COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF	)
THE TOWERS, LLC, D/B/A VERTICLE BRIDGE AND	)
KENTUCKY RSA NO. 1 PARTNERSHIP BY CELLCO	)
PARTNERSHIP D/B/A VERIZON WIRELESS	)
FOR ISSUANCE OF A CERTIFICATE OF PUBLIC	) CASE NO.: 2024-00407
CONVENIENCE AND NECESSITY TO CONSTRUCT	)
A WIRELESS COMMUNICATIONS FACILITY	)
IN THE COMMONWEALTH OF KENTUCKY	)
IN THE COUNTY OF BALLARD	)

SITE NAME: LOVELACEVILLE

* * * * * * *

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

The Towers, LLC d/b/a Vertical Bridge and Kentucky RSA No. 1 Partnership by Cellco Partnership d/b/a Verizon Wireless, its Operating Entity, ("Applicants"), by counsel, pursuant to (i) KRS §§ 278.020, 278.040, 278.650, 278.665, and other statutory authority, and the rules and regulations applicable thereto, and (ii) the Telecommunications Act of 1996, respectfully submit this Application requesting issuance of a Certificate of Public Convenience and Necessity ("CPCN") from the Kentucky Public Service Commission ("PSC") to construct, maintain, and operate a Wireless Communications Facility ("WCF") to serve the customers of Verizon Wireless with wireless communications services.

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

1. The complete name and address of the Applicants are: The Towers, LLC d/b/a Vertical Bridge, a Delaware limited liability company having an address of 750 Park of

Commerce Drive, Suite 200, Boca Raton, Florida 33487 and Kentucky RSA No. 1 Partnership by Cellco Partnership d/b/a Verizon Wireless, its Operating Entity, having an address of 2421 Holloway Road, Louisville, Kentucky 40299.

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

3. The Towers, LLC d/b/a Vertical Bridge is a limited liability company organized in the State of Delaware. The Towers, LLC Certificate of Good Standing issued by the State of Delaware is attached as part of **Exhibit A** and hereby incorporated by reference. The Towers, LLC is in good standing in the state in which it is organized and further states that it is authorized to transact business in Kentucky, and a copy of the Certificate of Authorization issued by the Kentucky Secretary of State is attached as part of **Exhibit A** and is hereby incorporated by reference.

4. Kentucky RSA No. 1 Partnership by Cellco Partnership d/b/a Verizon Wireless, its Operating Entity ("Verizon Wireless"), is a Delaware general partnership, and a copy of the Statement of Good Standing from Delaware and Certificate of Assumed Name on file with the Kentucky Secretary of State are included as part of **Exhibit A**. Verizon Wireless is in good standing in the state in which they are organized and further state that they are authorized to transact business in Kentucky.

5. Verizon Wireless operates on frequencies licensed by the Federal Communications Commission ("FCC") pursuant to applicable FCC requirements. A copy of

Verizon Wireless' FCC applications and licenses to provide wireless services are attached to this Application or described as part of **Exhibit A**, and the facility will be constructed and operated in accordance with applicable FCC regulations.

6. The public convenience and necessity require the construction of the proposed WCF. The construction of the WCF will bring or improve Verizon Wireless' services to an area currently not served or not adequately served by Verizon Wireless by increasing coverage or capacity and thereby enhancing the public's access to innovative and competitive wireless communications services. The WCF will provide a necessary link in Verizon Wireless' communications network that is designed to meet the increasing demands for wireless services in Kentucky's wireless communications service area. The WCF is an integral link in Verizon Wireless' network design that must be in place to provide adequate coverage to the service area.

7. To address the above-described service needs, Applicants propose to construct a WCF in a lease area located at KY Highway 286, Kevil, Kentucky 42053 (37° 00' 17.56" North latitude, 88° 51' 04.67" West longitude), on a parcel of land located entirely within the county referenced in the caption of this application. The property on which the WCF will be located is owned by Dwaine and Debra Stigall pursuant to a Deed recorded at Deed Book 134, Page 411 in the office of the County Clerk. The proposed WCF will consist of a 290-foot tower, with an approximately 10-foot lightning arrestor attached at the top, for a total height of 300-feet. The WCF will also include concrete foundations and a shelter or cabinets to accommodate the placement of Verizon Wireless' radio electronics equipment and appurtenant equipment. Verizon Wireless' equipment cabinet or shelter will be approved for use in the Commonwealth of Kentucky by the relevant building inspector.

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

8. A list of utilities, corporations, or persons with whom the proposed WCF is likely to compete is attached as **Exhibit D**.

9. The site development plan and a vertical profile sketch of the WCF signed and sealed by a professional engineer registered in Kentucky depicting the tower height, as well as a proposed configuration for the antennas of Verizon Wireless has also been included as part of **Exhibit B**.

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

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

12. A Determination of No Hazard to Air Navigation issued by the Federal Aviation Administration ("FAA") for the proposed tower is attached as **Exhibit E**.

13. A copy of the Kentucky Airport Zoning Commission ("KAZC") application is

attached as **Exhibit F**.

14. A geotechnical engineering firm has performed soil boring(s) and subsequent geotechnical engineering studies at the WCF site. A copy of the geotechnical engineering report, signed and sealed by a professional engineer registered in the Commonwealth of Kentucky, is attached as **Exhibit G**. The name and address of the geotechnical engineering firm and the professional engineer registered in the Commonwealth of Kentucky who supervised the examination of this WCF site are included as part of this exhibit.

15. Clear directions to the proposed WCF site from the County seat are attached as **Exhibit H**. The name and telephone number of the preparer of **Exhibit H** are included as part of this exhibit.

16. The Towers, LLC, pursuant to a written agreement, has acquired the right to use the WCF site and associated property rights. A copy of the agreement or an abbreviated agreement recorded with the County Clerk is attached as **Exhibit I**.

17. Personnel directly responsible for the design and construction of the proposed WCF are well qualified and experienced. The tower and foundation drawings for the proposed tower submitted as part of **Exhibit C** bear the signature and stamp of a professional engineer registered in the Commonwealth of Kentucky. All tower designs meet or exceed the minimum requirements of applicable laws and regulations.

18. The Construction Manager for the proposed facility is Joshua Sizemore and the identity and qualifications of each person directly responsible for design and construction of the proposed tower are contained in **Exhibits B & C**.

19. As noted on the Survey attached as part of **Exhibit B**, the surveyor has

determined that the site is not within any flood hazard area.

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

21. Applicants have notified every person who, according to the records of the County Property Valuation Administrator, owns property which is within 500 feet of the proposed tower or contiguous to the site property, by certified mail, return receipt requested, of the proposed construction. Each notified property owner has been provided with a map of the location of the proposed construction, the PSC docket number for this application, the address of the PSC, and has been informed of his or her right to request intervention. A list of the notified property owners and a copy of the form of the notice sent by certified mail to each landowner are attached as **Exhibit J** and **Exhibit K**, respectively.

22. Copies of the Ballard County PVA records obtained on January 8, 2025 and used to generate the notice list are attached as part of **Exhibit J**.

23. Eight notice letters were sent to the landowners on the notice list at the mailing addresses shown on the County's PVA records. Copies of the "Certified Mail Receipts" confirming the dates on which the letters were sent are attached as part of **Exhibit J**.

24. Five signed United States Postal Service Form 3811 "green cards" have been returned. Copies of the returned "green cards" are attached as a part of **Exhibit J**. One notice letter has been delivered, but Applicants have not received the signed returned

green card. A copy of the USPS tracking information showing that letter was delivered is also attached as **Exhibit J**. Two notice letters were dispatched on the even date of this filing and Applicants will supplement the record once those letters are delivered/returned.

25. Applicants have notified the applicable County Judge/Executive by certified mail, return receipt requested, of the proposed construction. This notice included the PSC docket number under which the application will be processed and informed the County Judge/Executive of his/her right to request intervention. A copy of this notice is attached as **Exhibit L**. A copy of the "Certified Mail Receipt" and a copy of the USPS Form 3811 "green card" for this mailing are also attached as a part of **Exhibit L**.

26. Notice signs meeting the requirements prescribed by 807 KAR 5:063, Section 1(2) that measure at least 2 feet in height and 4 feet in width and that contain all required language in letters of required height, have been posted, one in a visible location on the proposed site and one on the nearest public road. Such signs shall remain posted for at least two weeks after filing of the Application, and a copy of the posted text is attached as **Exhibit M.** A legal notice advertisement regarding the location of the proposed facility will be published in a newspaper of general circulation in the county in which the WCF is proposed to be located. A copy of the text of the newspaper legal notice advertisement is attached as part of **Exhibit M**.

27. The general area where the proposed facility is to be located is rural in character that consists of predominantly agricultural land with some residences spread throughout.

28. The process that was used by Verizon Wireless' radio frequency engineers in selecting the site for the proposed WCF was consistent with the general process used for

selecting all other existing and proposed WCF facilities within the proposed network design area. Verizon Wireless' radio frequency engineers have conducted studies and tests in order to develop a highly efficient network that is designed to handle voice and data traffic in the service area. The engineers determined an optimum area for the placement of the proposed facility in terms of elevation and location to provide the best quality service to customers in the service area. A radio frequency design search area prepared in reference to these radio frequency studies was considered by the Applicants when searching for sites for its antennas that would provide the coverage deemed necessary by Verizon Wireless' Radio Frequency Engineers. A map of the area in which the tower is proposed to be located which is drawn to scale and clearly depicts the necessary search area within which the site should be located pursuant to radio frequency requirements is attached as **Exhibit N**.

29. The tower must be located at the proposed location and proposed height to provide necessary service to wireless communications users in the subject area.

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

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

David A. Pike and
F. Keith Brown
Pike Legal Group, PLLC
1578 Highway 44 East, Suite 6
P. O. Box 369
Shepherdsville, KY 40165-0369
Telephone: (502) 955-4400
Telefax: (502) 543-4410
Email: dpike@pikelegal.com

kbrown@pikelegal.com

WHEREFORE, Applicants respectfully request that the PSC accept the foregoing Application for filing and having met the requirements of KRS §§ 278.020(1), 278.650, and 278.665 and all applicable rules and regulations of the PSC, grant a Certificate of Public Convenience and Necessity to construct and operate the WCF at the location set forth herein.

Respectfully submitted,

David A. Pike
And

F. Keith Brown
Pike Legal Group, PLLC
1578 Highway 44 East, Suite 6
P. O. Box 369
Shepherdsville, KY 40165-0369
Telephone: (502) 955-4400
Telefax: (502) 543-4410
Email: dpike@pikelegal.com
Email: kbrown@pikelegal.com
Attorneys for Applicants

LIST OF EXHIBITS

A - Business Entity Documentation & FCC License Documentation

B - Site Development Plan:

- 500' Vicinity Map
- Legal Descriptions
- Flood Plain Certification
- Site Plan
- Vertical Tower Profile

C - Tower and Foundation Design

- Construction Manager Letter
- List of Qualified Professionals
- Tower and Foundation Drawings

D - Competing Utilities, Corporations, or Persons List

E - FAA

F - Kentucky Airport Zoning Commission

G - Geotechnical Report

H - Directions to WCF Site

I - Copy of Real Estate Agreement

J - Notification Listing, PVA Records & Proof of Notice

K - Copy of Property Owner Notification

L - Copy of County Judge/Executive Notice & Proof of Notice

M - Copy of Posted Notices and Newspaper Notice Advertisement

N - Copy of Radio Frequency Design Search Area

EXHIBIT A
BUSINESS ENTITY DOCUMENTATION
& FCC LICENSE DOCUMENTATION

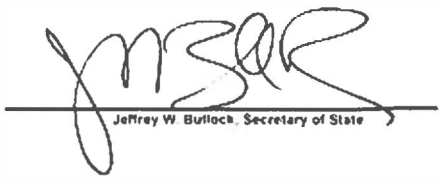
Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "THE TOWERS, 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 SIXTH DAY OF DECEMBER, A.D. 2024.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "THE TOWERS, LLC" WAS FORMED ON THE TWENTY-FOURTH DAY OF MARCH, A.D. 2023.

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



7370717 8300

SR# 20244414963

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

Authentication: 205056961

Date: 12-06-24

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: 307364
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,

THE TOWERS, LLC

, a limited liability company authorized under the laws of the state of Florida, is authorized to transact business in the Commonwealth of Kentucky, and received the authority to transact business in Kentucky on February 22, 2024.

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 18th day of March, 2024, in the 232nd year of the Commonwealth.

Michael G. Adams
Secretary of State
Commonwealth of Kentucky
307364/1343772

1343772.06 mmoore AOC

Michael G. Adams
Kentucky Secretary of State
Received and Filed:
12/13/2024 1:54 PM
Fee Receipt: $20.00

COMMONWEALTH OF KENTUCKY
MICHAEL G. ADAMS, SECRETARY OF STATE

Division of Business Filings
Business Filings
P.O. Box 718,
Frankfort, KY 40602
(502) 564-3490
sosfilings@ky.gov to submit via email
Filing Fee: $15.00 ($20.00 for LLC)

Articles of Correction

AOC

Pursuant to the provisions of KRS 14A-2.090, the undersigned applies correct articles and for that purpose, submits the following statement:

1. Name of the entity is: THE TOWERS, LLC
   Document to be corrected is: Certificate of Authority
   Date the document being corrected was originally filed: 2/22/2024

2. Please specify the inaccuracies or defects to be corrected:
   The domestic state in item 4 was incorrectly typed in as Florida.

3. The inaccuracy or defect stated above should be corrected as follows:
   The state or county under whose law the entity is organized is: Delaware

I declare under penalty of perjury under the laws of Kentucky that the forgoing is true and correct.

/s/ Allison Cannella	Allison Cannella	Authorized Person	12/12/2024
Signature	**Printed Name**	**Title**	**Date**

(2/23)

1343772.06 mmoore ADD

Michael G. Adams
Kentucky Secretary of State
Received and Filed:
2/22/2024 11:15 AM
Fee Receipt: $90.00

COMMONWEALTH OF KENTUCKY
MICHAEL G. ADAMS, SECRETARY OF STATE

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

Certificate of Authority
(Foreign Business Entity)

FBE

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

1. The entity is a:
- ☐ profit corporation
- ☐ business trust
- ☐ limited partnership
- ☐ non-profit llc
- ☐ nonprofit corporation
- ☒ limited liability company
- ☐ ltd cooperative association
- ☐ professional service corporation
- ☐ professional limited liability company
- ☐ statutory trust
- ☐ public benefit corporation
- ☐ other

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

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

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

5. The date of organization is 03/24/2023 and the period of duration is _____.
(If left blank, duration is considered perpetual.)

6. The mailing address of the entity's principal office is

Street Address	City	State	Zip Code
750 PARK OF COMMERCE DR, STE 200	BOCA RATON	FL	33487

7. The street address of the entity's registered office in Kentucky is

Street Address (No P.O. Box Numbers)	City	State	Zip Code
828 Lane Allen Road Suite 219	Lexington	KY	40504

and the name of the registered agent at that office is Cogency Global Inc.

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

Name	Street or P.O. Box	City	State	Zip Code
Ron Bizick	750 Park of Commerce Dr Ste 2	Boca Raton	FL	33487

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

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

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

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

13. This application will be effective upon filing.

Signature of Authorized Representative	Printed Name & Title	Date
	Ron Bizick, CEO	02/05/2024

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

Signature of Registered Agent	Printed Name	Title	Date
Joelle Churik	Joelle Churik	Asst. Secretary	02/06/2024

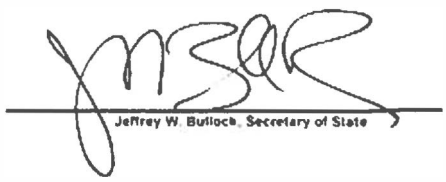
(2/23)

Delaware

The First State

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

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



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SR# 20231665976

Authentication: 203227418

Date: 04-27-23

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

COMMONWEALTH OF KENTUCKY

Michael G. Adams
Secretary of State

Certificate

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

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

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

COMMONWEALTH OF KENTUCKY
OFFICE OF SECRETARY OF STATE

Michael G. Adams

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

COMMONWEALTH OF KENTUCKY
TREY GRAYSON
SECRETARY OF STATE

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

CERTIFICATE OF ASSUMED NAME

This certifies that the assumed name of

Verizon Wireless

[Name under which the business will be conducted]

has been adopted by See Addendum

[Real name - KRS 365.015(1)]

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

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

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

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

The certificate of assumed name is executed by

NYNEX PCS Inc.

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

June 15, 2006
Date

Signature

Print or type name and title

Date

Addendum

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

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

C227

0641227.07
Alison Lundergan Grimes
KY Secretary of State
Received and Filed
5/31/2016 1:54:34 PM
Fee receipt: $20.00

Commonwealth of Kentucky
Alison Lundergan Grimes, Secretary o

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

Renewal Certificate of Assumed Name

REN

This certifies that the assumed name of

VERIZON WIRELESS

is hereby renewed by the general partnership listed above, organized and existing in the state of Delaware.

Signatures

Signature	Karen M. Shipman
Title	Assistatn Secretary
Date	5/31/2016 1:54:34 PM

Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

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

Call Sign	File Number
KNKN568	0009139106

Radio Service
CL - Cellular

Market Numer	Channel Block
CMA522	A

Sub-Market Designator
0

FCC Registration Number (FRN): 0003290673

Market Name
Missouri 19 - Stoddard

Grant Date	Effective Date	Expiration Date	Five Yr Build-Out Date	Print Date
09-01-2020	09-01-2020	10-01-2030		09-01-2020

Site Information:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
1	36-49-50.0 N	089-58-20.0 W	163.3	96.3	1005093

Address: (Dexter) CR 415
City: DEXTER **County:** STODDARD **State:** MO **Construction Deadline:**

Antenna: 1
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	131.300	112.700	156.500	162.600	151.100	151.000	148.600	136.300
Transmitting ERP (watts)	535.920	228.610	30.140	3.790	1.070	3.080	30.840	233.940

Antenna: 4
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	131.300	112.700	156.500	162.600	151.100	151.000	148.600	136.300
Transmitting ERP (watts)	6.150	64.430	370.760	488.760	119.980	14.420	1.690	1.070

Antenna: 5
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	131.300	112.700	156.500	162.600	151.100	151.000	148.600	136.300
Transmitting ERP (watts)	6.750	1.070	1.350	14.760	131.550	488.760	370.760	61.330

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

FCC 601-C
March 2018

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN568 **File Number:** 0009139106 **Print Date:** 09-01-2020

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
2	36-45-46.2 N	090-26-03.4 W	130.0		

Address: 2.33 MILES WEST OF
City: POPLAR BLUFF **County:** BUTLER **State:** MO **Construction Deadline:**

Antenna: 1
Maximum Transmitting ERP in Watts: 149.500

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	141.600	150.000	167.900	165.300	169.800	148.300	150.600	122.700
Transmitting ERP (watts)	127.400	126.300	124.500	168.000	55.600	27.500	38.000	40.700

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
3	36-21-01.2 N	089-49-54.3 W			

Address: 0.8 MILES WEST OF
City: WARDELL **County:** PEMISCOT **State:** MO **Construction Deadline:**

Antenna: 1
Maximum Transmitting ERP in Watts: 55.100

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	54.700	52.900	53.100	53.900	57.300	57.800	56.200	55.000
Transmitting ERP (watts)	140.100	133.800	47.500	30.000	119.300	172.400	38.600	54.500

Antenna: 2
Maximum Transmitting ERP in Watts: 49.300

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	48.900	47.100	47.300	48.100	51.500	52.000	50.400	49.300
Transmitting ERP (watts)	113.900	189.000	32.100	60.900	116.500	158.600	70.200	27.300

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
4	36-12-53.2 N	090-03-50.3 W			

Address: East side of County Road 504 1/2 mile South of
City: Kennett **County:** DUNKLIN **State:** MO **Construction Deadline:**

Antenna: 1
Maximum Transmitting ERP in Watts: 36.800

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	34.300	35.800	37.700	39.400	39.300	36.400	36.700	34.700
Transmitting ERP (watts)	32.300	227.300	267.600	206.100	265.600	181.800	19.200	10.300

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN568 **File Number:** 0009139106 **Print Date:** 09-01-2020

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
5	37-12-06.2 N	089-38-07.3 W	480.0		

Address: 0.4 miles east of Route M at Rockview, 1.6 miles NE of
City: Chaffee **County:** SCOTT **State:** MO **Construction Deadline:**

Antenna: 1
Maximum Transmitting ERP in Watts: 97.900

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	97.600	107.600	96.400	89.000	85.700	114.400	102.300	90.500
Transmitting ERP (watts)	24.300	2.800	3.300	27.800	86.400	95.300	95.200	76.900

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
6	36-32-33.2 N	090-01-49.3 W	88.0		

Address: 150' West of end of County Rd. 208 3.2 miles Southwest of
City: Malden **County:** DUNKLIN **State:** MO **Construction Deadline:**

Antenna: 1
Maximum Transmitting ERP in Watts: 67.300

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	68.500	71.400	73.000	73.600	73.100	63.700	58.700	56.500
Transmitting ERP (watts)	163.000	160.000	162.000	110.000	49.000	38.000	49.000	116.000

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
7	36-57-05.2 N	089-04-53.2 W	137.2		

Address: Approx. 1 mile SSE of
City: Wickliffe **County:** BALLARD **State:** KY **Construction Deadline:**

Antenna: 1
Maximum Transmitting ERP in Watts: 63.400

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.800	44.200	51.500	60.000	45.700	78.600	77.700	79.600
Transmitting ERP (watts)	0.500	33.000	283.800	425.600	77.600	2.300	0.400	1.200

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
8	36-10-08.2 N	089-38-52.3 W	82.0		

Address: 600' West of end of Route 363, 0.6 miles Southeast of
City: Caruthersville **County:** PEMISCOT **State:** MO **Construction Deadline:**

Antenna: 1
Maximum Transmitting ERP in Watts: 43.700

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	43.100	43.300	43.500	44.000	45.600	44.000	44.200	41.900
Transmitting ERP (watts)	38.000	9.000	2.000	3.000	23.000	56.000	57.000	57.000

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN568 **File Number:** 0009139106 **Print Date:** 09-01-2020

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
9	36-38-57.2 N	089-32-59.3 W	91.0		

Address: Southwest corner of intersection of US Hwy. 61/62 and, County Rd. 634, north of
City: New Madrid **County:** NEW MADRID **State:** MO **Construction Deadline:**

Antenna: 1
Maximum Transmitting ERP in Watts: 65.700

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	60.200	63.700	65.000	65.400	69.000	67.400	68.200	66.800
Transmitting ERP (watts)	331.000	54.000	12.000	22.000	151.000	349.000	266.000	311.000

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
10	36-55-17.2 N	089-29-57.3 W			

Address: 3.3 MILES NE OF
City: SIKESTON **County:** SCOTT **State:** MO **Construction Deadline:**

Antenna: 1
Maximum Transmitting ERP in Watts: 66.100

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.000	65.000	65.000	66.000	69.000	67.000	65.000	65.000
Transmitting ERP (watts)	414.000	50.000	3.000	0.800	1.000	0.800	13.000	156.000

Antenna: 2
Maximum Transmitting ERP in Watts: 66.100

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.000	65.000	65.000	66.000	69.000	67.000	65.000	65.000
Transmitting ERP (watts)	0.700	16.000	196.000	372.000	36.000	2.000	0.700	0.800

Antenna: 3
Maximum Transmitting ERP in Watts: 66.100

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.000	65.000	65.000	66.000	69.000	67.000	65.000	65.000
Transmitting ERP (watts)	0.700	1.000	0.700	2.000	37.000	364.000	223.000	14.000

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
11	37-12-25.5 N	089-30-44.0 W	128.6	50.3	1200145

Address: County Road 312
City: Scott City **County:** SCOTT **State:** MO **Construction Deadline:**

Antenna: 1
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	66.200	59.100	39.900	67.800	52.300	50.500	65.700	59.600
Transmitting ERP (watts)	21.800	5.200	16.200	80.900	97.700	88.900	100.000	84.700

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN568 **File Number:** 0009139106 **Print Date:** 09-01-2020

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
12	36-45-47.0 N	090-26-05.2 W	122.8	143.2	1229586

Address: 2579 Roxie Road
City: Poplar Bluff **County:** BUTLER **State:** MO **Construction Deadline:**

Antenna: 1
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	133.200	142.300	160.400	157.800	162.400	140.300	122.900	115.500
Transmitting ERP (watts)	150.000	109.420	29.180	3.680	0.890	3.110	27.360	112.740

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	133.200	142.300	160.400	157.800	162.400	140.300	122.900	115.500
Transmitting ERP (watts)	6.590	50.710	132.770	139.990	80.370	15.140	1.120	0.480

Antenna: 3
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	133.200	142.300	160.400	157.800	162.400	140.300	122.900	115.500
Transmitting ERP (watts)	16.500	0.310	0.300	10.170	68.980	31.590	28.500	70.890

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
13	36-47-19.2 N	089-32-50.5 W	95.4	67.1	1262445

Address: County Road 820
City: Matthews **County:** NEW MADRID **State:** MO **Construction Deadline:** 12-18-2009

Antenna: 1
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	63.400	63.200	65.000	67.100	64.100	68.200	67.100	64.100
Transmitting ERP (watts)	167.100	215.270	47.100	0.470	0.470	0.470	0.470	15.590

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	63.400	63.200	65.000	67.100	64.100	68.200	67.100	67.100
Transmitting ERP (watts)	0.190	0.320	33.340	93.970	51.640	1.030	0.280	0.190

Antenna: 3
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	63.400	63.200	65.000	67.100	64.100	68.200	67.100	64.100
Transmitting ERP (watts)	0.470	0.470	0.470	0.470	9.620	145.540	225.410	66.250

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN568 **File Number:** 0009139106 **Print Date:** 09-01-2020

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
14	36-56-14.5 N	089-13-16.3 W	95.4	50.0	

Address: 1070 North Highway Y

City: Charleston **County:** MISSISSIPPI **State:** MO C**onstruction Deadline:** 06-11-2010

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	45.700	47.800	47.500	47.000	48.100	46.000	44.400	46.700
Transmitting ERP (watts)	0.670	13.980	29.890	4.850	0.220	0.100	0.100	0.100

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	45.700	47.800	47.500	47.000	48.100	46.000	44.400	46.700
Transmitting ERP (watts)	0.380	0.380	1.370	32.920	131.080	32.920	1.610	0.380

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	45.700	47.800	47.500	47.000	48.000	46.000	44.400	46.700
Transmitting ERP (watts)	56.360	3.100	0.490	0.490	0.490	1.350	32.430	166.330

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
15	36-39-51.9 N	090-31-24.3 W	125.5	94.1	1247558

Address: U.S. Hwy 67 @ U.S. Highway 160

City: Neelyville **County:** BUTLER **State:** MO C**onstruction Deadline:** 06-11-2010

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	98.500	106.300	121.100	124.700	125.300	121.900	82.500	91.200
Transmitting ERP (watts)	205.880	87.820	7.830	0.450	0.410	1.790	15.620	89.870

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	98.500	106.300	124.700	124.700	125.300	121.900	82.500	91.200
Transmitting ERP (watts)	4.610	30.450	132.930	192.140	45.040	2.780	0.710	0.610

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
20	36-33-25.3 N	089-49-01.0 W	83.8	80.8	1268585

Address: (Risco site) Highway 62 & NE corner of Rogers Road

City: Risco **County:** NEW MADRID **State:** MO C**onstruction Deadline:** 04-28-2011

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	74.300	75.300	76.800	77.400	78.400	78.100	75.700	75.500
Transmitting ERP (watts)	219.270	102.560	0.870	0.460	0.440	0.440	1.950	95.710

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN568 **File Number:** 0009139106 **Print Date:** 09-01-2020

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
20	36-33-25.3 N	089-49-01.0 W	83.8	80.8	1268585

Address: (Risco site) Highway 62 & NE corner of Rogers Road
City: Risco **County:** NEW MADRID **State:** MO **Construction Deadline:** 04-28-2011

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	74.300	75.300	76.800	77.400	78.400	78.100	75.700	75.500
Transmitting ERP (watts)	0.440	14.490	155.230	199.970	43.750	0.440	0.440	0.440

Antenna: 3
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	74.300	75.300	76.800	77.400	78.400	78.100	75.700	75.500
Transmitting ERP (watts)	0.710	0.440	0.440	0.440	42.750	199.970	158.850	11.780

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
21	36-54-24.0 N	089-19-11.1 W	97.5	50.0	

Address: (Charleston) 5801 North 325th Road
City: Charleston **County:** MISSISSIPPI **State:** MO **Construction Deadline:** 06-06-2014

Antenna: 1
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	49.300	50.600	50.100	52.600	51.500	50.500	48.900	46.900
Transmitting ERP (watts)	115.240	138.550	39.960	1.450	0.300	0.300	0.450	18.260

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	49.300	50.600	50.100	52.600	51.500	50.500	48.900	46.900
Transmitting ERP (watts)	0.300	1.520	40.890	141.780	112.620	16.280	0.530	0.300

Antenna: 3
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	49.300	50.600	50.100	52.600	51.500	50.500	48.900	46.900
Transmitting ERP (watts)	6.050	0.410	0.300	0.300	6.190	76.140	151.920	76.140

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
22	36-27-17.7 N	089-38-26.4 W	85.9	79.6	1233494

Address: (Portageville) 2470 County Road 421
City: Portageville **County:** NEW MADRID **State:** MO **Construction Deadline:** 06-06-2014

Antenna: 1
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	77.300	75.600	77.900	77.800	78.000	78.300	79.100	78.700
Transmitting ERP (watts)	102.240	91.120	18.180	0.310	0.310	0.310	0.560	25.680

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN568 **File Number:** 0009139106 **Print Date:** 09-01-2020

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
22	36-27-17.7 N	089-38-26.4 W	85.9	79.6	1233494

Address: (Portageville) 2470 County Road 421

City: Portageville **County:** NEW MADRID **State:** MO **Construction Deadline:** 06-06-2014

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	77.300	75.600	77.900	77.800	78.000	78.300	79.100	78.700
Transmitting ERP (watts)	0.310	0.310	0.560	25.680	102.240	91.120	18.180	0.310

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	77.300	75.600	77.900	77.800	78.000	78.300	79.100	78.700
Transmitting ERP (watts)	23.970	0.760	0.310	0.310	0.910	33.080	134.780	122.920

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
23	36-07-34.0 N	090-10-28.9 W	77.4	44.2	

Address: (Senath) 9353 Hwy C

City: Senath **County:** DUNKLIN **State:** MO **Construction Deadline:** 12-26-2014

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	39.000	38.000	41.500	42.700	43.100	41.800	41.700	40.300
Transmitting ERP (watts)	30.910	27.440	5.820	0.420	0.400	0.400	0.650	5.960

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	39.000	38.000	41.500	42.700	43.100	41.800	41.700	40.300
Transmitting ERP (watts)	0.350	11.680	125.180	161.260	35.280	0.350	0.350	0.350

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	39.000	38.000	41.500	42.700	43.100	41.800	41.700	40.300
Transmitting ERP (watts)	0.400	0.400	0.400	0.810	8.170	33.560	23.960	4.310

Control Points:

Control Pt. No. 1

Address: 500 West Dove Road

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

Waivers/Conditions:

NONE

Universal Licensing System

ULS Application

0009135432 - Verizon Communications Inc.

File Number	0009135432	Application Status	Q - Accepted

General Information

Application Purpose	TC - Transfer of Control		
Receipt Date	07/21/2020		
Entered Date	07/21/2020	Action Date	08/13/2020
Waiver	No	Number of Rules	
Attachments	Yes		
Application Fee Exempt	No	Waiver/Deferral Fee	No

Licensee Information

FRN	0003290673 (View Ownership Filing)	Type	General Partnership
Name	Cellco Partnership ATTN Regulatory 5055 North Point Pkwy, NP2NE Engineering Alpharetta, GA 30022		P:(770)797-1070 E:Licensing.Compliance@verizonwireless.com
Race		Gender	
Ethnicity			

Licensee Contact Information

Name	Verizon Sarah Trosch 1300 I Street, NW - Suite 500 East Washington, DC 20005	P:(202)515-2453 E:sarah.trosch@verizon.com

Transferor Information

FRN	0003257094 (View Ownership Filing)	Type	Corporation

Name	Verizon Communications Inc. ATTN Sarah Trosch 1300 I Street, NW - Suite 500 East Washington, DC 20005		P:(202)515-2453 E:sarah.trosch@verizon.com
Race		Gender	
Ethnicity			

Transferor Contact Information

Name	Wilkinson Barker Knauer, LLP ATTN Jennifer L. Kostyu 1800 M. St., NW, Suite 800N Washington, DC 20036		P:(202)783-4141 F:(202)783-5851 E:jkostyu@wbklaw.com

Transferee Information

FRN	0003257094 (View Ownership)	Type	Corporation
Name	Verizon Communications Inc. ATTN Sarah Trosch 1300 I Street, NW - Suite 500 East Washington, DC 20005		P:(202)515-2453 E:sarah.trosch@verizon.com
Real Party In Interest	Cellco Partnership	FRN of Real Party in Interest	0003290673
Race		Gender	
Ethnicity			

Transferee Contact Information

Name	Wilkinson Barker Knauer, LLP ATTN Jennifer L. Kostyu 1800 M. St., NW, Suite 800N Washington, DC 20036		P:(202)783-4141 F:(202)783-5851 E:jkostyu@wbklaw.com

Transferee Qualifications and Ownership Information

Alien Ownership
The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications
The Applicant answered "No" to each of the Basic Qualification questions.

Return to the Top

Basic Search By File Number

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Help | Tech Support

Federal Communications Commission
45 L Street NE
Washington, DC 20554

Phone: 1-877-480-3201
ASL Videophone:1-844-432-2275
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: KENTUCKY RSA NO. 1 PARTNERSHIP

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

Call Sign	File Number
KNKQ306	0009611390

Radio Service
CL - Cellular

Market Numer	Channel Block
CMA443	B

Sub-Market Designator
0

FCC Registration Number (FRN): 0001836709

Market Name
Kentucky 1 - Fulton

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

Site Information:

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

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

Antenna: 1
Maximum Transmitting ERP in Watts: 135.800

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

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

FCC 601-C
March 2018

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

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

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

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

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

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

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

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

Antenna: 4
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 5
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 6
Maximum Transmitting ERP in Watts: 140.820

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

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

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

Antenna: 4
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 5
Maximum Transmitting ERP in Watts: 140.820

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

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

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

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

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

Antenna: 6
Maximum Transmitting ERP in Watts: 140.820

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

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

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

Antenna: 4
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 5
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 6
Maximum Transmitting ERP in Watts: 140.820

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

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

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

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 3
Maximum Transmitting ERP in Watts: 140.820

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

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

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

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

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

Antenna: 4
Maximum Transmitting ERP in Watts: 140.820

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

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

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

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

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

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

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

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 3
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 4
Maximum Transmitting ERP in Watts: 140.820

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

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

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

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

Address: 12201 SR 97

City: TriCity **County:** GRAVES **State:** KY C**onstruction Deadline:**

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

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

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

Address: (Paducah West) 4415 Merredith Rd.

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

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

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

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

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

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

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

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

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

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

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

Antenna: 1
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 3
Maximum Transmitting ERP in Watts: 140.820

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

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

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

Antenna: 1
Maximum Transmitting ERP in Watts: 140.820

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

Antenna: 2
Maximum Transmitting ERP in Watts: 140.820

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

Licensee Name: KENTUCKY RSA NO. 1 PARTNERSHIP

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

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

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

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

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

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

Control Points:

Control Pt. No. 3

Address: 500 W. Dove Rd.

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

Waivers/Conditions:

NONE

Universal Licensing System

ULS Application

Cellular - 0009611390 - KENTUCKY RSA NO. 1 PARTNERSHIP

File Number	0009611390	Radio Service	CL - Cellular
Call Sign	KNKQ306	Application Status	G - Granted

General Information

Application Purpose	RO - Renewal Only		
Existing Radio Service			
Authorization Type	Regular	Emergency STA	
Receipt Date	07/06/2021	Action Date	08/31/2021
Entered Date	07/06/2021	Requested Expiration Date	
Waiver	No	Number of Rules	
Attachments	No	Grandfathered Privileges	No
Application Fee Exempt	No	Regulatory Fee Exempt	No
Major Request			
Use Question			

Market Data

Market	CMA443 - Kentucky 1 - Fulton	Channel Block	B (View Frequencies)
Submarket Designator	0	Phase	2

Applicant Information

FRN	0001836709 (View Ownership Filing)	Type	General Partnership
Name	KENTUCKY RSA NO. 1 PARTNERSHIP 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Licensing Manager		P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com

Real Party in Interest	FRN of Real Party in Interest

Contact Information

Name	Verizon Wireless Licensing Manager 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com

Qualifications, Ownership

Radio Service Type	Mobile		
Regulatory Status	Common Carrier	Interconnected	Yes

Alien Ownership
The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications
The Applicant answered "No" to each of the Basic Qualification questions.

Demographics

Race	
Ethnicity	Gender

Additional Certifications

Operation/Performance Requirement Certification

For a site-based license

Applicant certifies that it is continuing to operate consistent with its most recently filed construction notification (or most recent authorization, if no construction notification was required).

For a geographic license, commercial service - licensee in its initial license term with an interim performance requirement

Applicant certifies that it has met its interim performance requirement, that over the portion of the license term following the interim performance requirement, it continues to use its facilities to provide at least the level of service required by its interim performance requirement, it has met its final performance requirement, and it continues to use its facilities to provide at least the level of service required by its final performance requirement through the end of the license term.

For a geographic license, commercial service - licensee in its initial license term with no interim performance requirement

Applicant certifies that it has met its final performance requirement and it continues to use its facilities to provide at least the level of service required by its final performance requirement through the end of the license term.

For a geographic license, commercial service - licensee in any subsequent term

Applicant certifies that it continues to use its facilities to provide at least the level of service required by its final performance requirement through the end of any subsequent license terms.

For a geographic license, private systems - licensee in its initial license term with an interim performance requirement

Applicant certifies that it has met its interim performance requirement, that over the portion of the license term following the interim performance requirement, it continues to use its facilities to further its private business or public interest/public safety communications needs at or above the level required to meet its interim performance requirement, it has met its final performance requirement, and it continues to use its facilities to provide at least the level of operation required by its final performance requirement through the end of the license term.

For a geographic license, private systems - licensee in its initial license term with no interim performance requirement

Applicant certifies that it has met its final performance requirement, it continues to use its facilities to further its private business or public interest/public safety communications needs, and it continues to use its facilities to provide at least the level of operation required by its final performance requirement through the end of the license term.

For a geographic license, private systems - licensee in any subsequent term

Applicant certifies that it continues to use its facilities to further its private business or public interest/public safety communications needs at or above the level required to meet its final performance requirement through the end of any subsequent license terms.

For a partitioned or disaggregated license without a performance requirement, for the first renewal application filed after 05/30/2020.

Applicant certifies that the partitioned and/or disaggregated license that is the subject of this renewal application has no separate performance requirement and that this is the first renewal of this license filed subsequent 10/01/2020.

For a partitioned or disaggregated license without a performance requirement, for any subsequent renewal filings

Applicant certifies that it continues to use its facilities to provide service or to further the applicant's private business or public interest/public safety needs.

Discontinuance of Service Certification

Applicant certifies that no permanent discontinuance of service or operation, as applicable, occurred during its current license term.

Regulatory Compliance Certification

Applicant certifies that it has substantially complied with all applicable FCC rules, policies, and the Communications Act of 1934, as amended.

Return to the Top

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Federal Communications Commission
45 L Street NE
Washington, DC 20554

Phone: 1-877-480-3201
ASL Videophone:1-844-432-2275
Submit Help Request

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

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

Call Sign KNLH404

File Number

Radio Service
CW - PCS Broadband

FCC Registration Number (FRN): 0003290673

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

Market Number	Channel Block	Sub-Market Designator
BTA339	D	0

Market Name
Paducah-Murray-Mayfield, KY

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

Waivers/Conditions:

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

Conditions:

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

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

FCC 601-MB
August 2021

Licensee Name: CELLCO PARTNERSHIP

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

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Universal Licensing System

ULS Application

0009135432 - Verizon Communications Inc.

File Number	0009135432	Application Status	Q - Accepted

General Information

Application Purpose	TC - Transfer of Control		
Receipt Date	07/21/2020		
Entered Date	07/21/2020	Action Date	08/13/2020
Waiver	No	Number of Rules	
Attachments	Yes		
Application Fee Exempt	No	Waiver/Deferral Fee	No

Licensee Information

FRN	0003290673 (View Ownership Filing)	Type	General Partnership
Name	Cellco Partnership ATTN Regulatory 5055 North Point Pkwy, NP2NE Engineering Alpharetta, GA 30022		P:(770)797-1070 E:Licensing.Compliance@verizonwireless.com
Race		Gender	
Ethnicity			

Licensee Contact Information

Name	Verizon Sarah Trosch 1300 I Street, NW - Suite 500 East Washington, DC 20005	P:(202)515-2453 E:sarah.trosch@verizon.com

Transferor Information

FRN	0003257094 (View Ownership Filing)	Type	Corporation

Name	Verizon Communications Inc. ATTN Sarah Trosch 1300 I Street, NW - Suite 500 East Washington, DC 20005		P:(202)515-2453 E:sarah.trosch@verizon.com
Race		Gender	
Ethnicity			

Transferor Contact Information

Name	Wilkinson Barker Knauer, LLP ATTN Jennifer L. Kostyu 1800 M. St., NW, Suite 800N Washington, DC 20036		P:(202)783-4141 F:(202)783-5851 E:jkostyu@wbklaw.com

Transferee Information

FRN	0003257094 (View Ownership)	Type	Corporation
Name	Verizon Communications Inc. ATTN Sarah Trosch 1300 I Street, NW - Suite 500 East Washington, DC 20005		P:(202)515-2453 E:sarah.trosch@verizon.com
Real Party In Interest	Cellco Partnership	FRN of Real Party in Interest	0003290673
Race		Gender	
Ethnicity			

Transferee Contact Information

Name	Wilkinson Barker Knauer, LLP ATTN Jennifer L. Kostyu 1800 M. St., NW, Suite 800N Washington, DC 20036		P:(202)783-4141 F:(202)783-5851 E:jkostyu@wbklaw.com

Transferee Qualifications and Ownership Information

Alien Ownership
The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications
The Applicant answered "No" to each of the Basic Qualification questions.

Return to the Top

ULS Help	FAQ - Online Help - Technical Support - Licensing Support
ULS Online Systems	CORES - ULS Online Filing - License Search - Application Search - Archive License Search
About ULS	Privacy Statement - About ULS - ULS Home

Basic Search By File Number

FCC | Wireless | ULS | CORES

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Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

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

Call Sign
WQGA718

File Number
0009793647

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

FCC Registration Number (FRN): 0003290673

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

Market Number	Channel Block	Sub-Market Designator
REA004	F	15

Market Name
Mississippi Valley

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

Waivers/Conditions:

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

Conditions:

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

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

FCC 601-MB
August 2021

Licensee Name: CELLCO PARTNERSHIP

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

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Universal Licensing System

ULS Application

0011116303 - Trace-Tek

File Number	0011116303	Application Status	G - Granted
Application Purpose	LN - New Lease	Classification of Lease	*De Facto* Transfer

General Information

Application Purpose	LN - New Lease		
Receipt Date	06/13/2024		
Entered Date	06/13/2024	Action Date	10/01/2024
Waiver	No	Number of Rules	
Attachments	Yes		
Application Fee Exempt	No	Waiver/Deferral Fee	No

Licensee Information

FRN	0003290673 (View Ownership Filing)	Type	General Partnership
Name	Cellco Partnership ATTN Network Engineering 5055 North Point Pkwy, NP2NE Engineering Alpharetta, GA 30022		P:(770)797-1070 E:Licensing.Compliance@verizonwireless.com
Race		Gender	
Ethnicity			

Licensee Contact Information

Name	Verizon Sarah Trosch 1300 I St, NW- Suite 500 East Washington, DC 20005		P:(202)515-2453 E:sarah.trosch@verizon.com

Lessee Information

FRN	0030856223 (View Ownership)	Type	Limited Liability Company

Name	Trace-Tek ATTN licenses@trace-tek.com 2625 Commons Boulevard Beavercreek, OH 45341		P:(972)672-0477 E:licenses@trace-tek.com
Real Party In Interest	Trace-Tek	FRN of Real Party in Interest	0030856223
Race		Gender	
Ethnicity			

Lessee Contact Information

Name	Trace-Tek Garrett Loo ATTN licenses@trace-tek.com 2625 Commons Boulevard Beavercreek, OH 45341		P:(972)672-0477 E:licenses@trace-tek.com

Lessee Qualifications and Ownership Information

Radio Service Type

Regulatory Status Interconnected

Alien Ownership
The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications
The Applicant answered "No" to each of the Basic Qualification questions.

Return to the Top

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

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

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

FCC Registration Number (FRN): 0003290673

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

Market Number	Channel Block	Sub-Market Designator
BEA072	B	0

Market Name
Paducah, KY-IL

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

Waivers/Conditions:

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

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

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

Licensee Name: CELLCO PARTNERSHIP

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

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Universal Licensing System

ULS Application

AWS (1710-1755 MHz and 2110-2155 MHz) - 0009775572 - Cellco Partnership

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

General Information

Application Purpose	RO - Renewal Only		
Existing Radio Service			
Authorization Type	Regular	Emergency STA	
Receipt Date	10/26/2021	Action Date	01/03/2022
Entered Date	10/26/2021	Requested Expiration Date	
Waiver	No	Number of Rules	
Attachments	Yes	Grandfathered Privileges	No
Application Fee Exempt	No	Regulatory Fee Exempt	No
Major Request			
Use Question			

Market Data

Market	BEA072 - Paducah, KY-IL	Channel Block	B
Submarket Designator	0	Associated Frequencies (MHz)	001720.00000000-001730.00000000 002120.00000000-002130.00000000

Applicant Information

FRN	0003290673 (View Ownership Filing)	Type	General Partnership
Name	Cellco Partnership 5055 North Point Pkwy, NP2NE		P:(770)797-1070 F:(770)797-1036

	Network Engineering Alpharetta, GA 30022	E:LicensingCompliance@VerizonWireless.com

Real Party in Interest		FRN of Real Party in Interest	

Contact Information

Name	Cellco Partnership Licensing Manager 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com

Qualifications, Ownership

Radio Service Type	Mobile		
Regulatory Status	Common Carrier	Interconnected	Yes

Alien Ownership
The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications
The Applicant answered "No" to each of the Basic Qualification questions.

Demographics

Race	
Ethnicity	Gender

Additional Certifications

Operation/Performance Requirement Certification

For a site-based license

Applicant certifies that it is continuing to operate consistent with its most recently filed construction notification (or most recent authorization, if no construction notification was required).

For a geographic license, commercial service - licensee in its initial license term with an interim performance requirement

Applicant certifies that it has met its interim performance requirement, that over the portion of the license term following the interim performance requirement, it continues to use its facilities to provide at least the level of service required by its interim performance requirement, it has met its final performance requirement, and it continues to use its facilities to provide at least the level of service required by its final performance requirement through the end of the license term.

For a geographic license, commercial service - licensee in its initial license term with no interim performance requirement

Applicant certifies that it has met its final performance requirement and it continues to use its facilities to provide at least the level of service required by its final performance requirement through the end of the license term.

For a geographic license, commercial service - licensee in any subsequent term

Applicant certifies that it continues to use its facilities to provide at least the level of service required by its final performance requirement through the end of any subsequent license terms.

For a geographic license, private systems - licensee in its initial license term with an interim performance requirement

Applicant certifies that it has met its interim performance requirement, that over the portion of the license term following the interim performance requirement, it continues to use its facilities to further its private business or public interest/public safety communications needs at or above the level required to meet its interim performance requirement, it has met its final performance requirement, and it continues to use its facilities to provide at least the level of operation required by its final performance requirement through the end of the license term.

For a geographic license, private systems - licensee in its initial license term with no interim performance requirement

Applicant certifies that it has met its final performance requirement, it continues to use its facilities to further its private business or public interest/public safety communications needs, and it continues to use its facilities to provide at least the level of operation required by its final performance requirement through the end of the license term.

For a geographic license, private systems - licensee in any subsequent term

Applicant certifies that it continues to use its facilities to further its private business or public interest/public safety communications needs at or above the level required to meet its final performance requirement through the end of any subsequent license terms.

For a partitioned or disaggregated license without a performance requirement, for the first renewal application filed after 05/30/2020.

Applicant certifies that the partitioned and/or disaggregated license that is the subject of this renewal application has no separate performance requirement and that this is the first renewal of this license filed subsequent 10/01/2020.

For a partitioned or disaggregated license without a performance requirement, for any subsequent renewal filings

Applicant certifies that it continues to use its facilities to provide service or to further the applicant's private business or public interest/public safety needs.

Discontinuance of Service Certification

Applicant certifies that no permanent discontinuance of service or operation, as applicable, occurred during its current license term.

Regulatory Compliance Certification

Applicant certifies that it has substantially complied with all applicable FCC rules, policies, and the Communications Act of 1934, as amended.

Return to the Top

ULS Help	FAQ - Online Help - Technical Support - Licensing Support
ULS Online Systems	CORES - ULS Online Filing - License Search - Application Search - Archive License Search
About ULS	Privacy Statement - About ULS - ULS Home
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RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

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

Call Sign	File Number
WQGD474	0009787546
Radio Service AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
02-09-2022	02-09-2022	12-18-2036	02-10-2022

Market Number	Channel Block	Sub-Market Designator
BEA096	C	0

Market Name
St. Louis, MO-IL

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

Waivers/Conditions:

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

Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station islicensed under the prior name.

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

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

FCC 601-MB
August 2021

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQGD474 **File Number:** 0009787546 **Print Date:** 02-10-2022

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Universal Licensing System

ULS Application

AWS (1710-1755 MHz and 2110-2155 MHz) - 0009787546 - Cellco Partnership

File Number	0009787546	Radio Service	AW - AWS (1710-1755 MHz and 2110-2155 MHz)
Call Sign	WQGD474	Application Status	G - Granted

General Information

Application Purpose	RO - Renewal Only		
Existing Radio Service			
Authorization Type	Regular	Emergency STA	
Receipt Date	11/05/2021	Action Date	02/09/2022
Entered Date	11/05/2021	Requested Expiration Date	
Waiver	No	Number of Rules	
Attachments	Yes	Grandfathered Privileges	No
Application Fee Exempt	No	Regulatory Fee Exempt	No
Major Request			
Use Question			

Market Data

Market	BEA096 - St. Louis, MO-IL	Channel Block	C
Submarket Designator	0	Associated Frequencies (MHz)	001730.00000000-001735.00000000 002130.00000000-002135.00000000

Applicant Information

FRN	0003290673 (View Ownership Filing)	Type	General Partnership
Name	Cellco Partnership 5055 North Point Pkwy, NP2NE		P:(770)797-1070 F:(770)797-1036

	Network Engineering Alpharetta, GA 30022	E:licensingcompliance@verizonwireless.com

Real Party in Interest		FRN of Real Party in Interest	

Contact Information

Name	Cellco Partnership Licensing Manager 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com

Qualifications, Ownership

Radio Service Type	Mobile		
Regulatory Status	Common Carrier	Interconnected	Yes

Alien Ownership
The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications
The Applicant answered "No" to each of the Basic Qualification questions.

Demographics

Race	
Ethnicity	Gender

Additional Certifications

Operation/Performance Requirement Certification

For a site-based license

Applicant certifies that it is continuing to operate consistent with its most recently filed construction notification (or most recent authorization, if no construction notification was required).

For a geographic license, commercial service - licensee in its initial license term with an interim performance requirement

Applicant certifies that it has met its interim performance requirement, that over the portion of the license term following the interim performance requirement, it continues to use its facilities to provide at least the level of service required by its interim performance requirement, it has met its final performance requirement, and it continues to use its facilities to provide at least the level of service required by its final performance requirement through the end of the license term.

For a geographic license, commercial service - licensee in its initial license term with no interim performance requirement

Applicant certifies that it has met its final performance requirement and it continues to use its facilities to provide at least the level of service required by its final performance requirement through the end of the license term.

For a geographic license, commercial service - licensee in any subsequent term

Applicant certifies that it continues to use its facilities to provide at least the level of service required by its final performance requirement through the end of any subsequent license terms.

For a geographic license, private systems - licensee in its initial license term with an interim performance requirement

Applicant certifies that it has met its interim performance requirement, that over the portion of the license term following the interim performance requirement, it continues to use its facilities to further its private business or public interest/public safety communications needs at or above the level required to meet its interim performance requirement, it has met its final performance requirement, and it continues to use its facilities to provide at least the level of operation required by its final performance requirement through the end of the license term.

For a geographic license, private systems - licensee in its initial license term with no interim performance requirement

Applicant certifies that it has met its final performance requirement, it continues to use its facilities to further its private business or public interest/public safety communications needs, and it continues to use its facilities to provide at least the level of operation required by its final performance requirement through the end of the license term.

For a geographic license, private systems - licensee in any subsequent term

Applicant certifies that it continues to use its facilities to further its private business or public interest/public safety communications needs at or above the level required to meet its final performance requirement through the end of any subsequent license terms.

For a partitioned or disaggregated license without a performance requirement, for the first renewal application filed after 05/30/2020.

Applicant certifies that the partitioned and/or disaggregated license that is the subject of this renewal application has no separate performance requirement and that this is the first renewal of this license filed subsequent 10/01/2020.

For a partitioned or disaggregated license without a performance requirement, for any subsequent renewal filings

Applicant certifies that it continues to use its facilities to provide service or to further the applicant's private business or public interest/public safety needs.

Discontinuance of Service Certification

Applicant certifies that no permanent discontinuance of service or operation, as applicable, occurred during its current license term.

Regulatory Compliance Certification

Applicant certifies that it has substantially complied with all applicable FCC rules, policies, and the Communications Act of 1934, as amended.

Return to the Top

ULS Help	FAQ - Online Help - Technical Support - Licensing Support
ULS Online Systems	CORES - ULS Online Filing - License Search - Application Search - Archive License Search
About ULS	Privacy Statement - About ULS - ULS Home
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RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

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

Call Sign	File Number
WQGD606	0009565676
Radio Service AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003290673

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

Market Number	Channel Block	Sub-Market Designator
BEA072	C	0

Market Name
Paducah, KY-IL

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

Waivers/Conditions:

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

Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station islicensed under the prior name.

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

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FCC 601-MB
August 2021

Licensee Name: CELLCO PARTNERSHIP

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

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Universal Licensing System

ULS Application

0010093348 - Cellco Partnership

HELP

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MAIN ADMIN TRANS LOG NOTIFICATION

File Number	0010093348	Application Status	Q - Accepted

General Information

Application Purpose	NT - Required Notification		
Existing Radio Service			
Authorization Type		Emergency STA	
Receipt Date	06/16/2022	Action Date	06/17/2022
Entered Date	06/16/2022	Requested Expiration Date	
Waiver	No	Number of Rules	
Attachments		Grandfathered Privileges	
Application Fee Exempt	No	Regulatory Fee Exempt	
Major Request			

Applicant Information

FRN	0003290673 (View Ownership Filing)	Type	General Partnership
Name	Cellco Partnership 5055 North Point Pkwy, NP2NE Engineering Alpharetta, GA 30022 ATTN Regulatory		P:(770)797-1070 E:Licensing.Compliance@verizonwireless.com
Real Party in Interest		FRN of Real Party in Interest	

Contact Information

Name	Verizon Sarah Trosch 1300 I Street, NW - Suite 500 East Washington, DC 20005	P:(202)515-2453 E:sarah.trosch@verizon.com

Return to the Top

ULS Help	FAQ - Online Help - Technical Support - Licensing Support
ULS Online Systems	CORES - ULS Online Filing - License Search - Application Search - Archive License Search
About ULS	Privacy Statement - About ULS - ULS Home
Basic Search	By File Number SEARCH

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RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

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

Call Sign	File Number
WQGV763	0009905996
Radio Service AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
04-05-2022	04-05-2022	04-30-2037	04-05-2022

Market Number	Channel Block	Sub-Market Designator
BEA096	B	0

Market Name
St. Louis, MO-IL

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

Waivers/Conditions:

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

Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station islicensed under the prior name.

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

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

FCC 601-MB
August 2021

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQGV763 **File Number:** 0009905996 **Print Date:** 04-05-2022

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Universal Licensing System

ULS Application

0010157192 - Illinois RSA 6 and 7 Limited Partnership

HELP

File Number	0010157192	Application Status	Q - Accepted
Application Purpose	LN - New Lease	Classification of Lease	Spectrum Manager

General Information

Application Purpose	LN - New Lease		
Receipt Date	08/08/2022		
Entered Date	08/08/2022	Action Date	12/03/2022
Waiver	Yes	Number of Rules	
Attachments	Yes		
Application Fee Exempt	No	Waiver/Deferral Fee	No

Licensee Information

FRN	0003290673 (View Ownership Filing)	Type	General Partnership
Name	Cellco Partnership ATTN Regulatory 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022		P:(770)797-1070 E:Licensing.Compliance@verizonwireless.com
Race		Gender	
Ethnicity			

Licensee Contact Information

Name	Verizon Sarah Trosch 1300 I St NW - Suite 500 East Washington, DC 20005		P:(202)515-2453 E:sarah.trosch@verizon.com

Lessee Information

FRN	0002842334 (View Ownership)	Type	Limited Partnership

Name	Illinois RSA 6 and 7 Limited Partnership ATTN Regulatory 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022		P:(770)797-1070 E:licensingcompliance@verizonwireless.com
Real Party In Interest	Cellco Partnership	FRN of Real Party in Interest	0003290673
Race		Gender	
Ethnicity			

Lessee Contact Information

Name	Verizon Sarah Trosch 1300 I St Nw - Suite 500 East Washington, DC 20005	P:(202)515-2453 E:sarah.trosch@verizon.com

Lessee Qualifications and Ownership Information

Radio Service Type

Regulatory Status Interconnected

Alien Ownership
The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications
The Applicant answered "No" to each of the Basic Qualification questions.

Return to the Top

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

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

Call Sign	File Number
WQJQ692	

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

FCC Registration Number (FRN): 0003290673

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

Market Number	Channel Block	Sub-Market Designator
REA004	C	0

Market Name
Mississippi Valley

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

Waivers/Conditions:

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

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

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

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

FCC 601-MB
August 2021

Licensee Name: CELLCO PARTNERSHIP

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

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Universal Licensing System

ULS Application

700 MHz Upper Band (Block C) - 0010612840 - Cellco Partnership

File Number	0010612840	Radio Service	WU - 700 MHz Upper Band (Block C)
Call Sign	WQJQ692	Application Status	2 - Pending

General Information

Application Purpose	AM - Amendment	Original Application Purpose	MD - Modification
Existing Radio Service			See Full Filing History
Authorization Type	Regular	Emergency STA	
Receipt Date	12/13/2024	Action Date	12/14/2024
Entered Date	12/13/2024	Requested Expiration Date	
Waiver	No	Number of Rules	
Attachments	Yes	Grandfathered Privileges	No
Application Fee Exempt	No	Regulatory Fee Exempt	No
Major Request			

Market Data

Market	REA004 - Mississippi Valley	Channel Block	C
Submarket Designator	0	Associated Frequencies (MHz)	000746.00000000-000757.00000000 000776.00000000-000787.00000000

Applicant Information

FRN	0003290673 (View Ownership Filing)	Type	General Partnership
Name	Cellco Partnership 5055 North Point Pkwy, NP2NE Network Engineering		P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com

Alpharetta, GA 30022
ATTN Regulatory

Real Party in Interest		FRN of Real Party in Interest	

Contact Information

Name	Verizon Wireless Licensing Manager 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com

Qualifications, Ownership

Radio Service Type	Mobile		
Regulatory Status	Common Carrier	Interconnected	Yes

Alien Ownership
The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications
The Applicant answered "No" to each of the Basic Qualification questions.

Demographics

Race			
Ethnicity		Gender	

Return to the Top

ULS Help	FAQ - Online Help - Technical Support - Licensing Support
ULS Online Systems	CORES - ULS Online Filing - License Search - Application Search - Archive License Search
About ULS	Privacy Statement - About ULS - ULS Home
Basic Search	By File Number SEARCH

FCC | Wireless | ULS | CORES

Help | Tech Support

Federal Communications Commission
45 L Street NE
Washington, DC 20554

Phone: 1-877-480-3201
ASL Videophone:1-844-432-2275
Submit Help Request

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

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

Call Sign	File Number
WQWY363	0009762545
Radio Service AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
12-14-2021	12-14-2021	11-29-2036	12-14-2021

Market Number	Channel Block	Sub-Market Designator
REA004	D	16

Market Name
Mississippi Valley

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

Waivers/Conditions:

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

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

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

The license is subject to compliance with the provisions of the January 12, 2001 Agreement between Deutsche Telekom AG, VoiceStream Wireless Corporation, VoiceStream Wireless Holding Corporation and the Department of Justice (DOJ) and the Federal Bureau of Investigation (FBI), which addresses national security, law enforcement, and public safety issues of the FBI and the DOJ regarding the authority granted by this license. Nothing in the Agreement is intended to limit any obligation imposed by Federal lawor regulation including, but not limited to, 47 U.S.C. Section 222(a) and (c)(1) and the FCC's implementing regulations. The Agreement is published at VoiceStream-DT Order, IB Docket No. 00-187, FCC 01-142, 16 FCC Rcd 9779, 9853 (2001).

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQWY363 **File Number:** 0009762545 **Print Date:** 12-14-2021

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Universal Licensing System

ULS Application

AWS (1710-1755 MHz and 2110-2155 MHz) - 0009762545 - Cellco Partnership

File Number	0009762545	Radio Service	AW - AWS (1710-1755 MHz and 2110-2155 MHz)
Call Sign	WQWY363	Application Status	G - Granted

General Information

Application Purpose	RO - Renewal Only		
Existing Radio Service			
Authorization Type	Regular	Emergency STA	
Receipt Date	10/21/2021	Action Date	12/14/2021
Entered Date	10/21/2021	Requested Expiration Date	
Waiver	No	Number of Rules	
Attachments	Yes	Grandfathered Privileges	No
Application Fee Exempt	No	Regulatory Fee Exempt	No
Major Request			
Use Question			

Market Data

Market	REA004 - Mississippi Valley	Channel Block	D
Submarket Designator	16	Associated Frequencies (MHz)	001735.00000000-001740.00000000 002135.00000000-002140.00000000

Applicant Information

FRN	0003290673 (View Ownership Filing)	Type	General Partnership
Name	Cellco Partnership 5055 North Point Pkwy, NP2NE		P:(770)797-1070 F:(770)797-1036

	Network Engineering Alpharetta, GA 30022	E:licensingcompliance@verizonwireless.com

Real Party in Interest		FRN of Real Party in Interest	

Contact Information

Name	Verizon Wireless Licensing Manager 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com

Qualifications, Ownership

Radio Service Type	Mobile		
Regulatory Status	Common Carrier	Interconnected	Yes

Alien Ownership
The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications
The Applicant answered "No" to each of the Basic Qualification questions.

Demographics

Race	
Ethnicity	Gender

Additional Certifications

Operation/Performance Requirement Certification

For a site-based license

Applicant certifies that it is continuing to operate consistent with its most recently filed construction notification (or most recent authorization, if no construction notification was required).

For a geographic license, commercial service - licensee in its initial license term with an interim performance requirement

Applicant certifies that it has met its interim performance requirement, that over the portion of the license term following the interim performance requirement, it continues to use its facilities to provide at least the level of service required by its interim performance requirement, it has met its final performance requirement, and it continues to use its facilities to provide at least the level of service required by its final performance requirement through the end of the license term.

For a geographic license, commercial service - licensee in its initial license term with no interim performance requirement

Applicant certifies that it has met its final performance requirement and it continues to use its facilities to provide at least the level of service required by its final performance requirement through the end of the license term.

For a geographic license, commercial service - licensee in any subsequent term

Applicant certifies that it continues to use its facilities to provide at least the level of service required by its final performance requirement through the end of any subsequent license terms.

For a geographic license, private systems - licensee in its initial license term with an interim performance requirement

Applicant certifies that it has met its interim performance requirement, that over the portion of the license term following the interim performance requirement, it continues to use its facilities to further its private business or public interest/public safety communications needs at or above the level required to meet its interim performance requirement, it has met its final performance requirement, and it continues to use its facilities to provide at least the level of operation required by its final performance requirement through the end of the license term.

For a geographic license, private systems - licensee in its initial license term with no interim performance requirement

Applicant certifies that it has met its final performance requirement, it continues to use its facilities to further its private business or public interest/public safety communications needs, and it continues to use its facilities to provide at least the level of operation required by its final performance requirement through the end of the license term.

For a geographic license, private systems - licensee in any subsequent term

Applicant certifies that it continues to use its facilities to further its private business or public interest/public safety communications needs at or above the level required to meet its final performance requirement through the end of any subsequent license terms.

For a partitioned or disaggregated license without a performance requirement, for the first renewal application filed after 05/30/2020.

Applicant certifies that the partitioned and/or disaggregated license that is the subject of this renewal application has no separate performance requirement and that this is the first renewal of this license filed subsequent 10/01/2020.

For a partitioned or disaggregated license without a performance requirement, for any subsequent renewal filings

Applicant certifies that it continues to use its facilities to provide service or to further the applicant's private business or public interest/public safety needs.

Discontinuance of Service Certification

Applicant certifies that no permanent discontinuance of service or operation, as applicable, occurred during its current license term.

Regulatory Compliance Certification

Applicant certifies that it has substantially complied with all applicable FCC rules, policies, and the Communications Act of 1934, as amended.

Return to the Top

ULS Help	FAQ - Online Help - Technical Support - Licensing Support
ULS Online Systems	CORES - ULS Online Filing - License Search - Application Search - Archive License Search
About ULS	Privacy Statement - About ULS - ULS Home
Basic Search	By File Number SEARCH

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Washington, DC 20554

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ASL Videophone:1-844-432-2275
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EXHIBIT B

SITE DEVELOPMENT PLAN:

500' VICINITY MAP
LEGAL DESCRIPTIONS
FLOOD PLAIN CERTIFICATION
SITE PLAN
VERTICAL TOWER PROFILE

PROJECT SUMMARY

SITE NAME:	LOVELACEVILLE
SITE ADDRESS:	±KY HIGHWAY 286 KEVIL, KY 42053
COUNTY:	BALLARD
JURISDICTION:	BALLARD COUNTY
LAND USE:	FARM
PARCEL ID:	72-35-02
SITE COORDINATES:	1A
LATITUDE:	37° 00' 17.56" N (NAD83)
LATITUDE:	37.004878°
LONGITUDE:	88° 51' 04.67" W (NAD83)
LONGITUDE:	-88.851298°
ELEVATION:	491.4' AMSL (NAVD88)
FUZE PROJECT ID:	17285932
PSLC CODE:	US-KY-5215
PROPERTY OWNER:	DWAINE & DEBRA STIGALL 1352 HAMBURG ROAD, KEVIL, KY 42053
PROPERTY OWNER CONTACT:	DWAINE STIGALL (270) 994-1486
TOWER OWNER:	VERTICAL BRIDGE 750 PARK OF COMMERCE DR BOCA RATON, FL 33487
TOWER OWNER CONTACT:	GRETCHEN BLANTON 704-472-0374
STRUCTURE TYPE:	SELF SUPPORTING
TOWER HEIGHT:	290'-0"
ENVIRONMENTAL REQ. :	N/A
OCCUPANCY :	UNMANNED
SITE TYPE :	RAWLAND
POWER COMPANY : CONTACT : PHONE :	BIG RIVERS ELECTRIC CORPORATION CUSTOMER SERVICE 270-827-2561
COMMUNICATIONS: PHONE :	AT&T (877) 275-2405
FIRE DEPARTMENT : PHONE :	KEVIL FIRE DEPARTMENT (270) 462-2157
POLICE DEPARTMENT : PHONE :	KEVIL POLICE DEPARTMENT (270) 462-3104
DIRECTIONS COORDINATOR : PHONE :	MATT BATES (423) 802-7707

DIRECTIONS FROM BALLARD COUNTY COURT: HEAD SOUTH ON US-62 E / US-51 S / N 4TH ST TOWARD COURT ST. TURN LEFT ONTO KY-121 / COURT ST. BEAR LEFT ONTO KY-286 / PHILLIPS DR. ARRIVE AT SITE ON THE RIGHT.

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.

verticalbridge

verizon

US-KY-5215

SITE NAME: LOVELACEVILLE
±KY HIGHWAY 286
KEVIL, KY 42053

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

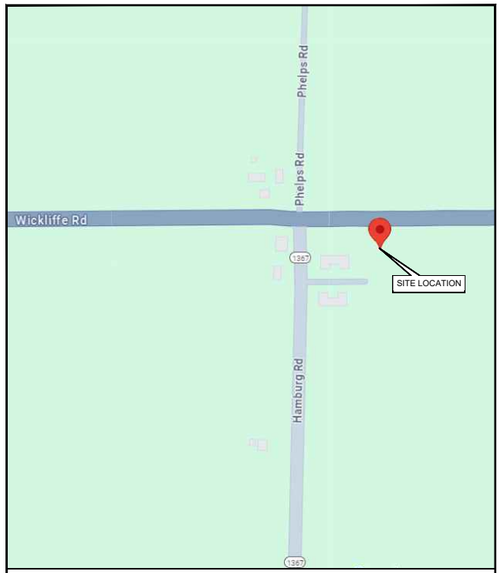
- INSTALL A NEW 290'-0" SELF SUPPORT TOWER WITH 10'-0" LIGHTNING ROD (OVERALL 300'-0")
- INSTALL A NEW 75' X 75' CHAIN LINK FENCE COMPOUND WITHIN A 100' X 100' LEASE AREA
- INSTALL A NEW UTILITY H-FRAME WITHIN THE NEW FENCED COMPOUND
- INSTALL A NEW TOWER, COMPOUND AND EQUIPMENT GROUNDING SYSTEM
- INSTALL 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 7'-6" X 11'-6" CONCRETE EQUIPMENT PAD
- INSTALL A NEW 4'-0" X 9'-6" CONCRETE GENERATOR PAD

ALL WORK MUST BE DONE IN ACCORDANCE TO THE DRAWINGS.

VICINITY MAP

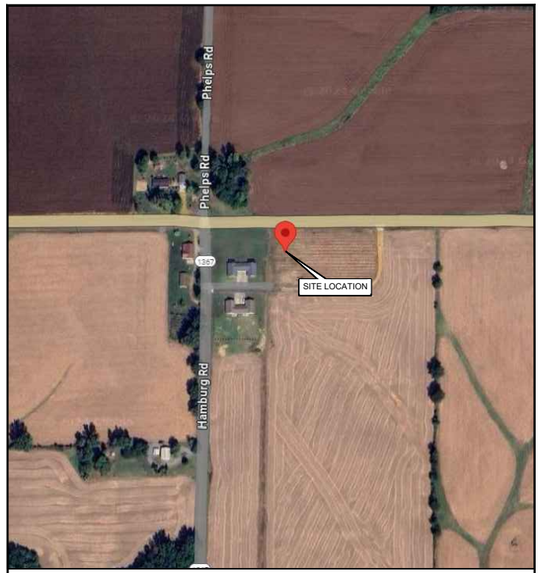
NOT TO SCALE

LOCATION MAP



NOT TO SCALE

AERIAL MAP



NOT TO SCALE

DIRECTIONS FROM 2441 HOLLOWAY RD, LOUISVILLE, KY 40299: HEAD SOUTH ON HOLLOWAY RD TOWARD SCHUTTE STATION PL, TURN LEFT ONTO SCHUTTE STATION PL, ROAD NAME CHANGES TO PLANTSIDE DR, TURN LEFT ONTO BLANKENBAKER PKWY, TAKE THE RAMP ON THE RIGHT FOR I-64 EAST AND HEAD TOWARD LEXINGTON, AT EXIT 19A, HEAD RIGHT ON THE RAMP FOR I-265 / KY-841 SOUTH TOWARD GENE SNYDER FREEWAY, ROAD NAME CHANGES TO I-265 W / KY-841 W, AT EXIT 10-B, HEAD RIGHT ON THE RAMP FOR I-65 SOUTH TOWARD NASHVILLE, AT EXIT 91C-A, HEAD RIGHT ON THE RAMP FOR US-31W TOWARD ELIZABETHTOWN / PADUCAH, KEEP LEFT, HEADING TOWARD LEITCHFIELD / PADUCAH, ROAD NAME CHANGES TO WESTERN KENTUCKY PKWY, ROAD NAME CHANGES TO WESTERN KENTUCKY PKWY W, KEEP STRAIGHT TO GET ONTO I-69 S, AT EXIT 68B, HEAD RIGHT ON THE RAMP FOR I-69 SOUTH / I-24 WEST TOWARD PADUCAH, AT EXIT 7, HEAD RIGHT ON THE RAMP FOR US-45 / US-62 TOWARD MAYFIELD / PADUCAH, KEEP LEFT, HEADING TOWARD BARDWELL, KEEP STRAIGHT TO GET ONTO ROAD, TURN LEFT ONTO US-62 W / ALBEN BARKLEY DR TOWARD BARDWELL / US-62 WEST, KEEP STRAIGHT TO GET ONTO KY-286 / US HIGHWAY 286. ARRIVE AT SITE ON THE LEFT.

SHEET INDEX

NO.	DESCRIPTION
T1	TITLE SHEET
S1	SURVEY - COVER SHEET
S2	SURVEY - OVERVIEW MAP
S3	SURVEY - SITE SURVEY
S4	SURVEY - SITE SURVEY
S5	SURVEY - SITE SURVEY
Z1	OVERALL SITE PLAN WITH AERIAL OVERLAY
Z2	OVERALL SITE PLAN WITHOUT AERIAL OVERLAY
Z3	TOWER LOCATION PLAN
Z4	SITE PLAN
Z5	DIMENSION SITE PLAN
Z6	TOWER ELEVATION
Z7	SITE DETAILS
Z8	SITE DETAILS
Z9	FENCE DETAILS

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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

TeleCAD Wireless
1961 NORTHPOINT BLVD.
SUITE 130
HIXSON, TN 37343
PH : 423-843-9500
FAX : 423-843-9509

DRAWN BY	TDD
CHECKED BY	SEH

REVISIONS

#	DATE	BY	DESCRIPTION
C	12/26/24	MDR	FINALS
B	09/16/24	MDR	ZONING REVIEW
A	07/16/24	JAE	ZONING REVIEW

STATE OF KENTUCKY
STEPHEN E. HUNT
25003
12/26/24
LICENSED PROFESSIONAL ENGINEER

verticalbridge

FUZE ID :
17285932

SITE NAME :
LOVELACEVILLE

SITE # / LOCATION CODE :
US-KY-5215

SITE ADDRESS :
±KY HIGHWAY 286
KEVIL, KY 42053

SITE TYPE:
RAWLAND

SHEET TITLE :
TITLE SHEET

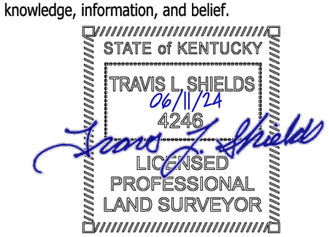
DRAWING # :	REVISION :
T1	C

GENERAL NOTES:

1. 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.
2. Survey shown hereon was performed under the supervision of a state-registered Land Surveyor and conforms to all applicable State Board Requirements.
3. Instruments Used: One or more of: Topcon Total Station, Topcon Hiperlite Plus GPS, Carlson Surveyor Data Collector, DJI UAV.
4. Where shown, improvements (utilities, buildings, trees, fences, etc.) are based on field Survey and/or aerial mapping.
5. 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.
6. 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.
7. This survey may have been reduced or enlarged in size due to subsequent reproduction. This should be taken into consideration when obtaining scaled data.
8. Geographic Coordinates, if published, meet FAA Accuracy Code 1A, and are accurate to within ± 20 feet horizontally and to within ± 3 feet vertically.
9. 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.
10. 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.
11. 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.
12. 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 that this survey was 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:	37.004878°	37° 00' 17.56"
Longitude:	WEST:	88.851298°	88° 51' 04.67"
Ground Elev:	491.4	FEET AMSL	(NAVD88)
Benchmark:	DM4118 MOCH		

PARENT TAX PARCEL

DWAINE STIGALL AND DEBRA J. STIGALL
TAX PARCEL: 72-35-02

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: 05-30-2024
Method: RTK (CORS); Confidence Level: 95%
Positional Accuracy: HZ ± 0.10'
EPOCH 2010.0000

FLOOD DATA

FEMA FLOOD MAP PANEL: 21007C0150C, Effective Date: 07-07-2014
Surveyed Area appears to lie within: ZONE X (Areas of Minimal Flood Hazard)

TITLE EXAMINATION:

See Sheet #5

ADDITIONAL NOTES

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

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

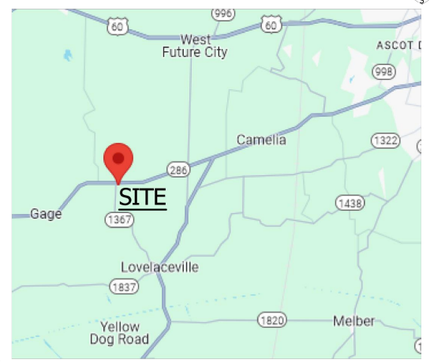
Except as noted hereon, no visible potential encroachments were observed at the time of the survey.

SURVEY ISSUE DATA

#	DETAILS	DATE	DRAWN	APP
0	Original Survey Issue	06-11-2024	NB	TLS

LOCATION MAP

NOT TO SCALE



LEGEND

	IRON ROD FOUND
	UTILITY POLE
F	FIBEROPTIC MARKER
	PROPOSED EQUIPMENT LOCATION
	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
	DITCH
OHU	OVERHEAD UTILITY LINES
	5' CONTOURS
	1' CONTOURS
RW	PUBLIC R/W
	TAX PARCEL BOUNDARY
	TIE LINE
	LOT LINES
	EXISTING EASEMENT
	LESSEE'S PREMISES
	LESSEE'S EASEMENTS

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

PREPARED FOR

verticalbridge

THE TOWERS, LLC

750 Park of Commerce Drive,
Boca Raton, FL 33487

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

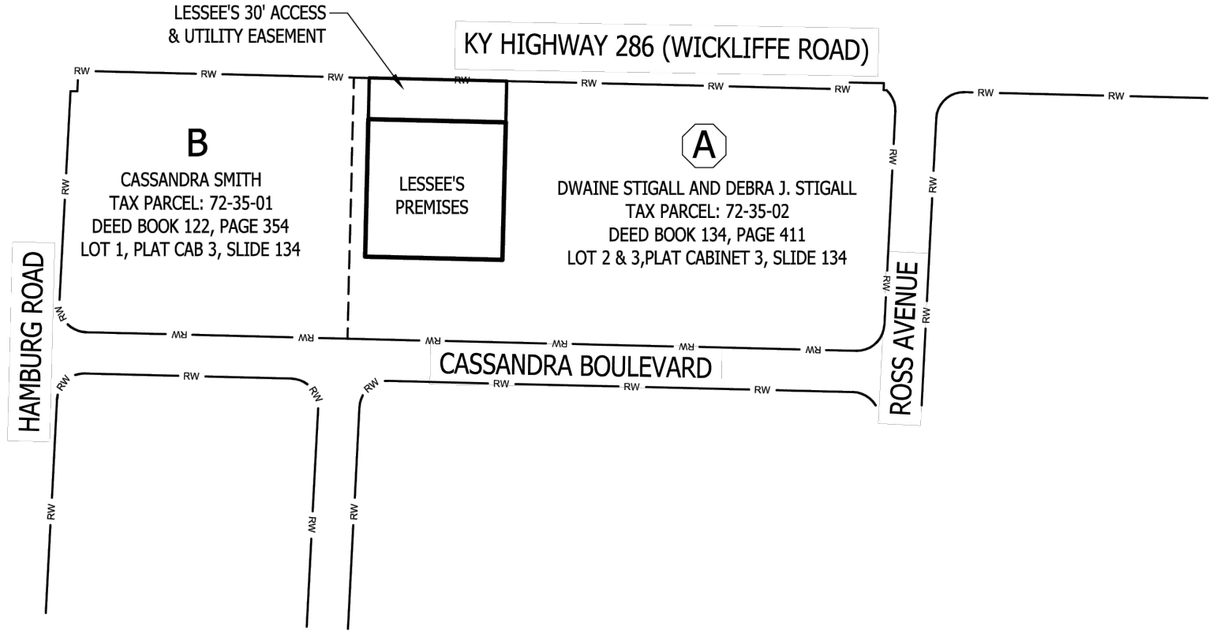
SITE SURVEY
LOVELACEVILLE

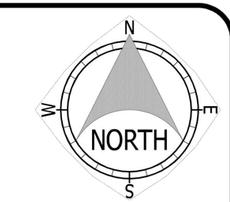
Site Number: US-KY-5215
KY Highway 286, Kevil, KY 42053
Ballard County, Kentucky

COVER SHEET

DWG#: 24165
ISSUE #: 0
ISSUE DATE: 06-11-2024
SEE SHEET #1

SHEET 1 OF 5





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

SCALE: 1in = 100'

0' 100' 200' 300'

RW PUBLIC R/W

VESTING LAND

LESSEE'S PREMISES

LESSEES EASEMENT(S)

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

PREPARED FOR

vertical bridge

THE TOWERS, 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
LOVELACEVILLE

Site Number: US-KY-5215

KY Highway 286, Kevil, KY 42053

Ballard County, Kentucky

OVERVIEW MAP

DWG#: 24165
ISSUE #: 0
ISSUE DATE: 06-11-2024
SEE SHEET #1

SHEET 2 OF 5

KY HIGHWAY 286

(Wickliffe Road)

Public R/W (Non-uniform width) (Ref: PB 3-134)

LINE DATA TABLE		
LINE	BEARING	DISTANCE
L1	S 01°20'37" W	100.00'
L2	N 88°39'23" W	100.00'
L3	N 01°20'37" E	100.00'
L4	S 88°39'23" E	100.00'
L5	N 88°39'23" W	100.00'
L6	N 01°20'37" E	30.00'
L7	S 88°39'23" E	100.00'
L8	S 01°20'37" W	30.00'

N
W E
S
NORTH

KENTUCKY SOUTH
STATE PLANE

Site Benchmark
PK Nail Set
EL: 494.46'

Pull Box

Grave Marker

P.O.C.
1/2in Capped
Iron Rod
Found

Chord Tie-Line
S 67°47'54" W
75.06'

P.O.B.
Premises
AU Esmt

15' Public Utility Easement
See Title Item #11

LESSEE'S 30'
ACCESS & UTILITY
EASEMENT
3,000 Sq. Ft. - 0.07± Ac

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

Gravel Area
(Assumed Septic)

8in PVC
Drain Pipe

Paved Road

Gravel Road

CASSANDRA BOULEVARD
30' Public R/W (Ref: PB 3-134)

ROSS AVENUE
30' Public R/W (Ref: PB 3-134)

SCALE: 1in = 40'

0 40' 80' 120'

STATE of KENTUCKY
TRAVIS L. SHIELDS
06/11/24
4246
LICENSED
PROFESSIONAL
LAND SURVEYOR

THE LAND CONSULTANTS LLC
5449 Highway 41
Jasper, TN 37347
423·304·6722

PREPARED FOR
vertical bridge
THE TOWERS, 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
LOVELACEVILLE
Site Number: US-KY-5215
KY Highway 286, Kevil, KY 42053
Ballard County, Kentucky

SITE SURVEY

DWG#: 24165
ISSUE #: 0
ISSUE DATE: 06-11-2024
SEE SHEET #1

SHEET 3 OF 5

LESSEE'S PREMISES

All that tract or parcel of land lying and being in Ballard County, Kentucky, and being a portion of the property of Dwaine Stigall and wife, Debra J. Stigall, of record in Deed Book 134, Page 411, Ballard County Clerk's Office, Ballard County, Kentucky, and being more particularly described as follows:

COMMENCE at a one-half-inch Iron Rod found at the Northeast Corner of Lot 2, as shown on Plat Cabinet 3, Slide 134, aforesaid records
Thence along a Chord Tie Line having a Bearing of S 67°47'54" W, a distance of 75.06 feet to the POINT OF BEGINNING;

Thence S 01°20'37" W, a distance of 100.00 feet;
Thence N 88°39'23" W, a distance of 100.00 feet;
Thence N 01°20'37" E, a distance of 100.00 feet;
Thence S 88°39'23" E, a distance of 100.00 feet to the POINT OF BEGINNING.

LESSEE'S 30' ACCESS & UTILITY EASEMENT

All that tract or parcel of land lying and being in Ballard County, Kentucky, and being a portion of the property of Dwaine Stigall and wife, Debra J. Stigall, of record in Deed Book 134, Page 411, Ballard County Clerk's Office, Ballard County, Kentucky, and being more particularly described as follows:

COMMENCE at a one-half-inch Iron Rod found at the Northeast Corner of Lot 2, as shown on Plat Cabinet 3, Slide 134, aforesaid records
Thence along a Chord Tie Line having a Bearing of S 67°47'54" W, a distance of 75.06 feet to the POINT OF BEGINNING;

Thence N 88°39'23" W, a distance of 100.00 feet;
Thence N 01°20'37" E, a distance of 30.00 feet, to a point on the Southern Right-of-Way Line of KY Highway 286;
Thence S 88°39'23" E, along said Right-of-Way, a distance of 100.00 feet;
Thence S 01°20'37" W, leaving said Right-of-Way, a distance of 30.00 feet to the POINT OF BEGINNING.

Said Easement contains 0.07 Acres (3,000 Square Feet), more or less.

STATE of KENTUCKY
TRAVIS L. SHIELDS
06/11/24
4246
LICENSED PROFESSIONAL LAND SURVEYOR

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

PREPARED FOR
vertical bridge
THE TOWERS, 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
LOVELACEVILLE

Site Number: US-KY-5215
KY Highway 286, Kevil, KY 42053
Ballard County, Kentucky

DESCRIPTIONS

DWG#: 24165
ISSUE #: 0
ISSUE DATE: 06-11-2024
SEE SHEET #1

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-171750-C, Commitment Date: March 25, 2024, Schedule B, Part II, Exceptions.

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

Item 10: Plat 3-134: Plat of current Parent Tax Parcel & other lands, shows no matters relevant to Current Parent Tax Parcel, but see item 11.

Item 11: Plat 3-73: Note: the instrument included under this reference with Title Exam does not actually bear a recording stamp, this this survey cannot confirm this instrument is in fact Plat 3-73. The supplied instrument shows a 15-foot Public Utility Easement, as shown hereon, located partly on Parent Tax Parcel and partly withing Lessee's Easement. Plat 3-134 does not show this easement, and current Deed of conveyance does not explicitly call for this easement.

LEGAL DESCRIPTION OF PARENT TAX PARCEL

The following real estate lying in Ballard County, Kentucky:

Lying at the Southwest intersection of Kentucky Highway 286 with Ross Avenue as shown on unrecorded subdivision plat of Country Village Subdivision and being part of the Anthony and Pamela Hunt property recorded in Deed Book 80, Page 20, and shown as Lot 3 in Block B to said Country Village Subdivision, Ballard County Clerk's Office, Ballard County, Kentucky and more particularly bounded and described as follows to wit:

Beginning at a ½" rebar with Cap 3861 set in the South right of way line of Kentucky Highway 286 at the Northwest corner of Lot 3 per unrecorded Plat of Country Village Subdivision, said point being S 88° 36' 39" E, 380.46 feet as measured along the South right of way line of said Kentucky Highway 286 from an existing ½" rebar with Cap 1842 at its intersection with the East right of way line of Kentucky Highway 1367 (Hamburg Road) and also having Kentucky State Plane Coordinates (South Zone 1602 - NAD 83) of Northing 1899964.3183 and Easting 735154.7422; thence from said point of beginning Eastwardly with the South right of way line of Kentucky Highway 286 for the following 5 calls: S 88° 36' 39" E. 180.49 feet to a ½" rebar with Cap 3861 set; N 01° 23' 21" E. 5.00 feet to an existing ½" rebar; S. 88°36'39" E. 25.00 feet to an existing ½" rebar, S. 01° 23' 21" W. 5.00 feet to an existing ½" rebar (disturbed); and S 88° 36' 39" E. 2.14 feet to a ½" rebar with Cap 3861 set at its intersection with the West right of way line of Ross Avenue as shown on aforesaid unrecorded Plat of Country Village Subdivision; thence Southwardly with the West right of way line of said Ross Avenue for the following 2 calls: Southeastwardly with a curve to the right having a radius of 20.00 feet (a chord being S 22° 04' 43" E. 16.92 feet) a distance of 17.48 feet to a ½" rebar with Cap 3861 set at the end of said curve; and S 02° 57' 10" W. 155.08 feet to a ½" rebar with Cap 3861 set in the Southerly right of way line of Cassandra Boulevard per aforesaid unrecorded Subdivision Plat of Country Village Subdivision and a curve to the right having a radius of 20.00 feet; thence Westwardly with the Northerly right of way of said Cassandra Boulevard for the following 2 calls: Southwestwardly with said curve to the right (a chord being S. 47° 10' 08" W. 27.89 feet) a distance of 30.87 feet to a ½" rebar with cap 38.61 set at the end of said curve; and N. 88° 36' 39" W. 190.15 feet to a ½" rebar with Cap 3861 set at the Southwest corner of aforesaid Lot 3 per unrecorded Subdivision Plat of Country Village Subdivision; thence N 01° 23' 21" E. with the West line of said Lot 3 a distance of 190.00 feet to the Point of Beginning and containing 0.93 acres as shown on "Minor Subdivision Plat for Anthony and Pamela Hunt" prepared by Siteworx Survey & Design, LLC, dated April 18, 2023.

A copy of the Minor Subdivision Plat for Lot 3, Block B, of the Country Village Subdivision, more particularly described as Tract II of this Deed, is of record in Plat Cabinet 3, Slide 134, Ballard County Court Clerk's Office.

Parcel ID: 72-35-02 (Being a portion of Parcel 72-35)

This being a portion of the property conveyed to Dwaine Stigall and wife, Debra J. Stigall, jointly as life tenants with the remainder to vest in the survivor from Anthony Hunt and wife, Pamela Hunt in a deed dated July 17, 2023 and recorded September 18, 2023 in Book 134 and Page 411 in Ballard County, KY.

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

PREPARED FOR
vertical bridge
THE TOWERS, LLC
750 Park of Commerce Drive,
Boca Raton, FL 33487

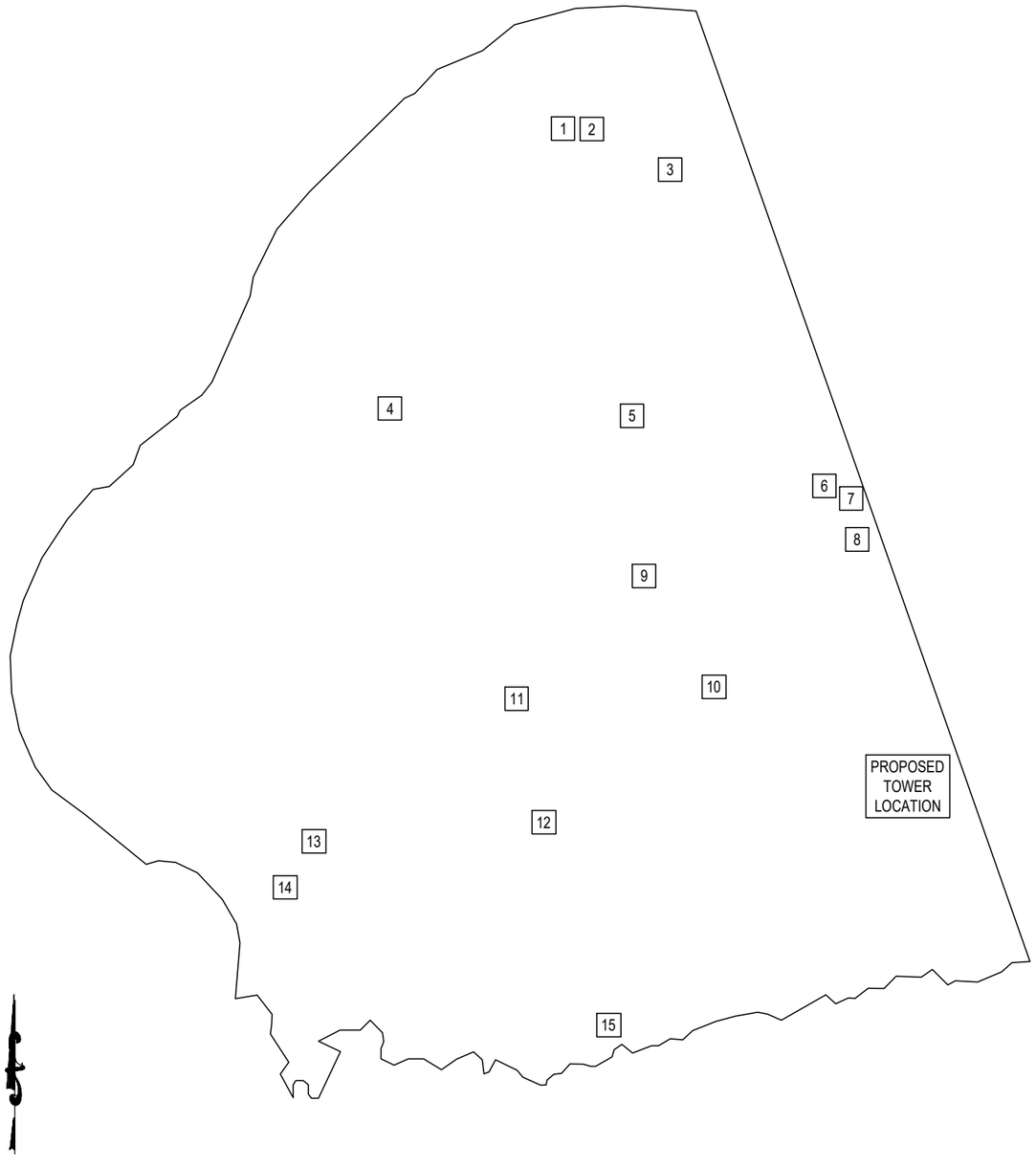
(Not a Boundary Survey of Parent Lands. Not intended for fee simple Land Transfer)

SITE SURVEY
LOVELACEVILLE

Site Number: US-KY-5215
KY Highway 286, Kevil, KY 42053
Ballard County, Kentucky

TITLE

DWG#: 24165
ISSUE #: 0
ISSUE DATE: 06-11-2024
SEE SHEET #1



BALLARD COUNTY TOWER MAP

FCC REGISTERED SITES (LAUREL COUNTY)

TOWER	ASR	LATITUDE	LONGITUDE	TOWER OWNER
1	1042698	37°11'31.20"N	88°58'53.20"W	WPSD-TV, LLC
2	1044387	37°11'36.00"N	88°58'40.00"W	AMERICAN FAMILY ASSOCIATION
3	1252613	37°10'55.40"N	88°56'43.70"W	KENTUCKY RSA NO. 1 PARTNERSHIP
4	1321587	37° 6'42.10"N	89° 2'44.50"W	KENTUCKY RSA NO. 1 PARTNERSHIP
5	1244919	37° 6'39.70"N	88°57'32.40"W	CCATT LLC
6	1324994	37° 5'14.10"N	88°53'8.30"W	TILLMAN INFRASTRUCTURE, LLC
7	1265272	37° 5'12.60"N	88°52'56.70"W	TV6 HOLDINGS LLC
8	1229412	37° 4'30.10"N	88°52'42.70"W	TOWERS III LLC
9	1030664	37° 3'51.40"N	88°57'23.60"W	CROWN CASTLE GT COMPANY LLC
10	1061534	37° 1'59.60"N	88°55'53.80"W	SBA PROPERTIES, LLC
11	1313667	37° 1'45.60"N	89° 0'7.60"W	HORVATH TOWERS VI, LLC
12	1222068	36°59'32.10"N	88°59'19.20"W	AMERICAN FAMILY ASSOCIATION
13	1265530	36°59'1.10"N	36°59'1.10"N	KENTUCKY RSA NO. 1 PARTNERSHIP
14	1318625	36°58'24.90"N	89° 4'58.40"W	KENTUCKY STATE POLICE
15	1044569	36°56'17.00"N	z E	WITHERS BROADCASTING COMPANY OF PADUCAH, LLC
PROPOSED TOWER	TBD	36° 47' 26.36" N	84° 10' 16.69" W	VERTICAL BRIDGE, LLC

TeleCAD Wireless
1961 NORTHPOINT BLVD.
SUITE 130
HIXSON, TN 37343
PH : 423-843-9500
FAX : 423-843-9509

DRAWN BY	TDD
CHECKED BY	SEH

REVISIONS

#	DATE	BY	DESCRIPTION
C	12/26/24	MDR	FINALS
B	09/16/24	MDR	ZONING REVIEW
A	07/16/24	JAE	ZONING REVIEW

FOR REFERENCE

verticalbridge

FUZE ID :
17285932

SITE NAME :
LOVELACEVILLE

SITE # / LOCATION CODE :
US-KY-5215

SITE ADDRESS :
±KY HIGHWAY 286
KEVIL, KY 42053

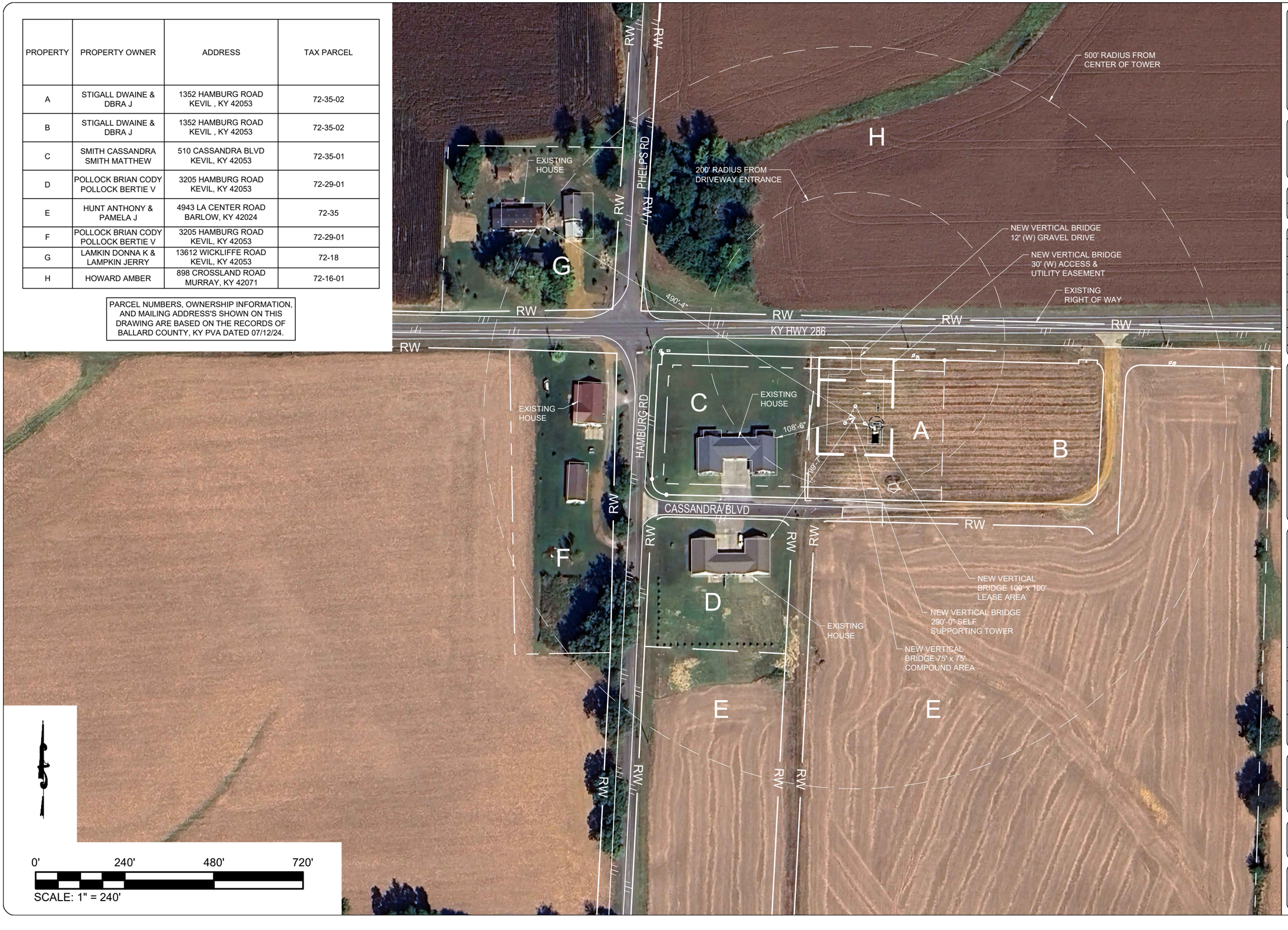
SITE TYPE:
RAWLAND

SHEET TITLE :
COUNTY TOWER MAP

DRAWING # :	REVISION :
Z1	C

PROPERTY	PROPERTY OWNER	ADDRESS	TAX PARCEL
A	STIGALL DWAINE & DBRA J	1352 HAMBURG ROAD KEVIL , KY 42053	72-35-02
B	STIGALL DWAINE & DBRA J	1352 HAMBURG ROAD KEVIL , KY 42053	72-35-02
C	SMITH CASSANDRA SMITH MATTHEW	510 CASSANDRA BLVD KEVIL, KY 42053	72-35-01
D	POLLOCK BRIAN CODY POLLOCK BERTIE V	3205 HAMBURG ROAD KEVIL, KY 42053	72-29-01
E	HUNT ANTHONY & PAMELA J	4943 LA CENTER ROAD BARLOW, KY 42024	72-35
F	POLLOCK BRIAN CODY POLLOCK BERTIE V	3205 HAMBURG ROAD KEVIL, KY 42053	72-29-01
G	LAMKIN DONNA K & LAMPKIN JERRY	13612 WICKLIFFE ROAD KEVIL, KY 42053	72-18
H	HOWARD AMBER	898 CROSSLAND ROAD MURRAY, KY 42071	72-16-01

PARCEL NUMBERS, OWNERSHIP INFORMATION, AND MAILING ADDRESS'S SHOWN ON THIS DRAWING ARE BASED ON THE RECORDS OF BALLARD COUNTY, KY PVA DATED 07/12/24.



0' 240' 480' 720'

SCALE: 1" = 240'

TeleCAD Wireless
1961 NORTHPOINT BLVD.
SUITE 130
HIXSON, TN 37343
PH : 423-843-9500
FAX : 423-843-9509

DRAWN BY	TDD
CHECKED BY	SEH

REVISIONS

#	DATE	BY	DESCRIPTION
C	12/26/24	MDR	FINALS
B	09/16/24	MDR	ZONING REVIEW
A	07/16/24	JAE	ZONING REVIEW

STATE OF KENTUCKY
STEPHEN E. HUNT
25003
LICENSED PROFESSIONAL ENGINEER
12/26/24

vertical bridge

FUZE ID :
17285932

SITE NAME :
LOVELACEVILLE

SITE # / LOCATION CODE :
US-KY-5215

SITE ADDRESS :
±KY HIGHWAY 286
KEVIL, KY 42053

SITE TYPE:
RAWLAND

SHEET TITLE :
OVERALL SITE LAYOUT WITH AERIAL OVERLAY

DRAWING # :	REVISION :
Z2	C

PROPERTY	PROPERTY OWNER	ADDRESS	TAX PARCEL
A	STIGALL DWAINE & DBRA J	1352 HAMBURG ROAD KEVIL , KY 42053	72-35-02
B	STIGALL DWAINE & DBRA J	1352 HAMBURG ROAD KEVIL , KY 42053	72-35-02
C	SMITH CASSANDRA SMITH MATTHEW	510 CASSANDRA BLVD KEVIL, KY 42053	72-35-01
D	POLLOCK BRIAN CODY POLLOCK BERTIE V	3205 HAMBURG ROAD KEVIL, KY 42053	72-29-01
E	HUNT ANTHONY & PAMELA J	4943 LA CENTER ROAD BARLOW, KY 42024	72-35
F	POLLOCK BRIAN CODY POLLOCK BERTIE V	3205 HAMBURG ROAD KEVIL, KY 42053	72-29-01
G	LAMKIN DONNA K & LAMPKIN JERRY	13612 WICKLIFFE ROAD KEVIL, KY 42053	72-18
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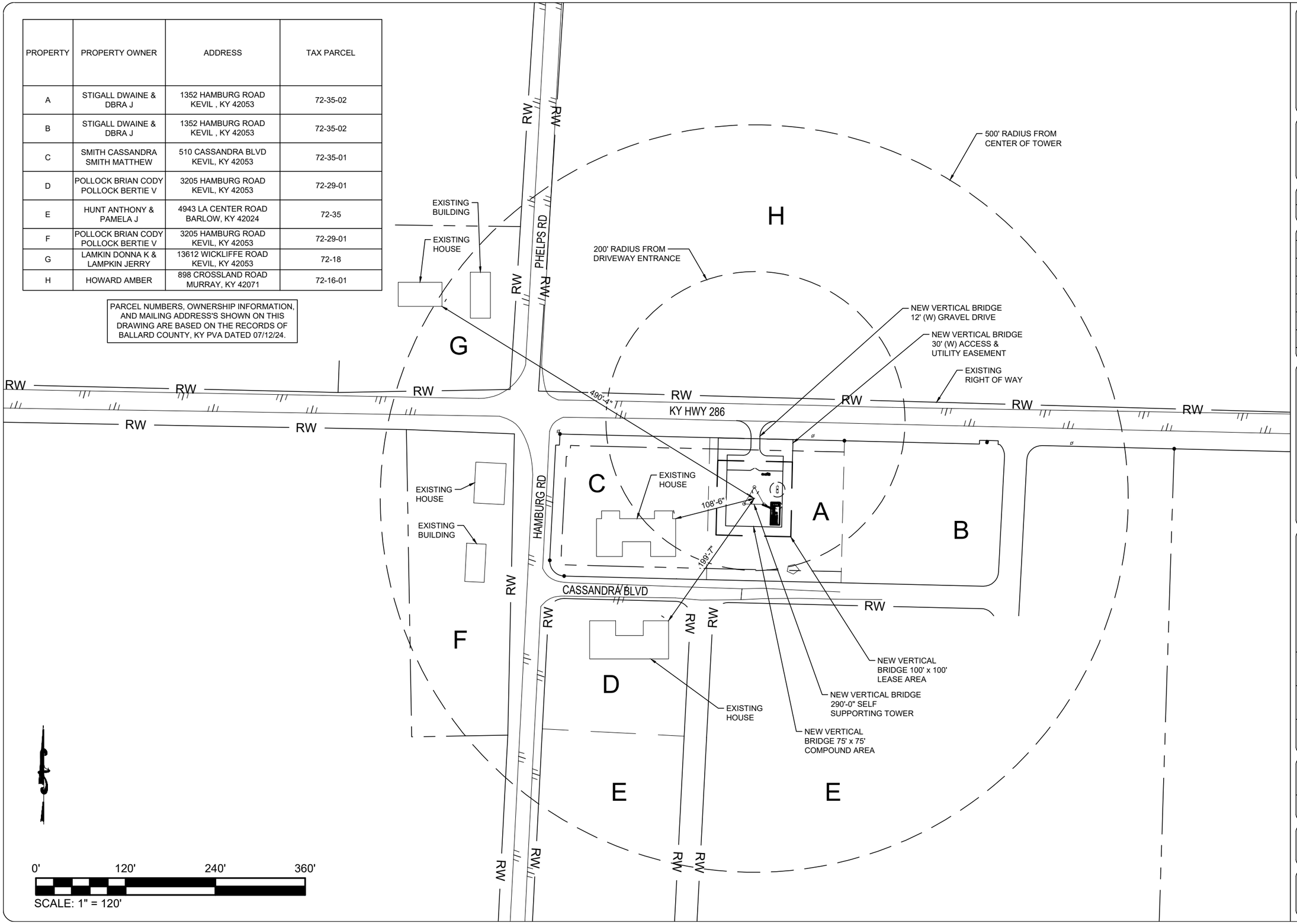
PARCEL NUMBERS, OWNERSHIP INFORMATION, AND MAILING ADDRESS'S SHOWN ON THIS DRAWING ARE BASED ON THE RECORDS OF BALLARD COUNTY, KY PVA DATED 07/12/24.



0' 120' 240' 360'

SCALE: 1" = 120'

TeleCAD Wireless
1961 NORTHPOINT BLVD.
SUITE 130
HIXSON, TN 37343
PH : 423-843-9500
FAX : 423-843-9509

DRAWN BY	TDD
CHECKED BY	SEH

REVISIONS

#	DATE	BY	DESCRIPTION
C	12/26/24	MDR	FINALS
B	09/16/24	MDR	ZONING REVIEW
A	07/16/24	JAE	ZONING REVIEW

STATE OF KENTUCKY
STEPHEN E. HUNT
25003
12/26/24
LICENSED PROFESSIONAL ENGINEER

vertical bridge

FUZE ID :
17285932

SITE NAME :
LOVELACEVILLE

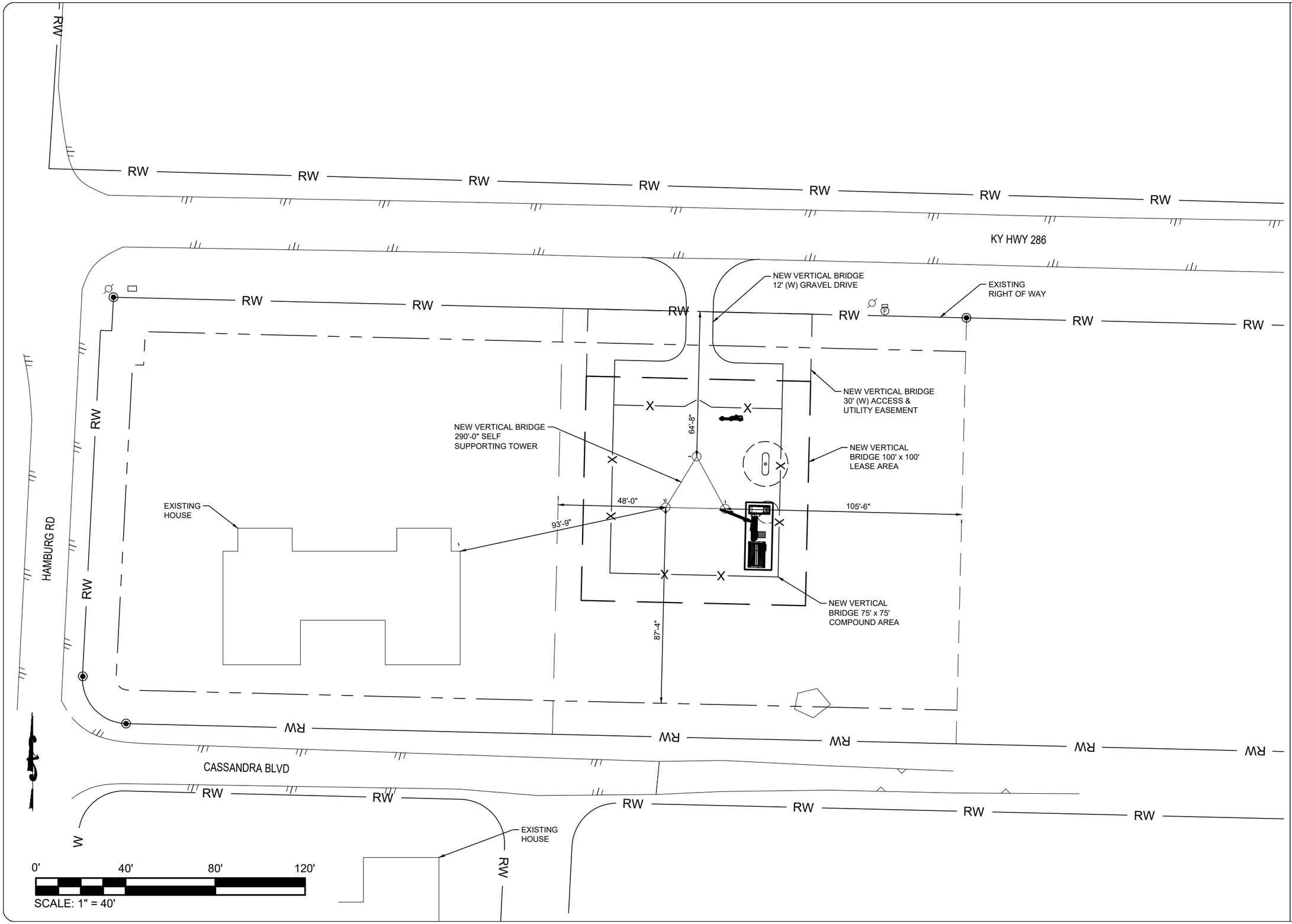
SITE # / LOCATION CODE :
US-KY-5215

SITE ADDRESS :
±KY HIGHWAY 286
KEVIL, KY 42053

SITE TYPE:
RAWLAND

SHEET TITLE :
OVERALL SITE LAYOUT WITHOUT AERIAL OVERLAY

DRAWING # :	REVISION :
Z3	C



TeleCAD Wireless
1961 NORTHPOINT BLVD.
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CHECKED BY	SEH

REVISIONS

#	DATE	BY	DESCRIPTION
C	12/26/24	MDR	FINALS
B	09/16/24	MDR	ZONING REVIEW
A	07/16/24	JAE	ZONING REVIEW

STATE OF KENTUCKY
STEPHEN E. HUNT
25003
12/26/24
LICENSED PROFESSIONAL ENGINEER

verticalbridge

FUZE ID :
17285932

SITE NAME :
LOVELACEVILLE

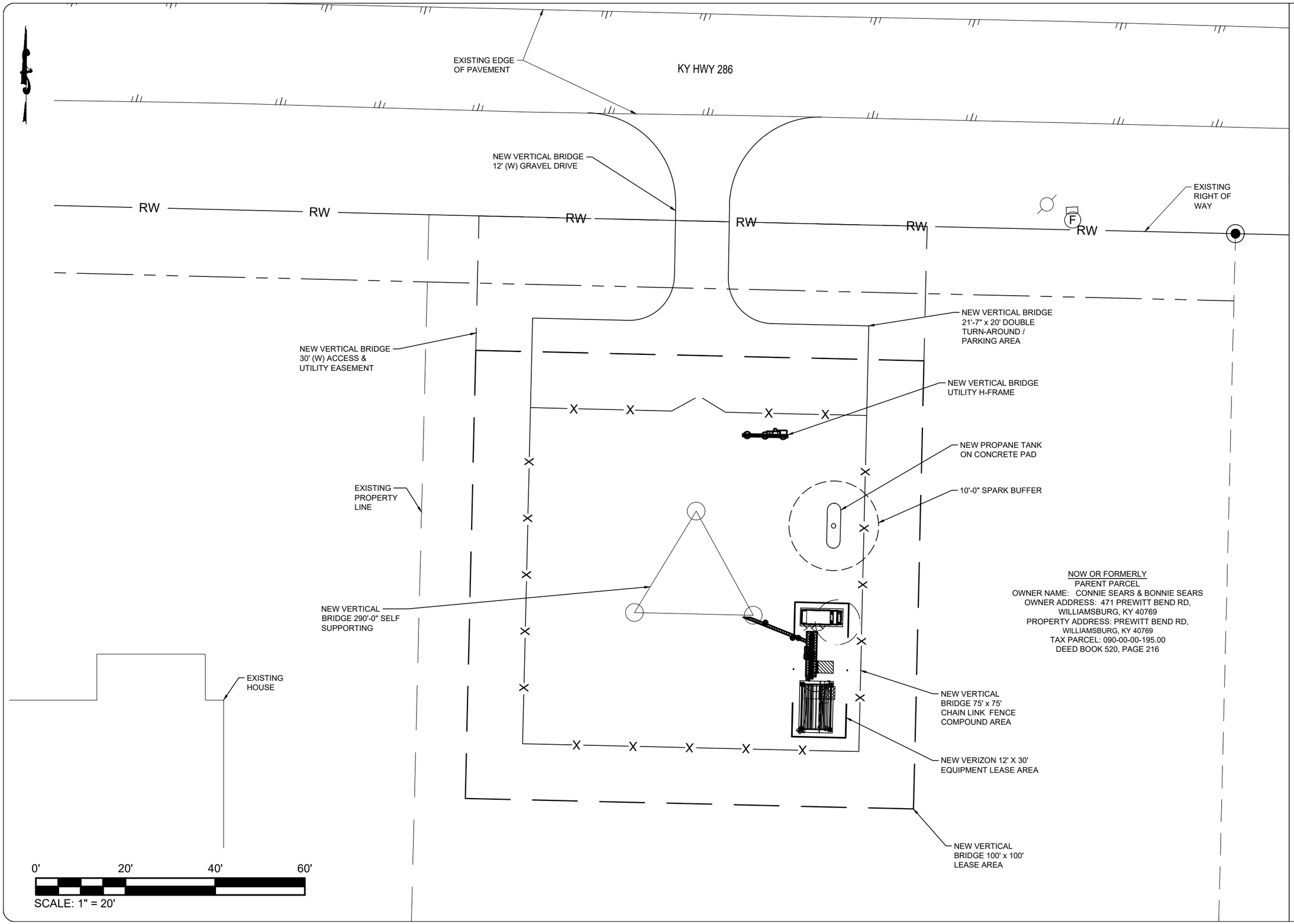
SITE # / LOCATION CODE :
US-KY-5215

SITE ADDRESS :
±KY HIGHWAY 286
KEVIL, KY 42053

SITE TYPE:
RAWLAND

SHEET TITLE :
TOWER LOCATION PLAN

DRAWING # :	REVISION :
Z4	C



NOW OR FORMERLY
PARENT PARCEL
OWNER NAME: CONNIE SEARS & BONNIE SEARS
OWNER ADDRESS: 471 PREWITT BEND RD, WILLIAMSBURG, KY 40769
PROPERTY ADDRESS: PREWITT BEND RD, WILLIAMSBURG, KY 40769
TAX PARCEL: 090-00-00-195.00
DEED BOOK 520, PAGE 216

TeleCAD Wireless
1961 NORTHPOINT BLVD.
SUITE 130
HIXSON, TN 37343
PH : 423-843-9500
FAX : 423-843-9509

DRAWN BY	TDD
CHECKED BY	SEH

REVISIONS

#	DATE	BY	DESCRIPTION
C	12/26/24	MDR	FINALS
B	09/16/24	MDR	ZONING REVIEW
A	07/16/24	JAE	ZONING REVIEW

STATE OF KENTUCKY
STEPHEN E. HUNT
25003
LICENSED PROFESSIONAL ENGINEER
12/26/24

verticalbridge

FUZE ID :
17285932

SITE NAME :
LOVELACEVILLE

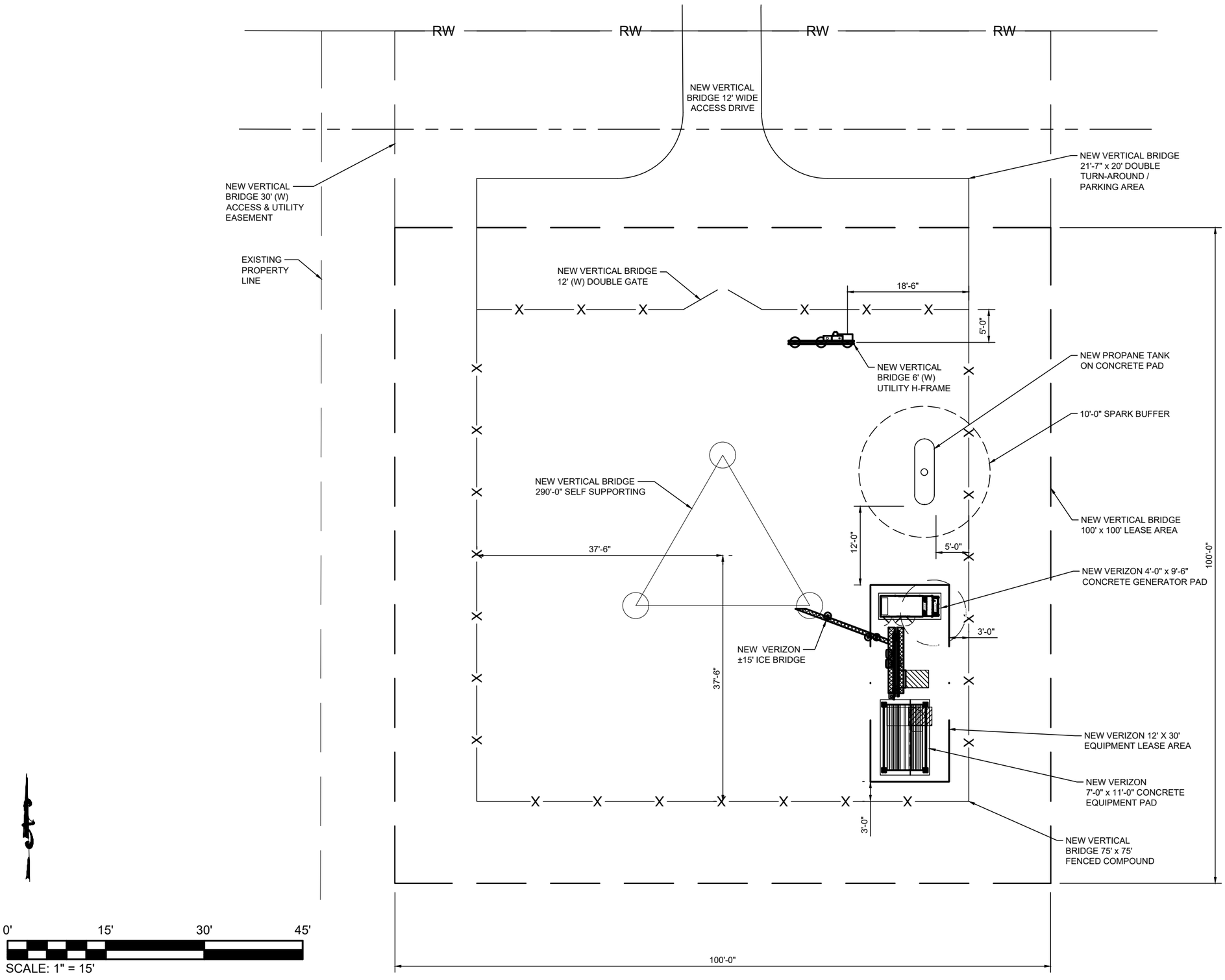
SITE # / LOCATION CODE :
US-KY-5215

SITE ADDRESS :
±KY HIGHWAY 286
KEVIL, KY 42053

SITE TYPE:
RAWLAND

SHEET TITLE :
SITE PLAN

DRAWING # :	REVISION :
Z5	C



0' 15' 30' 45'

SCALE: 1" = 15'

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REVISIONS

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STATE OF KENTUCKY
STEPHEN E. HUNT
25003
LICENSED PROFESSIONAL ENGINEER
12/26/24

verticalbridge

FUZE ID :
17285932

SITE NAME :
LOVELACEVILLE

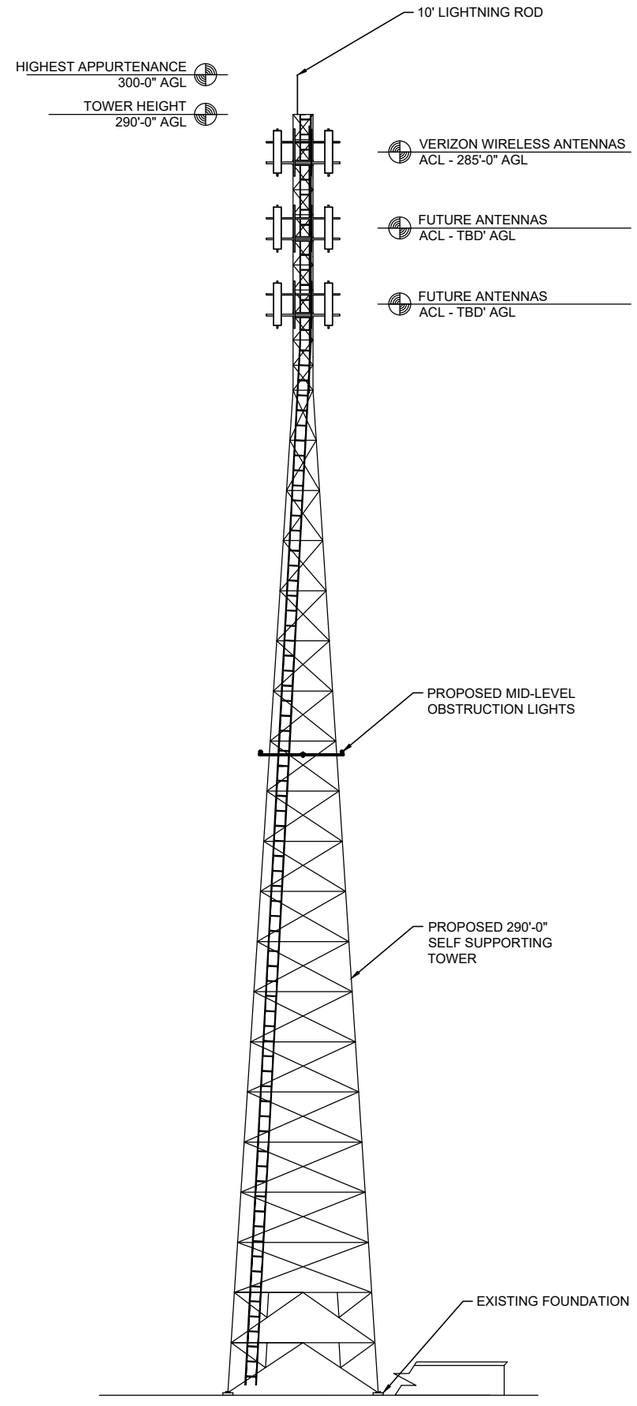
SITE # / LOCATION CODE :
US-KY-5215

SITE ADDRESS :
±KY HIGHWAY 286
KEVIL, KY 42053

SITE TYPE:
RAWLAND

SHEET TITLE :
DIMENSION SITE PLAN

DRAWING # :	REVISION :
Z6	C



TOWER ELEVATION

NTS

TeleCAD Wireless
1961 NORTHPOINT BLVD.
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PH : 423-843-9500
FAX : 423-843-9509

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REVISIONS

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STATE OF KENTUCKY
STEPHEN E. HUNT
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LICENSED PROFESSIONAL ENGINEER
12/26/24

verticalbridge

FUZE ID :
17285932

SITE NAME :
LOVELACEVILLE

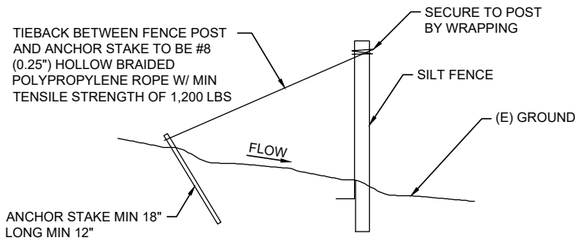
SITE # / LOCATION CODE :
US-KY-5215

SITE ADDRESS :
±KY HIGHWAY 286
KEVIL, KY 42053

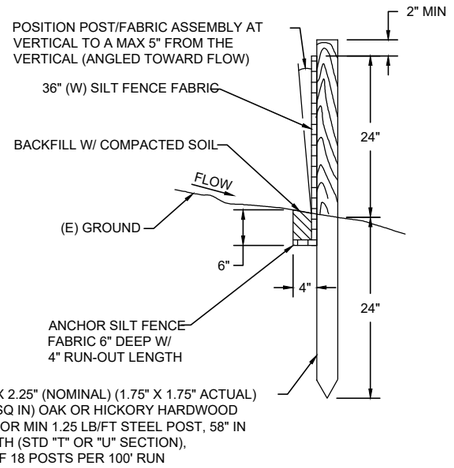
SITE TYPE:
RAWLAND

SHEET TITLE :
TOWER
ELEVATION

DRAWING # :	REVISION :
Z7	C



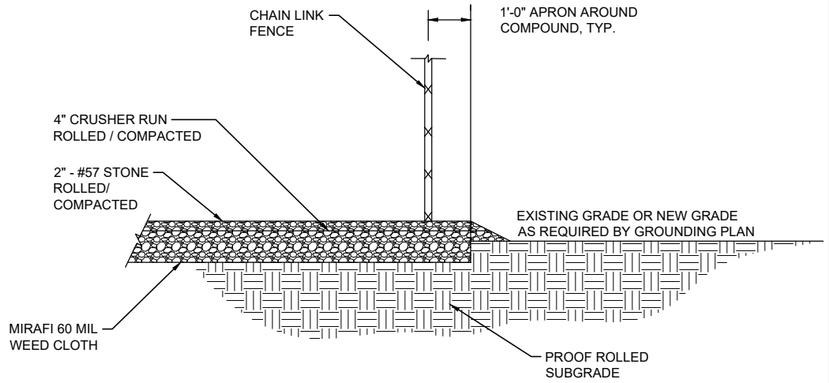
SILT FENCE TIEBACK FOR STEEL OR WOOD POSTS



SECTIONAL VIEW

SILT FENCE DETAIL (1)

NTS



COMPOUND SURFACING (2)

NTS

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SUITE 130
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STATE OF KENTUCKY
STEPHEN E. HUNT
25003
12/26/24
LICENSED PROFESSIONAL ENGINEER

verticalbridge

FUZE ID : 17285932

SITE NAME : LOVELACEVILLE

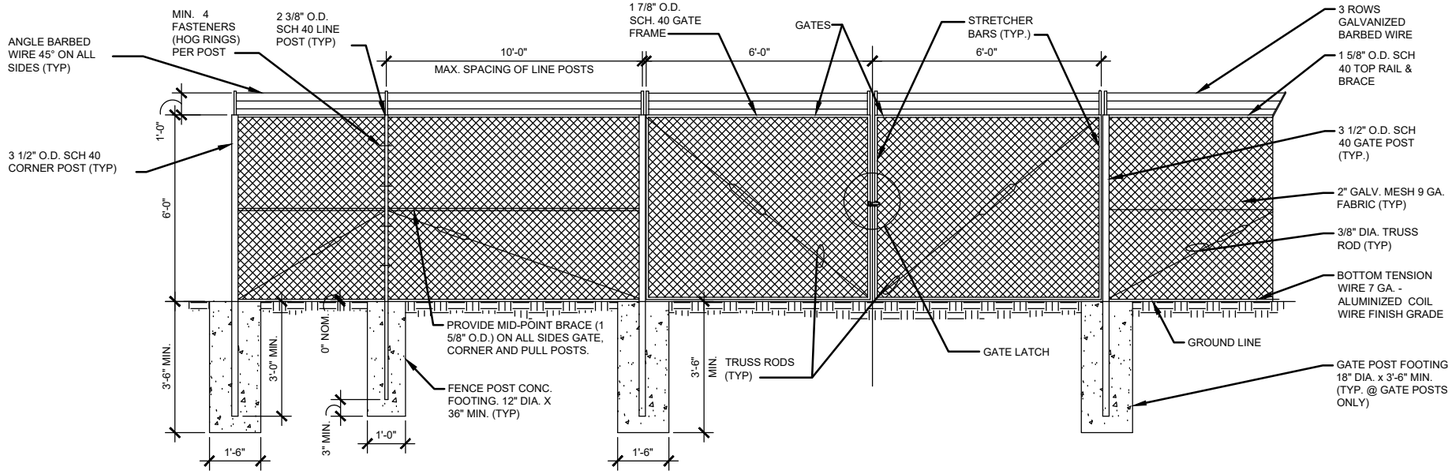
SITE # / LOCATION CODE : US-KY-5215

SITE ADDRESS : ±KY HIGHWAY 286 KEVIL, KY 42053

SITE TYPE: RAWLAND

SHEET TITLE : SITE DETAILS

DRAWING # :	REVISION :
Z8	C

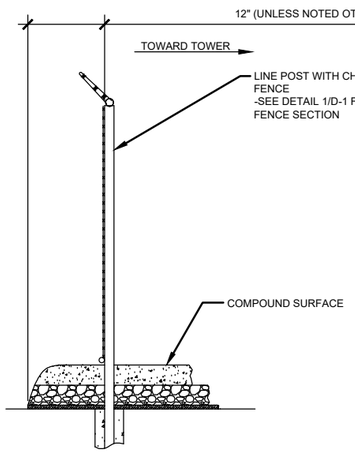


CHAIN LINK FENCE & POST DETAIL

SCALE: N.T.S.

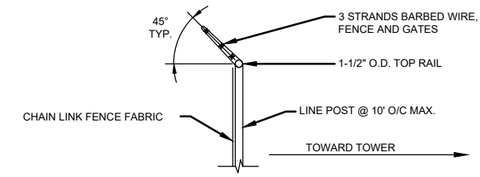
CHAIN LINK FENCING NOTES

1. ALL FENCE AND FABRIC SHALL BE HOT DIPPED GALVANIZED WITH A MINIMUM OF 2 OZ. PER SQUARE FOOT, 9 GAUGE WIRE (MIN. BREAKING STRENGTH OF 1,290 LBS) WITH 2" MESH. ALL BARBED WIRE SHALL BE ALUMINUM OR COATED PER NOTE #4.
2. BOTTOM EDGE OF FENCE FABRIC SHALL EXTEND TO FINISHED GRADE.
3. SITE FENCE SHALL BE 6'-0" FABRIC W/ 3 STRAND BARBED WIRE FOR TOTAL HEIGHT OF 7'-0".
4. BARBED WIRE SHALL MEET ASTM A 121, CLASS 3 GALV. OR ASTM A 585, TYPE I, CLASS 2 COATING (NOT LESS THAN 0.8 OZ. PER SQ. FT.) AND SHALL BE THREE STRAND 12.5 GAGE w/4 POINT BARBS AT 5" O/C.
5. BOTTOM OF CONCRETE BASE SHALL BE SET BELOW FROSTLINE (SEE LOCAL CODE). WHERE SOIL BEARING CAPACITY IS LESS THAN 2000 PSF, INCREASE CONCRETE SURROUNDING FENCE POST FOUNDATION DIAMETERS BY 8", PROVIDE CONCRETE WITH A 28 DAY STRENGTH OF 3000 PSI (MIN.)
6. PROVIDE A DIAGONAL BRACE ROD AND TURN BUCKLE ON BOTH GATE LEAFS.
7. ALL RAILS AND BRACES SHALL BE SCHEDULE 40 STEEL PIPE, AND ALL FENCE POSTS SHALL BE SCHEDULE 40 STEEL PIPE, AND BE 2 OZ. GALVANIZED COATED.
8. CONTRACTOR SHALL ENSURE ALL POSTS ARE PLUMB.
9. ALL FENCE SHALL BE FABRICATED AND INSTALLED PER ASTM F2611-15, ASTM F567-14a AND CHAIN LINK FENCE MANUFACTURES INSTITUTE CLFMI-PM 2445.
10. CONTRACTOR SHALL FURNISH AND INSTALL ONE (1) MASTER LOCK LONG SHANK #175LH COMBINATION PADLOCK. COMBINATION TO BE SET AT 7011.



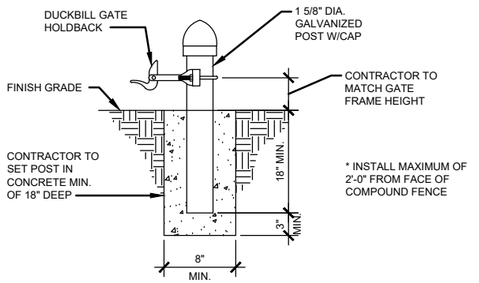
SITE AREA SURFACING

SCALE: N.T.S.



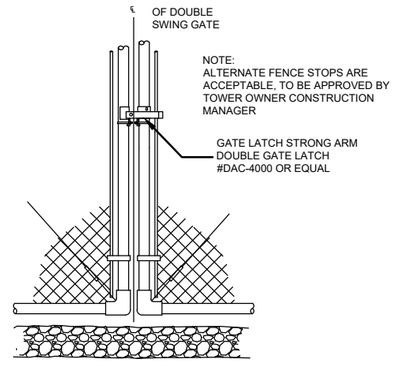
TYPICAL BARBED WIRE DETAIL

SCALE: N.T.S.



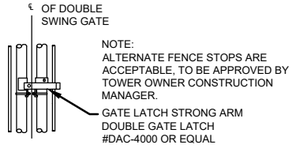
GATE KEEPER DETAIL

SCALE: N.T.S.



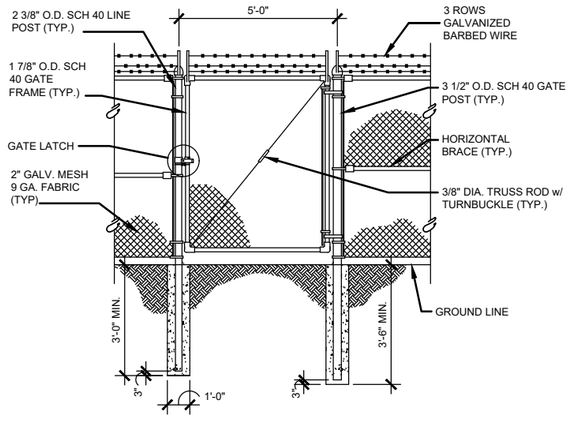
GATE LATCH DETAIL

SCALE: N.T.S.



GATE LATCH DETAIL

SCALE: N.T.S.



MAN GATE DETAIL

SCALE: N.T.S.

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CHECKED BY	SEH

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STATE OF KENTUCKY
STEPHEN E. HUNT
25003
12/26/24
LICENSED PROFESSIONAL ENGINEER

vertical bridge

FUZE ID :
17285932

SITE NAME :
LOVELACEVILLE

SITE # / LOCATION CODE :
US-KY-5215

SITE ADDRESS :
±KY HIGHWAY 286
KEVIL, KY 42053

SITE TYPE:
RAWLAND

SHEET TITLE :
SITE DETAILS

DRAWING # :	REVISION :
Z9	C

EXHIBIT C

CONSTRUCTION MANAGER LETTER
LIST OF QUALIFIED PROFESSIONALS
TOWER AND FOUNDATION DESIGN

RE: Site Name – US-KY-5215 Lovelaceville
Proposed 300’ Cell Tower
Ky Highway 286, Kevil, Kentucky 42053
37° 00’ 17.56” North latitude, 88° 51’ 04.67” West longitude

Dear Commissioners:

The Construction Manager for the proposed new communications facility will be Joshua Sizemore, (770)875-5351, Josh.Sizemore@verticalbridge.com. Josh has been in the industry completing civil construction and constructing towers since 2011. He has worked at Vertical Bridge since June of 2023 completing projects and acting as the construction management on new site build projects.

Thank you,
Josh Sizemore
Josh Sizemore, Construction Manager – KY/TN/GA/AL Market
The Towers, LLC
(770) 875-5351

November 25, 2024

Ballard County Planning Commission
EV Lovelaceville-A / Cell Tower Proposal

List of Identity and Qualifications of each person directly responsible for the design and construction of the proposed tower.

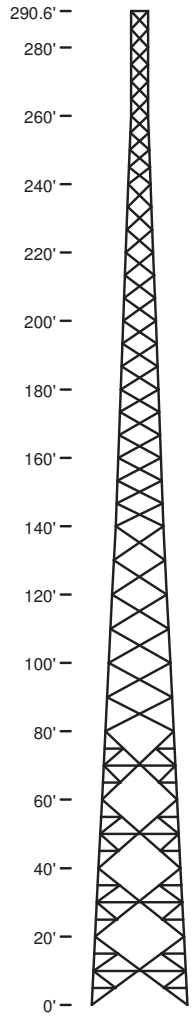
Stephen E. Hunt
Professional Engineer
Kentucky License 25003
TeleCAD Wireless Site Design, Inc
1961 Northpoint Blvd, Suite 130
Hixson, TN 37343

Travis Shields
Professional Land Surveyor
Kentucky License 4246
The Land Consultants LLC
5449 Hwy 41
Jasper, TN 37347

Jason Mark Lambert, P.E.
Professional Engineer
Kentucky License 28217
Nello
1201 S Sheridan St
South Bend, IN 46619

Joseph V. Borrelli, Jr., P.E.
Professional Engineer
Kentucky License 30809
Delta Oaks Group
4904 Professional Court, Second Floor
Raleigh, NC 27609

Steven Belcher
RF Engineer
Verizon Wireless
250 East 96th Street, Suite 300
Indianapolis, IN 46157



Self-Supporting Tower Section Data

Section Number	Bottom Elevation (ft)	Top Elevation (ft)	Model	Bottom Face Width (ft)	Top Face Width (ft)	Number of Panels	Leg Size (in)	Diagonal Size (in)	Girt Size (in)	Mid-Horizontal Size (in)	Redundant Horizontal Size (in)	Redundant Diagonal Size (in)
15	280	290.6	NSX	5.0	5.0	2	P2x.154	L1 3/4x1 3/4x1/8	L1 3/4x1 3/4x1/8			
14	260	280	NSX	5.0	5.0	4	P3x.216	L2x2x3/16				
13	240	260	NSX	6.5	5.0	4	P5x.258	L2x2x1/8				
12	220	240	NSX	8.0	6.5	3	P6x.28	L2x2x3/16				
11	200	220	NSX	9.5	8.0	3	P8x.322	L2 1/2x2 1/2x3/16				
10	180	200	NSX	11.0	9.5	3	P8x.322	L2 1/2x2 1/2x3/16				
9	160	180	NSX	12.5	11.0	3	P8x.322	L2 1/2x2 1/2x3/16				
8	140	160	NSX	14.0	12.5	3	P10x.365	L2 1/2x2 1/2x3/16				
7	120	140	NSX	16.0	14.0	2	P10x.365	L3x3x3/16				
6	100	120	NSX	18.0	16.0	2	P10x.365	L3x3x3/16				
5	80	100	NSX	20.0	18.0	2	P10x.365	L3 1/2x3 1/2x1/4				
4	60	80	NSK	22.0	20.0	4	P10x.365	L3 1/2x3 1/2x1/4		L3 1/2x3 1/2x1/4	L2x2x3/16	L2 1/2x2 1/2x3/16
3	40	60	NSK	24.0	22.0	4	P10x.365	L3 1/2x3 1/2x1/4		L3 1/2x3 1/2x1/4	L2 1/2x2 1/2x3/16	L2 1/2x2 1/2x3/16
2	20	40	NSK	26.0	24.0	4	P10x.365	L4x4x1/4		L4x4x1/4	L2 1/2x2 1/2x3/16	L2 1/2x2 1/2x3/16
1	0	20	NSK	28.0	26.0	4	P10x.365	L4x4x1/4		L5x5x5/16	L2 1/2x2 1/2x3/16	L2 1/2x2 1/2x3/16

Tower Reactions

No Ice
Shear: 70.1 kips
Moment: 12238.21 ft-kips
Weight: 84.1 kips

With Ice
Shear: 8.9 kips
Moment: 1637.62 ft-kips
Weight: 193.9 kips

Leg Reactions
Compression: 532.7 kips
Uplift: -462.7 kips
Shear: 47.5 kips

11/22/2024

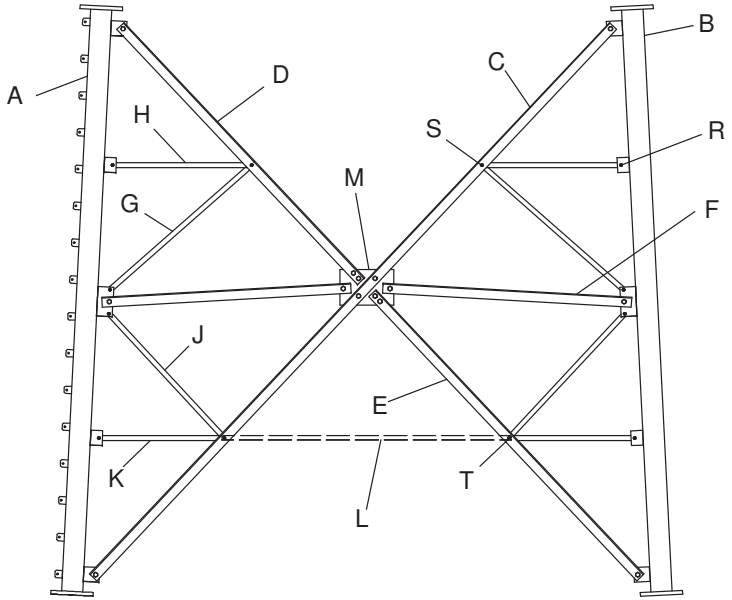
REV	BY	DATE	DESCRIPTION

ORIG. DATE: 11/20/2024 | DWG NO: 769554
DWG. PROG: v2.05 | SHEET: 1 OF 8

TITLE:
The Towers, LLC
NSK 28' X 290.6'
US-KY-5215 / Lovelaceville
Ballard Co., KY

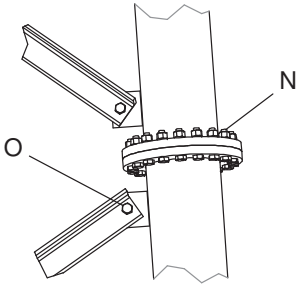
NELLO
1201 S. Sheridan St.
South Bend, IN 46619
Bus: (574)288-3632
Fax: (574)288-5860

NSK Section Legend:
A. Climbing Leg
B. Non-Climbing Leg
C. Long Diagonal
D. Upper Diagonal
E. Lower Diagonal
F. Horizontal
G. Upper Redundant Diagonal
H. Upper Redundat Horizontal
J. Lower Redundant Diagonal
K. Lower Redundant Horizontal
L. Installation Horizontal
M. Splice Plate
N. Leg Bolts
O. Diagonal Bolts
P. Horizontal Bolts
Q. Redundant Diagonal Bolts
R. Redundant Horizontal Bolts
S. Upper Redundant Bolts
T. Lower Redundant Bolts
U. Diagonal Mid Bolts
V. Horizontal Mid Bolts

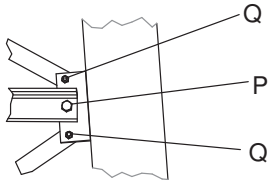


NSK Section Detail

1. A part number is stamped on the bottom footpad of each leg.
2. A part number is stamped and /or labeled on the bottom end of each angle.
3. The bolt head must bear against the angle.

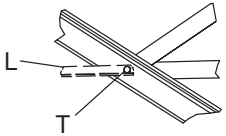


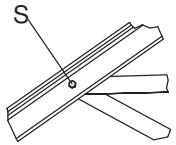
NSK Leg Connection Detail



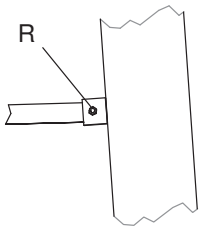
NSK Center Sideplate Connection

Note:
1. One face of bracing (not including legs) may be pre-assembled and lifted into place at once, ensuring best practices are used to reduce stresses in bracing members.

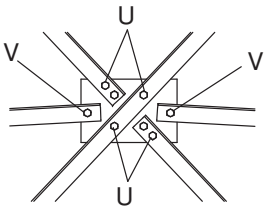




NSK Inner Redundant Connection



NSK Outer Redundant Connection



NSK Mid-Plate Detail

11/22/2024

REV	BY	DATE	DESCRIPTION

ORIG. DATE: 11/20/2024	DWG NO: 769554
DWG. PROG: v2.05	SHEET: 2 OF 8

TITLE:
The Towers, LLC
NSK 28' X 290.6'
US-KY-5215 / Lovelaceville
Ballard Co., KY

NELLO
1201 S. Sheridan St.
South Bend, IN 46619
Bus: (574)288-3632
Fax: (574)288-5860

NSK Section Part Numbers

Item	Elevation	Climbing Leg (A)	Non-Climbing Leg (B)	Long Diagonal (C)	Upper Diagonal (D)	Lower Diagonal (E)	Horizontal (F)	Upper Redundant Diagonal (G)	Upper Redundant Horizontal (H)	Lower Redundant Diagonal (J)	Lower Redundant Horizontal (K)	Installation Horizontal (L)	Splice Plate (M)
4	60' - 80'	141702		170514	170516	170518	168048	170133	170190	170134	170193	172544	115102
3	40' - 60'	141702		170183	170185	170187	168505	170129	170131	170130	170132	172545	115101
2	20' - 40'	141702		170113	170114	170115	167912	170125	170127	170126	170128	172546	115100
1	0' - 20'	141700		195892	195893	195894	168639	170901	170903	170902	170904	172547	115099

NSK Section Hardware

Item	Elevation	Leg Bolts (N)	Diagonal Bolts (O)	Horizontal Bolts (P)	Redundant Diagonal Bolts (Q)	Redundant Horizontal Bolts (R)	Upper Redundant Bolts (S)	Lower Redundant Bolts (T)	Diagonal Mid Bolts (U)	Horizontal Mid Bolts (V)	Section Weight (Lbs.)
4	60' - 80'	(30) 1" x 3-3/4"	(12) 1" x 2-1/4"	(6) 1" x 2-1/4"	(12) 1" x 2-1/4"	(12) 1" x 2-1/4"	(6) 1" x 2-1/4"	(6) 1" x 2-3/4"	(18) 1" x 2-1/4"	(6) 1" x 2-1/4"	5190
3	40' - 60'	(30) 1" x 3-3/4"	(12) 1" x 2-1/4"	(6) 1" x 2-1/4"	(12) 1" x 2-1/4"	(12) 1" x 2-1/4"	(6) 1" x 2-1/4"	(6) 1" x 2-3/4"	(18) 1" x 2-1/4"	(6) 1" x 2-1/4"	5370
2	20' - 40'	(30) 1" x 3-3/4"	(12) 1" x 2-1/4"	(6) 1" x 2-1/4"	(12) 1" x 2-1/4"	(12) 1" x 2-1/4"	(6) 1" x 2-1/4"	(6) 1" x 2-3/4"	(18) 1" x 2-1/4"	(6) 1" x 2-1/4"	5750
1	0' - 20'	0	(12) 1" x 2-1/4"	(6) 1" x 2-3/4"	(12) 1" x 2-1/4"	(12) 1" x 2-1/4"	(6) 1" x 2-1/4"	(6) 1" x 2-3/4"	(18) 1" x 2-1/4"	(6) 1" x 2-3/4"	6190

11/22/2024

REV	BY	DATE	DESCRIPTION

ORIG. DATE: 11/20/2024 | DWG NO: 769554

DWG. PROG: v2.05 | SHEET: 3 OF 8

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Bus: (574)288-3632
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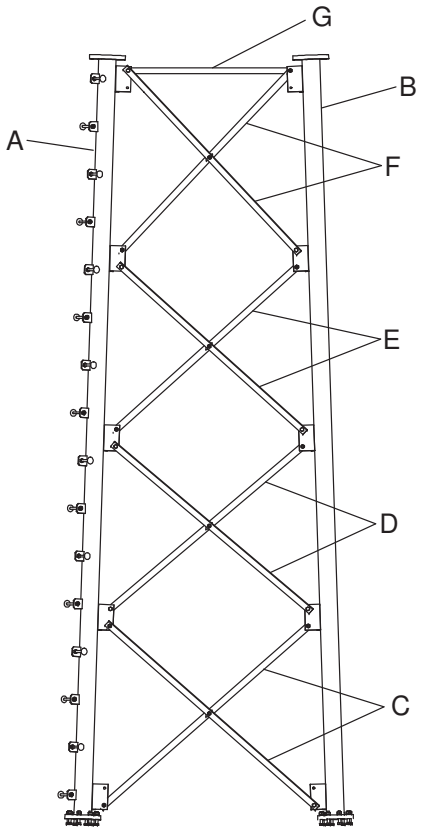
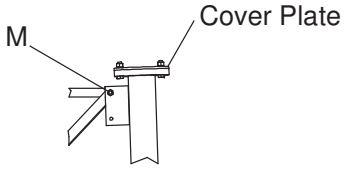


NSX Section Detail

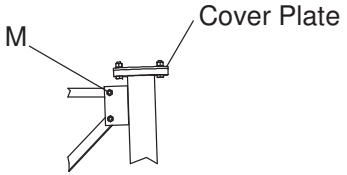
1. A part number is stamped on the bottom footpad of each leg.
2. A part number is stamped and /or labeled on the bottom end of each angle.
3. Be sure to place diagonal bracing angles in correct positions, angles in the top panel may be longer than they are in the middle panel.
4. The bolt head must bear against the angle bracing.



One plain nut and one lockwasher per bolt.

Detail A: NSX Top Connection

*Applicable to all 20 ft Sections.
*Applicable to all Sections Shorter than 20 ft and are Straight.

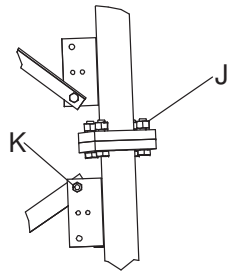


One plain nut and one lockwasher per bolt.

Detail B: NSX Top Connection

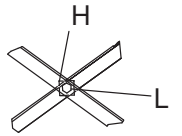
*Applicable to all Sections Shorter than 20 ft that are Tapered Sections.

NSX Section Legend:
A. Climbing Leg
B. Non-Climbing Leg
C. Diag., Panel 1
D. Diag., Panel 2
E. Diag., Panel 3
F. Diag., Panel 4
G. Top Girt
H. Spacer
J. Leg Bolts
K. Diagonal Bolts
L. Stitch Bolts
M. Top Girt Bolts



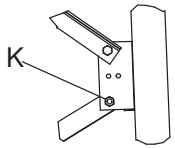
One plain nut and one lockwasher per bolt.

NSX Leg Connection



One plain nut and one lockwasher per bolt.

NSX Spacer Detail



One plain nut and one lockwasher per bolt.

NSX Bracing Detail

11/22/2024

REV	BY	DATE	DESCRIPTION

ORIG. DATE: 11/20/2024	DWG NO: 769554
DWG. PROG: v2.05	SHEET: 4 OF 8

TITLE:
The Towers, LLC
NSK 28' X 290.6'
US-KY-5215 / Lovelaceville
Ballard Co., KY

NELLO
1201 S. Sheridan St.
South Bend, IN 46619
Bus: (574)288-3632
Fax: (574)288-5860

NSX Section Part Numbers

Item	Elevation	Climbing Leg (A)	Non-Climbing Leg (B)	Diagonal - Panel 1 (C)	Diagonal - Panel 2 (D)	Diagonal - Panel 3 (E)	Diagonal - Panel 4 (F)	Top Girt (G)	Spacer (H)
15	280' - 290.6'	141412		167456	167456			168613	132233
14	260' - 280'	216391		216260	216261	216261	216260		132233
13	240' - 260'	141422		227147	227146	227145	227144		132233
12	220' - 240'	129729		167216	167217	167218			132233
11	200' - 220'	129695		167005	167006	167007			132233
10	180' - 200'	129695		167170	167171	167172			132233
9	160' - 180'	129705		168102	168103	168104			132233
8	140' - 160'	188268		167978	167979	167980			132233
7	120' - 140'	129736		169771	169772				132233
6	100' - 120'	129736		169811	169812				132233
5	80' - 100'	129736		169767	169768				132233

NSX Section Hardware

Item	Elevation	Leg Bolts (J)	Diagonal Bolts (K)	Stitch Bolts (L)	Top Girt Bolts (M)	Section Weight (Lbs.)
15	280' - 290.6'	(12) 3/4" x 3-1/2"	(24) 1/2" x 1-1/2"	(6) 1/2" x 1-1/2"	(6) 1/2" x 1-1/2"	470
14	260' - 280'	(24) 3/4" x 3-1/2"	(48) 5/8" x 2-1/2"	(12) 5/8" x 2-1/2"		1240
13	240' - 260'	(24) 3/4" x 3-1/2"	(48) 5/8" x 2-1/2"	(12) 5/8" x 2-1/2"		1590
12	220' - 240'	(24) 1" x 3-3/4"	(36) 5/8" x 2-1/2"	(9) 5/8" x 2-1/2"		2020
11	200' - 220'	(24) 1" x 3-3/4"	(36) 3/4" x 2-1/4"	(9) 3/4" x 2-1/4"		2880
10	180' - 200'	(24) 1" x 3-3/4"	(36) 3/4" x 2-1/4"	(9) 3/4" x 2-1/4"		2950
9	160' - 180'	(30) 1" x 3-3/4"	(36) 3/4" x 2-1/4"	(9) 3/4" x 2-1/4"		3120
8	140' - 160'	(30) 1" x 3-3/4"	(36) 3/4" x 2-1/4"	(9) 3/4" x 2-1/4"		3940
7	120' - 140'	(30) 1" x 3-3/4"	(24) 3/4" x 2-1/4"	(6) 3/4" x 2-1/4"		3890
6	100' - 120'	(30) 1" x 3-3/4"	(24) 3/4" x 2-1/4"	(6) 3/4" x 2-1/4"		3970
5	80' - 100'	(30) 1" x 3-3/4"	(24) 3/4" x 2-1/4"	(6) 3/4" x 2-1/4"		4590

11/22/2024

REV	BY	DATE	DESCRIPTION

ORIG. DATE: 11/20/2024 | DWG NO: 769554

DWG. PROG: v2.05 | SHEET: 5 OF 8

TITLE:
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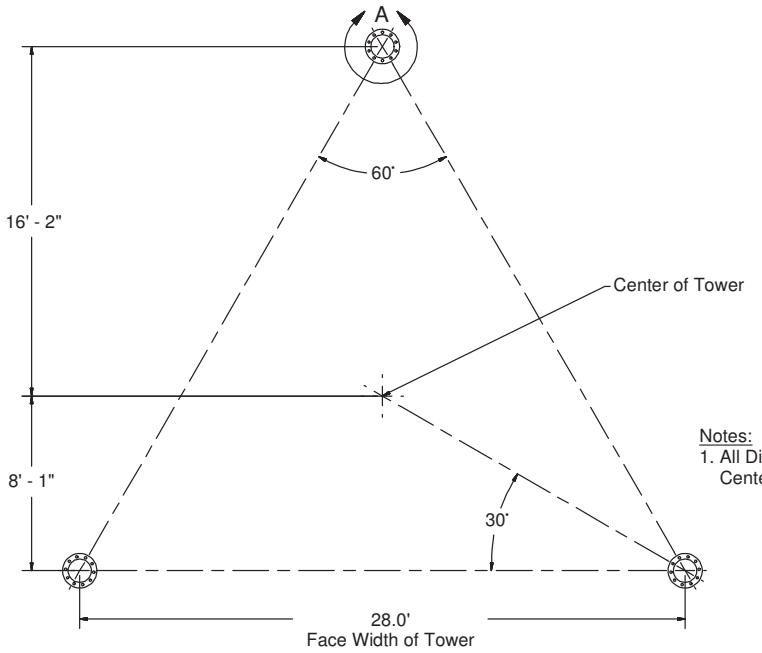
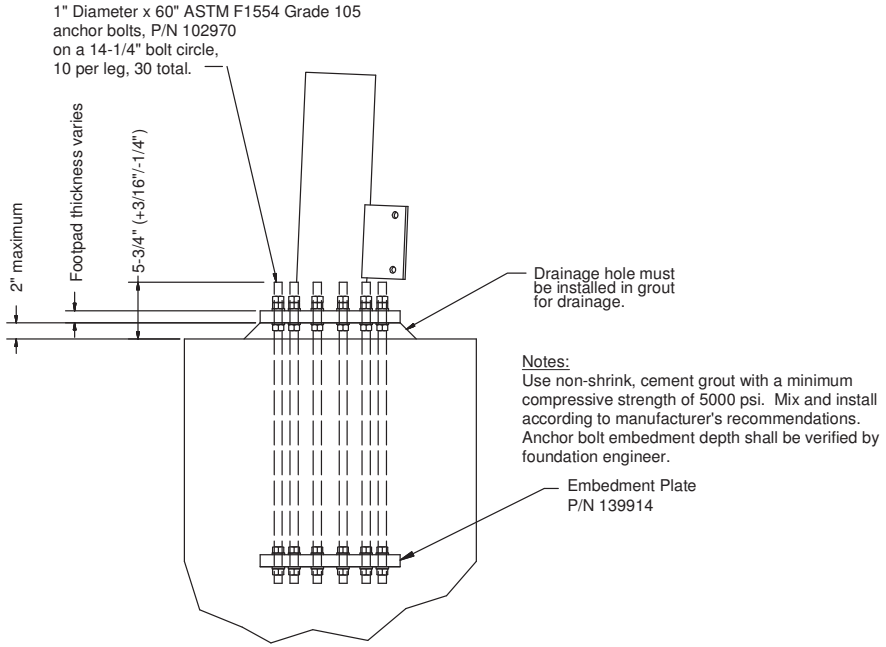
Ballard Co., KY

NELLO
1201 S. Sheridan St.
South Bend, IN 46619
Bus: (574)288-3632
Fax: (574)288-5860

DETAIL A
Bolt hole must be aligned with center of tower.



Notes:
1. All Dimensions are from Center of Bolt Circles.



Notes:
Use non-shrink, cement grout with a minimum compressive strength of 5000 psi. Mix and install according to manufacturer's recommendations. Anchor bolt embedment depth shall be verified by foundation engineer.

11/22/2024

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DWG. PROG: v2.05 | SHEET: 6 OF 8

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Antenna Loading

Height	Qty.	Description
285'	1	42,000 sq in CaAa
274'	1	30,000 sq in CaAa
264'	1	30,000 sq in CaAa
240'	2	Dish Pipe Mount

Feedline Loading

Height	Qty.	Description
0' - 290'	1	1'' Conduit
0' - 285'	18	LDF7-50A (1-5/8 FOAM)
0' - 274'	12	LDF7-50A (1-5/8 FOAM)
0' - 264'	12	LDF7-50A (1-5/8 FOAM)
0' - 240'	2	EW63

Dish Loading

Height	Qty.	Description
240'	2	6' Dish with Radome

11/22/2024

REV	BY	DATE	DESCRIPTION

ORIG. DATE: 11/20/2024 | DWG NO: 769554

DWG. PROG: v2.05 | SHEET: 7 OF 8

TITLE:
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NSK 28' X 290.6'
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Tower Notes:

1. Tower is designed per TIA-222-H, “Structural Standard for Antenna Supporting Structures, Anennas and Small Wind Turbine Support Structures,” for the following loading conditions:
   106 mph 3-second gust ultimate wind speed with no ice per ASCE 7-16
   30 mph 3-second gust basic wind speed with 1-1/2 inch basic ice thickness per ASCE 7-16
   Risk Category: II
   Exposure Category: C
   Topographic Category: 1
   Crest Height: 0 feet
2. A tower field inspection shall be performed in order to verify that design exposure and topographic parameters are consistent with the existing tower site conditions.
3. Tower design includes the antennas, dishes, and/or lines listed in the appurtenance loading tables on sheet 7.
4. Antenna mounting pipes may need to be field cut to match the lengths listed in the appurtenance loading tables on sheet 7.
5. Tower member design does not include stresses due to erection since erection equipment and procedures are unknown. Tower installation shall be performed by competent and qualified erectors in accordance with TIA-222-H and OSHA standards and all applicable building codes.
6. Field connections shall be bolted. No field welds shall be allowed unless otherwise noted.
7. Structural bolts shall conform to ASTM A325, except for 1/2 inch diameter and smaller bolts, which shall conform to ASTM A449 or SAE J429 Grade 5.
8. Structural steel and connection bolts shall be galvanized after fabrication in accordance with TIA-222-H.
9. All high strength bolts shall be tightened to a "snug tight" condition as defined in the RCSC "Specification for Structural Joints Using ASTM A325 or A490 Bolts."
10. Tower shall be marked and lighted in conformance with local building codes, FAA regulations, and TIA-222-H.
11. Tower shall be grounded in conformance with local building codes and TIA-222-H. Evaluation of protective grounding and consideration for special grounding systems shall be performed by others.
12. Allowable tolerance on as-built tower steel height is plus 1% or minus 1/2%.
13. Maintenance and inspection shall be performed over the life of the structure in accordance with TIA-222-H.
14. Material specifications:
    Self Supporting Pipe Legs - ASTM A500 Grade 50
    Angle Bracing - ASTM A529 Grade 50
    Leg Footpads - ASTM A572 Grade 50
    Leg Side Plates - ASTM A36 (Min)
15. Remove anchor bolt template before erecting tower. Place non-shrink grout under base section footpads after leveling tower.
16. Concrete contractor shall be responsible for properly aligning anchor bolts and materials before and after placing concrete, regardless of whether an anchor bolt template is provided.

11/22/2024

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TITLE:
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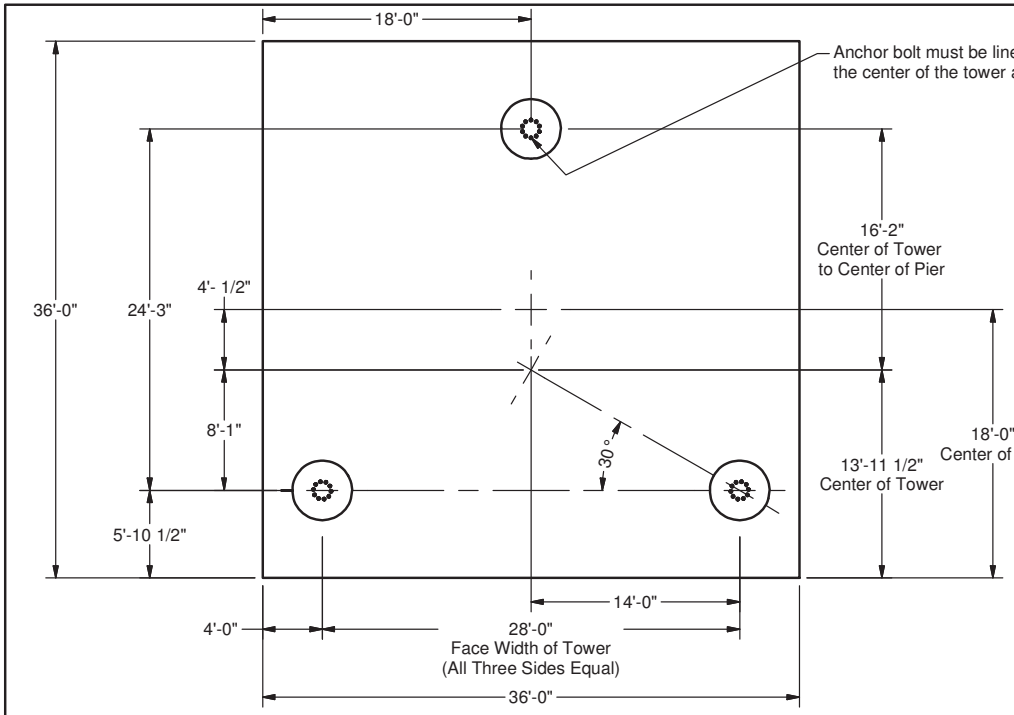
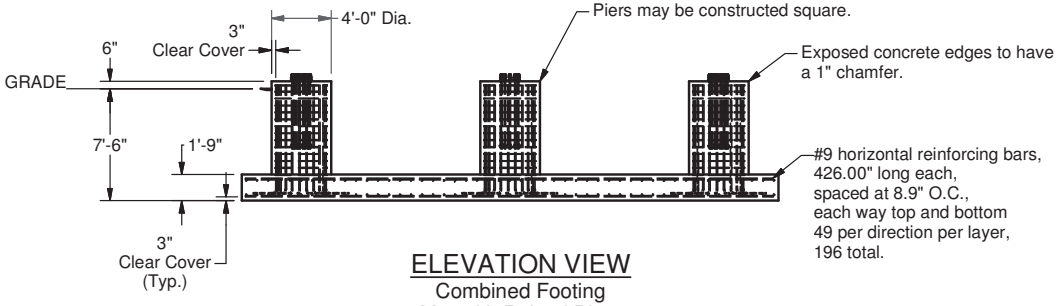


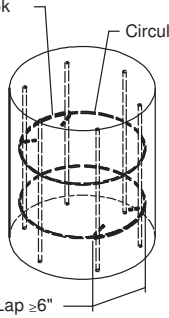
PLAN VIEW

(Reinforcement not shown for clarity)

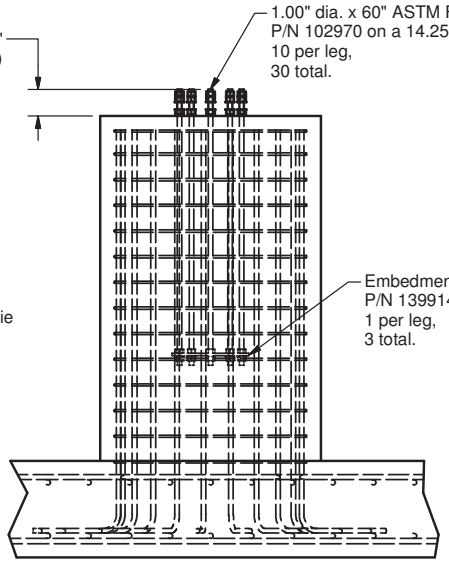


ELEVATION VIEW

Combined Footing
Mat with Raised Piers
(Concrete Volume: 92.8 cu. yd.)



SEISMIC HOOK DETAIL



PIER DETAIL

CAUTION:
1. Ensure that all anchor bolt nuts are tightened.
2. Ensure that all three face width dimensions (pier center to pier center) are measured and verified before pouring concrete.

Concrete Compressive Strength, f'c = 4500 psi

#8 vertical reinforcing bars,
102.00" long before being bent with
(3.00" bend radius)
15.00" long 90 degree standard hook
spaced at 6.0" O.C. around inside of ties.
21 per pier,
63 total.

#4 circular reinforcing ties,
148.00" long before being bent into
42.00" outer diameter circle with 6.00" overlap
w/ 3" long 135 degree seismic hooks
alternated each successive tie,
top 2 spaced at 5" with the remainder
spaced at 5.6" O.C.to the top of pad.
14 per pier,
42 total.

11/22/2024

REV	BY	DATE	DESCRIPTION

ORIG. DATE: 11/21/2024	DWG NO: 769555
DWG. PROG: v2.05	SHEET: 1 OF 2

TITLE:
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NELLO
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Foundation Notes:

1. This foundation has been designed for the following tower reactions:
   - Leg Compression: 532.7 Kips
   - Leg Uplift: 462.7 Kips
   - Leg Shear: 47.5 Kips
   - Tower Shear: 70.1 Kips
   - Tower Moment: 12238.2 Ft-Kips
   - Tower Weight: 84.1 Kips
2. Foundation design is based on the Geotechnical Report dated 11/01/2024, by Delta Oaks Group; Project No. GEO24-23358-08.
3. A field inspection shall be performed in order to verify that the actual site soil parameters meet or exceed the assumed soil parameters and that the depth of standard foundations are adequate based on the frost penetration and groundwater depth. Local frost depth must be no deeper than the bottom of the base foundation or the top of the anchor.
4. Reinforcement shall be deformed and conform to the requirements of ASTM A615 Grade 60 unless otherwise noted. Splices in reinforcement shall not be allowed unless otherwise indicated.
5. Welding is prohibited on reinforcing steel and anchorage.
6. Structural backfill placed below pad must be compacted in 8" loose lifts to 98% of maximum dry density at optimum moisture content in accordance with ASTM D698. Backfill must be clean and free of organic and frozen soils and foreign materials.
7. Backfill above foundation should be compacted to 95% of maximum dry density at water content within 2 percent of optimum. Backfill must be clean and free of organic and frozen soils and foreign materials.
8. Finished grade shall be leveled over the entire foundation footprint. Backfill is recommended to slope to native grade using a 2:1 (H:V) slope.
9. Loose material shall be removed from bottom of excavation prior to concrete placement.
10. Concrete cover from exposed surface of concrete to surface of reinforcement shall not be less than 3".
11. Concrete and reinforcement installation must conform to ACI 318, “Building Code Requirements for Structural Concrete.”
12. Concrete shall develop a minimum compressive strength of 4500 psi at 28 days.
13. Concrete shall be placed as soon as practical after excavating to avoid disturbance of bearing and side wall surfaces
14. Concrete contractor shall be responsible for properly aligning anchor bolts before and after placing concrete, regardless of whether an anchor bolt template is provided.
15. Positive drainage shall be maintained during construction and throughout the life of the facility to minimize the potential for surface water infiltration.
16. If unsuitable soils are encountered, overexcavation of unsuitable soils for compacted backfill placement below footings should extend laterally beyond all edges of the footings at least 12 inches per foot of overexcavation depth below footing base elevation.
17. It shall be the contractor's responsibility to locate and prevent damage to any existing underground utilities, foundations or other buried objects that might be damaged or interfered with during construction of the foundation.
18. It is permissible to utilize a cold joint during construction of a pier and pad type foundation. The cold joint must be located at the interface of the piers with the pad, and contractor shall use a bonding agent suitable for cold joints.
19. It is permissible for the top of the vertical reinforcement cage alignment to fluctuate slightly, allowing for a minimum clear cover of 2” to a maximum clear cover of 3” over the top of any individual vertical bar.
20. Earthwork operations and foundation installation methods shall be in accordance with the geotechnical report and all applicable American Concrete Institute (ACI) Standards.
21. Groundwater was not encountered during the geotechnical investigation.
22. This mat design assumes an ultimate bearing capacity of 3260 psf (allowable bearing capacity of 3260 psf) based on the geotechnical report. The bearing surface shall be inspected prior to concrete placement.
23. During placement, concrete shall be suitably consolidated. Proper curing methods shall be used directly following concrete placement as established by the contractor. Concrete shall develop a minimum compressive strength of 3000 psi prior to backfill and compaction operations, and backfill shall be compacted to a minimum moist unit weight of 110 pcf.

11/22/2024

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DWG. PROG: v2.05 | SHEET: 2 OF 2

TITLE:
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Ballard Co., KY

NELLO
1201 S. Sheridan St.
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NELLO

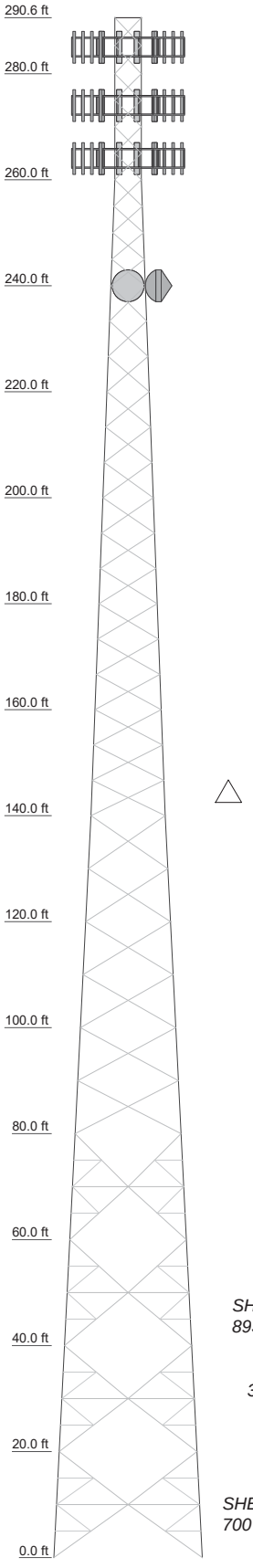
Design Supporting Calculations

Sales Order:	SO32498
Drawing Number(s)	
Tower:	769554
Foundation:	769555
Order Description:	NSK 28' x 290.6'
Site Name:	US-KY-5215 / Lovelaceville
Location:	Ballard County, KY
	Prepared For:
Customer:	The Towers, LLC
Contact:	Christopher Molloy
Date:	11/21/2024

11/22/2024

Table of Contents

Section	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs				P10x.365						P8x.322		P6x.28	P5x.258	P3x.216	P2x.154
Leg Grade								A500-50							
Diagonals		L4x4x1/4		L3 1/2x3 1/2x1/4			L3x3x3/16		L2 1/2x2 1/2x3/16			L2x2x3/16	L2x2x1/8	L2x2x3/16	A
Diagonal Grade								A529-50							
Top Girts								N.A.							A
Horizontals	L5x5x5/16		L4x4x1/4		L3 1/2x3 1/2x1/4			N.A.							
Red. Horizontals		L2 1/2x2 1/2x3/16			L2x2x3/16			N.A.							
Red. Diagonals			L2 1/2x2 1/2x3/16					N.A.							
Face Width (ft)	28	26	24	22	20	18	16	14	12.5	11	9.5	8	6.5	5	
# Panels @ (ft)				14 @ 10						15 @ 6.66667			8 @ 5	2 @ 5.3	
Weight (lb) 47591.3	567.5.8	5196.5	4814.5	4641.1	4309.0	3644.7	3561.7	3578.4	2709.3	2631.4	2556.9	1729.4	1298.4	954.7	289.7



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
42,000 sq in CaAa	285	Dish Pipe Mount	240
30,000 sq in CaAa	274	6' Solid w/Radome	240
30,000 sq in CaAa	264	6' Solid w/Radome	240
Dish Pipe Mount	240		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L1 3/4x1 3/4x1/8		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-50	50 ksi	62 ksi	A529-50	50 ksi	65 ksi

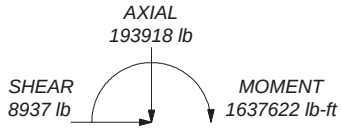
TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 106 mph ultimate wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 30 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 99.1%

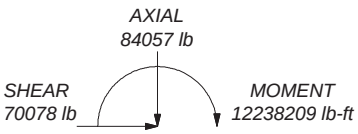
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 532714 lb
SHEAR: 47500 lb

UPLIFT: -462722 lb
SHEAR: 40803 lb



TORQUE 1664 lb-ft
30 mph WIND - 1.5000 in ICE



TORQUE 13377 lb-ft
REACTIONS - 106 mph WIND

Nello Corporation
1201 S. Sheridan Street
South Bend, IN. 46619
Phone: 800-806-3556
FAX:

Job:	***SO32498; Tower 769554; Foundation 769555***		
Project:	***NS 290.6' - US-KY-5215 / Lovelaceville - Ballard Co., KY***		
Client: The Towers, LLC		Drawn by: AG	App'd:
Code: TIA-222-H		Date: 11/20/24	Scale: NTS
Path: N:\eri\7695\769554.eri			Dwg No. E-1

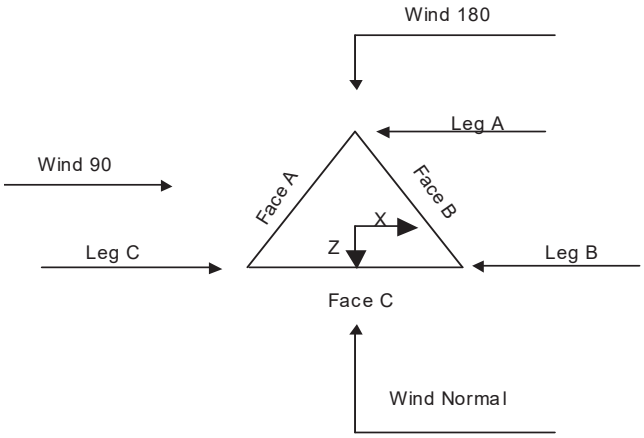
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 290.60 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 28.00 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower base elevation above sea level: 0.00 ft.
Ultimate wind speed of 106 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.5000 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 non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned	√	Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area	√	SR Leg Bolts Resist Compression
	Use Code Stress Ratios	√	Use Clear Spans For KL/r	√	All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys	√	Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice		Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
	Include Bolts In Member Capacity	√	Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
√	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
√	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)	√	Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
√	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	290.60-280.00			5.00	1	10.60
T2	280.00-260.00			5.00	1	20.00
T3	260.00-240.00			5.00	1	20.00
T4	240.00-220.00			6.50	1	20.00
T5	220.00-200.00			8.00	1	20.00
T6	200.00-180.00			9.50	1	20.00
T7	180.00-160.00			11.00	1	20.00
T8	160.00-140.00			12.50	1	20.00
T9	140.00-120.00			14.00	1	20.00
T10	120.00-100.00			16.00	1	20.00
T11	100.00-80.00			18.00	1	20.00
T12	80.00-60.00			20.00	1	20.00
T13	60.00-40.00			22.00	1	20.00
T14	40.00-20.00			24.00	1	20.00
T15	20.00-0.00			26.00	1	20.00

Tower Section Geometry *(cont'd)*

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

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	290.60-280.00	5.30	X Brace	No	No	0.0000	0.0000
T2	280.00-260.00	5.00	X Brace	No	No	0.0000	0.0000
T3	260.00-240.00	5.00	X Brace	No	No	0.0000	0.0000
T4	240.00-220.00	6.67	X Brace	No	No	0.0000	0.0000
T5	220.00-200.00	6.67	X Brace	No	No	0.0000	0.0000
T6	200.00-180.00	6.67	X Brace	No	No	0.0000	0.0000
T7	180.00-160.00	6.67	X Brace	No	No	0.0000	0.0000
T8	160.00-140.00	6.67	X Brace	No	No	0.0000	0.0000
T9	140.00-120.00	10.00	X Brace	No	No	0.0000	0.0000
T10	120.00-100.00	10.00	X Brace	No	No	0.0000	0.0000
T11	100.00-80.00	10.00	X Brace	No	No	0.0000	0.0000
T12	80.00-60.00	10.00	Double K1	No	Yes	0.0000	0.0000
T13	60.00-40.00	10.00	Double K1	No	Yes	0.0000	0.0000
T14	40.00-20.00	10.00	Double K1	No	Yes	0.0000	0.0000
T15	20.00-0.00	10.00	Double K1	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 290.60-280.00	Pipe	P2x.154	A500-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x1/8	A529-50 (50 ksi)
T2 280.00-260.00	Pipe	P3x.216	A500-50 (50 ksi)	Equal Angle	L2x2x3/16	A529-50 (50 ksi)
T3 260.00-240.00	Pipe	P5x.258	A500-50 (50 ksi)	Equal Angle	L2x2x1/8	A529-50 (50 ksi)
T4 240.00-220.00	Pipe	P6x.28	A500-50 (50 ksi)	Equal Angle	L2x2x3/16	A529-50 (50 ksi)
T5 220.00-200.00	Pipe	P8x.322	A500-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A529-50 (50 ksi)
T6 200.00-180.00	Pipe	P8x.322	A500-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A529-50 (50 ksi)
T7 180.00-160.00	Pipe	P8x.322	A500-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A529-50 (50 ksi)
T8 160.00-140.00	Pipe	P10x.365	A500-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A529-50 (50 ksi)
T9 140.00-120.00	Pipe	P10x.365	A500-50 (50 ksi)	Equal Angle	L3x3x3/16	A529-50 (50 ksi)
T10 120.00-100.00	Pipe	P10x.365	A500-50 (50 ksi)	Equal Angle	L3x3x3/16	A529-50 (50 ksi)
T11 100.00-80.00	Pipe	P10x.365	A500-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A529-50 (50 ksi)
T12 80.00-60.00	Pipe	P10x.365	A500-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A529-50 (50 ksi)
T13 60.00-40.00	Pipe	P10x.365	A500-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A529-50 (50 ksi)
T14 40.00-20.00	Pipe	P10x.365	A500-50 (50 ksi)	Equal Angle	L4x4x1/4	A529-50 (50 ksi)
T15 20.00-0.00	Pipe	P10x.365	A500-50 (50 ksi)	Equal Angle	L4x4x1/4	A529-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 290.60-280.00	Equal Angle	L1 3/4x1 3/4x1/8	A529-50 (50 ksi)	Solid Round		A529-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T12 80.00-60.00	None	Solid Round		A529-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A529-50 (50 ksi)
T13 60.00-40.00	None	Solid Round		A529-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A529-50 (50 ksi)
T14 40.00-20.00	None	Solid Round		A529-50 (50 ksi)	Equal Angle	L4x4x1/4	A529-50 (50 ksi)
T15 20.00-0.00	None	Solid Round		A529-50 (50 ksi)	Equal Angle	L5x5x5/16	A529-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T12	A529-50	Horizontal (1)	Equal Angle	L2x2x3/16	1
80.00-60.00	(50 ksi)	Diagonal (1)	Equal Angle	L2 1/2x2 1/2x3/16	1
T13	A529-50	Horizontal (1)	Equal Angle	L2 1/2x2 1/2x3/16	1
60.00-40.00	(50 ksi)	Diagonal (1)	Equal Angle	L2 1/2x2 1/2x3/16	1
T14	A529-50	Horizontal (1)	Equal Angle	L2 1/2x2 1/2x3/16	1
40.00-20.00	(50 ksi)	Diagonal (1)	Equal Angle	L2 1/2x2 1/2x3/16	1
T15	A529-50	Horizontal (1)	Equal Angle	L2 1/2x2 1/2x3/16	1
20.00-0.00	(50 ksi)	Diagonal (1)	Equal Angle	L2 1/2x2 1/2x3/16	1

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 290.60-280.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T2 280.00-260.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T3 260.00-240.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T4 240.00-220.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T5 220.00-200.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T6 200.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T7 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T8 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T9 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T10 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T11 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T12 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T13 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T14 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000
T15 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1.1	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 290.60-280.00	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 280.00-260.00	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 260.00-240.00	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 240.00-220.00	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 220.00-200.00	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 200.00-180.00	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 180.00-160.00	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 160.00-140.00	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 140.00-120.00	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T10 120.00-100.00	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T11 100.00-80.00	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T12	No	Yes	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1
T13	No	Yes	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1
T14	No	Yes	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1
T15	No	Yes	1	1	1	1	1	1	1	1
20.00-0.00				1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
290.60-280.00														
T2	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
280.00-260.00														
T3	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
260.00-240.00														
T4	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
240.00-220.00														
T5	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
220.00-200.00														
T6	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
200.00-180.00														
T7	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
180.00-160.00														
T8	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
160.00-140.00														
T9	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
140.00-120.00														
T10	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
120.00-100.00														
T11	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
100.00-80.00														
T12	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
80.00-60.00														
T13	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
60.00-40.00														
T14	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
40.00-20.00														
T15 20.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 290.60-280.00	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

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1" Conduit	C	No	No	Ar (CaAa)	290.00 - 0.00	1	1	2.2400 0.0000	0.0100		0.50
LDF7-50A (1-5/8 FOAM)	C	No	No	Ar (CaAa)	285.00 - 0.00	18	6	0.2700 0.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	B	No	No	Ar (CaAa)	274.00 - 0.00	12	4	0.2700 0.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	A	No	No	Ar (CaAa)	264.00 - 0.00	12	4	0.2700 0.0000	1.9800		0.82
EW63	B	No	No	Ar (CaAa)	240.00 - 0.00	2	1	0.6758 0.0000	1.5742		0.51

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	290.60-280.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	17.830	0.000	78.80
T2	280.00-260.00	A	0.000	0.000	9.504	0.000	39.36
		B	0.000	0.000	33.264	0.000	137.76
		C	0.000	0.000	71.300	0.000	305.20
T3	260.00-240.00	A	0.000	0.000	47.520	0.000	196.80
		B	0.000	0.000	47.520	0.000	196.80
		C	0.000	0.000	71.300	0.000	305.20
T4	240.00-220.00	A	0.000	0.000	47.520	0.000	196.80
		B	0.000	0.000	53.817	0.000	217.20
		C	0.000	0.000	71.300	0.000	305.20
T5	220.00-200.00	A	0.000	0.000	47.520	0.000	196.80
		B	0.000	0.000	53.817	0.000	217.20
		C	0.000	0.000	71.300	0.000	305.20
T6	200.00-180.00	A	0.000	0.000	47.520	0.000	196.80
		B	0.000	0.000	53.817	0.000	217.20
		C	0.000	0.000	71.300	0.000	305.20
T7	180.00-160.00	A	0.000	0.000	47.520	0.000	196.80
		B	0.000	0.000	53.817	0.000	217.20
		C	0.000	0.000	71.300	0.000	305.20
T8	160.00-140.00	A	0.000	0.000	47.520	0.000	196.80
		B	0.000	0.000	53.817	0.000	217.20
		C	0.000	0.000	71.300	0.000	305.20
T9	140.00-120.00	A	0.000	0.000	47.520	0.000	196.80
		B	0.000	0.000	53.817	0.000	217.20
		C	0.000	0.000	71.300	0.000	305.20
T10	120.00-100.00	A	0.000	0.000	47.520	0.000	196.80
		B	0.000	0.000	53.817	0.000	217.20
		C	0.000	0.000	71.300	0.000	305.20
T11	100.00-80.00	A	0.000	0.000	47.520	0.000	196.80
		B	0.000	0.000	53.817	0.000	217.20
		C	0.000	0.000	71.300	0.000	305.20
T12	80.00-60.00	A	0.000	0.000	47.520	0.000	196.80
		B	0.000	0.000	53.817	0.000	217.20
		C	0.000	0.000	71.300	0.000	305.20
T13	60.00-40.00	A	0.000	0.000	47.520	0.000	196.80
		B	0.000	0.000	53.817	0.000	217.20
		C	0.000	0.000	71.300	0.000	305.20
T14	40.00-20.00	A	0.000	0.000	47.520	0.000	196.80
		B	0.000	0.000	53.817	0.000	217.20
		C	0.000	0.000	71.300	0.000	305.20
T15	20.00-0.00	A	0.000	0.000	47.520	0.000	196.80
		B	0.000	0.000	53.817	0.000	217.20
		C	0.000	0.000	71.300	0.000	305.20

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_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	290.60-280.00	A	1.861	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	15.927	0.000	318.50
T2	280.00-260.00	A	1.851	0.000	0.000	7.866	0.000	157.56
		B		0.000	0.000	27.532	0.000	551.47
		C		0.000	0.000	56.135	0.000	1174.14
T3	260.00-240.00	A	1.837	0.000	0.000	39.232	0.000	783.48

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
		B		0.000	0.000	39.232	0.000	783.48
		C		0.000	0.000	55.981	0.000	1167.53
T4	240.00-220.00	A	1.821	0.000	0.000	39.125	0.000	778.84
		B		0.000	0.000	60.534	0.000	1101.49
		C		0.000	0.000	55.816	0.000	1160.46
T5	220.00-200.00	A	1.805	0.000	0.000	39.009	0.000	773.83
		B		0.000	0.000	60.303	0.000	1092.29
		C		0.000	0.000	55.638	0.000	1152.83
T6	200.00-180.00	A	1.787	0.000	0.000	38.883	0.000	768.39
		B		0.000	0.000	60.051	0.000	1082.31
		C		0.000	0.000	55.444	0.000	1144.55
T7	180.00-160.00	A	1.767	0.000	0.000	38.744	0.000	762.42
		B		0.000	0.000	59.774	0.000	1071.39
		C		0.000	0.000	55.230	0.000	1135.48
T8	160.00-140.00	A	1.745	0.000	0.000	38.590	0.000	755.81
		B		0.000	0.000	59.466	0.000	1059.32
		C		0.000	0.000	54.992	0.000	1125.44
T9	140.00-120.00	A	1.720	0.000	0.000	38.416	0.000	748.38
		B		0.000	0.000	59.118	0.000	1045.78
		C		0.000	0.000	54.724	0.000	1114.16
T10	120.00-100.00	A	1.692	0.000	0.000	38.216	0.000	739.88
		B		0.000	0.000	58.718	0.000	1030.33
		C		0.000	0.000	54.416	0.000	1101.28
T11	100.00-80.00	A	1.658	0.000	0.000	37.981	0.000	729.90
		B		0.000	0.000	58.247	0.000	1012.26
		C		0.000	0.000	54.053	0.000	1086.19
T12	80.00-60.00	A	1.617	0.000	0.000	37.692	0.000	717.76
		B		0.000	0.000	57.670	0.000	990.37
		C		0.000	0.000	53.608	0.000	1067.86
T13	60.00-40.00	A	1.564	0.000	0.000	37.317	0.000	702.10
		B		0.000	0.000	56.921	0.000	962.27
		C		0.000	0.000	53.030	0.000	1044.28
T14	40.00-20.00	A	1.486	0.000	0.000	36.771	0.000	679.55
		B		0.000	0.000	55.830	0.000	922.13
		C		0.000	0.000	52.190	0.000	1010.47
T15	20.00-0.00	A	1.331	0.000	0.000	35.689	0.000	635.68
		B		0.000	0.000	53.667	0.000	845.09
		C		0.000	0.000	50.523	0.000	945.10

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	290.60-280.00	0.0000	2.2865	0.0000	2.5646
T2	280.00-260.00	1.2579	1.2452	1.1430	1.9560
T3	260.00-240.00	0.0000	-0.9307	0.0000	0.1177
T4	240.00-220.00	0.9298	-1.5367	1.4134	-0.6184
T5	220.00-200.00	0.9583	-1.5666	1.5043	-0.6501
T6	200.00-180.00	1.0648	-1.7367	1.6629	-0.7157
T7	180.00-160.00	1.1608	-1.8907	1.8035	-0.7767
T8	160.00-140.00	1.1889	-1.9177	1.8660	-0.8044
T9	140.00-120.00	1.3358	-2.1500	2.1103	-0.9173
T10	120.00-100.00	1.4461	-2.3269	2.2673	-0.9959
T11	100.00-80.00	1.4570	-2.3503	2.3304	-1.0427
T12	80.00-60.00	1.4281	-2.3107	2.2609	-1.0332
T13	60.00-40.00	1.4813	-2.3985	2.3338	-1.0993

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T14	40.00-20.00	1.4741	-2.3912	2.3355	-1.1545
T15	20.00-0.00	1.4881	-2.4166	2.3115	-1.2587

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	1" Conduit	280.00 - 290.00	0.6000	0.5594
T1	2	LDF7-50A (1-5/8 FOAM)	280.00 - 285.00	0.6000	0.5594
T2	1	1" Conduit	260.00 - 280.00	0.6000	0.5597
T2	2	LDF7-50A (1-5/8 FOAM)	260.00 - 280.00	0.6000	0.5597
T2	3	LDF7-50A (1-5/8 FOAM)	260.00 - 274.00	0.6000	0.5597
T2	4	LDF7-50A (1-5/8 FOAM)	260.00 - 264.00	0.6000	0.5597
T3	1	1" Conduit	240.00 - 260.00	0.6000	0.5604
T3	2	LDF7-50A (1-5/8 FOAM)	240.00 - 260.00	0.6000	0.5604
T3	3	LDF7-50A (1-5/8 FOAM)	240.00 - 260.00	0.6000	0.5604
T3	4	LDF7-50A (1-5/8 FOAM)	240.00 - 260.00	0.6000	0.5604
T4	1	1" Conduit	220.00 - 240.00	0.6000	0.6000
T4	2	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.6000
T4	3	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.6000
T4	4	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.6000
T4	5	EW63	220.00 - 240.00	0.6000	0.6000
T5	1	1" Conduit	200.00 - 220.00	0.6000	0.6000
T5	2	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.6000
T5	3	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.6000
T5	4	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.6000
T5	5	EW63	200.00 - 220.00	0.6000	0.6000
T6	1	1" Conduit	180.00 - 200.00	0.6000	0.6000
T6	2	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.6000
T6	3	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.6000
T6	4	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T6	5	EW63	180.00 - 200.00	0.6000	0.6000
T7	1	1" Conduit	160.00 - 180.00	0.6000	0.6000
T7	2	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.6000
T7	3	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.6000
T7	4	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.6000
T7	5	EW63	160.00 - 180.00	0.6000	0.6000
T8	1	1" Conduit	140.00 - 160.00	0.6000	0.6000
T8	2	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.6000
T8	3	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.6000
T8	4	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.6000
T8	5	EW63	140.00 - 160.00	0.6000	0.6000
T9	1	1" Conduit	120.00 - 140.00	0.6000	0.6000
T9	2	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	3	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	4	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	5	EW63	120.00 - 140.00	0.6000	0.6000
T10	1	1" Conduit	100.00 - 120.00	0.6000	0.6000
T10	2	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	3	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	4	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	5	EW63	100.00 - 120.00	0.6000	0.6000
T11	1	1" Conduit	80.00 - 100.00	0.6000	0.6000
T11	2	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	3	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	4	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	5	EW63	80.00 - 100.00	0.6000	0.6000
T12	1	1" Conduit	60.00 - 80.00	0.6000	0.6000
T12	2	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	3	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	4	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	5	EW63	60.00 - 80.00	0.6000	0.6000
T13	1	1" Conduit	40.00 - 60.00	0.6000	0.6000
T13	2	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	3	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	4	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	5	EW63	40.00 - 60.00	0.6000	0.6000
T14	1	1" Conduit	20.00 - 40.00	0.6000	0.6000
T14	2	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	3	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	4	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	5	EW63	20.00 - 40.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T15	1	1" Conduit	0.00 - 20.00	0.6000	0.6000
T15	2	LDF7-50A (1-5/8 FOAM)	0.00 - 20.00	0.6000	0.6000
T15	3	LDF7-50A (1-5/8 FOAM)	0.00 - 20.00	0.6000	0.6000
T15	4	LDF7-50A (1-5/8 FOAM)	0.00 - 20.00	0.6000	0.6000
T15	5	EW63	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
42,000 sq in CaAa	A	None		0.0000	285.00	No Ice	292.00	292.00	4964.00
						1/2" Ice	350.00	350.00	6652.00
						1" Ice	408.00	408.00	8340.00
						2" Ice	524.00	524.00	11716.00
30,000 sq in CaAa	C	None		0.0000	274.00	No Ice	208.00	208.00	3536.00
						1/2" Ice	250.00	250.00	4738.00
						1" Ice	292.00	292.00	5940.00
						2" Ice	376.00	376.00	8344.00
30,000 sq in CaAa	B	None		0.0000	264.00	No Ice	208.00	208.00	3536.00
						1/2" Ice	250.00	250.00	4738.00
						1" Ice	292.00	292.00	5940.00
						2" Ice	376.00	376.00	8344.00
Dish Pipe Mount	A	From Leg	0.00 0.00 0.00	0.0000	240.00	No Ice	0.00	1.80	103.00
						1/2" Ice	0.00	2.10	119.00
						1" Ice	0.00	2.40	135.00
						2" Ice	0.00	3.00	167.00
Dish Pipe Mount	B	From Leg	0.00 0.00 0.00	0.0000	240.00	No Ice	0.00	1.80	103.00
						1/2" Ice	0.00	2.10	119.00
						1" Ice	0.00	2.40	135.00
						2" Ice	0.00	3.00	167.00

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
6' Solid w/Radome	A	Paraboloid w/Radome	From Leg	0.00 0.00 0.00	0.0000		240.00	6.00	No Ice 1/2" Ice 1" Ice 2" Ice	28.27 29.07 29.86 31.44	162.00 321.00 480.00 798.00
6' Solid w/Radome	B	Paraboloid w/Radome	From Leg	0.00 0.00	0.0000		240.00	6.00	No Ice 1/2" Ice	28.27 29.07	162.00 321.00

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
				0.00					1" Ice	29.86	480.00
									2" Ice	31.44	798.00

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg % %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
T1	285.30	1.578	39	55.098	A	4.782	4.196	4.196	46.73	0.000	0.000
290.60-280.00					B	4.782	4.196		46.73	0.000	0.000
					C	4.782	4.196		46.73	17.830	0.000
T2	270.00	1.56	38	105.833	A	8.878	11.667	11.667	56.79	9.504	0.000
280.00-260.00					B	8.878	11.667		56.79	33.264	0.000
					C	8.878	11.667		56.79	71.300	0.000
T3	250.00	1.535	38	124.278	A	9.346	18.561	18.561	66.51	47.520	0.000
260.00-240.00					B	9.346	18.561		66.51	47.520	0.000
					C	9.346	18.561		66.51	71.300	0.000
T4	230.00	1.508	37	156.049	A	9.103	22.104	22.104	70.83	47.520	0.000
240.00-220.00					B	9.103	22.104		70.83	53.817	0.000
					C	9.103	22.104		70.83	71.300	0.000
T5	210.00	1.48	36	189.385	A	12.624	28.777	28.777	69.51	47.520	0.000
220.00-200.00					B	12.624	28.777		69.51	53.817	0.000
					C	12.624	28.777		69.51	71.300	0.000
T6	190.00	1.449	35	219.385	A	14.215	28.777	28.777	66.94	47.520	0.000
200.00-180.00					B	14.215	28.777		66.94	53.817	0.000
					C	14.215	28.777		66.94	71.300	0.000
T7	170.00	1.415	35	249.385	A	15.856	28.777	28.777	64.47	47.520	0.000
180.00-160.00					B	15.856	28.777		64.47	53.817	0.000
					C	15.856	28.777		64.47	71.300	0.000
T8	150.00	1.378	34	282.929	A	17.289	35.867	35.867	67.47	47.520	0.000
160.00-140.00					B	17.289	35.867		67.47	53.817	0.000
					C	17.289	35.867		67.47	71.300	0.000
T9	130.00	1.337	33	317.939	A	16.955	35.893	35.893	67.92	47.520	0.000
140.00-120.00					B	16.955	35.893		67.92	53.817	0.000
					C	16.955	35.893		67.92	71.300	0.000
T10	110.00	1.291	32	357.939	A	18.687	35.893	35.893	65.76	47.520	0.000
120.00-100.00					B	18.687	35.893		65.76	53.817	0.000
					C	18.687	35.893		65.76	71.300	0.000
T11	90.00	1.238	30	397.939	A	23.872	35.893	35.893	60.06	47.520	0.000
100.00-80.00					B	23.872	35.893		60.06	53.817	0.000
					C	23.872	35.893		60.06	71.300	0.000
T12	70.00	1.174	29	437.939	A	30.796	35.893	35.893	53.82	47.520	0.000
80.00-60.00					B	30.796	35.893		53.82	53.817	0.000
					C	30.796	35.893		53.82	71.300	0.000
T13	50.00	1.094	27	477.939	A	33.817	35.893	35.893	51.49	47.520	0.000
60.00-40.00					B	33.817	35.893		51.49	53.817	0.000
					C	33.817	35.893		51.49	71.300	0.000
T14	30.00	0.982	24	517.939	A	39.650	35.893	35.893	47.51	47.520	0.000
40.00-20.00					B	39.650	35.893		47.51	53.817	0.000
					C	39.650	35.893		47.51	71.300	0.000
T15 20.00-0.00	10.00	0.85	21	557.939	A	44.330	35.893	35.893	44.74	47.520	0.000
					B	44.330	35.893		44.74	53.817	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	44.330	35.893		44.74	71.300	0.000

Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	285.30	1.578	3	1.8611	58.386	A	4.782	20.944	10.772	41.87	0.000	0.000
290.60-280.00						B	4.782	20.944		41.87	0.000	0.000
						C	4.782	20.944		41.87	15.927	0.000
T2	270.00	1.56	3	1.8509	112.003	A	8.878	40.438	24.006	48.68	7.866	0.000
280.00-260.00						B	8.878	40.438		48.68	27.532	0.000
						C	8.878	40.438		48.68	56.135	0.000
T3	250.00	1.535	3	1.8367	130.405	A	9.346	47.982	30.817	53.75	39.232	0.000
260.00-240.00						B	9.346	47.982		53.75	39.232	0.000
						C	9.346	47.982		53.75	55.981	0.000
T4	230.00	1.508	3	1.8214	162.125	A	9.103	50.838	34.258	57.15	39.125	0.000
240.00-220.00						B	9.103	50.838		57.15	60.534	0.000
						C	9.103	50.838		57.15	55.816	0.000
T5	210.00	1.48	3	1.8049	195.406	A	12.624	59.050	40.821	56.95	39.009	0.000
220.00-200.00						B	12.624	59.050		56.95	60.303	0.000
						C	12.624	59.050		56.95	55.638	0.000
T6	190.00	1.449	3	1.7870	225.346	A	14.215	61.023	40.701	54.10	38.883	0.000
200.00-180.00						B	14.215	61.023		54.10	60.051	0.000
						C	14.215	61.023		54.10	55.444	0.000
T7	170.00	1.415	3	1.7672	255.280	A	15.856	62.986	40.569	51.46	38.744	0.000
180.00-160.00						B	15.856	62.986		51.46	59.774	0.000
						C	15.856	62.986		51.46	55.230	0.000
T8	150.00	1.378	3	1.7452	288.751	A	17.289	71.651	47.513	53.42	38.590	0.000
160.00-140.00						B	17.289	71.651		53.42	59.466	0.000
						C	17.289	71.651		53.42	54.992	0.000
T9	130.00	1.337	3	1.7204	323.681	A	16.955	66.828	47.382	56.55	38.416	0.000
140.00-120.00						B	16.955	66.828		56.55	59.118	0.000
						C	16.955	66.828		56.55	54.724	0.000
T10	110.00	1.291	3	1.6919	363.586	A	18.687	68.269	47.191	54.27	38.216	0.000
120.00-100.00						B	18.687	68.269		54.27	58.718	0.000
						C	18.687	68.269		54.27	54.416	0.000
T11	90.00	1.238	2	1.6583	403.474	A	23.872	69.588	46.967	50.25	37.981	0.000
100.00-80.00						B	23.872	69.588		50.25	58.247	0.000
						C	23.872	69.588		50.25	54.053	0.000
T12 80.00-60.00	70.00	1.174	2	1.6171	443.336	A	30.796	79.412	46.692	42.37	37.692	0.000
						B	30.796	79.412		42.37	57.670	0.000
						C	30.796	79.412		42.37	53.608	0.000
T13 60.00-40.00	50.00	1.094	2	1.5636	483.158	A	33.817	80.223	46.335	40.63	37.317	0.000
						B	33.817	80.223		40.63	56.921	0.000
						C	33.817	80.223		40.63	53.030	0.000
T14 40.00-20.00	30.00	0.982	2	1.4858	522.898	A	39.650	80.186	45.815	38.23	36.771	0.000
						B	39.650	80.186		38.23	55.830	0.000
						C	39.650	80.186		38.23	52.190	0.000
T15 20.00-0.00	10.00	0.85	2	1.3312	562.382	A	44.330	77.548	44.782	36.74	35.689	0.000
						B	44.330	77.548		36.74	53.667	0.000
						C	44.330	77.548		36.74	50.523	0.000

Tower Pressure - Service

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	285.30	1.578	12	55.098	A	4.782	4.196	4.196	46.73	0.000	0.000
290.60-280.00					B	4.782	4.196		46.73	0.000	0.000
					C	4.782	4.196		46.73	17.830	0.000
T2	270.00	1.56	12	105.833	A	8.878	11.667	11.667	56.79	9.504	0.000
280.00-260.00					B	8.878	11.667		56.79	33.264	0.000
					C	8.878	11.667		56.79	71.300	0.000
T3	250.00	1.535	12	124.278	A	9.346	18.561	18.561	66.51	47.520	0.000
260.00-240.00					B	9.346	18.561		66.51	47.520	0.000
					C	9.346	18.561		66.51	71.300	0.000
T4	230.00	1.508	12	156.049	A	9.103	22.104	22.104	70.83	47.520	0.000
240.00-220.00					B	9.103	22.104		70.83	53.817	0.000
					C	9.103	22.104		70.83	71.300	0.000
T5	210.00	1.48	12	189.385	A	12.624	28.777	28.777	69.51	47.520	0.000
220.00-200.00					B	12.624	28.777		69.51	53.817	0.000
					C	12.624	28.777		69.51	71.300	0.000
T6	190.00	1.449	11	219.385	A	14.215	28.777	28.777	66.94	47.520	0.000
200.00-180.00					B	14.215	28.777		66.94	53.817	0.000
					C	14.215	28.777		66.94	71.300	0.000
T7	170.00	1.415	11	249.385	A	15.856	28.777	28.777	64.47	47.520	0.000
180.00-160.00					B	15.856	28.777		64.47	53.817	0.000
					C	15.856	28.777		64.47	71.300	0.000
T8	150.00	1.378	11	282.929	A	17.289	35.867	35.867	67.47	47.520	0.000
160.00-140.00					B	17.289	35.867		67.47	53.817	0.000
					C	17.289	35.867		67.47	71.300	0.000
T9	130.00	1.337	10	317.939	A	16.955	35.893	35.893	67.92	47.520	0.000
140.00-120.00					B	16.955	35.893		67.92	53.817	0.000
					C	16.955	35.893		67.92	71.300	0.000
T10	110.00	1.291	10	357.939	A	18.687	35.893	35.893	65.76	47.520	0.000
120.00-100.00					B	18.687	35.893		65.76	53.817	0.000
					C	18.687	35.893		65.76	71.300	0.000
T11	90.00	1.238	10	397.939	A	23.872	35.893	35.893	60.06	47.520	0.000
100.00-80.00					B	23.872	35.893		60.06	53.817	0.000
					C	23.872	35.893		60.06	71.300	0.000
T12	70.00	1.174	9	437.939	A	30.796	35.893	35.893	53.82	47.520	0.000
80.00-60.00					B	30.796	35.893		53.82	53.817	0.000
					C	30.796	35.893		53.82	71.300	0.000
T13	50.00	1.094	9	477.939	A	33.817	35.893	35.893	51.49	47.520	0.000
60.00-40.00					B	33.817	35.893		51.49	53.817	0.000
					C	33.817	35.893		51.49	71.300	0.000
T14	30.00	0.982	8	517.939	A	39.650	35.893	35.893	47.51	47.520	0.000
40.00-20.00					B	39.650	35.893		47.51	53.817	0.000
					C	39.650	35.893		47.51	71.300	0.000
T15 20.00-0.00	10.00	0.85	7	557.939	A	44.330	35.893	35.893	44.74	47.520	0.000
					B	44.330	35.893		44.74	53.817	0.000
					C	44.330	35.893		44.74	71.300	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	78.80	289.66	A	0.163	2.724	39	1	1	7.170	803.57	75.81	C
290.60-280.00			B	0.163	2.724		1	1	7.170			
			C	0.163	2.724		1	1	7.170			
T2	482.32	954.66	A	0.194	2.616	38	1	1	15.569	2254.49	112.72	C
280.00-260.00			B	0.194	2.616		1	1	15.569			
			C	0.194	2.616		1	1	15.569			
T3	698.80	1298.40	A	0.225	2.516	38	1	1	18.857	2782.00	139.10	C
260.00-240.00			B	0.225	2.516		1	1	18.857			
			C	0.225	2.516		1	1	18.857			
T4	719.20	1729.37	A	0.2	2.596	37	1	1	19.403	2943.74	147.19	C
240.00-220.00			B	0.2	2.596		1	1	19.403			
			C	0.2	2.596		1	1	19.403			
T5	719.20	2556.85	A	0.219	2.535	36	1	1	25.764	3347.34	167.37	C
220.00-200.00			B	0.219	2.535		1	1	25.764			
			C	0.219	2.535		1	1	25.764			
T6	719.20	2631.37	A	0.196	2.61	35	1	1	26.977	3430.60	171.53	C
200.00-180.00			B	0.196	2.61		1	1	26.977			
			C	0.196	2.61		1	1	26.977			
T7	719.20	2709.25	A	0.179	2.668	35	1	1	28.345	3504.76	175.24	C
180.00-160.00			B	0.179	2.668		1	1	28.345			
			C	0.179	2.668		1	1	28.345			
T8	719.20	3578.45	A	0.188	2.637	34	1	1	33.032	3742.64	187.13	C
160.00-140.00			B	0.188	2.637		1	1	33.032			
			C	0.188	2.637		1	1	33.032			
T9	719.20	3561.71	A	0.166	2.713	33	1	1	32.286	3644.86	182.24	C
140.00-120.00			B	0.166	2.713		1	1	32.286			
			C	0.166	2.713		1	1	32.286			
T10	719.20	3644.68	A	0.152	2.762	32	1	1	33.761	3671.30	183.56	C
120.00-100.00			B	0.152	2.762		1	1	33.761			
			C	0.152	2.762		1	1	33.761			
T11	719.20	4308.96	A	0.15	2.771	30	1	1	38.904	3893.32	194.67	C
100.00-80.00			B	0.15	2.771		1	1	38.904			
			C	0.15	2.771		1	1	38.904			
T12	719.20	4641.09	A	0.152	2.763	29	1	1	45.866	4154.79	207.74	C
80.00-60.00			B	0.152	2.763		1	1	45.866			
			C	0.152	2.763		1	1	45.866			
T13	719.20	4814.47	A	0.146	2.787	27	1	1	48.770	4079.30	203.96	C
60.00-40.00			B	0.146	2.787		1	1	48.770			
			C	0.146	2.787		1	1	48.770			
T14	719.20	5196.49	A	0.146	2.787	24	1	1	54.603	3995.20	199.76	C
40.00-20.00			B	0.146	2.787		1	1	54.603			
			C	0.146	2.787		1	1	54.603			
T15	719.20	5675.84	A	0.144	2.795	21	1	1	59.245	3693.87	184.69	C
20.00-0.00			B	0.144	2.795		1	1	59.245			
			C	0.144	2.795		1	1	59.245			
Sum Weight:	9890.32	47591.25						OTM	6602158.7 9 lb-ft	49941.77		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	78.80	289.66	A	0.163	2.724	39	0.8	1	6.213	718.10	67.75	A
290.60-280.00			B	0.163	2.724		0.8	1	6.213			
			C	0.163	2.724		0.8	1	6.213			
T2	482.32	954.66	A	0.194	2.616	38	0.8	1	13.793	2103.92	105.20	A
280.00-260.00			B	0.194	2.616		0.8	1	13.793			
			C	0.194	2.616		0.8	1	13.793			
T3	698.80	1298.40	A	0.225	2.516	38	0.8	1	16.988	2631.98	131.60	A
260.00-240.00			B	0.225	2.516		0.8	1	16.988			
			C	0.225	2.516		0.8	1	16.988			
T4	719.20	1729.37	A	0.2	2.596	37	0.8	1	17.582	2795.60	139.78	A
240.00-220.00			B	0.2	2.596		0.8	1	17.582			
			C	0.2	2.596		0.8	1	17.582			
T5	719.20	2556.85	A	0.219	2.535	36	0.8	1	23.239	3150.53	157.53	A
220.00-200.00			B	0.219	2.535		0.8	1	23.239			
			C	0.219	2.535		0.8	1	23.239			
T6	719.20	2631.37	A	0.196	2.61	35	0.8	1	24.134	3207.23	160.36	A
200.00-180.00			B	0.196	2.61		0.8	1	24.134			
			C	0.196	2.61		0.8	1	24.134			
T7	719.20	2709.25	A	0.179	2.668	35	0.8	1	25.174	3255.94	162.80	A
180.00-160.00			B	0.179	2.668		0.8	1	25.174			
			C	0.179	2.668		0.8	1	25.174			
T8	719.20	3578.45	A	0.188	2.637	34	0.8	1	29.574	3481.44	174.07	A
160.00-140.00			B	0.188	2.637		0.8	1	29.574			
			C	0.188	2.637		0.8	1	29.574			
T9	719.20	3561.71	A	0.166	2.713	33	0.8	1	28.895	3389.17	169.46	A
140.00-120.00			B	0.166	2.713		0.8	1	28.895			
			C	0.166	2.713		0.8	1	28.895			
T10	719.20	3644.68	A	0.152	2.762	32	0.8	1	30.024	3394.24	169.71	A
120.00-100.00			B	0.152	2.762		0.8	1	30.024			
			C	0.152	2.762		0.8	1	30.024			
T11	719.20	4308.96	A	0.15	2.771	30	0.8	1	34.129	3553.00	177.65	A
100.00-80.00			B	0.15	2.771		0.8	1	34.129			
			C	0.15	2.771		0.8	1	34.129			
T12	719.20	4641.09	A	0.152	2.763	29	0.8	1	39.707	3739.54	186.98	A
80.00-60.00			B	0.152	2.763		0.8	1	39.707			
			C	0.152	2.763		0.8	1	39.707			
T13	719.20	4814.47	A	0.146	2.787	27	0.8	1	42.007	3650.86	182.54	A
60.00-40.00			B	0.146	2.787		0.8	1	42.007			
			C	0.146	2.787		0.8	1	42.007			
T14	719.20	5196.49	A	0.146	2.787	24	0.8	1	46.673	3544.08	177.20	A
40.00-20.00			B	0.146	2.787		0.8	1	46.673			
			C	0.146	2.787		0.8	1	46.673			
T15	719.20	5675.84	A	0.144	2.795	21	0.8	1	50.379	3256.21	162.81	A
20.00-0.00			B	0.144	2.795		0.8	1	50.379			
			C	0.144	2.795		0.8	1	50.379			
Sum Weight:	9890.32	47591.25						OTM	6137549.78 lb-ft	45871.84		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	78.80	289.66	A	0.163	2.724	39	0.85	1	6.452	717.05	67.65	B
290.60-280.00			B	0.163	2.724		0.85	1	6.452			
			C	0.163	2.724		0.85	1	6.452			
T2	482.32	954.66	A	0.194	2.616	38	0.85	1	14.237	2093.64	104.68	A
280.00-260.00			B	0.194	2.616		0.85	1	14.237			
			C	0.194	2.616		0.85	1	14.237			
T3	698.80	1298.40	A	0.225	2.516	38	0.85	1	17.455	2615.66	130.78	B
260.00-240.00			B	0.225	2.516		0.85	1	17.455			
			C	0.225	2.516		0.85	1	17.455			
T4	719.20	1729.37	A	0.2	2.596	37	0.85	1	18.038	2779.74	138.99	B
240.00-220.00			B	0.2	2.596		0.85	1	18.038			
			C	0.2	2.596		0.85	1	18.038			
T5	719.20	2556.85	A	0.219	2.535	36	0.85	1	23.871	3147.84	157.39	B
220.00-200.00			B	0.219	2.535		0.85	1	23.871			
			C	0.219	2.535		0.85	1	23.871			
T6	719.20	2631.37	A	0.196	2.61	35	0.85	1	24.844	3212.26	160.61	B
200.00-180.00			B	0.196	2.61		0.85	1	24.844			
			C	0.196	2.61		0.85	1	24.844			
T7	719.20	2709.25	A	0.179	2.668	35	0.85	1	25.967	3268.51	163.43	B
180.00-160.00			B	0.179	2.668		0.85	1	25.967			
			C	0.179	2.668		0.85	1	25.967			
T8	719.20	3578.45	A	0.188	2.637	34	0.85	1	30.438	3498.40	174.92	B
160.00-140.00			B	0.188	2.637		0.85	1	30.438			
			C	0.188	2.637		0.85	1	30.438			
T9	719.20	3561.71	A	0.166	2.713	33	0.85	1	29.743	3406.19	170.31	B
140.00-120.00			B	0.166	2.713		0.85	1	29.743			
			C	0.166	2.713		0.85	1	29.743			
T10	719.20	3644.68	A	0.152	2.762	32	0.85	1	30.958	3418.22	170.91	B
120.00-100.00			B	0.152	2.762		0.85	1	30.958			
			C	0.152	2.762		0.85	1	30.958			
T11	719.20	4308.96	A	0.15	2.771	30	0.85	1	35.323	3594.67	179.73	B
100.00-80.00			B	0.15	2.771		0.85	1	35.323			
			C	0.15	2.771		0.85	1	35.323			
T12	719.20	4641.09	A	0.152	2.763	29	0.85	1	41.247	3802.18	190.11	B
80.00-60.00			B	0.152	2.763		0.85	1	41.247			
			C	0.152	2.763		0.85	1	41.247			
T13	719.20	4814.47	A	0.146	2.787	27	0.85	1	43.697	3719.61	185.98	B
60.00-40.00			B	0.146	2.787		0.85	1	43.697			
			C	0.146	2.787		0.85	1	43.697			
T14	719.20	5196.49	A	0.146	2.787	24	0.85	1	48.655	3622.41	181.12	B
40.00-20.00			B	0.146	2.787		0.85	1	48.655			
			C	0.146	2.787		0.85	1	48.655			
T15	719.20	5675.84	A	0.144	2.795	21	0.85	1	52.596	3335.82	166.79	B
20.00-0.00			B	0.144	2.795		0.85	1	52.596			
			C	0.144	2.795		0.85	1	52.596			
Sum Weight:	9890.32	47591.25						OTM	6151389.3 3 lb-ft	46232.21		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
T1	318.50	1605.86	A	0.441	1.989	3	1	1	18.495	117.71	11.10	C
290.60-280.00			B	0.441	1.989		1	1	18.495			
			C	0.441	1.989		1	1	18.495			
T2	1883.17	3476.33	A	0.44	1.99	3	1	1	35.349	288.76	14.44	C
280.00-260.00			B	0.44	1.99		1	1	35.349			
			C	0.44	1.99		1	1	35.349			
T3	2734.50	4211.43	A	0.44	1.991	3	1	1	40.739	352.10	17.61	C
260.00-240.00			B	0.44	1.991		1	1	40.739			
			C	0.44	1.991		1	1	40.739			
T4	3040.79	4693.52	A	0.37	2.127	3	1	1	40.809	394.00	19.70	C
240.00-220.00			B	0.37	2.127		1	1	40.809			
			C	0.37	2.127		1	1	40.809			
T5	3018.95	6270.72	A	0.367	2.133	3	1	1	49.384	431.64	21.58	C
220.00-200.00			B	0.367	2.133		1	1	49.384			
			C	0.367	2.133		1	1	49.384			
T6	2995.25	6554.58	A	0.334	2.21	3	1	1	51.451	442.12	22.11	C
200.00-180.00			B	0.334	2.21		1	1	51.451			
			C	0.334	2.21		1	1	51.451			
T7	2969.29	6841.23	A	0.309	2.273	3	1	1	53.757	451.19	22.56	C
180.00-160.00			B	0.309	2.273		1	1	53.757			
			C	0.309	2.273		1	1	53.757			
T8	2940.56	8184.99	A	0.308	2.275	3	1	1	60.384	473.59	23.68	C
160.00-140.00			B	0.308	2.275		1	1	60.384			
			C	0.308	2.275		1	1	60.384			
T9	2908.32	7849.14	A	0.259	2.411	3	1	1	56.198	454.60	22.73	C
140.00-120.00			B	0.259	2.411		1	1	56.198			
			C	0.259	2.411		1	1	56.198			
T10	2871.49	8094.24	A	0.239	2.47	3	1	1	58.449	457.11	22.86	C
120.00-100.00			B	0.239	2.47		1	1	58.449			
			C	0.239	2.47		1	1	58.449			
T11	2828.35	9269.75	A	0.232	2.494	2	1	1	64.284	469.99	23.50	C
100.00-80.00			B	0.232	2.494		1	1	64.284			
			C	0.232	2.494		1	1	64.284			
T12	2775.99	10625.03	A	0.249	2.442	2	1	1	77.225	499.84	24.99	C
80.00-60.00			B	0.249	2.442		1	1	77.225			
			C	0.249	2.442		1	1	77.225			
T13	2708.65	10926.45	A	0.236	2.48	2	1	1	80.483	484.36	24.22	C
60.00-40.00			B	0.236	2.48		1	1	80.483			
			C	0.236	2.48		1	1	80.483			
T14	2612.16	11554.55	A	0.229	2.501	2	1	1	86.173	459.22	22.96	C
40.00-20.00			B	0.229	2.501		1	1	86.173			
			C	0.229	2.501		1	1	86.173			
T15	2425.87	11694.71	A	0.217	2.541	2	1	1	89.122	409.68	20.48	C
20.00-0.00			B	0.217	2.541		1	1	89.122			
			C	0.217	2.541		1	1	89.122			
Sum Weight:	39031.85	111852.53						OTM	841342.48 lb-ft	6185.93		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
T1	318.50	1605.86	A	0.441	1.989	3	0.8	1	17.539	112.71	10.63	A
290.60-280.00			B	0.441	1.989		0.8	1	17.539			
			C	0.441	1.989		0.8	1	17.539			
T2	1883.17	3476.33	A	0.44	1.99	3	0.8	1	33.573	279.59	13.98	A
280.00-260.00			B	0.44	1.99		0.8	1	33.573			
			C	0.44	1.99		0.8	1	33.573			
T3	2734.50	4211.43	A	0.44	1.991	3	0.8	1	38.870	342.60	17.13	A
260.00-240.00			B	0.44	1.991		0.8	1	38.870			
			C	0.44	1.991		0.8	1	38.870			
T4	3040.79	4693.52	A	0.37	2.127	3	0.8	1	38.988	384.28	19.21	A
240.00-220.00			B	0.37	2.127		0.8	1	38.988			
			C	0.37	2.127		0.8	1	38.988			
T5	3018.95	6270.72	A	0.367	2.133	3	0.8	1	46.859	418.37	20.92	A
220.00-200.00			B	0.367	2.133		0.8	1	46.859			
			C	0.367	2.133		0.8	1	46.859			
T6	2995.25	6554.58	A	0.334	2.21	3	0.8	1	48.608	426.97	21.35	A
200.00-180.00			B	0.334	2.21		0.8	1	48.608			
			C	0.334	2.21		0.8	1	48.608			
T7	2969.29	6841.23	A	0.309	2.273	3	0.8	1	50.585	434.21	21.71	A
180.00-160.00			B	0.309	2.273		0.8	1	50.585			
			C	0.309	2.273		0.8	1	50.585			
T8	2940.56	8184.99	A	0.308	2.275	3	0.8	1	56.927	455.54	22.78	A
160.00-140.00			B	0.308	2.275		0.8	1	56.927			
			C	0.308	2.275		0.8	1	56.927			
T9	2908.32	7849.14	A	0.259	2.411	3	0.8	1	52.807	436.39	21.82	A
140.00-120.00			B	0.259	2.411		0.8	1	52.807			
			C	0.259	2.411		0.8	1	52.807			
T10	2871.49	8094.24	A	0.239	2.47	3	0.8	1	54.712	437.26	21.86	A
120.00-100.00			B	0.239	2.47		0.8	1	54.712			
			C	0.239	2.47		0.8	1	54.712			
T11	2828.35	9269.75	A	0.232	2.494	2	0.8	1	59.509	445.46	22.27	A
100.00-80.00			B	0.232	2.494		0.8	1	59.509			
			C	0.232	2.494		0.8	1	59.509			
T12	2775.99	10625.03	A	0.249	2.442	2	0.8	1	71.066	470.45	23.52	A
80.00-60.00			B	0.249	2.442		0.8	1	71.066			
			C	0.249	2.442		0.8	1	71.066			
T13	2708.65	10926.45	A	0.236	2.48	2	0.8	1	73.720	453.82	22.69	A
60.00-40.00			B	0.236	2.48		0.8	1	73.720			
			C	0.236	2.48		0.8	1	73.720			
T14	2612.16	11554.55	A	0.229	2.501	2	0.8	1	78.243	426.79	21.34	A
40.00-20.00			B	0.229	2.501		0.8	1	78.243			
			C	0.229	2.501		0.8	1	78.243			
T15	2425.87	11694.71	A	0.217	2.541	2	0.8	1	80.256	377.81	18.89	A
20.00-0.00			B	0.217	2.541		0.8	1	80.256			
			C	0.217	2.541		0.8	1	80.256			
Sum Weight:	39031.85	111852.53						OTM	809933.42 lb-ft	5902.25		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	318.50	1605.86	A	0.441	1.989	3	0.85	1	17.778	112.28	10.59	B
290.60-280.00			B	0.441	1.989		0.85	1	17.778			
			C	0.441	1.989		0.85	1	17.778			
T2	1883.17	3476.33	A	0.44	1.99	3	0.85	1	34.017	278.30	13.92	A
280.00-260.00			B	0.44	1.99		0.85	1	34.017			
			C	0.44	1.99		0.85	1	34.017			
T3	2734.50	4211.43	A	0.44	1.991	3	0.85	1	39.338	340.95	17.05	B
260.00-240.00			B	0.44	1.991		0.85	1	39.338			
			C	0.44	1.991		0.85	1	39.338			
T4	3040.79	4693.52	A	0.37	2.127	3	0.85	1	39.444	383.95	19.20	B
240.00-220.00			B	0.37	2.127		0.85	1	39.444			
			C	0.37	2.127		0.85	1	39.444			
T5	3018.95	6270.72	A	0.367	2.133	3	0.85	1	47.490	418.99	20.95	B
220.00-200.00			B	0.367	2.133		0.85	1	47.490			
			C	0.367	2.133		0.85	1	47.490			
T6	2995.25	6554.58	A	0.334	2.21	3	0.85	1	49.319	428.11	21.41	B
200.00-180.00			B	0.334	2.21		0.85	1	49.319			
			C	0.334	2.21		0.85	1	49.319			
T7	2969.29	6841.23	A	0.309	2.273	3	0.85	1	51.378	435.87	21.79	B
180.00-160.00			B	0.309	2.273		0.85	1	51.378			
			C	0.309	2.273		0.85	1	51.378			
T8	2940.56	8184.99	A	0.308	2.275	3	0.85	1	57.791	457.54	22.88	B
160.00-140.00			B	0.308	2.275		0.85	1	57.791			
			C	0.308	2.275		0.85	1	57.791			
T9	2908.32	7849.14	A	0.259	2.411	3	0.85	1	53.655	438.50	21.93	B
140.00-120.00			B	0.259	2.411		0.85	1	53.655			
			C	0.259	2.411		0.85	1	53.655			
T10	2871.49	8094.24	A	0.239	2.47	3	0.85	1	55.646	439.87	21.99	B
120.00-100.00			B	0.239	2.47		0.85	1	55.646			
			C	0.239	2.47		0.85	1	55.646			
T11	2828.35	9269.75	A	0.232	2.494	2	0.85	1	60.703	449.33	22.47	B
100.00-80.00			B	0.232	2.494		0.85	1	60.703			
			C	0.232	2.494		0.85	1	60.703			
T12	2775.99	10625.03	A	0.249	2.442	2	0.85	1	72.605	475.65	23.78	B
80.00-60.00			B	0.249	2.442		0.85	1	72.605			
			C	0.249	2.442		0.85	1	72.605			
T13	2708.65	10926.45	A	0.236	2.48	2	0.85	1	75.411	459.46	22.97	B
60.00-40.00			B	0.236	2.48		0.85	1	75.411			
			C	0.236	2.48		0.85	1	75.411			
T14	2612.16	11554.55	A	0.229	2.501	2	0.85	1	80.226	433.10	21.66	B
40.00-20.00			B	0.229	2.501		0.85	1	80.226			
			C	0.229	2.501		0.85	1	80.226			
T15	2425.87	11694.71	A	0.217	2.541	2	0.85	1	82.472	384.22	19.21	B
20.00-0.00			B	0.217	2.541		0.85	1	82.472			
			C	0.217	2.541		0.85	1	82.472			
Sum Weight:	39031.85	111852.53						OTM	811714.00 lb-ft	5936.13		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	78.80	289.66	A	0.163	2.724	12	1	1	7.170	257.46	24.29	C
290.60-280.00			B	0.163	2.724		1	1	7.170			
			C	0.163	2.724		1	1	7.170			
T2	482.32	954.66	A	0.194	2.616	12	1	1	15.569	722.34	36.12	C
280.00-260.00			B	0.194	2.616		1	1	15.569			
			C	0.194	2.616		1	1	15.569			
T3	698.80	1298.40	A	0.225	2.516	12	1	1	20.097	923.23	46.16	C
260.00-240.00			B	0.225	2.516		1	1	20.097			
			C	0.225	2.516		1	1	20.097			
T4	719.20	1729.37	A	0.2	2.596	12	1	1	21.678	1002.49	50.12	C
240.00-220.00			B	0.2	2.596		1	1	21.678			
			C	0.2	2.596		1	1	21.678			
T5	719.20	2556.85	A	0.219	2.535	12	1	1	28.052	1129.62	56.48	C
220.00-200.00			B	0.219	2.535		1	1	28.052			
			C	0.219	2.535		1	1	28.052			
T6	719.20	2631.37	A	0.196	2.61	11	1	1	29.486	1162.32	58.12	C
200.00-180.00			B	0.196	2.61		1	1	29.486			
			C	0.196	2.61		1	1	29.486			
T7	719.20	2709.25	A	0.179	2.668	11	1	1	31.047	1190.82	59.54	C
180.00-160.00			B	0.179	2.668		1	1	31.047			
			C	0.179	2.668		1	1	31.047			
T8	719.20	3578.45	A	0.188	2.637	11	1	1	34.861	1243.41	62.17	C
160.00-140.00			B	0.188	2.637		1	1	34.861			
			C	0.188	2.637		1	1	34.861			
T9	719.20	3561.71	A	0.166	2.713	10	1	1	34.360	1217.91	60.90	C
140.00-120.00			B	0.166	2.713		1	1	34.360			
			C	0.166	2.713		1	1	34.360			
T10	719.20	3644.68	A	0.152	2.762	10	1	1	36.063	1230.96	61.55	C
120.00-100.00			B	0.152	2.762		1	1	36.063			
			C	0.152	2.762		1	1	36.063			
T11	719.20	4308.96	A	0.15	2.771	10	1	1	41.395	1304.32	65.22	C
100.00-80.00			B	0.15	2.771		1	1	41.395			
			C	0.15	2.771		1	1	41.395			
T12	719.20	4641.09	A	0.152	2.763	9	1	1	48.556	1389.29	69.46	C
80.00-60.00			B	0.152	2.763		1	1	48.556			
			C	0.152	2.763		1	1	48.556			
T13	719.20	4814.47	A	0.146	2.787	9	1	1	51.788	1368.26	68.41	C
60.00-40.00			B	0.146	2.787		1	1	51.788			
			C	0.146	2.787		1	1	51.788			
T14	719.20	5196.49	A	0.146	2.787	8	1	1	58.029	1342.50	67.12	C
40.00-20.00			B	0.146	2.787		1	1	58.029			
			C	0.146	2.787		1	1	58.029			
T15	719.20	5675.84	A	0.144	2.795	7	1	1	63.208	1246.19	62.31	C
20.00-0.00			B	0.144	2.795		1	1	63.208			
			C	0.144	2.795		1	1	63.208			
Sum Weight:	9890.32	47591.25						OTM	2206400.18 lb-ft	16731.12		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
T1	78.80	289.66	A	0.163	2.724	12	0.8	1	6.213	230.08	21.71	A
290.60-280.00			B	0.163	2.724		0.8	1	6.213			
			C	0.163	2.724		0.8	1	6.213			
T2	482.32	954.66	A	0.194	2.616	12	0.8	1	13.793	674.09	33.70	A
280.00-260.00			B	0.194	2.616		0.8	1	13.793			
			C	0.194	2.616		0.8	1	13.793			
T3	698.80	1298.40	A	0.225	2.516	12	0.8	1	18.227	875.16	43.76	A
260.00-240.00			B	0.225	2.516		0.8	1	18.227			
			C	0.225	2.516		0.8	1	18.227			
T4	719.20	1729.37	A	0.2	2.596	12	0.8	1	19.858	955.03	47.75	A
240.00-220.00			B	0.2	2.596		0.8	1	19.858			
			C	0.2	2.596		0.8	1	19.858			
T5	719.20	2556.85	A	0.219	2.535	12	0.8	1	25.527	1066.56	53.33	A
220.00-200.00			B	0.219	2.535		0.8	1	25.527			
			C	0.219	2.535		0.8	1	25.527			
T6	719.20	2631.37	A	0.196	2.61	11	0.8	1	26.643	1090.75	54.54	A
200.00-180.00			B	0.196	2.61		0.8	1	26.643			
			C	0.196	2.61		0.8	1	26.643			
T7	719.20	2709.25	A	0.179	2.668	11	0.8	1	27.875	1111.10	55.56	A
180.00-160.00			B	0.179	2.668		0.8	1	27.875			
			C	0.179	2.668		0.8	1	27.875			
T8	719.20	3578.45	A	0.188	2.637	11	0.8	1	31.403	1159.73	57.99	A
160.00-140.00			B	0.188	2.637		0.8	1	31.403			
			C	0.188	2.637		0.8	1	31.403			
T9	719.20	3561.71	A	0.166	2.713	10	0.8	1	30.969	1135.98	56.80	A
140.00-120.00			B	0.166	2.713		0.8	1	30.969			
			C	0.166	2.713		0.8	1	30.969			
T10	719.20	3644.68	A	0.152	2.762	10	0.8	1	32.326	1142.19	57.11	A
120.00-100.00			B	0.152	2.762		0.8	1	32.326			
			C	0.152	2.762		0.8	1	32.326			
T11	719.20	4308.96	A	0.15	2.771	10	0.8	1	36.621	1195.28	59.76	A
100.00-80.00			B	0.15	2.771		0.8	1	36.621			
			C	0.15	2.771		0.8	1	36.621			
T12	719.20	4641.09	A	0.152	2.763	9	0.8	1	42.397	1256.25	62.81	A
80.00-60.00			B	0.152	2.763		0.8	1	42.397			
			C	0.152	2.763		0.8	1	42.397			
T13	719.20	4814.47	A	0.146	2.787	9	0.8	1	45.025	1230.99	61.55	A
60.00-40.00			B	0.146	2.787		0.8	1	45.025			
			C	0.146	2.787		0.8	1	45.025			
T14	719.20	5196.49	A	0.146	2.787	8	0.8	1	50.099	1197.96	59.90	A
40.00-20.00			B	0.146	2.787		0.8	1	50.099			
			C	0.146	2.787		0.8	1	50.099			
T15	719.20	5675.84	A	0.144	2.795	7	0.8	1	54.342	1105.96	55.30	A
20.00-0.00			B	0.144	2.795		0.8	1	54.342			
			C	0.144	2.795		0.8	1	54.342			
Sum Weight:	9890.32	47591.25						OTM	2057540.06 lb-ft	15427.12		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	78.80	289.66	A	0.163	2.724	12	0.85	1	6.452	229.74	21.67	B
290.60-280.00			B	0.163	2.724		0.85	1	6.452			
			C	0.163	2.724		0.85	1	6.452			
T2	482.32	954.66	A	0.194	2.616	12	0.85	1	14.237	670.80	33.54	A
280.00-260.00			B	0.194	2.616		0.85	1	14.237			
			C	0.194	2.616		0.85	1	14.237			
T3	698.80	1298.40	A	0.225	2.516	12	0.85	1	18.695	869.93	43.50	B
260.00-240.00			B	0.225	2.516		0.85	1	18.695			
			C	0.225	2.516		0.85	1	18.695			
T4	719.20	1729.37	A	0.2	2.596	12	0.85	1	20.313	949.95	47.50	B
240.00-220.00			B	0.2	2.596		0.85	1	20.313			
			C	0.2	2.596		0.85	1	20.313			
T5	719.20	2556.85	A	0.219	2.535	12	0.85	1	26.158	1065.70	53.28	B
220.00-200.00			B	0.219	2.535		0.85	1	26.158			
			C	0.219	2.535		0.85	1	26.158			
T6	719.20	2631.37	A	0.196	2.61	11	0.85	1	27.354	1092.37	54.62	B
200.00-180.00			B	0.196	2.61		0.85	1	27.354			
			C	0.196	2.61		0.85	1	27.354			
T7	719.20	2709.25	A	0.179	2.668	11	0.85	1	28.668	1115.13	55.76	B
180.00-160.00			B	0.179	2.668		0.85	1	28.668			
			C	0.179	2.668		0.85	1	28.668			
T8	719.20	3578.45	A	0.188	2.637	11	0.85	1	32.268	1165.16	58.26	B
160.00-140.00			B	0.188	2.637		0.85	1	32.268			
			C	0.188	2.637		0.85	1	32.268			
T9	719.20	3561.71	A	0.166	2.713	10	0.85	1	31.816	1141.44	57.07	B
140.00-120.00			B	0.166	2.713		0.85	1	31.816			
			C	0.166	2.713		0.85	1	31.816			
T10	719.20	3644.68	A	0.152	2.762	10	0.85	1	33.260	1149.87	57.49	B
120.00-100.00			B	0.152	2.762		0.85	1	33.260			
			C	0.152	2.762		0.85	1	33.260			
T11	719.20	4308.96	A	0.15	2.771	10	0.85	1	37.814	1208.63	60.43	B
100.00-80.00			B	0.15	2.771		0.85	1	37.814			
			C	0.15	2.771		0.85	1	37.814			
T12	719.20	4641.09	A	0.152	2.763	9	0.85	1	43.936	1276.32	63.82	B
80.00-60.00			B	0.152	2.763		0.85	1	43.936			
			C	0.152	2.763		0.85	1	43.936			
T13	719.20	4814.47	A	0.146	2.787	9	0.85	1	46.716	1253.02	62.65	B
60.00-40.00			B	0.146	2.787		0.85	1	46.716			
			C	0.146	2.787		0.85	1	46.716			
T14	719.20	5196.49	A	0.146	2.787	8	0.85	1	52.081	1223.06	61.15	B
40.00-20.00			B	0.146	2.787		0.85	1	52.081			
			C	0.146	2.787		0.85	1	52.081			
T15	719.20	5675.84	A	0.144	2.795	7	0.85	1	56.559	1131.47	56.57	B
20.00-0.00			B	0.144	2.795		0.85	1	56.559			
			C	0.144	2.795		0.85	1	56.559			
Sum Weight:	9890.32	47591.25						OTM	2061974.23 lb-ft	15542.58		

Mast Vectors - No Ice

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
T1	290.60-280.00	0	Wind Normal	803.57	0.00	-803.57	-229125.98	0.00	0.00

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		30	Wind 90	717.05	358.53	-620.99	-177035.40	-102287.65	118.76
		60	Wind 60	650.86	563.66	-325.43	-92712.63	-160811.62	140.05
		90	Wind 90	649.81	649.81	0.00	132.01	-185390.05	123.81
		120	Wind Normal	736.32	637.67	368.16	105168.38	-181928.33	140.05
		150	Wind 90	717.05	358.53	620.99	177299.41	-102287.65	118.76
		180	Wind 60	718.10	0.00	718.10	205006.51	0.00	0.00
		210	Wind 90	717.05	-358.53	620.99	177299.41	102287.65	-118.76
		240	Wind Normal	736.32	-637.67	368.16	105168.38	181928.33	-140.05
		270	Wind 90	649.81	-649.81	0.00	132.01	185390.05	-123.81
		300	Wind 60	650.86	-563.66	-325.43	-92712.63	160811.62	-140.05
		330	Wind 90	717.05	-358.53	-620.99	-177035.40	102287.65	-118.76
T2	280.00-260.00	0	Wind Normal	2254.49	0.00	-2254.49	-608348.56	-144.09	236.33
		30	Wind 90	2093.64	1046.82	-1813.14	-489184.32	-282784.85	602.76
		60	Wind 60	1909.27	1653.47	-954.63	-257386.96	-446581.57	458.72
		90	Wind 90	1848.11	1848.11	0.00	363.84	-499132.83	191.77
		120	Wind Normal	2008.96	1739.81	1004.48	271573.65	-469893.26	222.39
		150	Wind 90	2042.76	1021.38	1769.08	478015.29	-275916.28	193.43
		180	Wind 60	2103.92	0.00	2103.92	568421.08	-144.09	-236.33
		210	Wind 90	2093.64	-1046.82	1813.14	489912.00	282496.67	-602.76
		240	Wind Normal	2059.84	-1783.87	1029.92	278442.22	481501.79	-458.72
		270	Wind 90	1848.11	-1848.11	0.00	363.84	498844.65	-191.77
		300	Wind 60	1858.39	-1609.41	-929.19	-250518.39	434396.67	-222.39
		330	Wind 90	2042.76	-1021.38	-1769.08	-477287.61	275628.10	-193.43
T3	260.00-240.00	0	Wind Normal	2782.00	0.00	-2782.00	-695296.26	0.00	0.00
		30	Wind 90	2615.66	1307.83	-2265.23	-566102.64	-326957.46	345.29
		60	Wind 60	2470.50	2139.51	-1235.25	-308607.94	-534878.47	89.47
		90	Wind 90	2454.17	2454.17	0.00	204.29	-613543.47	-190.33
		120	Wind Normal	2620.52	2269.43	1310.26	327768.84	-567358.44	89.47
		150	Wind 90	2615.66	1307.83	2265.23	566511.22	-326957.46	345.29
		180	Wind 60	2631.98	0.00	2631.98	658200.20	0.00	0.00
		210	Wind 90	2615.66	-1307.83	2265.23	566511.22	326957.46	-345.29
		240	Wind Normal	2620.52	-2269.43	1310.26	327768.84	567358.44	-89.47
		270	Wind 90	2454.17	-2454.17	0.00	204.29	613543.47	190.33
		300	Wind 60	2470.50	-2139.51	-1235.25	-308607.94	534878.47	-89.47
		330	Wind 90	2615.66	-1307.83	-2265.23	-566102.64	326957.46	-345.29
T4	240.00-220.00	0	Wind Normal	2943.74	0.00	-2943.74	-676831.73	-39.29	228.09
		30	Wind 90	2753.84	1376.92	-2384.90	-548297.53	-316730.97	519.20
		60	Wind 60	2592.52	2245.19	-1296.26	-297911.18	-516432.45	107.89
		90	Wind 90	2595.16	2595.16	0.00	228.54	-596927.21	-332.34
		120	Wind Normal	2785.06	2411.94	1392.53	320510.96	-554784.71	-120.20
		150	Wind 90	2779.74	1389.87	2407.33	553914.34	-319709.94	152.95
		180	Wind 60	2795.60	0.00	2795.60	643217.03	-39.29	-228.09
		210	Wind 90	2753.84	-1376.92	2384.90	548754.62	316652.39	-519.20
		240	Wind Normal	2740.66	-2373.48	1370.33	315404.16	545860.89	-107.89
		270	Wind 90	2595.16	-2595.16	0.00	228.54	596848.63	332.34
		300	Wind 60	2636.93	-2283.65	-1318.46	-303017.99	525199.10	120.20
		330	Wind 90	2779.74	-1389.87	-2407.33	-553457.26	319631.35	-152.95
T5	220.00-200.00	0	Wind Normal	3347.34	0.00	-3347.34	-702670.03	-46.94	267.32
		30	Wind 90	3122.43	1561.21	-2704.10	-567590.40	-327901.91	604.58
		60	Wind 60	2951.30	2555.90	-1475.65	-309615.04	-536785.42	125.44
		90	Wind 90	2966.76	2966.76	0.00	271.06	-623067.07	-387.32
		120	Wind Normal	3191.67	2764.07	1595.84	335396.71	-580501.58	-141.89
		150	Wind 90	3147.84	1573.92	2726.11	572754.22	-330570.24	175.32
		180	Wind 60	3150.53	0.00	3150.53	661881.64	-46.94	-267.32
		210	Wind 90	3122.43	-1561.21	2704.10	568132.53	327808.03	-604.58
		240	Wind Normal	3148.11	-2726.34	1574.05	330822.42	572484.81	-125.44
		270	Wind 90	2966.76	-2966.76	0.00	271.06	622973.19	387.32
		300	Wind 60	2994.86	-2593.63	-1497.43	-314189.32	544614.42	141.89
		330	Wind 90	3147.84	-1573.92	-2726.11	-572212.09	330476.36	-175.32
T6	200.00-180.00	0	Wind Normal	3430.60	0.00	-3430.60	-651499.73	-54.59	304.41
		30	Wind 90	3187.38	1593.69	-2760.35	-524153.14	-302855.60	685.21

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		60	Wind 60	3012.15	2608.60	-1506.07	-285840.62	-495688.21	142.01
		90	Wind 90	3034.96	3034.96	0.00	313.59	-576696.77	-439.24
		120	Wind Normal	3278.18	2838.98	1639.09	311740.33	-539461.53	-162.40
		150	Wind 90	3212.26	1606.13	2781.90	528874.65	-305219.47	196.40
		180	Wind 60	3207.23	0.00	3207.23	609686.52	-54.59	-304.41
		210	Wind 90	3187.38	-1593.69	2760.35	524780.31	302746.41	-685.21
		240	Wind Normal	3235.52	-2802.04	1617.76	307687.98	532333.47	-142.01
		270	Wind 90	3034.96	-3034.96	0.00	313.59	576587.59	439.24
		300	Wind 60	3054.81	-2645.54	-1527.40	-289892.96	502597.90	162.40
		330	Wind 90	3212.26	-1606.13	-2781.90	-528247.48	305110.28	-196.40
T7	180.00-160.00	0	Wind Normal	3504.76	0.00	-3504.76	-595452.59	-62.24	339.03
		30	Wind 90	3244.20	1622.10	-2809.56	-477269.75	-275819.66	760.43
		60	Wind 60	3065.38	2654.69	-1532.69	-260200.88	-451360.19	157.47
		90	Wind 90	3095.31	3095.31	0.00	356.11	-526265.35	-487.69
		120	Wind Normal	3355.86	2906.26	1677.93	285604.59	-494127.11	-181.57
		150	Wind 90	3268.51	1634.26	2830.61	481560.54	-277885.75	216.03
		180	Wind 60	3255.94	0.00	3255.94	553865.56	-62.24	-339.03
		210	Wind 90	3244.20	-1622.10	2809.56	477981.97	275695.18	-760.43
		240	Wind Normal	3314.20	-2870.18	1657.10	282062.72	487867.92	-157.47
		270	Wind 90	3095.31	-3095.31	0.00	356.11	526140.86	487.69
		300	Wind 60	3107.05	-2690.78	-1553.52	-263742.75	457370.40	181.57
		330	Wind 90	3268.51	-1634.26	-2830.61	-480848.33	277761.27	-216.03
T8	160.00-140.00	0	Wind Normal	3742.64	0.00	-3742.64	-560997.70	-69.89	370.80
		30	Wind 90	3474.73	1737.36	-3009.20	-450981.40	-260674.28	829.37
		60	Wind 60	3295.83	2854.28	-1647.92	-246788.88	-428211.22	171.63
		90	Wind 90	3329.70	3329.70	0.00	398.63	-499525.59	-532.10
		120	Wind Normal	3597.62	3115.63	1798.81	270220.26	-467414.66	-199.17
		150	Wind 90	3498.40	1749.20	3029.70	454854.11	-262449.89	233.95
		180	Wind 60	3481.44	0.00	3481.44	522614.54	-69.89	-370.80
		210	Wind 90	3474.73	-1737.36	3009.20	451778.66	260534.49	-829.37
		240	Wind Normal	3557.04	-3080.48	1778.52	267176.35	462002.68	-171.63
		270	Wind 90	3329.70	-3329.70	0.00	398.63	499385.80	532.10
		300	Wind 60	3336.42	-2889.42	-1668.21	-249832.79	433343.64	199.17
		330	Wind 90	3498.40	-1749.20	-3029.70	-454056.85	262310.10	-233.95
T9	140.00-120.00	0	Wind Normal	3644.86	0.00	-3644.86	-473384.05	-78.82	405.74
		30	Wind 90	3383.22	1691.61	-2929.95	-380445.70	-219988.04	905.18
		60	Wind 60	3209.08	2779.14	-1604.54	-208141.73	-361367.25	187.20
		90	Wind 90	3242.50	3242.50	0.00	448.24	-421604.09	-580.94
		120	Wind Normal	3504.15	3034.68	1752.07	228217.80	-394587.27	-218.54
		150	Wind 90	3406.19	1703.10	2949.85	383928.47	-221481.23	253.66
		180	Wind 60	3389.17	0.00	3389.17	441040.87	-78.82	-405.74
		210	Wind 90	3383.22	-1691.61	2929.95	381342.18	219830.40	-905.18
		240	Wind Normal	3464.77	-3000.58	1732.38	225658.04	389996.00	-187.20
		270	Wind 90	3242.50	-3242.50	0.00	448.24	421446.45	580.94
		300	Wind 60	3248.46	-2813.25	-1624.23	-210701.50	365643.25	218.54
		330	Wind 90	3406.19	-1703.10	-2949.85	-383031.99	221323.60	-253.66
T10	120.00-100.00	0	Wind Normal	3671.30	0.00	-3671.30	-403337.78	-89.02	442.41
		30	Wind 90	3396.04	1698.02	-2941.06	-323011.70	-186871.44	984.70
		60	Wind 60	3220.37	2788.92	-1610.18	-176615.40	-306870.43	203.53
		90	Wind 90	3260.19	3260.19	0.00	504.93	-358709.94	-632.17
		120	Wind Normal	3535.44	3061.78	1767.72	194954.33	-336885.25	-238.88
		150	Wind 90	3418.22	1709.11	2960.27	326134.34	-188091.25	274.30
		180	Wind 60	3394.24	0.00	3394.24	373871.71	-89.02	-442.41
		210	Wind 90	3396.04	-1698.02	2941.06	324021.57	186693.40	-984.70
		240	Wind Normal	3497.42	-3028.86	1748.71	192863.23	333085.33	-203.53
		270	Wind 90	3260.19	-3260.19	0.00	504.93	358531.90	632.17
		300	Wind 60	3258.39	-2821.85	-1629.19	-178706.50	310314.28	238.88
		330	Wind 90	3418.22	-1709.11	-2960.27	-325124.48	187913.21	-274.30
T11	100.00-80.00	0	Wind Normal	3893.32	0.00	-3893.32	-349836.89	-99.22	472.71
		30	Wind 90	3573.41	1786.70	-3094.66	-277957.89	-160902.54	1050.19
		60	Wind 60	3386.32	2932.64	-1693.16	-151822.72	-264036.66	216.98

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		90	Wind 90	3443.17	3443.17	0.00	561.63	-309984.80	-674.38
		120	Wind Normal	3763.08	3258.93	1881.54	169900.36	-293402.50	-255.73
		150	Wind 90	3594.67	1797.33	3113.07	280738.28	-161859.28	291.14
		180	Wind 60	3553.00	0.00	3553.00	320331.65	-99.22	-472.71
		210	Wind 90	3573.41	-1786.70	3094.66	279081.15	160704.10	-1050.19
		240	Wind Normal	3726.64	-3227.36	1863.32	168260.23	290363.28	-216.98
		270	Wind 90	3443.17	-3443.17	0.00	561.63	309786.37	674.38
		300	Wind 60	3422.77	-2964.20	-1711.38	-153462.85	266679.01	255.73
		330	Wind 90	3594.67	-1797.33	-3113.07	-279615.02	161660.84	-291.14
T12	80.00-60.00	0	Wind Normal	4154.79	0.00	-4154.79	-290216.66	-109.42	494.44
		30	Wind 90	3782.01	1891.01	-3275.32	-228653.91	-132479.81	1096.82
		60	Wind 60	3581.45	3101.62	-1790.72	-124732.33	-217223.12	226.53
		90	Wind 90	3658.49	3658.49	0.00	618.33	-256203.61	-704.46
		120	Wind Normal	4031.26	3491.18	2015.63	141712.53	-244491.74	-267.91
		150	Wind 90	3802.18	1901.09	3292.78	231113.02	-133185.59	302.87
		180	Wind 60	3739.54	0.00	3739.54	262386.05	-109.42	-494.44
		210	Wind 90	3782.01	-1891.01	3275.32	229890.56	132260.97	-1096.82
		240	Wind Normal	3996.69	-3461.24	1998.35	140502.61	242177.27	-226.53
		270	Wind 90	3658.49	-3658.49	0.00	618.33	255984.77	704.46
		300	Wind 60	3616.02	-3131.56	-1808.01	-125942.24	219099.92	267.91
		330	Wind 90	3802.18	-1901.09	-3292.78	-229876.37	132966.75	-302.87
T13	60.00-40.00	0	Wind Normal	4079.30	0.00	-4079.30	-203289.97	-119.62	503.57
		30	Wind 90	3700.83	1850.41	-3205.01	-159575.49	-92640.30	1115.67
		60	Wind 60	3503.58	3034.19	-1751.79	-86914.53	-151829.17	230.35
		90	Wind 90	3585.75	3585.75	0.00	675.02	-179407.20	-716.69
		120	Wind Normal	3964.22	3433.12	1982.11	99780.63	-171775.57	-273.21
		150	Wind 90	3719.61	1859.81	3221.28	161739.00	-93109.95	307.07
		180	Wind 60	3650.86	0.00	3650.86	183218.15	-119.62	-503.57
		210	Wind 90	3700.83	-1850.41	3205.01	160925.54	92401.06	-1115.67
		240	Wind Normal	3932.02	-3405.23	1966.01	98975.51	170141.81	-230.35
		270	Wind 90	3585.75	-3585.75	0.00	675.02	179167.96	716.69
		300	Wind 60	3535.79	-3062.08	-1767.89	-87719.65	152984.45	273.21
		330	Wind 90	3719.61	-1859.81	-3221.28	-160388.96	92870.72	-307.07
T14	40.00-20.00	0	Wind Normal	3995.20	0.00	-3995.20	-119124.22	-129.82	490.78
		30	Wind 90	3605.54	1802.77	-3122.49	-92942.97	-54212.93	1086.21
		60	Wind 60	3411.82	2954.72	-1705.91	-50445.51	-88771.38	224.21
		90	Wind 90	3502.20	3502.20	0.00	731.72	-105195.77	-697.86
		120	Wind Normal	3891.86	3370.45	1945.93	59109.55	-101243.20	-266.57
		150	Wind 90	3622.41	1811.21	3137.10	94844.72	-54465.99	298.13
		180	Wind 60	3544.08	0.00	3544.08	107054.09	-129.82	-490.78
		210	Wind 90	3605.54	-1802.77	3122.49	94406.41	53953.29	-1086.21
		240	Wind Normal	3862.93	-3345.40	1931.47	58675.73	100232.16	-224.21
		270	Wind 90	3502.20	-3502.20	0.00	731.72	104936.13	697.86
		300	Wind 60	3440.74	-2979.77	-1720.37	-50879.33	89263.14	266.57
		330	Wind 90	3622.41	-1811.21	-3137.10	-93381.29	54206.35	-298.13
T15	20.00-0.00	0	Wind Normal	3693.87	0.00	-3693.87	-36150.31	-140.02	458.07
		30	Wind 90	3321.22	1660.61	-2876.26	-27974.18	-16746.11	1012.90
		60	Wind 60	3141.76	2720.84	-1570.88	-14920.37	-27348.43	209.03
		90	Wind 90	3231.79	3231.79	0.00	788.41	-32457.92	-650.84
		120	Wind Normal	3604.44	3121.54	1802.22	18810.63	-31355.42	-249.04
		150	Wind 90	3335.82	1667.91	2888.90	29677.44	-16819.11	277.34
		180	Wind 60	3256.21	0.00	3256.21	33350.53	-140.02	-458.07
		210	Wind 90	3321.22	-1660.61	2876.26	29551.01	16466.07	-1012.90
		240	Wind Normal	3579.42	-3099.87	1789.71	18685.50	30858.64	-209.03
		270	Wind 90	3231.79	-3231.79	0.00	788.41	32177.89	650.84
		300	Wind 60	3166.78	-2742.52	-1583.39	-15045.51	27285.14	249.04
		330	Wind 90	3335.82	-1667.91	-2888.90	-28100.61	16539.07	-277.34

Mast Totals - No Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	-49941.77	-6595562.44	-1182.98	5013.70
30	22985.60	-39812.22	-5291176.45	-3059853.53	11717.27
60	37587.37	-21701.08	-2872656.72	-4988195.58	2890.49
90	43898.09	0.00	6596.35	-5784111.67	-6710.79
120	41455.48	23934.33	3140469.54	-5429210.56	-2123.21
150	23090.66	39994.20	5321959.06	-3070009.07	3636.65
180	0.00	45871.84	6144146.13	-1182.98	-5013.70
210	-22985.60	39812.22	5304369.15	3057487.58	-11717.27
240	-41112.03	23736.04	3118153.92	5388192.83	-2890.49
270	-43898.09	0.00	6596.35	5781745.72	6710.79
300	-37930.82	-21899.37	-2894972.34	5024481.41	2123.21
330	-23090.66	-39994.20	-5308766.36	3067643.11	-3636.65

Mast Vectors - With Ice

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
T1	290.60-280.00	0	Wind Normal	117.71	0.00	-117.71	-33054.91	0.00	0.00
		30	Wind 90	112.28	56.14	-97.24	-27216.00	-16017.31	15.71
		60	Wind 60	107.69	93.26	-53.84	-14834.70	-26606.90	22.30
		90	Wind 90	107.26	107.26	0.00	526.80	-30601.94	22.92
		120	Wind Normal	112.68	97.59	56.34	16601.31	-27841.87	22.30
		150	Wind 90	112.28	56.14	97.24	28269.60	-16017.31	15.71
		180	Wind 60	112.71	0.00	112.71	32682.48	0.00	0.00
		210	Wind 90	112.28	-56.14	97.24	28269.60	16017.31	-15.71
		240	Wind Normal	112.68	-97.59	56.34	16601.31	27841.87	-22.30
		270	Wind 90	107.26	-107.26	0.00	526.80	30601.94	-22.92
		300	Wind 60	107.69	-93.26	-53.84	-14834.70	26606.90	-22.30
		330	Wind 90	112.28	-56.14	-97.24	-27216.00	16017.31	-15.71
T2	280.00-260.00	0	Wind Normal	288.76	0.00	-288.76	-76603.57	-576.81	27.51
		30	Wind 90	278.30	139.15	-241.02	-63711.88	-38147.59	67.59
		60	Wind 60	265.05	229.54	-132.52	-34418.50	-62551.53	63.49
		90	Wind 90	259.96	259.96	0.00	1362.62	-70765.10	42.37
		120	Wind Normal	270.42	234.19	135.21	37869.08	-63807.85	35.98
		150	Wind 90	274.50	137.25	237.72	65548.22	-37634.38	19.95
		180	Wind 60	279.59	0.00	279.59	76851.72	-576.81	-27.51
		210	Wind 90	278.30	-139.15	241.02	66437.12	36993.97	-67.59
		240	Wind Normal	274.22	-237.48	137.11	38382.28	63543.13	-63.49
		270	Wind 90	259.96	-259.96	0.00	1362.62	69611.48	-42.37
		300	Wind 60	261.24	-226.24	-130.62	-33905.30	60509.01	-35.98
		330	Wind 90	274.50	-137.25	-237.72	-62822.98	36480.76	-19.95
T3	260.00-240.00	0	Wind Normal	352.10	0.00	-352.10	-87316.40	0.00	0.00
		30	Wind 90	340.95	170.47	-295.27	-73107.33	-42618.22	34.56
		60	Wind 60	330.51	286.23	-165.26	-40604.76	-71558.55	21.82
		90	Wind 90	328.86	328.86	0.00	709.59	-82216.23	3.23
		120	Wind Normal	340.02	294.47	170.01	43212.48	-73617.16	21.82
		150	Wind 90	340.95	170.47	295.27	74526.51	-42618.22	34.56
		180	Wind 60	342.60	0.00	342.60	86358.50	0.00	0.00
		210	Wind 90	340.95	-170.47	295.27	74526.51	42618.22	-34.56
		240	Wind Normal	340.02	-294.47	170.01	43212.48	73617.16	-21.82
		270	Wind 90	328.86	-328.86	0.00	709.59	82216.23	-3.23
		300	Wind 60	330.51	-286.23	-165.26	-40604.76	71558.55	-21.82
		330	Wind 90	340.95	-170.47	-295.27	-73107.33	42618.22	-34.56

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
T4	240.00-220.00	0	Wind Normal	394.00	0.00	-394.00	-90107.70	-621.46	46.41
		30	Wind 90	379.51	189.75	-328.66	-75080.32	-44264.55	68.33
		60	Wind 60	367.12	317.93	-183.56	-41706.98	-73746.42	28.54
		90	Wind 90	366.80	366.80	0.00	511.73	-84984.37	-18.90
		120	Wind Normal	381.29	330.20	190.64	44359.81	-76568.56	-17.87
		150	Wind 90	383.95	191.98	332.51	76989.40	-44775.87	-12.05
		180	Wind 60	384.28	0.00	384.28	88895.06	-621.46	-46.41
		210	Wind 90	379.51	-189.75	328.66	76103.77	43021.62	-68.33
		240	Wind Normal	376.84	-326.35	188.42	43848.49	74440.01	-28.54
		270	Wind 90	366.80	-366.80	0.00	511.73	83741.44	18.90
		300	Wind 60	371.57	-321.79	-185.78	-42218.30	73389.12	17.87
		330	Wind 90	383.95	-191.98	-332.51	-75965.94	43532.94	12.05
T5	220.00-200.00	0	Wind Normal	431.64	0.00	-431.64	-90038.86	-732.81	54.11
		30	Wind 90	414.63	207.31	-359.08	-74800.37	-44268.57	79.62
		60	Wind 60	401.54	347.75	-200.77	-41556.23	-73759.55	33.39
		90	Wind 90	402.16	402.16	0.00	605.78	-85185.89	-21.79
		120	Wind Normal	419.17	363.01	209.59	44618.88	-76965.73	-20.72
		150	Wind 90	418.99	209.49	362.85	76805.21	-44726.57	-14.10
		180	Wind 60	418.37	0.00	418.37	88464.24	-732.81	-54.11
		210	Wind 90	414.63	-207.31	359.08	76011.93	42802.95	-79.62
		240	Wind Normal	414.81	-359.24	207.41	44160.88	74706.83	-33.39
		270	Wind 90	402.16	-402.16	0.00	605.78	83720.27	21.79
		300	Wind 60	405.90	-351.52	-202.95	-42014.22	73087.20	20.72
		330	Wind 90	418.99	-209.49	-362.85	-75593.64	43260.95	14.10
T6	200.00-180.00	0	Wind Normal	442.12	0.00	-442.12	-83303.82	-840.09	61.27
		30	Wind 90	423.84	211.92	-367.06	-69041.62	-41105.00	90.16
		60	Wind 60	410.49	355.50	-205.25	-38297.36	-68384.18	37.88
		90	Wind 90	411.63	411.63	0.00	699.24	-79050.23	-24.55
		120	Wind Normal	429.91	372.32	214.96	41540.93	-71579.98	-23.38
		150	Wind 90	428.11	214.06	370.76	71142.86	-41510.74	-15.95
		180	Wind 60	426.97	0.00	426.97	81823.58	-840.09	-61.27
		210	Wind 90	423.84	-211.92	367.06	70440.10	39424.81	-90.16
		240	Wind Normal	425.64	-368.62	212.82	41135.19	69197.03	-37.88
		270	Wind 90	411.63	-411.63	0.00	699.24	77370.05	24.55
		300	Wind 60	414.76	-359.19	-207.38	-38703.09	67406.76	23.38
		330	Wind 90	428.11	-214.06	-370.76	-69744.38	39830.55	15.95
T7	180.00-160.00	0	Wind Normal	451.19	0.00	-451.19	-75910.73	-942.70	67.81
		30	Wind 90	431.70	215.85	-373.86	-62764.92	-37637.31	99.86
		60	Wind 60	418.11	362.10	-209.06	-34747.76	-62499.38	41.97
		90	Wind 90	419.78	419.78	0.00	792.01	-72304.45	-27.17
		120	Wind Normal	439.27	380.42	219.63	38129.65	-65613.39	-25.84
		150	Wind 90	435.87	217.94	377.48	64963.17	-37991.94	-17.59
		180	Wind 60	434.21	0.00	434.21	74608.26	-942.70	-67.81
		210	Wind 90	431.70	-215.85	373.86	64348.93	35751.91	-99.86
		240	Wind Normal	435.09	-376.80	217.55	37775.02	63113.76	-41.97
		270	Wind 90	419.78	-419.78	0.00	792.01	70419.06	27.17
		300	Wind 60	422.29	-365.71	-211.14	-35102.39	61228.22	25.84
		330	Wind 90	435.87	-217.94	-377.48	-63379.16	36106.54	17.59
T8	160.00-140.00	0	Wind Normal	473.59	0.00	-473.59	-70155.15	-1039.84	73.64
		30	Wind 90	453.48	226.74	-392.72	-58024.30	-35050.54	108.58
		60	Wind 60	439.87	380.93	-219.93	-32105.92	-58179.98	45.59
		90	Wind 90	441.86	441.86	0.00	883.96	-67318.82	-29.62
		120	Wind Normal	461.98	400.08	230.99	35532.30	-61052.54	-28.06
		150	Wind 90	457.54	228.77	396.24	60320.09	-35355.31	-18.98
		180	Wind 60	455.54	0.00	455.54	69215.66	-1039.84	-73.64
		210	Wind 90	453.48	-226.74	392.72	59792.21	32970.86	-108.58
		240	Wind Normal	457.91	-396.57	228.96	35227.53	58444.98	-45.59
		270	Wind 90	441.86	-441.86	0.00	883.96	65239.14	29.62
		300	Wind 60	443.93	-384.45	-221.96	-32410.69	56628.18	28.06
		330	Wind 90	457.54	-228.77	-396.24	-58552.18	33275.63	18.98
T9	140.00-120.00	0	Wind Normal	454.60	0.00	-454.60	-58107.34	-1149.03	79.94

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		30	Wind 90	434.56	217.28	-376.34	-47933.64	-29395.44	118.04
		60	Wind 60	421.18	364.75	-210.59	-26386.15	-48566.91	49.47
		90	Wind 90	423.29	423.29	0.00	990.58	-56176.57	-32.36
		120	Wind Normal	443.33	383.93	221.66	29806.90	-51060.36	-30.47
		150	Wind 90	438.50	219.25	379.75	50358.71	-29651.73	-20.42
		180	Wind 60	436.39	0.00	436.39	57721.90	-1149.03	-79.94
		210	Wind 90	434.56	-217.28	376.34	49914.79	27097.38	-118.04
		240	Wind Normal	439.39	-380.52	219.69	29550.60	48318.39	-49.47
		270	Wind 90	423.29	-423.29	0.00	990.58	53878.51	32.36
		300	Wind 60	425.12	-368.17	-212.56	-26642.45	46712.77	30.47
		330	Wind 90	438.50	-219.25	-379.75	-48377.56	27353.68	20.42
T10	120.00-100.00	0	Wind Normal	457.11	0.00	-457.11	-49170.58	-1267.42	86.37
		30	Wind 90	436.06	218.03	-377.64	-40428.80	-25250.68	127.78
		60	Wind 60	422.57	365.96	-211.29	-22130.16	-41523.02	53.40
		90	Wind 90	425.18	425.18	0.00	1111.43	-48036.94	-35.29
		120	Wind Normal	446.23	386.44	223.11	25653.93	-43776.28	-32.97
		150	Wind 90	439.87	219.93	380.94	43014.29	-25460.05	-21.81
		180	Wind 60	437.26	0.00	437.26	49210.34	-1267.42	-86.37
		210	Wind 90	436.06	-218.03	377.64	42651.65	22715.84	-127.78
		240	Wind Normal	442.42	-383.15	221.21	25444.56	40878.80	-53.40
		270	Wind 90	425.18	-425.18	0.00	1111.43	45502.10	35.29
		300	Wind 60	426.38	-369.26	-213.19	-22339.53	39350.82	32.97
		330	Wind 90	439.87	-219.93	-380.94	-40791.44	22925.21	21.81
T11	100.00-80.00	0	Wind Normal	469.99	0.00	-469.99	-41069.13	-1373.30	91.27
		30	Wind 90	445.68	222.84	-385.97	-33507.29	-21429.08	135.40
		60	Wind 60	431.38	373.59	-215.69	-18181.76	-34996.02	56.34
		90	Wind 90	435.25	435.25	0.00	1230.32	-40546.00	-37.82
		120	Wind Normal	459.56	397.99	229.78	21910.62	-37192.63	-34.93
		150	Wind 90	449.33	224.67	389.13	36252.37	-21593.29	-22.69
		180	Wind 60	445.46	0.00	445.46	41321.78	-1373.30	-91.27
		210	Wind 90	445.68	-222.84	385.97	35967.94	18682.47	-135.40
		240	Wind Normal	455.91	-394.83	227.96	21746.41	34161.59	-56.34
		270	Wind 90	435.25	-435.25	0.00	1230.32	37799.39	37.82
		300	Wind 60	435.03	-376.75	-217.51	-18345.98	32533.84	34.93
		330	Wind 90	449.33	-224.67	-389.13	-33791.73	18846.69	22.69
T12	80.00-60.00	0	Wind Normal	499.84	0.00	-499.84	-33642.26	-1462.17	94.17
		30	Wind 90	472.19	236.09	-408.93	-27278.47	-17988.81	140.21
		60	Wind 60	457.09	395.85	-228.55	-14651.70	-29171.89	57.97
		90	Wind 90	462.30	462.30	0.00	1346.51	-33822.86	-39.80
		120	Wind Normal	489.95	424.31	244.97	18494.61	-31163.53	-36.20
		150	Wind 90	475.65	237.83	411.93	30181.32	-18109.95	-22.90
		180	Wind 60	470.45	0.00	470.45	34277.82	-1462.17	-94.17
		210	Wind 90	472.19	-236.09	408.93	29971.50	15064.47	-140.21
		240	Wind Normal	486.48	-421.31	243.24	18373.46	28029.37	-57.97
		270	Wind 90	462.30	-462.30	0.00	1346.51	30898.53	39.80
		300	Wind 60	460.55	-398.85	-230.28	-14772.84	26457.38	36.20
		330	Wind 90	475.65	-237.83	-411.93	-27488.29	15185.62	22.90
T13	60.00-40.00	0	Wind Normal	484.36	0.00	-484.36	-22759.38	-1525.57	94.20
		30	Wind 90	456.23	228.12	-395.11	-18296.83	-12931.34	140.96
		60	Wind 60	441.38	382.24	-220.69	-9575.85	-20637.71	57.74
		90	Wind 90	447.01	447.01	0.00	1458.55	-23876.24	-40.95
		120	Wind Normal	475.14	411.48	237.57	13337.08	-22099.78	-36.46
		150	Wind 90	459.46	229.73	397.90	21353.56	-13011.96	-22.19
		180	Wind 60	453.82	0.00	453.82	24149.46	-1525.57	-94.20
		210	Wind 90	456.23	-228.12	395.11	21213.93	9880.21	-140.96
		240	Wind Normal	471.92	-408.69	235.96	13256.46	18909.02	-57.74
		270	Wind 90	447.01	-447.01	0.00	1458.55	20825.11	40.95
		300	Wind 60	444.60	-385.04	-222.30	-9656.47	17726.21	36.46
		330	Wind 90	459.46	-229.73	-397.90	-18436.46	9960.82	22.19
T14	40.00-20.00	0	Wind Normal	459.22	0.00	-459.22	-12213.77	-1543.69	89.38
		30	Wind 90	430.21	215.10	-372.57	-9614.19	-7996.82	134.82

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		60	Wind 60	415.62	359.93	-207.81	-4671.29	-12341.71	54.40
		90	Wind 90	421.93	421.93	0.00	1562.95	-14201.61	-40.59
		120	Wind Normal	450.95	390.53	225.47	8327.14	-13259.61	-34.97
		150	Wind 90	433.10	216.55	375.08	12815.33	-8040.25	-19.98
		180	Wind 60	426.79	0.00	426.79	14366.64	-1543.69	-89.38
		210	Wind 90	430.21	-215.10	372.57	12740.09	4909.44	-134.82
		240	Wind Normal	448.05	-388.02	224.03	8283.71	10097.00	-54.40
		270	Wind 90	421.93	-421.93	0.00	1562.95	11114.23	40.59
		300	Wind 60	418.51	-362.44	-209.26	-4714.73	9329.57	34.97
		330	Wind 90	433.10	-216.55	-375.08	-9689.43	4952.87	19.98
T15	20.00-0.00	0	Wind Normal	409.68	0.00	-409.68	-2451.65	-1437.30	78.92
		30	Wind 90	381.72	190.86	-330.58	-1660.58	-3345.88	121.14
		60	Wind 60	368.14	318.82	-184.07	-195.50	-4625.45	47.26
		90	Wind 90	374.55	374.55	0.00	1645.18	-5182.83	-39.29
		120	Wind Normal	402.52	348.59	201.26	3657.78	-4923.22	-31.66
		150	Wind 90	384.22	192.11	332.75	4972.64	-3358.41	-15.54
		180	Wind 60	377.81	0.00	377.81	5423.23	-1437.30	-78.92
		210	Wind 90	381.72	-190.86	330.58	4950.94	471.28	-121.14
		240	Wind Normal	400.01	-346.42	200.01	3645.25	2026.92	-47.26
		270	Wind 90	374.55	-374.55	0.00	1645.18	2308.23	39.29
		300	Wind 60	370.64	-320.99	-185.32	-208.03	1772.56	31.66
		330	Wind 90	384.22	-192.11	-332.75	-1682.28	483.81	15.54

Mast Totals - With Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	-6185.93	-825905.23	-14512.19	944.99
30	2945.67	-5102.04	-682466.55	-417447.14	1482.77
60	4934.38	-2848.87	-374064.62	-689149.21	671.55
90	5727.82	0.00	15437.24	-794270.09	-319.61
120	5215.56	3011.21	423052.48	-720522.50	-273.43
150	2966.17	5137.55	717513.29	-419855.98	-153.99
180	0.00	5902.25	825370.66	-14512.19	-944.99
210	-2945.67	5102.04	713341.04	388422.75	-1482.77
240	-5180.06	2990.71	420643.63	687325.87	-671.55
270	-5727.82	0.00	15437.24	765245.70	319.61
300	-4969.89	-2869.37	-376473.47	664297.08	273.43
330	-2966.17	-5137.55	-686638.80	390831.60	153.99

Mast Vectors - Service

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
T1	290.60-280.00	0	Wind Normal	257.46	0.00	-257.46	-73321.96	0.00	0.00
		30	Wind 90	229.74	114.87	-198.96	-56632.20	-32772.83	38.05
		60	Wind 60	208.53	180.60	-104.27	-29615.30	-51523.84	44.87
		90	Wind 90	208.20	208.20	0.00	132.01	-59398.73	39.67
		120	Wind Normal	235.92	204.31	117.96	33785.52	-58289.60	44.87
		150	Wind 90	229.74	114.87	198.96	56896.21	-32772.83	38.05

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		180	Wind 60	230.08	0.00	230.08	65773.53	0.00	0.00
		210	Wind 90	229.74	-114.87	198.96	56896.21	32772.83	-38.05
		240	Wind Normal	235.92	-204.31	117.96	33785.52	58289.60	-44.87
		270	Wind 90	208.20	-208.20	0.00	132.01	59398.73	-39.67
		300	Wind 60	208.53	-180.60	-104.27	-29615.30	51523.84	-44.87
		330	Wind 90	229.74	-114.87	-198.96	-56632.20	32772.83	-38.05
T2	280.00-260.00	0	Wind Normal	722.34	0.00	-722.34	-194666.83	-144.09	75.72
		30	Wind 90	670.80	335.40	-580.93	-156486.76	-90701.83	193.12
		60	Wind 60	611.73	529.77	-305.86	-82219.18	-143182.09	146.97
		90	Wind 90	592.13	592.13	0.00	363.84	-160019.44	61.44
		120	Wind Normal	643.67	557.43	321.83	87259.12	-150651.12	71.25
		150	Wind 90	654.50	327.25	566.81	153402.75	-88501.15	61.97
		180	Wind 60	674.09	0.00	674.09	182368.65	-144.09	-75.72
		210	Wind 90	670.80	-335.40	580.93	157214.44	90413.65	-193.12
		240	Wind Normal	659.97	-571.55	329.99	89459.80	154174.63	-146.97
		270	Wind 90	592.13	-592.13	0.00	363.84	159731.26	-61.44
		300	Wind 60	595.42	-515.65	-297.71	-80018.50	139082.21	-71.25
		330	Wind 90	654.50	-327.25	-566.81	-152675.07	88212.97	-61.97
T3	260.00-240.00	0	Wind Normal	923.23	0.00	-923.23	-230602.49	0.00	0.00
		30	Wind 90	869.93	434.97	-753.38	-188141.34	-108741.40	110.63
		60	Wind 60	823.42	713.10	-411.71	-102723.40	-178275.99	28.67
		90	Wind 90	818.19	818.19	0.00	204.29	-204547.83	-60.98
		120	Wind Normal	871.49	754.73	435.74	109140.20	-188682.53	28.67
		150	Wind 90	869.93	434.97	753.38	188549.91	-108741.40	110.63
		180	Wind 60	875.16	0.00	875.16	218994.63	0.00	0.00
		210	Wind 90	869.93	-434.97	753.38	188549.91	108741.40	-110.63
		240	Wind Normal	871.49	-754.73	435.74	109140.20	188682.53	-28.67
		270	Wind 90	818.19	-818.19	0.00	204.29	204547.83	60.98
		300	Wind 60	823.42	-713.10	-411.71	-102723.40	178275.99	-28.67
		330	Wind 90	869.93	-434.97	-753.38	-188141.34	108741.40	-110.63
T4	240.00-220.00	0	Wind Normal	1002.49	0.00	-1002.49	-230344.94	-39.29	73.08
		30	Wind 90	941.65	470.82	-815.49	-187334.77	-108329.02	166.35
		60	Wind 60	889.96	770.73	-444.98	-102117.16	-177307.26	34.57
		90	Wind 90	890.81	890.81	0.00	228.54	-204925.66	-106.48
		120	Wind Normal	951.65	824.16	475.83	109668.74	-189595.27	-38.51
		150	Wind 90	949.95	474.97	822.68	189445.02	-109283.48	49.00
		180	Wind 60	955.03	0.00	955.03	219885.47	-39.29	-73.08
		210	Wind 90	941.65	-470.82	815.49	187791.85	108250.44	-166.35
		240	Wind Normal	937.43	-811.83	468.71	108032.53	186682.68	-34.57
		270	Wind 90	890.81	-890.81	0.00	228.54	204847.07	106.48
		300	Wind 60	904.19	-783.05	-452.10	-103753.38	180062.67	38.51
		330	Wind 90	949.95	-474.97	-822.68	-188987.94	109204.89	-49.00
T5	220.00-200.00	0	Wind Normal	1129.62	0.00	-1129.62	-236948.31	-46.94	85.65
		30	Wind 90	1057.56	528.78	-915.87	-192061.55	-111090.23	193.71
		60	Wind 60	1002.72	868.39	-501.36	-105015.02	-182407.79	40.19
		90	Wind 90	1007.68	1007.68	0.00	271.06	-211659.75	-124.10
		120	Wind Normal	1079.74	935.08	539.87	113643.87	-196414.40	-45.46
		150	Wind 90	1065.70	532.85	922.92	194084.46	-111945.16	56.17
		180	Wind 60	1066.56	0.00	1066.56	224248.20	-46.94	-85.65
		210	Wind 90	1057.56	-528.78	915.87	192603.68	110996.35	-193.71
		240	Wind Normal	1065.78	-923.00	532.89	112178.27	193782.03	-40.19
		270	Wind 90	1007.68	-1007.68	0.00	271.06	211565.86	124.10
		300	Wind 60	1016.68	-880.47	-508.34	-106480.62	184852.39	45.46
		330	Wind 90	1065.70	-532.85	-922.92	-193542.34	111851.28	-56.17
T6	200.00-180.00	0	Wind Normal	1162.32	0.00	-1162.32	-220527.55	-54.59	97.53
		30	Wind 90	1084.40	542.20	-939.11	-178118.04	-103072.14	219.54
		60	Wind 60	1028.25	890.49	-514.13	-97370.35	-169248.13	45.50
		90	Wind 90	1035.56	1035.56	0.00	313.59	-196811.00	-140.73
		120	Wind Normal	1113.49	964.31	556.74	106094.81	-183273.04	-52.03
		150	Wind 90	1092.37	546.18	946.02	180057.03	-103829.52	62.93
		180	Wind 60	1090.75	0.00	1090.75	207556.88	-54.59	-97.53

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		210	Wind 90	1084.40	-542.20	939.11	178745.21	102962.96	-219.54
		240	Wind Normal	1099.82	-952.47	549.91	104796.44	180915.02	-45.50
		270	Wind 90	1035.56	-1035.56	0.00	313.59	196701.81	140.73
		300	Wind 60	1041.92	-902.33	-520.96	-98668.71	171387.78	52.03
		330	Wind 90	1092.37	-546.18	-946.02	-179429.86	103720.34	-62.93
T7	180.00-160.00	0	Wind Normal	1190.82	0.00	-1190.82	-202084.10	-62.24	108.63
		30	Wind 90	1107.34	553.67	-958.99	-162671.88	-94186.50	243.64
		60	Wind 60	1050.05	909.37	-525.02	-88897.95	-154654.80	50.45
		90	Wind 90	1059.64	1059.64	0.00	356.11	-180200.90	-156.26
		120	Wind Normal	1143.12	989.97	571.56	97521.29	-168357.27	-58.17
		150	Wind 90	1115.13	557.57	965.73	164530.67	-94848.47	69.22
		180	Wind 60	1111.10	0.00	1111.10	189243.69	-62.24	-108.63
		210	Wind 90	1107.34	-553.67	958.99	163384.10	94062.01	-243.64
		240	Wind Normal	1129.77	-978.41	564.88	96386.48	166267.23	-50.45
		270	Wind 90	1059.64	-1059.64	0.00	356.11	180076.42	156.26
		300	Wind 60	1063.40	-920.93	-531.70	-90032.76	156495.87	58.17
		330	Wind 90	1115.13	-557.57	-965.73	-163818.45	94723.98	-69.22
T8	160.00-140.00	0	Wind Normal	1243.41	0.00	-1243.41	-186113.55	-69.89	118.80
		30	Wind 90	1157.57	578.79	-1002.49	-149974.68	-86887.96	265.73
		60	Wind 60	1100.26	952.85	-550.13	-82120.69	-142997.55	54.99
		90	Wind 90	1111.11	1111.11	0.00	398.63	-166736.38	-170.48
		120	Wind Normal	1196.95	1036.59	598.48	90169.89	-155558.28	-63.81
		150	Wind 90	1165.16	582.58	1009.06	151757.31	-87456.87	74.96
		180	Wind 60	1159.73	0.00	1159.73	174357.46	-69.89	-118.80
		210	Wind 90	1157.57	-578.79	1002.49	150771.94	86748.18	-265.73
		240	Wind Normal	1183.95	-1025.33	591.97	89194.63	153729.29	-54.99
		270	Wind 90	1111.11	-1111.11	0.00	398.63	166596.59	170.48
		300	Wind 60	1113.26	-964.11	-556.63	-83095.96	144546.97	63.81
		330	Wind 90	1165.16	-582.58	-1009.06	-150960.05	87317.08	-74.96
T9	140.00-120.00	0	Wind Normal	1217.91	0.00	-1217.91	-157879.70	-78.82	130.00
		30	Wind 90	1134.08	567.04	-982.14	-127229.84	-73793.79	290.02
		60	Wind 60	1078.28	933.82	-539.14	-69640.06	-121475.31	59.98
		90	Wind 90	1088.99	1088.99	0.00	448.24	-141647.66	-186.13
		120	Wind Normal	1172.82	1015.69	586.41	76681.65	-132118.97	-70.02
		150	Wind 90	1141.44	570.72	988.51	128954.96	-74272.21	81.27
		180	Wind 60	1135.98	0.00	1135.98	148126.23	-78.82	-130.00
		210	Wind 90	1134.08	-567.04	982.14	128126.32	73636.15	-290.02
		240	Wind Normal	1160.20	-1004.77	580.10	75861.51	130540.80	-59.98
		270	Wind 90	1088.99	-1088.99	0.00	448.24	141490.02	186.13
		300	Wind 60	1090.90	-944.75	-545.45	-70460.21	122738.21	70.02
		330	Wind 90	1141.44	-570.72	-988.51	-128058.48	74114.57	-81.27
T10	120.00-100.00	0	Wind Normal	1230.96	0.00	-1230.96	-134900.65	-89.02	141.75
		30	Wind 90	1142.77	571.38	-989.67	-108358.43	-62941.31	315.50
		60	Wind 60	1086.48	940.92	-543.24	-59251.64	-103590.44	65.21
		90	Wind 90	1099.24	1099.24	0.00	504.93	-121005.60	-202.55
		120	Wind Normal	1187.43	1028.35	593.72	65813.72	-113207.15	-76.54
		150	Wind 90	1149.87	574.94	995.82	110045.23	-63332.14	87.89
		180	Wind 60	1142.19	0.00	1142.19	126146.07	-89.02	-141.75
		210	Wind 90	1142.77	-571.38	989.67	109368.30	62763.28	-315.50
		240	Wind Normal	1175.25	-1017.80	587.63	65143.73	111868.67	-65.21
		270	Wind 90	1099.24	-1099.24	0.00	504.93	120827.56	202.55
		300	Wind 60	1098.66	-951.47	-549.33	-59921.63	104572.86	76.54
		330	Wind 90	1149.87	-574.94	-995.82	-109035.36	63154.10	-87.89
T11	100.00-80.00	0	Wind Normal	1304.32	0.00	-1304.32	-116826.90	-99.22	151.45
		30	Wind 90	1201.82	600.91	-1040.81	-93110.84	-54181.04	336.48
		60	Wind 60	1141.88	988.89	-570.94	-50822.77	-89099.60	69.52
		90	Wind 90	1160.09	1160.09	0.00	561.63	-104507.45	-216.07
		120	Wind Normal	1262.59	1093.44	631.30	57378.19	-98508.38	-81.94
		150	Wind 90	1208.63	604.32	1046.70	94765.04	-54487.58	93.28
		180	Wind 60	1195.28	0.00	1195.28	108136.83	-99.22	-151.45
		210	Wind 90	1201.82	-600.91	1040.81	94234.10	53982.61	-336.48

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		240	Wind Normal	1250.91	-1083.32	625.46	56852.69	97399.76	-69.52
		270	Wind 90	1160.09	-1160.09	0.00	561.63	104309.02	216.07
		300	Wind 60	1153.55	-999.01	-576.78	-51348.26	89811.35	81.94
		330	Wind 90	1208.63	-604.32	-1046.70	-93641.78	54289.14	-93.28
T12	80.00-60.00	0	Wind Normal	1389.29	0.00	-1389.29	-96632.13	-109.42	158.42
		30	Wind 90	1269.86	634.93	-1099.73	-76362.59	-44554.37	351.42
		60	Wind 60	1205.60	1044.08	-602.80	-41577.51	-73194.76	72.58
		90	Wind 90	1230.28	1230.28	0.00	618.33	-86228.97	-225.71
		120	Wind Normal	1349.72	1168.89	674.86	47858.38	-81931.59	-85.84
		150	Wind 90	1276.32	638.16	1105.32	77990.92	-44780.50	97.04
		180	Wind 60	1256.25	0.00	1256.25	88555.67	-109.42	-158.42
		210	Wind 90	1269.86	-634.93	1099.73	77599.24	44335.54	-351.42
		240	Wind Normal	1338.64	-1159.30	669.32	47470.72	81041.31	-72.58
		270	Wind 90	1230.28	-1230.28	0.00	618.33	86010.14	225.71
		300	Wind 60	1216.67	-1053.67	-608.34	-41965.17	73647.36	85.84
		330	Wind 90	1276.32	-638.16	-1105.32	-76754.26	44561.67	-97.04
T13	60.00-40.00	0	Wind Normal	1368.26	0.00	-1368.26	-67737.99	-119.62	161.34
		30	Wind 90	1247.00	623.50	-1079.93	-53321.58	-31294.57	357.46
		60	Wind 60	1183.80	1025.20	-591.90	-28920.00	-51379.70	73.80
		90	Wind 90	1210.13	1210.13	0.00	675.02	-60626.02	-229.63
		120	Wind Normal	1331.39	1153.02	665.70	33959.78	-57770.50	-87.54
		150	Wind 90	1253.02	626.51	1085.14	54932.26	-31445.05	98.38
		180	Wind 60	1230.99	0.00	1230.99	62224.50	-119.62	-161.34
		210	Wind 90	1247.00	-623.50	1079.93	54671.62	31055.33	-357.46
		240	Wind Normal	1321.07	-1144.08	660.54	33701.82	57084.47	-73.80
		270	Wind 90	1210.13	-1210.13	0.00	675.02	60386.78	229.63
		300	Wind 60	1194.12	-1034.14	-597.06	-29177.96	51587.27	87.54
		330	Wind 90	1253.02	-626.51	-1085.14	-53582.21	31205.81	-98.38
T14	40.00-20.00	0	Wind Normal	1342.50	0.00	-1342.50	-39543.27	-129.82	157.25
		30	Wind 90	1217.65	608.83	-1054.52	-30903.86	-18394.63	348.02
		60	Wind 60	1155.58	1000.77	-577.79	-16602.05	-30152.79	71.84
		90	Wind 90	1184.54	1184.54	0.00	731.72	-35666.12	-223.59
		120	Wind Normal	1309.39	1133.96	654.69	20372.55	-34148.74	-85.41
		150	Wind 90	1223.06	611.53	1059.20	32507.73	-18475.71	95.52
		180	Wind 60	1197.96	0.00	1197.96	36670.57	-129.82	-157.25
		210	Wind 90	1217.65	-608.83	1054.52	32367.30	18134.99	-348.02
		240	Wind Normal	1300.12	-1125.94	650.06	20233.56	33648.36	-71.84
		270	Wind 90	1184.54	-1184.54	0.00	731.72	35406.48	223.59
		300	Wind 60	1164.85	-1008.79	-582.43	-16741.05	30133.90	85.41
		330	Wind 90	1223.06	-611.53	-1059.20	-31044.30	18216.07	-95.52
T15	20.00-0.00	0	Wind Normal	1246.19	0.00	-1246.19	-11673.46	-140.02	146.77
		30	Wind 90	1126.79	563.39	-975.83	-8969.87	-5773.97	324.53
		60	Wind 60	1069.29	926.03	-534.65	-4558.04	-9400.35	66.97
		90	Wind 90	1098.14	1098.14	0.00	788.41	-11121.39	-208.53
		120	Wind Normal	1217.53	1054.42	608.77	6876.09	-10684.18	-79.79
		150	Wind 90	1131.47	565.73	979.88	10587.21	-5797.35	88.86
		180	Wind 60	1105.96	0.00	1105.96	11848.03	-140.02	-146.77
		210	Wind 90	1126.79	-563.39	975.83	10546.70	5493.93	-324.53
		240	Wind Normal	1209.52	-1047.47	604.76	6835.99	10334.70	-66.97
		270	Wind 90	1098.14	-1098.14	0.00	788.41	10841.35	208.53
		300	Wind 60	1077.31	-932.98	-538.65	-4598.13	9189.75	79.79
		330	Wind 90	1131.47	-565.73	-979.88	-9010.38	5517.32	-88.86

Mast Totals - Service

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	-16731.12	-2199803.84	-1182.98	1606.38
30	7729.48	-13387.85	-1769678.24	-1026715.59	3754.20
60	12675.01	-7317.92	-961451.13	-1677890.39	926.11
90	14794.73	0.00	6596.35	-1945102.89	-2150.13
120	13914.34	8033.45	1056223.79	-1819191.03	-680.27
150	7763.14	13446.15	1788506.72	-1029969.41	1165.18
180	0.00	15427.12	2064136.40	-1182.98	-1606.38
210	-7729.48	13387.85	1782870.93	1024349.63	-3754.20
240	-13804.30	7969.92	1049073.89	1804441.09	-926.11
270	-14794.73	0.00	6596.35	1942736.94	2150.13
300	-12785.05	-7381.45	-968601.03	1687908.42	680.27
330	-7763.14	-13446.15	-1775314.02	1027603.45	-1165.18

Discrete Appurtenance Pressures - No Ice

$G_H = 0.850$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
42,000 sq in CaAa	0.0000	4964.00	0.00	0.00	285.00	1.578	39	292.00	292.00
30,000 sq in CaAa	0.0000	3536.00	0.00	0.00	274.00	1.565	38	208.00	208.00
30,000 sq in CaAa	0.0000	3536.00	0.00	0.00	264.00	1.553	38	208.00	208.00
Dish Pipe Mount	0.0000	103.00	0.00	-3.75	240.00	1.522	37	0.00	1.80
Dish Pipe Mount	120.0000	103.00	3.25	1.88	240.00	1.522	37	0.00	1.80
	Sum Weight:	12242.00							

Discrete Appurtenance Vectors - No Ice

42,000 sq in CaAa - Elevation 285 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	7851.38	0.00	0.00	-7851.38	-2237643.11	0.00	0.00
30	7851.38	0.00	3925.69	-6799.49	-1937855.78	-1118821.56	0.00
60	7851.38	0.00	6799.49	-3925.69	-1118821.56	-1937855.78	0.00
90	7851.38	0.00	7851.38	0.00	0.00	-2237643.11	0.00
120	7851.38	0.00	6799.49	3925.69	1118821.56	-1937855.78	0.00
150	7851.38	0.00	3925.69	6799.49	1937855.78	-1118821.56	0.00
180	7851.38	0.00	0.00	7851.38	2237643.11	0.00	0.00
210	7851.38	0.00	-3925.69	6799.49	1937855.78	1118821.56	0.00
240	7851.38	0.00	-6799.49	3925.69	1118821.56	1937855.78	0.00
270	7851.38	0.00	-7851.38	0.00	0.00	2237643.11	0.00
300	7851.38	0.00	-6799.49	-3925.69	-1118821.56	1937855.78	0.00
330	7851.38	0.00	-3925.69	-6799.49	-1937855.78	1118821.56	0.00

30,000 sq in CaAa - Elevation 274 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	5546.61	0.00	0.00	-5546.61	-1519771.19	0.00	0.00
30	5546.61	0.00	2773.31	-4803.51	-1316160.46	-759885.60	0.00
60	5546.61	0.00	4803.51	-2773.31	-759885.60	-1316160.46	0.00

30,000 sq in CaAa - Elevation 274 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
90	5546.61	0.00	5546.61	0.00	0.00	-1519771.19	0.00
120	5546.61	0.00	4803.51	2773.31	759885.60	-1316160.46	0.00
150	5546.61	0.00	2773.31	4803.51	1316160.46	-759885.60	0.00
180	5546.61	0.00	0.00	5546.61	1519771.19	0.00	0.00
210	5546.61	0.00	-2773.31	4803.51	1316160.46	759885.60	0.00
240	5546.61	0.00	-4803.51	2773.31	759885.60	1316160.46	0.00
270	5546.61	0.00	-5546.61	0.00	0.00	1519771.19	0.00
300	5546.61	0.00	-4803.51	-2773.31	-759885.60	1316160.46	0.00
330	5546.61	0.00	-2773.31	-4803.51	-1316160.46	759885.60	0.00

30,000 sq in CaAa - Elevation 264 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	5503.37	0.00	0.00	-5503.37	-1452888.48	0.00	0.00
30	5503.37	0.00	2751.68	-4766.05	-1258238.33	-726444.24	0.00
60	5503.37	0.00	4766.05	-2751.68	-726444.24	-1258238.33	0.00
90	5503.37	0.00	5503.37	0.00	0.00	-1452888.48	0.00
120	5503.37	0.00	4766.05	2751.68	726444.24	-1258238.33	0.00
150	5503.37	0.00	2751.68	4766.05	1258238.33	-726444.24	0.00
180	5503.37	0.00	0.00	5503.37	1452888.48	0.00	0.00
210	5503.37	0.00	-2751.68	4766.05	1258238.33	726444.24	0.00
240	5503.37	0.00	-4766.05	2751.68	726444.24	1258238.33	0.00
270	5503.37	0.00	-5503.37	0.00	0.00	1452888.48	0.00
300	5503.37	0.00	-4766.05	-2751.68	-726444.24	1258238.33	0.00
330	5503.37	0.00	-2751.68	-4766.05	-1258238.33	726444.24	0.00

Dish Pipe Mount - Elevation 240 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	0.00	0.00	0.00	-386.54	0.00	0.00
30	0.00	28.46	28.46	0.00	-386.54	-6831.10	-106.81
60	0.00	49.30	49.30	0.00	-386.54	-11831.81	-185.01
90	0.00	56.93	56.93	0.00	-386.54	-13662.20	-213.63
120	0.00	49.30	49.30	0.00	-386.54	-11831.81	-185.01
150	0.00	28.46	28.46	0.00	-386.54	-6831.10	-106.81
180	0.00	0.00	0.00	0.00	-386.54	0.00	0.00
210	0.00	28.46	-28.46	0.00	-386.54	6831.10	106.81
240	0.00	49.30	-49.30	0.00	-386.54	11831.81	185.01
270	0.00	56.93	-56.93	0.00	-386.54	13662.20	213.63
300	0.00	49.30	-49.30	0.00	-386.54	11831.81	185.01
330	0.00	28.46	-28.46	0.00	-386.54	6831.10	106.81

Dish Pipe Mount - Elevation 240 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	49.30	24.65	-42.69	-10053.38	-6250.66	185.01
30	0.00	56.93	28.46	-49.30	-11638.54	-7165.85	213.63
60	0.00	49.30	24.65	-42.69	-10053.38	-6250.66	185.01
90	0.00	28.46	14.23	-24.65	-5722.64	-3750.30	106.81
120	0.00	0.00	0.00	0.00	193.27	-334.75	0.00
150	0.00	28.46	-14.23	24.65	6109.17	3080.80	-106.81

Dish Pipe Mount - Elevation 240 - From Leg B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
180	0.00	49.30	-24.65	42.69	10439.92	5581.16	-185.01
210	0.00	56.93	-28.46	49.30	12025.08	6496.35	-213.63
240	0.00	49.30	-24.65	42.69	10439.92	5581.16	-185.01
270	0.00	28.46	-14.23	24.65	6109.17	3080.80	-106.81
300	0.00	0.00	0.00	0.00	193.27	-334.75	0.00
330	0.00	28.46	14.23	-24.65	-5722.64	-3750.30	106.81

Discrete Appurtenance Totals - No Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	24.65	-18944.05	-5220742.71	-6250.66	185.01
30	9507.60	-16418.35	-4524279.66	-2619148.34	106.81
60	16443.00	-9493.37	-2615591.31	-4530337.04	0.00
90	18972.51	-24.65	-6109.17	-5227715.29	-106.81
120	16418.35	9450.68	2604958.13	-4524421.14	-185.01
150	9464.91	16393.70	4517977.21	-2608901.69	-213.63
180	-24.65	18944.05	5220356.17	5581.16	-185.01
210	-9507.60	16418.35	4523893.12	2618478.84	-106.81
240	-16443.00	9493.37	2615204.78	4529667.54	0.00
270	-18972.51	24.65	5722.64	5227045.79	106.81
300	-16418.35	-9450.68	-2605344.66	4523751.64	185.01
330	-9464.91	-16393.70	-4518363.75	2608232.19	213.63

Discrete Appurtenance Pressures - With Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
42,000 sq in CaAa	0.0000	11246.42	0.00	0.00	285.00	1.578	3	507.87	507.87	1.8609
30,000 sq in CaAa	0.0000	7992.04	0.00	0.00	274.00	1.565	3	363.70	363.70	1.8536
30,000 sq in CaAa	0.0000	7975.51	0.00	0.00	264.00	1.553	3	363.12	363.12	1.8467
Dish Pipe Mount	0.0000	161.53	0.00	-3.75	240.00	1.522	3	0.00	2.90	1.8292
Dish Pipe Mount	120.0000	161.53	3.25	1.88	240.00	1.522	3	0.00	2.90	1.8292
	Sum Weight:	27537.04								

Discrete Appurtenance Vectors - With Ice

42,000 sq in CaAa - Elevation 285 - None A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	1093.81	0.00	0.00	-1093.81	-311736.09	0.00	0.00
30	1093.81	0.00	546.91	-947.27	-269971.37	-155868.04	0.00
60	1093.81	0.00	947.27	-546.91	-155868.04	-269971.37	0.00
90	1093.81	0.00	1093.81	0.00	0.00	-311736.09	0.00
120	1093.81	0.00	947.27	546.91	155868.04	-269971.37	0.00

42,000 sq in CaAa - Elevation 285 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	1093.81	0.00	546.91	947.27	269971.37	-155868.04	0.00
180	1093.81	0.00	0.00	1093.81	311736.09	0.00	0.00
210	1093.81	0.00	-546.91	947.27	269971.37	155868.04	0.00
240	1093.81	0.00	-947.27	546.91	155868.04	269971.37	0.00
270	1093.81	0.00	-1093.81	0.00	0.00	311736.09	0.00
300	1093.81	0.00	-947.27	-546.91	-155868.04	269971.37	0.00
330	1093.81	0.00	-546.91	-947.27	-269971.37	155868.04	0.00

30,000 sq in CaAa - Elevation 274 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	776.86	0.00	0.00	-776.86	-212858.67	0.00	0.00
30	776.86	0.00	388.43	-672.78	-184341.02	-106429.34	0.00
60	776.86	0.00	672.78	-388.43	-106429.34	-184341.02	0.00
90	776.86	0.00	776.86	0.00	0.00	-212858.67	0.00
120	776.86	0.00	672.78	388.43	106429.34	-184341.02	0.00
150	776.86	0.00	388.43	672.78	184341.02	-106429.34	0.00
180	776.86	0.00	0.00	776.86	212858.67	0.00	0.00
210	776.86	0.00	-388.43	672.78	184341.02	106429.34	0.00
240	776.86	0.00	-672.78	388.43	106429.34	184341.02	0.00
270	776.86	0.00	-776.86	0.00	0.00	212858.67	0.00
300	776.86	0.00	-672.78	-388.43	-106429.34	184341.02	0.00
330	776.86	0.00	-388.43	-672.78	-184341.02	106429.34	0.00

30,000 sq in CaAa - Elevation 264 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	769.58	0.00	0.00	-769.58	-203167.82	0.00	0.00
30	769.58	0.00	384.79	-666.47	-175948.49	-101583.91	0.00
60	769.58	0.00	666.47	-384.79	-101583.91	-175948.49	0.00
90	769.58	0.00	769.58	0.00	0.00	-203167.82	0.00
120	769.58	0.00	666.47	384.79	101583.91	-175948.49	0.00
150	769.58	0.00	384.79	666.47	175948.49	-101583.91	0.00
180	769.58	0.00	0.00	769.58	203167.82	0.00	0.00
210	769.58	0.00	-384.79	666.47	175948.49	101583.91	0.00
240	769.58	0.00	-666.47	384.79	101583.91	175948.49	0.00
270	769.58	0.00	-769.58	0.00	0.00	203167.82	0.00
300	769.58	0.00	-666.47	-384.79	-101583.91	175948.49	0.00
330	769.58	0.00	-384.79	-666.47	-175948.49	101583.91	0.00

Dish Pipe Mount - Elevation 240 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	0.00	0.00	0.00	-606.20	0.00	0.00
30	0.00	3.67	3.67	0.00	-606.20	-880.80	-13.77
60	0.00	6.36	6.36	0.00	-606.20	-1525.58	-23.85
90	0.00	7.34	7.34	0.00	-606.20	-1761.59	-27.55
120	0.00	6.36	6.36	0.00	-606.20	-1525.58	-23.85
150	0.00	3.67	3.67	0.00	-606.20	-880.80	-13.77
180	0.00	0.00	0.00	0.00	-606.20	0.00	0.00
210	0.00	3.67	-3.67	0.00	-606.20	880.80	13.77

Dish Pipe Mount - Elevation 240 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	0.00	6.36	-6.36	0.00	-606.20	1525.58	23.85
270	0.00	7.34	-7.34	0.00	-606.20	1761.59	27.55
300	0.00	6.36	-6.36	0.00	-606.20	1525.58	23.85
330	0.00	3.67	-3.67	0.00	-606.20	880.80	13.77

Dish Pipe Mount - Elevation 240 - From Leg B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	6.36	3.18	-5.50	-1018.09	-1287.78	23.85
30	0.00	7.34	3.67	-6.36	-1222.48	-1405.78	27.55
60	0.00	6.36	3.18	-5.50	-1018.09	-1287.78	23.85
90	0.00	3.67	1.83	-3.18	-459.69	-965.38	13.77
120	0.00	0.00	0.00	0.00	303.10	-524.99	0.00
150	0.00	3.67	-1.83	3.18	1065.89	-84.59	-13.77
180	0.00	6.36	-3.18	5.50	1624.30	237.81	-23.85
210	0.00	7.34	-3.67	6.36	1828.68	355.81	-27.55
240	0.00	6.36	-3.18	5.50	1624.30	237.81	-23.85
270	0.00	3.67	-1.83	3.18	1065.89	-84.59	-13.77
300	0.00	0.00	0.00	0.00	303.10	-524.99	0.00
330	0.00	3.67	1.83	-3.18	-459.69	-965.38	13.77

Discrete Appurtenance Totals - With Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	3.18	-2645.75	-729386.87	-1287.78	23.85
30	1327.46	-2292.87	-632089.56	-366167.87	13.77
60	2296.05	-1325.63	-365505.58	-633074.24	0.00
90	2649.42	-3.18	-1065.89	-730489.55	-13.77
120	2292.87	1320.12	363578.19	-632311.45	-23.85
150	1321.96	2289.70	630720.57	-364846.67	-27.55
180	-3.18	2645.75	728780.67	237.81	-23.85
210	-1327.46	2292.87	631483.36	365117.89	-13.77
240	-2296.05	1325.63	364899.38	632024.27	0.00
270	-2649.42	3.18	459.69	729439.58	13.77
300	-2292.87	-1320.12	-364184.39	631261.47	23.85
330	-1321.96	-2289.70	-631326.77	363796.70	27.55

Discrete Appurtenance Pressures - Service $G_H = 0.850$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
42,000 sq in CaAa	0.0000	4964.00	0.00	0.00	285.00	1.578	12	292.00	292.00
30,000 sq in CaAa	0.0000	3536.00	0.00	0.00	274.00	1.565	12	208.00	208.00
30,000 sq in CaAa	0.0000	3536.00	0.00	0.00	264.00	1.553	12	208.00	208.00
Dish Pipe Mount	0.0000	103.00	0.00	-3.75	240.00	1.522	12	0.00	1.80
Dish Pipe Mount	120.0000	103.00	3.25	1.88	240.00	1.522	12	0.00	1.80

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
	Sum Weight:	12242.00							

Discrete Appurtenance Vectors - Service

42,000 sq in CaAa - Elevation 285 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	2515.57	0.00	0.00	-2515.57	-716937.99	0.00	0.00
30	2515.57	0.00	1257.79	-2178.55	-620886.51	-358468.99	0.00
60	2515.57	0.00	2178.55	-1257.79	-358468.99	-620886.51	0.00
90	2515.57	0.00	2515.57	0.00	0.00	-716937.99	0.00
120	2515.57	0.00	2178.55	1257.79	358468.99	-620886.51	0.00
150	2515.57	0.00	1257.79	2178.55	620886.51	-358468.99	0.00
180	2515.57	0.00	0.00	2515.57	716937.99	0.00	0.00
210	2515.57	0.00	-1257.79	2178.55	620886.51	358468.99	0.00
240	2515.57	0.00	-2178.55	1257.79	358468.99	620886.51	0.00
270	2515.57	0.00	-2515.57	0.00	0.00	716937.99	0.00
300	2515.57	0.00	-2178.55	-1257.79	-358468.99	620886.51	0.00
330	2515.57	0.00	-1257.79	-2178.55	-620886.51	358468.99	0.00

30,000 sq in CaAa - Elevation 274 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	1777.13	0.00	0.00	-1777.13	-486932.74	0.00	0.00
30	1777.13	0.00	888.56	-1539.04	-421696.12	-243466.37	0.00
60	1777.13	0.00	1539.04	-888.56	-243466.37	-421696.12	0.00
90	1777.13	0.00	1777.13	0.00	0.00	-486932.74	0.00
120	1777.13	0.00	1539.04	888.56	243466.37	-421696.12	0.00
150	1777.13	0.00	888.56	1539.04	421696.12	-243466.37	0.00
180	1777.13	0.00	0.00	1777.13	486932.74	0.00	0.00
210	1777.13	0.00	-888.56	1539.04	421696.12	243466.37	0.00
240	1777.13	0.00	-1539.04	888.56	243466.37	421696.12	0.00
270	1777.13	0.00	-1777.13	0.00	0.00	486932.74	0.00
300	1777.13	0.00	-1539.04	-888.56	-243466.37	421696.12	0.00
330	1777.13	0.00	-888.56	-1539.04	-421696.12	243466.37	0.00

30,000 sq in CaAa - Elevation 264 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	1763.27	0.00	0.00	-1763.27	-465503.61	0.00	0.00
30	1763.27	0.00	881.64	-1527.04	-403137.95	-232751.80	0.00
60	1763.27	0.00	1527.04	-881.64	-232751.80	-403137.95	0.00
90	1763.27	0.00	1763.27	0.00	0.00	-465503.61	0.00
120	1763.27	0.00	1527.04	881.64	232751.80	-403137.95	0.00
150	1763.27	0.00	881.64	1527.04	403137.95	-232751.80	0.00
180	1763.27	0.00	0.00	1763.27	465503.61	0.00	0.00
210	1763.27	0.00	-881.64	1527.04	403137.95	232751.80	0.00
240	1763.27	0.00	-1527.04	881.64	232751.80	403137.95	0.00
270	1763.27	0.00	-1763.27	0.00	0.00	465503.61	0.00
300	1763.27	0.00	-1527.04	-881.64	-232751.80	403137.95	0.00

30,000 sq in CaAa - Elevation 264 - None B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	1763.27	0.00	-881.64	-1527.04	-403137.95	232751.80	0.00

Dish Pipe Mount - Elevation 240 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	0.00	0.00	0.00	-386.54	0.00	0.00
30	0.00	9.12	9.12	0.00	-386.54	-2188.68	-34.22
60	0.00	15.80	15.80	0.00	-386.54	-3790.90	-59.28
90	0.00	18.24	18.24	0.00	-386.54	-4377.35	-68.45
120	0.00	15.80	15.80	0.00	-386.54	-3790.90	-59.28
150	0.00	9.12	9.12	0.00	-386.54	-2188.68	-34.22
180	0.00	0.00	0.00	0.00	-386.54	0.00	0.00
210	0.00	9.12	-9.12	0.00	-386.54	2188.68	34.22
240	0.00	15.80	-15.80	0.00	-386.54	3790.90	59.28
270	0.00	18.24	-18.24	0.00	-386.54	4377.35	68.45
300	0.00	15.80	-15.80	0.00	-386.54	3790.90	59.28
330	0.00	9.12	-9.12	0.00	-386.54	2188.68	34.22

Dish Pipe Mount - Elevation 240 - From Leg B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	15.80	7.90	-13.68	-3089.75	-2230.20	59.28
30	0.00	18.24	9.12	-15.80	-3597.63	-2523.43	68.45
60	0.00	15.80	7.90	-13.68	-3089.75	-2230.20	59.28
90	0.00	9.12	4.56	-7.90	-1702.18	-1429.09	34.22
120	0.00	0.00	0.00	0.00	193.27	-334.75	0.00
150	0.00	9.12	-4.56	7.90	2088.72	759.59	-34.22
180	0.00	15.80	-7.90	13.68	3476.28	1560.70	-59.28
210	0.00	18.24	-9.12	15.80	3984.17	1853.93	-68.45
240	0.00	15.80	-7.90	13.68	3476.28	1560.70	-59.28
270	0.00	9.12	-4.56	7.90	2088.72	759.59	-34.22
300	0.00	0.00	0.00	0.00	193.27	-334.75	0.00
330	0.00	9.12	4.56	-7.90	-1702.18	-1429.09	34.22

Discrete Appurtenance Totals - Service

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	7.90	-6069.65	-1672850.62	-2230.20	59.28
30	3046.22	-5260.42	-1449704.75	-839399.27	34.22
60	5268.32	-3041.66	-838163.45	-1451741.68	0.00
90	6078.77	-7.90	-2088.72	-1675180.78	-34.22
120	5260.42	3027.98	834493.90	-1449846.23	-59.28
150	3032.54	5252.52	1447422.76	-836116.26	-68.45
180	-7.90	6069.65	1672464.08	1560.70	-59.28
210	-3046.22	5260.42	1449318.21	838729.77	-34.22
240	-5268.32	3041.66	837776.91	1451072.18	0.00
270	-6078.77	7.90	1702.18	1674511.28	34.22
300	-5260.42	-3027.98	-834880.44	1449176.73	59.28

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	-3032.54	-5252.52	-1447809.30	835446.76	68.45

Dish Pressures - No Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf
240.00	6' Solid w/Radome	0.0000	162.00	0.00	-3.75	1.522	28.27	37
240.00	6' Solid w/Radome	120.0000	162.00	3.25	1.88	1.522	28.27	37
		Sum Weight:	324.00					

Dish Vectors - No Ice

6' Solid w/Radome - Elevation 240 - From Leg A

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-0.001770	0.000000	0.000000	-618.15	0.00	0.00	0.00	-618.15	-148964.69	0.00	0.00
30	-0.001330	-0.000700	-0.000132	-464.49	-244.47	-276.60	244.47	-464.49	-112085.04	-58672.16	-1194.03
60	-0.000420	-0.000890	-0.000404	-146.68	-310.82	-846.56	310.82	-146.68	-35811.24	-74597.45	-2013.00
90	0.000340	-0.001040	-0.000390	118.74	-363.21	-817.22	363.21	118.74	27889.95	-87170.06	-2180.26
120	0.001070	-0.001280	0.000002	373.69	-447.03	4.19	447.03	373.69	89076.63	-107286.23	-1673.40
150	0.001950	-0.001050	0.000277	681.02	-366.70	580.44	366.70	681.02	162835.91	-88008.23	-795.71
180	0.002210	0.000000	0.000000	771.82	0.00	0.00	0.00	771.82	184628.43	0.00	0.00
210	0.001950	0.001050	-0.000277	681.02	366.70	-580.44	-366.70	681.02	162835.91	88008.23	795.71
240	0.001070	0.001280	-0.000002	373.69	447.03	-4.19	-447.03	373.69	89076.63	107286.23	1673.40
270	0.000340	0.001040	0.000390	118.74	363.21	817.22	-363.21	118.74	27889.95	87170.06	2180.26
300	-0.000420	0.000890	0.000404	-146.68	310.82	846.56	-310.82	-146.68	-35811.24	74597.45	2013.00
330	-0.001330	0.000700	0.000132	-464.49	244.47	276.60	-244.47	-464.49	-112085.04	58672.16	1194.03

6' Solid w/Radome - Elevation 240 - From Leg B

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.001070	0.001280	-0.000002	373.69	447.03	-4.19	-100.11	-573.98	-137450.91	23499.51	1673.40
30	0.000340	0.001040	0.000390	118.74	363.21	817.22	78.77	-373.92	-89436.46	-19431.62	2180.26
60	-0.000420	0.000890	0.000404	-146.68	310.82	846.56	282.44	-195.84	-46697.67	-68312.17	2013.00
90	-0.001330	0.000700	0.000132	-464.49	244.47	276.60	524.49	20.53	5230.95	-126404.57	1194.03
120	-0.001770	0.000000	0.000000	-618.15	0.00	0.00	535.34	309.08	74482.34	-129007.20	0.00
150	-0.001330	-0.000700	-0.000132	-464.49	-244.47	-276.60	280.02	443.96	106854.10	-67732.42	-1194.03
180	-0.000420	-0.000890	-0.000404	-146.68	-310.82	-846.56	-28.38	342.52	82508.91	6285.28	-2013.00
210	0.000340	-0.001040	-0.000390	118.74	-363.21	-817.22	-284.44	255.18	61546.51	67738.44	-2180.26
240	0.001070	-0.001280	0.000002	373.69	-447.03	4.19	-547.13	200.29	48374.28	130785.74	-1673.40
270	0.001950	-0.001050	0.000277	681.02	-366.70	580.44	-773.13	-22.94	-5200.59	185024.15	-795.71
300	0.002210	0.000000	0.000000	771.82	0.00	0.00	-668.41	-385.91	-92314.21	159892.91	0.00
330	0.001950	0.001050	-0.000277	681.02	366.70	-580.44	-406.43	-658.08	-157635.32	97015.92	795.71

Dish Totals - No Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-100.11	-1192.13	-286415.60	23499.51	1673.40
30	323.24	-838.41	-201521.51	-78103.78	986.23
60	593.26	-342.52	-82508.91	-142909.63	0.00
90	887.70	139.27	33120.90	-213574.63	-986.23
120	982.36	682.76	163558.97	-236293.43	-1673.40
150	646.73	1124.97	269690.01	-155740.65	-1989.74
180	-28.38	1114.34	267137.34	6285.28	-2013.00
210	-651.14	936.19	224382.42	155746.67	-1384.55
240	-994.16	573.98	137450.91	238071.96	0.00
270	-1136.34	95.81	22689.36	272194.21	1384.55
300	-979.24	-532.59	-128125.46	234490.36	2013.00
330	-650.89	-1122.57	-269720.37	155688.07	1989.74

Dish Pressures - With Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf	t_z in
240.00	6' Solid w/Radome	0.0000	743.69	0.00	-3.75	1.522	31.17	3	1.8292
240.00	6' Solid w/Radome	120.0000	743.69	3.25	1.88	1.522	31.17	3	1.8292
		Sum Weight:	1487.37						

Dish Vectors - With Ice

6' Solid w/Radome - Elevation 240 - From Leg A

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-0.001770	0.000000	0.000000	-54.59	0.00	0.00	0.00	-54.59	-15893.29	0.00	0.00
30	-0.001330	-0.000700	-0.000132	-41.02	-21.59	-24.43	21.59	-41.02	-12636.19	-5181.74	-105.45
60	-0.000420	-0.000890	-0.000404	-12.95	-27.45	-74.77	27.45	-12.95	-5899.93	-6588.21	-177.78
90	0.000340	-0.001040	-0.000390	10.49	-32.08	-72.17	32.08	10.49	-274.04	-7698.59	-192.55
120	0.001070	-0.001280	0.000002	33.00	-39.48	0.37	39.48	33.00	5129.78	-9475.18	-147.79
150	0.001950	-0.001050	0.000277	60.15	-32.39	51.26	32.39	60.15	11643.96	-7772.61	-70.27
180	0.002210	0.000000	0.000000	68.16	0.00	0.00	0.00	68.16	13568.61	0.00	0.00
210	0.001950	0.001050	-0.000277	60.15	32.39	-51.26	-32.39	60.15	11643.96	7772.61	70.27
240	0.001070	0.001280	-0.000002	33.00	39.48	-0.37	-39.48	33.00	5129.78	9475.18	147.79
270	0.000340	0.001040	0.000390	10.49	32.08	72.17	-32.08	10.49	-274.04	7698.59	192.55
300	-0.000420	0.000890	0.000404	-12.95	27.45	74.77	-27.45	-12.95	-5899.93	6588.21	177.78
330	-0.001330	0.000700	0.000132	-41.02	21.59	24.43	-21.59	-41.02	-12636.19	5181.74	105.45

6' Solid w/Radome - Elevation 240 - From Leg B

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.001070	0.001280	-0.000002	33.00	39.48	-0.37	-8.84	-50.69	-10770.64	-295.08	147.79
30	0.000340	0.001040	0.000390	10.49	32.08	72.17	6.96	-33.02	-6530.15	-4086.62	192.55
60	-0.000420	0.000890	0.000404	-12.95	27.45	74.77	24.94	-17.30	-2755.60	-8403.60	177.78
90	-0.001330	0.000700	0.000132	-41.02	21.59	24.43	46.32	1.81	1830.58	-13534.13	105.45
120	-0.001770	0.000000	0.000000	-54.59	0.00	0.00	47.28	27.30	7946.64	-13763.99	0.00
150	-0.001330	-0.000700	-0.000132	-41.02	-21.59	-24.43	24.73	39.21	10805.62	-8352.39	-105.45
180	-0.000420	-0.000890	-0.000404	-12.95	-27.45	-74.77	-2.51	30.25	8655.52	-1815.38	-177.78
210	0.000340	-0.001040	-0.000390	10.49	-32.08	-72.17	-25.12	22.54	6804.19	3611.97	-192.55
240	0.001070	-0.001280	0.000002	33.00	-39.48	0.37	-48.32	17.69	5640.86	9180.11	-147.79
270	0.001950	-0.001050	0.000277	60.15	-32.39	51.26	-68.28	-2.03	909.30	13970.27	-70.27

6' Solid w/Radome - Elevation 240 - From Leg B											
Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
300	0.002210	0.000000	0.000000	68.16	0.00	0.00	-59.03	-34.08	-6784.31	11750.76	0.00
330	0.001950	0.001050	-0.000277	60.15	32.39	-51.26	-35.89	-58.12	-12553.26	6197.66	70.27

Dish Totals - With Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-8.84	-105.29	-26663.92	-295.08	147.79
30	28.55	-74.05	-19166.34	-9268.36	87.10
60	52.40	-30.25	-8655.52	-14991.81	0.00
90	78.40	12.30	1556.54	-21232.72	-87.10
120	86.76	60.30	13076.42	-23239.17	-147.79
150	57.12	99.35	22449.58	-16125.00	-175.73
180	-2.51	98.41	22224.14	-1815.38	-177.78
210	-57.51	82.68	18448.16	11384.58	-122.28
240	-87.80	50.69	10770.64	18655.29	0.00
270	-100.36	8.46	635.26	21668.86	122.28
300	-86.48	-47.04	-12684.23	18338.98	177.78
330	-57.48	-99.14	-25189.45	11379.40	175.73

Dish Pressures - Service

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf
240.00	6' Solid w/Radome	0.0000	162.00	0.00	-3.75	1.522	28.27	12
240.00	6' Solid w/Radome	120.0000	162.00	3.25	1.88	1.522	28.27	12
		Sum Weight:	324.00					

Dish Vectors - Service

6' Solid w/Radome - Elevation 240 - From Leg A											
Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-0.001770	0.000000	0.000000	-198.06	0.00	0.00	0.00	-198.06	-48141.26	0.00	0.00
30	-0.001330	-0.000700	-0.000132	-148.82	-78.33	-88.62	78.33	-148.82	-36325.07	-18798.48	-382.57
60	-0.000420	-0.000890	-0.000404	-47.00	-99.59	-271.24	99.59	-47.00	-11887.04	-23900.93	-644.96
90	0.000340	-0.001040	-0.000390	38.04	-116.37	-261.84	116.37	38.04	8522.74	-27929.18	-698.55
120	0.001070	-0.001280	0.000002	119.73	-143.23	1.34	143.23	119.73	28126.87	-34374.37	-536.15
150	0.001950	-0.001050	0.000277	218.20	-117.49	185.97	117.49	218.20	51759.25	-28197.73	-254.94
180	0.002210	0.000000	0.000000	247.29	0.00	0.00	0.00	247.29	58741.55	0.00	0.00
210	0.001950	0.001050	-0.000277	218.20	117.49	-185.97	-117.49	218.20	51759.25	28197.73	254.94
240	0.001070	0.001280	-0.000002	119.73	143.23	-1.34	-143.23	119.73	28126.87	34374.37	536.15
270	0.000340	0.001040	0.000390	38.04	116.37	261.84	-116.37	38.04	8522.74	27929.18	698.55
300	-0.000420	0.000890	0.000404	-47.00	99.59	271.24	-99.59	-47.00	-11887.04	23900.93	644.96
330	-0.001330	0.000700	0.000132	-148.82	78.33	88.62	-78.33	-148.82	-36325.07	18798.48	382.57

6' Solid w/Radome - Elevation 240 - From Leg B											
Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.001070	0.001280	-0.000002	119.73	143.23	-1.34	-32.07	-183.90	-43832.51	7171.40	536.15
30	0.000340	0.001040	0.000390	38.04	116.37	261.84	25.24	-119.80	-28448.75	-6583.68	698.55
60	-0.000420	0.000890	0.000404	-47.00	99.59	271.24	90.49	-62.75	-14755.29	-22244.94	644.96
90	-0.001330	0.000700	0.000132	-148.82	78.33	88.62	168.05	6.58	1882.57	-40857.67	382.57
120	-0.001770	0.000000	0.000000	-198.06	0.00	0.00	171.52	99.03	24070.63	-41691.55	0.00
150	-0.001330	-0.000700	-0.000132	-148.82	-78.33	-88.62	89.72	142.24	34442.50	-22059.19	-382.57
180	-0.000420	-0.000890	-0.000404	-47.00	-99.59	-271.24	-9.09	109.74	26642.33	1655.99	-644.96
210	0.000340	-0.001040	-0.000390	38.04	-116.37	-261.84	-91.13	81.76	19926.00	21345.50	-698.55
240	0.001070	-0.001280	0.000002	119.73	-143.23	1.34	-175.30	64.17	15705.64	41545.77	-536.15
270	0.001950	-0.001050	0.000277	218.20	-117.49	185.97	-247.71	-7.35	-1459.68	58923.69	-254.94
300	0.002210	0.000000	0.000000	247.29	0.00	0.00	-214.16	-123.64	-29370.77	50871.67	0.00
330	0.001950	0.001050	-0.000277	218.20	117.49	-185.97	-130.22	-210.85	-50299.57	30725.97	254.94

Dish Totals - Service

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-32.07	-381.96	-91973.77	7171.40	536.15
30	103.57	-268.62	-64773.81	-25382.16	315.99
60	190.08	-109.74	-26642.33	-46145.87	0.00
90	284.42	44.62	10405.31	-68786.85	-315.99
120	314.75	218.76	52197.50	-76065.92	-536.15
150	207.21	360.44	86201.75	-50256.92	-637.51
180	-9.09	357.03	85383.88	1655.99	-644.96
210	-208.62	299.96	71685.26	49543.22	-443.61
240	-318.53	183.90	43832.51	75920.14	0.00
270	-364.08	30.70	7063.06	86852.87	443.61
300	-313.75	-170.64	-41257.81	74772.60	644.96
330	-208.55	-359.67	-86624.64	49524.45	637.51

Force Totals

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Leg Weight	29942.94					
Bracing Weight	17648.31					
Total Member Self-Weight	47591.25			6099.10	-2044.23	
Total Weight	70047.57			6099.10	-2044.23	
Wind 0 deg - No Ice		-75.46	-70077.95	-12102720.74	16065.88	6872.11
Wind 30 deg - No Ice		32816.44	-57068.98	-10016977.62	-5757105.65	12810.32
Wind 60 deg - No Ice		54623.64	-31536.97	-5570756.95	-9661442.25	2890.49
Wind 90 deg - No Ice		63758.30	114.62	33608.07	-11225401.59	-7803.84
Wind 120 deg - No Ice		58856.19	34067.77	5908986.63	-10189925.13	-3981.61
Wind 150 deg - No Ice		33202.30	57512.88	10109626.28	-5834651.42	1433.28
Wind 180 deg - No Ice		-53.03	65930.23	11631639.64	10683.46	-7211.71
Wind 210 deg - No Ice		-33144.34	57166.77	10052644.69	5831713.09	-13208.64
Wind 240 deg - No Ice		-58549.19	33803.39	5870809.61	10155932.34	-2890.49
Wind 270 deg - No Ice		-64006.93	120.46	35008.35	11280985.72	8202.16
Wind 300 deg - No Ice		-55328.41	-31882.63	-5628442.46	9782723.41	4321.22
Wind 330 deg - No Ice		-33206.47	-57510.48	-10096850.48	5831563.38	-1433.28
Member Ice	64261.28					

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Total Weight Ice	179908.78			13738.70	-17454.15	
Wind 0 deg - Ice		-5.66	-8936.96	-1581956.03	-16095.04	1116.63
Wind 30 deg - Ice		4301.67	-7468.96	-1333722.46	-792883.36	1583.64
Wind 60 deg - Ice		7282.83	-4204.74	-748225.73	-1337215.26	671.55
Wind 90 deg - Ice		8455.63	9.12	15927.89	-1545992.36	-420.48
Wind 120 deg - Ice		7595.20	4391.63	799707.09	-1376073.12	-445.08
Wind 150 deg - Ice		4345.24	7526.60	1370683.43	-800827.66	-357.27
Wind 180 deg - Ice		-5.68	8646.41	1576375.47	-16089.77	-1146.62
Wind 210 deg - Ice		-4330.63	7477.60	1363272.55	764925.23	-1618.82
Wind 240 deg - Ice		-7563.91	4367.02	796313.65	1338005.43	-671.55
Wind 270 deg - Ice		-8477.59	11.64	16532.19	1516354.14	455.66
Wind 300 deg - Ice		-7349.25	-4236.52	-753342.09	1313897.53	475.07
Wind 330 deg - Ice		-4345.61	-7526.39	-1343155.03	766007.70	357.27
Total Weight	70047.57			6099.10	-2044.23	
Wind 0 deg - Service		-24.18	-23182.73	-3971224.57	4941.20	2201.81
Wind 30 deg - Service		10879.27	-18916.89	-3290753.15	-1890314.04	4104.41
Wind 60 deg - Service		18133.40	-10469.33	-1832853.26	-3174594.97	926.11
Wind 90 deg - Service		21157.92	36.72	8316.60	-3687887.54	-2500.34
Wind 120 deg - Service		19489.51	11280.19	1936318.84	-3343920.20	-1275.70
Wind 150 deg - Service		11002.89	19059.11	3315534.89	-1915159.60	459.22
Wind 180 deg - Service		-16.99	21853.80	3815388.02	3216.68	-2310.62
Wind 210 deg - Service		-10984.32	18948.22	3297278.06	1913805.60	-4232.03
Wind 240 deg - Service		-19391.15	11195.48	1924086.97	3332616.39	-926.11
Wind 270 deg - Service		-21237.58	38.59	8765.24	3705284.06	2627.96
Wind 300 deg - Service		-18359.21	-10580.08	-1851335.62	3213040.73	1384.51
Wind 330 deg - Service		-11004.23	-19058.34	-3316344.31	1913757.64	-459.22

Load Combinations

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

Comb. No.	Description
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T1	290.6 - 280	Leg	Max Tension	14	4646.18	0.26	-355.57
			Max. Compression	10	-6465.03	-125.96	-69.02
			Max. Mx	20	-1842.50	-556.80	-0.61
			Max. My	14	-4173.37	-114.99	525.04
			Max. Vy	20	2590.42	321.35	61.22
			Max. Vx	2	2611.01	0.02	355.66
		Diagonal	Max Tension	20	3875.84	0.00	0.00
			Max. Compression	20	-4081.50	0.00	0.00
			Max. Mx	2	563.23	23.73	1.15
			Max. My	20	-4076.29	-1.52	15.66
			Max. Vy	28	-19.59	17.67	-0.16
			Max. Vx	20	4.30	0.00	0.00
		Top Girt	Max Tension	23	993.44	0.00	0.00
			Max. Compression	10	-1097.72	0.00	0.00
			Max. Mx	26	-165.37	-36.73	0.00
			Max. My	16	-73.86	0.00	0.00
			Max. Vy	26	-29.38	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
T2	280 - 260	Leg	Max Tension	15	62672.19	0.50	-687.08
			Max. Compression	2	-71289.32	13.49	866.69
			Max. Mx	20	-3393.41	-1244.55	9.42
			Max. My	14	-17301.63	-157.19	1160.40
			Max. Vy	20	1618.37	635.94	227.33
			Max. Vx	14	-1661.18	-2.48	-767.10
		Diagonal	Max Tension	12	9578.52	0.00	0.00
			Max. Compression	24	-9928.31	0.00	0.00
			Max. Mx	16	6542.02	52.04	-1.00
			Max. My	20	-6777.40	-15.22	21.26

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Vy	31	-26.89	33.79	-0.30
			Max. Vx	20	6.02	0.00	0.00
T3	260 - 240	Leg	Max Tension	15	132604.99	-836.13	3.31
			Max. Compression	2	-145128.01	1406.93	55.27
			Max. Mx	2	-145128.01	1406.93	55.27
			Max. My	12	-6091.93	-2.16	-1307.72
			Max. Vy	2	-153.78	1406.93	55.27
			Max. Vx	12	140.23	-2.16	-1307.72
		Diagonal	Max Tension	24	7687.83	0.00	0.00
			Max. Compression	24	-7901.03	0.00	0.00
			Max. Mx	4	3387.35	29.41	0.79
			Max. My	35	45.58	19.23	2.83
			Max. Vy	33	25.91	22.00	2.43
			Max. Vx	31	1.30	0.00	0.00
T4	240 - 220	Leg	Max Tension	15	182524.16	-1314.38	-0.15
			Max. Compression	2	-198352.45	2136.04	-21.05
			Max. Mx	2	-198352.45	2136.04	-21.05
			Max. My	16	-7329.10	-1.02	2010.86
			Max. Vy	19	460.91	1380.85	6.54
			Max. Vx	16	558.10	2.59	1236.85
		Diagonal	Max Tension	24	7791.36	0.00	0.00
			Max. Compression	24	-8166.46	0.00	0.00
			Max. Mx	14	5952.76	40.51	1.71
			Max. My	14	-6858.43	-7.52	6.66
			Max. Vy	33	34.34	37.72	-4.32
			Max. Vx	27	1.73	0.00	0.00
T5	220 - 200	Leg	Max Tension	15	225528.29	-2512.52	0.47
			Max. Compression	2	-245171.62	2693.07	-2.88
			Max. Mx	2	-214968.54	2882.76	-0.32
			Max. My	12	-8207.90	-17.85	-2774.00
			Max. Vy	14	190.50	-2844.37	-1.43
			Max. Vx	16	-147.13	-21.03	2772.58
		Diagonal	Max Tension	24	6877.48	0.00	0.00
			Max. Compression	24	-7174.03	0.00	0.00
			Max. Mx	31	824.59	58.66	5.06
			Max. My	27	58.96	49.68	-6.71
			Max. Vy	33	47.40	57.01	-5.92
			Max. Vx	27	2.21	0.00	0.00
T6	200 - 180	Leg	Max Tension	15	263185.56	-2610.12	-1.65
			Max. Compression	2	-286644.48	2647.70	-3.00
			Max. Mx	2	-259215.82	2693.07	-2.88
			Max. My	12	-9594.34	-4.36	-2643.35
			Max. Vy	6	-81.35	-2589.04	-2.19
			Max. Vx	16	-86.63	-8.79	2638.28
		Diagonal	Max Tension	24	6707.32	0.00	0.00
			Max. Compression	24	-7032.79	0.00	0.00
			Max. Mx	31	827.64	71.70	6.26
			Max. My	27	76.97	63.67	-7.97
			Max. Vy	33	54.18	71.34	-7.20
			Max. Vx	27	-2.37	0.00	0.00
T7	180 - 160	Leg	Max Tension	15	297289.27	-2404.25	-2.39
			Max. Compression	2	-324696.43	3056.10	-1.90
			Max. Mx	2	-324696.43	3056.10	-1.90
			Max. My	12	-11254.56	5.20	-2933.26
			Max. Vy	2	-169.97	3056.10	-1.90
			Max. Vx	16	-131.42	-32.70	2817.34
		Diagonal	Max Tension	24	6732.15	0.00	0.00
			Max. Compression	24	-7101.77	0.00	0.00
			Max. Mx	33	666.75	87.69	-8.72
			Max. My	27	90.15	79.59	-9.35
			Max. Vy	33	60.80	87.69	-8.72

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Vx	27	-2.54	0.00	0.00
T8	160 - 140	Leg	Max Tension	15	328789.15	-3347.89	-9.07
			Max. Compression	2	-360756.92	7401.70	-59.74
			Max. Mx	2	-360756.92	7401.70	-59.74
			Max. My	16	-12337.72	129.64	4294.73
			Max. Vy	2	-715.82	7401.70	-59.74
			Max. Vx	16	-196.05	13.50	3595.28
		Diagonal	Max Tension	24	7088.83	0.00	0.00
			Max. Compression	24	-7332.43	0.00	0.00
			Max. Mx	33	601.27	104.74	10.37
			Max. My	27	109.76	96.77	-10.91
			Max. Vy	33	67.08	104.74	-10.21
			Max. Vx	27	-2.72	0.00	0.00
T9	140 - 120	Leg	Max Tension	15	348739.84	-2778.06	-10.32
			Max. Compression	2	-384673.63	4472.23	-7.58
			Max. Mx	2	-371384.62	7401.69	-59.73
			Max. My	12	-13768.13	-198.79	-5499.25
			Max. Vy	2	616.96	7401.69	-59.73
			Max. Vx	16	385.15	-205.13	5471.94
		Diagonal	Max Tension	24	5235.56	0.00	0.00
			Max. Compression	2	-6006.48	0.00	0.00
			Max. Mx	33	490.46	167.83	-22.04
			Max. My	27	128.73	146.74	-22.97
			Max. Vy	33	87.38	167.83	-22.04
			Max. Vx	27	-4.87	0.00	0.00
T10	120 - 100	Leg	Max Tension	15	367027.55	-3501.31	-7.88
			Max. Compression	2	-407339.15	3909.25	-50.71
			Max. Mx	2	-395413.09	4472.23	-7.58
			Max. My	16	-15664.51	50.59	4406.21
			Max. Vy	2	230.97	4472.23	-7.58
			Max. Vx	16	-210.42	-126.47	3739.75
		Diagonal	Max Tension	24	5565.40	0.00	0.00
			Max. Compression	24	-6052.17	0.00	0.00
			Max. Mx	33	494.03	200.42	25.67
			Max. My	27	-99.77	197.75	-26.31
			Max. Vy	33	96.59	200.42	-25.48
			Max. Vx	27	-5.16	0.00	0.00
T11	100 - 80	Leg	Max Tension	15	386119.34	-6019.11	-2.47
			Max. Compression	2	-431522.75	-8539.81	6.75
			Max. Mx	2	-431522.75	-8539.81	6.75
			Max. My	16	-16048.54	50.53	4406.22
			Max. Vy	2	1620.30	6429.04	0.69
			Max. Vx	16	328.34	50.53	4406.22
		Diagonal	Max Tension	2	7105.18	0.00	0.00
			Max. Compression	24	-7167.35	0.00	0.00
			Max. Mx	33	959.76	287.58	34.85
			Max. My	34	-280.98	278.62	36.44
			Max. Vy	33	130.49	287.58	34.85
			Max. Vx	27	-6.69	0.00	0.00
T12	80 - 60	Leg	Max Tension	15	393685.71	6770.56	-16.90
			Max. Compression	2	-441184.86	20845.94	-62.50
			Max. Mx	2	-440544.96	-26342.59	-32.65
			Max. My	12	-19993.17	-2298.87	-12461.82
			Max. Vy	2	8480.93	15819.76	71.99
			Max. Vx	16	-2252.54	-2248.08	12434.76
		Diagonal	Max Tension	15	13426.15	135.18	-7.68
			Max. Compression	2	-15211.35	0.00	0.00
			Max. Mx	2	2353.58	223.79	11.72
			Max. My	38	-2618.96	78.61	-29.11
			Max. Vy	33	-71.25	109.16	25.57
			Max. Vx	38	-6.19	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
		Horizontal	Max Tension	14	2292.60	0.00	0.00
			Max. Compression	13	-2411.78	96.24	67.29
			Max. Mx	31	-97.14	287.34	170.56
			Max. My	33	503.47	280.07	175.95
			Max. Vy	31	-135.29	287.34	170.56
			Max. Vx	33	19.85	0.00	0.00
		Redund Horz 1 Bracing	Max Tension	2	6627.77	0.00	0.00
			Max. Compression	15	-5777.85	0.00	0.00
			Max. Mx	35	292.24	-41.31	0.00
			Max. My	32	1273.63	0.00	1.19
			Max. Vy	35	-31.47	0.00	0.00
			Max. Vx	32	-0.91	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	15	3995.24	0.00	0.00
			Max. Compression	2	-4419.59	0.00	0.00
			Max. Mx	32	-122.28	-72.77	0.00
			Max. My	27	-356.98	0.00	2.96
			Max. Vy	32	39.15	0.00	0.00
			Max. Vx	27	-1.59	0.00	0.00
T13	60 - 40	Leg	Max Tension	15	412324.18	433.71	-3.77
			Max. Compression	2	-466626.53	15830.73	73.93
			Max. Mx	2	-464218.44	-26342.59	-32.64
			Max. My	12	-20766.31	-2298.98	-12461.80
			Max. Vy	2	-9575.51	21315.95	-72.67
			Max. Vx	12	-1754.42	-2298.98	-12461.80
		Diagonal	Max Tension	15	13016.29	127.71	-7.74
			Max. Compression	2	-14849.83	0.00	0.00
			Max. Mx	2	1746.80	200.60	12.61
			Max. My	38	-1039.42	90.04	-29.86
			Max. Vy	33	-75.10	117.11	25.85
			Max. Vx	38	-6.15	0.00	0.00
		Horizontal	Max Tension	12	2909.23	144.32	82.57
			Max. Compression	13	-3051.52	81.94	63.59
			Max. Mx	33	877.37	322.99	147.90
			Max. My	27	133.36	318.12	151.05
			Max. Vy	33	143.23	322.99	147.90
			Max. Vx	31	-16.52	0.00	0.00
		Redund Horz 1 Bracing	Max Tension	2	7742.88	0.00	0.00
			Max. Compression	15	-7007.73	0.00	0.00
			Max. Mx	28	1931.44	-56.98	0.00
			Max. My	32	1607.90	0.00	1.64
			Max. Vy	28	39.64	0.00	0.00
			Max. Vx	32	-1.14	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	15	4744.89	0.00	0.00
			Max. Compression	2	-5395.09	0.00	0.00
			Max. Mx	32	-170.11	-80.82	0.00
			Max. My	27	-318.24	0.00	3.15
			Max. Vy	32	-41.39	0.00	0.00
			Max. Vx	27	-1.61	0.00	0.00
T14	40 - 20	Leg	Max Tension	15	431894.58	17056.84	20.50
			Max. Compression	2	-491659.21	15812.89	63.76
			Max. Mx	2	-491295.84	-26704.21	-33.21
			Max. My	12	-24644.57	-2576.72	-14076.33
			Max. Vy	2	8543.41	15812.89	63.75
			Max. Vx	16	-2705.65	-2525.87	14035.43
		Diagonal	Max Tension	15	12799.13	177.92	-9.20
			Max. Compression	2	-14559.21	0.00	0.00
			Max. Mx	2	3345.32	285.94	14.20

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. My	38	-3946.97	107.95	-36.73
			Max. Vy	33	-88.31	146.65	32.79
			Max. Vx	38	-7.13	0.00	0.00
		Horizontal	Max Tension	14	3143.99	0.00	0.00
			Max. Compression	13	-3319.86	150.99	98.99
			Max. Mx	31	-139.78	450.05	263.15
			Max. My	31	-139.73	449.96	263.30
			Max. Vy	31	-171.44	450.05	263.15
			Max. Vx	31	-25.01	0.00	0.00
		Redund Horz 1 Bracing	Max Tension	2	6830.79	0.00	0.00
			Max. Compression	15	-6342.86	0.00	0.00
			Max. Mx	26	428.96	-64.26	0.00
			Max. My	32	1893.02	0.00	1.86
			Max. Vy	26	41.13	0.00	0.00
			Max. Vx	32	1.19	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	15	4146.50	0.00	0.00
			Max. Compression	2	-4655.28	0.00	0.00
			Max. Mx	32	-428.25	-87.72	0.00
			Max. My	27	-650.32	0.00	3.32
			Max. Vy	32	42.78	0.00	0.00
			Max. Vx	27	1.62	0.00	0.00
T15	20 - 0	Leg	Max Tension	15	450389.45	215.84	-3.80
			Max. Compression	2	-516993.41	14156.09	66.71
			Max. Mx	2	-512756.54	-26704.21	-33.20
			Max. My	12	-25573.53	-2576.84	-14076.30
			Max. Vy	2	-9263.99	19455.41	-61.96
			Max. Vx	12	-1875.95	-2576.84	-14076.30
		Diagonal	Max Tension	15	12028.06	188.86	-8.45
			Max. Compression	2	-14142.07	0.00	0.00
			Max. Mx	2	2281.93	276.44	14.50
			Max. My	27	-482.43	97.71	-33.75
			Max. Vy	27	-88.60	191.51	27.96
			Max. Vx	27	-6.48	0.00	0.00
		Horizontal	Max Tension	14	1843.86	433.05	181.65
			Max. Compression	13	-1889.33	151.00	83.73
			Max. Mx	33	208.80	539.74	224.77
			Max. My	33	210.59	539.72	224.81
			Max. Vy	33	-224.01	539.74	224.77
			Max. Vx	33	-21.98	0.00	0.00
		Redund Horz 1 Bracing	Max Tension	2	7378.40	0.00	0.00
			Max. Compression	15	-6503.15	0.00	0.00
			Max. Mx	33	912.56	-68.12	0.00
			Max. My	31	1483.32	0.00	1.97
			Max. Vy	33	40.37	0.00	0.00
			Max. Vx	31	-1.17	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	15	4117.98	0.00	0.00
			Max. Compression	2	-4877.61	0.00	0.00
			Max. Mx	32	-108.36	-90.07	0.00
			Max. My	34	-30.85	0.00	-3.25
			Max. Vy	32	41.88	0.00	0.00
			Max. Vx	34	1.51	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg C	Max. Vert	18	517288.53	39837.29	-22924.42
	Max. H_x	18	517288.53	39837.29	-22924.42
	Max. H_z	7	-442846.17	-33783.65	19438.09
	Min. Vert	7	-442846.17	-33783.65	19438.09
	Min. H_x	7	-442846.17	-33783.65	19438.09
	Min. H_z	18	517288.53	39837.29	-22924.42
Leg B	Max. Vert	10	519333.27	-39974.85	-23163.07
	Max. H_x	23	-448421.44	34142.13	19823.54
	Max. H_z	23	-448421.44	34142.13	19823.54
	Min. Vert	23	-448421.44	34142.13	19823.54
	Min. H_x	10	519333.27	-39974.85	-23163.07
	Min. H_z	10	519333.27	-39974.85	-23163.07
Leg A	Max. Vert	2	532713.85	137.78	47500.27
	Max. H_x	21	19589.44	1482.78	1464.67
	Max. H_z	2	532713.85	137.78	47500.27
	Min. Vert	15	-462722.04	-154.75	-40802.47
	Min. H_x	9	19647.22	-1479.67	1471.84
	Min. H_z	15	-462722.04	-154.75	-40802.47

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	70047.57	-0.00	0.00	6099.61	-2044.19	0.03
1.2 Dead+1.0 Wind 0 deg - No Ice	84057.07	-75.44	-70078.15	-12238199.10	15767.68	6922.56
0.9 Dead+1.0 Wind 0 deg - No Ice	63042.80	-75.44	-70078.12	-12204995.42	16345.22	6909.13
1.2 Dead+1.0 Wind 30 deg - No Ice	84057.08	32816.40	-57069.05	-10130069.96	-5823461.42	12976.86
0.9 Dead+1.0 Wind 30 deg - No Ice	63042.81	32816.41	-57069.04	-10102616.16	-5805978.58	12953.83
1.2 Dead+1.0 Wind 60 deg - No Ice	84057.08	54623.63	-31536.97	-5633587.25	-9773010.45	2984.27
0.9 Dead+1.0 Wind 60 deg - No Ice	63042.81	54623.64	-31536.97	-5619032.39	-9743942.47	2960.41
1.2 Dead+1.0 Wind 90 deg - No Ice	84057.08	63758.33	114.69	35078.96	-11354547.48	-7800.20
0.9 Dead+1.0 Wind 90 deg - No Ice	63042.81	63758.33	114.67	33149.26	-11320967.32	-7819.20
1.2 Dead+1.0 Wind 120 deg - No Ice	84057.07	58856.35	34067.85	5977176.21	-10305874.52	-3934.28
0.9 Dead+1.0 Wind 120 deg - No Ice	63042.80	58856.32	34067.84	5958164.66	-10275649.96	-3945.88
1.2 Dead+1.0 Wind 150 deg - No Ice	84057.07	33202.40	57512.87	10226257.45	-5901562.72	1515.80
0.9 Dead+1.0 Wind 150 deg - No Ice	63042.81	33202.37	57512.87	10194853.37	-5883896.41	1515.34
1.2 Dead+1.0 Wind 180 deg - No Ice	84057.08	-53.02	65930.22	11765895.09	10320.85	-7261.41
0.9 Dead+1.0 Wind 180 deg - No Ice	63042.81	-53.03	65930.23	11729982.04	10914.38	-7248.22
1.2 Dead+1.0 Wind 210 deg - No Ice	84057.07	-33144.42	57166.77	10168797.55	5897731.29	-13376.75
0.9 Dead+1.0 Wind 210 deg -	63042.81	-33144.40	57166.77	10137530.35	5881305.00	-13353.50

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
No Ice						
1.2 Dead+1.0 Wind 240 deg - No Ice	84057.07	-58549.34	33803.49	5938724.70	10270821.99	-2988.13
0.9 Dead+1.0 Wind 240 deg - No Ice	63042.80	-58549.32	33803.47	5919796.13	10241895.20	-2963.33
1.2 Dead+1.0 Wind 270 deg - No Ice	84057.08	-64006.97	120.52	36483.43	11409925.61	8198.76
0.9 Dead+1.0 Wind 270 deg - No Ice	63042.81	-64006.96	120.51	34550.39	11377428.25	8217.93
1.2 Dead+1.0 Wind 300 deg - No Ice	84057.08	-55328.40	-31882.63	-5691877.78	9894606.17	4275.86
0.9 Dead+1.0 Wind 300 deg - No Ice	63042.81	-55328.41	-31882.64	-5677179.58	9866478.59	4287.11
1.2 Dead+1.0 Wind 330 deg - No Ice	84057.07	-33206.41	-57510.56	-10210784.37	5897772.17	-1515.70
0.9 Dead+1.0 Wind 330 deg - No Ice	63042.81	-33206.42	-57510.54	-10183123.34	5881336.00	-1515.26
1.2 Dead+1.0 Ice+1.0 Temp	193918.30	-0.00	-0.00	15100.05	-17985.55	0.15
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	193918.30	-5.66	-8936.96	-1625348.14	-17049.54	1155.05
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	193918.30	4301.67	-7468.96	-1370360.47	-815861.33	1628.63
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	193918.30	7282.83	-4204.74	-768295.39	-1375782.36	712.44
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	193918.30	8455.63	9.12	17644.21	-1590470.54	-393.91
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	193918.30	7595.20	4391.63	823551.70	-1415474.91	-441.25
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	193918.30	4345.24	7526.60	1410760.68	-824052.62	-377.76
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	193918.30	-5.68	8646.41	1622333.53	-17042.91	-1184.49
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	193918.30	-4330.63	7477.60	1403191.51	786167.64	-1663.96
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	193918.30	-7563.91	4367.03	820093.10	1375386.39	-713.28
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	193918.30	-8477.59	11.64	18265.34	1559004.08	428.85
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	193918.30	-7349.25	-4236.52	-773532.05	1350765.33	471.21
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	193918.30	-4345.61	-7526.39	-1380015.05	787201.79	377.77
Dead+Wind 0 deg - Service	70047.57	-24.18	-23182.73	-4002049.88	3779.14	2215.93
Dead+Wind 30 deg - Service	70047.57	10879.27	-18916.89	-3315457.29	-1909503.58	4131.19
Dead+Wind 60 deg - Service	70047.57	18133.41	-10469.33	-1843736.91	-3206181.81	951.54
Dead+Wind 90 deg - Service	70047.57	21157.92	36.73	15077.37	-3724333.20	-2482.03
Dead+Wind 120 deg - Service	70047.57	19489.51	11280.19	1961296.89	-3376773.43	-1263.12
Dead+Wind 150 deg - Service	70047.57	11002.90	19059.12	3353725.86	-1934624.75	462.51
Dead+Wind 180 deg - Service	70047.57	-16.99	21853.80	3858379.40	2033.94	-2324.25
Dead+Wind 210 deg - Service	70047.57	-10984.33	18948.22	3335330.80	1930855.11	-4259.01
Dead+Wind 240 deg - Service	70047.57	-19391.15	11195.49	1948982.67	3363004.54	-952.56
Dead+Wind 270 deg - Service	70047.57	-21237.58	38.59	15529.12	3739493.40	2609.49
Dead+Wind 300 deg - Service	70047.57	-18359.21	-10580.08	-1862377.18	3242536.23	1371.69
Dead+Wind 330 deg - Service	70047.57	-11004.23	-19058.34	-3341275.27	1930737.06	-462.51

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
1	-0.00	-70047.57	0.00	0.00	70047.57	-0.00	0.000%
2	-75.46	-84057.09	-70077.95	75.44	84057.07	70078.15	0.000%
3	-75.46	-63042.81	-70077.95	75.44	63042.80	70078.12	0.000%
4	32816.44	-84057.09	-57068.98	-32816.40	84057.08	57069.05	0.000%
5	32816.44	-63042.81	-57068.98	-32816.41	63042.81	57069.04	0.000%
6	54623.64	-84057.09	-31536.97	-54623.63	84057.08	31536.97	0.000%
7	54623.64	-63042.81	-31536.97	-54623.64	63042.81	31536.97	0.000%
8	63758.30	-84057.09	114.62	-63758.33	84057.08	-114.69	0.000%
9	63758.30	-63042.81	114.62	-63758.33	63042.81	-114.67	0.000%
10	58856.19	-84057.09	34067.77	-58856.35	84057.07	-34067.85	0.000%
11	58856.19	-63042.81	34067.77	-58856.32	63042.80	-34067.84	0.000%
12	33202.30	-84057.09	57512.88	-33202.40	84057.07	-57512.87	0.000%
13	33202.30	-63042.81	57512.88	-33202.37	63042.81	-57512.87	0.000%
14	-53.03	-84057.09	65930.23	53.02	84057.08	-65930.22	0.000%
15	-53.03	-63042.81	65930.23	53.03	63042.81	-65930.23	0.000%
16	-33144.34	-84057.09	57166.77	33144.42	84057.07	-57166.77	0.000%
17	-33144.34	-63042.81	57166.77	33144.40	63042.81	-57166.77	0.000%
18	-58549.19	-84057.09	33803.39	58549.34	84057.07	-33803.49	0.000%
19	-58549.19	-63042.81	33803.39	58549.32	63042.80	-33803.47	0.000%
20	-64006.93	-84057.09	120.46	64006.97	84057.08	-120.52	0.000%
21	-64006.93	-63042.81	120.46	64006.96	63042.81	-120.51	0.000%
22	-55328.41	-84057.09	-31882.63	55328.40	84057.08	31882.63	0.000%
23	-55328.41	-63042.81	-31882.63	55328.41	63042.81	31882.64	0.000%
24	-33206.47	-84057.09	-57510.48	33206.41	84057.07	57510.56	0.000%
25	-33206.47	-63042.81	-57510.48	33206.42	63042.81	57510.54	0.000%
26	-0.00	-193918.30	0.00	0.00	193918.30	0.00	0.000%
27	-5.66	-193918.30	-8936.96	5.66	193918.30	8936.96	0.000%
28	4301.67	-193918.30	-7468.96	-4301.67	193918.30	7468.96	0.000%
29	7282.83	-193918.30	-4204.74	-7282.83	193918.30	4204.74	0.000%
30	8455.63	-193918.30	9.12	-8455.63	193918.30	-9.12	0.000%
31	7595.20	-193918.30	4391.63	-7595.20	193918.30	-4391.63	0.000%
32	4345.24	-193918.30	7526.60	-4345.24	193918.30	-7526.60	0.000%
33	-5.68	-193918.30	8646.41	5.68	193918.30	-8646.41	0.000%
34	-4330.63	-193918.30	7477.60	4330.63	193918.30	-7477.60	0.000%
35	-7563.91	-193918.30	4367.02	7563.91	193918.30	-4367.03	0.000%
36	-8477.59	-193918.30	11.64	8477.59	193918.30	-11.64	0.000%
37	-7349.25	-193918.30	-4236.52	7349.25	193918.30	4236.52	0.000%
38	-4345.61	-193918.30	-7526.39	4345.61	193918.30	7526.39	0.000%
39	-24.18	-70047.57	-23182.73	24.18	70047.57	23182.73	0.000%
40	10879.27	-70047.57	-18916.89	-10879.27	70047.57	18916.89	0.000%
41	18133.40	-70047.57	-10469.33	-18133.41	70047.57	10469.33	0.000%
42	21157.92	-70047.57	36.72	-21157.92	70047.57	-36.73	0.000%
43	19489.51	-70047.57	11280.19	-19489.51	70047.57	-11280.19	0.000%
44	11002.89	-70047.57	19059.11	-11002.90	70047.57	-19059.12	0.000%
45	-16.99	-70047.57	21853.80	16.99	70047.57	-21853.80	0.000%
46	-10984.32	-70047.57	18948.22	10984.33	70047.57	-18948.22	0.000%
47	-19391.15	-70047.57	11195.48	19391.15	70047.57	-11195.49	0.000%
48	-21237.58	-70047.57	38.59	21237.58	70047.57	-38.59	0.000%
49	-18359.21	-70047.57	-10580.08	18359.21	70047.57	10580.08	0.000%
50	-11004.23	-70047.57	-19058.34	11004.23	70047.57	19058.34	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001

2	Yes	4	0.00000001	0.00000341
3	Yes	4	0.00000001	0.00000237
4	Yes	4	0.00000001	0.00000701
5	Yes	4	0.00000001	0.00000586
6	Yes	4	0.00000001	0.00000574
7	Yes	4	0.00000001	0.00000394
8	Yes	4	0.00000001	0.00000648
9	Yes	4	0.00000001	0.00000530
10	Yes	4	0.00000001	0.00000336
11	Yes	4	0.00000001	0.00000217
12	Yes	4	0.00000001	0.00000686
13	Yes	4	0.00000001	0.00000575
14	Yes	4	0.00000001	0.00000608
15	Yes	4	0.00000001	0.00000441
16	Yes	4	0.00000001	0.00000708
17	Yes	4	0.00000001	0.00000594
18	Yes	4	0.00000001	0.00000335
19	Yes	4	0.00000001	0.00000214
20	Yes	4	0.00000001	0.00000654
21	Yes	4	0.00000001	0.00000539
22	Yes	4	0.00000001	0.00000584
23	Yes	4	0.00000001	0.00000407
24	Yes	4	0.00000001	0.00000686
25	Yes	4	0.00000001	0.00000574
26	Yes	4	0.00000001	0.00000545
27	Yes	4	0.00000001	0.00005295
28	Yes	4	0.00000001	0.00005302
29	Yes	4	0.00000001	0.00005314
30	Yes	4	0.00000001	0.00005314
31	Yes	4	0.00000001	0.00005345
32	Yes	4	0.00000001	0.00005370
33	Yes	4	0.00000001	0.00005374
34	Yes	4	0.00000001	0.00005319
35	Yes	4	0.00000001	0.00005264
36	Yes	4	0.00000001	0.00005228
37	Yes	4	0.00000001	0.00005245
38	Yes	4	0.00000001	0.00005268
39	Yes	4	0.00000001	0.00000316
40	Yes	4	0.00000001	0.00000331
41	Yes	4	0.00000001	0.00000344
42	Yes	4	0.00000001	0.00000332
43	Yes	4	0.00000001	0.00000318
44	Yes	4	0.00000001	0.00000330
45	Yes	4	0.00000001	0.00000340
46	Yes	4	0.00000001	0.00000331
47	Yes	4	0.00000001	0.00000318
48	Yes	4	0.00000001	0.00000331
49	Yes	4	0.00000001	0.00000343
50	Yes	4	0.00000001	0.00000330

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	290.6 - 280	20.562	39	0.7763	0.0294
T2	280 - 260	18.823	39	0.7726	0.0292
T3	260 - 240	15.652	39	0.6962	0.0275
T4	240 - 220	12.846	39	0.6001	0.0236
T5	220 - 200	10.464	39	0.5088	0.0183

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T6	200 - 180	8.426	39	0.4441	0.0150
T7	180 - 160	6.659	39	0.3781	0.0122
T8	160 - 140	5.165	39	0.3121	0.0096
T9	140 - 120	3.900	39	0.2663	0.0071
T10	120 - 100	2.846	39	0.2218	0.0054
T11	100 - 80	1.971	39	0.1803	0.0038
T12	80 - 60	1.271	39	0.1407	0.0028
T13	60 - 40	0.720	39	0.1035	0.0020
T14	40 - 20	0.337	39	0.0681	0.0012
T15	20 - 0	0.085	39	0.0333	0.0006

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
285.00	42,000 sq in CaAa	39	19.642	0.7768	0.0293	109933
274.00	30,000 sq in CaAa	39	17.848	0.7576	0.0289	26369
264.00	30,000 sq in CaAa	39	16.264	0.7156	0.0280	13810
240.00	6' Solid w/Radome	39	12.846	0.6001	0.0236	10808

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	290.6 - 280	63.484	2	2.4112	0.0923
T2	280 - 260	58.084	2	2.3995	0.0917
T3	260 - 240	48.242	2	2.1593	0.0864
T4	240 - 220	39.544	2	1.8580	0.0741
T5	220 - 200	32.179	2	1.5724	0.0577
T6	200 - 180	25.884	2	1.3707	0.0473
T7	180 - 160	20.435	2	1.1655	0.0384
T8	160 - 140	15.836	2	0.9605	0.0302
T9	140 - 120	11.948	2	0.8187	0.0224
T10	120 - 100	8.714	2	0.6813	0.0169
T11	100 - 80	6.030	2	0.5533	0.0119
T12	80 - 60	3.885	2	0.4315	0.0089
T13	60 - 40	2.199	2	0.3173	0.0062
T14	40 - 20	1.025	2	0.2085	0.0038
T15	20 - 0	0.259	2	0.1020	0.0018

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
285.00	42,000 sq in CaAa	2	60.627	2.4127	0.0921	35357
274.00	30,000 sq in CaAa	2	55.057	2.3523	0.0908	8468

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
264.00	30,000 sq in CaAa	2	50.140	2.2202	0.0880	4412
240.00	6' Solid w/Radome	2	39.544	1.8580	0.0741	3457

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	290.6 - 280	P2x.154	10.60	5.30	80.8 K=1.00	1.0745	-6465.03	29999.80	0.216 [1] ✔
T2	280 - 260	P3x.216	20.00	5.00	51.6 K=1.00	2.2285	-71289.30	82563.00	0.863 [1] ✔
T3	260 - 240	P5x.258	20.02	5.00	32.0 K=1.00	4.2999	-145128.00	179551.00	0.808 [1] ✔
T4	240 - 220	P6x.28	20.02	6.67	35.7 K=1.00	5.5813	-198352.00	228860.00	0.867 [1] ✔
T5	220 - 200	P8x.322	20.02	6.67	27.3 K=1.00	8.3993	-245172.00	357982.00	0.685 [1] ✔
T6	200 - 180	P8x.322	20.02	6.67	27.3 K=1.00	8.3993	-286645.00	357982.00	0.801 [1] ✔
T7	180 - 160	P8x.322	20.02	6.67	27.3 K=1.00	8.3993	-324696.00	357982.00	0.907 [1] ✔
T8	160 - 140	P10x.365	20.02	6.67	21.8 K=1.00	11.9083	-360757.00	517579.00	0.697 [1] ✔
T9	140 - 120	P10x.365	20.03	10.02	32.7 K=1.00	11.9083	-384674.00	495532.00	0.776 [1] ✔
T10	120 - 100	P10x.365	20.03	10.02	32.7 K=1.00	11.9083	-407339.00	495532.00	0.822 [1] ✔
T11	100 - 80	P10x.365	20.03	10.02	32.7 K=1.00	11.9083	-431523.00	495532.00	0.871 [1] ✔
T12	80 - 60	P10x.365	20.03	5.01	16.4 K=1.00	11.9083	-441185.00	525490.00	0.840 [1] ✔
T13	60 - 40	P10x.365	20.03	5.01	16.4 K=1.00	11.9083	-466627.00	525490.00	0.888 [1] ✔
T14	40 - 20	P10x.365	20.03	5.01	16.4 K=1.00	11.9083	-491659.00	525490.00	0.936 [1] ✔
T15	20 - 0	P10x.365	20.03	5.01	16.4 K=1.00	11.9083	-516993.00	525490.00	0.984 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	290.6 - 280	L1 3/4x1 3/4x1/8	7.29	3.50	121.1 K=1.00	0.4219	-4081.50	8238.30	0.495 [1] ✔
T2	280 - 260	L2x2x3/16	7.07	3.33	101.4 K=1.00	0.7150	-9928.31	19696.80	0.504 [1] ✔
T3	260 - 240	L2x2x1/8	8.05	3.85	116.2 K=1.00	0.4844	-6611.25	10260.40	0.644 [1] ✔
T4	240 - 220	L2x2x3/16	10.22	4.91	149.6 K=1.00	0.7150	-7425.69	9140.81	0.812 [1] ✔
T5	220 - 200	L2 1/2x2 1/2x3/16	11.40	5.41	131.2 K=1.00	0.9020	-7079.96	14994.70	0.472 [1] ✔
T6	200 - 180	L2 1/2x2 1/2x3/16	12.65	6.05	146.7 K=1.00	0.9020	-7024.08	12004.30	0.585 [1] ✔
T7	180 - 160	L2 1/2x2 1/2x3/16	13.95	6.71	162.6 K=1.00	0.9020	-7101.77	9765.99	0.727 [1] ✔
T8	160 - 140	L2 1/2x2 1/2x3/16	15.28	7.28	176.5 K=1.00	0.9020	-7163.91	8284.32	0.865 [1] ✔
T9	140 - 120	L3x3x3/16	18.45	8.99	181.0 K=1.00	1.0900	-5659.49	9525.13	0.594 [1] ✔
T10	120 - 100	L3x3x3/16	20.16	9.85	198.3 K=1.00	1.0900	-6052.17	7930.45	0.763 [1] ✔
T11	100 - 80	L3 1/2x3 1/2x1/4	21.92	10.74	185.6 K=1.00	1.6900	-7167.35	14036.80	0.511 [1] ✔
T12	80 - 60	L3 1/2x3 1/2x1/4	14.87	14.26	157.0 K=1.00	1.6900	-15211.40	19616.20	0.775 [1] ✔
T13	60 - 40	L3 1/2x3 1/2x1/4	15.62	15.04	165.6 K=1.00	1.6900	-14849.80	17642.90	0.842 [1] ✔
T14	40 - 20	L4x4x1/4	16.40	15.84	152.1 K=1.00	1.9400	-14559.20	24016.90	0.606 [1] ✔
T15	20 - 0	L4x4x1/4	17.21	16.66	159.9 K=1.00	1.9400	-14142.10	21716.10	0.651 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T12	80 - 60	L3 1/2x3 1/2x1/4	21.00	10.05	221.3 K=1.00	1.6900	-7651.08	9874.22	0.775 [1] ✔
T13	60 - 40	L3 1/2x3 1/2x1/4	23.00	11.05	243.3 K=1.00	1.6900	-8092.30	8168.21	0.991 [1] ✔
T14	40 - 20	L4x4x1/4	25.00	12.05	231.4 K=1.00	1.9400	-8526.42	10369.90	0.822 [1] ✔
T15	20 - 0	L5x5x5/16	27.00	13.05	199.5 K=1.00	3.0300	-8965.77	21785.00	0.412 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	290.6 - 280	L1 3/4x1 3/4x1/8	5.00	4.80	166.2 K=1.00	0.4219	-1097.72	4373.71	0.251 [1] ✔

[1] P_u / ϕP_n controls

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T12	80 - 60	L2x2x3/16	5.25	4.80	146.3 K=1.00	0.7150	-7651.08	9566.97	0.800 [1] ✔
T13	60 - 40	L2 1/2x2 1/2x3/16	5.75	5.30	128.5 K=1.00	0.9020	-8092.30	15626.40	0.518 [1] ✔
T14	40 - 20	L2 1/2x2 1/2x3/16	6.25	5.80	140.7 K=1.00	0.9020	-8526.42	13049.20	0.653 [1] ✔
T15	20 - 0	L2 1/2x2 1/2x3/16	6.75	6.30	152.8 K=1.00	0.9020	-8965.77	11060.70	0.811 [1] ✔

[1] P_u / ϕP_n controls

Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T12	80 - 60	L2 1/2x2 1/2x3/16	7.43	6.80	164.9 K=1.00	0.9020	-5417.28	9497.11	0.570 [1] ✔
T13	60 - 40	L2 1/2x2 1/2x3/16	7.81	7.21	174.7 K=1.00	0.9020	-5496.84	8459.08	0.650 [1] ✔
T14	40 - 20	L2 1/2x2 1/2x3/16	8.20	7.62	184.7 K=1.00	0.9020	-5594.61	7567.78	0.739 [1] ✔
T15	20 - 0	L2 1/2x2 1/2x3/16	8.60	8.04	194.9 K=1.00	0.9020	-5713.87	6798.36	0.840 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	290.6 - 280	P2x.154	10.60	5.30	80.8	1.0745	4646.18	48353.90	0.096 [1] ✔
T2	280 - 260	P3x.216	20.00	5.00	51.6	2.2285	62672.20	100281.00	0.625 [1] ✔
T3	260 - 240	P5x.258	20.02	5.00	32.0	4.2999	132605.00	193494.00	0.685 [1] ✔
T4	240 - 220	P6x.28	20.02	6.67	35.7	5.5813	182524.00	251161.00	0.727 [1] ✔
T5	220 - 200	P8x.322	20.02	6.67	27.3	8.3993	225528.00	377967.00	0.597 [1] ✔
T6	200 - 180	P8x.322	20.02	6.67	27.3	8.3993	263186.00	377967.00	0.696 [1] ✔
T7	180 - 160	P8x.322	20.02	6.67	27.3	8.3993	297289.00	377967.00	0.787 [1] ✔
T8	160 - 140	P10x.365	20.02	6.67	21.8	11.9083	328789.00	535873.00	0.614 [1] ✔
T9	140 - 120	P10x.365	20.03	10.02	32.7	11.9083	348740.00	535873.00	0.651 [1] ✔
T10	120 - 100	P10x.365	20.03	10.02	32.7	11.9083	367028.00	535873.00	0.685 [1] ✔
T11	100 - 80	P10x.365	20.03	10.02	32.7	11.9083	386119.00	535873.00	0.721 [1] ✔
T12	80 - 60	P10x.365	20.03	5.01	16.4	11.9083	393686.00	535873.00	0.735 [1] ✔
T13	60 - 40	P10x.365	20.03	5.01	16.4	11.9083	412324.00	535873.00	0.769 [1] ✔
T14	40 - 20	P10x.365	20.03	5.01	16.4	11.9083	431895.00	535873.00	0.806 [1] ✔
T15	20 - 0	P10x.365	20.03	5.01	16.4	11.9083	450389.00	535873.00	0.840 [1] ✔

[1] $P_u / \phi P_n$ controls

Diagonal Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	290.6 - 280	L1 3/4x1 3/4x1/8	7.29	3.50	76.9	0.3164	3875.84	15424.80	0.251 [1] ✔
T2	280 - 260	L2x2x3/16	7.07	3.33	64.8	0.5363	9578.52	26142.20	0.366 [1] ✔
T3	260 - 240	L2x2x1/8	7.21	3.44	65.9	0.3633	7687.83	17710.00	0.434 [1] ✔
T4	240 - 220	L2x2x3/16	9.49	4.56	88.6	0.5363	7791.36	26142.20	0.298 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T5	220 - 200	L2 1/2x2 1/2x3/16	10.61	5.02	77.5	0.6765	6877.48	32979.40	0.209 [1]
T6	200 - 180	L2 1/2x2 1/2x3/16	11.81	5.63	86.9	0.6765	6707.32	32979.40	0.203 [1]
T7	180 - 160	L2 1/2x2 1/2x3/16	13.51	6.49	100.1	0.6765	6732.15	32979.40	0.204 [1]
T8	160 - 140	L2 1/2x2 1/2x3/16	14.83	7.06	108.9	0.6765	7088.83	32979.40	0.215 [1]
T9	140 - 120	L3x3x3/16	18.45	8.99	114.9	0.8175	5235.56	39853.10	0.131 [1]
T10	120 - 100	L3x3x3/16	20.16	9.85	125.9	0.8175	5565.40	39853.10	0.140 [1]
T11	100 - 80	L3 1/2x3 1/2x1/4	21.92	10.74	118.2	1.2675	7105.18	61790.60	0.115 [1]
T12	80 - 60	L3 1/2x3 1/2x1/4	14.87	14.26	157.0	1.2675	13426.10	61790.60	0.217 [1]
T13	60 - 40	L3 1/2x3 1/2x1/4	15.62	15.04	165.6	1.2675	13016.30	61790.60	0.211 [1]
T14	40 - 20	L4x4x1/4	16.40	15.84	152.1	1.4550	12799.10	70931.30	0.180 [1]
T15	20 - 0	L4x4x1/4	17.21	16.66	159.9	1.4550	12028.10	70931.30	0.170 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T12	80 - 60	L3 1/2x3 1/2x1/4	21.00	10.05	166.0	1.2675	7651.08	61790.60	0.124 [1]
T13	60 - 40	L3 1/2x3 1/2x1/4	23.00	11.05	182.5	1.2675	8092.30	61790.60	0.131 [1]
T14	40 - 20	L4x4x1/4	25.00	12.05	173.6	1.4550	8526.42	70931.30	0.120 [1]
T15	20 - 0	L5x5x5/16	27.00	13.05	149.6	2.2725	8965.77	110784.00	0.081 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	290.6 - 280	L1 3/4x1 3/4x1/8	5.00	4.80	105.6	0.3164	993.44	15424.80	0.064 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$

[1] P_u / ϕP_n controls

Redundant Horizontal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T12	80 - 60	L2x2x3/16	5.25	4.80	93.4	0.5363	7651.08	26142.20	0.293 [1]
T13	60 - 40	L2 1/2x2 1/2x3/16	5.75	5.30	81.8	0.6765	8092.30	32979.40	0.245 [1]
T14	40 - 20	L2 1/2x2 1/2x3/16	6.25	5.80	89.5	0.6765	8526.42	32979.40	0.259 [1]
T15	20 - 0	L2 1/2x2 1/2x3/16	6.75	6.30	97.2	0.6765	8965.77	32979.40	0.272 [1]

[1] P_u / ϕP_n controls

Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T12	80 - 60	L2 1/2x2 1/2x3/16	7.43	6.80	104.9	0.6765	5417.28	32979.40	0.164 [1]
T13	60 - 40	L2 1/2x2 1/2x3/16	7.81	7.21	111.2	0.6765	5496.84	32979.40	0.167 [1]
T14	40 - 20	L2 1/2x2 1/2x3/16	8.20	7.62	117.5	0.6765	5594.61	32979.40	0.170 [1]
T15	20 - 0	L2 1/2x2 1/2x3/16	8.60	8.04	124.0	0.6765	5713.87	32979.40	0.173 [1]

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	290.6 - 280	Leg	P2x.154	2	-6465.03	29999.80	21.6	Pass
		Diagonal	L1 3/4x1 3/4x1/8	7	-4081.50	8238.30	49.5	Pass
		Top Girt	L1 3/4x1 3/4x1/8	6	-1097.72	4373.71	25.1	Pass
T2	280 - 260	Leg	P3x.216	21	-71289.30	82563.00	86.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
		Diagonal	L2x2x3/16	25	-9928.31	19696.80	50.4	Pass
T3	260 - 240	Leg	P5x.258	48	-145128.00	179551.00	80.8	Pass
		Diagonal	L2x2x1/8	52	-6611.25	10260.40	64.4	Pass
T4	240 - 220	Leg	P6x.28	75	-198352.00	228860.00	86.7	Pass
		Diagonal	L2x2x3/16	79	-7425.69	9140.81	81.2	Pass
T5	220 - 200	Leg	P8x.322	96	-245172.00	357982.00	68.5	Pass
		Diagonal	L2 1/2x2 1/2x3/16	100	-7079.96	14994.70	47.2	Pass
T6	200 - 180	Leg	P8x.322	117	-286645.00	357982.00	80.1	Pass
		Diagonal	L2 1/2x2 1/2x3/16	121	-7024.08	12004.30	58.5	Pass
T7	180 - 160	Leg	P8x.322	138	-324696.00	357982.00	90.7	Pass
		Diagonal	L2 1/2x2 1/2x3/16	142	-7101.77	9765.99	72.7	Pass
T8	160 - 140	Leg	P10x.365	159	-360757.00	517579.00	69.7	Pass
		Diagonal	L2 1/2x2 1/2x3/16	163	-7163.91	8284.32	86.5	Pass
T9	140 - 120	Leg	P10x.365	180	-384674.00	495532.00	77.6	Pass
		Diagonal	L3x3x3/16	184	-5659.49	9525.13	59.4	Pass
T10	120 - 100	Leg	P10x.365	195	-407339.00	495532.00	82.2	Pass
		Diagonal	L3x3x3/16	199	-6052.17	7930.45	76.3	Pass
T11	100 - 80	Leg	P10x.365	210	-431523.00	495532.00	87.1	Pass
		Diagonal	L3 1/2x3 1/2x1/4	214	-7167.35	14036.80	51.1	Pass
T12	80 - 60	Leg	P10x.365	225	-441185.00	525490.00	84.0	Pass
		Diagonal	L3 1/2x3 1/2x1/4	237	-15211.40	19616.20	77.5	Pass
		Horizontal	L3 1/2x3 1/2x1/4	233	-7651.08	9874.22	77.5	Pass
		Redund Horz 1 Bracing	L2x2x3/16	238	-7651.08	9566.97	80.0	Pass
		Redund Diag 1 Bracing	L2 1/2x2 1/2x3/16	258	-5417.28	9497.11	57.0	Pass
T13	60 - 40	Leg	P10x.365	267	-466627.00	525490.00	88.8	Pass
		Diagonal	L3 1/2x3 1/2x1/4	279	-14849.80	17642.90	84.2	Pass
		Horizontal	L3 1/2x3 1/2x1/4	275	-8092.30	8168.21	99.1	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	299	-8092.30	15626.40	51.8	Pass
		Redund Diag 1 Bracing	L2 1/2x2 1/2x3/16	300	-5496.84	8459.08	65.0	Pass
T14	40 - 20	Leg	P10x.365	309	-491659.00	525490.00	93.6	Pass
		Diagonal	L4x4x1/4	321	-14559.20	24016.90	60.6	Pass
		Horizontal	L4x4x1/4	317	-8526.42	10369.90	82.2	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	322	-8526.42	13049.20	65.3	Pass
		Redund Diag 1 Bracing	L2 1/2x2 1/2x3/16	345	-5594.61	7567.78	73.9	Pass
T15	20 - 0	Leg	P10x.365	351	-516993.00	525490.00	98.4	Pass
		Diagonal	L4x4x1/4	363	-14142.10	21716.10	65.1	Pass
		Horizontal	L5x5x5/16	359	-8965.77	21785.00	41.2	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	368	-8965.77	11060.70	81.1	Pass
		Redund Diag 1 Bracing	L2 1/2x2 1/2x3/16	387	-5713.87	6798.36	84.0	Pass

Summary		
Leg (T15)	98.4	Pass
Diagonal (T8)	86.5	Pass
Horizontal (T13)	99.1	Pass
Top Girt (T1)	25.1	Pass
Redund Horz 1 Bracing (T15)	81.1	Pass
Redund Diag 1	84.0	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
						Bracing (T15) **RATING =**	**99.1**	**Pass**

Combined Foundation Design

Order/Quote Number: SO32498
Part Number: 769555
Tower Model: NSX 28' x 290.6'
Company: The Towers, LLC
Site: NS 290.6' - US-KY-5215 / Lovelaceville - Ballard Co., KY

NELLO
1201 South Sheridan St.
South Bend, IN 46619
574-288-3632 (phone)
574-288-5860 (fax)
www.nelloinc.com

Tower Reactions (Factored)

Shear:	70.078	kips
Moment:	12238.209	ft-kips
Weight:	84.057	kips
Leg Compression:	**532.714**	kips
Leg Uplift:	**462.722**	kips
Leg Shear:	**47.500**	kips

Site Details

SoilType:	Sand	
Soil Unit Weight (Backfill):	110	pcf
Allowable Bearing Pressure:	3260	psf
Factor of Safety:	1	
Ultimate Bearing Pressure:	3,260	psf
Bearing Pressure Type:	Net Bearing Pressure	
Angle of Internal Friction:	30	degrees
Cohesion:	0	psf
Sliding Friction Coefficient:	0.45	
Frost Depth (Neglected):	1.67	ft
Min. Bearing Depth:	1.67	ft
Water Depth:	999	ft
Rock Depth:	-	ft
Passive Pressure Coefficient:	3.00	
Active Pressure Coefficient:	0.33	

Design Dimensions

Tower Base Width:	28	ft
Base Leg Diameter (Nominal):	10	in
Base Leg Member:		
Tower Bracing System:		
Pier Extension:	0.5	ft
Pier Diameter:	4	ft
Depth:	7.5	ft
Pad Thickness:	1.75	ft
Pad Width:	36	ft

Tower Offset: ☑ Tower Center is Offset

Eccentricity:	4.04	ft
Distance Between Piers	24.25	ft
Edge 1	4.00	ft
Edge 2	5.88	ft
Edge 3	5.88	ft
Soil Corrosion Risk:		

Foundation Design Reactions

Additional Load Factor:	1.00	
Shear:	70.078	kips
Moment:	12238.209	ft-kips
Weight:	84.057	kips
Compression:	532.714	kips
Uplift:	462.722	kips
Individual Shear:	47.500	kips

Geotechnical Report

Company:	Delta Oaks Group	
Date:	11/1/2024	
Project:	GEO24-23358-08	
Seismic Site Class:	D	TIA-222-H 2-10
Design Response Acc., S_{DS}:	0.940	g
Design Response Acc., S_{D1}:	0.562	g
Seismic Design Category:	D	

Material Specifications

Concrete Unit Weight:	150	pcf
Concrete Strength:	4500	psi
Rebar Yield Strength:	60	ksi
Clear Cover:	3	in
Clear Cover (Top of Pier):	3	in
Clear Cover Tolerance, +/- (Top of Piers):	1	in

Development Length Requirements

Pad Reinforcement Location Factor:	1.0	ACI-318-14 R25.4.2.2	
Pier Reinforcement Location Factor:	1.0	ACI-318-14 R25.4.2.2	
Coating Factor:	1.0	ACI-318-14 R25.4.2.2	
Lightweight Concrete Factor:	1.0	ACI-318-14 R25.4.2.2	
Transverse Reinforcement Index:	0.0 in	ACI-318-14 25.4.2.3	
Pad Development Length Reduction:	☐	No Reduction	ACI-318-14 25.4.10
Compressive Development Length Red:	☑	Yes; Utilize Reduction	ACI-318-14 25.4.10
Tension Development Length Reduction:	☐	No Reduction	ACI-318-14 25.4.10
Pad Ties Development Length Reduction:	☐	No Ties in Pad	ACI-318-14 25.4.10

Maximum Foundation Capacity Rating: **97.8%**

ANSI/TIA-222-H - Design Factors TIA-222-H 9.7

Uplift Resistance Factor, Phi:	0.75
Compressive Resistance Factor, Phi:	0.75
Bearing Capacity Resistance, Phi:	0.75
Lateral Resistance Factor, Phi:	0.75

Summary Check

Minimum Depth: TIA-222-H 9.3	**OK**
Lateral Check:	**OK**
Overturning Check:	**OK**
Maximum Eccentricity Check:	**OK**
Bearing Check:	**OK**
Concrete Strength Check:	**OK**
Max Pad Reinforcement Spacing:	**OK**
Min. Pad Reinforcement Spacing:	**OK**
Pad Constructability Check:	**OK**
Min. Pad Reinforcement Check:	**OK**
Pad Reinforcement Yield Check:	**OK**
Pad Flexural Check:	**OK**
Pad Development Length:	**OK**
One Way Shear Check:	**OK**
Two-Way Shear Check:	**OK**
Vertical Bar Quantity Check:	**OK**
Min/Max Vertical Bar Spacing Check:	**OK**
Pier Constructability Check:	**OK**
Minimum Vertical Reinforcement:	**OK**
Pier Compressive Strength:	**OK**
Pier Reinforcement Stress:	**OK**
Compressive Development in Pier:	**OK**
Compressive Development in Footing:	**OK**
Tensile Development in Pier:	**OK**
Tensile Development in Footing:	**HOOK REQ'D**
Hook Development Length:	**OK**
Space of Hook:	**OK**
Rebar Engaged by Anchors:	**OK**
Plate & Rebar Spacing Check:	**OK**
Anchor Embedment Clearance:	**PIER ONLY**
Anchor Strength Check:	**OK**
Anchor Concrete Punching Check:	**OK**

Weight

Concrete Pad Volume (cubic yd)	Concrete Pier Volume (cubic yd)	Total Concrete Volume (cubic yd)	Concrete Weight (kips)	Soil Volume (cubic yd)	Soil Weight (kips)	Soil Weight Removed (kips)	Total Dead Load (kips)	Total Factored Dead Load (LC:0.9D controls) (kips)
84.00	2.91	92.73	375.54	267.97	795.88	1069.20	1234.46	1117.32
							TIA-222-H 9.4	TIA-222-H 9.4

Lateral Capacity

Minimum Depth Required (ft)	Soil Unit Weight Below GWT (pcf)	Ultimate Passive Pressure @ Depth Neglected (ksf)	@ Top of Footing (ksf)	@ Bottom of Footing (ksf)	@ Top of Pressure Zone (ksf)	@ GWT (ksf)	Average (ksf)	Ultimate Active Pressure @ Top of Footing (ksf)	@ Bottom of Footing (ksf)	@ GWT (ksf)	Average (ksf)
1.67	47.6	0.55	1.90	2.48	1.90	329.67	2.19	0.21	0.28	36.63	0.24
OK											

Effective Pad Thickness (ft)	Effective Pad Area (sq ft)	Nominal Passive Resistance (kips)	Nominal Active Loading (kips)	Nominal Friction Resistance (kips)	Design Lateral Resistance (kips)
1.75	63	137.73	15.30	555.51	508.45
					OK
					13.8%

Overturning TIA-H-222 9.4 TIA-H-222 9.4 TIA-H-222 9.4.1

Weight of Soil Wedge on Back Face (kips)	Moment Resistance From Weight (ft-kips)	Moment Resistance from Soil Wedge (ft-kips)	Moment Resistance from Passive Pressure (ft-kips)	Moment Loading from Active Pressure (ft-kips)	Overturning Moment (ft-kips)	Design Overturning Resistance (ft-kips)	Maximum Eccentricity (LC: 0.9D) (ft)
64.30	19856.96	2407.70	80.34	8.93	13053.62	21716.30	11.7
						OK	**OK**
						60.1%	**72.1%**

Solve for Min. Pressure

Bearing Pressure 0.000 This Cell = 0 when spreadsheet is solved.

Case 1: Entire Mat is in Positive Bearing			Case 2: Back Edge of Mat is Uplifting				Maximum Gross Bearing Pressure (ksf)	Maximum Net Bearing Pressure (ksf)	Width of Bearing Section ft	Net Bearing Pressure at Pier 1 (ksf)	Net Bearing Pressure at Pier 2 (ksf)	Maximum Bearing Pressure (ksf)
Minimum Pressure (ksf)	Maximum Pressure (ksf)	Entire Mat is in Positive Bearing (TRUE/FALSE)	Adjusted Bearing Width (ft)	Minimum Pressure (ksf)	Maximum Pressure (ksf)	Back Edge of Mat is Uplifting (TRUE/FALSE)						
-0.75	2.66	FALSE	21.66	0.00	3.17	TRUE	3.17	2.34	21.66	1.49	0.00	2.34
												OK
												95.8%

Pad Reinforcement Design Flexural Strength Reduction Factor = 0.9 ACI-318-14 21.2.2 ACI-318-14 8.6.1.1

Number of Bars	Bar Size	Bar Length (in)	Bar Diameter (in)	Bar Weight (lb/ft)	Total Bar Weight (lb)	Bar Area (sq in)	Total Bar Area per Layer per Direction (sq in)	Minimum Bar Area Required (sq in)	Ctr-Ctr Spacing (in)	Clear Spacing (in)
49	9	426	1.13	3.40	23657	1.00	49.00	8.16	8.9	7.7
							OK		**OK**	**OK**
									Constructability:	**OK**

ACI-318-14 22.2.2.4.1

Flexural Strength									Required Development Length (in)	Available Development Length (in)
Effective Depth (in)	Effective Width (in)	Compressive Zone Depth (in)	Concrete Strength Factor	Edge Unbraced Length (ft)	Inner Unbraced Length (ft)	Corner Unbraced Length (ft)	Factored Moment (ft-kips)	Design Moment (ft-kips)		
16.87	432.00	1.779	0.83	5.88	20.25	9.26	3447.73	3524.12	30.27	43.51
ACI-318-14 2.3		Yield Check:	OK					OK	ACI-318-14 25.4.2.3a	OK
			ACI-318-14 Table 22.2.2.4.3					97.8%		

ACI-318-14 21.2.1

Concrete Shear Capacity Shear Strength Reduction Factor = 0.75

One-Way Shear					Two-Way Shear				
Effective Shear Depth (ft)	Effective Shear Width (ft)	Factored Shear Force (kips)	Nominal Concrete Shear Strength (kips)	Nominal Rebar Shear Strength (kips)	Design Shear Strength (kips)	Shear Perimeter (ft)	Factored Shear Force (kips)	Nominal Concrete Shear Strength (kips)	Nominal Rebar Shear Strength (kips)	Design Shear Strength (kips)
1.36	36.00	212.15	945.19	0.00	708.90	14.08	499.10	739.59	0.00	554.69
ACI-318-14 2.3			ACI -318-14 22.5.5.1	ACI -318-14 22.5.1.1	OK			ACI-318-14 22.6.5.2	ACI-318-14 22.6.1.2	OK
					29.9%	ACI-318-14 22.6.4.1				90.0%
					ACI-318-14 22.5.1.1					ACI-318-14 22.6.1.3

Tie Reinforcement Design

Number of Bars	Bar Size	Bar Diameter (in)	Bar Weight (lb/ft)	Total Bar Weight (lb)	Bar Area (sq in)	Min. Seismic Hook Extension (in)	Total Length (in)	Zone	Maximum Tie Spacing (in)	Zone Distance (in)	Number of Tie Spaces	Actual Tie Spacing (in)	Number of Ties per Zone
14	4	0.50	0.67	115	0.20	3.0	147.9	End	5	5	1	5	2
								Top	0	0	0	0	0
								Middle	6	67	12	5 9/16	12
								Pad	N/A	N/A	N/A	N/A	N/A
						6.0	overlap (min)						
						ACI-318-14 2.3							

Shear (Compression) **Shear (Uplift)**

Factored Axial Force N_u (lb)	Distance to Tension Reinf. d (in)	Ratio of A_s to $b_w d$ ρ_w	Concrete Weight W_c (lb)	Pier Gross Area A_g (in^2)	Nom. Strength Concrete V_c (kip)	Minimum Bar Area A_{vmin} (in^2)	Total Bar Area A_v (in^2)	Nom. Strength Reinforcement V_s (kip)	Des. Shear Strength ϕV_n (kip)	Factored Axial Force N_u (lb)	Nom. Shear Concrete V_c (kip)	Des. Shear Strength ϕV_n (kip)
532871	38.400	0.009	157.080	1809.557	283.702	0.000	0.400	307.200	443.176	**532557**	101.734	306.701
	ACI-318-14 22.5.2.2 ACI-318-14 2.2				ACI-318-14 22.5.6.1	OK	OK	ACI-318-14 22.5.10.5.3	OK		ACI-318-14 22.5.7.1	OK
							ACI-318-14 22.5.10.6		10.7%			15.5%
						ACI-318-14 18.12.7.6			ACI-318-14 22.9.3.1			ACI-318-14 22.9.3.1

Splice Length - Ties

Bar Size	Reinf. Location Factor, α	Coating Factor, β	Reinf. Size Factor, γ	Lightwt. Aggregate Factor, λ	Spacing or Cover, c (in)	Transverse Reinf. Index, K_{tr}	Development Length ℓ_d (in)	Splice Length Tolerance (in)	Splice Length 1.3 * ℓ_d (in)
4	1.0	1.0	0.8	1.0	2.78	0.0	12.0	1.0	18.0
	ACI-318-14 25.4.2.4	CI-318-14 Table 25.4.2	ACI-318-14 Table 25.4.2.4	CI-318-14 Table 25.4.2.4		ACI-318-14 25.4.2.3b	ACI-318-14 Table 25.4.2.2		ACI-318-14 Table 25.5.2.1

Pier Vertical Reinforcement Design

Number of Bars	Bar Size	Bar Diameter (in)	Hook Bend Radius (in)	Hook Extension Length (in)	90 degree Std. Hook Length (in)	Bar Length (in)	Bar Area (sq in)	Pier Gross Area (sq in)	Total Bar Area (sq in)	Minimum Bar Area Required (sq in)	Ctr-Ctr Spacing (in)	Clear Spacing (in)
21	8	1.00	3.00	12.00	15.00	102.00	0.79	1809.56	16.59	9.05	6.0	5.0
OK			ACI 318-14 Table 25.3.1	ACI 318-14 Table 25.3.1	ACI 318-14 Table 25.3.1					OK		OK
										TIA-222-H 9.4.1	Constructability:	OK
												ACI-318-14 25.2.3

Development Length - Vertical Pier Reinforcement TIA-222-H 9.4.1

Compressive Development				Tension Development			Basic Development Length (in)	Concrete Cover Factor	Required Development Length (in)	Development Length Available (in)
Required Length (in)	Required Length Adj. (in)	Available in Pier (in)	Available in Footing (in)	Required Length (in)	Available in Pier (in)	Available in Footing (in)				
18.00	8.00	72.00	15.74	26.83	72.00	15.74	17.89	0.7	12.5	15.74
ACI-318-14 25.4.9.2	ACI-318-14 22.4.3.b	OK	OK	ACI-318-14 25.4.2.3.a	OK	HOOK REQ'D	ACI-318-14 25.4.3.1	ACI-318-14 Table 25.4.3.2	ACI-318-14 25.4.3.1	OK
	ACI-318-14 25.3.1									

Hook Development Length

Space for Hook

Hook Orientation	Space Available for Hook (in)	Space Required for Hook (in)
Hooks Extend Outward	24.50	15.0
ACI-318-14 18.13.2.2		OK

Pier Axial Strength - Compression and Tension

Reinforcement Stress

Pier Gross Area (in^2)	Nominal Compressive Strength (kip)	Compressive Strength Reduction Factor	Design Compressive Strength (kip)	Nominal Tensile Strength (kip)	Tensile Strength Reduction Factor	Design Tensile Strength (kip)	Diameter of Reinforcement Circle (in)	Equivalent Pipe Outer Diameter (in)	Equivalent Pipe Inner Diameter (in)	Equivalent Pipe Thickness (in)	Equivalent Pipe Section Modulus (in ^ 3)	Reinforcement Stress (ksi)	Design Stress (ksi)
1809.56	7853.50	0.65	4083.82	995.40	0.90	895.86	40.00	40.13	39.87	0.264	165.4	49.44	54
	ACI-318-14 22.4.2.2	CI-318-14 Table 21.2	OK	ACI-318-14 22.4.3.1	ACI-318-14 Table 21.2.2	OK							OK
			13.0%			51.7%							91.5%
			ACI-318-14 22.4.2.1										

Anchor Bolt Design

Bolt Threads per Inch	Gross Area (in^2)	Bolt Net Area (in^2)	Ultimate Tensile Stress (ksi)	Bolt Yield Strength (ksi)	Bolt Nominal Tensile Strength (kip)	Nominal Shear Rupture Strength (kip)	Nominal Compression Yield Strength (kip)	Nominal Shear Yield Strength (kip)	Anchor Bolt Interaction Equation	Embedment Depth of Anchor (in)	Pier Allowable Embedment Depth (in)	Footing Embedment Top Limit (in)	Footing Embedment Bot. Limit (in)
8	0.785	0.606	125	105	75.718	49.087	63.603	19.081	0.900	54.500	75.000	82.256	88.744
		TIA-222-H 4.9.6.1			TIA-222-H 4.9.9	TIA-222-H 4.9.9	TIA-222-H 4.9.9	TIA-222-H 4.9.9	OK		PIER ONLY		
									TIA-222-H 4.9.9				

Anchor Bolts and Embedment Plate

Anchor Bolt PN	Number of Bolts	Bolt Diameter (in)	Bolt Length (in)	Length Protruding From Concrete			Plate PN	Plate O.D. or Width (in)	Plate Thickness (in)	Bolt Circle Diameter (in)	Rebar Engaged by Bolts (in)	Length Required (in)	Gap Btwn Rebar & Plate (in)
				Specified (in)	Tolerance Above (in)	Tolerance Below (in)							
102970	10	1.00	60	5.75	0.1875	-0.25	139914	16.75	0.5	14.25	35.19	26.83	11.13
	Std. Pattern										OK	ACI-318-14 25.4.2.3.	OK

Notes

- Foundation design is based on the Geotechnical Report dated 11/01/2024, by Delta Oaks Group; Project No. GEO24-23358-08.

- Groundwater was not encountered during the geotechnical investigation.

- This mat design assumes an ultimate bearing capacity of 3260 psf (allowable bearing capacity of 3260 psf) based on the geotechnical report. The bearing surface shall be inspected prior to concrete placement.

- During placement, concrete shall be suitably consolidated. Proper curing methods shall be used directly following concrete placement as established by the contractor. Concrete shall develop a minimum compressive strength of 3000 psi prior to backfill and compaction operations, and backfill shall be compacted to a minimum moist unit weight of 110 pcf.

Combined (MAT) Foundation Design Summary

Max. Foundation Capacity Rating:	97.8%

FOUNDATION DIMENSIONS		
Tower Width:	28	ft
Pier Extension:	0.5	ft
Depth:	7.5	ft
Pad Width:	36	ft
Pad Thickness:	1.75	ft
Pier Diameter:	4	ft
Clear Cover:	3	in
Volume:	92.8	yd^3

MAT REINFORCEMENT		
Bar Size:	9	
Bar Length:	426	in
Bar Center to Center Spacing:	8.9	in
Quantity per Layer per Direction:	49	
Total Quantity:	196	
Weight per Bar:	120.7	lbs
Total Weight:	23657	lbs

PIER REINFORCEMENT		
Bar Size:	8	
Bar Length:	102	in
Bend Radius:	3	in
Standard Hook Length:	15	in
Hook Orientation:	Hooks Extend Outward	
Bar Center to Center Spacing:	6.0	in
Quantity per Pier:	21	
Total Quantity:	63	
Weight per Pier:	477	lbs
Total Weight:	1430	lbs

TIE REINFORCEMENT		
Bar Size:	4	
Bar Length:	148	in
Circular Tie Outer Diameter:	42	in
Overlap:	6	in
Tie Termination Type:	3" Seismic Hooks	
Quantity of Ties in Pad:	N/A	
Quantity per Pier:	14	
Bar Center to Center Spacing:	5.6	in
Total Quantity:	42	
Weight per Pier:	115	lbs
Total Weight:	345	lbs

TOWER REACTIONS		
Tower Shear:	70.1	kip
Tower Moment:	12238.2	ft-kip
Tower Weight:	84.1	kip
Leg Compression:	532.7	kip
Leg Uplift:	462.7	kip
Leg Shear:	47.5	kip

MATERIAL SPECIFICATIONS		
Concrete Strength:	4500	psi
Concrete Weight:	150	pcf
Soil Strength (Ultimate Bearing):	3,260	psf
Rebar Yield Strength:	60	ksi

ANCHORING DETAILS		
Anchor P/N:	102970	
Anchor Diameter:	1	in
Anchor Length:	60	in
Anchor Quantity per Leg:	10	
	Std. Pattern	
Anchor Projection:	5.75	in
	+ 0.1875"	-0.25"
Bolt Circle Diameter:	14.25	in
Template P/N	139914	

STRUCTURAL FILL CRITERIA		
Loose Lift Thickness:	8	in
Percent Compaction:	98%	
ASTM Standard:	D698	
Optimum Moisture Content	2%	
Tolerance:	-2%	

BACKFILL CRITERIA (NON-STRUCTURAL)		
Loose Lift Thickness:	8	in
Percent Compaction:	95%	
ASTM Standard:	D698	
Optimum Moisture Content	2%	
Tolerance:	-2%	

ECO #:		

ADDITIONAL NOTES

- Foundation design is based on the Geotechnical Report dated 11/01/2024, by Delta Oaks Group; Project No. GEO24-23358-08.

- Groundwater was not encountered during the geotechnical investigation.

- This mat design assumes an ultimate bearing capacity of 3260 psf (allowable bearing capacity of 3260 psf) based on the geotechnical report. The bearing surface shall be inspected prior to concrete placement.

- During placement, concrete shall be suitably consolidated. Proper curing methods shall be used directly following concrete placement as established by the contractor. Concrete shall develop a minimum compressive strength of 3000 psi prior to backfill and compaction operations, and backfill shall be compacted to a minimum moist unit weight of 110 pcf.

This is a beta release of the new ATC Hazards by Location website. Please contact us with feedback.

The ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Hazards by Location

Search Information

Coordinates: 37.004878, -88.851298

Elevation: 492 ft

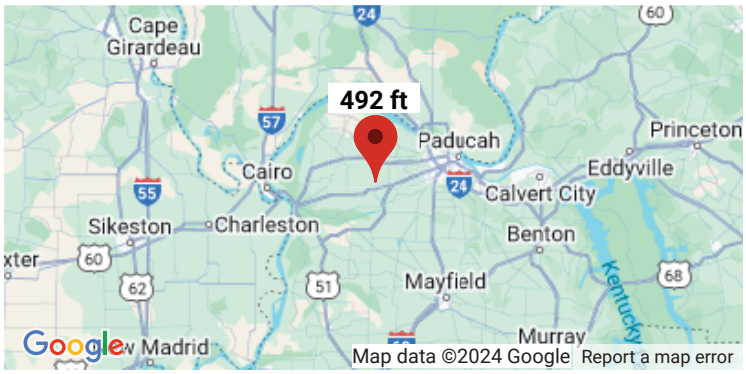
Timestamp: 2024-11-21T13:59:49.725Z

Hazard Type: Seismic

Reference Document: ASCE7-16

Risk Category: II

Site Class: D



Basic Parameters

Name	Value	Description
S_S	1.41	MCE_R ground motion (period=0.2s)
S_1	0.458	MCE_R ground motion (period=1.0s)
S_{MS}	1.41	Site-modified spectral acceleration value
S_{M1}	* null	Site-modified spectral acceleration value
S_{DS}	0.94	Numeric seismic design value at 0.2s SA
S_{D1}	* null	Numeric seismic design value at 1.0s SA

* See Section 11.4.8

Additional Information

Name	Value	Description
SDC	* null	Seismic design category
F_a	1	Site amplification factor at 0.2s
F_v	* null	Site amplification factor at 1.0s
CR_S	0.858	Coefficient of risk (0.2s)
CR_1	0.868	Coefficient of risk (1.0s)
PGA	0.88	MCE_G peak ground acceleration
F_{PGA}	1.1	Site amplification factor at PGA
PGA_M	0.968	Site modified peak ground acceleration
T_L	12	Long-period transition period (s)

SsRT	1.41	Probabilistic risk-targeted ground motion (0.2s)
SsUH	1.643	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	2.943	Factored deterministic acceleration value (0.2s)
S1RT	0.458	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.528	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.899	Factored deterministic acceleration value (1.0s)
PGAd	1.585	Factored deterministic acceleration value (PGA)

* See Section 11.4.8

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Please note that the ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

TOWER SEISMIC ANALYSIS

EARTHQUAKE LOADING

ANSI/TIA-222-H / SEI/ASCE 7

Tower Parameters

Tower Type:	Latticed Self-Support		
Structure Class:	II		
Seismic Site Class:	D		
Height of Structure:	H = 290.0	ft	
Design Base Shear Due to Wind:	V_w = 70.078	kips	
Design Base Moment Due to Wind:	M_w = 12238.21	kip-ft	
Total Weight of Structure:	W = 69.724	kips	
Height to Level under Consideration:	H_z =	ft	
Weight of Level under Consideration:	W_z = 0.000	kips	
Spectral Response Acceleration at Short Periods (0.2-Second) - Mapped:	S_S = 1.410	141% g	
Spectral Response Acceleration at 1-Second Periods - Mapped:	S_1 = 0.458	45.8% g	

Latticed Self-Support Parameters

Base Face Width of Structure:	w_o = 28	ft	
Top Face Width of Structure:	w_t = 5	ft	
Length of Straight Section:	L_s = 30	ft	
N/A	I_{bot} =	in^4	
N/A	I_{top} =	in^4	
N/A	n_g =		
N/A	N_i =		
N/A	G_r =	ft	

Steel Guy Cables [None]

Guy Level i (Elevation) (ft)	Guy Diameter (in)	Average Chord Length @ Level i (ft)	Initial Tension (%)

Guy Level i (ft)	Wires per Strand	Guy Tensile Area (in^2)	Tension (lbs)

Guy Level i (ft)	Guy Weight (lbs)	Equivalent Guy Stiffness
Total:	0.00	0.00000

Table of Weights

	Level i [Elevation] (ft)	Structure Weight (lbs)	Transmission[Feed] Line Weight (lbs)	Microwave Dish Weight (lbs)	Appurtenance Weight (lbs)	Total Weight (lbs)
1	10.0	5675.8	719.2			6395.0
2	20.0					
3	30.0	5196.5	719.2			5915.7
4	40.0					
5	50.0	4814.5	719.2			5533.7
6	60.0					
7	70.0	4641.1	719.2			5360.3
8	80.0					
9	90.0	4309.0	719.2			5028.2
10	100.0					
11	110.0	3644.7	719.2			4363.9
12	120.0					
13	130.0	3561.7	719.2			4280.9
14	140.0					
15	150.0	3578.4	719.2			4297.6
16	160.0					
17	170.0	2709.3	719.2			3428.5
18	180.0					
19	190.0	2631.4	719.2			3350.6
20	200.0					
21	210.0	2556.9	719.2			3276.1
22	220.0					
23	230.0	1729.4	719.2			2654.6
24	240.0			206.0		
25	250.0	1298.4	698.8			1997.2
26	260.0					
27	270.0	954.7	482.3		3536.0	8509.0
28	280.0				3536.0	
29	290.0	289.7	78.8		4964.0	5332.5
30						
	Total (lbs):	47591.5 +	9890.32 +	206 +	12036 =	69,723.8

~ Earthquake Effects May Be Ignored ~

> Use Seismic Analysis Procedure Method 2

Computed Earthquake Design Data

Importance Factor:	I = 1.00	
Steel Modulus of Elasticity:	E = 29000	ksi
Acceleration Due to Gravity:	g = 32.174	ft/s^2
Number of Tower Levels (10' Sections):	n = 29	
Weight for Fundamental Frequencies:	W_1 = 31.305	kips
Weight within Top 5% of Structure:	W_2 = 9.034	kips
Average Face Width of Structure:	w_a = 15.310	ft
Number of Levels@ Top Third of Tower:	n_u =	
Weight of Apprt. @ Top Third of Tower:	W_u =	kips
Weight of Structure Excluding App.:	W_L =	kips
Average Moment of Inertia of Pole:	I_{avg} =	in^4
Equivalent Stiffness of Guy Cables:	K_g =	
Fundamental Frequency of Structure:	f_1 = 0.728	Hertz

Response Modification Coefficient:	R = 3.0
Acceleration-Based Site Coefficient at Short Periods (0.2-Second):	F_a = 1.000
Design Spectral Response Acceleration at Short Periods (0.2-Second):	S_{DS} = 0.940
Velocity-Based Site Coefficient for a 1-Second Period:	F_v = 1.842
Design Spectral Response Acceleration for a 1-Second Period:	S_{D1} = 0.562
Natural Frequency Conversion Factor for Guyed Masts:	C_g =
Simplified Natural Frequency Conversion Factor for Guyed Masts:	K_m =
Coefficient for Fundamental Frequencies of Latticed Self-Supports:	K_s = 4540

Seismic Analysis Results: Induced Earthquake Loading

Distribution of Seismic Forces (lbs)

20 ft	Eh1 = 234.8	268579
40 ft	Eh2 = 294.2	lbs
60 ft	Eh3 = 314.7	lbs
80 ft	Eh4 = 342.0	lbs
100 ft	Eh5 = 351.0	lbs
120 ft	Eh6 = 309.0	lbs
140 ft	Eh7 = 268.2	lbs
160 ft	Eh8 = 195.7	lbs
180 ft	Eh9 = 97.5	lbs
200 ft	Eh10 = 97.5	lbs
220 ft	Eh11 = 219.4	lbs
240 ft	Eh12 = 413.2	lbs
260 ft	Eh13 = 603.1	lbs
280 ft	Eh14 = 4329.5	lbs
290 ft	Eh15 = 3388.6	lbs

Equivalent Lateral Force Procedure (Method 1)

Seismic Force Distribution Exponent:	k_e = 1.795	
Lateral Seismic Force @ ft:	F_{SZ} = 0.000	kips
Total Seismic Shear at Base:	**V_S = 9.517**	**kips**
Seismic Overturning Moment:	**M_S =**	**kip-ft**

~ PERMITTED ~

<<<<<<<

Equivalent Modal Analysis Procedure (Method 2)

Modal Acceleration Coefficient:	a = 0.000	
Modal Acceleration Coefficient:	b = 0.000	
Modal Acceleration Coefficient:	c = 0.000	
Design Spectral Response Acceleration:	S_A = 0.409	
Acceleration Coefficient at height z:	S_{az} = 0.000	
Lateral Seismic Force @ ft:	F_{SZ} = 0.000	kips
Total Seismic Shear at Base:	**V_S = 11.458**	**kips**
Seismic Overturning Moment:	**M_S = 2739.98**	**kip-ft**

Corporate Headquarters
1201 South Sheridan St.
South Bend, IN 46619
Phone: (800) 806-3556
Fax: 574-288-5860
www.nelloinc.com

Date:	11/21/2024
Engineer:	KYW
SO#:	32498
Client:	The Towers, LLC
Project:	NS 290.6' - US-KY-5215 / Lovelaceville - Ballard Co., KY
Site Address:	KY Highway 286, Kevil, KY 42053
Coordinates:	Latitude: 37.004878 Longitude: -88.851298

TOWER SEISMIC ANALYSIS - RESULTS SUMMARY

ANSI/TIA-222-H / SEI/ASCE 7

Equivalent Modal Analysis Procedure

Tower Type / Seismic Force Resisting System:		Latticed Self-Support	
Construction Type:		Type IIB	
Use Group:		Group U	
Risk (Occupancy) Category:		II	
Seismic Site Class:		D	
Seismic Design Category:		D	
Structure Class:		II	
Height of Structure:	H =	290.0	ft
Design Base Shear Due to Wind:	V_w =	70.078	kips
Design Base Moment Due to Wind:	M_w =	12238.21	kip-ft
Total Weight of Structure:	W =	69.724	kips
Importance Factor:	I =	1.00	
Mapped Spectral Response Acceleration at Short Periods (0.2-Second):	S_S =	1.410	
		141% g	
Mapped Spectral Response Acceleration at 1-Second Periods:	S_1 =	0.458	
		45.8% g	
Response Modification Coefficient:	R =	3.0	
Design Spectral Response Acceleration at Short Periods (0.2-Second):	S_{DS} =	0.940	
Design Spectral Response Acceleration for a 1-Second Period:	S_{D1} =	0.562	
Total Axial Load at Base:	**P_S =**	**83.669**	**kips**
Total Seismic Shear at Base:	**V_S =**	**11.458**	**kips**
Seismic Shear Check:		**OK**	
TNX: Total Seismic Shear at Base:	**V_S =**		**kips**
TNX Full Structural Analysis Seismic Check:		**OK**	
Seismic Overturning Moment at Base:	**M_S =**	**2739.98**	**kip-ft**
Seismic OTM Check:		**OK**	

RESULT: **- WIND is the Controlling Load Case for Structural Design**
- Tower is adequately designed to resist lateral seismic forces

~ Earthquake Effects May Be Ignored ~

Full Structural Analysis is NOT required per TIA-222-H 2.7.3

EXHIBIT D
COMPETING UTILITIES, CORPORATIONS, OR PERSONS LIST

Navigation | Reports | PSC Home

KY Public Service Commission

Master Utility Search

- Search for the utility of interest by using any single or combination of criteria.
- Enter Partial names to return the closest match for Utility Name and Address/City/Contact entries.

Utility ID	Utility Name	Address/City/Contact	Utility Type	Status
				Activ

Search

	Utility ID	Utility Name	Utility Type	Class	City	State
View	4002000	1GLOBAL Operations (US) Inc.	Cellular	D	Durham	NC
View	4111300	2600Hz, Inc. dba ZSWITCH	Cellular	D	Henderson	NV
View	4115150	ACN Communication Services, LLC dba Flash Wireless dba Flash Mobile	Cellular	D	Concord	
View	4113600	AFNET, LLC	Cellular	D	Alpharetta	GA
View	4108300	Air Voice Wireless, LLC d/b/a AirTalk Wireless	Cellular	A	Houston	TX
View	4115200	Airespring, Inc.	Cellular	C	Clearwater	FL
View	4111900	ALLNETAIR, INC.	Cellular	D	West Palm Beach	FL
View	44451184	Alltel Corporation d/b/a Verizon Wireless	Cellular	A	Lisle	IL
View	4110850	AltaWorx, LLC	Cellular	D	Fairhope	AL
View	4107800	American Broadband and Telecommunications Company	Cellular	D	Toledo	OH

View	4108650	AmeriMex Communications Corp.	Cellular	A	Safety Harbor	FL
View	4105100	AmeriVision Communications, Inc. d/b/a Affinity 4	Cellular	D	Virginia Beach	VA
View	4114250	Approved Contact LLC	Cellular	D	Reno	NV
View	4115050	Aquarius Silver LLC	Cellular	C	Sheridan	WY
View	4105700	Assurance Wireless USA, L.P.	Cellular	D	Atlanta	GA
View	4114150	Atlantic Mobile US LLC d/b/a Angel Mobile	Cellular	D	Wilmington	DE
View	4113100	BARK TECHNOLOGIES, INC.	Cellular	D	Charlotte	NC
View	4108600	BCN Telecom, Inc.	Cellular	D	Morristown	NJ
View	4106000	Best Buy Health, Inc. d/b/a GreatCall d/b/a Jitterbug	Cellular	A	San Diego	CA
View	4111050	BlueBird Communications, LLC	Cellular	D	New York	NY
View	4107600	Boomerang Wireless, LLC	Cellular	A	Dallas	TX
View	4115500	CALL CENTERS INDIA INCORPORATED d/b/a Blueconnects	Cellular		Seattle	WA
View	4100700	Cellco Partnership dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
View	4106600	Cintex Wireless, LLC	Cellular	D	Houston	TX
View	4112900	Clear Mobile, LLC	Cellular	D	Tulsa	OK
View	4114550	Cliq Communications LLC d/b/a Cliq Mobile	Cellular	D	Coral Gables	FL
View	4111150	Comcast OTR1, LLC	Cellular	A	Phoeniexville	PA
View	4113550	Comlink Total Solutions Corp	Cellular	D	Fort Myers	FL
View	4101900	Consumer Cellular, Incorporated	Cellular	A	Portland	OR
View	4112700	Cox Wireless, LLC	Cellular	D	Atlanta	GA
View	4108850	Cricket Wireless, LLC	Cellular	A	San Antonio	TX
View	4111500	CSC Wireless, LLC d/b/a Altice Wireless	Cellular	B	Long Island City	NY

View	4114000	Daywalker Mobile Inc.	Cellular	D	Bartlesville	OK
View	4112000	DISH Wireless L.L.C.	Cellular	A	Englewood	CO
View	4111200	Dynalink Communications, Inc.	Cellular	C	Brooklyn	NY
View	4111800	Earthlink, LLC	Cellular	B	Atlanta	GA
View	4101000	East Kentucky Network, LLC dba Appalachian Wireless	Cellular	A	Ivel	KY
View	4002300	Easy Telephone Service Company dba Easy Wireless	Cellular	D	Ocala	FL
View	4113250	Elevate Platforms, LLC	Cellular	D	Nashville	TN
View	4109500	Enhanced Communications Group, LLC	Cellular	D	Bartlesville	OK
View	4113800	EVOLVE WIRELESS LLC	Cellular	D	Maumee	OH
View	4110450	Excellus Communications, LLC	Cellular	D	Harrisburg	SD
View	4112400	Excess Telecom Inc.	Cellular	D	Beverly Hills	CA
View	4104800	France Telecom Corporate Solutions L.L.C.	Cellular	D	Herndon	VA
View	4111750	Gabb Wireless, Inc.	Cellular	A	Lehi	UT
View	4109350	Global Connection Inc. of America	Cellular	D	Miami	FL
View	4102200	Globalstar USA, LLC	Cellular	C	Covington	LA
View	4112850	GO TECHNOLOGY MANAGEMENT, LLC	Cellular	D	Atlanta	GA
View	4109600	Google North America Inc.	Cellular	A	Mountain View	CA
View	4113500	GR8 CONNECT Corp.	Cellular	C	Brooklyn	NY
View	33350363	Granite Telecommunications, LLC	Cellular	D	Quincy	MA
View	4114300	Group F Consulting, LLC	Cellular	D		
View	4114050	Helix Wireless Inc.	Cellular	D	Monmouth Junction	NJ
View	4111350	HELLO MOBILE TELECOM LLC	Cellular	D	Dania Beach	FL
View	4112950	Hoop Wireless, LLC	Cellular	D	Lakewood	NJ

View	4103100	i-Wireless, LLC	Cellular	C	Newport	KY
View	4112550	IDT Domestic Telecom, Inc.	Cellular	D	Newark	NJ
View	4109800	IM Telecom, LLC d/b/a Infiniti Mobile	Cellular	D	Plano	TX
View	4112650	Insight Mobile, Inc.	Cellular	D	Los Angeles	CA
View	4115300	Interactivetel LLC	Cellular	C	Houston	TX
View	4111950	J Rhodes Enterprises LLC	Cellular	D	Gulf Breeze	FL
View	22215360	KDDI America, Inc.	Cellular	D	Staten Island	NY
View	10872	Kentucky RSA #1 Partnership	Cellular	A	Basking Ridge	NJ
View	4112200	Lexvor Inc.	Cellular	D	Irvine	CA
View	4111250	Liberty Mobile Wireless, LLC	Cellular	B	Sunny Isles Beach	FL
View	4114900	Liberty Wireless, LLC	Cellular	C	Rockville	MD
View	4114750	Link Mobile, Inc.	Cellular	C	New York	NY
View	4111400	Locus Telecommunications, LLC	Cellular	D	Fort Lee	NJ
View	4114500	Lux Mobile USA, Inc	Cellular	D	Baton Rouge	LA
View	4107300	Lycamobile USA, Inc.	Cellular	D	Newark	NJ
View	4112500	Marconi Wireless Holdings, LLC	Cellular	B	Westlake Village	CA
View	4113850	MAXSIP TEL KENTUCKY LLC d/b/a Maxsip Telecom	Cellular	D	Woodmere	NY
View	4114800	Mediacom Wireless LLC	Cellular	C	Mediacom Park	NY
View	4108800	MetroPCS Michigan, LLC	Cellular	A	Bellevue	WA
View	4111700	Mint Mobile, LLC	Cellular	A	Costa Mesa	CA
View	4111850	Mobi, Inc.	Cellular	D	Honolulu	HI
View	4115100	Mobile 13, Inc	Cellular	C	South Jordan	UT
View	4114100	MVNO Connect LLC	Cellular	D	St. Petersburg	FL
View	4113350	NatWireless, LLC	Cellular	D	Houston	TX
View	4202400	New Cingular Wireless PCS, LLC	Cellular	A	San Antonio	TX
View	4110700	Norcell, LLC	Cellular	D	Clayton	WA
View	4113700	Nova Labs, Inc. dba Helium Mobile	Cellular	D	Las Vegas	NV
View	4110750	Onvoy Spectrum, LLC	Cellular	D	Chicago	IL

View	4114950	Panda Mobile LLC	Cellular	C	Sparks	NV
View	4109050	Patriot Mobile LLC	Cellular	B	Grapevine	TX
View	4115600	PHREELI COMPANY	Cellular	C	Lewes	DE
View	4110250	Plintron Technologies USA LLC	Cellular	D	Bellevue	WA
View	4115650	PLUG MOBILE LLC	Cellular	C	St. Louis	MO
View	33351182	PNG Telecommunications, Inc. dba PowerNet Global Communications	Cellular	D	Cincinnati	OH
View	4114850	POWER MOBILE LLC	Cellular	C	Rockville Centre	NY
View	4112800	Prepaid Wireless Group, LLC dba Prepaid Wireless Wholesale	Cellular	D	Rockville	MD
View	4115550	Prepaid Wireless Wholesale of Maryland, LLC	Cellular	C	Rockville	MD
View	4114350	PRESTO WIRELESS Corp.	Cellular	D	Fair Lawn	NJ
View	4115000	Prosper Wireless LLC	Cellular	D	Sherman Oaks	CA
View	4107700	Puretalk Holdings, Inc.	Cellular	A	Covington	GA
View	4106700	Q Link Wireless, LLC	Cellular	A	Dania	FL
View	4108700	Ready Wireless, LLC	Cellular	D	Cedar Rapids	IA
View	4113200	Red Pocket Inc.	Cellular	D	Thousand Oaks	CA
View	4114200	Roccstar Wireless LLC	Cellular	D	Bedford	TX
View	4114700	Rocket Mobile LLC	Cellular	C	West Palm Beach	FL
View	4115400	RSCU Mobile, LLC	Cellular	C	Alpine	UT
View	4106200	Rural Cellular Corporation	Cellular	A	Basking Ridge	NJ
View	4108550	Sage Telecom Communications, LLC dba TruConnect	Cellular	A	Los Angeles	CA
View	4113050	Sarver Corporation	Cellular	D	Rancho Cucamonga	CA
View	4109150	SelecTel, Inc. d/b/a SelecTel Wireless	Cellular	A	Fremont	NE
View	4110150	Spectrotel of the South LLC dba	Cellular	D	Neptune	NJ

		Touch Base Communications				
View	4111450	Spectrum Mobile, LLC	Cellular	A	St. Louis	MO
View	4114400	Splash Cellular Inc.	Cellular	D	Bountiful	UT
View	4111600	STX Group LLC dba Twigby	Cellular	D	Murfreesboro	TN
View	4115450	Surf Telecom, LLC	Cellular	C	Key Bixcayne	FL
View	4113450	Syntegra North America, LLC	Cellular	D	Denton	TX
View	4202200	T-Mobile Central, LLC dba T-Mobile	Cellular	A	Bellevue	WA
View	4002500	TAG Mobility, LLC d/b/a TAG Mobile	Cellular	D	Plano	TX
View	4107200	Telefonica Global Solutions USA, Inc.	Cellular	D	Miami	FL
View	4112100	Tello LLC	Cellular	A	Atlanta	GA
View	4108900	Telrite Corporation	Cellular	D	Covington	GA
View	4108450	Tempo Telecom, LLC	Cellular	D	Dallas	TX
View	4113900	TERRACOM Inc. d/b/a Maxsip Tel	Cellular	D	Chattanooga	TN
View	4113950	THE LIGHT PHONE INC.	Cellular	D	Brooklyn	NY
View	4110400	Torch Wireless Corp.	Cellular	C	Bartlett	TN
View	4103300	Touchtone Communications, Inc.	Cellular	D	Cedar Knolls	NJ
View	4104200	TracFone Wireless, Inc.	Cellular	D	Miami	FL
View	4115350	TREK CELLULAR, LLC	Cellular	C	Stevensville	MD
View	4112250	TROOMI WIRELESS, Inc.	Cellular	D	Orem	UT
View	4114600	TruConnect Communications, Inc.	Cellular	D	Los Angeles	CA
View	4112600	Tube Incorporated dba Reach Mobile	Cellular	D	Atlanta	GA
View	4112750	Unity Wireless, Inc.	Cellular	D	Pembroke Pines	FL
View	4110300	UVNV, Inc. d/b/a Mint Mobile	Cellular	C	Costa Mesa	CA
View	10630	Verizon Americas LLC dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
View	4113300	Via Wireless, LLC	Cellular	D	Houston	TX

View	4110800	Visible Service LLC	Cellular	D	Basking Ridge	NJ
View	4113750	VOLT MOBILE Inc	Cellular	D	Delray Beach	FL
View	4114450	WeIncentivize LLC d/b/a ChosenWireless	Cellular	D	San Diego	CA
View	4113000	Whoop Connect Inc.	Cellular	D	Melbourne	FL
View	4115250	WHOOP MOBILE INC.	Cellular	C	Melbourne	FL
View	4106500	WiMacTel, Inc.	Cellular	D	Calgary, AB	CA
View	4110950	Wing Tel Inc.	Cellular	D	New York	NY
View	4113400	Wrazzle, Inc.	Cellular	D	New Milford	CT
View	4113650	XCHANGE TELECOM LLC	Cellular	D	Brooklyn	NY
View	4112150	Zefcom, LLC	Cellular	C	Wichita Falls	TX

EXHIBIT E
FAA

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

Aeronautical Study No.
2024-ASO-12391-OE

Issued Date: 08/26/2024

Julie Heffernan
The Towers, LLC
7500 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-5215 - Lovelaceville
Location:	Kevil, KY
Latitude:	37-00-17.56N NAD 83
Longitude:	88-51-04.67W
Heights:	491 feet site elevation (SE)
	300 feet above ground level (AGL)
	791 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:

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

See attachment for additional condition(s) or information.
This determination expires on 02/26/2026 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 (817) 222-5928, or chris.smith@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASO-12391-OE.

Signature Control No: 624387199-631113141 (DNE)
Chris Smith
Specialist

Attachment(s)
Additional Information
Frequency Data
Map(s)

cc: FCC

FAA facilities, CNG VOR, critical to aviation safety are located 0.72 NM from your proposed transmitter site. There is no objection provided the proponent contacts the FAA NASHVILLE B SSC at the following phone number: 615-695-4601 and performs an on/off test, prior to the transmission of their frequencies, in order to verify that no FAA facilities have been adversely impacted. Frequency Management is not anticipating any adverse effects; however, if some issues do occur, it would be the proponent's responsibility to mitigate them. During the mitigation process, depending on its impact on FAA services, the offending equipment will be required to be shut down until verification has been made that any adverse effects have been resolved

Part 77 authorizes the FAA to evaluate a structure or object's potential electromagnetic effects on air navigation, communication facilities, and other surveillance systems. It also authorizes study of impact on arrival, departure, and en route procedures for aircraft operating under visual or instrument flight rules, as well as the impact on airport traffic capacity at existing public use airports. Broadcast in the 3.7 to 3.98 GHz frequency (5G C band) currently causes errors in certain aircraft radio altimeters and the FAA has determined they cannot be relied upon to perform their intended function when experiencing interference from wireless broadband operations in the 5G C band. The FAA has adopted Airworthiness Directives for all transport and commuter category aircraft equipped with radio altimeters that prohibit certain operations when in the presence of 5G C band.

This determination of no hazard is based upon those mitigations implemented by the FAA and operators of transport and commuter category aircraft, and helicopters operating in the vicinity of your proposed location. It is also based on telecommunication industry and FAA collaboration on acceptable power levels and other parameters as reflected in the FAA 5G C band evaluation process.

The FAA 5G C band compatibility evaluation is a data analytics system used by FAA to evaluate operational hazards related to aircraft design. The FAA 5G C band compatibility evaluation process refers to the process in which the telecommunication companies and the FAA have set parameters, such as power output, locations, frequencies, and tilt angles for antenna that mitigate the hazard to aviation. As the telecommunication companies and FAA refine the tools and methodology, the allowable frequencies and power levels may change in the FAA 5G C band compatibility evaluation process. Therefore, your proposal will not have a substantial adverse effect on the safe and efficient use of the navigable airspace by aircraft provided the equipment and emissions are in compliance with the parameters established through the FAA 5G C band compatibility evaluation process.

Any future changes that are not consistent with the parameters listed in the FAA 5G C band compatibility evaluation process will void this determination of no hazard.

Frequency Data for ASN 2024-ASO-12391-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	2000	W
614	698	MHz	1000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W
3700	3980	MHz	3280	W

TOPO Map for ASN 2024-ASO-12391-OE

Sectional Map for ASN 2024-ASO-12391-OE

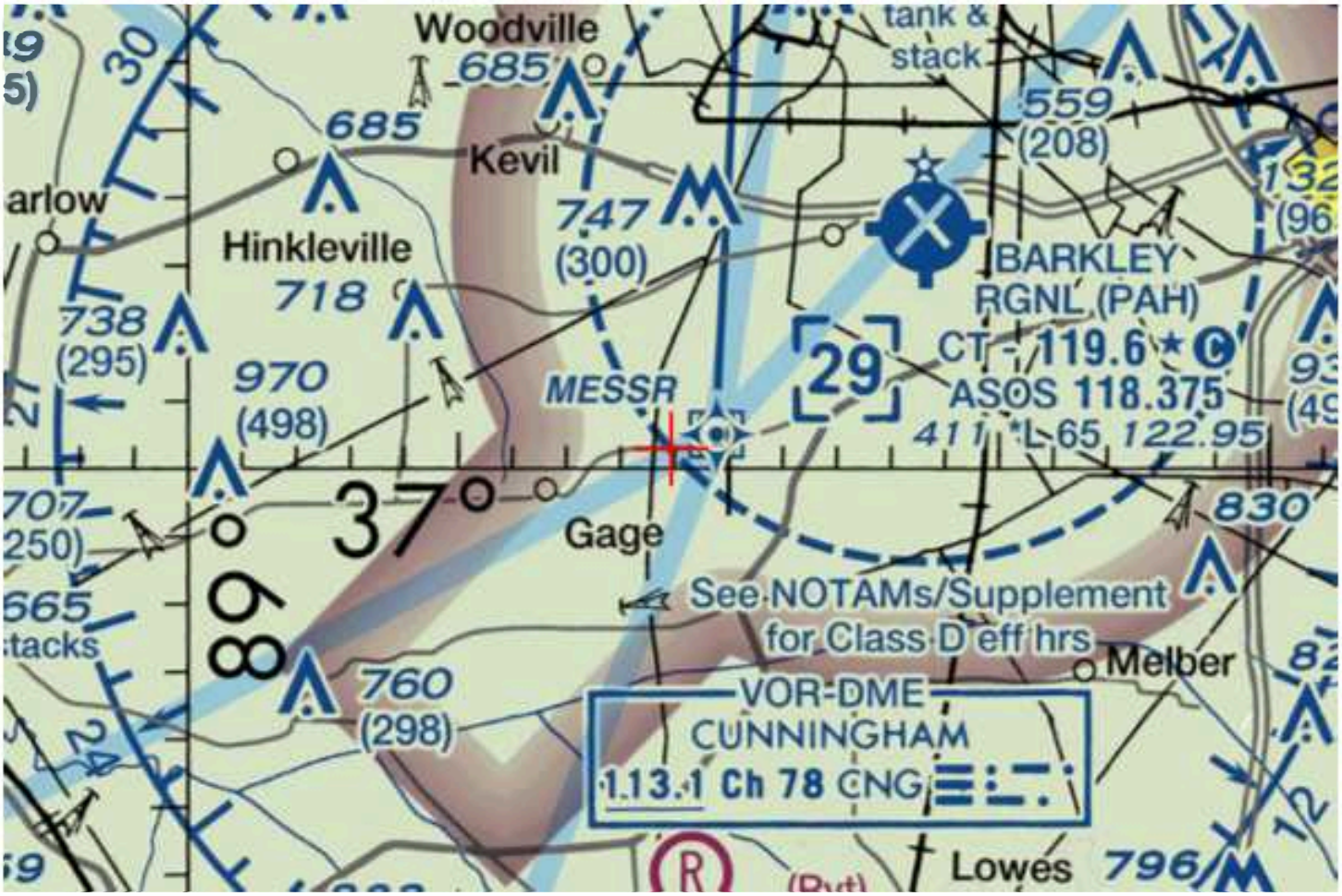


EXHIBIT F
KENTUCKY AIRPORT ZONING COMMISSION

KENTUCKY TRANSPORTATION CABINET

KENTUCKY AIRPORT ZONING COMMISSION

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

JURISDICTION

602 KAR 50:030

Section 1. The commission has zoning jurisdiction over that airspace over and around the public use and military airports within the Commonwealth which lies above the imaginary surface that extends outward and upward at one (1) of the following slopes:

(1) 100 to one (1) for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each public use airport and military airport with at least one (1) runway 3,200 feet or more in length; or

(2) fifty (50) to one (1) for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each public use and military airport with its longest runway less than 3,200 feet in length.

Section 2. The commission has zoning jurisdiction over the use of land and structures within public use airports within the state.

Section 3. The commission has jurisdiction from the ground upward within the limits of the primary and approach surfaces of each public use airport and military airport as depicted on airport zoning maps approved by the Kentucky Airport Zoning Commission.

Section 4. The Commission has jurisdiction over the airspace of the Commonwealth that exceeds 200 feet in height above the ground.

Section 5. The owner or person who has control over a structure which penetrates or will penetrate the airspace over which the Commission has Jurisdiction shall apply for a permit from the Commission in accordance with 602 KAR 50:090.

INSTRUCTIONS

1. "Alteration" means to increase or decrease the height of a structure or change the obstruction marking and lighting.
2. "Applicant" means the person who will own or have control over the completed structure.
3. "Certification by Applicant" shall be made by the individual who will own or control the completed structure; or a partner in a partnership; or the president or authorized officer of a corporation company, or association; or the authorized official of a body politic; or the legally designated representative of a trustee, receiver, or assignee.
4. Prepare the application and forward to the Kentucky Dept. of Aviation, ATTN: Airport Zoning Commission, 90 Airport Drive, Frankfort KY 40601. For questions, telephone 502-782-4043.
5. The statutes applicable to the Kentucky Airport Commission are KRS 183.861 to 183.990 and the administrative regulations are 602 KAR Chapter 50.
6. When applicable, attach the following appendices to the application:

Appendix A. A 7.5 minute quadrangle topographical map prepared by the U.S. Geological Survey and the Kentucky Geological Survey with the exact location of the structure which is the subject of the application indicated thereon. (*The 7.5 minute quadrangle map may be obtained from the Kentucky Geological Survey, Department of Mines and Minerals, Lexington, KY 40506.*)

Appendix B. For structures on or very near to property of a public use airport, a copy of the airport layout drawing (ALP) with the exact location of the structure which is the subject of this application indicated thereon. (*The ALP may be obtained from the Chairperson of the local airport board or the Kentucky Airport Zoning Commission.*)

Appendix C. Copies of Federal Aviation Administration Applications (*FFA Form 7460-1*) or any orders issued by the manager, Air Traffic Division, FAA regional office.

Appendix D. If the applicant has indicated in item number 7 of the application that the structure will not be marked or lighted in accordance with the regulations of the Commission, the applicant shall attach a written request for a determination by the commission that the marking and lighting are not necessary. The applicant shall specifically state the reasons that the absence of marking and lighting will not impair the safety of air navigation.

Appendix E. The overall height in feet of the overhead transmission line or static wire above ground level or mean water level with span length 1,000 feet and over shall be depicted on a blueprint profile map.

PENALTIES

1. Persons failing to comply with the Airport Zoning Commission statutes and regulations are liable for a fine or imprisonment as set forth in KRS 183.990(3).
2. Applicants are cautioned: Noncompliance with Federal Aviation Administration Regulations may provide for further penalties.

TEAM KENTUCKY TRANSPORTATION CABINET

KENTUCKY TRANSPORTATION CABINET

KENTUCKY AIRPORT ZONING COMMISSION

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

APPLICANT (*name*) Vertical Bridge REIT, LLC dba The Towers, LLC	**PHONE** 561-406-4015	**FAX**	**KY AERONAUTICAL STUDY #**	
ADDRESS (*street*) 750 Park of Commerce Drive, Suite 200	**CITY** Boca Raton		**STATE** FL	**ZIP** 33487
APPLICANT'S REPRESENTATIVE (*name*) Gretchen Blanton	**PHONE** 704-472-0374	**FAX**		
ADDRESS (*street*) 750 Park of Commerce Drive, Suite 200	**CITY** Boca Raton		**STATE** FL	**ZIP** 33487
APPLICATION FOR ☒ New Construction ☐ Alteration ☐ Existing **DURATION** ☒ Permanent ☐ Temporary (*months* *days*)			**WORK SCHEDULE** Start End	
TYPE ☐ Crane ☐ Building ☒ Antenna Tower ☐ Power Line ☐ Water Tank ☐ Landfill ☐ Other	**MARKING/PAINTING/LIGHTING PREFERRED** ☐ Red Lights & Paint ☐ White- medium intensity ☐ White- high intensity ☒ Dual- red & medium intensity white ☐ Dual- red & high intensity white ☐ Other			
LATITUDE 37° 00' 17.56"	**LONGITUDE** -88° 51' 04.67"		**DATUM** ☒ NAD83 ☐ NAD27 ☐ Other	
NEAREST KENTUCKY City Kevil County Casey	**NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT** Barkley RGNL			
SITE ELEVATION (AMSL, *feet*) 491.4	**TOTAL STRUCTURE HEIGHT** (AGL, *feet*) 300		**CURRENT** (*FAA aeronautical study #*) 2024-ASO-12391-OE	
OVERALL HEIGHT (*site elevation plus total structure height, feet*) 791.4			**PREVIOUS** (*FAA aeronautical study #*)	
DISTANCE (*from nearest Kentucky public use or Military airport to structure*) 5.01 Nautical Miles			**PREVIOUS** (*KY aeronautical study #*)	
DIRECTION (*from nearest Kentucky public use or Military airport to structure*) NE				

DESCRIPTION OF LOCATION (*Attach USGS 7.5 minute quadrangle map or an airport layout drawing with the precise site marked and any certified survey.*)
See attached

DESCRIPTION OF PROPOSAL
300' AGL Self-Support Tower
US-KY-5215 Lovelaceville

FAA Form 7460-1 (*Has the "Notice of Construction or Alteration" been filed with the Federal Aviation Administration?*)
☐ No ☒ Yes

CERTIFICATION (*I hereby certify that all the above entries, made by me, are true, complete, and correct to the best of my knowledge and belief.*)
PENALITIES (*Persons failing to comply with KRS 183.861 to 183.990 and 602 KAR 050 are liable for fines and/or imprisonment as set forth in KRS 183.990(3). Noncompliance with FAA regulations may result in further penalties.*)

NAME	**TITLE**	**SIGNATURE**	**DATE**
Gretchen Blanton	Project Manager	Gretchen Blanton	10/25/2024

COMMISSION ACTION

☐ Chairperson, KAZC
☐ Administrator, KAZC

☐ Approved
☐ Disapproved

SIGNATURE

DATE

FAA 1-A SURVEY CERTIFICATION

Applicant:	**The Towers, LLC**
Site Name:	**LOVELACEVILLE**
Site Number:	**US-KY-5215**
Site Location:	**KY Highway 286, Kevil, KY 42053**
Survey Type:	GPS Survey
Horizonal Datum:	NAD83
Vertical Datum:	NAVD88
Benchmark:	DM4118 MOCH CORS ARP
Structure Type:	Proposed Tower

CENTER OF PROPOSED TOWER

		Decimal Degrees	Degrees Minutes Seconds
Latitude:	**NORTH:**	**37.004878°**	**37° 00' 17.56"**
Longitude:	**WEST:**	**88.851298°**	**88° 51' 04.67"**

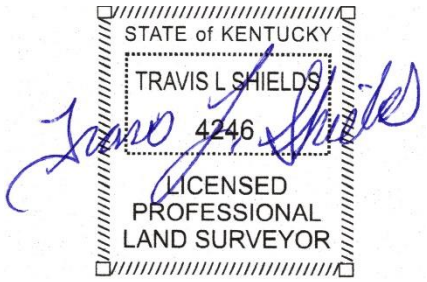
ELEVATIONS:

Ground Elevation at Center **491.4** Feet AMSL (NAVD88)

CERTIFICATION

I certify that the coordinates specified above are accurate to within 20± feet horizontally and that the elevation(s) specified above are accurate to within 3± feet vertically. Horizontal Coordinates are in terms of the North American Datum of 1983 and are expressed as decimal degrees, to the nearest 10^{-6} degree (0.01 Seconds). Elevations are in terms of the North American Vertical Datum of 1988 (NAVD 88) and are determined to the nearest 0.1 foot. Horizontal Coordinates and Elevations established on site by means of a GPS survey.

Travis L. Shields
Kentucky P.L.S. #4246
5449 Highway #41, Jasper, TN 37347
(423) 304-6722



Date: June 11, 2024

EXHIBIT G
GEOTECHNICAL REPORT

GEOTECHNICAL INVESTIGATION REPORT

November 1, 2024

Prepared For:

Vertical Bridge Holdings, LLC

Lovelaceville
US-KY-5015
Proposed 290-Foot Self-Supporting Tower
KY Highway 286, Kevil (Ballard County), Kentucky 42053
Latitude N 37° 00' 17.56" Longitude W 88° 51' 04.67"

Delta Oaks Group Project GEO24-23358-08
Revision 0
geotech@deltaoaksgroup.com

Performed By:

Michael Thomas

Reviewed By:

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

DocuSigned by:
Joseph Borrelli
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COMMONWEALTH OF KENTUCKY
JOSEPH V. BORRELLI
30809
LICENSED PROFESSIONAL ENGINEER
11/1/2024

INTRODUCTION

This geotechnical investigation report has been completed for the proposed 290-foot self-supporting tower located at KY Highway 286 in Kevil (Ballard County), Kentucky. The purpose of this investigation was to provide engineering recommendations and subsurface condition data at the proposed tower location. A geotechnical engineering interpretation of the collected information was completed and utilized to suggest design parameters regarding the adequacy of the structure's proposed foundation capacity under various loading conditions. This report provides the scope of the geotechnical investigation; geologic material identification; results of the geotechnical laboratory testing; and design parameter recommendations for use in the design of the telecommunication facility's foundation and site development.

SITE CONDITION SUMMARY

The proposed tower and compound are located on an agricultural field exhibiting a generally flat topography across the tower compound and subject property.

REFERENCES

- Survey Drawings, prepared by THE LAND CONSULTANTS, LLC., dated June 24, 2024
- Tower Elevation Drawing, prepared by TeleCAD Wireless, dated July 16, 2024
- FAA 1-A Survey Certification, provided by THE TOWERS, LLC., dated June 11, 2024
- TIA Standard (TIA-222-G), dated August 2005

SUBSURFACE FIELD INVESTIGATION SUMMARY

The subsurface field investigation was conducted through the advancement of one (1) mechanical soil test boring to the termination depth of 50.0 feet bgs. Samples were obtained at selected intervals in accordance with ASTM D 1586. The sampling was conducted at the coordinates provided for the base of the proposed tower. Soil samples were transported to our laboratory and classified by a geotechnical engineer in accordance with ASTM D 2487. A detailed breakdown of the material encountered in our subsurface field investigation can be found in the boring log presented in the Appendix of this report.

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

SUBSURFACE CONDITION SUMMARY

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

FILL

Fill material was not encountered during the subsurface field investigation.

SOIL

The residual soil encountered in the subsurface field investigation began at the existing ground surface in the boring and consisted of silty sand, clayey sand with silt, sandy gravel with silt, poorly graded sandy gravel, sandy silt, and sandy clay with silt. The materials ranged from a loose to very dense relative density and a medium stiff to very stiff consistency.

Auger advancement refusal was not encountered during the subsurface field investigation.

ROCK

Rock was not encountered during the subsurface field investigation.

SUBSURFACE WATER

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

FROST PENETRATION

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

CORROSIVITY

Soil resistivity was performed in accordance with ASTM G187 with a test result of 6,800 ohms-cm.

FOUNDATION DESIGN SUMMARY

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

GENERAL SUBSURFACE STRENGTH PARAMETERS

Boring	Depth (bgs)	USCS	Moist/Buoyant Unit Weight (pcf)	Phi Angle (degrees)	Cohesion (psf)
B-1	0.0 - 3.0	SM	105	29	0
	3.0 - 8.0	SM	115	30	0
	8.0 - 13.0	ML	110	0	500
	13.0 - 18.0	SC-SM	115	31	0
	18.0 - 23.0	SM	130	43	0
	23.0 - 28.0	SC-SM	115	32	0
	28.0 - 33.0	CL-ML	120	0	1,600
	33.0 - 43.0	GM	130	45	0
	43.0 - 48.0	SM	130	45	0
	48.0 - 50.0	GP	125	37	0

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

SUBSURFACE STRENGTH PARAMETERS – SHALLOW FOUNDATION

Boring	Dimensions (feet)	Depth (feet bgs)	Net Ultimate Bearing Capacity (psf)
B-1	5.0 x 5.0	3.0	8,920
		4.0	8,180
		5.0	7,220
		6.0	6,050
	10.0 x 10.0	3.0	5,200
		4.0	4,930
		5.0	4,580
		6.0	4,160
	15.0 x 15.0	3.0	4,100
		4.0	3,970
		5.0	3,800
		6.0	3,600
	20.0 x 20.0	3.0	3,630
		4.0	3,560
		5.0	3,470
		6.0	3,360
	25.0 x 25.0	3.0	3,430
		4.0	3,390
		5.0	3,330
		6.0	3,260

- Delta Oaks Group recommends the foundation bear a minimum of 3.0 feet bgs.
- A sliding friction factor of 0.45can be utilized along the base of the proposed foundation.
- An Ultimate Passive Pressure Table with a reduction due to frost penetration to a depth of 1.7 feet bgs is presented on the following page.
- Delta Oaks Group recommends an appropriate factor of safety be utilized for the design of the foundation.

ULTIMATE PASSIVE PRESSURE VS. DEPTH - TOWER FOUNDATION

Soil Layers (feet)		Moist Unit Weight	Phi Angle	Cohesion	PV	KP	Ph
Top	0.0	105	29	0	0.00	2.88	0.00
Bottom	1.7	105	29	0	178.50	2.88	257.22
Top	1.7	105	29	0	178.50	2.88	514.45
Bottom	3.0	105	29	0	315.00	2.88	907.85
Top	3.0	115	30	0	315.00	3.00	945.00
Bottom	8.0	115	30	0	890.00	3.00	2,670.00
Top	8.0	110	0	500	890.00	1.00	1,890.00
Bottom	10.0	110	0	500	1,110.00	1.00	2,110.00

SUBSURFACE STRENGTH PARAMETERS - DRILLED SHAFT FOUNDATION

Boring	Depth (bgs)	Net Ultimate Bearing Capacity (psf)	Ultimate Skin Friction - Compression (psf)	Ultimate Skin Friction - Uplift (psf)
B-1	0.0 – 3.0	-	-	-
	3.0 – 6.0	3,630	410	300
	6.0 – 8.0	2,960	600	450
	8.0 – 13.0	2,120	270	270
	13.0 – 18.0	19,170	1,680	1,260
	18.0 – 23.0	8,660	2,070	1,550
	23.0 – 28.0	11,470	2,410	1,810
	28.0 – 33.0	40,510	870	870
	33.0 – 38.0	57,400	2,880	2,160
	38.0 – 43.0	47,520	3,060	2,300
	43.0 – 48.0	36,220	3,200	2,400
	48.0 – 50.0	36,170	3,260	2,440

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

SEISMIC DESIGN CONSIDERATIONS

Period (seconds)	Site Coefficients	Mapped Spectral Acceleration Parameters	Adjusted Spectral Acceleration Parameters	Design Spectral Acceleration Parameters
0.2	1.000 (F_a)	S_s = 1.410	S_{ms} = 1.410	S_{Ds} = 0.940
1.0	1.842 (F_v)	S_1 = 0.458	S_{m1} = 0.844	S_{D1} = 0.562

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

CONSTRUCTION

SITE DEVELOPMENT

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

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

STRUCTURAL FILL PLACEMENT

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

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

SHALLOW FOUNDATIONS

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

DRILLED SHAFT FOUNDATIONS

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

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

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

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

QUALIFICATIONS

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

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

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

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

APPENDIX

BORING PLAN

PROJECT NAME Lovelaceville (US-KY-5015)

PROJECT NUMBER GEO24-23358-08

PROJECT LOCATION Kevil, Kentucky

CLIENT Vertical Bridge Holdings, LLC

Boring No.: B-1

DATE DRILLED : 10/18/2024

DRILLING METHOD : Hollow Stem Auger

GROUND ELEVATION :

BORING DEPTH (ft) : 50

GROUND WATER LEVELS:

AT TIME OF DRILLING : --- Not encountered

AT END OF DRILLING : --- Not encountered

AFTER DRILLING : --- Not measured

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE	MATERIAL CLASSIFICATION	Pocket Penetrometer (tsf)	BLOWS 1st	BLOWS 2nd	BLOWS 3rd	N VALUE
0	Brown, loose, fine grained, SILTY SAND (SM), trace gravel, trace organics, moist		SM		3	3	4	7
5	-- medium dense				3	4	6	10
	-- with silt seams				2	5	6	11
10	Brown, grey, medium stiff, SANDY SILT (ML), moist		ML		1	2	3	5
15	Red, brown, medium dense, fine to coarse grained, CLAYEY SAND WITH SILT (SC-SM), moist		SC-SM		3	6	7	13
20	Red, very dense, fine to coarse grained, SILTY SAND (SM), with gravel, wet		SM		15	26	37	63
25	Red, grey, medium dense, fine to coarse grained, CLAYEY SAND WITH SILT (SC-SM), trace gravel, moist		SC-SM		5	7	10	17
30	Red, grey, purple, very stiff, SANDY CLAY WITH SILT (CL-ML), moist		CL-ML		2	7	9	16
35	Red, very dense, SANDY GRAVEL WITH SILT (GM), moist		GM		50/5"			100
40	-- brown				33	50/5"		100
45	Brown, orange, very dense, fine to medium grained, SILTY SAND (SM), with gravel, moist		SM		7	37	50/3"	100
50	Brown, dense, POORLY GRADED SANDY GRAVEL (GP), trace silt, dry		GP		20	23	14	37
	Bottom of borehole at 50.0 feet.							

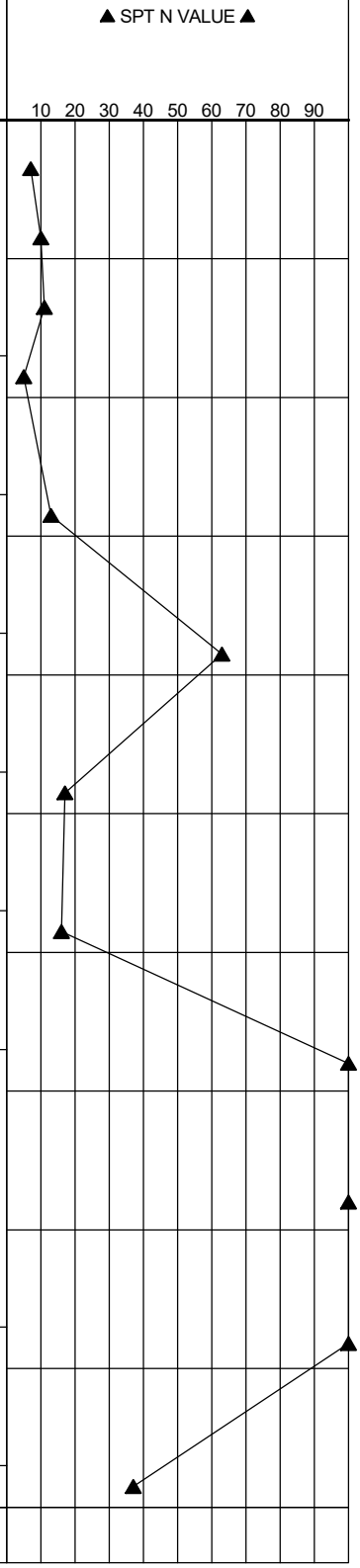
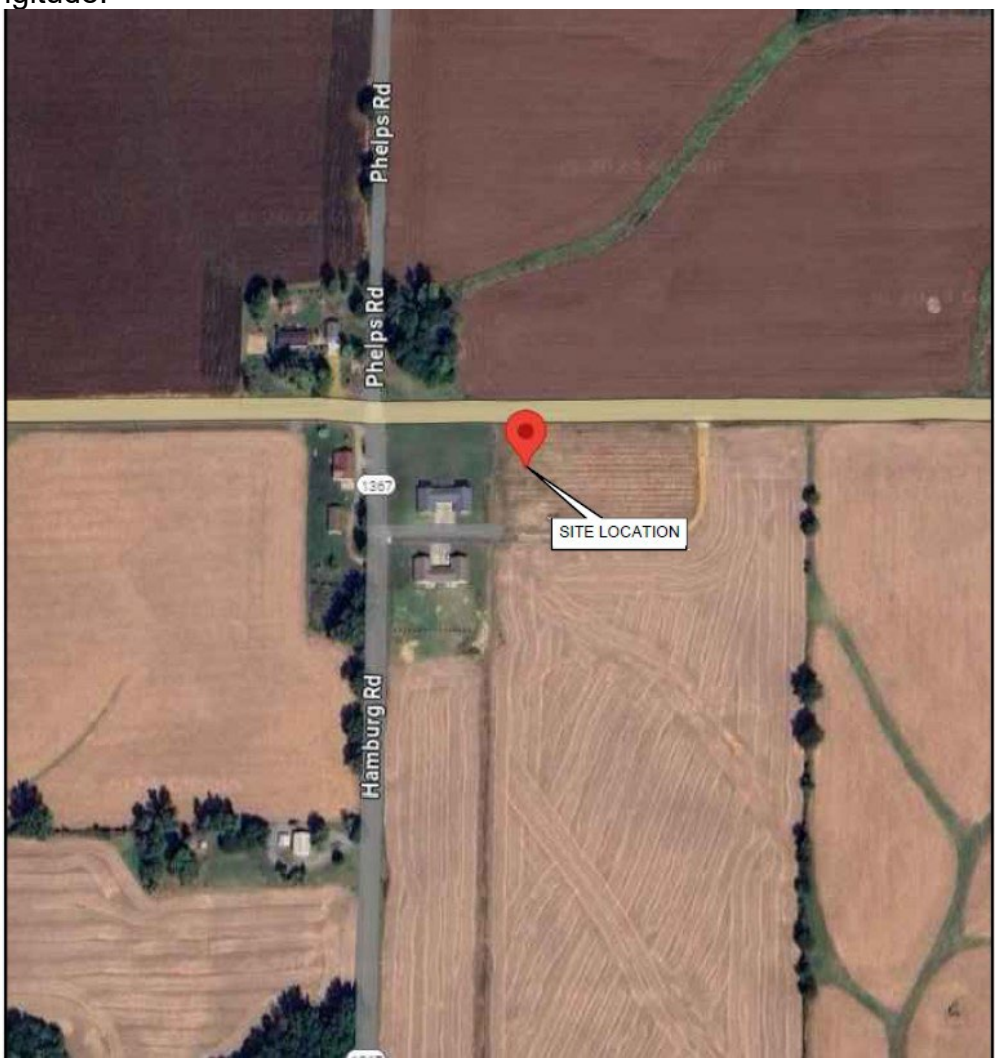


EXHIBIT H
DIRECTIONS TO WCF SITE

Driving Directions to Proposed Tower Site

1. Beginning at Ballard County Fiscal Court, head south on US-62 E /US-51 S / N 4TH ST toward Court Street.
2. Turn left onto KY-121 / Court Street.
3. Bear left onto KY-286 / Phillips Drive.
4. Arrive at the site on the right.
5. The site coordinates are 37° 00’ 17.56” North latitude, 88° 51’ 04.67” West longitude.



Prepared by:
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Telephone: 502-955-4400 or 800-516-4293

EXHIBIT I
COPY OF REAL ESTATE AGREEMENT

Landlord:
Dwaine Stigall and Debra J. Stigall
1352 Hamburg Road
Kevil, Kentucky 42053

Tenant:
The Towers, LLC
750 Park of Commerce Drive, Suite 200
Boca Raton, Florida 33487

Site#: US-KY-5215
Site Name: Lovelaceville

OPTION AND LEASE AGREEMENT

THIS OPTION AND LEASE AGREEMENT (this "**Agreement**") is made this 24th day of MAY, 20 24 (the "**Effective Date**") by and between **Dwaine Stigall and Debra J. Stigall, jointly as life tenants with the remainder to vest in the survivor**, a married couple ("**Landlord**"), whose address is 1352 Hamburg Road, Kevil, Kentucky 42053, and **The Towers, LLC**, a Delaware limited liability company ("**Tenant**"), whose address is 750 Park of Commerce Drive, Suite 200, Boca Raton, Florida 33487.

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

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

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

1. OPTION TO LEASE.

(a) As of the Effective Date, Landlord grants to Tenant the exclusive option to lease the Premises (the "**Option**") during the Option Period (defined below). At any time during the Option Period and Term (defined below), Tenant and its agents, engineers, surveyors and other representatives will have the right to enter upon the Property to inspect, examine, conduct soil borings, drainage testing, material sampling, and other geological or engineering tests or studies of the Property (collectively, the "**Tests**"), to apply for and obtain licenses, permits, approvals, or other relief required of or deemed necessary or appropriate at Tenant's sole discretion for its use of the Premises including, without limitation, applications for zoning variances, zoning ordinances, amendments, special use permits, construction permits and any other permits and approvals deemed necessary by Tenant (collectively, the "**Government Approvals**"), initiate the ordering and/or scheduling of necessary utilities, obtain a title report with respect to the Property, and otherwise to do those things on or off the Property that, in the opinion of Tenant, are necessary in Tenant's sole discretion to determine the physical condition of the Property, the environmental history of the Property, and the feasibility or suitability of the Property for Tenant's permitted use under this Agreement, all at Tenant's expense. Tenant shall be authorized to apply for the Government Approvals on

behalf of Landlord and Landlord agrees to reasonably cooperate with such applications. Tenant will not be liable to Landlord or any third party on account of any pre-existing defect or condition on or with respect to the Property, whether or not such defect or condition is disclosed by Tenant's Tests. Tenant will restore the Property to its condition as it existed prior to conducting any Tests, reasonable wear and tear and casualty not caused by Tenant excepted. In addition, Tenant shall indemnify, defend and hold Landlord harmless from and against any and all injury, loss, damage or claims arising directly out of Tenant's Tests.

(a) In consideration of Landlord granting Tenant the Option, Tenant agrees to pay Landlord the sum of [redacted] within thirty (30) days of the full execution of this Agreement. The Option Period will be for a term of two (2) years from the Effective Date (the "**Initial Option Period**") and may be renewed by Tenant for an additional two (2) year period (collectively "**Renewal Option Period**") upon written notification to Landlord and the payment of [redacted] for each Renewal Option Period prior to the expiration date of the of the current Option Period as hereinafter defined. Unless utilized independently, the Initial Option Period and any Renewal Option Period shall be referred to collectively as the "**Option Period.**"

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

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

2. TERM.

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

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

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

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

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

5. **USE.** The Premises are being leased for the purpose of erecting, installing, operating, maintaining, repairing and replacing radio or communications towers, transmitting and receiving equipment, antennas, dishes, satellite dishes, mounting structures, equipment shelters and buildings, solar energy conversion and electrical power generation system, fencing and other supporting structures and related equipment (collectively, the "**Communications Facilities**"), and to alter, supplement and/or modify same. Tenant may, subject to the foregoing, make any improvements, alterations or modifications to the Premises as are deemed appropriate by Tenant for the permitted use herein. Tenant shall have the right to clear the Premises of any trees, vegetation, or undergrowth which interferes with the use of the Premises for the intended purposes by Tenant and/or its subtenants and licensees, as applicable. Tenant shall have the exclusive right to install and operate the Communications Facilities upon the Premises.

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

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

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

8. ASSIGNMENT AND SUBLEASE. Tenant may transfer or assign this Agreement to Tenant's Lender (defined below), principal, affiliates, subsidiaries, subsidiaries of its principal or to any entity which acquires all of or substantially all of Tenant's assets or ownership interests by reasons of merger, acquisition or other business reorganization without Landlord's consent (a "**Permitted Assignment**"). As to transfers or assignments which do not constitute a Permitted Assignment, Tenant is required to obtain Landlord's written consent prior to effecting such transfer or assignment, which consent shall not be unreasonably withheld, conditioned or delayed. Upon such assignment, including a Permitted Assignment, Tenant will be relieved and released of all obligations and liabilities hereunder. Tenant shall have the exclusive right to sublease or grant licenses without Landlord's consent to use all or part of the Premises and/or the Communications Facilities, but no such sublease or license shall relieve or release Tenant from its obligations under this Agreement. Landlord may assign this Agreement only in its entirety and only to any person or entity who or which acquires fee title to the Property, subject to Section 15. Landlord may subdivide the Property without Tenant's prior written consent provided the resulting parcels from such subdivision are required to afford Tenant the protections set forth in Section 14 hereof.

9. COVENANTS, WARRANTIES AND REPRESENTATIONS.

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

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

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

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

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

(f) Landlord warrants and represents that there currently exist no licenses, sublicenses, or other agreements, written or oral, granting to any party or parties the right of use or occupancy of any portion of the Property; there are no outstanding options or rights of first refusal to purchase the Property or any portion thereof or interest therein, or any equity or interest in Landlord if Landlord is an entity; and there are no parties (other than Landlord) in possession of the Property except as to those that may have been disclosed to Tenant in writing prior to the execution hereof.

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

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

12. WAIVERS.

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

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

13. INSURANCE. Tenant shall insure against property damage and bodily injury arising by reason of occurrences on or about the Premises in the amount of not less than [redacted] The insurance coverage provided for herein may be maintained pursuant to master policies of insurance covering other communication facilities of Tenant and its corporate affiliates. All insurance policies required to be maintained by Tenant hereunder shall be with responsible insurance companies, authorized to do business in the State or Commonwealth where the Premises are located if required by law, and shall provide for

cancellation only upon ten (10) days' prior written notice to Landlord. Tenant shall evidence such insurance coverage by delivering to Landlord, if requested, a copy of a certificate of insurance of such policies issued by the insurance companies underwriting such risks.

14. INTERFERENCE. During the Option Period and the Term, Landlord, its successors and assigns, will not grant any ground lease, license, or easement with respect to the Property (outside of the Premises) and any property adjacent or contiguous to the Property or in the immediate vicinity of the Property that is fee owned by Landlord: (a) for any of the uses contemplated in Section 5 herein; or (b) if such lease, license, or easement would detrimentally impact the Communications Facilities or Tenant's economic opportunities at the Premises, or the use thereof. Landlord shall not cause or permit the construction of communications or broadcast towers or structures, fiber optic backhaul facilities, or satellite facilities on the Property or on any other property of Landlord adjacent or contiguous to or in the immediate vicinity of the Property, except for the Communications Facilities constructed by Tenant. Landlord and Tenant intend by this Agreement for Tenant (and persons deriving rights by, through, or under Tenant) to be the sole parties to market, use, or sublease any portion of the Property for Communications Facilities during the Option Period and the Term. Landlord agrees that this restriction on the use of the Property is commercially reasonable, not an undue burden on Landlord, not injurious to the public interest, and shall be specifically enforceable by Tenant (and persons deriving rights by, through or under Tenant) in a court of competent jurisdiction. The foregoing restriction shall run with the land and be binding on the successors and assigns of Landlord.

15. RIGHT OF FIRST REFUSAL. In the event Landlord determines to sell, transfer, license or otherwise convey any interest, whether fee simple interest, easement interest, leasehold, or otherwise, and whether direct or indirect by way of transfer of ownership interests in Landlord if Landlord is an entity, which interest underlies or affects any or all of the Premises (the "**ROFR Property**") to any third party that is a Third Party Competitor (as defined below), Landlord shall offer Tenant a right of first refusal to purchase the Premises (or such larger portion of the Property that encompasses the Premises, if applicable). For purposes herein, a "**Third Party Competitor**" is any person or entity directly or indirectly engaged in the business of owning, acquiring, operating, managing, investing in or leasing communications infrastructure or any person or entity directly or indirectly engaged in the business of owning, acquiring, or investing in real property leases or easements underlying communications infrastructure. In such event, Landlord shall send a written notice to Tenant in accordance with Section 29 below that shall contain an offer to Tenant of a right of first refusal to purchase the ROFR Property, together with a copy of any offer to purchase, or any executed purchase agreement or letter of intent (each, an "**Offer**"), which copy shall include, at a minimum, the purchase price or acquisition price, proposed closing date, and financing terms (collectively, the "**Minimum Terms**"). Within thirty (30) days of receipt of such Offer, Tenant shall provide written notice to Landlord of Tenant's election to purchase the ROFR Property on the same Minimum Terms, provided: (a) the closing date shall be no sooner than sixty (60) days after Tenant's purchase election notice; (b) given Landlord's direct relationship and access to Tenant, Tenant shall not be responsible for payment of any broker fees associated with an exercise of Tenant's rights to acquire the ROFR Property; and, (c) Tenant shall not be required to match any components of the purchase price which are speculative or incalculable at the time of the Offer. In such event, Landlord agrees to sell the ROFR Property to Tenant subject to Tenant's payment of the purchase price and compliance with a purchase and sale agreement to be negotiated in good faith between Landlord and Tenant. If Tenant provides written notice that it does not elect to exercise its right of first refusal to purchase the ROFR Property, or if Tenant does not provide notice of its election within the thirty (30) day period, Tenant shall be deemed to have waived such right of first refusal only with respect to the specific Offer presented (and any subsequent Offers shall again be subject to Tenant's continuing right of first refusal hereunder), and Landlord shall be permitted to consummate the sale of the ROFR Property in accordance with the strict terms of the Offer ("**Permitted Sale**"). If Landlord does not consummate the Permitted Sale within ninety (90) days of the

date of Tenant's waiver of its right of first refusal, including if the Minimum Terms are modified between Landlord and the Third Party Competitor, Landlord shall be required to reissue a New Offer to Tenant.

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

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

18. CONDEMNATION; CASUALTY.

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

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

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

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

21. ATTORNEYS' FEES. If there is any legal proceeding between Landlord and Tenant arising from or based on this Agreement, the unsuccessful party to such action or proceeding shall pay to the prevailing party all costs and expenses, including, without limitation, reasonable attorneys' fees and disbursements, incurred by such prevailing party in such action or proceeding and in any appeal in connection therewith. If such prevailing party recovers a judgment in any such action, proceeding or appeal, such costs, expenses and attorneys' fees and disbursements shall be included in and as a part of such judgment.

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

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

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

25. LENDER'S RIGHTS.

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

(b) Tenant shall have the right from time to time to mortgage or otherwise encumber Tenant's interest in this Agreement, the Communications Facilities and/or leasehold estate in the Premises (a "**Tenant Mortgage**") and Landlord consents to the granting by Tenant of a lien and security interest in Tenant's interest in this Agreement and/or leasehold estate of the Premises and all of Tenant's personal property and fixtures attached to the real property described herein, and furthermore consents to the exercise by any such lender of Tenant ("**Lender**") of its rights of foreclosure with respect to its lien and security interest. Landlord agrees to recognize Lender as Tenant hereunder upon any such exercise by Lender of its rights of foreclosure. The term "**Lender**" as used in this Agreement shall mean the lender identified in Section 29 hereof and its successors, assigns, designees or nominees.

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

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

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

26. RIGHT TO NEW LEASE.

(a) In the case of termination of this Agreement for any reason, or in the event this Agreement is rejected or disaffirmed pursuant to any bankruptcy, insolvency or other law affecting creditor's rights, Landlord shall give prompt notice thereof to Lender at the address set forth in Section 29 or as may be provided to Landlord by Tenant following the Commencement Date. Thereafter, Landlord, upon written request of Lender, and within thirty (30) days after the receipt of such request, shall promptly execute and deliver a new lease of the Premises and assignment of all subleases and licenses to Lender or its designee or nominee, for the remainder of the Term upon all the covenants, conditions, limitations and agreements contained herein (including, without limitation, options to extend the Term) except for such provisions which must be modified to reflect such termination, rejection or disaffirmance and the passage of time, provided that Lender (i) shall pay to Landlord, simultaneously with the delivery of such new lease, all

unpaid rent due under this Agreement up to and including the date of the commencement of the term of such new lease and all reasonable expenses, including, without limitation, reasonable attorneys' fees and disbursements and court costs, incurred by Landlord in connection with the default by Tenant, the termination of this Agreement and the preparation of the new lease, and (ii) shall cure all defaults existing under this Agreement which are susceptible to being cured by Lender promptly and with due diligence after the delivery of such new lease. Notwithstanding anything to the contrary contained herein, provided Lender shall have otherwise complied with the provisions of this Section, Lender shall have no obligation to cure any defaults which are not susceptible to being cured by Lender (for example, the bankruptcy of Tenant).

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

27. ADDITIONAL PROVISIONS.

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

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

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

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

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

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

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

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

28. QUIET ENJOYMENT. So long as Tenant is not in default under this Agreement beyond the applicable notice and cure period, Landlord covenants and agrees that Tenant shall peaceably and quietly hold and enjoy the Premises throughout the Term, without any hindrance, molestation or ejection by Landlord, its successors or assigns or by those claiming by, through or under them.

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

If to Landlord:
Dwaine Stigall and Debra J. Stigall
1352 Hamburg Road
Kevil, Kentucky 42053

If to Tenant:
The Towers, LLC
750 Park of Commerce Drive,
Suite 200
Boca Raton, Florida 33487
Ref: US-KY-5215
Attn: VP Asset Management

With a copy to: General Counsel

If to Lender:
Toronto Dominion (Texas) LLC
31 West 52nd Street
New York, NY 10019
Attn: Admin Agent
[redacted]

30. MISCELLANEOUS.

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

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

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

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

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

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

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

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

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

SIGNATURES BEGIN ON NEXT PAGE

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

WITNESSES:	LANDLORD:
Name: Kori Giovengo Name: Debbie Dew	Dwaine Stigall Date: 5-13-24 Debra J. Stigall Date: 5-13-24

STATE OF Kentucky

COUNTY OF McCracken

The foregoing instrument was acknowledged before me this 13th May 2024 by Dwaine Stigall and Debra J. Stigall.

Notary Public

Print Name: Brandy Wren

My Commission Expires: 07-30-26

BRANDY LEE WREN
MY COMMISSION EXPIRES
NOTARY PUBLIC
COMM. # KYNP54977
JULY 30, 2026
COMMONWEALTH OF KENTUCKY

(Tenant signature page to Option and Lease Agreement)

WITNESSES:	TENANT:
* Edward Davis Name: Edward Davis Name: Olivia Vogan * 750 Park of Commerce Drive, Suite 200 Boca Raton, FL 33487	**The Towers, LLC** a Delaware limited liability company By: Name: Adam Ginder Title: VP Date: 5/24/2024

STATE OF FLORIDA

COUNTY OF PALM BEACH

Leasing Ops DS LG

The foregoing instrument was acknowledged before me this May 24th, 20 24 by Adam Ginder (name of signatory), VP (title of signatory) of The Towers, LLC, a Delaware limited liability company, on behalf of the company.

Esther Nelson
Notary Public

Print Name: Esther Nelson

My Commission Expires: 11/13/2027

ESTHER NELSON
Notary Public - State of Florida
Commission # HH 464044
My Comm. Expires Nov 13, 2027
Bonded through National Notary Assn.

EXHIBIT 1

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

TRACT I:

Being Lot 2, in Block B, of the Country Village Subdivision, consisting of 0.785 acres, and lying and being in Plat Cabinet 3, Slide 73, Ballard County Court Clerk's Office.

TRACT II:

Lying at the southwest intersection of Kentucky Highway 286 with Ross Avenue as shown on unrecorded subdivision plat of Country Village Subdivision and being part of the Anthony and Pamela Hunt property recorded in Deed Book 80, Page 20, and shown as Lot 3 in Block B to said Country Village Subdivision, Ballard County Clerk's Office, Ballard County, Kentucky and more particularly bounded and described as follows to wit:

Beginning at a ½" rebar with Cap 3861 set in the South right of way line of Kentucky Highway 286 at the northwest corner of Lot 3 per unrecorded Plat of Country Village Subdivision, said point being S 88° 36' 39" E, 380.46 feet as measured along the South right of way line of said Kentucky Highway 286 from an existing ½" rebar with Cap 1842 at its intersection with the East right of way line of Kentucky Highway 1367 (Hamburg Road) and also having Kentucky State Plane Coordinates (South Zone 1602 – NAD 83) of Northing 1899964.3183 and Easting 735154.7422; THENCE FROM SAID POINT OF BEGINNING Eastwardly with the South right of way line of Kentucky Highway 286 for the following 5 calls: S 88° 36' 39" E. 180.49 feet to a ½" rebar with Cap 3861 set; N 01° 23' 21" E. 5.00 feet to an existing ½" rebar; S. 88°36' 39" E. 25.00 feet to an existing ½" rebar, S. 01° 23' 21" W. 5.00 feet to an existing ½" rebar

(disturbed); and S 88° 36' 39" E. 2.14 feet to a ½" rebar with Cap 3861 set at its intersection with the west right of way line of Ross Avenue as shown on aforesaid unrecorded Plat of Country Village Subdivision; thence southwardly with the West right of way line of said Ross Avenue for the following 2 calls: Southeastwardly with a curve to the right having a radius of 20.00 feet (a chord being S 22° 04' 43" E. 16.92 feet) a distance of 17.48 feet to a ½" rebar with Cap 3861 set at the end of said curve; and S 02° 57' 10" W. 155.08 feet to a ½" rebar with Cap 3861 set in the Southerly right of way line of Cassandra Boulevard per aforesaid unrecorded Subdivision Plat of Country Village Subdivision and a curve to the right having a radius of 20.00 feet; thence Westwardly with the Northerly right of way of said Cassandra Boulevard for the following 2 calls: Southwestwardly with said curve to the right (a chord being S. 47° 10' 08" W. 27.89 feet) a distance of 30.87 feet to a ½" rebar with cap 38.61 set at the end of said curve; and N. 88° 36' 39" W. 190.15 feet to a ½" rebar with Cap 3861 set at the southwest corner of aforesaid Lot 3 per unrecorded Subdivision Plat of Country Village Subdivision; thence N 01° 23' 21" E. with the West line of said Lot 3 a distance of 190.00 feet to the Point of Beginning and containing 0.93 acres as shown on "Minor Subdivision Plat for Anthony and Pamela Hunt" prepared by Siteworx Survey & Design, LLC, dated April 18, 2023.

A copy of the Minor Subdivision Plat for Lot 3, Block B, of the Country Village Subdivision, more particularly described as Tract II of this Deed, is of record in Plat Cabinet 3, Slide 134, Ballard County Court Clerk's Office.

Tracts I and II are being a portion of the same real estate conveyed to Anthony Hunt and wife, Pamela Hunt, by Deed from Anthony Hunt and wife, Pamela Hunt and Ross T. Hunt, a single person, dated June 27, 2006, recorded July 7, 2006 at 12:30 p.m., and of record in Deed Book 80, Page 20, Ballard County Court Clerk's Office.

EXHIBIT 2

Premises

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

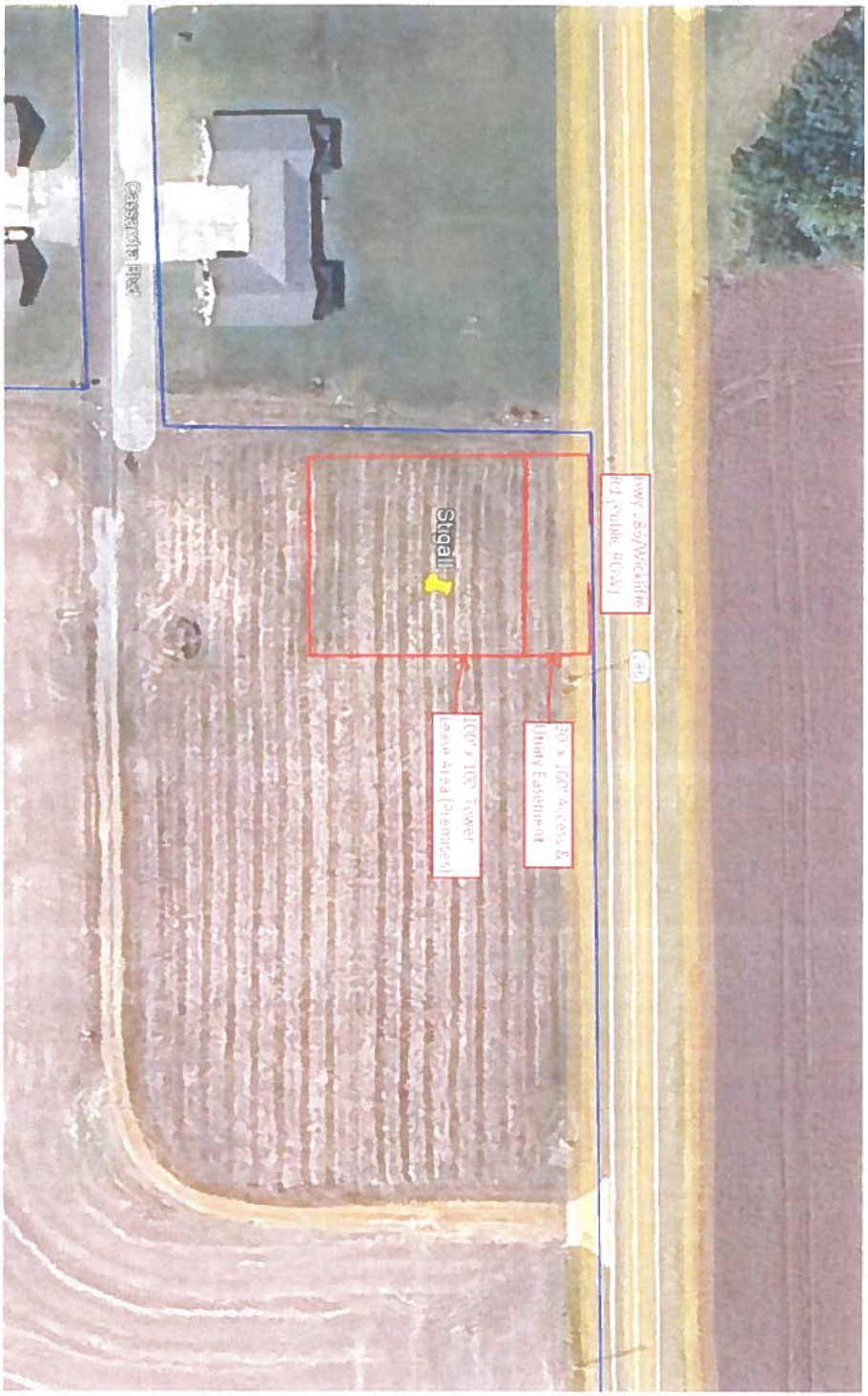

EXHIBIT J

NOTIFICATION LIST
PVA RECORDS
PROOF OF NOTICE

Lovelaceville – Notice List

72-35-02
DWAINE & DBRA J STIGALL
1352 HAMBURG ROAD
KEVIL, KY 42053

72-35-01
CASSANDRA SMITH
MATTHEW SMITH
2162 HAMBURG ROAD
KEVIL, KY 42053

72-29-01
BRIAN CODY POLLOCK
BERTIE V POLLOCK
3205 HAMBURG ROAD
KEVIL, KY 42053

72-35
ANTHONY & PAMELA J HUNT
4943 LA CENTER ROAD
BARLOW, KY 42024

72-18
DONNA K & JERRY LAMPKIN
13612 WICKLIFFE ROAD
KEVIL, KY 42053

72-16-01 and 72-16
AMBER HOWARD
898 CROSSLAND ROAD
MURRAY, KY 42071

72-29
BOHANON JOHN L
2099 COUNTY LINE ROAD
KEVIL, KY 42053

72-35-25
RYAN LAWSON PROPERTIES LLC
968 NORTH 37TH STREET UNIT B
PADUCAH, KY 42001

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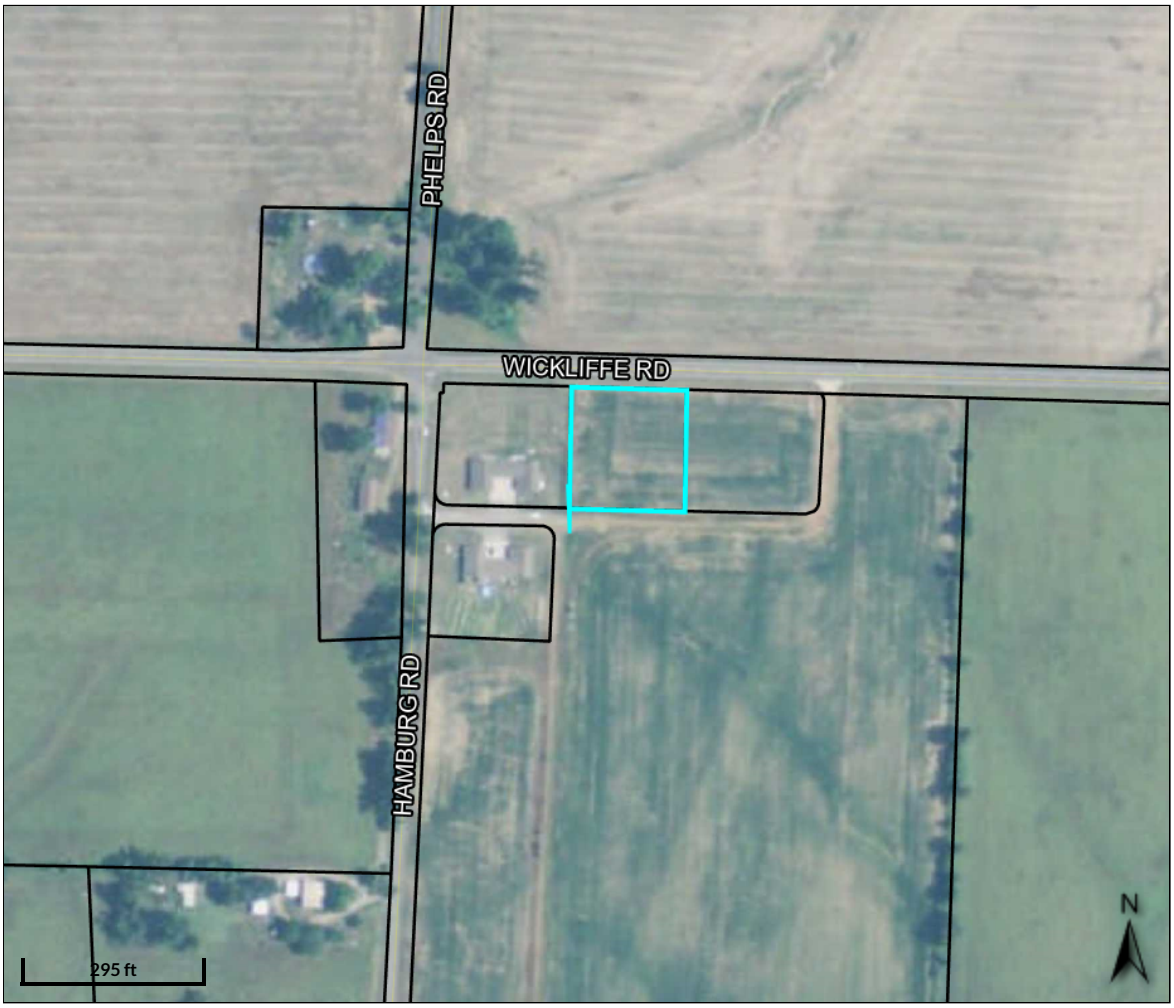

Overview

Legend

- Parcels
- Roads

Parcel ID	72-35-02	**Alternate ID**	114940	**Owner Address**	STIGALL DWAINE & DBRA J
Sec/Twp/Rng	n/a	**Class**	FARM (20)		1352 HAMBURG ROAD
Property Address	WICKLIFFE ROAD	**Acreage**	1.715		KEVIL , KY 42053
District	01-County				
Brief Tax Description	n/a				
	(Note: Not to be used on legal documents)				

Date created: 1/8/2025
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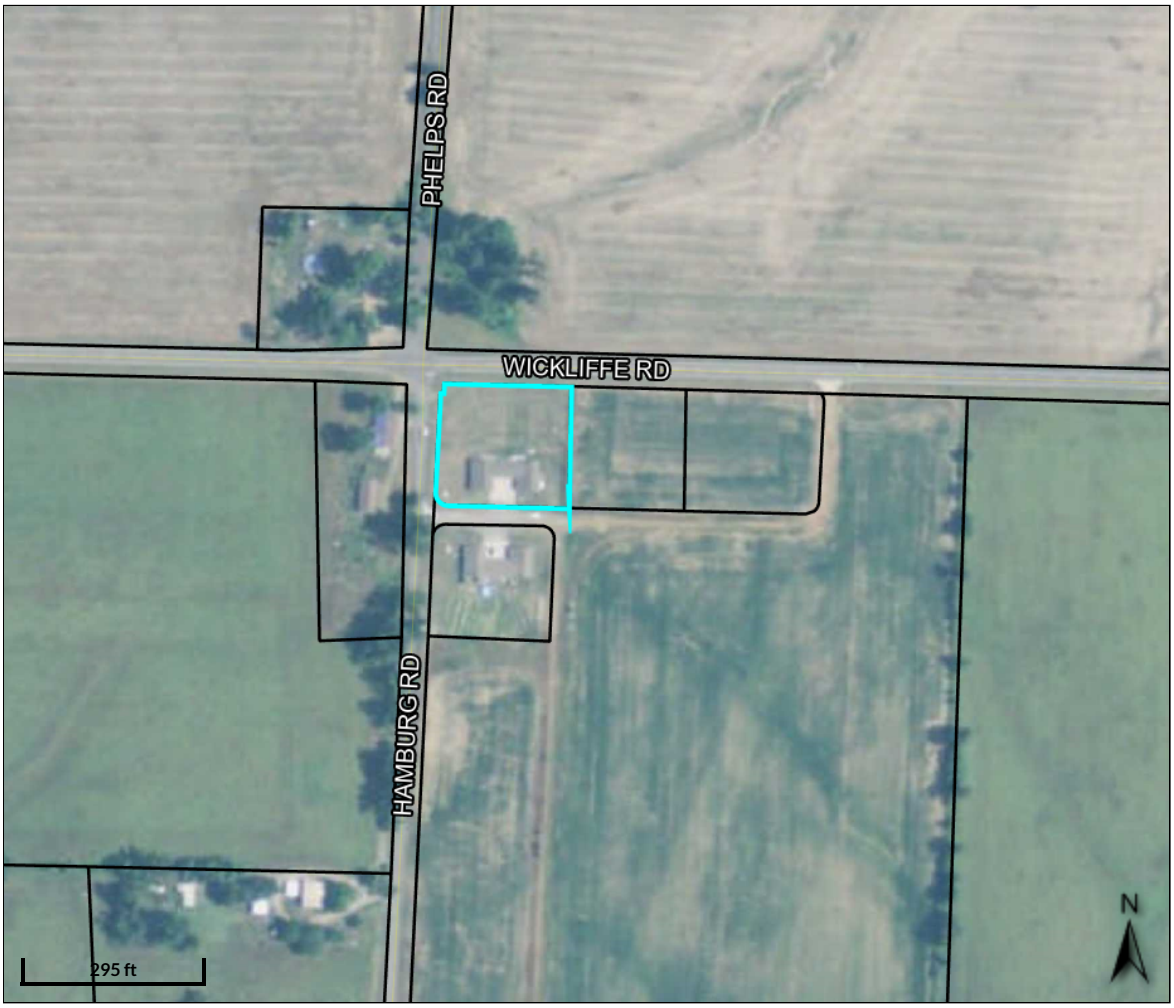

Overview

Legend

Parcels

Roads

Parcel ID	72-35-01	**Alternate ID**	114620	**Owner Address**	SMITH CASSANDRA SMITH MATTHEW
Sec/Twp/Rng	n/a	**Class**	COMMERCIAL (40)		2162 HAMBURG ROAD
Property Address	510 CASSANDRA BLVD	**Acreage**	0.902		KEVIL, KY 42053
District	01-County				
Brief Tax Description	n/a				
	(Note: Not to be used on legal documents)				

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Overview

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Parcels

Roads

Parcel ID	72-29-01	**Alternate ID**	114610	**Owner Address**	POLLOCK BRIAN CODY POLLOCK BERTIE V
Sec/Twp/Rng	n/a	**Class**	RESIDENTIAL (10)		3205 HAMBURG ROAD
Property Address	3205 HAMBURG ROAD	**Acreage**	0.98		KEVIL, KY 42053
District	01-County				
Brief Tax Description	n/a				
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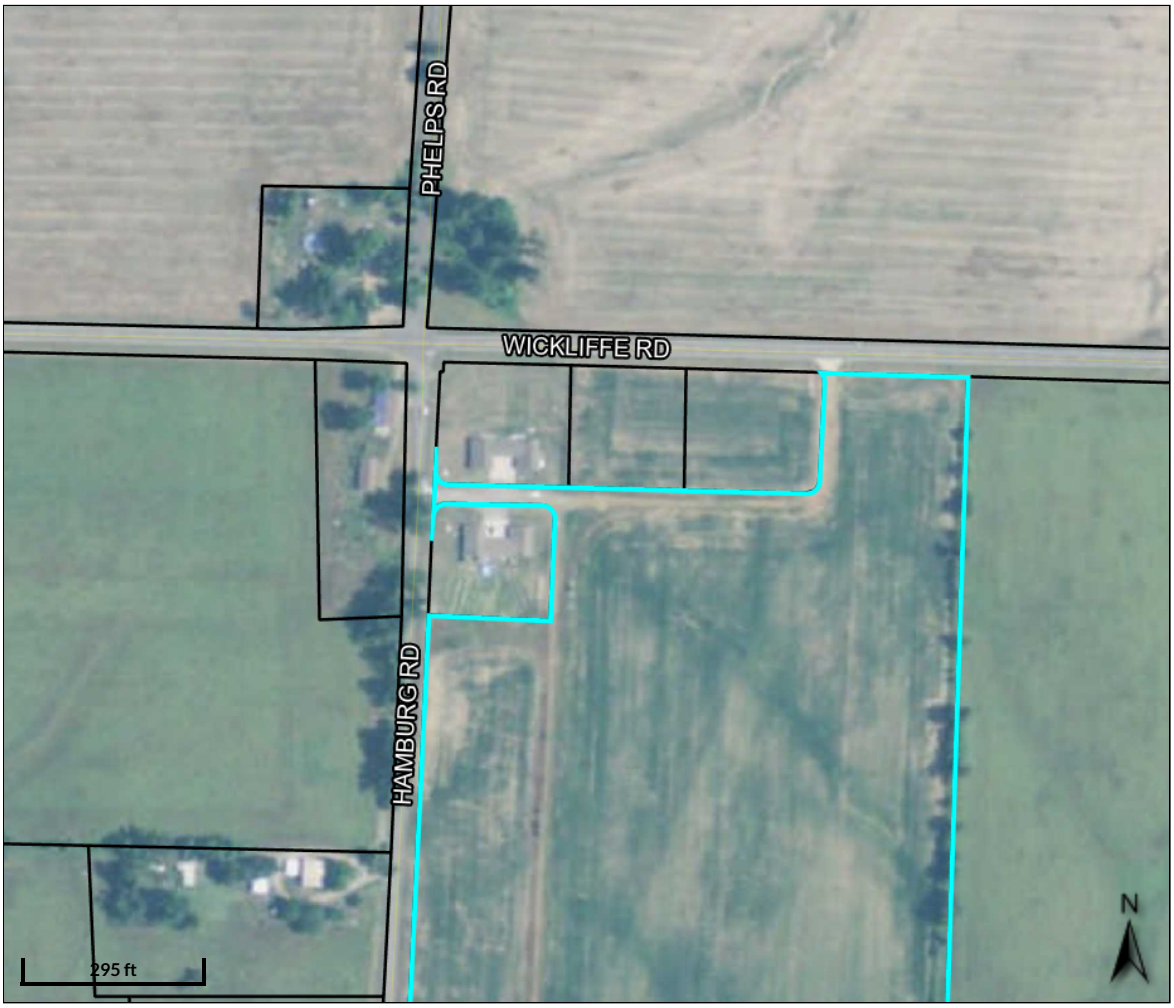

Overview

Legend

Parcels

Roads

Parcel ID	72-35	**Alternate ID**	114619	**Owner Address**	HUNT ANTHONY & PAMELA J
Sec/Twp/Rng	n/a	**Class**	FARM (20)		4943 LA CENTER ROAD
Property Address	WICKLIFFE ROAD	**Acreage**	30.782		BARLOW, KY 42024
District	01-County				
Brief Tax Description	n/a				
	(Note: Not to be used on legal documents)				

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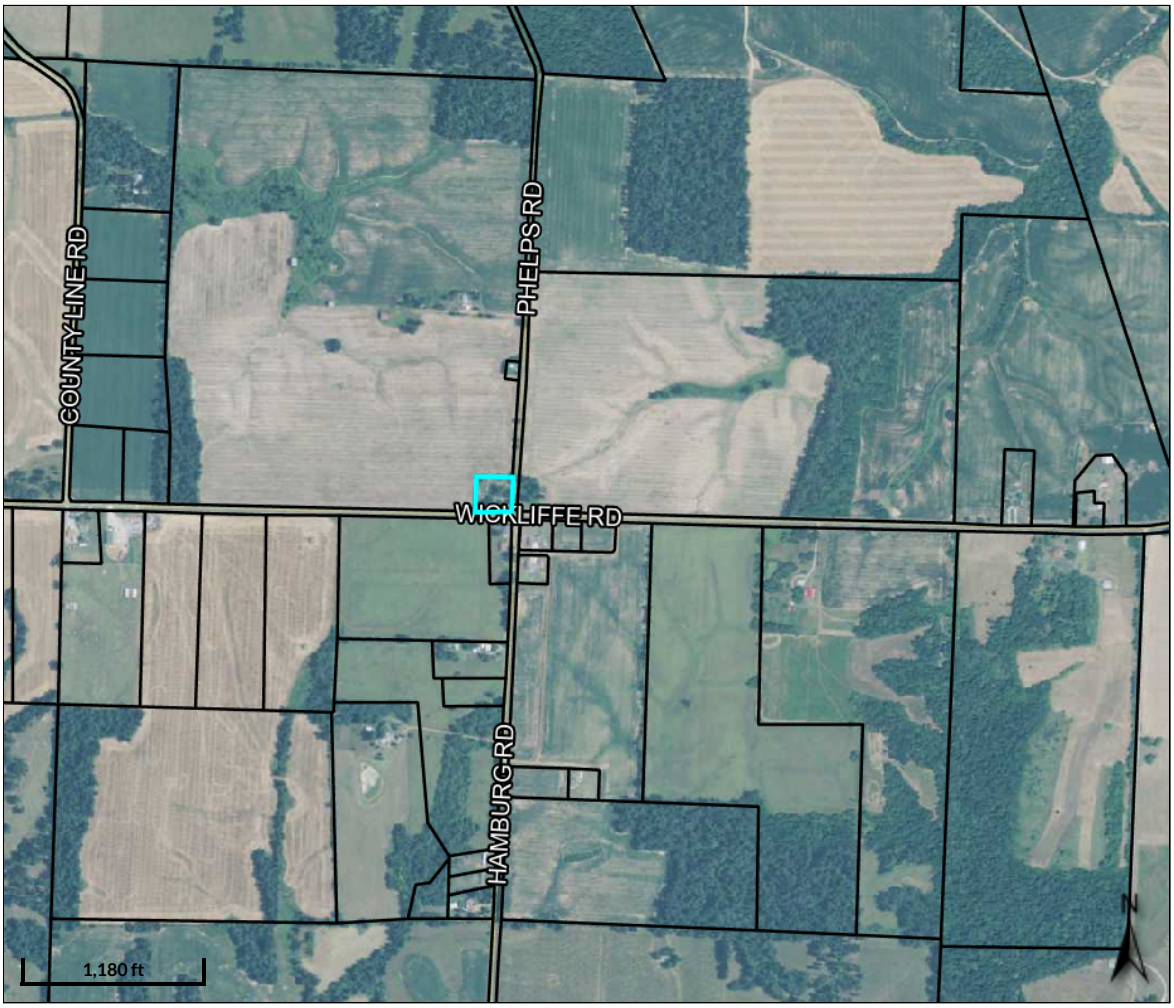

Overview

Legend

Parcels

Roads

Parcel ID	72-18	**Alternate ID**	114571	**Owner Address**	LAMKIN DONNA K & LAMPKIN JERRY
Sec/Twp/Rng	n/a	**Class**	RESIDENTIAL (10)		13612 WICKLIFFE ROAD
Property Address	13612 WICKLIFFE ROAD	**Acreage**	1.0		KEVIL, KY 42053
District	01-County				
Brief Tax Description	n/a				
	(Note: Not to be used on legal documents)				

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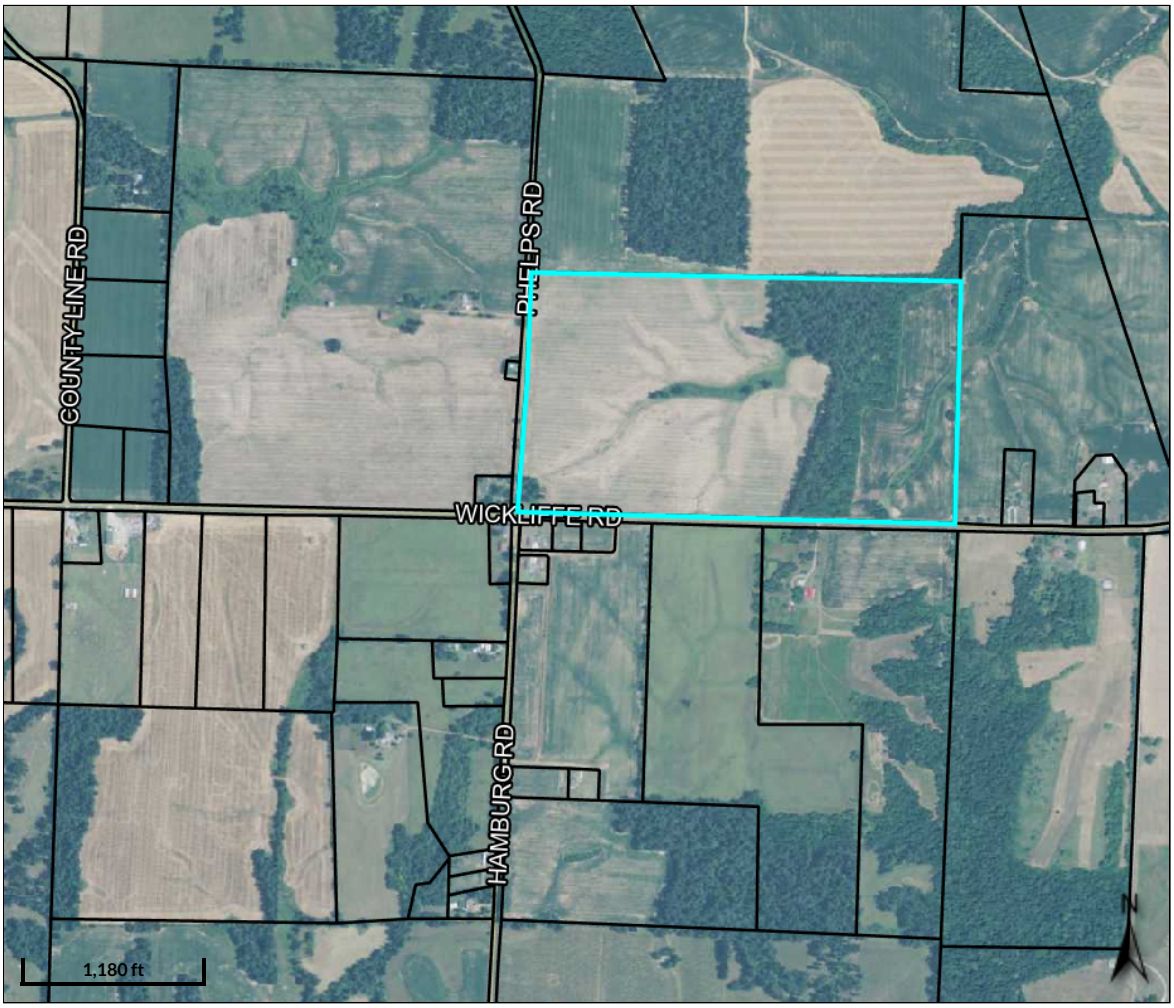

Overview

Legend

Parcels

Roads

Parcel ID	72-16-01	**Alternate ID**	114568	**Owner Address**	HOWARD AMBER
Sec/Twp/Rng	n/a	**Class**	FARM (20)		898 CROSSLAND ROAD
Property Address	WICKLIFFE ROAD	**Acreage**	95.0		MURRAY, KY 42071
District	01-County				
Brief Tax Description	WILL D8 N11964 1971 MH 60 X 12 (Note: Not to be used on legal documents)				

Date created: 1/8/2025
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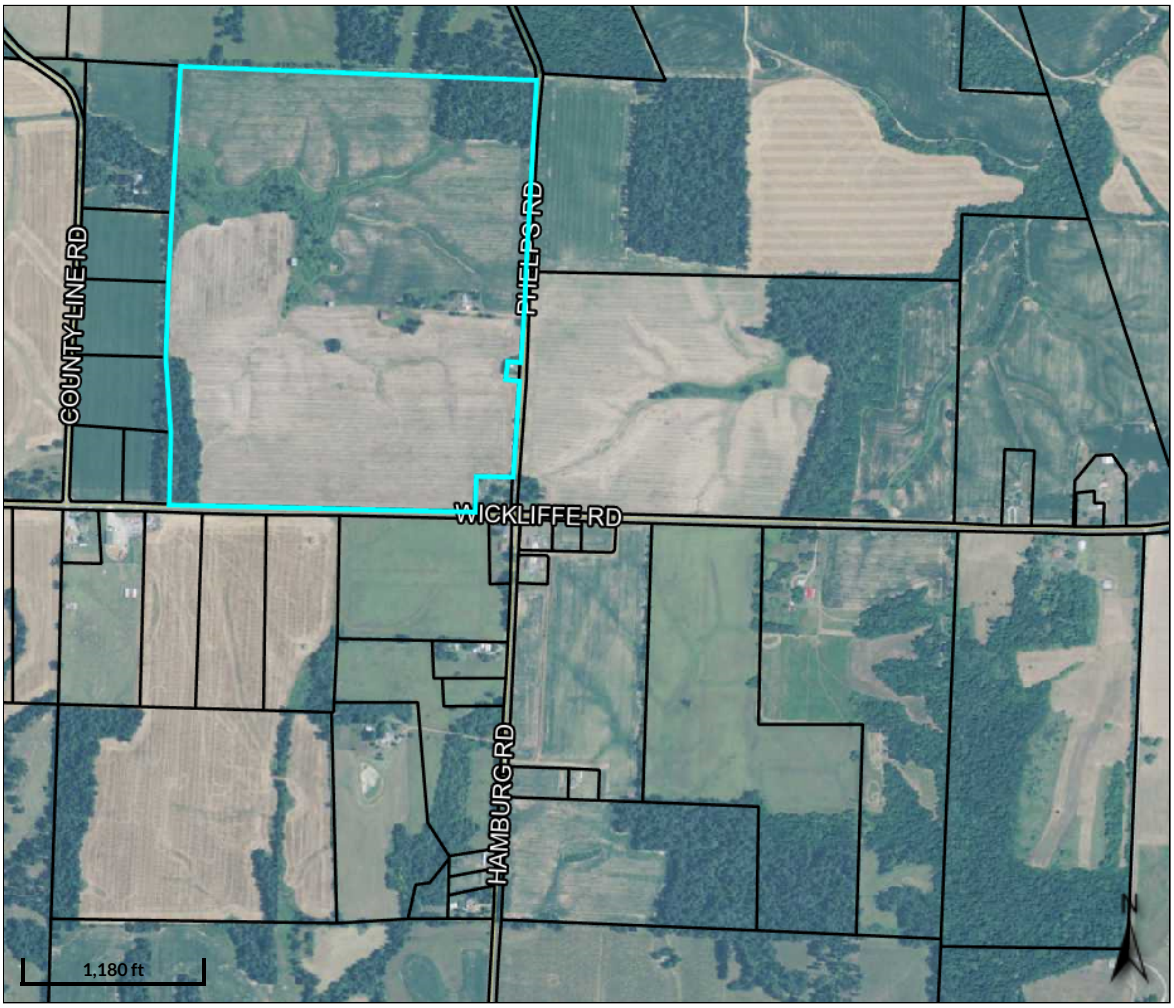

Overview

Legend

Parcels

Roads

Parcel ID	72-16	**Alternate ID**	114567	**Owner Address**	HOWARD AMBER
Sec/Twp/Rng	n/a	**Class**	FARM (20)		898 CROSSLAND ROAD
Property Address	13997 WICKLIFFE ROAD	**Acreage**	120.0		MURRAY, KY 42071
District	01-County				
Brief Tax Description	n/a				
	(Note: Not to be used on legal documents)				

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Overview

Legend

Parcels

Roads

Parcel ID	72-29	**Alternate ID**	114609	**Owner Address**	BOHANON JOHN L
Sec/Twp/Rng	n/a	**Class**	FARM (20)		2099 COUNTY LINE ROAD
Property Address	WICKLIFFE ROAD	**Acreage**	20.0		KEVIL, KY 42053
District	01-County				
Brief Tax Description	n/a				
	(Note: Not to be used on legal documents)				

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Overview

Legend

Parcels

Roads

Parcel ID	72-35-25	**Alternate ID**	114623	**Owner Address**	RYAN LAWSON PROPERTIES LLC
Sec/Twp/Rng	n/a	**Class**	RESIDENTIAL (10)		968 NORTH 37TH STREET UNIT B
Property Address	509 CASSANDRA BLVD	**Acreage**	0.771		PADUCAH, KY 42001
District	01-County				
Brief Tax Description	n/a				
	(Note: Not to be used on legal documents)				

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Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
CASSANDRA SMITH
MATTHEW SMITH
2162 HAMBURG ROAD
KEVIL, KY 42053
PS Form 3800, January 2023 PSN 7530-02-000-9047
See Reverse for Instructions
DEC 24 2024
SHEPHERDSVILLE KY
40165


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ANTHONY & PAMELA J HUNT
4943 LA CENTER ROAD
BARLOW, KY 42024
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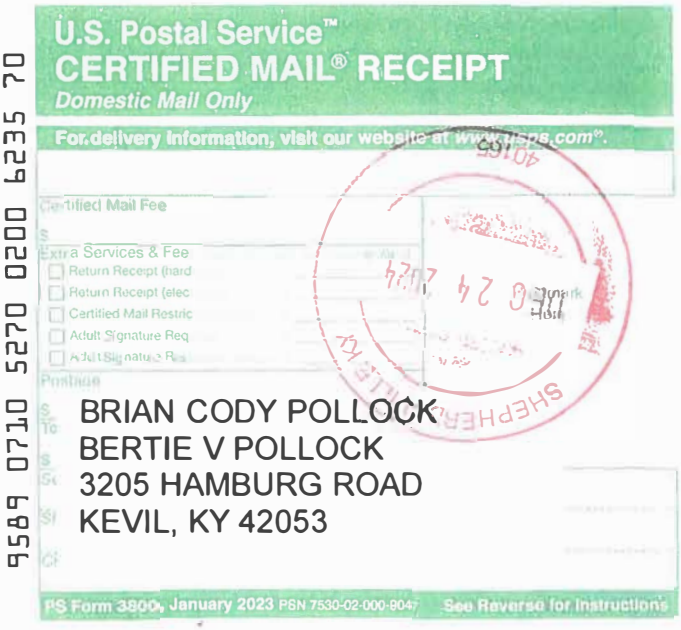
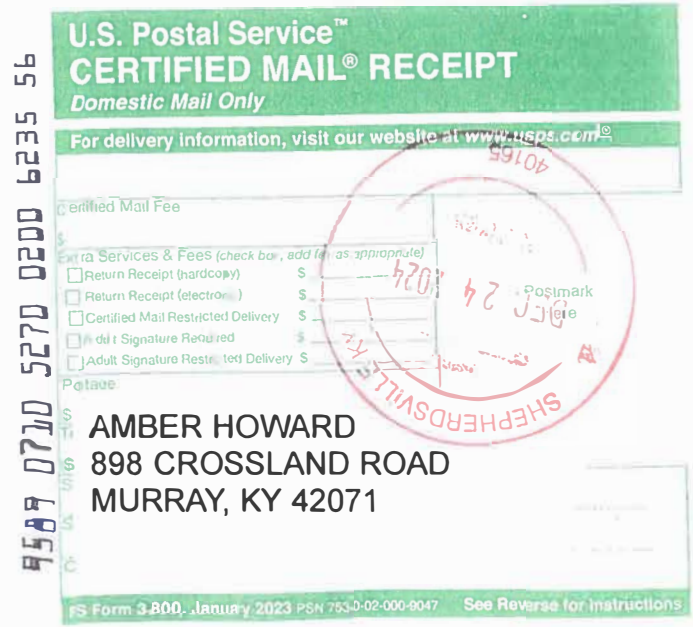
DEC 24 2024
SHEPHERDSVILLE KY
40165


9589 0710 5270 0200 6235 70
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
Certified Mail Fee
Extra Services & Fees
Return Receipt (hard
Return Receipt (elec
Certified Mail Restric
Adult Signature Req
Postage
BRIAN CODY POLLOCK
BERTIE V POLLOCK
3205 HAMBURG ROAD
KEVIL, KY 42053
PS Form 3800, January 2023 PSN 7530-02-000-9047
See Reverse for Instructions
DEC 24 2024
SHEPHERDSVILLE KY
40165


9589 0710 5270 0200 6235 56
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
AMBER HOWARD
898 CROSSLAND ROAD
MURRAY, KY 42071
PS Form 3800, January 2023 PSN 7530-02-000-9047
See Reverse for Instructions
DEC 24 2024
SHEPHERDSVILLE KY
40165


9589 0710 5270 0200 6235 49
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
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For delivery information, visit our website at www.usps.com®.
Certified Mail Fee
Extra Services & Fees
Return Receipt (hardcopy)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
DONNA K & JERRY LAMPKIN
13612 WICKLIFFE ROAD
KEVIL, KY 42053
PS Form 3800, January 2023 PSN 7530-02-000-9047
See Reverse for Instructions
DEC 24 2024
SHEPHERDSVILLE KY
40165


9589 0710 5270 0200 6242 25
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
SHEPHERDSVILLE KY
JAN 08 2025
Postmark Here
RYAN LAWSON PROPERTIES LLC
968 NORTH 37TH STREET UNIT B
PADUCAH, KY 42001
PS Form 3800, January 2023 PSN 7530-02-000-9047
See Reverse for Instructions


9589 0710 5270 0200 6242 32
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
SHEPHERDSVILLE KY
JAN 08 2025
40165
BOHANON JOHN L
2099 COUNTY LINE ROAD
KEVIL, KY 42053
PS Form 3800, January 2023 PSN 7530-02-000-9047
See Reverse for Instru

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:

AMBER HOWARD
898 CROSSLAND ROAD
MURRAY, KY 42071

9590 9402 7926 2305 8566 47

2. Article Number (Transfer from service label)
9589 0710 5270 0200 6235 56

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Amber Howard ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery 12-30

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

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

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

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

DONNA K & JERRY LAMPKIN
13612 WICKLIFFE ROAD
KEVIL, KY 42053

9590 9402 7926 2305 8566 54

2. Article Number (Transfer from ...
9589 0710 5270 0200 6235 49

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Address

B. Received by (Printed Name) Jerry D. Lampkin | C. Date of Deliv 12-27-2

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

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restri Delivery
☐ Signature Confirmatio
☐ Signature Confirmatio Restricted Delivery

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

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:

DWAINE & DBRA J STIGALL
1352 HAMBURG ROAD
KEVIL, KY 42053

9590 9402 7926 2305 8566 09

2. Article Number (Transfer from service label)
9589 0710 5270 0200 6235 94

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Cassie Smith | 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

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

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

ANTHONY & PAMELA J HUNT
4943 LA CENTER ROAD
BARLOW, KY 42024

9590 9402 7926 2305 8566 30

Article Number (Transfer from service label)
589 0710 5270 0200 6235 63

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addres

B. Received by (Printed Name) Pam Hunt | C. Date of Deliv 12-26-20

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 Restri Delivery
☐ Signature Confirmatio
☐ Signature Confirmatio Restricted Delivery

S Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Recei

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:

CASSANDRA SMITH
MATTHEW SMITH
2162 HAMBURG ROAD
KEVIL, KY 42053

9590 9402 7926 2305 8566 16

2. Article Number *(Transfer from service label)*

9589 0710 5270 0200 6235 87

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent
☐ Addressee

B. Received by *(Printed Name)* Cassie Smith

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
- ☐ red Mail
- ☐ red Mail Restricted Delivery
- $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

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

ALERT: MAJOR WINTER STORM FROM CENTRAL PLAINS THROUGH MID-AT…

USPS Tracking®

FAQs >

Remove ×

Tracking Number:

9589071052700200623570

Copy Add to Informed Delivery (https://informeddelivery.usps.com/)

Feedback

Latest Update

Your item was picked up at the post office at 1:21 pm on January 2, 2025 in KEVIL, KY 42053.

Get More Out of USPS Tracking:

USPS Tracking Plus®

Delivered

Delivered, Individual Picked Up at Post Office

KEVIL, KY 42053
January 2, 2025, 1:21 pm

See All Tracking History

What Do USPS Tracking Statuses Mean? (https://faq.usps.com/s/article/Where-is-my-package)

Text & Email Updates

USPS Tracking Plus®

Product Information

See Less

Track Another Package

Enter tracking or barcode numbers

Need More Help?

Contact USPS Tracking support for further assistance.

FAQs

EXHIBIT K
COPY OF PROPERTY OWNER NOTIFICATION

PIKE LEGAL GROUP PLLC
1578 Highway 44 East, Unit 6
PO Box 369
Shepherdsville, KY 40165-0369
Phone: 502-955-4400
Fax: 502-543-4410

VIA CERTIFIED MAIL

Notice of Proposed Construction of Wireless Communications Facility

Dear Landowner:

The Towers, LLC d/b/a Vertical Bridge and Kentucky RSA No. 1 Partnership by Cellco Partnership d/b/a Verizon Wireless, its Operating Entity, are filing an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located on KY Highway 286, Kevil, KY 42053 (37° 00' 17.56" North latitude, 88° 51' 04.67" West longitude). The proposed facility will include a 290-foot tower with a 10-foot lightning arrestor attached at the top for a total height of 300-feet, plus related ground facilities. This facility is needed to provide improved service for wireless communications in the area.

This notice is being sent to you because the County Property Valuation Administrator's records indicate that you may own property that is within a 500' radius of the proposed tower site or contiguous to the property on which the tower is to be constructed. You have a right to submit testimony to the PSC, either in writing or to request intervention in the PSC's proceedings on the application. You may contact the PSC for additional information concerning this matter at: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2024-00407 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. Verizon Wireless radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the area. Please feel free to contact us toll free at (800) 516-4293 if you have any comments or questions about this proposal. The Applicant site name is Lovelaceville.

Sincerely,
David A. Pike
Attorney for Applicant

enclosures

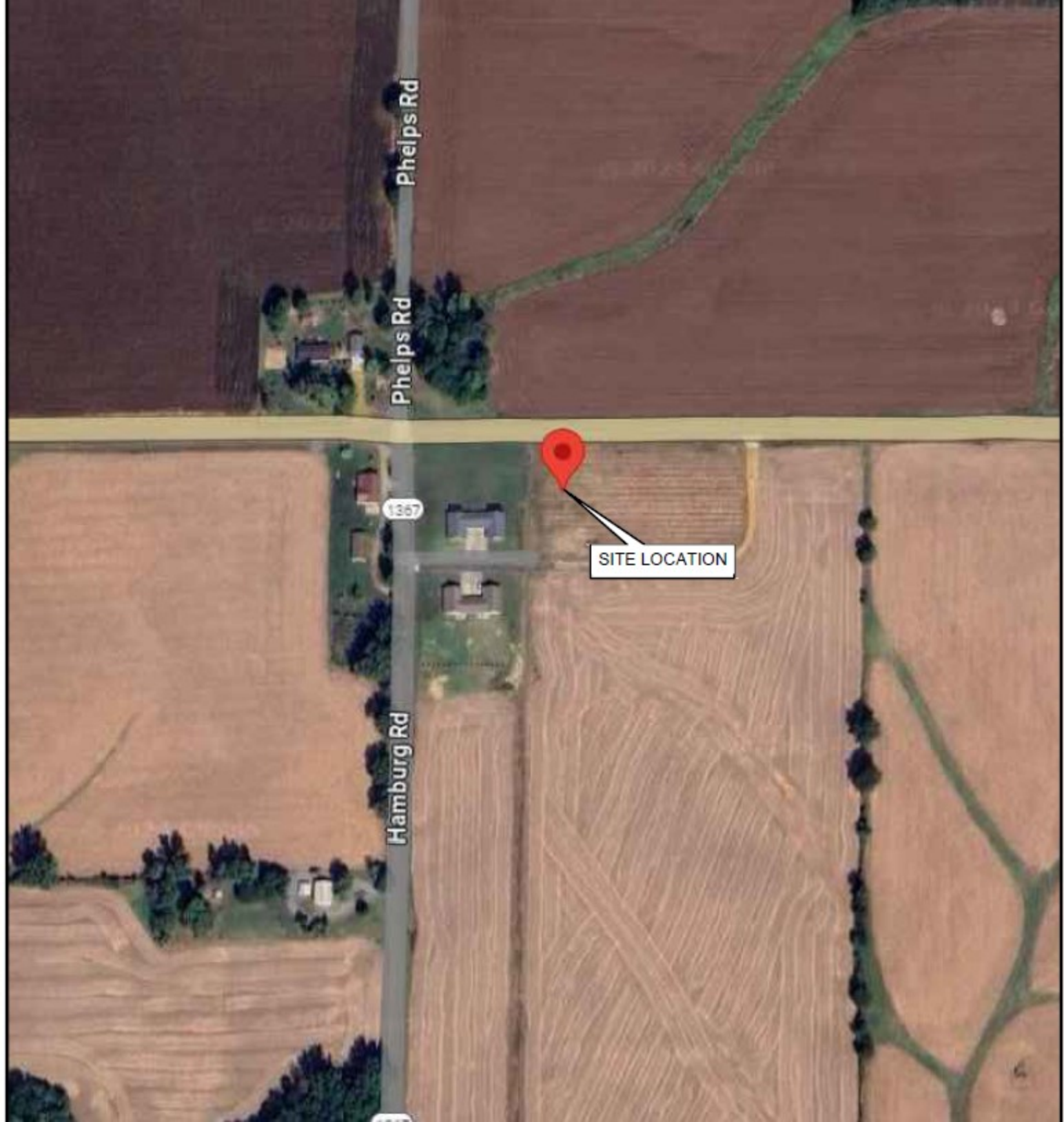

Phelps Rd
Phelps Rd
1357
SITE LOCATION
Hamburg Rd

EXHIBIT L
COPY OF COUNTY JUDGE/EXECUTIVE NOTICE

PIKE LEGAL GROUP PLLC
1578 Highway 44 East, Unit 6
PO Box 369
Shepherdsville, KY 40165-0369
Phone: 502-955-4400
Fax: 502-543-4410

VIA CERTIFIED MAIL

Hon. Todd Cooper
Ballard County Judge Executive
Ballard County Courthouse Annex
P.O. Box 276
437 Ohio Street
Wickliffe, KY 42087

RE: Notice of Proposal to Construct Wireless Communications Facility
Kentucky Public Service Commission Docket No. 2024-00407
Site Name: Lovelaceville

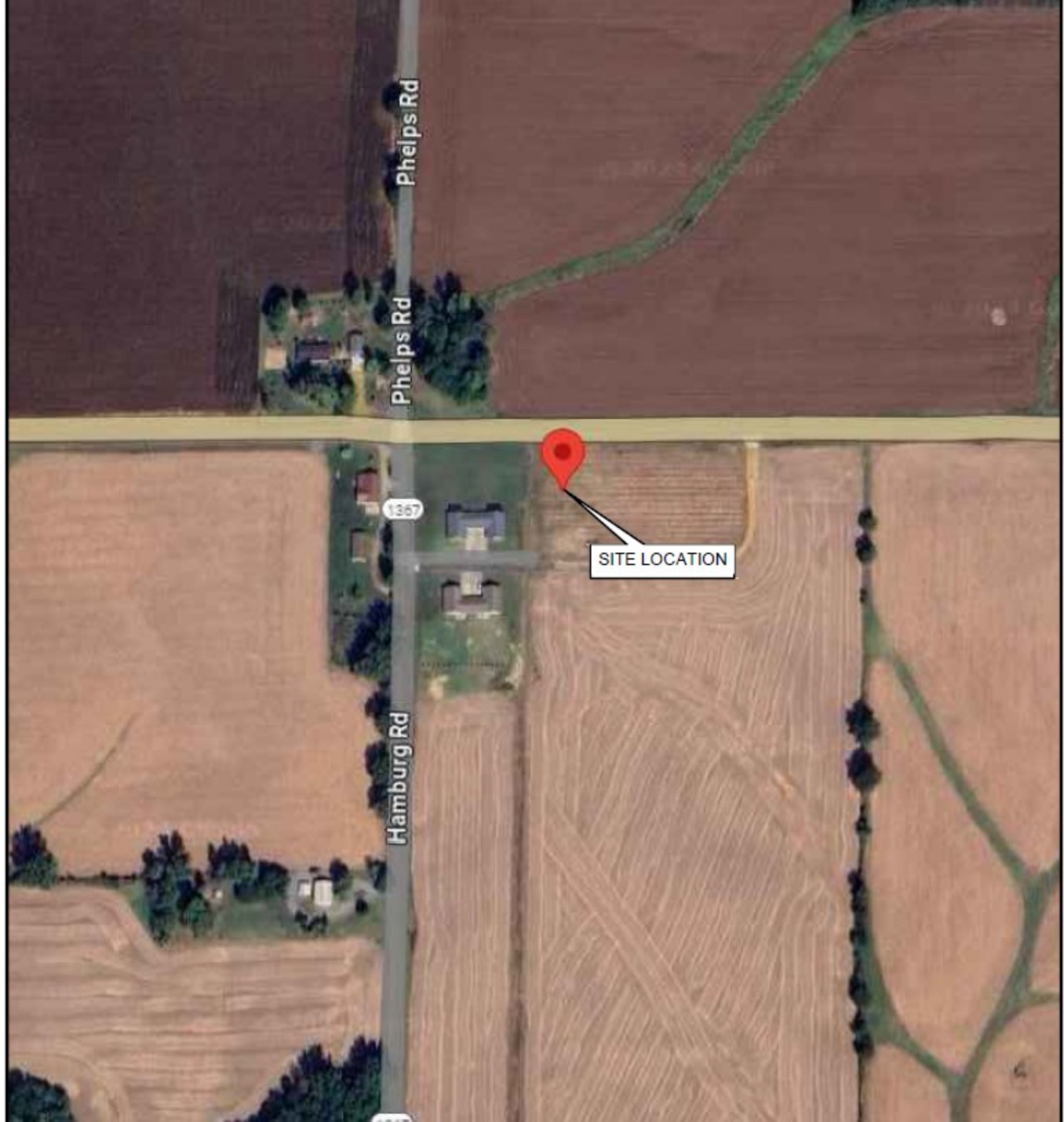
Dear Judge/Executive:

The Towers, LLC d/b/a Vertical Bridge and Kentucky RSA No. 1 Partnership by Cellco Partnership d/b/a Verizon Wireless, its Operating Entity, are filing an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located on KY Highway 286, Kevil, KY 42053 (37° 00' 17.56" North latitude, 88° 51' 04.67" West longitude). The proposed facility will include a 290-foot tower with a 10-foot lightning arrestor attached at the top for a total height of 300-feet, plus related ground facilities. This facility is needed to provide improved service for wireless communications in the area.

You have a right to submit comments to the PSC or to request intervention in the PSC's proceedings on the application. You may contact the PSC at: Executive Director, Public Service Commission, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2024- 00407 in any correspondence sent in connection with this matter.

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

Sincerely,
David A. Pike
Attorney for Applicant
enclosures


Phelps Rd
Phelps Rd
1357
SITE LOCATION
Hamburg Rd

9589 0710 5270 0200 6236 00

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

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

Certified Mail Fee
$
Extra Services & Fees
☐ Return Receipt (hardcopy)
☐ Return Receipt (electronic)
☐ Certified Mail Restricted Delivery
☐ Adult Signature Required
☐ Adult Signature Restricted Delivery
Postage

Hon. Todd Cooper
Ballard County Judge Executive
Ballard County Courthouse Annex
P. O. Box 276
437 Ohio Street
Wickliffe, KY 42087

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

SENDER: *COMPLETE THIS SECTION*

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

1. Article Addressed to:

Hon. Todd Cooper
Ballard County Judge Executive
Ballard County Courthouse Annex
P. O. Box 276
437 Ohio Street
Wickliffe, KY 42087

9590 9402 7926 2305 8565 93

2. Article Number *(Transfer from service label)*

9589 0710 5270 0200 6236 00

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

WICKLIFFE KY 42087

DEC 27 2024

USPS

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ■ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ red Mail
- ☐ red Mail Restricted Delivery
- ☐ $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

EXHIBIT M
COPY OF POSTED NOTICES
AND NEWSPAPER NOTICE ADVERTISEMENT

SITE NAME: LOVELACEVILLE
NOTICE SIGNS

The signs are at least (2) feet by four (4) feet in size, of durable material, with the text printed in black letters at least one (1) inch in height against a white background, except for the word "**tower**," which is at least four (4) inches in height.

The Towers, LLC d/b/a Vertical Bridge and Kentucky RSA No. 1 Partnership by Cellco Partnership d/b/a Verizon Wireless, its Operating Entity, propose to construct a telecommunications **tower** on this site. If you have questions, please contact Pike Legal Group, PLLC, P.O. Box 369, Shepherdsville, KY 40165; (800) 516-4293, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2024-00407 in your correspondence.

The Towers, LLC d/b/a Vertical Bridge and Kentucky RSA No. 1 Partnership by Cellco Partnership d/b/a Verizon Wireless, its Operating Entity, propose to construct a telecommunications **tower** near this site. If you have questions, please contact Pike Legal Group, PLLC, P.O. Box 369, Shepherdsville, KY 40165; (800) 516-4293, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2024-00407 in your correspondence.

PIKE LEGAL GROUP PLLC
1578 Highway 44 East, Unit 6
PO Box 369
Shepherdsville, KY 40165-0369
Phone: 502-955-4400
Fax: 502-543-4410

TELEPHONE: (270) 442-7389
VIA EMAIL: greg007@ky-news.com

Advance-Yeoman
Attn: Greg LeNeave
114 West Kentucky Dr
LaCenter, KY 42056

RE: Legal Notice Advertisement
Site Name: Lovelaceville

Dear Mr. LeNeave:

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

NOTICE

The Towers, LLC d/b/a Vertical Bridge and Kentucky RSA No. 1 Partnership by Cellco Partnership d/b/a Verizon Wireless, its Operating Entity, are filing an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located on KY Highway 286, Kevil, KY 42053 (37° 00' 17.56" North latitude, 88° 51' 04.67" West longitude). The proposed facility will include a 290-foot tower with a 10-foot lightning arrestor attached at the top for a total height of 300-feet, plus related ground facilities. You may contact the PSC for additional information concerning this matter at: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2024-00407 in any correspondence sent in connection with this matter.

After this advertisement has been published, please forward a tearsheet copy, affidavit of publication, and invoice to Pike Legal Group, PLLC, P. O. Box 369, Shepherdsville, KY 40165. Please call me at (800) 516-4293 if you have any questions. Thank you for your assistance.

Sincerely,
Robert W. Grant
Pike Legal Group, PLLC

EXHIBIT N
COPY OF RADIO FREQUENCY DESIGN SEARCH AREA


36.976669, -88.838331
42060
Image © 2024 Airbus
7206 ft
Google Earth