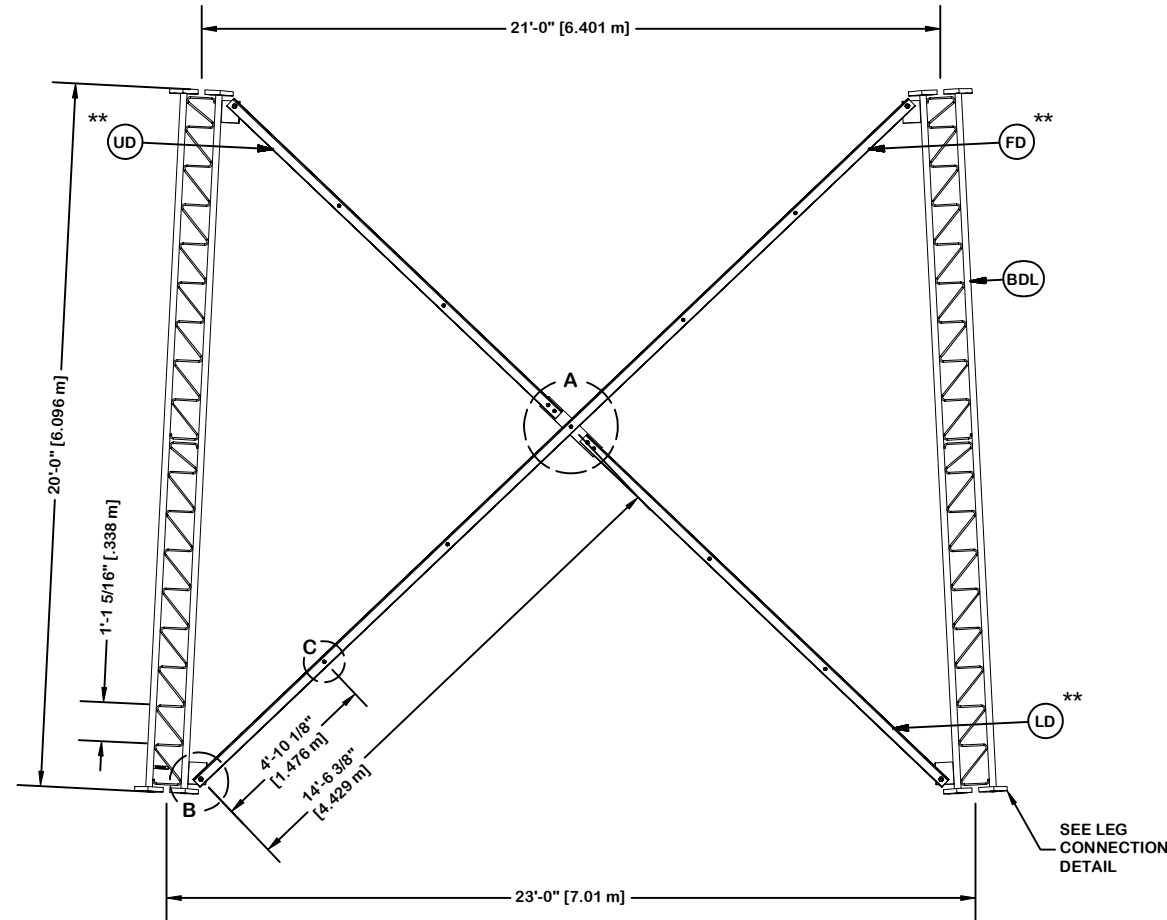
DWG. NO. **296780T**

PAGE **6 OF 17**

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

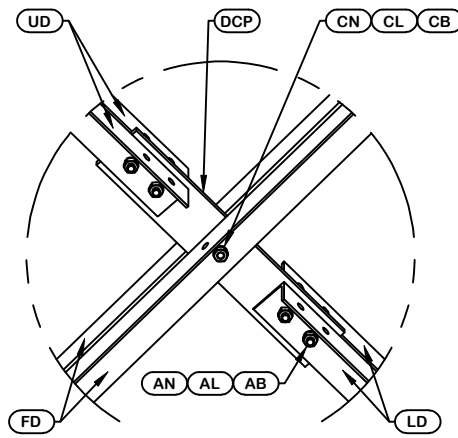
ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION
** DIAGONAL ANGLES MUST BE INSTALLED WITH THE NON-BOLTED FACE UP, 

* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES

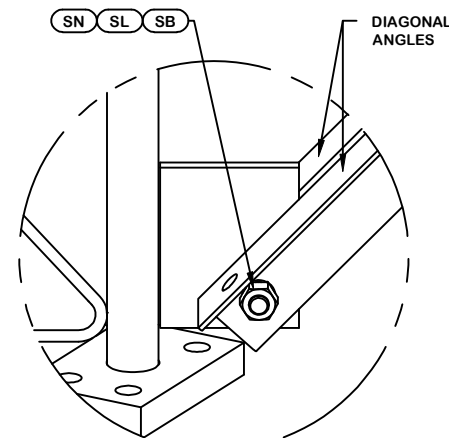


PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195960	#12 LEG SECTION - 2-1/4" LEG - 1/2" BRACE - 7/8" B	1100.520	3301.560
UD	6	265733	U-23 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	49.920	299.520
LD	6	265732	U-23 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	55.080	330.480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

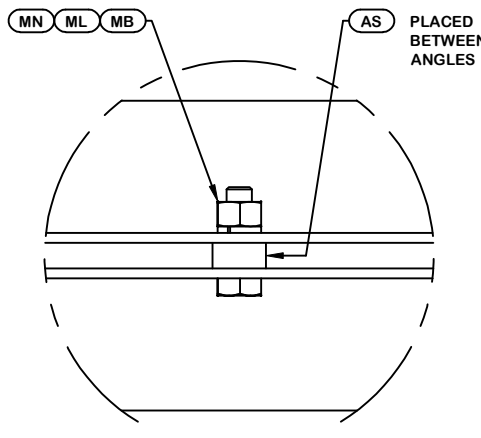
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW. PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



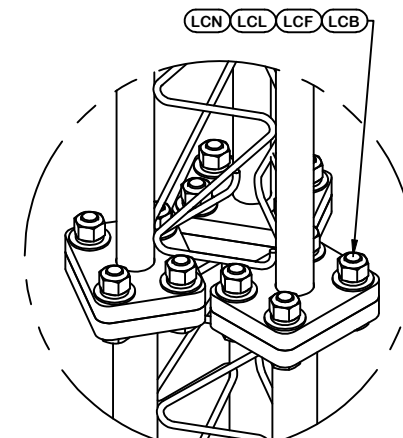
DETAIL A
ANGLE INTERSECTION CONNECTION



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				

DRAWN BY CAM	APPROVED BY J_S	DESIGNED BY NS	RELEASE DATE 2/12/2024
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SITE
**US-KY-5178 MATNEY RD, KY
VB BTS II, LLC
H 31 X 300'**

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

ENG. FILE NO.
604200

valmont 


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

STRUCTURES

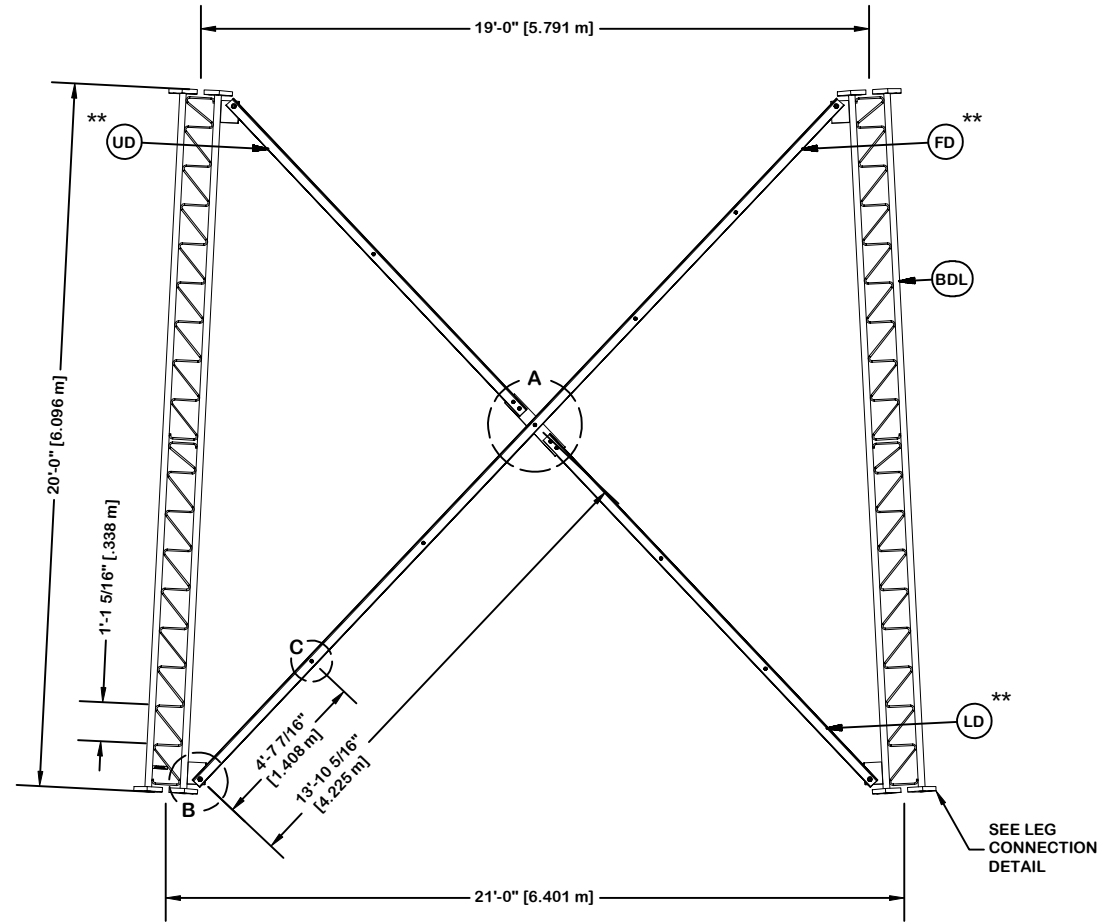
DWG. NO. **296780T**

PAGE **7 OF 17**

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

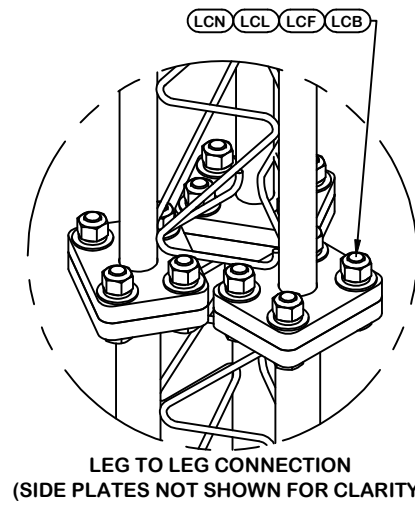
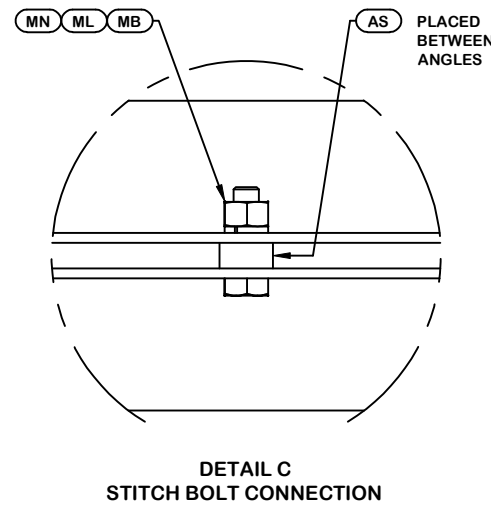
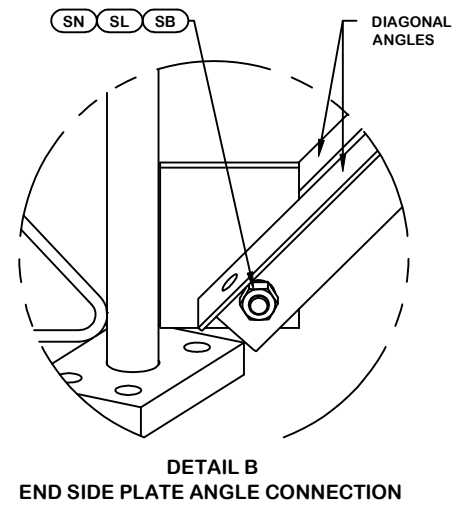
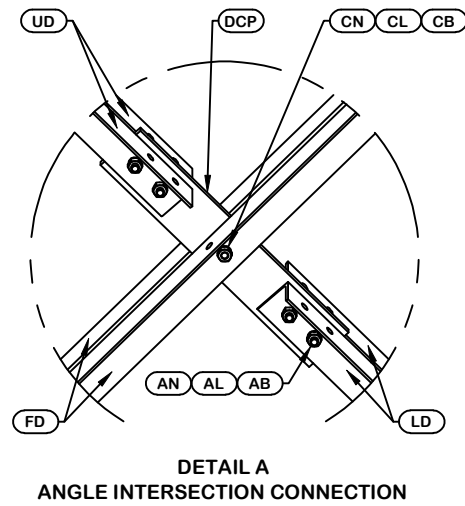
ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION
** DIAGONAL ANGLES MUST BE INSTALLED WITH THE NON-BOLTED FACE UP, 

* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES



PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195639	#12 LEG SECTION - 2" LEG - 1/2" BRACE - 7/8" BOLT	926.920	2780.760
UD	6	265709	U-21 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	47.030	282.180
LD	6	265708	U-21 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	52.470	314.820
FD	6	265707	U-21 LONG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	103.560	621.360
ML	21	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.420
MN	21	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	2.520
AS	21	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				4169.22 lb [1892.86 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.



REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
REVISION HISTORY				

DRAWN BY CAM	APPROVED BY	DESIGNED BY NS	APPROVED BY J_S	RELEASE DATE 2/12/2024
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SITE
**US-KY-5178 MATNEY RD, KY
VB BTS II, LLC
H 31 X 300'**

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

ENG. FILE NO.
604200

valmont 


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

STRUCTURES

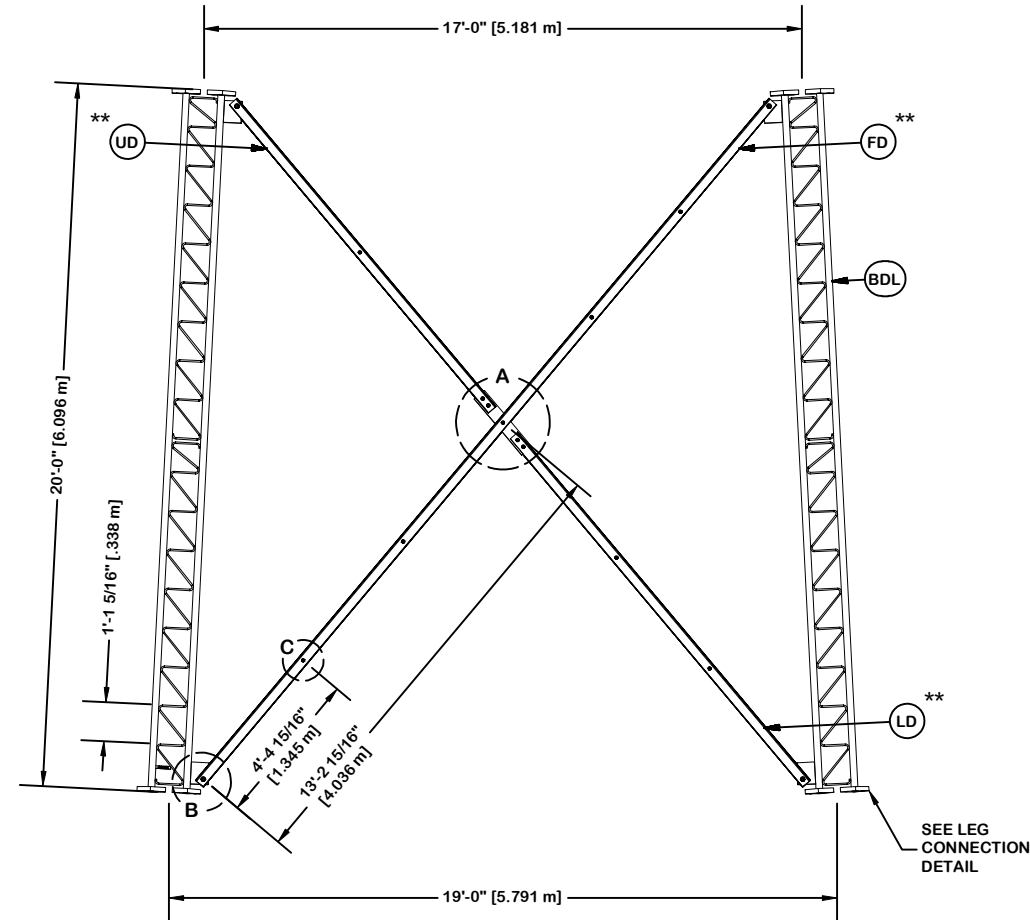
DWG. NO. **296780T**

PAGE **8 OF 17**

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

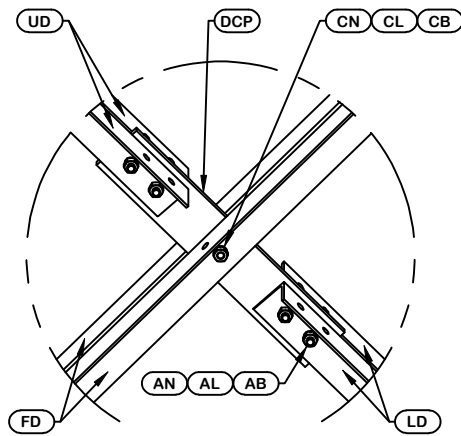
ORIENT ANGLES WITH STAMPED END TOWARD TOP OF SECTION
** DIAGONAL ANGLES MUST BE INSTALLED WITH THE NON-BOLTED FACE UP, 

* STITCH BOLT SPACING SHOWN
IS MAX. FOR ALL ANGLES

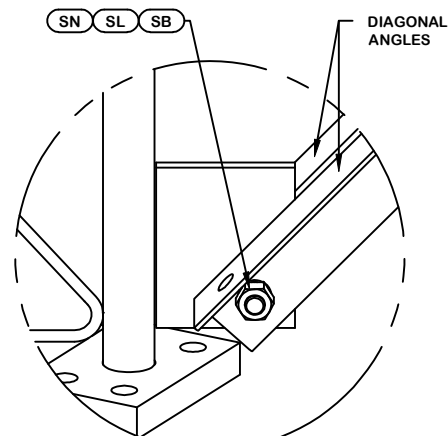


PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195637	#12 LEG SECT - 2" TO 1-3/4" TRANS LEG - 1/2" BRACE	906.870	2720.610
UD	6	265682	U-19 UPPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	44.260	265.560
LD	6	265681	U-19 LOWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	50.060	300.360
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				4046.91 lb [1837.33 kg]	

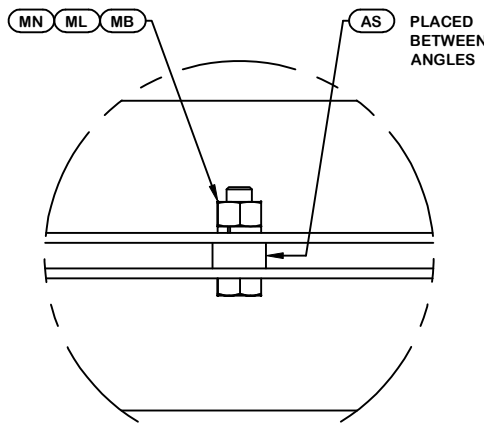
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW.
PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



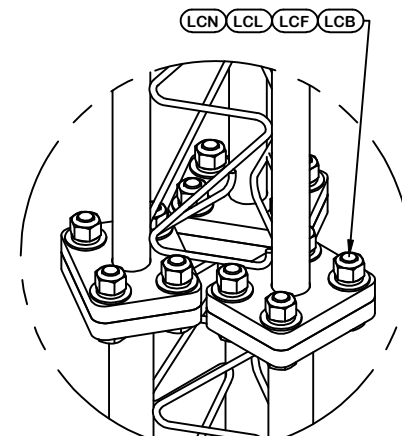
DETAIL A
ANGLE INTERSECTION CONNECTION



DETAIL B
END SIDE PLATE ANGLE CONNECTION



DETAIL C
STITCH BOLT CONNECTION



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



REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
REVISION HISTORY				
DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
CAM		NS	J_S	2/12/2024


SITE
US-KY-5178 MATNEY RD, KY
VB BTS II, LLC
H 31 X 300'

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

ENG. FILE NO.
604200

valmont 

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

STRUCTURES

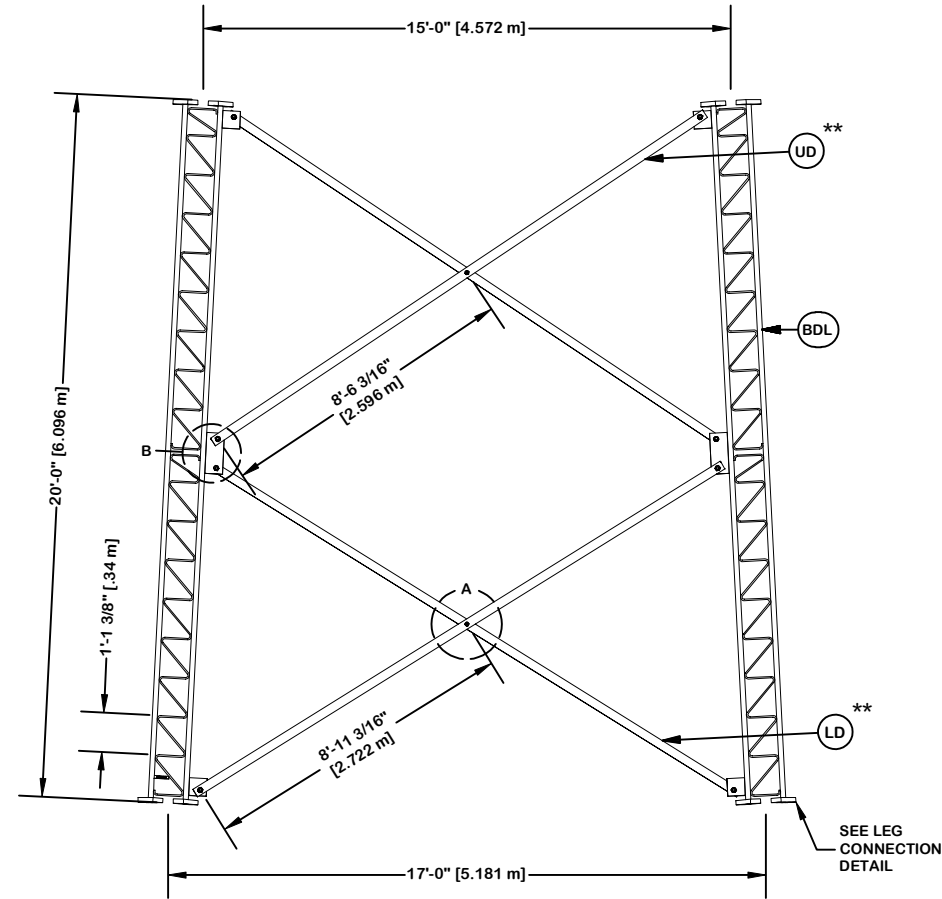
DWG. NO. **296780T**

PAGE **9 OF 17**

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

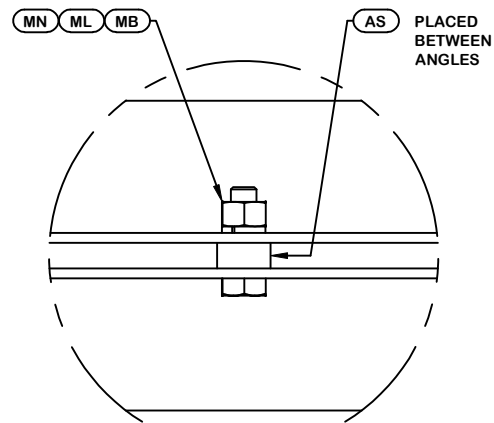
** DIAGONAL ANGLES MUST BE INSTALLED
WITH THE NON-BOLTED FACE UP,
THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



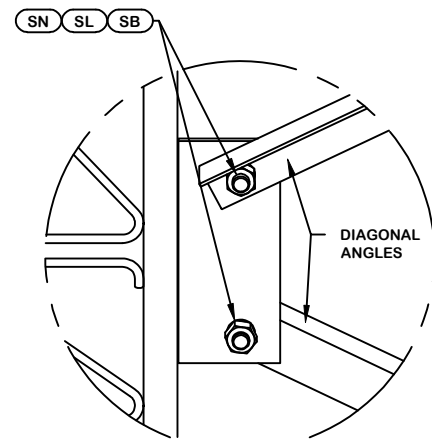
PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195217	#12 LEG SECTION - 1-3/4" LEG - 1/2" BRACE - 1" BOL	746.710	2240.130
LD	6	279264	U-18 UPPER DIAGONAL - 3" x 3" x 3/16" ANGLE (A572)	69.430	416.580
AS	6	104291	RING FILL SPACER 1/2" THICK 1.049" HOLE	0.070	0.420
MN	6	312502	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	126820	U-16 LOWER DIAGONAL - 3" x 3" x 3/16" ANGLE (A572)	66.120	396.720
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 3154.11 lb [1431.99 kg]

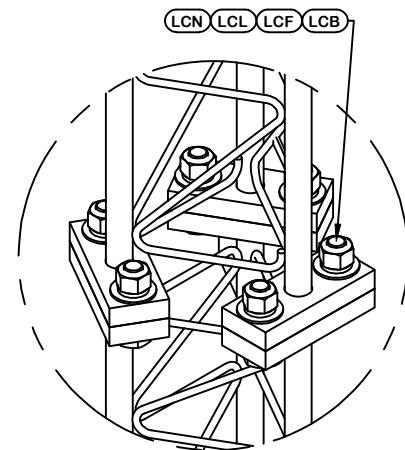
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW. PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



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				

DRAWN BY CAM	APPROVED BY	DESIGNED BY NS	APPROVED BY J_S	RELEASE DATE 2/12/2024
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SITE
US-KY-5178 MATNEY RD, KY
VB BTS II, LLC
H 31 X 300'

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

ENG. FILE NO.
604200

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

STRUCTURES

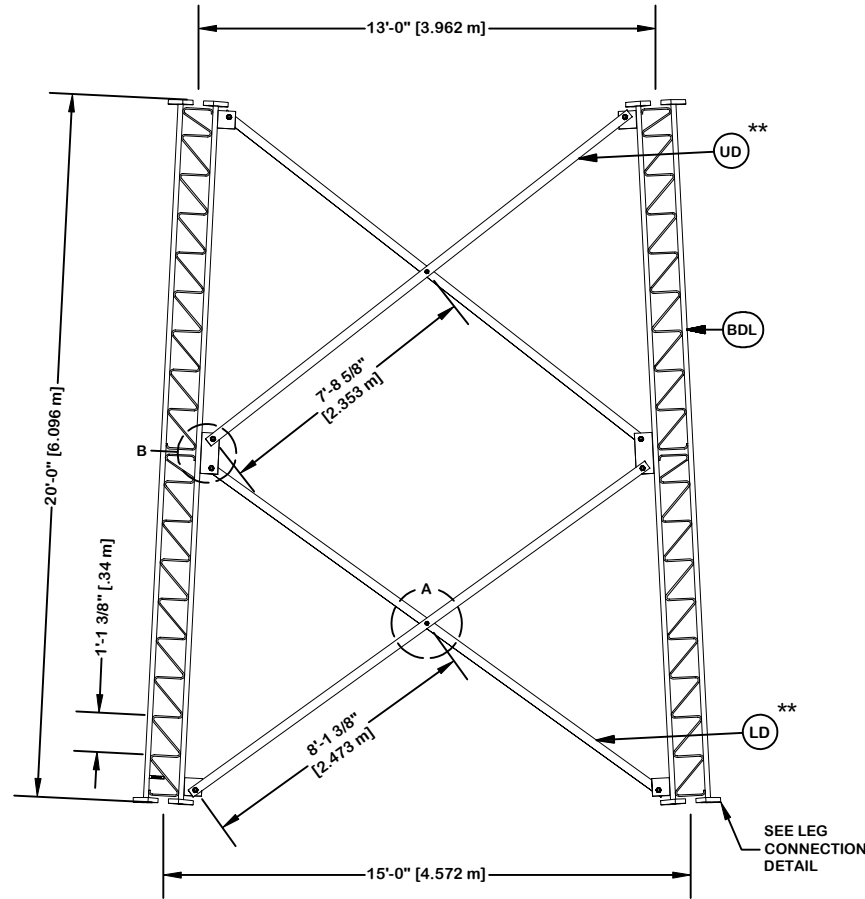
DWG. NO.
296780T

PAGE
10 OF 17

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

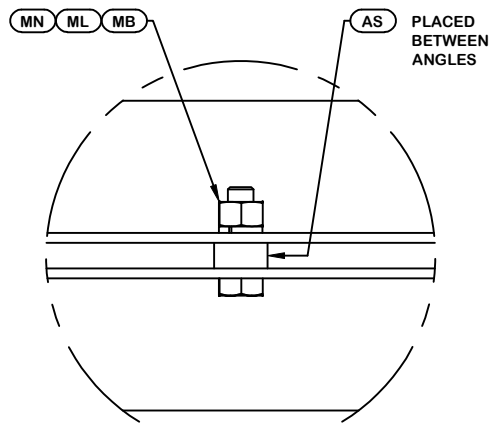
** DIAGONAL ANGLES MUST BE INSTALLED
WITH THE NON-BOLTED FACE UP,
THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



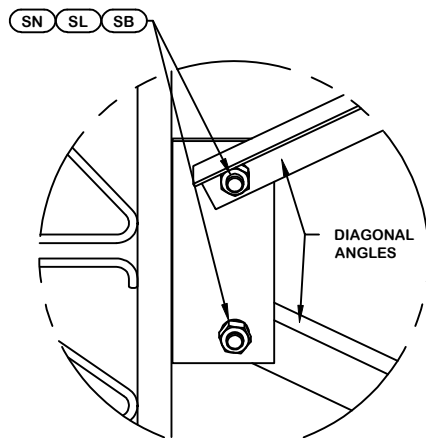
PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195217	#12 LEG SECTION - 1-3/4" LEG - 1/2" BRACE - 1" BOL	746.710	2240.130
LD	6	279250	U-16 UPPER DIAGONAL - 2 1/2" x 2 1/2" x 1/4" ANGLE	68.430	410.580
AS	6	104291	RING FILL SPACER 1/2" THICK 1.049" HOLE	0.070	0.420
MN	6	312502	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	279227	U-14 LOWER DIAGONAL - 2 1/2" x 2 1/2" x 1/4" ANGLE	65.000	390.000
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 3141.39 lb [1426.22 kg]

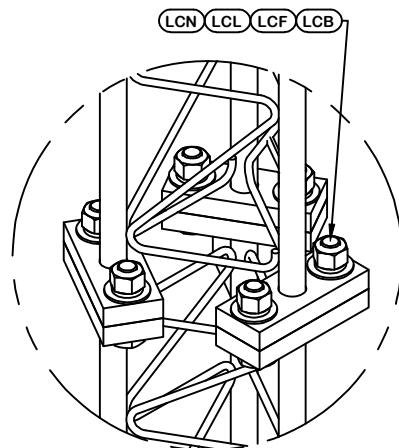
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW. PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



DETAIL A
ANGLE INTERSECTION CONNECTION



DETAIL B
MID SIDE PLATE ANGLE CONNECTION



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



REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
REVISION HISTORY				
DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
CAM		NS	J_S	2/12/2024

SITE
US-KY-5178 MATNEY RD, KY
VB BTS II, LLC
H 31 X 300'

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

ENG. FILE NO.
604200

valmont

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

STRUCTURES

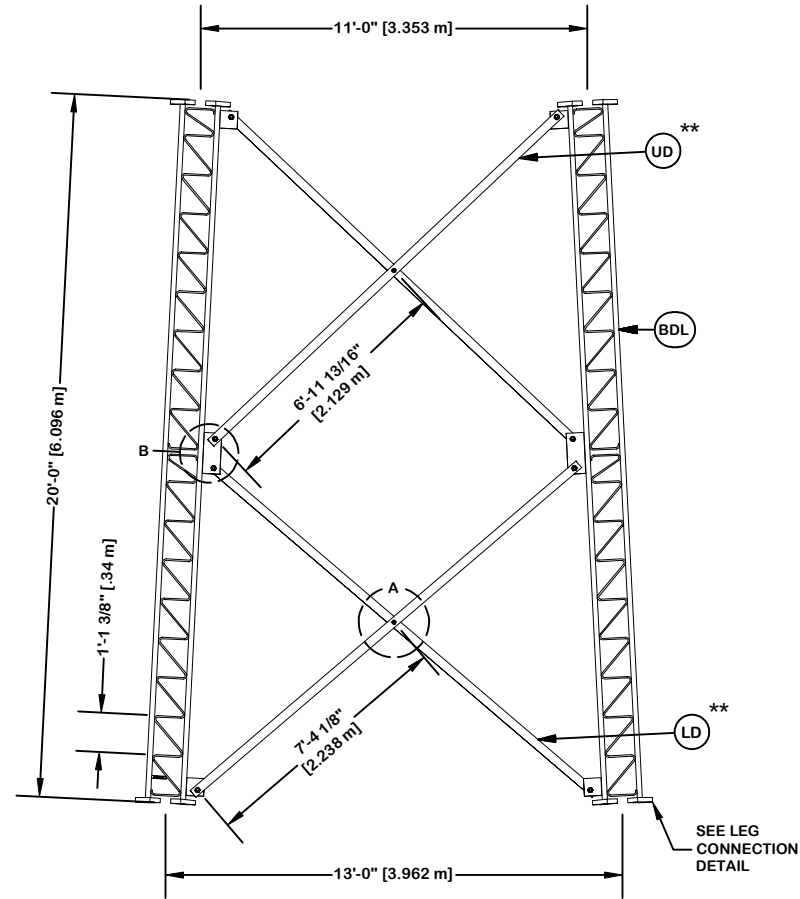
DWG. NO. 296780T

PAGE 11 OF 17

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

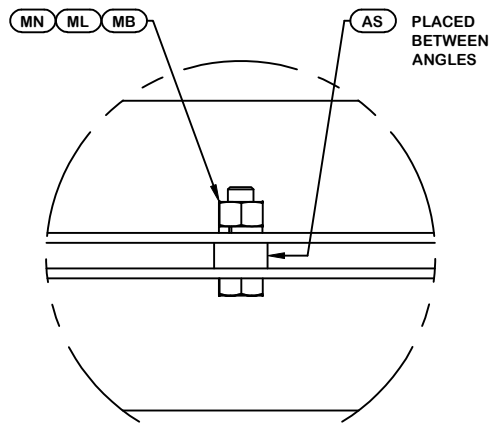
** DIAGONAL ANGLES MUST BE INSTALLED
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THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



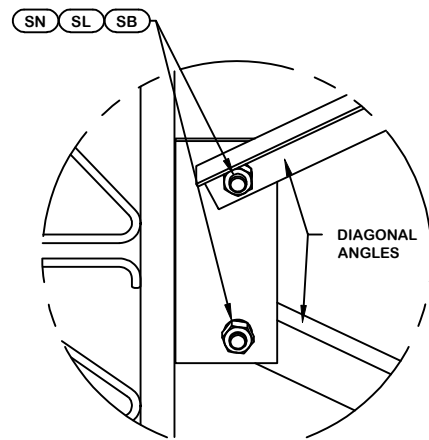
PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195213	#12 LEG SECT - 1-3/4" TO 1-1/2" TRANS LEG - 1/2" B	739.890	2219.670
LD	6	279224	U-14 UPPER DIAGONAL - 2 1/2" x 2 1/2" x 3/16" ANGL	47.000	282.000
AS	6	104291	RING FILL SPACER 1/2" THICK 1.049" HOLE	0.070	0.420
MN	6	312502	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	126805	U-12 LOWER DIAGONAL - 2 1/2" x 2 1/2" x 3/16" ANGL	44.570	267.420
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 2869.77 lb [1302.90 kg]

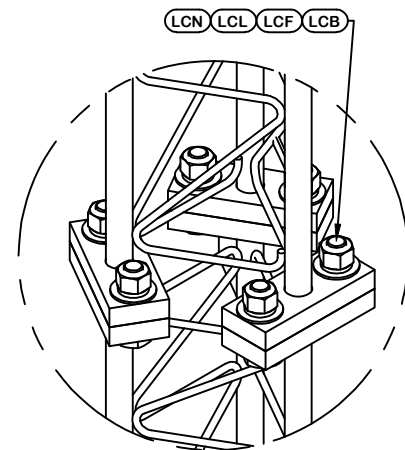
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW. PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



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				

DRAWN BY CAM	APPROVED BY	DESIGNED BY NS	APPROVED BY J_S	RELEASE DATE 2/12/2024
-----------------	-------------	-------------------	--------------------	---------------------------

SITE
US-KY-5178 MATNEY RD, KY
VB BTS II, LLC
H 31 X 300'

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

ENG. FILE NO.
604200

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

STRUCTURES

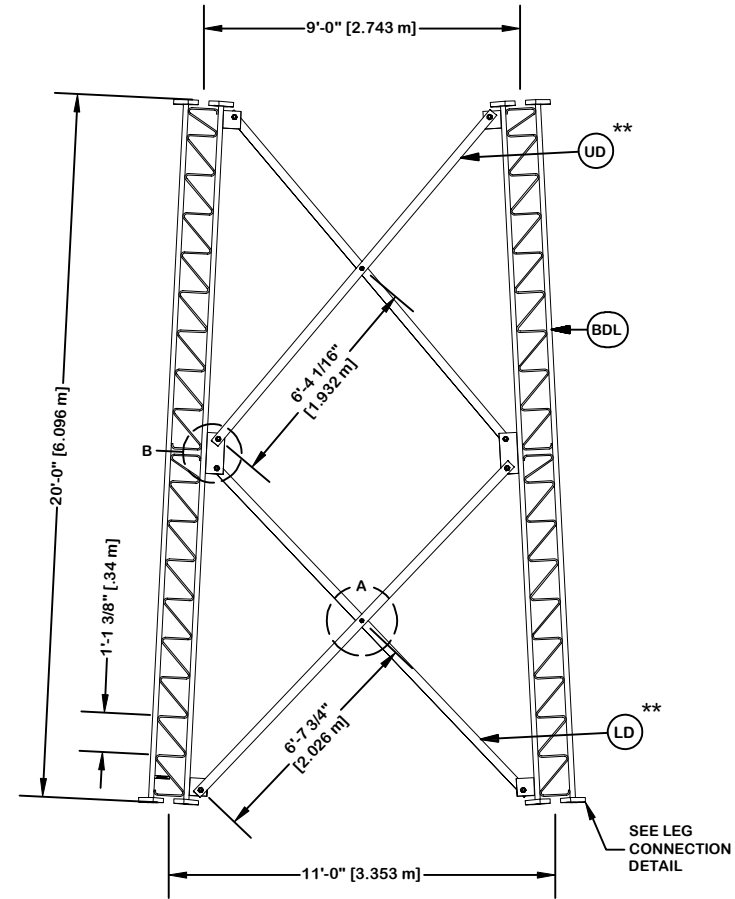
DWG. NO.
296780T

PAGE
12 OF 17

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

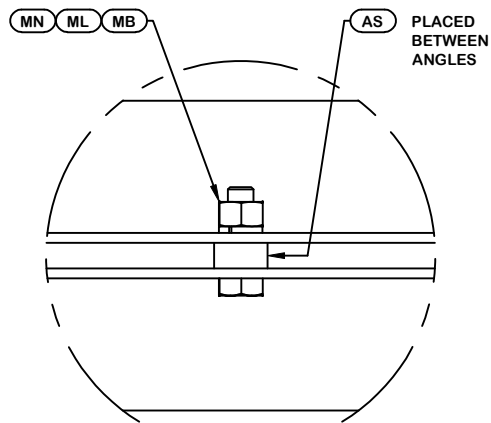
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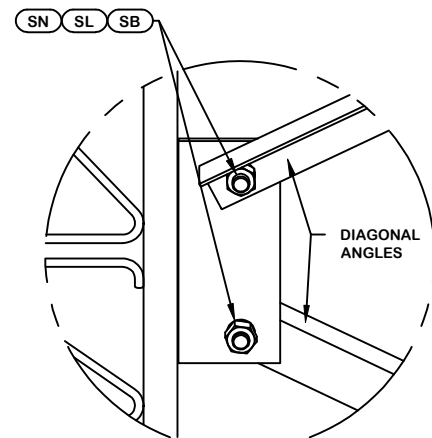
PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	194651	#12 LEG SECTION - 1-1/2" LEG - 1/2" BRACE - 1" BOL	602.830	1808.490
LD	6	126801	U-12 UPPER DIAGONAL - 2 1/2" x 2 1/2" x 3/16" ANGL	42.250	253.500
AS	6	104291	RING FILL SPACER 1/2" THICK 1.049" HOLE	0.070	0.420
MN	6	312502	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	222016	1"-8 X 4-3/4" A-325 BOLT WITH 1-3/4" THREAD	1.380	24.840
LCF	18	312222	1" GALVANIZED FLAT WASHER (F436)	0.140	2.520
LCL	18	312223	1" GALVANIZED LOCKWASHER	0.080	1.440
LCN	18	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	7.740

Total Wt 2375.91 lb [1078.68 kg]

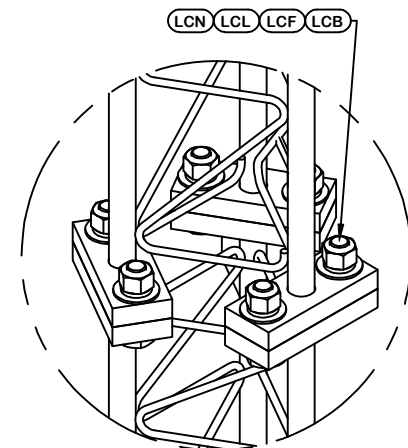
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DETAIL A
ANGLE INTERSECTION CONNECTION



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				

DRAWN BY CAM	APPROVED BY	DESIGNED BY NS	APPROVED BY J_S	RELEASE DATE 2/12/2024
-----------------	-------------	-------------------	--------------------	---------------------------

SITE
US-KY-5178 MATNEY RD, KY
VB BTS II, LLC
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DESCRIPTION
SECTION U-11.0 (200' - 220' ELEVATION)

ENG. FILE NO.
604200

valmont STRUCTURES

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

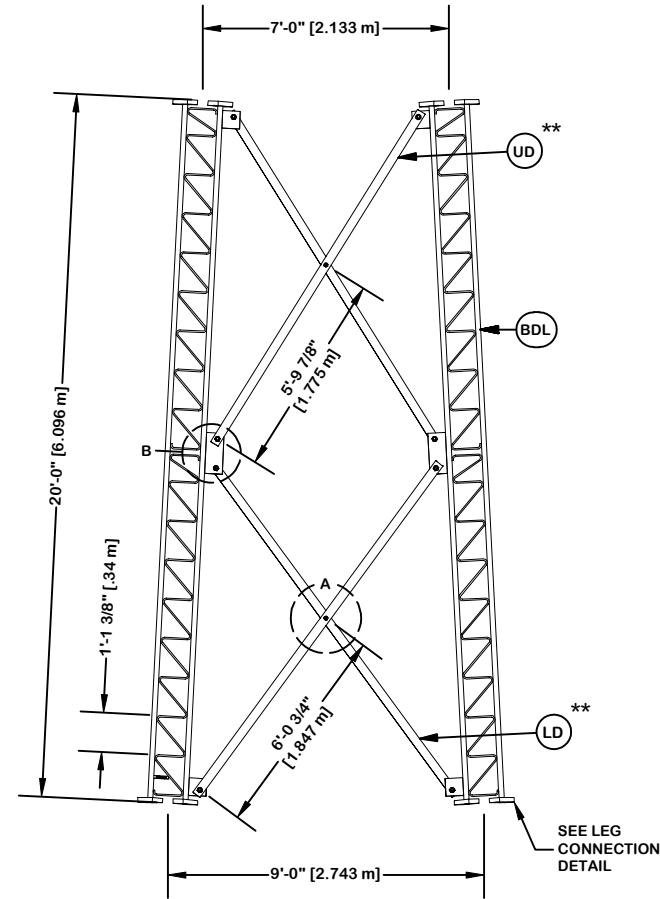
DWG. NO. 296780T

PAGE 13 OF 17

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

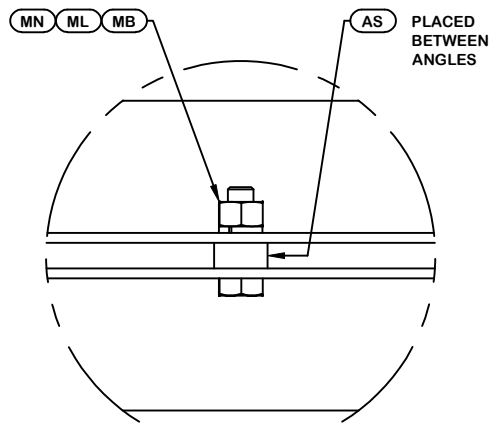
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THIS MAY BE ON THE OPPOSITE SIDE OF THE
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



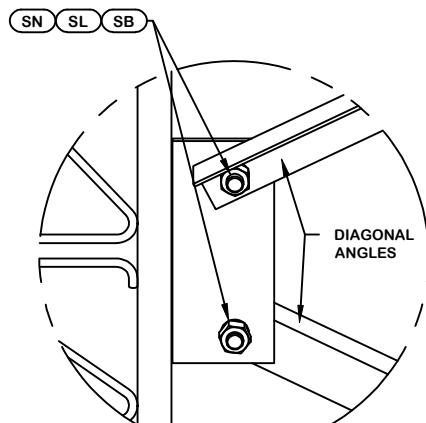
PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	194651	#12 LEG SECTION - 1-1/2" LEG - 1/2" BRACE - 1" BOL	602.830	1808.490
LD	6	126793	U-10 UPPER DIAGONAL - 2 1/2" x 2 1/2" x 3/16" ANGL	38.050	228.300
AS	6	104291	RING FILL SPACER 1/2" THICK 1.049" HOLE	0.070	0.420
MN	6	312502	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	126789	U-8 LOWER DIAGONAL - 2 1/2" x 2 1/2" x 3/16" ANGLE	36.220	217.320
LCB	18	222016	1"-8 X 4-3/4" A-325 BOLT WITH 1-3/4" THREAD	1.380	24.840
LCF	18	312222	1" GALVANIZED FLAT WASHER (F436)	0.140	2.520
LCL	18	312223	1" GALVANIZED LOCKWASHER	0.080	1.440
LCN	18	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	7.740

Total Wt 2327.61 lb [1056.76 kg]

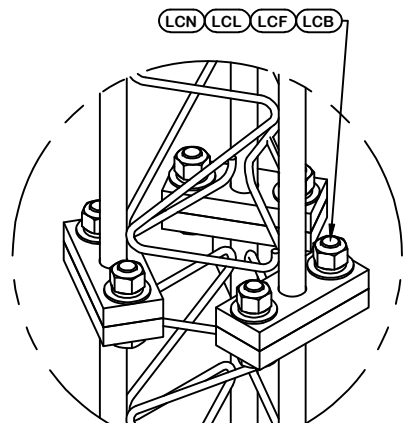
NOTE: THE VIEWS SHOWN BELOW ARE FOR PART IDENTIFICATION ONLY. THE ACTUAL PART STYLE MAY VARY FROM WHAT IS DEPICTED BELOW. PLEASE SEE ASSEMBLY INFORMATION IN THE UPPER LEFT CORNER FOR FURTHER INSTALLATION INSTRUCTIONS.



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				

DRAWN BY CAM	APPROVED BY	DESIGNED BY NS	APPROVED BY J_S	RELEASE DATE 2/12/2024
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SITE
US-KY-5178 MATNEY RD, KY
VB BTS II, LLC
H 31 X 300'

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PROPRIETARY NOTE:
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DESCRIPTION
SECTION U-9.0 (220' - 240' ELEVATION)

ENG. FILE NO.
604200

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

STRUCTURES

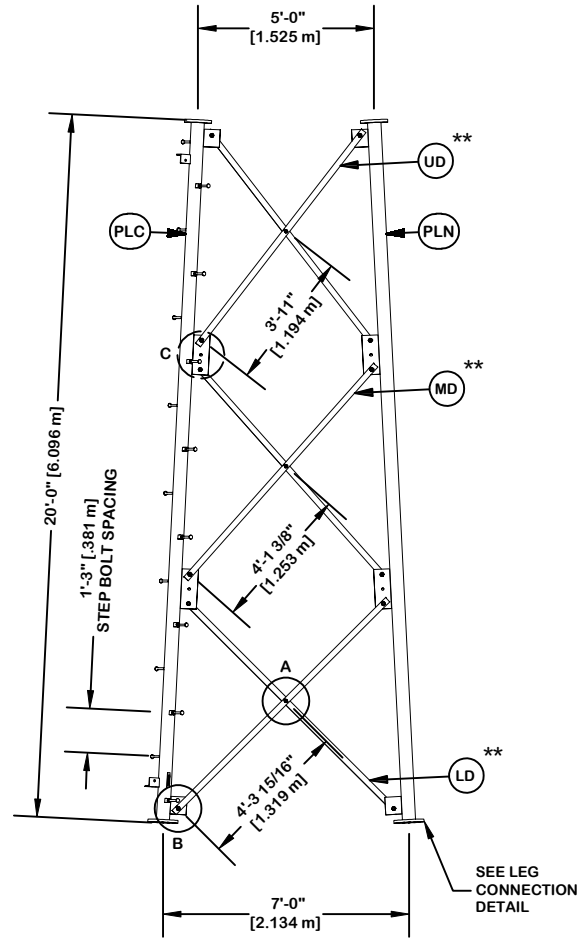
DWG. NO. 296780T

PAGE 14 OF 17

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

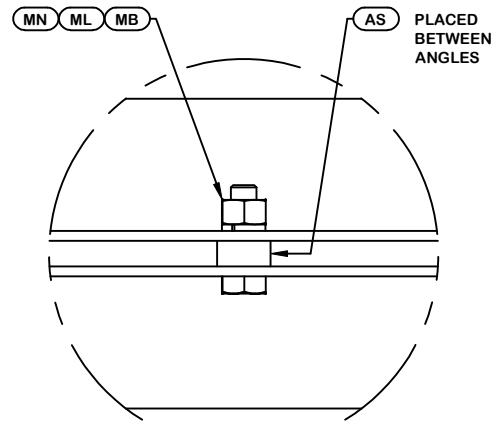
ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

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

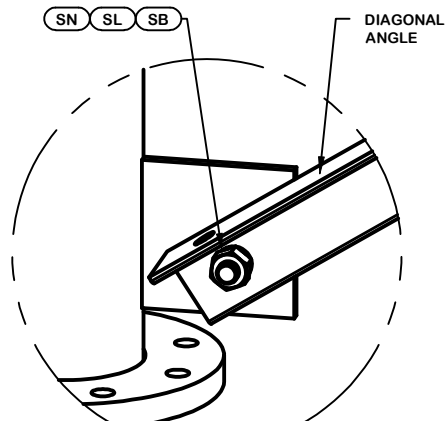


PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
PLC	1	229377	PIPE LEG SECTION 20'-0" (CLIMBING) 6" SCH. 40 V-SE	537.940	537.940
PLN	2	229378	PIPE LEG SECTION 20'-0" (NON-CLIMBING) 6" SCH. 40	534.580	1069.160
STP	16	285595	STEP BOLT ASSY 5/8"-11 X 7" W/(2)HEAVY HEX NUT	0.990	15.840
LD	6	284736	V-7 LOWER CLIPPED ANGLE - 2 1/2" x 2 1/2" x 3/16"	27.190	163.140
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	284735	V-7 MID ANGLE - 2 1/2" x 2 1/2" x 3/16" ANGLE (A57	25.880	155.280
UD	6	284734	V-7 UPPER ANGLE - 2 1/2" x 2 1/2" x 3/16" ANGLE (A	24.520	147.120
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				2144.46 lb [973.60 kg]	

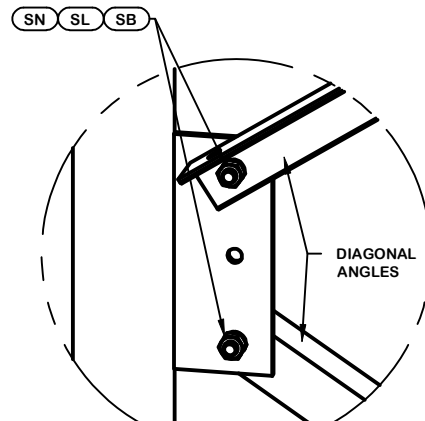
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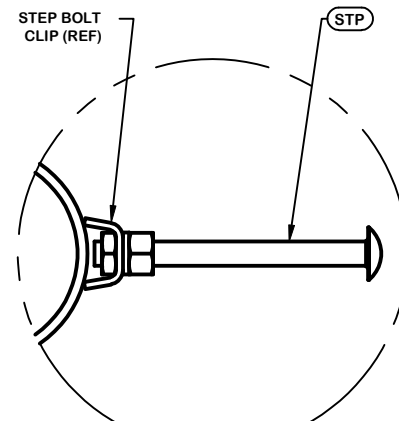
DETAIL A
ANGLE INTERSECTION CONNECTION



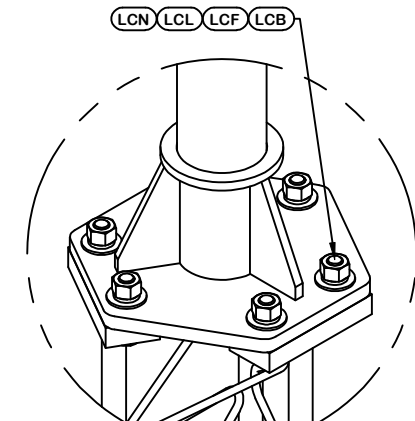
DETAIL B
END SIDE PLATE ANGLE CONNECTION



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				
DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
CAM		NS	J_S	2/12/2024

SITE	US-KY-5178 MATNEY RD, KY VB BTS II, LLC H 31 X 300'
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DESCRIPTION	SECTION V-7.0 (240' - 260' ELEVATION)
ENG. FILE NO.	604200

valmont

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

STRUCTURES

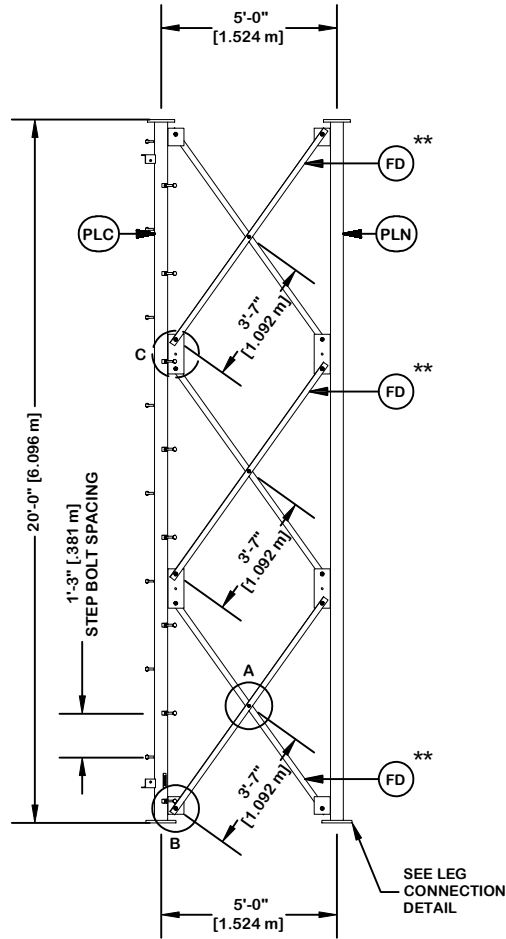
DWG. NO. 296780T

PAGE 15 OF 17

ORIENT LEGS WITH P/N STAMP
TOWARD BOTTOM OF SECTION

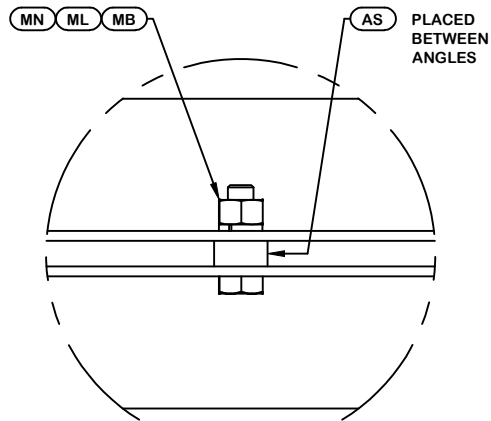
ORIENT ANGLES WITH STAMPED
END TOWARD TOP OF SECTION

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

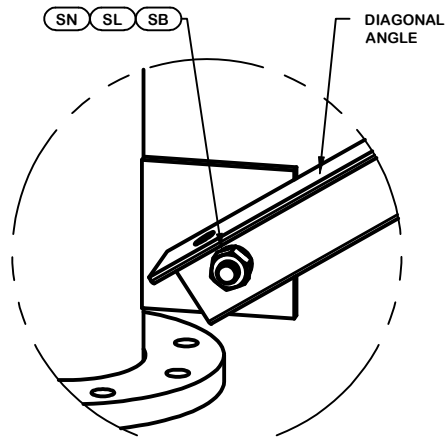


PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
PLC	1	295612	PIPE LEG SECTION 20'-0" (CLIMBING) 4" SCH. 80 PIPE	392.550	392.550
PLN	2	295613	PIPE LEG SECTION 20'-0" (NON-CLIMBING) 4" SCH. 80	385.380	770.760
STP	16	285595	STEP BOLT ASSY 5/8"-11 X 7" W/(2)HEAVY HEX NUT	0.990	15.840
FD	18	296270	V-5 DIAGONAL ANGLE - 2 1/2" x 2 1/2" x 1/4" ANGLE	31.880	573.840
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
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				1805.46 lb [819.69 kg]	

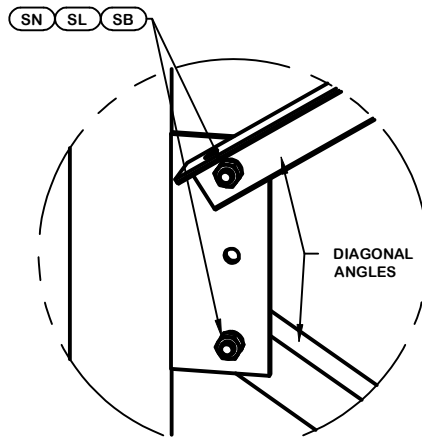
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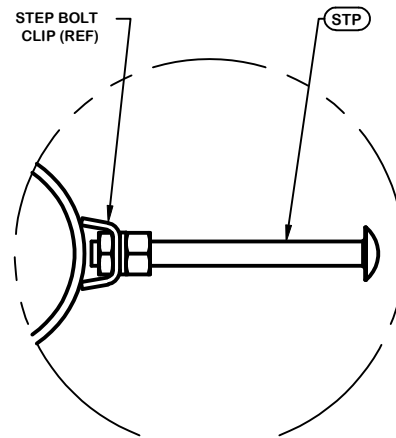
DETAIL A
ANGLE INTERSECTION CONNECTION



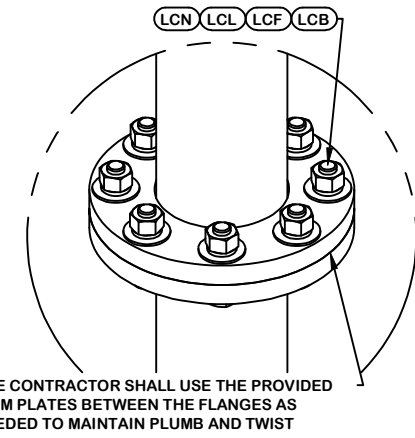
DETAIL B
END SIDE PLATE ANGLE CONNECTION



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				

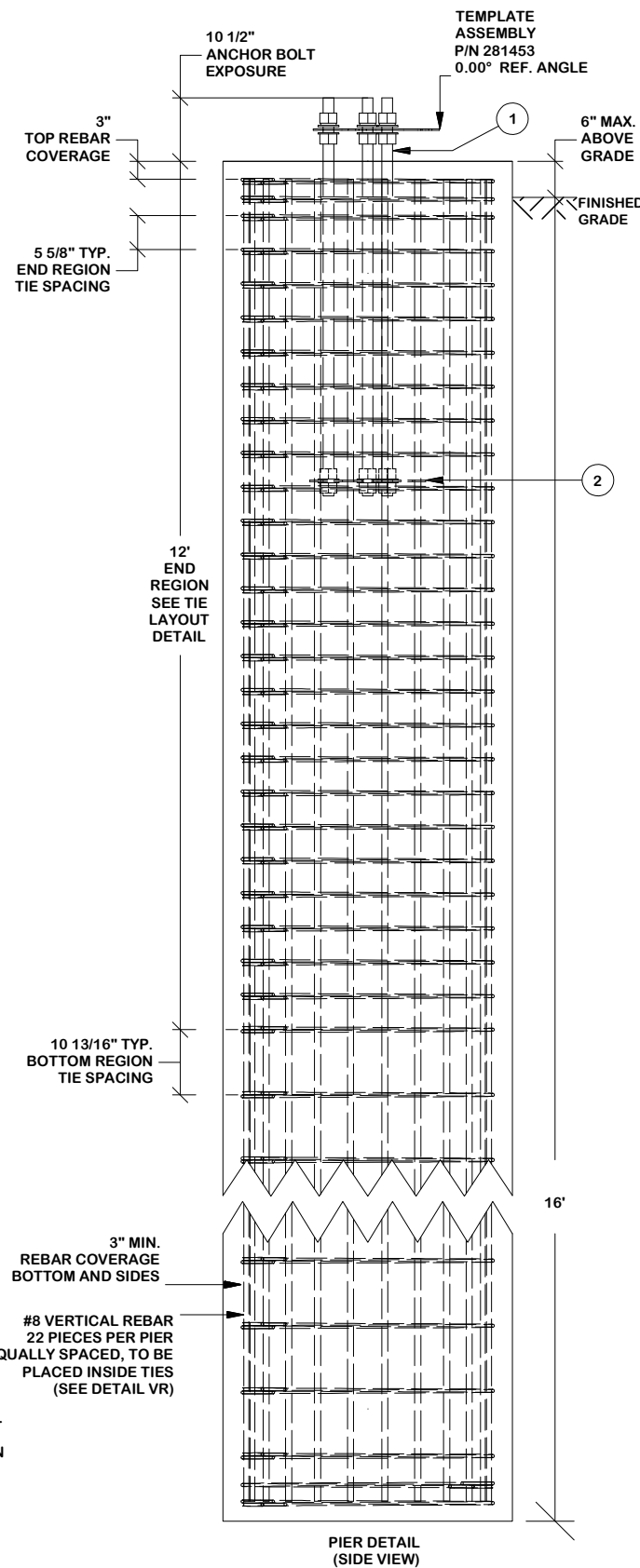
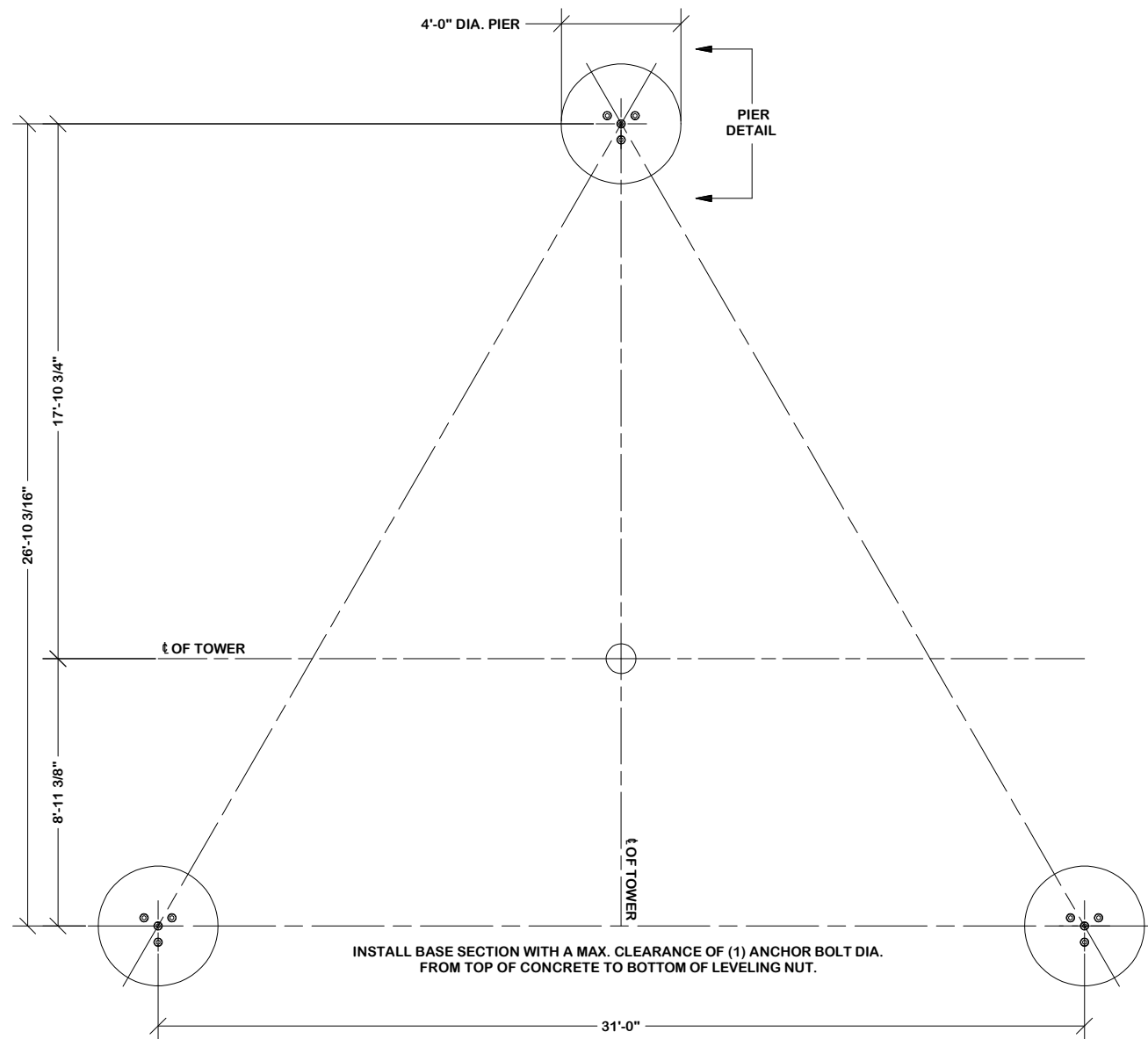
DRAWN BY CAM	APPROVED BY	DESIGNED BY NS	APPROVED BY J_S	RELEASE DATE 2/12/2024
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SITE US-KY-5178 MATNEY RD, KY VB BTS II, LLC H 31 X 300'
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PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION SECTION V-5.0 (260' - 280' ELEVATION)
ENG. FILE NO. 604200

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

DWG. NO. 296780T	PAGE 16 OF 17
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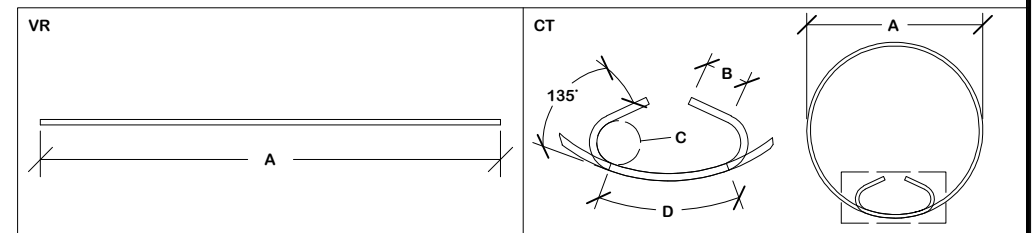


REBAR/ANCHOR STEEL TABLE				
ITEM	QTY	PART DESCRIPTION	UNIT WT.	NET WT.
1	12	1 3/4" DIA. x 66" LONG ANCHOR BOLT - 262357	55.43	665.17
2	3	EMBEDMENT PLATE - 281262	19.88	59.63

FOUNDATION NOTES:

- SOIL AS PER REPORT BY SOIL REPORT BY BUILDING & EARTH SCIENCES, INC., PROJECT #LV230026 DATED OCTOBER 27, 2023
- 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.
- A COLD JOINT IS PERMISSIBLE UPON CONSULTATION WITH VALMONT. ALL COLD JOINTS SHALL BE COATED WITH BONDING AGENTS PRIOR TO SECOND POUR.
- ALL REINFORCING STEEL TO BE FORMED INTO A CAGE PRIOR TO SETTING INTO POSITION IN THE EXCAVATED PIER.
- PERMANENT STEEL CASING SHALL NOT BE USED WITHOUT CONSENT FROM FOUNDATION DESIGNERS.
- BENDING, STRAIGHTENING OR REALIGNING (HOT OR COLD) OF THE ANCHOR BOLTS BY ANY METHOD IS PROHIBITED.
- CROWN TOP OF FOUNDATION FOR PROPER DRAINAGE.
- THE ON-SITE GEOTECHNICAL ENGINEER SHALL CONFIRM THAT THE INSITU SOIL STRENGTHS MEET OR EXCEED THOSE PARAMETERS GIVEN IN THE SOIL REPORT.
- SEE GEOTECHNICAL REPORT FOR ADDITIONAL CONSTRUCTION RECOMMENDATIONS, BACKFILL COMPACTION DETAIL, SUBGRADE PREPARATION, ETC.
- A TEMPORARY, FULL LENGTH STEEL CASING MAY BE REQUIRED DURING INSTALLATION.
- DRILLING SLURRY AND TREMIE METHODS OF CONCRETE PLACEMENT MAY BE REQUIRED DURING INSTALLATION.
- DIFFICULTIES DURING EXCAVATION MAY ARISE DUE TO THE PRESENCE OF BOULDERS, COBBLES, AND/OR SHALLOW BEDROCK. THE BOULDERS, COBBLES, AND/OR ROCK MUST BE REMOVED FROM THE EXCAVATION OR DRILLED THROUGH.
- THE FOUNDATION MUST BEAR ENTIRELY ON COMPETENT BEDROCK. THE FOUNDATION IS NOT TO BEAR ON ANY COMBINATION OF SOIL AND BEDROCK AS THIS MAY CAUSE EXCESSIVE DIFFERENTIAL SETTLEMENT.

REBAR DETAIL									
BAR	QTY	SIZE	UNBENT LENGTH	A	B	C DIAMETER	D	UNIT WT.	NET WT.
CT	99	#4	13'- 11/16"	3'-6"	3"	3"	12"	8.72	1177.70
VR	66	#8	15'-11 11/16"	15'-11 3/4"				42.75	2821.54



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

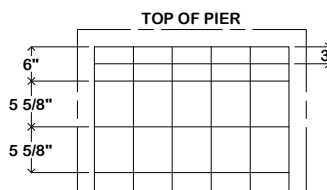
Rebar Class B Splice Length			
Bar Size	(in)	Bar Size	(in)
3	16	8	47
4	19	9	53
5	24	10	60
6	28	11	66
7	41		

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	7.7 CU.YD. PER PIER (23.0 CU.YD. TOTAL)
CONCRETE STRENGTH	4500 PSI @ 28 DAYS
CONCRETE DENSITY	150 PCF

TEMPLATE INSTALLATION NOTES:

- THE PROVIDED TEMPLATE ASSEMBLY MUST BE USED TO ENSURE ACCURATE ANCHOR BOLT LOCATION & INSTALLATION ANGLE (BASE LEG REFERENCE ANGLE 0.00°.)
- 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.
- THE ENTIRE TEMPLATE ASSEMBLY MUST BE LEVEL +/- 1".
- INSTALLED TEMPLATE CLEARANCE 2" MIN - 4" MAX T.O.C. TO BOTTOM OF LEVELING NUT.
- MUST USE TEMPLATE ASSEMBLY# 281453



CIRCULAR TIE LAYOUT

(NOT TO SCALE)
 PLACE ONE TIE 3" FROM THE END TIE AT THE TOP AND BOTTOM OF THE PIER.
 PLACE REMAINING TIES @ 5 5/8" NOMINAL SPACING WITHIN END REGION AND 10 13/16" 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
REVISION HISTORY				
DRAWN BY	APPROVED BY	DESIGNED BY	APPROVED BY	RELEASE DATE
CAM		NS	J_S	2/12/2024

SITE	US-KY-5178 MATNEY RD, KY VB BTS II, LLC H 31 X 300'
DESCRIPTION	DRILLED PIERS TOWER FOUNDATION #1
ENG. FILE NO.	604200
DWG. NO.	296780F
PAGE	1 OF 1

valmont

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

STRUCTURES

PROPRIETARY NOTE:
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SELF-SUPPORT TOWER FOUNDATION DESIGN SUMMARY

VB BTS II, LLC
H31' x 300' - US-KY-5178 Matney Rd, KY

H 31 300
A- 604200

V 2.9

Pier Dimensions	
Pier diameter, d_p :	4.00 ft
Depth, D :	16.0 ft
Ext. above grade, E :	0.50 ft
Bell diameter, b_d :	none ft
Volume, V_o :	7.68 cy / leg

Soil Information Per:
Soil Report by Building & Earth Sciences, Inc., Project #LV230026 dated October 27, 2023

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

Reinforcement Design	
Rebar m_c :	22 verticals
size, s_c :	8 <small>equally spaced in 3.5' cage</small>
Ties size, s_t :	4 default hook
m_t :	33 tie qty

Site Parameters	
Ultimate Bearing, B_c :	85.000 ksf
Ultimate P_p :	3.038 kcf
Ult. Skin Friction, SF :	4.95 ksf
Seismic Design Cat.:	C
Depth neglected, N :	4.00 ft
Neglect bottom, N_b :	none ft

Tower design conforms to the following:

* International Building Code (IBC)

* ANSI TIA-222-G

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

* Rebar quantities shown above are per pier

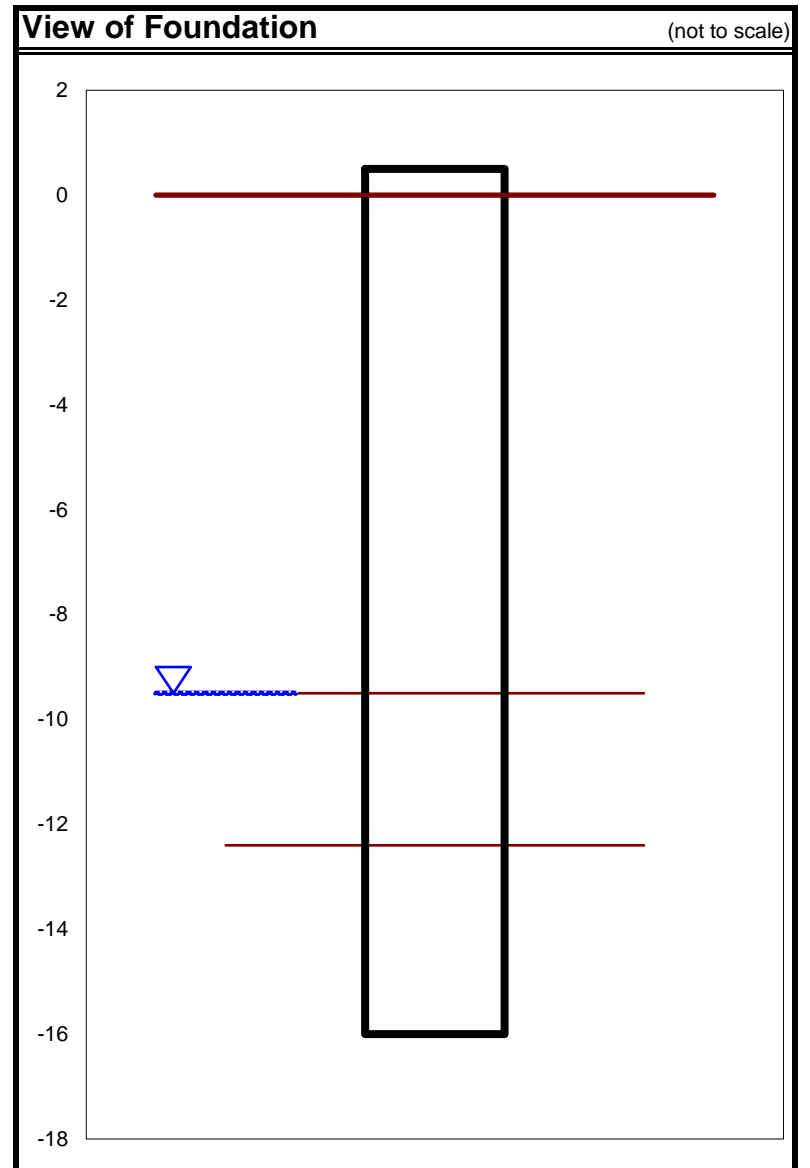
Additional Notes:

* No foundation modifications listed.

* See attached "Foundation Notes" for further information.

Anchor Bolts	
P/N:	262357
	(4) 1.75" Dia. x 66" Anchor Bolts Per Leg Grade 105

Foundation Loading		
Max Corner Reactions		
	stress ratio: 95.3%	mark up: 4.9%
Shear/Leg, S :	45.00 kips	x 1.049 = 47.21 kips
Moment/Leg, M :	0.00 ft-kips	x 1.049 = 0.00 ft-kips
Compression/Leg, C :	500.00 kips	x 1.049 = 524.50 kips
Uplift/Leg, U :	433.00 kips	x 1.049 = 454.22 kips



FOUNDATION NOTES

- 1 THE ON-SITE GEOTECHNICAL ENGINEER SHALL CONFIRM THAT THE INSITU SOIL STRENGTHS MEET OR EXCEED THOSE PARAMETERS GIVEN IN THE SOIL REPORT.
- 2 SEE GEOTECHNICAL REPORT FOR ADDITIONAL CONSTRUCTION RECOMMENDATIONS, BACKFILL COMPACTION DETAIL, SUBGRADE PREPARATION, ETC.
- 3 A TEMPORARY, FULL LENGTH STEEL CASING MAY BE REQUIRED DURING INSTALLATION.
- 4 DRILLING SLURRY AND TREMIE METHODS OF CONCRETE PLACEMENT MAY BE REQUIRED DURING INSTALLATION.
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- 6 THE FOUNDATION MUST BEAR ENTIRELY ON COMPETENT BEDROCK. THE FOUNDATION IS NOT TO BEAR ON ANY COMBINATION OF SOIL AND BEDROCK AS THIS MAY CAUSE EXCESSIVE DIFFERENTIAL SETTLEMENT.

SST DRILLED PIER FOUNDATION

VB BTS II, LLC
H31' x 300' - US-KY-5178 Matney Rd, KY

H 31.0 300
A- 604200

V 2.9

Design Summary	
Pier diameter:	4.00 ft
Design depth:	16.0 ft
Concrete volume:	7.68 cu.yd. each

Maximum Loading	
Max. Uplift, U_{max} :	454.22 kips/leg
Max. Comp., C_{max} :	560.78 kips/leg
Max. Shear, S_{max} :	47.21 kips/leg

Soil per: **Soil Report by Building & Earth Sciences, Inc., Project #LV230026 dated October 27, 2023**

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

Ultimate bearing: **85.000** ksf
 Ultimate S F (uplift): **4.950** ksf
 Ultimate S F (comp.): **3.375** ksf

Skin friction by: <input type="text" value="Given"/>										Uplift Resistance				Compression Resistance			
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)	Factored skin friction (ksf)	Factored friction force (kips)	Factored concrete weight (kips)	Uplift Resist. (kips)	Factored skin friction (ksf)	Factored friction force (kips)	Factored bearing capacity (ksf)	
1	0.00	4.00	4.00	4.00	1.000	0.000	110.0	0.440	0.220	0.000	0.00	6.36	6.36	0.000	0.00	-	
2	4.00	9.50	5.50	4.00	1.000	0.000	110.0	1.045	0.743	0.000	0.00	7.78	7.78	0.000	0.00	-	
3	9.50	12.40	2.90	4.00	3.768	0.000	47.6	1.183	1.114	0.000	0.00	2.39	2.39	0.000	0.00	-	
4	12.40	16.00	3.60	4.00	5.565	0.000	47.6	1.354	1.269	16.500	746.44	2.97	749.41	11.250	508.94	63.75	
Lateral pressure coefficient = 0.7										Total Uplift Capacity (kips) =			765.95	Total friction capacity (kips) =			508.94
													OK	Factored Tip capacity (kips) =			801.11
													Total Comp. Capacity (kips) =			1310.04	
										Weighted Average Skin Friction (ultimate) =			uplift 4.950 ksf				compression 3.375 ksf

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) **
22	8	0.79	5.00	17.38	9.05	3.038	8.23

* 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**

Moment Check (ft-k)	
Induced *	225.16
φ Capacity ***	643.86
	OK

Equivalent Weighted Average Cohesion

Layer	From (ft)	To (ft)	Layer Length (ft)	Neglect?	Cohesion (ksf)	Weighted Cohesion (ksf)
1	0.00	4.00	0.00	y	1.000	0.00
2	4.00	9.50	5.50	n	1.000	5.50
3	9.50	12.40	2.90	n	3.768	10.93
4	12.40	16.00	3.60	n	5.565	20.03
5	16.00	16.00	0.00	n	5.565	0.00
6	16.00	16.00	0.00	n	5.565	0.00
7	16.00	16.00	0.00	n	5.565	0.00
8	16.00	16.00	0.00	n	5.565	0.00
9	16.00	16.00	0.00	n	5.565	0.00
10	16.00	16.00	0.00	n	5.565	0.00
11	16.00	16.00	0.00	n	5.565	0.00
12	16.00	16.00	0.00	n	5.565	0.00
13	16.00	16.00	0.00	n	5.565	0.00
14	16.00	16.00	0.00	n	5.565	0.00
15	16.00	16.00	0.00	n	5.565	0.00
16	16.00	16.00	0.00	n	5.565	0.00
17	16.00	16.00	0.00	n	5.565	0.00
18	16.00	16.00	0.00	n	5.565	0.00
19	16.00	16.00	0.00	n	5.565	0.00
20	16.00	16.00	0.00	n	5.565	0.00
Bell	16.00	16.00	0.00	n	5.565	0.00
Total =			12.00		Total =	36.46

Weighted Average Equivalent Cohesion = 3.04 (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

Diameter of pier, d_i :	4.00	ft			
Extension above grade, E :	0.50	ft		S/leg (kips)	M/leg (k-ft)
Neglect at ground surface, N :	4.00	ft			
Ultimate Passive Pressure, P_p :	3.038	kcf			
Reduction Factor, ϕ :	0.75				
Nominal Passive Pressure ($P_p * \phi$), P_{pa} :	2.279	kcf			
# of pier dia. P_p acts over, N_d :	3.00				

LC	47.21	0
----	--------------	----------

Depth to Max. M, F (ft) $F = S / ((N_d / 3) * 9 * P_p * d_i)$

LC
0.43

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
3.29

Minimum length of pier, L (ft) $L = E + N + F + G_a$

LC
8.23

Minimum length req'd, L: **8.23** 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
225.16

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

Loading	
(negative for compression)	
Axial load =	454.22 kips

Foundation	
<i>Concrete</i>	
Pier diameter =	4.00 ft
Pier area =	1809.6 in ²
<i>Reinforcement</i>	
Clear cover =	3.00 in
Cage diameter =	3.33 ft
Bar size =	8
Bar diameter =	1.000 in
Bar area =	0.785 in ²
Number of bars =	22

Material Strengths	
Concrete compressive strength =	4500 psi
Reinforcement yield strength =	60000 psi
Modulus of elasticity =	29000 ksi
Reinforcement yield strain =	0.00207
Limiting compressive strain =	0.003

(per ACI 10.3.5 - OK)

814.30

Seismic	
SDC=	C
Are hooks required?	no

Minimum Area of Steel

Required area of steel = 9.05 in²
 Actual area of steel = 17.28 in² **OK**
 Bar spacing = 5.00 in

Axial Loading

Load factor = 1.00
 Reduction factor = 0.65575 (per ACI 9.3.1 & 2)
 Factored axial load = 454.22 kips

Neutral Axis

Distance from extreme edge to neutral axis = 5.70 in
 Equivalent compression zone factor = 0.825 (per ACI 10.2.7.3)
 Distance from extreme edge to
 Equivalent compression zone factor = 4.70 in
 Distance from centroid to neutral axis = 18.30 in

Compression Zone

Area of steel in compression zone = 1.57 in²
 Angle from centroid of pier to intersection of
 equivalent compression zone and edge of pier = 36.47 deg
 Area of concrete in compression = 91.28 in²
 Force in concrete = 0.85 * f_c * (Acc - steel in comp zone) = 343.15 kips (per ACI 10.3.6.2)
 Total reinforcement forces = -797.37 kips
 Factored axial load = 454.22 kips
 Force in concrete = -343.15 kips
 Sum of the forces in concrete = 0.00 kips **OK**

Maximum Moment

First moment of the concrete area in compression about the centroid = 1934.97 in³
 Distance between centroid of concrete in compression and centroid of pier = 21.20 in
 Moment of concrete in compression = 7273.90 in-kips
 Total reinforcement moment = 4508.52 in-kips
 Nominal moment strength of column = 11782.42 in-kips
 Factored moment strength of column = 7726.29 in-kips 643.86 ft-kips

Maximum allowable moment of the pier = 643.86 ft-kips
--

Individual Bars

Bar #	Angle from first bar (deg)	Distance to centroid (in)	Distance to neutral axis (in)	Distance to equivalent comp. zone (in)	Strain	Area of steel in compression (in ²)	Axial force (kips)	Moment (in-kips)
1	0.00	0.00	-18.30	-19.30	-0.00964	0.00	-47.12	0.00
2	16.36	5.63	-12.67	-13.67	-0.00667	0.00	-47.12	-265.53
3	32.73	10.81	-7.49	-8.49	-0.00395	0.00	-47.12	-509.54
4	49.09	15.11	-3.19	-4.19	-0.00168	0.00	-38.26	-578.27
5	65.45	18.19	-0.11	-1.11	-5.9E-05	0.00	-1.34	-24.33
6	81.82	19.80	1.49	0.50	0.00079	0.79	17.90	354.40
7	98.18	19.80	1.49	0.50	0.00079	0.79	17.90	354.40
8	114.55	18.19	-0.11	-1.11	-5.9E-05	0.00	-1.34	-24.33
9	130.91	15.11	-3.19	-4.19	-0.00168	0.00	-38.26	-578.27
10	147.27	10.81	-7.49	-8.49	-0.00395	0.00	-47.12	-509.54
11	163.64	5.63	-12.67	-13.67	-0.00667	0.00	-47.12	-265.53
12	180.00	0.00	-18.30	-19.30	-0.00964	0.00	-47.12	0.00
13	196.36	-5.63	-23.94	-24.94	-0.01261	0.00	-47.12	265.53
14	212.73	-10.81	-29.12	-30.11	-0.01534	0.00	-47.12	509.54
15	229.09	-15.11	-33.42	-34.42	-0.0176	0.00	-47.12	712.28
16	245.45	-18.19	-36.50	-37.49	-0.01922	0.00	-47.12	857.31
17	261.82	-19.80	-38.10	-39.10	-0.02007	0.00	-47.12	932.88
18	278.18	-19.80	-38.10	-39.10	-0.02007	0.00	-47.12	932.88
19	294.55	-18.19	-36.50	-37.49	-0.01922	0.00	-47.12	857.31
20	310.91	-15.11	-33.42	-34.42	-0.0176	0.00	-47.12	712.28
21	327.27	-10.81	-29.12	-30.11	-0.01534	0.00	-47.12	509.54
22	343.64	-5.63	-23.94	-24.94	-0.01261	0.00	-47.12	265.53

DEVELOPMENT LENGTH CHECK OF PIER REINFORCEMENT

Foundation:	Pier diameter = 4.0 ft	Cover between side of pier and cage = 3.00 in.
	Cage diameter = 3.5 ft	Cover between top of pier and cage = 3.00 in.
	Rebar size = 8	Compressive strength of concrete = 4500 psi
	Number of bars = 22	Rebar yield strength = 60000 psi
	Clear spacing = 5.00 in.	
	Are there hooks? n	
	Check Compression? n	

Anchor Steel:	Part number: 262357	Actual Bending Moment = 225.16 ft-kips
	Embedment length = 55.5 in.	Allowable Bending Moment = 643.86 ft-kips
	Bolt Diameter = 1.75	Excess Reinforcement Ratio = 0.350

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) = 12.00 in.	(reduced)
Available development length = 38.625 in.	

OK

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

CHECK EMBEDMENT PLATE CLEARANCE IN THE PIER

Foundation:	Pier diameter = 4.0 ft	Cover between side of pier and cage = 3.00 in.
	Cage diameter = 3.5 ft	Minimum cover between A/S and cage = 3.00 in.

Anchor Steel:	Part number: 262357	Angle of anchor steel in foundation = 0 degrees
	Embedment length = 55.5 in.	

Anchor Plate: Part number: 281262
Largest plate width = 19.25 in.
Bolt Diameter = 1.75 in.

Minimum cage diameter = 25.25 in.	
Actual cage diameter = 42 in.	

OK

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



REPORT OF SUBSURFACE EXPLORATION
AND GEOTECHNICAL EVALUATION
MATNEY ROAD TOWER
GREENSBURG, KENTUCKY
BUILDING & EARTH PROJECT NO.: **LV230026**

PREPARED FOR:
GSS Midwest, Inc.

OCTOBER 27, 2023



Geotechnical, Environmental, and Materials Engineers



Geotechnical, Environmental, and Materials Engineers

13159 Middletown Industrial Blvd., Suite D
Louisville, Kentucky 40223
Ph: (502) 267-1710
www.BuildingAndEarth.com

October 27, 2023

GSS Midwest, Inc.
1054 Texan Trail, Suite 300
Grapevine, Texas 76051
859-389-9293 (O)

Attention: Ms. Jessica Norrid
Project Manager

Subject: Report of Subsurface Exploration and Geotechnical Evaluation
Matney Road Tower
Greensburg, Green County, Kentucky
Building & Earth Project No: LV230026

Ms. Norrid:

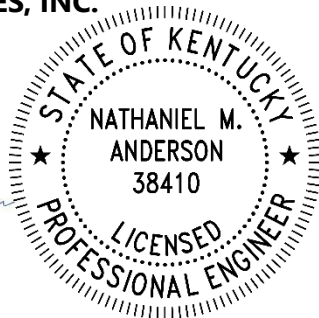
Building & Earth Sciences, Inc. (Building & Earth) has completed an authorized subsurface exploration and geotechnical engineering evaluation in support of the Matney Road Tower planned for a site in Green County, Kentucky.


The purpose of this exploration and evaluation has been to assess general subsurface conditions at the site and to address applicable geotechnical aspects of the project. Recommendations in this report are based on a physical reconnaissance of the site and observation and classification of subsurface samples recovered from 2 soil test borings drilled at the site. Confirmation of anticipated subsurface conditions during construction is an essential part of geotechnical services. Building & Earth appreciates the opportunity to provide consultation services in support of this project. If there are any questions regarding the information in this report, or if additional information is required, please call.

Respectfully Submitted,

BUILDING & EARTH SCIENCES, INC.


Nathan M. Anderson, P.E., S.I.
Operations Manager




Malcolm D. Barrett, P.E., P.G.
East Region Chief Engineer

Birmingham, AL • Auburn, AL • Huntsville, AL • Montgomery, AL
Tuscaloosa, AL • Columbus, GA • Louisville, KY • Raleigh, NC • Dunn, NC
Jacksonville, NC • Springdale, AR • Little Rock, AR • Ft. Smith, AR • Tulsa, OK
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APPENDIX

1.0 PROJECT & SITE DESCRIPTION

Proposed for construction is a new, free-standing communications tower with ancillary facilities planned for a site in Green County, Kentucky. The site is situated on the southeast side of Edmonson Road (U.S. Route 68 / State Route 70) approximately 1/3rd mile southwest of the US Route 68 – Kentucky Route 487 intersection in Green County, Kentucky. The tower site is described as a 100-ft. by 100-ft. lease area within an existing agricultural field. Site access will be via U.S. Route 68. Photographs taken during the site reconnaissance follow.



Figure 1: Photographs Depicting Site Conditions at Time of Exploration

The proposed tower will be supported on three legs; foundation loading is not available at this writing. In addition to the tower, ancillary facilities will include:

- A utility H-Frame, and
- An 11'-6" X 19'-6" Concrete Utility Pad.

Notes:

- 1. When foundation configuration and loading information becomes available, Building & Earth Sciences should review the configuration and loading information and either confirm our recommendations are appropriate or revise our recommendations to meet loading and configuration requirements.***
- 2. When a site grading plan is finalized, Building & Earth should review the plan and to identify any adverse effects the grading may have on our recommendations.***

2.0 SCOPE OF SERVICES

Services reported herein have been performed in general conformance to Building & Earth proposal LV25038 dated July 20, 2023. Authorization was provided by GSS via signed contract. Field reconnaissance and subsurface exploration was conducted on October 11, 2023. Occasionally some modification to work scopes appearing in our proposals is required to provide for proper evaluation of encountered subsurface conditions. Two rock unconfined compressive strength tests were added to aid in providing L-Pile parameters; otherwise, no significant modification to the scope proposed for this work was required.

The purpose of the geotechnical exploration has been to characterize subsurface conditions at the site and to prepare geotechnical engineering recommendations for use in project design and construction. Subsurface exploration for this project has included 2 engineering test borings drilled using an Acker Rebel drill fitted with an automatic hammer for performing Standard Penetration Tests (SPT) to help evaluate the relative soil strength. Rock sampling was performed using NQ sized double barrel core equipment, returning approximately 2-1/8-inch rock core samples.

Boring sites were located in the field by our representatives using a GPS system in coordination with client provided mapping and surveys. Boring positions appearing on the attached Boring Location Plan should therefore be considered approximate.

Soil and rock samples recovered from the test borings were visually classified and representative samples were selected by the project engineer for laboratory analysis. The laboratory analyses consisted of:

Test	ASTM	No. of Tests
Natural Moisture Content	D2216	10
Atterberg Limits	D4318	1
Particle Size Distribution of Soils (Gradation)	D6913	1
Rock Core Unconfined Compressive Strength	D2938	2

Table 1: Scope of Laboratory Tests

Results of the laboratory analyses are presented on Boring Logs and in tabular form, both in the report Appendix. Descriptions of laboratory tests performed for this work also appear in the Appendix.

Information gathered from the exploration was used to prepare geotechnical engineering recommendations for use in foundation design and project design and construction. The information was also evaluated to identify any special subgrade preparation procedures that may be required during the project earthworks phase. Results of the work presented in this report provide or address the following:

- Site geology and its impact on site development.
- Summary of existing surface conditions.
- A description of the subsurface and groundwater conditions encountered at the soil test boring locations. Long-term water level monitoring is not included in this work.
- Presentation of laboratory test results.
- Recommendations to be used for foundation design, including L-Pile parameters to be used for lateral design.

3.0 GEOTECHNICAL SITE CHARACTERIZATION

The following paragraphs are intended to provide a general characterization of the site from a geotechnical engineering perspective. It is not the intention of this report to address every potential geotechnical matter that may arise, nor to provide every possible interpretation of conditions encountered. The following condition descriptions and subsequent geotechnical recommendations are based, in part, on the assumption significant changes in subsurface conditions do not occur between boreholes. However, anomalous conditions can occur due to variations in existing fill that may be present at the site, or due to natural variation in site geologic conditions. It will be necessary to confirm conditions encountered during construction are as those reported herein, and that recommendations reported herein are appropriate to actual encountered conditions.

3.1 GEOLOGY

USGS mapping reports the general area around the tower site is underlain by rocks associated with Mississippian aged St. Louis Limestone. Rocks of this formation are generally described as medium gray, fine grained, and medium to thick bedded. Shale partings and clayey limestone are reported. Ground surface contours in the area indicate significant karst development, for which Mississippian limestone in Kentucky is known. (The Mammoth Cave system occurs in the St. Geneveive limestone that, where present, occurs above the St. Louis. The St. Geneveive formation is absent from this area). While karst conditions are prevalent in the area, evidence of karst conditions are not in evidence at the tower site.

3.2 EXISTING SURFACE CONDITIONS

Ground surface conditions at the tower site are described as fairly level and well drained, with drainage generally in a southerly direction to Greasy Creek. The site and surrounding area are generally utilized for agricultural row crop planting; ground conditions are typical of this use.

3.3 SUBSURFACE CONDITIONS

A generalized stratification summary, presented below, has been prepared using data from the soil test borings. The stratification depicts the general subsurface conditions and strata encountered.

Stratum No.	Typical Thickness	Description	Consistency
1	6 – 7 in.	Topsoil	N/A
2	9.5 ft.	Lean Clay with Sand (CL) – Residual	Medium Stiff to Very Stiff
3	19-ft. +	Limestone Rock	Hard

Table 2: Stratification Summary

A subsurface profile showing strata thickness and relative (vertical) position has been prepared using boring log data. The profile appears in the report appendix. For specific details on the information obtained from individual test borings, please refer to the appended Boring Logs. Ground surface elevations at the boring sites were provided by the Client via topographic survey.

3.3.1 TOPSOIL

Topsoil was observed in both test borings extending 6 to 7 inches below the surface. This material was visually classified as topsoil, and no testing (organic material and humus content) has been performed to confirm the material meets definitional properties of topsoil.

3.3.2 LEAN CLAY WITH SAND (CL)

Residual weathered in-place soils classified *Lean Clay with Sand* were observed extending from just below the topsoil to the rock line at 9.7 to 10.4-ft. (elevations 775.1 to 775.3-ft.). This soil material is further described as medium stiff to very stiff, yellow, brown, and gray, and moist. Standard penetration tests in the stratum range from 6 to 13 blows per foot (N_{60} 8 to 17), with values in the range 9 to 11 (N_{60} 12 to 14) considered representative.

Atterberg limits testing indicates a 30 liquid limit, a 16 plastic limit, and a 14 plasticity index. Sieve and hydrometer analyses indicate the soil has an 84.3 percent sand fines (silt and clay) content.

3.3.3 LIMESTONE ROCK

Limestone bedrock was encountered below the clay material. The rock was sampled in B-02 via two 5-ft. core runs. The rock material is generally described as limestone, fresh to slightly weathered, thick to very thick bedded, very hard. Core sample measurements and descriptions follow:

Run Interval	Recovery (%)	RQD (%)	Rock Mass Rating	Rock Mass Quality	q _u (psi)
775 – 770 ft.	73	59	63 (Good Rock)	Fair	11,130
770 – 765 ft.	95	90	67 (Good Rock)	Good	7,535

Table 3: Boring B-02 Rock Core Evaluation

3.3.4 AUGER REFUSAL

Auger refusal is the drilling depth at which a borehole can no longer be advanced using soil drilling procedures. Auger refusal can occur on hard soil, boulders, buried debris or bedrock. Coring is required to sample materials below auger refusal. Refusal occurred in both test borings at depths and approximate elevations tabulated below. Coring indicates refusal occurred on hard, naturally occurring rock.

Boring No.	Depth (ft)	Elevation (ft)	Boring No.	Depth (ft)	Elevation (ft)
B-01	8.7	775.3	B-02	10.4	775.1

Table 4: Auger Refusal Depths and Elevations

3.3.5 GROUNDWATER

Free groundwater was observed in both test borings just above the rock line. The water levels reported are accurate only for the time and date that the borings were drilled. Long term monitoring of the boreholes was not included as part of our subsurface exploration. The borings were backfilled the same day that they were drilled. Groundwater data is tabulated below:

Boring No.	Depth (ft)	Elevation (ft)	Boring No.	Depth (ft)	Elevation (ft)
B-01	9.5	775.5	B-02	9.9	775.6

Table 5: Groundwater Information

4.0 SITE DEVELOPMENT CONSIDERATIONS

Grading and foundation plans were not available for use in preparing this report. The fairly level nature of the site suggests only minimal grading (cuts and fills less than about 1-ft.) will be required during site preparation.

Foundations will be required to support the proposed H-Frame and to support the tower. For purposes of this reporting, Building & Earth assumes the following:

- The H-Frame will be supported on conventional, soil bearing spread foundations.
- H-Frame foundation pressures will be minimal (no more than about 2,000 psf.).
- H-Frame foundations will be designed with sufficient mass to resist uplift loads.
- Tower foundations will be rock bearing drilled piers.
- Tower foundations will be designed with sufficient mass to resist uplift loads.
- Utility pad loading is not expected to exceed 200 psf.

Geotechnical recommendations provided in this report have been prepared, in part, using these foundation types and loading assumptions. ***If different foundation types and loading are required, Building & Earth should review the proposed foundation types, loading requirements and installation configuration and revise our recommendations as appropriate.***

4.1 INITIAL SITE PREPARATION

Initial site preparation should include removal of all trees, roots, topsoil, and deleterious materials from areas to receive grade-raise fill and infrastructure. Approximately 6 to 7 inches of topsoil were observed. Reported topsoil thickness is accurate only at the specific boring locations but can be extrapolated between boreholes for initial cost estimating purposes. The geotechnical engineer or a qualified agent of the engineer should observe stripping and grubbing operations to confirm all unsuitable materials are removed from construction areas.

Materials disturbed during clearing operations should be stabilized in place or, if necessary, undercut to undisturbed materials and backfilled with properly compacted, approved structural fill. During site preparation, the Contractor should identify borrow source materials that will be used as structural fill and provide samples to the testing laboratory so that conformance to the Structural Fill requirements can be confirmed and so that laboratory moisture density (Proctor) testing can be completed prior to commencement of project earthworks operations.

4.2 SUBGRADE EVALUATION

We recommend that the project geotechnical engineer or a qualified agent of the engineer evaluate the subgrade after the site is prepared. Some unsuitable or unstable areas may be present in unexplored areas of the site. All areas that will require fill or that will support structures should be carefully proof-rolled with a heavy (40,000 lb. minimum), rubber-tired vehicle at the following times.

- After an area has been stripped, and undercut if required, prior to the placement of any fill.
- After grading an area to the finished subgrade elevation in a building or pavement area.
- After areas have been exposed to any precipitation, and/or have been exposed for more than 48 hours.

Some instability may exist during construction, depending on climatic and other factors immediately preceding and during construction. If any soft or otherwise unsuitable soils are identified during the proof-rolling process, they must be undercut or stabilized prior to fill placement, pavement construction, or floor slab construction. All unsuitable material identified during the construction shall be removed and replaced in accordance with the Structural Fill section of this report.

4.3 MOISTURE SENSITIVE SOILS

Moisture sensitive lean clay (CL) soils are present across the site. Lean clay soils will degrade if allowed to become saturated. Therefore, not allowing water to pond by maintaining positive drainage and temporary dewatering methods (if required) is important to help avoid degradation and softening of the soils.

The contractor should anticipate some difficulty during the earthwork phase of this project if moisture levels are moderate to high during construction. Increased moisture levels will soften the subgrade and the soils may become unstable under the influence of construction traffic. Accordingly, construction during wet weather conditions should be avoided, as this could result in soft and unstable soil conditions that would require ground modification, such as in place stabilization or undercutting.

4.4 UNDERCUTTING OF LOW CONSISTENCY SOILS

Low consistency soils ($N \leq 6$) may be encountered during site preparation efforts. Where encountered, low consistency soils should be undercut to a stable, suitable subgrade. The undercutting should extend laterally 5-ft. outside structure footprints and 3-ft. beyond traffic lanes.

It may be possible to stabilize any soft soils in place. Typical stabilization methods vary widely and may include modification of the soft soils with the addition of shot rock or No. 2 stone, as well as utilization of geogrids and graded aggregates. The selection of stabilization methods is beyond the scope of this investigation but can be provided by Building & Earth as an additional service if desired. Any undercutting or stabilization should be conducted under the observation of the geotechnical engineer or a qualified agent of the engineer.

Where undercutting is performed, undercut soils should be replaced with structural fill. Clean, non-organic, non-saturated soils taken from the undercut area can be re-used as structural fill. The placement procedure, compaction and composition of the structural fill must meet the requirements of the Structural Fill section of this report.

The undercutting should be conducted under the observation of the geotechnical engineer or a qualified agent of the engineer. *Weather conditions at the time of construction will affect the undercutting depths and quantities.* Some instability may exist during construction, depending on climatic and other factors immediately preceding and during construction.

4.5 STRUCTURAL FILL

Recommendations for structural fill follow:

Soil Type	USCS Classification	Property	Placement Location
Sand and Gravel	GW, GP, GM, SW, SP, SM or combinations	Maximum 2" particle size	All areas where fill can be confined against raveling.
Clay	CL, SC, GC	$LL < 50, PI < 25, \gamma_d > 100$ pcf	All areas.
Clay	CH	$LL > 50, PI > 25, \gamma_d > 100$ pcf	Not recommended for use.
Silt	ML, MH	N/A	Not recommended for use.
On-site soils	CL	As listed above	All areas.

Table 6: Structural Fill Recommendations

Notes:

1. LL indicates the soil Liquid Limit; PI indicates the soil Plasticity Index; γ_d indicates the maximum dry density as defined by the density standard outlined in the table below.
2. Laboratory testing of the soils proposed for fill must be performed in order to verify their conformance with the above recommendations.
3. Any fill to be placed at the site should be reviewed by the geotechnical engineer.

Structural fill placement recommendations follow:

Specification	Recommendation
Lift Thickness	Maximum 8-in. loose, maximum 6-in. compacted
Density	95-percent as determined by ASTM D698 (standard Proctor)
Moisture	+/- 2-percent as determined by ASTM D698 (standard Proctor)
Density Testing Frequency	Minimum 1-test per 2,500 sq. ft.; minimum 2-tests per lift.

Table 7: Structural Fill Placement Recommendations

4.6 EXCAVATION CONSIDERATIONS

All excavations performed at the site should follow OSHA guidelines for temporary excavations. Excavated soils should be stockpiled according to OSHA regulations to limit the potential cave-in of soils.

4.6.1 GROUNDWATER

Groundwater was encountered at the rock line in both test borings (see Table 5, above). Groundwater could be encountered during construction, particularly during undercutting and foundation excavation operations. It should be noted that fluctuations in the water level could occur due to seasonal variations in rainfall. The contractor must be prepared to remove groundwater seepage from excavations if encountered during construction. Excavations extending below groundwater levels will require dewatering systems (such as well points, sump pumps or trench drains). The contractor should evaluate the most economical and practical dewatering method.

4.7 UTILITY TRENCH BACKFILL

All utility trenches must be backfilled and compacted in the manner specified above for structural fill. It may be necessary to reduce the lift thickness to 4 to 6 inches to achieve compaction using hand-operated equipment.

4.8 LANDSCAPING AND DRAINAGE CONSIDERATIONS

The potential for soil moisture fluctuations within building areas and pavement subgrades should be reduced to lessen the potential of subgrade movement. Site grading should include positive drainage away from buildings and pavements. Excessive irrigation of landscaping poses a risk of saturating and softening soils below shallow footings and pavements, which could result in settlement of footings and premature failure of pavements.

4.9 WET WEATHER CONSTRUCTION

Excessive movement of construction equipment across the site during wet weather may result in ruts, which will collect rainwater, prolonging the time required to dry the subgrade soils.

During rainy periods, additional effort will be required to properly prepare the site and establish/maintain an acceptable subgrade. The difficulty will increase in areas where clay or silty soils are exposed at the subgrade elevation. Grading contractors typically postpone grading operations during wet weather to wait for conditions that are more favorable. Contractors can typically disk or aerate the upper soils to promote drying during intermittent periods of favorable weather. When deadlines restrict postponement of grading operations, additional measures such as undercutting and replacing saturated soils or stabilization can be utilized to facilitate placement of additional fill material.

5.0 FOUNDATION RECOMMENDATIONS

Foundation loads and configurations were not available for use in preparing this report. General recommendations for use in foundation design have been provided for the foundation assumptions presented above. ***If these assumptions concerning structural loading and configuration are incorrect, our office should be contacted, such that our recommendations can be reviewed and revised accordingly.***

SHALLOW FOUNDATIONS – H-FRAME STRUCTURE

Based on the conditions encountered during our field investigation and after our site preparation and grading recommendations are implemented, the proposed H-Frame structure can be supported on conventional shallow foundations designed using a 2,500 psf allowable soil bearing pressure.

Even though computed footing dimensions may be less, column footings should be at least 24 inches wide and strip footings should be at least 18 inches wide. These dimensions facilitate hand cleaning of footing subgrades disturbed by the excavation

process and the placement of reinforcing steel. They also reduce the potential for localized punching shear failure. **All footings should bear at least 24 inches below the surface for frost protection.** Total settlement of footings designed and constructed as recommended above should be 1 inch or less.

DRILLED PIER TOWER FOUNDATIONS

Building & Earth has been requested to provide parameters for use in drilled pier L-Pile analysis. For analysis purposes, the rock is described as “massive” or “strong” as described in L-Pile literature. L-Pile parameters are tabulated below.

Strata	k_c	k_s	ϵ_{50}	E_m
Clay soil	400 pci	1000 pci	0.005	--
Rock	--	--	0.0005	4 X 10 ⁶ psi

Table 8: L-Pile Parameters for Drilled Pier Design

Assuming concrete compressive strength is less than rock strengths tabulated above, drilled pier end bearing and skin friction capacities are a function of concrete compressive strength. Recommended allowable shaft end bearing capacity for shafts bearing on competent rock are tabulated below.

Additional axial capacity and uplift resistance can be developed by extending drilled shafts below the rock line. Where skin friction is developed, it is recommended the shafts be extended below weathered rock or to a minimum depth 18-inches below the rock line, whichever is greater. Rock skin friction development should be calculated for the depth penetrated below this level. Where voids or clay seams occur in the skin friction zone, this condition should be evaluated by the geotechnical engineer and embedment depths adjusted accordingly. For calculating allowable skin friction, a factor of safety of 3 should be applied to axial load. Where uplift is the result of wind and seismic loading, a safety factor of 2 is recommended. Ultimate and allowable skin friction values are tabulated below.

Concrete Strength (psi)	Recommended Allowable Bearing Pressure (tsf)	Ultimate Skin Friction (ksf)	Allowable Axial Skin Friction (ksf)	Allowable Uplift Skin Friction (Wind & Seismic Only) (ksf)
3000	65	20	6.5	10
4000	85	23	7.5	11
5000	105	25	8.5	12.5

Table 9: Recommended Drilled Pier Capacity Parameters based on Concrete Strength

We recommend a minimum pier diameter of 30 inches, regardless of loading, to allow access for personnel for hand cleaning, drilling a 2-inch diameter probe hole, and to check the bearing surface for competency.

A Building & Earth engineer or qualified representative should observe the installation of piers to check that the installation criteria are implemented. Test holes should be performed in order to verify rock continuity. A minimum of one 2-inch diameter test hole is recommended at each pier excavation. The test hole should be drilled in the center of the pier excavation and should extend a minimum of twice the pier diameter, or 6 feet, whichever is greater.

As an alternative, an air track rig can be utilized to drill the test holes at each drill pier location prior to excavating the drilled piers. The air track test holes should extend at least 10 feet below the bottom of the planned drilled pier elevation. The planned bottom elevation for the drilled piers should be determined by the Geotechnical Engineer during air track drilling. Additional test holes may be necessary, depending on conditions encountered during excavation of the drilled piers.

Loose material and fractured rock should be removed from the bearing surface. Bearing elevations will be adjusted based on actual conditions encountered. Alternative recommendations can be provided if anomalous or unforeseen conditions occur.

5.1 SLABS ON GRADE

Site development recommendations presented in this report should be followed to provide for subgrade conditions suitable for support of grade supported concrete slabs.

We recommend slabs-on-grade be supported on a minimum four-inch layer of clean, densely-graded granular material commonly referred to as "crusher-run" materials. Alternatively, DOT approved road base with 100% passing the 1-1/2 in sieve, 15% to 55% passing the No. 4 sieve and less than 12% passing the No 200 sieve. The material passing the #200 sieve should be clean, granular fill with less than 3% clay or friable particles. The purpose of this layer is to help provide a uniform loading condition and act as a capillary break for moisture migration through the subgrade soil. This gravel material should be consolidated in-place with vibratory equipment. A 150 pci modulus of subgrade reaction is recommended for design.

We recommend a minimum 10-mil thick vapor retarder meeting ASTM E 1745, Class C requirements be placed directly below the slab-on-grade. A higher quality vapor retarder (Class A or B) may be used if desired to further inhibit the migration of moisture through the slab-on-grade and should be evaluated based on the floor covering and use. The

vapor retarder should extend to the edge of the slab-on-grade floors and should be sealed at all seams and penetrations. The slab should be appropriately reinforced (if required) to support the proposed loads.

5.2 FOUNDATION AND SLAB-ON-GRADE QUALITY ASSURANCE

The following items should be considered during the preparation of construction documents and foundation installation:

- The geotechnical engineer of record should observe the exposed foundation and slab-on-grade bearing surfaces prior to concrete placement to verify that the conditions anticipated during the subsurface exploration are encountered.
- All bearing surfaces should be free of soft or loose soil prior to placing concrete.
- Concrete should be placed the same day excavations are completed and bearing materials verified by the engineer. If the excavations are left open for an extended period (24 hours or more), or if the bearing surfaces are disturbed after the initial observation, then the bearing surfaces should be reevaluated prior to concrete placement.
- Water should not be allowed to pond in foundation excavations prior to concrete placement or above the concrete after the foundation is completed.
- Wherever possible, the foundation concrete should be placed “neat”, using the sides of the excavations as forms. Where this is not possible, the excavations created by forming the foundations must be backfilled with suitable structural fill and properly compacted.

6.0 SUBGRADE REHABILITATION

Subgrade soils often become disturbed during the period between initial site grading and construction of surface improvements. The amount and depth of disturbance will vary with soil type, weather conditions, construction traffic, and drainage.

The engineer should evaluate the subgrade soils during final grading to verify that the subgrade is suitable to receive pavement and/or concrete slab base materials. The final evaluation may include proof-rolling or density testing.

Subgrade rehabilitation can become a point of controversy when different contractors are responsible for site grading and building construction. The construction documents should specifically state which contractor will be responsible for maintaining and rehabilitating the subgrade. Rehabilitation may include moisture conditioning and re-

compacting soils. When deadlines or weather restrict grading operations, additional measures such as undercutting and replacing saturated soils or chemical stabilization can often be utilized.

7.0 CONSTRUCTION MONITORING

Field verification of site conditions is an essential part of the services provided by the geotechnical consultant. In order to confirm our recommendations, it will be necessary for Building & Earth personnel to make periodic visits to the site during site grading. Typical construction monitoring services are listed below.

- Earthworks including stripping and grubbing, subgrade proof-rolling and grade-raise fill installation.
- Foundation installation including bearing surface evaluation and reinforcing steel installation.
- All other special inspections required under applicable building codes.

8.0 CLOSING AND LIMITATIONS

This report was prepared for GSS Midwest, Inc., for specific application to the Matney Road Tower project located in Green County, Kentucky. The information in this report is not transferable. This report should not be used for a different development on the same property without first being evaluated by the engineer.

The recommendations in this report were based on the information obtained from our field exploration and laboratory analysis. The data collected is representative of the locations tested. Variations are likely to occur at other locations throughout the site. Engineering judgment was applied in regards to conditions between borings. It will be necessary to confirm the anticipated subsurface conditions during construction.

This report has been prepared in accordance with generally accepted standards of geotechnical engineering practice. No other warranty is expressed or implied. In the event that changes are made, or anticipated to be made, to the nature, design, or location of the project as outlined in this report, Building & Earth must be informed of the changes and given the opportunity to either verify or modify the conclusions of this report in writing, or the recommendations of this report will no longer be valid.

The scope of services for this project did not include any environmental assessment of the site or identification of pollutants or hazardous materials or conditions. If the owner

is concerned about environmental issues Building & Earth would be happy to provide an additional scope of services to address those concerns.

This report is intended for use during design and preparation of specifications and may not address all conditions at the site during construction. Contractors reviewing this information should acknowledge that this document is for design information only.

An article published by the Geoprofessional Business Association (GBA), titled *Important Information About Your Geotechnical Report*, has been included in the Appendix. We encourage all individuals to become familiar with the article to help manage risk.

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GEOTECHNICAL INVESTIGATION METHODOLOGIES

The subsurface exploration, which is the basis of the recommendations of this report, has been performed in accordance with industry standards. Detailed methodologies employed in the investigation are presented in the following sections.

DRILLING PROCEDURES – STANDARD PENETRATION TEST (ASTM D1586)

At each boring location, soil samples were obtained at standard sampling intervals with a split-spoon sampler. The borehole was first advanced to the sample depth by augering and the sampling tools were placed in the open hole. The sampler was then driven 18 inches into the ground with a 140-pound automatic hammer free-falling 30 inches. The number of blows required to drive the sampler each 6-inch increment was recorded. The initial increment is considered the “seating” blows, where the sampler penetrates loose or disturbed soil in the bottom of the borehole. The blows required to penetrate the final two (2) increments are added together and are referred to as the Standard Penetration Test (SPT) N-value. The N-value, when properly evaluated, gives an indication of the soil’s strength and ability to support structural loads. Many factors can affect the SPT N-value, so this result cannot be used exclusively to evaluate soil conditions.

The SPT testing was performed using a drill rig equipped with an automatic hammer. Automatic hammers mechanically control the height of the hammer drop, and doing so, deliver higher energy efficiency (90 to 99 % efficiency) than manual hammers (60 % efficiency) which are dropped using a manually operated rope and cathead system. Because historic data correlations were developed based on use of a manual hammer, it is necessary to adjust the N-values obtained using an automatic hammer to make these correlations valid. Therefore, an energy correction factor of 1.3 was applied to the recorded field N-values from the automatic hammer for the purpose of our evaluation. The N-values discussed or mentioned in this report and shown on the boring logs are recorded field values.

Samples retrieved from the boring locations were labeled and stored in plastic bags at the jobsite before being transported to our laboratory for analysis. The project engineer prepared Boring Logs summarizing the subsurface conditions at the boring locations.

ROCK CORING

Rock coring was performed in accordance with ASTM Specification D2113-99. During the coring operations, the rock cores were placed in core boxes at the site and transported to our laboratory for identification and classification. At the laboratory, the rock type was identified and the “recovery” and “rock quality designation” (RQD) was determined. The recovery is the ratio of the length of sample obtained to the length of the run cored, as a percent. The RQD is the percentage of the length of the core run which has rock segments of moderately hard or harder rock four inches or greater in length, compared to the total length of the run. Generalized rock descriptions, percent recovery, and RQD values are shown on the boring logs.

BORING LOG DESCRIPTION

Building & Earth Sciences, Inc. used the gINT software program to prepare the attached boring logs. The gINT program provides the flexibility to custom design the boring logs to include the pertinent information from the subsurface exploration and results of our laboratory analysis. The soil and laboratory information included on our logs is summarized below:

DEPTH AND ELEVATION

The depth below the ground surface and the corresponding elevation are shown in the first two columns.

SAMPLE TYPE

The method used to collect the sample is shown. The typical sampling methods include Split Spoon Sampling, Shelby Tube Sampling, Grab Samples, and Rock Core. A key is provided at the bottom of the log showing the graphic symbol for each sample type.

SAMPLE NUMBER

Each sample collected is numbered sequentially.

BLOWS PER INCREMENT, REC%, RQD%

When Standard Split Spoon sampling is used, the blows required to drive the sampler each 6-inch increment are recorded and shown in column 5. When rock core is obtained the recovery ration (REC%) and Rock Quality Designation (RQD%) is recorded.

SOIL DATA

Column 6 is a graphic representation of four different soil parameters. Each of the parameters use the same graph, however, the values of the graph subdivisions vary with each parameter. Each parameter presented on column 6 is summarized below:

- **N-value**- The Standard Penetration Test N-value, obtained by adding the number of blows required to drive the sampler the final 12 inches, is recorded . The graph labels range from 0 to 50.
- **Qu** – Unconfined Compressive Strength estimate from the Pocket Penetrometer test in tons per square foot (tsf). The graph labels range from 0 to 5 tsf.
- **Atterberg Limits** – The Atterberg Limits are plotted with the plastic limit to the left, and liquid limit to the right, connected by a horizontal line. The difference in the plastic and liquid limits is referred to as the Plasticity Index. The Atterberg Limits test results are also included in the Remarks column on the far right of the boring log. The Atterberg Limits graph labels range from 0 to 100%.
- **Moisture** – The Natural Moisture Content of the soil sample as determined in our laboratory.

SOIL DESCRIPTION

The soil description prepared in accordance with ASTM D2488, Visual Description of Soil Samples. The Munsel Color chart is used to determine the soil color. Strata changes are indicated by a solid line, with the depth of the change indicated on the left side of the line and the elevation of the change indicated on the right side of the line. If subtle changes within a soil type occur, a broken line is used. The Boring Termination or Auger Refusal depth is shown as a solid line at the bottom of the boring.

GRAPHIC

The graphic representation of the soil type is shown. The graphic used for each soil type is related to the Unified Soil Classification chart. A chart showing the graphic associated with each soil classification is included.

REMARKS

Remarks regarding borehole observations, and additional information regarding the laboratory results and groundwater observations.




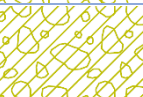

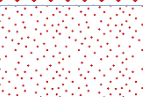
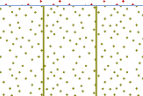
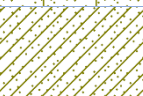

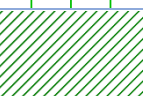
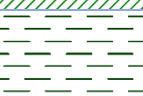

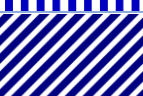

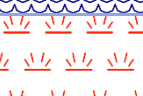
Major Divisions			Symbols		Group Name & Typical Description	
			Lithology	Group		
<p>Coarse Grained Soils</p> <p>More than 50% of material is larger than No. 200 sieve size</p>	<p>Gravel and Gravelly Soils</p> <p>More than 50% of coarse fraction is larger than No. 4 sieve</p>	<p>Clean Gravels</p> <p>(Less than 5% fines)</p>		GW	Well-graded gravels, gravel – sand mixtures, little or no fines	
				GP	Poorly-graded gravels, gravel – sand mixtures, little or no fines	
		<p>Gravels with Fines</p> <p>(More than 12% fines)</p>		GM	Silty gravels, gravel – sand – silt mixtures	
				GC	Clayey gravels, gravel – sand – clay mixtures	
	<p>Sand and Sandy Soils</p> <p>More than 50% of coarse fraction is smaller than No. 4 sieve</p>	<p>Clean Sands</p> <p>(Less than 5% fines)</p>		SW	Well-graded sands, gravelly sands, little or no fines	
				SP	Poorly-graded sands, gravelly sands, little or no fines	
		<p>Sands with Fines</p> <p>(More than 12% fines)</p>		SM	Silty sands, sand – silt mixtures	
				SC	Clayey sands, sand – clay mixtures	
	<p>Fine Grained Soils</p> <p>More than 50% of material is smaller than No. 200 sieve size</p>	<p>Silts and Clays</p> <p>Liquid Limit less than 50</p>	<p>Inorganic</p>		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silt with slight plasticity
					CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
Organic				OL	Organic silts and organic silty clays of low plasticity	
<p>Silts and Clays</p> <p>Liquid Limit greater than 50 sieve</p>		<p>Inorganic</p>		MH	Inorganic silts, micaceous or diatomaceous fine sand, or silty soils	
				CH	Inorganic clays of high plasticity	
		Organic		OH	Organic clays of medium to high plasticity, organic silts	
		<p>Highly Organic Soils</p>				PT

Table 1: Soil Classification Chart (based on ASTM D2487)

Building & Earth Sciences classifies soil in general accordance with the Unified Soil Classification System (USCS) presented in ASTM D2487. Table 1 and Figure 1 exemplify the general guidance of the USCS. Soil consistencies and relative densities are presented in general accordance with Terzaghi, Peck, & Mesri's (1996) method, as shown on Table 2, when quantitative field and/or laboratory data is available. Table 2 includes Consistency and Relative Density correlations with N-values obtained using either a manual hammer (60 percent efficiency) or automatic hammer (90 percent efficiency). The *Blows Per Increment* and *SPT N-values* displayed on the boring logs are the unaltered values measured in the field. When field and/or laboratory data is not available, we may classify soil in general accordance with the Visual Manual Procedure presented in ASTM D2488.

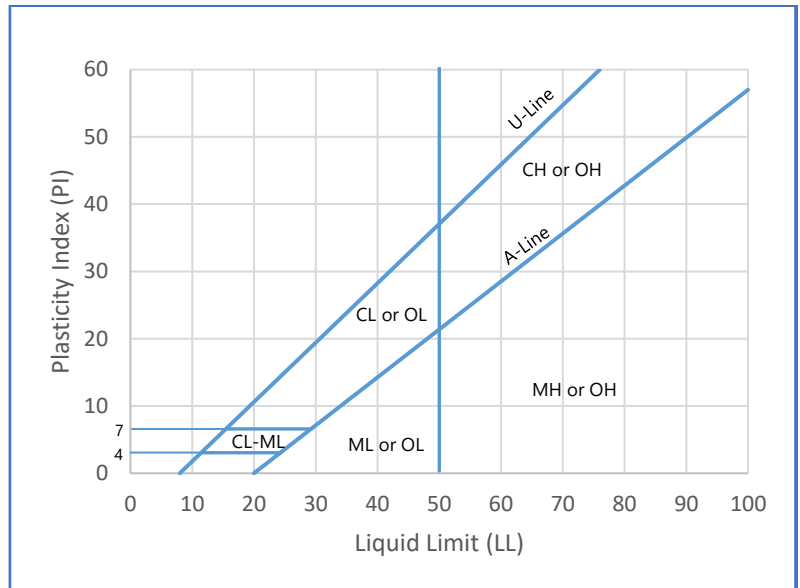


Figure 1: Plasticity Chart (based on ASTM D2487)

Non-cohesive: Coarse-Grained Soil		Cohesive: Fine-Grained Soil				
SPT Penetration (blows/foot)		Relative Density	SPT Penetration (blows/foot)		Consistency	Estimated Range of Unconfined Compressive Strength (tsf)
			Automatic Hammer*	Manual Hammer		
Automatic Hammer*	Manual Hammer		< 2	< 2	Very Soft	< 0.25
0 - 3	0 - 4	Very Loose	2 - 3	2 - 4	Soft	0.25 – 0.50
3 - 8	4 - 10	Loose	3 - 6	4 - 8	Medium Stiff	0.50 – 1.00
8 - 23	10 - 30	Medium Dense	6 - 12	8 - 15	Stiff	1.00 – 2.00
23 - 38	30 - 50	Dense	12 - 23	15 - 30	Very Stiff	2.00 – 4.00
> 38	> 50	Very Dense	> 23	> 30	Hard	> 4.00

Table 2: Soil Consistency and Relative Density (based on Terzaghi, Peck & Mesri, 1996)

* - Modified based on 80% hammer efficiency

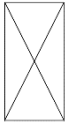
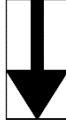

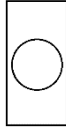




	Standard Penetration Test ASTM D1586 or AASHTO T-206		Dynamic Cone Penetrometer (Sower DCP) ASTM STP-399
	Shelby Tube Sampler ASTM D1587		No Sample Recovery
	Rock Core Sample ASTM D2113		Groundwater at Time of Drilling
	Auger Cuttings		Groundwater as Indicated

Table 1: Symbol Legend

Soil	Particle Size	U.S. Standard
Boulders	Larger than 300 mm	N.A.
Cobbles	300 mm to 75 mm	N.A.
Gravel	75 mm to 4.75 mm	3-inch to #4 sieve
Coarse	75 mm to 19 mm	3-inch to ¾-inch sieve
Fine	19 mm to 4.75 mm	¾-inch to #4 sieve
Sand	4.75 mm to 0.075 mm	#4 to #200 Sieve
Coarse	4.75 mm to 2 mm	#4 to #10 Sieve
Medium	2 mm to 0.425 mm	#10 to #40 Sieve
Fine	0.425 mm to 0.075 mm	#40 to #200 Sieve
Fines	Less than 0.075 mm	Passing #200 Sieve
Silt	Less than 5 µm	N.A.
Clay	Less than 2 µm	N.A.

Table 2: Standard Sieve Sizes





N-Value 	Standard Penetration Test Resistance calculated using ASTM D1586 or AASHTO T-206. Calculated as sum of original, field recorded values.	Atterberg Limits 	A measure of a soil's plasticity characteristics in general accordance with ASTM D4318. The soil Plasticity Index (PI) is representative of this characteristic and is bracketed by the Liquid Limit (LL) and the Plastic Limit (PL).
Qu 	Unconfined compressive strength, typically estimated from a pocket penetrometer. Results are presented in tons per square foot (tsf).	% Moisture 	Percent natural moisture content in general accordance with ASTM D2216.

Table 3: Soil Data

Hollow Stem Auger	Flights on the outside of the shaft advance soil cuttings to the surface. The hollow stem allows sampling through the middle of the auger flights.
Mud Rotary / Wash Bore	A cutting head advances the boring and discharges a drilling fluid to support the borehole and circulate cuttings to the surface.
Solid Flight Auger	Flights on the outside bring soil cuttings to the surface. Solid stem requires removal from borehole during sampling.
Hand Auger	Cylindrical bucket (typically 3-inch diameter and 8 inches long) attached to a metal rod and turned by human force.

Table 4: Soil Drilling Methods

Descriptor	Meaning
Trace	Likely less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

Table 5: Descriptors

Manual Hammer	The operator tightens and loosens the rope around a rotating drum assembly to lift and drop a sliding, 140-pound hammer falling 30 inches.
Automatic Trip Hammer	An automatic mechanism is used to lift and drop a sliding, 140-pound hammer falling 30 inches.
Dynamic Cone Penetrometer (Sower DCP) ASTM STP-399	Uses a 15-pound steel mass falling 20 inches to strike an anvil and cause penetration of a 1.5-inch diameter cone seated in the bottom of a hand augered borehole. The blows required to drive the embedded cone a depth of 1-3/4 inches have been correlated by others to N-values derived from the Standard Penetration Test (SPT).

Table 6: Sampling Methods

Non-plastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be re-rolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be re-rolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

Table 7: Plasticity

Dry	Absence of moisture, dusty, dry to the touch.
Moist	Damp but no visible water.
Wet	Visible free water, usually soil is below water table.

Table 8: Moisture Condition

Stratified	Alternating layers of varying material or color with layers at least 1/2 inch thick.
Laminated	Alternating layers of varying material or color with layers less than 1/4 inch thick.
Fissured	Breaks along definite planes of fracture with little resistance to fracturing.
Slickensides	Fracture planes appear polished or glossy, sometimes striated.
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown.
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay.
Homogeneous	Same color and appearance throughout.

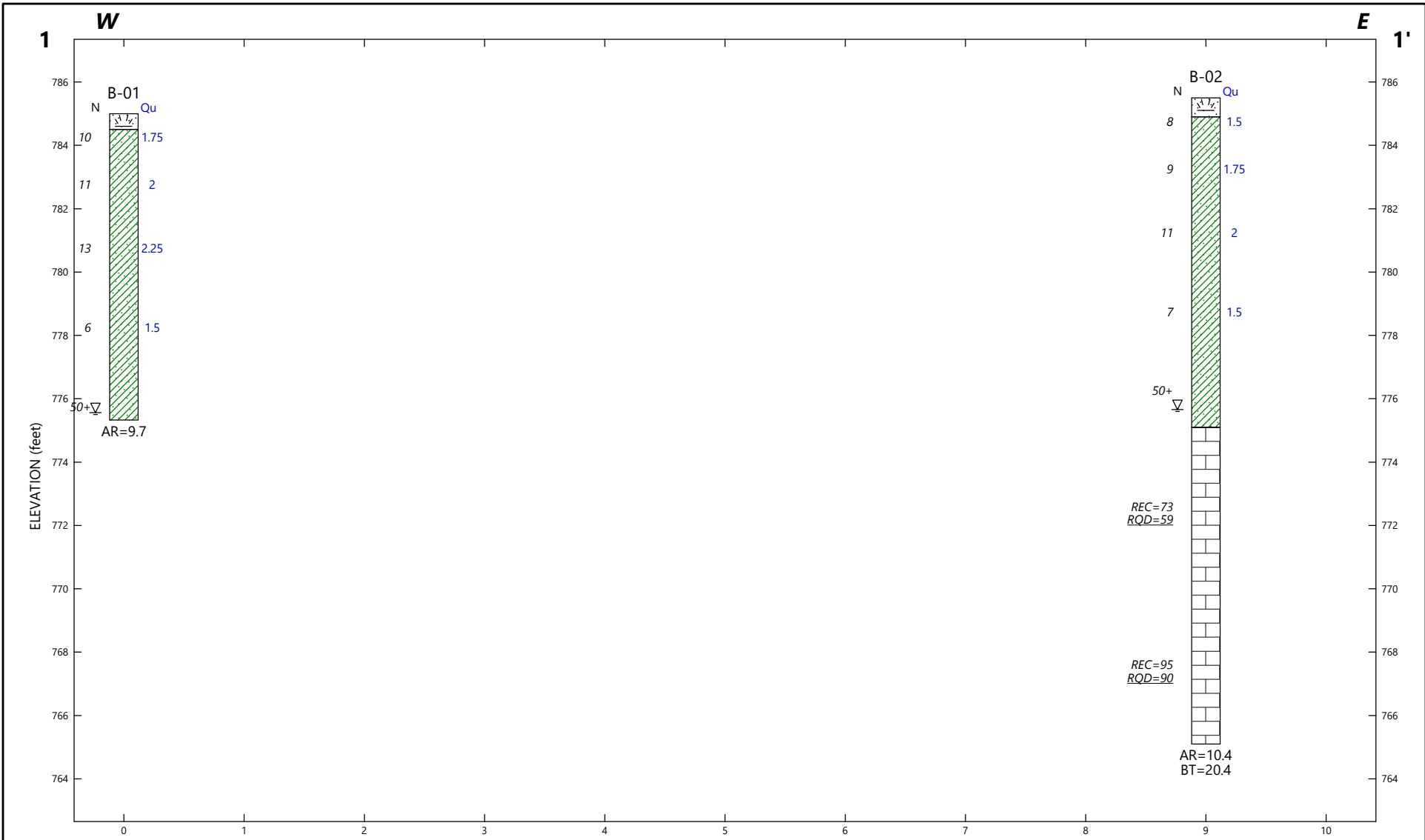
Table 9: Structure

Hatch	Description	Hatch	Description	Hatch	Description
	GW - Well-graded gravels, gravel – sand mixtures, little or no fines		Asphalt		Clay with Gravel
	GP - Poorly-graded gravels, gravel – sand mixtures, little or no fines		Aggregate Base		Sand with Gravel
	GM - Silty gravels, gravel – sand – silt mixtures		Topsoil		Silt with Gravel
	GC - Clayey gravels, gravel – sand – clay mixtures		Concrete		Gravel with Sand
	SW - Well-graded sands, gravelly sands, little or no fines		Coal		Gravel with Clay
	SP - Poorly-graded sands, gravelly sands, little or no fines		CL-ML - Silty Clay		Gravel with Silt
	SM - Silty sands, sand – silt mixtures		Sandy Clay		Limestone
	SC - Clayey sands, sand – clay mixtures		Clayey Chert		Chalk
	ML - Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silt with slight plasticity		Low and High Plasticity Clay		Siltstone
	CL - Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays		Low Plasticity Silt and Clay		Till
	OL - Organic silts and organic silty clays of low plasticity		High Plasticity Silt and Clay		Sandy Clay with Cobbles and Boulders
	MH - Inorganic silts, micaceous or diatomaceous fine sand, or silty soils		Fill		Sandstone with Shale
	CH - Inorganic clays of high plasticity		Weathered Rock		Coral
	OH - Organic clays of medium to high plasticity, organic silts		Sandstone		Boulders and Cobbles
	PT - Peat, humus, swamp soils with high organic contents		Shale		Soil and Weathered Rock

Table 1: Key to Hatches Used for Boring Logs and Soil Profiles

BORING LOCATION PLAN

SUBSURFACE SOIL PROFILES



Key to Hatches

- Topsoil
- USCS Low Plasticity Sandy Clay
- Limestone

Legend

- BT=Boring Termination, TPT=Test Pit Terminated
- AR=Auger Refusal, ER=Excavation Refusal
- N=Standard Penetration Test N-Value
- Qu=Unconfined compressive strength estimate from pocket penetrometer test (tsf)
- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

Scale:

Horizontal Scale (feet): 0 to 1

Vertical Exaggeration: 0.5x

Site Map:

Site Map Scale 1 inch equals 5 feet

Building & Earth Sciences, Inc.
 13159 Middletown Industrial Blvd., Louisville, KY 40223

Matney Road Tower
 Greensburg, KY

Fence 1-1': Subsurface Profile

PROJECT NO: LV230026 | PLATE NO: 1-1' | DATE: 10/25/23

BUILDING & EARTH
 Geotechnical, Environmental, and Materials Engineers

BORING LOGS

LABORATORY TEST PROCEDURES

A brief description of the laboratory tests performed is provided in the following sections.

DESCRIPTION OF SOILS (VISUAL-MANUAL PROCEDURE) (ASTM D2488)

The soil samples were visually examined by our engineer and soil descriptions were provided. Representative samples were then selected and tested in accordance with the aforementioned laboratory-testing program to determine soil classifications and engineering properties. This data was used to correlate our visual descriptions with the Unified Soil Classification System (USCS).

POCKET PENETROMETER

Pocket Penetrometer tests were performed on cohesive soil samples. The pocket penetrometer provides a consistency classification, and an indication of the soils unconfined compressive strength (Q_u).

NATURAL MOISTURE CONTENT (ASTM D2216)

Natural moisture contents (M%) were determined on selected samples. The natural moisture content is the ratio, expressed as a percentage, of the weight of water in a given amount of soil to the weight of solid particles.

ATTERBERG LIMITS (ASTM D4318)

The Atterberg Limits test was performed to evaluate the soil's plasticity characteristics. The soil Plasticity Index (PI) is representative of this characteristic and is bracketed by the Liquid Limit (LL) and the Plastic Limit (PL). The Liquid Limit is the moisture content at which the soil will flow as a heavy viscous fluid. The Plastic Limit is the moisture content at which the soil is between "plastic" and the semi-solid stage. The Plasticity Index ($PI = LL - PL$) is a frequently used indicator for a soil's potential for volume change. Typically, a soil's potential for volume change increases with higher plasticity indices.

MATERIAL FINER THAN NO. 200 SIEVE BY WASHING (ASTM D1140)

Grain-size tests were performed to determine the partial soil particle size distribution. The amount of material finer than the openings on the No. 200 sieve (0.075 mm) was determined by washing soil over the No. 200 sieve. The results of wash #200 tests are presented on the boring logs included in this report and in the table of laboratory test results.

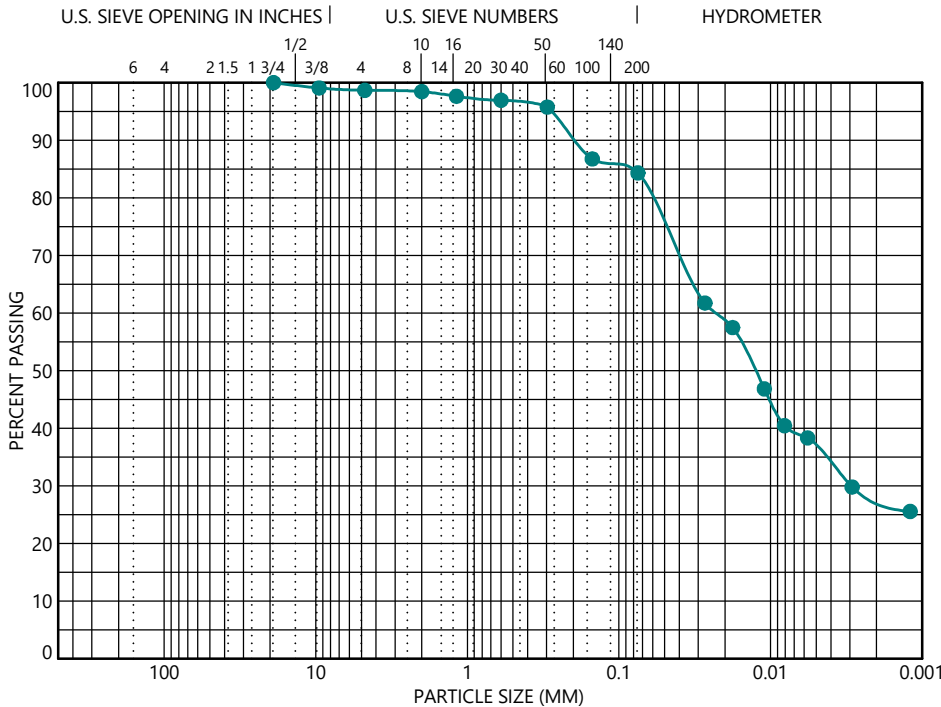
Geotechnical, Environmental, and Materials Engineers

PROJECT NAME Matney Road Tower

PROJECT NUMBER LV230026

CLIENT GSS Midwest

PROJECT LOCATION Greensburg, KY



GENERAL SAMPLE AND TEST DATA

SOURCE: B-02
DEPTH: 3.5 FT
TESTED BY: JLT
SPECIMEN PROCUREMENT: Air Dried
USCS: LEAN CLAY with SAND(CL)
DISPERSION: Shaking Apparatus and Ultrasonic Bath
PRIOR TESTING: N/A
EXCLUDED MATERIAL OR TEST PROBLEMS: None

SYMBOL: ●
TEST METHOD: A

COBBLES	GRAVEL		SAND			SILT OR CLAY
	Coarse	Fine	Coarse	Medium	Fine	

GRADATION TEST RESULTS

SOURCE: B-02 DEPTH: 3.5 FT

Sieve	3/4"	3/8"	No. 4	No. 10	No. 16	No. 30	No. 50	No. 100	No. 200							
Size (mm)	19	9.5	4.75	2	1.18	0.6	0.297	0.15	0.075	0.0271	0.0178	0.011	0.0081	0.0057	0.0029	0.0012
% Passing	100	99	99	98	98	97	96	87	84	62	57	47	40	38	30	26
SYMBOL:	D100	D60	D30	D10	%Gravel	%Sand	%Silt	and	%Clay	LL	PL	PI	Cc	Cu	Composite Sieving: Yes	
●	19	0.023	0.003		1.3	14.3	56.3		28.0	30	16	14			Split Sieve Size: 2 mm	

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply this report for any purpose or project except the one originally contemplated.*

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an

assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by:* the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time to perform additional study.* Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help

others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold-prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical-engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.



8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@geoprofessional.org www.geoprofessional.org

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Date: 2/1/2024

VB BTS II, LLC

Attn: To Whom It May Concern

SUBJECT: Project Number: 604200
Site Name: US-KY-5178 Matney Rd, KY
Structure: 300-ft Self-Supporting Tower
Designed within a Theoretical Zero Fall Radius

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:

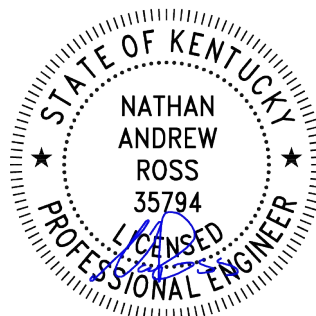
- Exposure Category C
- Topographical Category 1
- Risk Category II
- Site Elevation 788 feet
- 105 MPH Ultimate Wind Speed (no ice) per ASCE 7-16
- 30 MPH with 0.75 inches ice per ANSI/TIA-222-G

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 tower legs 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,

Ilza Nelly Salinas | Project Engineer
Valmont Industries, Inc
Ilza.Salinas@valmont.com



TAB #7

**Green County, KY Judge Executive and Property Owner list within 500 feet
of the proposed cell tower location that received notice letters for:**

Case Number: 2024-00014

John H. Frank

Green County Judge Executive
203 West Court Street
Greensburg, KY 42743

Jeffrey R. Vanarsdale

7702 Edmonton Road
Greensburg, KY 42743

James Wesley Adkins

7690 Edmonton Road
Greensburg, KY 42743

David Marcum

1345 S Westgate Ave, #204
Los Angeles, CA 90025-1485

ERIN CONNOLLY
Direct Dial: 404-221-6525
E-Mail Address: econnolly@bakerdonelson.com

January 24, 2024

VIA CERTIFIED MAIL

John H. Frank
Green County Judge Executive
203 West Court Street
Greensburg, KY 42743

RE: Notice of Intent to Construct a Cellular Antenna Tower
Subject Parcel Address: Edmonton Road, Greensburg, KY 42743
Latitude: 37.156392 / **Longitude:** -85.540427
Parcel ID: 55.09-01
Case Number: 2024-00014

Dear Judge Executive:

This letter is being sent on behalf of VB BTS II, LLC (Vertical Bridge) to provide notice that Vertical Bridge plans to construct a new cellular tower on a portion of the above referenced property. This notice is required by 807 KAR 5:063 Section 1(1)(n).

You are being provided this notice because public records indicate that you are the County Judge Executive of the Green County, KY governmental body. You are hereby informed of your right to request intervention in the Commission's proceedings on the application. The Kentucky Public Service Commission contact information is below:

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

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 404-221-6525, or via email at econnolly@bakerdonelson.com.

Sincerely,



Erin Connolly

BAKER DONELSON

BEARMAN, CALDWELL & BERKOWITZ, PC

3414 PEACHTREE ROAD NE
MONARCH PLAZA, SUITE 1500
ATLANTA, GA 30326
PHONE: 404.221.6525

www.bakerdonelson.com

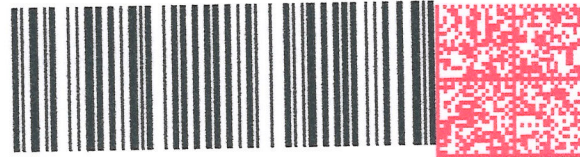
ERIN CONNOLLY
Direct Dial: 404-221-6525
E-Mail Address: econnolly@bakerdonelson.com



BAKER DONELSON

3414 PEACHTREE ROAD, N.E.
SUITE 1500
ATLANTA, GEORGIA 30326

CERTIFIED MAIL®



US POSTAGESM PITNEY BOWES



ZIP 30361 \$ 008.69⁰
02 4W
0000375394 JAN. 24. 2024

7016 2070 0000 7173 1530

John H. Frank
Green County Judge Executive
203 West Court Street
Greensburg, KY 42743

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT
OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

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:

John H. Frank
Green County Judge Executive
203 West Court Street
Greensburg, KY 42743



9590 9402 7468 2055 1431 28

2. Article Number (Transfer from service label)

7016 2070 0000 7173 1530

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

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

Domestic Return Receipt

BAKER DONELSON
BEARMAN, CALDWELL & BERKOWITZ, PC

3414 PEACHTREE ROAD NE
MONARCH PLAZA, SUITE 1500
ATLANTA, GA 30326
PHONE: 404.221.6525

www.bakerdonelson.com

ERIN CONNOLLY
Direct Dial: 404-221-6525
E-Mail Address: econnolly@bakerdonelson.com

January 24, 2024

VIA CERTIFIED MAIL

Jeffrey R. Vanarsdale
7702 Edmonton Road
Greensburg, KY 42743

RE: Notice of Intent to Construct a Cellular Antenna Tower
Subject Parcel Address: Edmonton Road, Greensburg, KY 42743
Latitude: 37.156392 / **Longitude:** -85.540427
Parcel ID: 55.09-01
Case Number: 2024-00014

Dear Mr. Vanarsdale:

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

You are being provided this notice because the property valuation administrator for Green County, KY indicated that you are the owner 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. Per 807 KAR 5:063 Section 1(1)(l) you are hereby informed of your right to request intervention in the Commission's proceedings on the application. The Kentucky Public Service Commission contact information is below:

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

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 404-221-6525, or via email at econnolly@bakerdonelson.com.

Sincerely,



Erin Connolly

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3414 PEACHTREE ROAD NE
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BAKER DONELSON

3414 PEACHTREE ROAD, N.E.
SUITE 1500
ATLANTA, GEORGIA 30326

CERTIFIED MAIL



US POSTAGE TM PITNEY BOWES



ZIP 30361 \$ 008.69⁰
02 4W
0000375394 JAN. 24. 2024

7016 2070 0000 7173 1547

Jeffrey R. Vanarsdale
7702 Edmonton Road
Greensburg, KY 42743

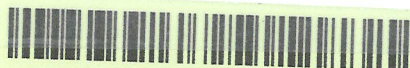
PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT
OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

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:

Jeffrey R. Vanarsdale
7702 Edmonton Road
Greensburg, KY 42743



9590 9402 7468 2055 1431 04

2. Article Number (Transfer from service label)

7016 2070 0000 7173 1547

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

Adult Signature Restricted Delivery

Certified Mail®

Certified Mail Restricted Delivery

Collect on Delivery

Collect on Delivery Restricted Delivery

Priority Mail Express®

Registered Mail™

Registered Mail Restricted Delivery

Signature Confirmation™

Signature Confirmation

Signature Confirmation Restricted Delivery

Registered Mail

Registered Mail Restricted Delivery

(\$500)

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

Domestic Return Receipt

BAKER DONELSON
BEARMAN, CALDWELL & BERKOWITZ, PC

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January 24, 2024

VIA CERTIFIED MAIL

James Wesley Adkins
7690 Edmonton Road
Greensburg, KY 42743

RE: Notice of Intent to Construct a Cellular Antenna Tower
Subject Parcel Address: Edmonton Road, Greensburg, KY 42743
Latitude: 37.156392 / **Longitude:** -85.540427
Parcel ID: 55.09-01
Case Number: 2024-00014

Dear Mr. Adkins:

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

You are being provided this notice because the property valuation administrator for Green County, KY indicated that you are the owner 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. Per 807 KAR 5:063 Section 1(1)(l) you are hereby informed of your right to request intervention in the Commission's proceedings on the application. The Kentucky Public Service Commission contact information is below:

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

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 404-221-6525, or via email at econnolly@bakerdonelson.com.

Sincerely,



Erin Connolly

BAKER DONELSON

BEARMAN, CALDWELL & BERKOWITZ, PC

3414 PEACHTREE ROAD NE
MONARCH PLAZA, SUITE 1500
ATLANTA, GA 30326
PHONE: 404.221.6525

www.bakerdonelson.com

ERIN CONNOLLY
Direct Dial: 404-221-6525
E-Mail Address: econnolly@bakerdonelson.com



BAKER DONELSON

3414 PEACHTREE ROAD, N.E.
SUITE 1500
ATLANTA, GEORGIA 30326

CERTIFIED MAIL®



7016 2070 0000 7173 1554

US POSTAGE IMPITNEY BOWES



ZIP 30361 \$ 008.69⁰
02 4W
0000375394 JAN. 24. 2024

James Wesley Adkins
7690 Edmonton Road
Greensburg, KY 42743

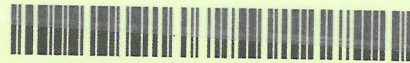
PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT
OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

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:

James Wesley Adkins
7690 Edmonton Road
Greensburg, KY 42743



9590 9402 7468 2055 1431 11

2. Article Number (Transfer from service label)

7016 2070 0000 7173 1554

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

Adult Signature Restricted Delivery

Certified Mail®

Certified Mail Restricted Delivery

Collect on Delivery

Collect on Delivery Restricted Delivery

ed Mail

ed Mail Restricted Delivery

(\$500)

Priority Mail Express®

Registered Mail™

Registered Mail Restricted Delivery

Signature Confirmation™

Signature Confirmation Restricted Delivery

BAKER DONELSON
BEARMAN, CALDWELL & BERKOWITZ, PC

3414 PEACHTREE ROAD NE
MONARCH PLAZA, SUITE 1500
ATLANTA, GA 30326
PHONE: 404.221.6525

www.bakerdonelson.com

ERIN CONNOLLY
Direct Dial: 404-221-6525
E-Mail Address: econnolly@bakerdonelson.com

January 24, 2024

VIA CERTIFIED MAIL

David Marcum
1345 S Westgate Ave, #204
Los Angeles, CA 90025-1485

RE: Notice of Intent to Construct a Cellular Antenna Tower
Subject Parcel Address: Edmonton Road, Greensburg, KY 42743
Latitude: 37.156392 / **Longitude:** -85.540427
Parcel ID: 55.09-01
Case Number: 2024-00014

Dear Mr. Marcum:

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

You are being provided this notice because the property valuation administrator for Green County, KY indicated that you are the owner 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. Per 807 KAR 5:063 Section 1(1)(l) you are hereby informed of your right to request intervention in the Commission's proceedings on the application. The Kentucky Public Service Commission contact information is below:

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

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 404-221-6525, or via email at econnolly@bakerdonelson.com.

Sincerely,



Erin Connolly

BAKER DONELSON

BEARMAN, CALDWELL & BERKOWITZ, PC

3414 PEACHTREE ROAD NE
MONARCH PLAZA, SUITE 1500
ATLANTA, GA 30326
PHONE: 404.221.6525

www.bakerdonelson.com

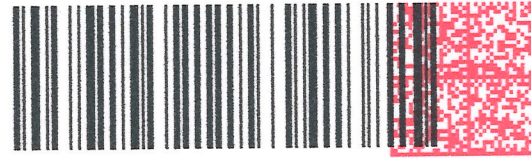
ERIN CONNOLLY
Direct Dial: 404-221-6525
E-Mail Address: econnolly@bakerdonelson.com



BAKER DONELSON

3414 PEACHTREE ROAD, N.E.
SUITE 1500
ATLANTA, GEORGIA 30326

CERTIFIED MAIL®



7016 2070 0000 7173 1561

US POSTAGE TM PITNEY BOWES



ZIP 30361 \$ 008.69⁰
02 4W
0000375394 JAN. 24. 2024

David Marcum
1345 S Westgate Ave, #204
Los Angeles, CA 90025-1485

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS. FOLD AT DOTTED LINE

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:

David Marcum
 1345 S Westgate Ave, #204
 Los Angeles, CA 90025-1485



9590 9402 7468 2055 1430 98

2. Article Number (Transfer from service label)

7016 2070 0000 7173 1561

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

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

Adult Signature Restricted Delivery

Certified Mail®

Certified Mail Restricted Delivery

Collect on Delivery

Collect on Delivery Restricted Delivery

Insured Mail

Insured Mail Restricted Delivery

(over \$500)

Priority Mail Express®

Registered Mail™

Registered Mail Restricted Delivery

Signature Confirmation™

Signature Confirmation™

Signature Confirmation Restricted Delivery

Domestic Return Receipt



NOTICE OF THE LOCATION OF THE PROPOSED CONSTRUCTION HAS BEEN PUBLISHED IN A NEWSPAPER OF GENERAL CIRCULATION IN GREEN COUNTY, KY IN WHICH THE CONSTRUCTION IS PROPOSED.

THE FOLLOWING IS THE PUBLIC NOTICE IN THE NEWSPAPER OF GENERAL CIRCULATION WITH THE GREENSBURG RECORD-HERALD.

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 EDMONTON ROAD, GREENSBURG, KY 42743 (LATITUDE: 37.156392, LONGITUDE: - 85.540427). THE PROPOSED FACILITY WILL INCLUDE A 300-FOOT-TALL ANTENNA TOWER, PLUS A 10-FOOT LIGHTNING ARRESTOR, FOR A TOTAL HEIGHT OF 310 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 2024-00014 IN ANY CORRESPONDENCE SENT IN CONNECTION WITH THIS MATTER.

Glaucoma, leads in blindness, can be detected & treated

DR. ELHAM GHAHARI
UNIV. OF KENTUCKY

Glaucoma is a disease of the optic nerve that can cause vision loss. It is the second leading cause of blindness in the U.S. and the leading cause of irreversible blindness worldwide, and 111.8 million people worldwide will have glaucoma by the year 2040. Glaucomatous damage is the loss of optic nerve cells, which leads to changes in the head of the optic nerve at

the eye, with damage to the field of vision. Glaucoma cannot be cured, but it can be controlled and stabilized with proper treatment. The most common form of glaucoma is primary, open-angle glaucoma. It is associated with several risk factors such as family history, African ancestry, other eye diseases such as diabetes or inflammation, past eye injury, and elevated eyeball pressure. High eye pressure is the most important

risk factor because it is the only effective target of therapy for glaucoma. Although some forms of glaucoma develop even when the eye pressure is normal, the risk of abnormally high eye pressure increases with age. Early detection and intervention can help prevent vision loss from glaucoma. However, most patients don't know they have the disease because it is generally asymptomatic in the early stages, which

means symptoms don't present themselves. A routine eye exam can identify the risk for glaucoma and early signs of the disease. During an eye exam, glaucomatous optic-nerve damage can be assessed by clinical examination of the optic nerve head and eye pressure can be checked. The risk of having abnormally high eye pressure as the most important risk factor for glaucoma increases with age. Glau-

coma screenings are suggested beginning at age 40 and should continue after that in intervals suggested by your eye doctor, usually every two to four years. There are usually no early symptoms of glaucoma, so screening exams are very important. Gradual dimming or weakening of vision is sometimes reported. Some patients with acute glaucoma develop severe eye pain and rapid visual changes. Glaucoma treatment consists of reducing eye

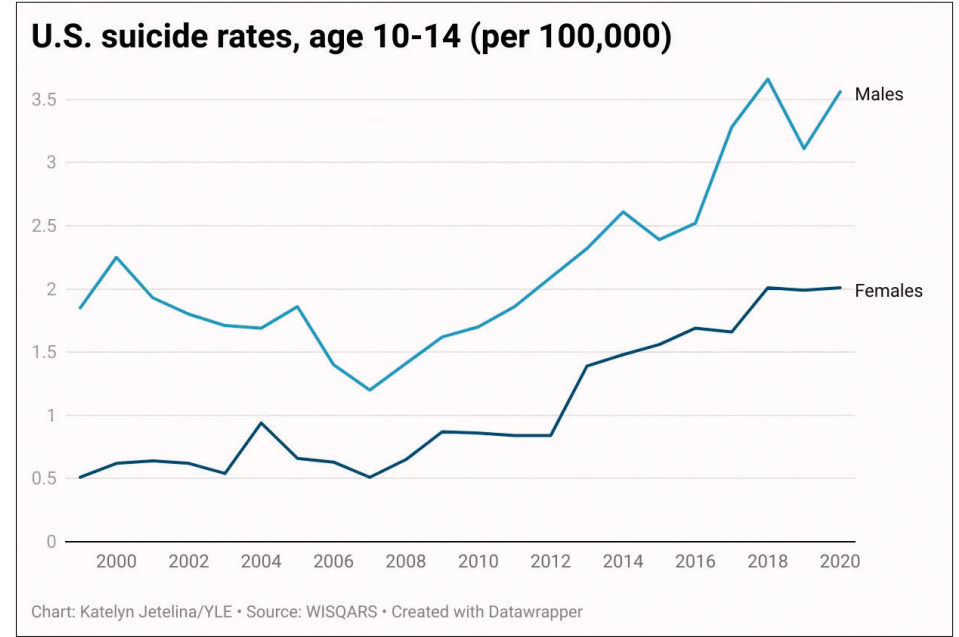
pressure using medications, lasers or surgery. Most glaucoma patients can be stabilized with prescription eye drops or in-office laser treatment. Once the pressure is stabilized, it is important to continue regular follow-ups to make sure the pressure remains low enough. Less frequently, glaucoma surgery may be required. Elham Ghahari, M.D., is an assistant professor of ophthalmology at UK HealthCare Advanced Eye Care.

Evidence that social media hurt teens' mental health, but it's not definitive; what limits would be reasonable? Some ideas.

KATELYN JETELINA
AND JACQUELINE NESI
EPIDEMIOLOGIST

Strong bipartisan statements came out of a congressional hearing yesterday about the harms of social media use among children and teens. Parents of kids harmed by social media showed up in immense force. "You have blood on your hands."— Sen. Lindsey Graham to five social media CEOs. "I'm sorry for everything you have all been through."— Mark Zuckerberg to parents in the audience.

Is social media dangerous for children and teens? And, if so, what are our options? Here is the nuanced public health data that (hopefully) congressmen/women are using to (hopefully) make meaningful and needed change. But, as we know by now, policy isn't always based on science. This was published eight months ago, and some things have changed since. As a parent, I still root for Option #4. This post contains sensitive information, including a discussion of suicide. If you are in need of help, there is an abundance of resources on the National Suicide Prevention Hotline website, which includes an anonymous chat function and a direct line at 988. Protecting youth from the potential negative mental-health effects of social media is front and center in the mass media, in conversations around dinner tables, and in federal-



and state-level bills. Is the teen mental health crisis a real thing? Yes. Rates of mental health problems have continually increased among young people over the past 15 years, regardless of how you measure it: In 2021, 42% of U.S. high school students reported "persistent feelings of sadness or hopelessness," up from 28% in 2011. The increase was especially dramatic among girls. According to diagnostic measures (structured interviews by a trained professional), depression has increased 7.7% in U.S. teens—and 12% among girls—between 2009 and 2019. According to U.S. death certificates, suicide rates among youth ages 10-14 increased 139% for girls and 70% for boys since 2012. However, this is a bit difficult to interpret given low the rates to begin with for girls. Is this rise due to social media? Teens use

social media. A lot. Almost one in five teens use YouTube "almost constantly." Nearly half of teens use TikTok (48%) and Snapchat (44%) several times per day. And the total hours of use have increased in recent years among teens. But using social media doesn't necessarily equate to mental-health problems. Correlation doesn't always equal causation. And, to make things more complicated, there are harms and benefits of social media. Harms of social media: We have a lot of correlational evidence, and some—but not much—causal evidence of the harms of social media on teens' mental health. Correlational studies ask teens how much time they're spending on social media, and ask them about mental health. In general, these point to weak but statistically relevant correlations between social media use and lower teen well-being.

In terms of causal evidence, we have a couple of studies: Some studies randomly assigned people (both adults and teens) to stop using social media (and others not to stop) and then evaluated their well-being. The

results of these studies are mixed. Variability seems to depend on the details of the design: How long did they stop using social media? Did they "detox" completely or just reduce the time spent? What are they using social media for? Other studies have taken advantage of circumstances that naturally occurred in the world to mimic an experimental design. One study looked at when Facebook was introduced on different college campuses (which varied randomly) and found that after Facebook showed up, rates of mental-health concerns increased. A few others (like this and this) look at the introduction of high-speed Internet in different areas and found associations with poorer mental health after its introduc-

tion, but these studies do not address social media specifically. What is clear is that we need more research with more rigorous designs. **Benefits of social media:** Competing with these harms are studies that show social media have benefits for mental health, too. Teens report that social media are important for:

- **Helping them stay connected with friends**
- **Meeting like-minded peers**
- **Exploring their interests**
- **Learning**
- **Discovery**

These benefits can be especially important for those who may be socially vulnerable in their offline lives.

See Teens, page 9A

PUBLIC NOTICE

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 Edmonton Road, Greensburg, KY 42743 (Latitude: 37.156392, Longitude: -85.540427). The proposed facility will include a 300-foot-tall antenna tower, plus a 10-foot lightning arrester, for a total height of 310 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 2024-00014 in any correspondence sent in connection with this matter.

COMMONWEALTH OF KENTUCKY
ELEVENTH JUDICIAL CIRCUIT
GREEN CIRCUIT COURT
CIVIL ACTION NO. 23-CI-00047
DIVISION II

JENNIFER LEE SIMPSON JUDD
AND
ANTHONY JUDD

PLAINTIFFS

VS.

NOTICE OF MASTER COMMISSIONER'S SALE

RICKY DARYL SIMPSON
AND
DEBBIE SIMPSON
AND
WILLIAM BRYAN SIMPSON
AND
LISA SIMPSON

DEFENDANTS

By virtue of orders of the Green Circuit Court in the above referenced civil action, entered on January 3, 2024; and the Order Referring Case to Master Commissioner for Judicial Sale entered on January 23, 2024, I shall proceed to offer for sale, at public auction, the real estate described herein to the highest and best bidder:

PLACE OF SALE: District Courtroom, 2nd Floor, Green County Judicial Center
200 West Court Street, Greensburg, Kentucky.

DATE AND TIME OF SALE: Friday, February 16, 2024, at or about 10:00 a.m. central time
11:00 a.m. eastern time.

PROPERTY ADDRESS: 1669 Highway 218, Green County, KY; PVA Map ID 55-03

TERMS: (a) The foregoing parcel of real estate shall be sold as a whole on terms of cash payment in full, or a bond with good and sufficient surety(s), bearing interest at the rate of 6% per annum from the date of sale and payable to the Master Commissioner within 30 days from the date of sale. If bond is given, the sum of ten percent (10%) shall be paid on date of sale by either cash, certified or cashier's check and said bond shall have the force and effect of a judgment and shall be and remain a lien on the property sold as an additional security for the payment of the purchase price. Surety on said bond must be acceptable to the Master Commissioner and pre-approved by the Master Commissioner at least by noon, two (2) business days before the sale date, to secure the unpaid balance of the purchase price. The bond surety must be present at the sale and execute the Sale Bond and the Affidavit of Surety. (b) The purchaser of the subject property shall be responsible for satisfaction of any current year real estate taxes not yet delinquent affecting the real estate, any delinquent State, County and/or City real estate taxes sold pursuant to the provisions of KRS Chapter 134 to any private purchaser during the pendency of this action, and shall take said property subject to all easements, restrictions, and stipulations of record, any matters which would be disclosed by an accurate survey or inspection of the property, and any current assessments for public improvements levied against the property and any applicable zoning regulations. (c) The Master Commissioner does not warrant title nor the physical condition of the subject property and any prospective purchaser shall satisfy themselves of the title and physical condition before the sale. (d) The risk of loss for the subject property shall pass to the purchaser on the date of sale, and possession shall pass to the purchaser upon payment of the purchase price and delivery of deed. (e) The sale is subject to easements, covenants and restrictions of record, and to any right of redemption which may exist.

For additional information, please go to www.jdhpsc.com and select Master Commissioner, Upcoming.

John D. Henderson
Green County Master Commissioner

FRUIT OF THE LOOM

CANCER: LUNG, THROAT, COLON

If you worked at the Fruit of the Loom plant before 1982, you may have been exposed to **asbestos**. You could be entitled to multiple cash settlements from special asbestos trusts.

If you have been diagnosed with **lung cancer (even if you are a smoker) or another cancer**, or know someone who died from one of these cancers, call

1-800-478-9578

Free Claims Analysis

NORRIS
INJURY LAWYERS

getnorris.com/asb
Nationwide Service

Birmingham, Alabama attorney Robert Norris helps injured claimants, nationwide, collect cash benefits from Asbestos Trusts. "No representation is made that the quality of legal services to be performed is greater than the quality of legal services performed by other lawyers."



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 FOUR (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 2024-00014 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 2024-00014 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 2024-00014 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 2024-00014 in your correspondence.

TAB #8



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

Aeronautical Study No.
 2023-ASO-21245-OE

Issued Date: 11/09/2023

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-5178 Matney Rd
 Location: greensburg, KY
 Latitude: 37-09-23.01N NAD 83
 Longitude: 85-32-25.54W
 Heights: 786 feet site elevation (SE)
 310 feet above ground level (AGL)
 1096 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)
- 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 05/09/2025 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-21245-OE.

Signature Control No: 591244604-604298878

(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.

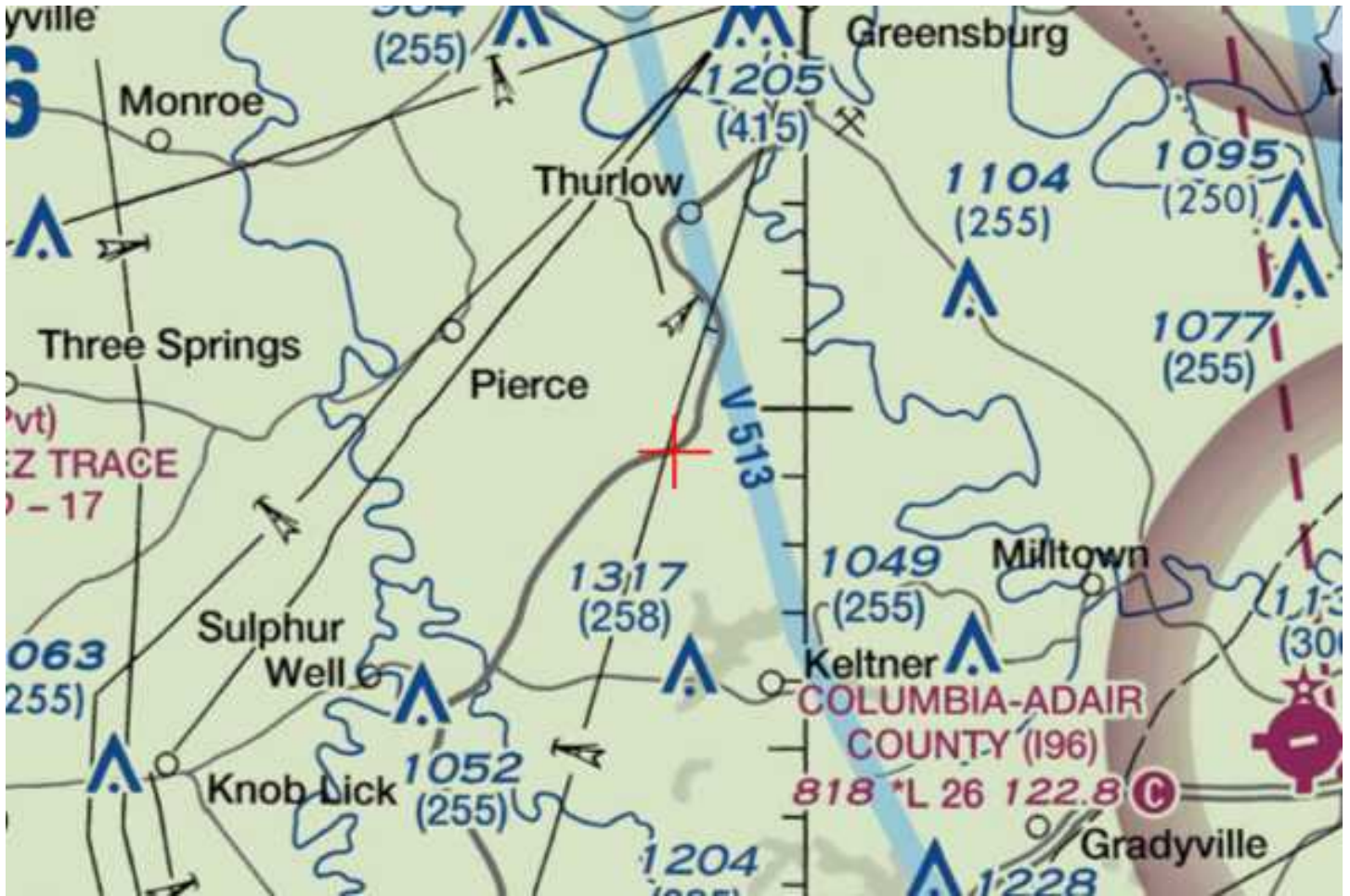
Any future changes that are not consistent with the parameters listed in the FAA 5G C band compatibility evaluation process will void this determination of no hazard.

new cell site (JH)

Frequency Data for ASN 2023-ASO-21245-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





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.



KENTUCKY TRANSPORTATION CABINET
KENTUCKY AIRPORT ZONING COMMISSION

TC 55-2
Rev. 06/2020
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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) Emiy Smith - Agent for Vertical Bridge		PHONE 423-280-3361	FAX		
ADDRESS (street) 1961 Northpointe Blvd, Suite 130		CITY Hixson		STATE TN	ZIP 37343
APPLICATION FOR <input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing				WORK SCHEDULE	
DURATION <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary (months days)				Start End	
TYPE <input checked="" type="checkbox"/> Crane <input type="checkbox"/> Building <input checked="" type="checkbox"/> Antenna Tower <input type="checkbox"/> Power Line <input type="checkbox"/> Water Tank <input type="checkbox"/> Landfill <input type="checkbox"/> Other		MARKING/PAINTING/LIGHTING PREFERRED <input type="checkbox"/> Red Lights & Paint <input type="checkbox"/> White- medium intensity <input type="checkbox"/> White- high intensity <input checked="" type="checkbox"/> Dual- red & medium intensity white <input type="checkbox"/> Dual- red & high intensity white <input type="checkbox"/> Other			
LATITUDE 37°09'23.01"		LONGITUDE 85°32'25.54"		DATUM <input checked="" type="checkbox"/> NAD83 <input type="checkbox"/> NAD27 <input type="checkbox"/> Other	
NEAREST KENTUCKY City Greensburg County Green		NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT Taylor County Airport - AAS			
SITE ELEVATION (AMSL, feet) 785.5		TOTAL STRUCTURE HEIGHT (AGL, feet) 310		CURRENT (FAA aeronautical study #)	
OVERALL HEIGHT (site elevation plus total structure height, feet) 1095.5				PREVIOUS (FAA aeronautical study #)	
DISTANCE (from nearest Kentucky public use or Military airport to structure) 18 miles				PREVIOUS (KY aeronautical study #)	
DIRECTION (from nearest Kentucky public use or Military airport to structure) SW					
DESCRIPTION OF LOCATION (Attach USGS 7.5 minute quadrangle map or an airport layout drawing with the precise site marked and any certified survey.) Approximately 569' East from intersection of Matney Rd and Hwy 70. See attached USGS quad map.					
DESCRIPTION OF PROPOSAL Proposing the construction of a new 310' Self-Support Antenna tower.					
FAA Form 7460-1 (Has the "Notice of Construction or Alteration" been filed with the Federal Aviation Administration?) <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes, when? 6/23/2023					
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.)					
PENALTIES (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 Johnnie Whitfield	TITLE VB Dev Director	SIGNATURE 		DATE 10/12/2023	
COMMISSION ACTION		<input checked="" type="checkbox"/> Chairperson, KAZC <input type="checkbox"/> Administrator, KAZC			
<input type="checkbox"/> Approved		SIGNATURE		DATE	
<input type="checkbox"/> Disapproved					

AM - Amendment of a Pending Application

[Reference Copy](#)[Help](#)

Confirmation

General Information

File Number:

A1247163

Registration Number:

1326936

Date Received:

01/04/2024

Purpose:

Amend an application

Status:

Granted

National Notice Date:

11/20/2023

Owner Information

VB BTS II, LLC

Attn: JULIE

HEFFERNAN

750 PARK OF
COMMERCE DRBOCA RATON, FL
33487**Phone:** (561) 406-
4015**E-mail:** [fcc-
faa@verticalbridge.com](mailto:fcc-faa@verticalbridge.com)

Antenna Structure

Latitude:

37° 09' 23.0" N

Longitude:

085° 32' 25.5" W

Structure Location:Mell Road, , (jh) ky-
5178
Greensburg, KY 42743**Overall AGL Height:**

94.5 m

FAA Study Number:

2023-ASO-21245-OE

Date Issued:

11/09/2023

Resources

[Tower Construction](#)[Notification System \(TCNS\)](#)[E-106 System](#)[File Pleadings](#)[TOWAIR](#)[FAA Notice Criteria Tool](#)[Universal Licensing System](#)[Back to Home](#)

[Submit a help request for assistance](#) or contact (877) 480-3201 or TTY: (717) 338-2824

Federal Communications
Commission
45 L Street NE
Washington, DC 20554

Phone: 1-888-225-5322
TTY: 1-888-835-5322
Fax: 1-866-418-0232

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