COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF	)	
NEW CINGULAR WIRELESS PCS, LLC,	)	
A DELAWARE LIMITED LIABILITY COMPANY,	)	
D/B/A AT&T MOBILITY	)	
AND HARMONI TOWERS LLC, A DELAWARE	)	
LIMITED LIABILITY COMPANY	)	
FOR ISSUANCE OF A CERTIFICATE OF PUBLIC	)	CASE NO.: 2022-00062
CONVENIENCE AND NECESSITY TO CONSTRUCT	)	
A WIRELESS COMMUNICATIONS FACILITY	)	
IN THE COMMONWEALTH OF KENTUCKY	)	
IN THE COUNTY OF MCCREARY	)	

SITE NAME: PARKERS LAKE RELO

* * * * * * *

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

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility and Harmoni Towers LLC, a Delaware limited liability company (formerly known as Uniti Towers LLC) ("Applicants"), by counsel, pursuant to (i) KRS §§ 278.020, 278.040, 278.650, 278.665, and other statutory authority, and the rules and regulations applicable thereto, and (ii) the Telecommunications Act of 1996, respectfully submit this Application requesting issuance of a Certificate of Public Convenience and Necessity ("CPCN") from the Kentucky Public Service Commission ("PSC") to construct, maintain, and operate a Wireless Communications Facility ("WCF") to serve the customers of the Applicants with wireless communications services.

In support of this Application, Applicants respectfully provide and state the following

information:

1. The complete names and addresses of the Applicants are: New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility, having an address of Meidinger Tower, 462 S. 4th Street, Suite 2400, Louisville, Kentucky 40202 and Harmoni Towers LLC, a Delaware limited liability company having an address of 11101 Anderson Drive, Suite 200, Little Rock, Arkansas 72212.

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. AT&T Mobility is a limited liability company organized in the State of Delaware on October 20, 1994. Harmoni Towers is a limited liability company organized in the State of Delaware on December 2, 2015.

4. Applicants attest that they are in good standing in the state in which they are organized and further state that they are authorized to transact business in Kentucky.

5. The Certificates of Authority filed with the Kentucky Secretary of State for both Applicants are attached as part of **Exhibit A** pursuant to 807 KAR 5:001: Section 14(3). Note that Harmoni Towers LLC was formerly organized as Uniti Towers LLC (see an Amended Certificate of Authority to change entity name dated March 22, 2021 attached as part of **Exhibit A**). The Certificates of Authority for Uniti Towers LLC along with the Amended Certificate of Authority for Harmoni Towers LLC is attached as part of **Exhibit A.**

6. AT&T Mobility operates on frequencies licensed by the Federal Communications Commission ("FCC") pursuant to applicable FCC requirements. Copies of AT&T Mobility's FCC 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.

7. The public convenience and necessity require the construction of the proposed WCF. The construction of the WCF will bring or improve AT&T Mobility's services to an area currently not served or not adequately served by AT&T Mobility 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 AT&T Mobility's 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 AT&T Mobility's network design that must be in place to provide adequate coverage to the service area.

8. To address the above-described service needs, Applicants propose to construct a WCF 141 Joe Neal Road, Parkers Lake, KY 42634 (E-911) / Joe Neal Road, Parkers Lake, KY 42634 (PARCEL) (36° 50' 21.56" North latitude, 84° 29' 06.37" 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 Richard E. Corder and Sheryl F. Corder pursuant to a deed recorded at Deed Book 205, Page 106 in the office of the County Clerk. The proposed WCF will consist of a 2-foot tall foundation below a 255-foot tall tower, with an approximately 10-foot tall lightning arrestor attached at

the top, for a total height of 267-feet, plus related ground facilities. The WCF will also include concrete foundations and a shelter or cabinets to accommodate the placement of AT&T Mobility's radio electronics equipment and appurtenant equipment. The Applicants' equipment cabinet or shelter will be approved for use in the Commonwealth of Kentucky by the relevant building inspector. The WCF compound will be fenced and all access gate(s) will be secured. A description of the manner in which the proposed WCF will be constructed is attached as **Exhibit B** and **Exhibit C**.

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

10. 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 AT&T Mobility's antennas has also been included as part of **Exhibit B**.

11. 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**.

12. 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 AT&T Mobility's antennas on an existing structure. When suitable towers or structures exist, AT&T Mobility attempts to co-locate on existing structures such as communications towers or other structures

capable of supporting AT&T Mobility's facilities; however, no other suitable or available co-location site was found to be located in the vicinity of the site.

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

14. A copy of the Kentucky Airport Zoning Commission ("KAZC") application for the proposed construction is attached as **Exhibit F**.

15. 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.

16. 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.

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

18. 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.

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

20. 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.

21. **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**.

22. 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.

23. 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**.

24. 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 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 has been published in a newspaper of general circulation in the county in which the WCF is proposed to be located. A copy of the newspaper legal notice advertisement is attached as part of **Exhibit M**.

25. The general area where the proposed facility is to be located is rural in character.

26. The process that was used by AT&T Mobility's radio frequency engineers in selecting the site for the proposed WCF was consistent with the general process used for selecting all other existing and proposed WCF facilities within the proposed network design area. AT&T Mobility's radio frequency engineers have conducted studies and tests in order to develop a highly efficient network that is designed to handle voice and data traffic in the service area. The engineers determined an optimum area for the placement of the proposed facility in terms of elevation and location to provide the best quality service to

customers in the service area. A radio frequency design search area prepared in reference to these radio frequency studies was considered by the Applicants when searching for sites for its antennas that would provide the coverage deemed necessary by AT&T Mobility. 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**.

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

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

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

David A. Pike
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

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
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
Attorney for Applicants

LIST OF EXHIBITS

A - Certificate of Authority & 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

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

K - Copy of Property Owner Notification

L - Copy of County Judge/Executive Notice

M - Copy of Posted Notices and Newspaper Notice Advertisement

N - Copy of Radio Frequency Design Search Area

EXHIBIT A
CERTIFICATE OF AUTHORITY & FCC LICENSE DOCUMENTATION

Commonwealth of Kentucky
Alison Lundergan Grimes, Secretary of State

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

Certificate of Authorization

Authentication number: 216299
Visit https://app.sos.ky.gov/ftshow/certvalidate.aspx to authenticate this certificate.

I, Alison Lundergan Grimes, Secretary of State of the Commonwealth of Kentucky, do hereby certify that according to the records in the Office of the Secretary of State,

NEW CINGULAR WIRELESS PCS, LLC

, a limited liability company authorized under the laws of the state of Delaware, is authorized to transact business in the Commonwealth of Kentucky, and received the authority to transact business in Kentucky on October 14, 1999.

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 28th day of May, 2019, in the 227th year of the Commonwealth.

Alison Lundergan Grimes
Secretary of State
Commonwealth of Kentucky
216299/0481848

0972004.06 mstratton ADD

Alison Lundergan Grimes
Kentucky Secretary of State
Received and Filed:
1/3/2017 3:10 PM
Fee Receipt: $90.00

COMMONWEALTH OF KENTUCKY
ALISON LUNDERGAN GRIMES, SECRETARY OF STATE

Division of Business Filings Business Filings PO Box 718 Frankfort, KY 40602 (502) 564-3490 www.sos.ky.gov	Certificate of Authority (Foreign Business Entity)	FBE

Pursuant to the provisions of KRS 14A and KRS 271B, 273, 274,275, 362 and 386 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 (KRS 271B). ☐ nonprofit corporation (KRS 273). ☐ professional service corporation (KRS 274). ☐ business trust (KRS 386). ☑ limited liability company (KRS 275). ☐ professional limited liability company (KRS 275). ☐ limited partnership (KRS 362).

2. The name of the entity is Uniti 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 Delaware

5. The date of organization is 12/2/2015 and the period of duration is _____
(If left blank, the period of duration is considered perpetual.)

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

10802 Executive Center Drive, Benton Building, Suite 300	Little Rock	AR	72211
Street Address	City	State	Zip Code

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

306 West Main Street - Suite 512	Frankfort	KY	40601
Street Address (No P.O. Box Numbers)	City	State	Zip Code

and the name of the registered agent at that office is C T Corporation System

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

Daniel L. Heard	10802 Executive Center Drive, Benton Building, Suite 300	Little Rock	AR	72211
Name	Street or P.O. Box	City	State	Zip Code
Kenneth Gunderman	10802 Executive Center Drive, Benton Building, Suite 300	Little Rock	AR	72211
Name	Street or P.O. Box	City	State	Zip Code
Mark A. Wallace	10802 Executive Center Drive, Benton Building, Suite 300	Little Rock	AR	72211
Name	Street or P.O. Box	City	State	Zip Code

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, unless a delayed effective date and/or time is provided.
The effective date or the delayed effective date cannot be prior to the date the application is filed. The date and/or time is _____
(Delayed effective date and/or time)

[signature]	Keith Harvey, VP - Deputy General Counsel	12/30/2016
Signature of Authorized Representative	Printed Name & Title	Date

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

[signature]	Tristan Emrich	Assistant Secretary	12/30/2016
Signature of Registered Agent	Printed Name	Title	Date

(09/15)

0972004.06	vmiller AMD
Michael G. Adams Kentucky Secretary of State Received and Filed: 3/22/2021 12:28 PM Fee Receipt: $40.00	

COMMONWEALTH OF KENTUCKY
MICHAEL ADAMS, SECRETARY OF STATE

Division of Business Filings P.O. Box 718 Frankfort, KY 40602 (502) 564-3490 www.sos.ky.gov	**Amended Certificate of Authority** **(Foreign Business Entity)**	**FCA**

Pursuant to the provisions of KRS Chapter KRS 14A and 271B, 273, 274, 275, 362 or 386 the undersigned hereby applies for an amended certificate of authority on behalf of the entity named below and, for that purpose, submits the following statements:

1. The business entity is:
- ☐ profit corporation (KRS 271B)
- ☐ professional service corporation (KRS 274).
- ☒ limited liability company (KRS 275).
- ☐ professional limited liability company (KRS 275
- ☐ limited cooperative association
- ☐ cooperative association
- ☐ nonprofit corporation (KRS 273).
- ☐ business trust (KRS 386).
- ☐ limited partnership (KRS 362).
- ☐ statutory trust (KRS 386)
- ☐ non-profit LLC (KRS 275).

2. The name of the company is: Uniti Towers LLC.
(The name must be identical to the name on record with the Secretary of State.)

3. It is an entity organized and existing under the laws of the state or country of Delaware.

4. The entity received authority to transact business in Kentucky on 1/3/2017.

5. The entity has changed its **(check all that apply)**

- ☑ Domicile name to Harmoni Towers LLC
- ☑ Name to be used in Kentucky to Harmoni Towers LLC
- ☐ Jurisdiction of organization to
- ☐ Period of duration
- ☐ Form of organization
- ☐ Management type: ☒ Member managed ☐ Manager managed

6. This application will be effective upon filing, unless a delayed effective date and/or time is provided. The effective date or the delayed effective date cannot be prior to the date the application is filed. The effective date is .

Please indicate the county in which your business operates:
County: Franklin

To complete the following, please shade the box completely.

Please indicate the size of your business:
- ☐ Small (Fewer than 50 employees)
- ☑ Large (50 or more employees)

Please indicate whether any of the following make up more than fifty percent (50%) of your business ownership:
- ☐ Women-Owned
- ☐ Veteran Owned
- ☐ Minority Owned

Please indicate which of the following best describes your business:
- ☐ Agriculture
- ☐ Wholesale Trade
- ☐ Public Administration
- ☐ Other
- ☐ Mining
- ☐ Retail Trade
- ☐ Services
- ☐ Manufacturing
- ☐ Construction
- ☐ Finance, Insurance, Real Estate
- ☑ Transportation, Communications, Electric, Gas, Sanitary Services

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

Signature of Authorized Representative	Dara Hoey	In-House Counsel	2/25/21
	Printed Name	**Title**	**Date**

(1/20)

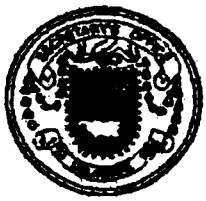
Delaware

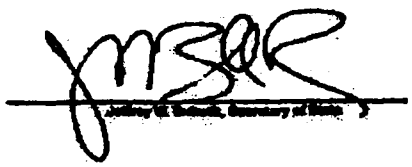
The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THAT THE SAID "UNITI TOWERS LLC", FILED A CERTIFICATE OF AMENDMENT, CHANGING ITS NAME TO "HARMONI TOWERS LLC" ON THE EIGHTEENTH DAY OF SEPTEMBER, A.D. 2020, AT 5:13 O'CLOCK P.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE AFORESAID LIMITED LIABILITY COMPANY IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE NOT HAVING BEEN CANCELLED OR REVOKED SO FAR AS THE RECORDS OF THIS OFFICE SHOW AND IS DULY AUTHORIZED TO TRANSACT BUSINESS.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "HARMONI TOWERS LLC" WAS FORMED ON THE SECOND DAY OF DECEMBER, A.D. 2015.





5896640 8320
SR# 20210417869

Authentication: 202491953
Date: 02-11-21

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

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: FCC GROUP
NEW CINGULAR WIRELESS PCS, LLC
208 S AKARD ST., RM 2100
DALLAS, TX 75202

Call Sign	File Number
KNKN666	0009619100
Radio Service CL - Cellular	
Market Numer CMA447	**Channel Block** A
Sub-Market Designator 0	

FCC Registration Number (FRN): 0003291192

Market Name
Kentucky 5 - Barren

Grant Date	Effective Date	Expiration Date	Five Yr Build-Out Date	Print Date
09-08-2021	09-08-2021	10-01-2031		09-08-2021

Site Information:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
7	37-10-00.0 N	085-18-37.0 W	282.5	291.4	1062332

Address: 1210 Cane Valley Road (94238)
City: Columbia **County:** ADAIR **State:** KY **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)	180.300	151.200	132.800	140.500	155.800	172.800	186.200	183.500
Transmitting ERP (watts)	250.037	98.154	10.266	2.559	0.527	0.738	12.510	102.333

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)	180.300	151.200	132.800	140.500	155.800	172.800	186.200	183.500
Transmitting ERP (watts)	1.408	30.262	153.476	217.337	49.025	5.207	1.772	0.660

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)	180.300	151.200	132.800	140.500	155.800	172.800	186.200	183.500
Transmitting ERP (watts)	2.948	0.454	0.942	4.366	59.310	210.546	155.347	22.706

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.

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKN666 **File Number:** 0009619100 **Print Date:** 09-08-2021

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
8	36-43-12.0 N	084-28-13.0 W	409.3	91.1	1042231

Address: 100 Manor Circle (94260)

City: Whitley City **County:** MCCREARY **State:** KY **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)	123.400	147.100	135.800	109.800	103.700	143.600	127.300	165.300
Transmitting ERP (watts)	244.175	220.925	36.790	4.400	1.072	1.113	3.637	56.485

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)	123.400	147.100	135.800	109.800	103.700	143.600	127.300	165.300
Transmitting ERP (watts)	2.526	8.109	37.053	64.172	73.466	23.019	4.143	0.935

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)	123.400	147.100	135.800	109.800	103.700	143.600	127.300	165.300
Transmitting ERP (watts)	13.438	3.125	0.649	0.912	15.291	122.113	297.793	117.856

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
17	36-56-36.9 N	086-00-52.2 W	218.8	91.1	1063506

Address: 638 GRAHAM ROAD (87368)

City: GLASGOW **County:** BARREN **State:** KY **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)	76.900	78.700	69.100	74.800	91.600	116.000	101.800	89.500
Transmitting ERP (watts)	138.618	59.574	7.477	1.200	0.283	0.661	10.185	66.521

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)	76.900	78.700	69.100	74.800	91.600	116.000	101.800	89.500
Transmitting ERP (watts)	2.142	19.146	94.547	124.562	33.322	3.559	0.817	0.257

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)	76.900	78.700	69.100	74.800	91.600	116.000	101.800	89.500
Transmitting ERP (watts)	2.434	0.360	0.244	4.119	40.205	121.384	90.927	17.264

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKN666 **File Number:** 0009619100 **Print Date:** 09-08-2021

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
18	36-48-31.1 N	084-50-43.5 W	466.6	61.0	1004214

Address: 6565 MORRIS HILL ROAD (87856)
City: MONTICELLO **County:** WAYNE **State:** KY **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)	216.900	160.100	180.400	174.000	158.000	164.800	204.700	214.300
Transmitting ERP (watts)	159.083	70.430	5.874	0.769	0.334	0.371	9.558	76.538

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)	216.900	160.100	180.400	174.000	158.000	164.800	204.700	214.300
Transmitting ERP (watts)	1.547	33.128	166.094	241.154	55.397	5.855	1.952	0.731

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)	216.900	160.100	180.400	174.000	158.000	164.800	204.700	214.300
Transmitting ERP (watts)	1.611	0.321	0.293	4.972	42.968	145.725	111.912	13.218

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
19	36-53-52.1 N	084-47-02.5 W	353.6	94.2	1238700

Address: ROUTE 5, BOX 9516 (87058)
City: Monticello **County:** WAYNE **State:** KY **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)	153.300	160.500	119.100	104.500	62.300	124.200	155.000	148.700
Transmitting ERP (watts)	151.264	65.591	5.815	0.740	0.328	0.344	9.075	72.988

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)	153.300	160.500	119.100	104.500	62.300	124.200	155.000	148.700
Transmitting ERP (watts)	2.029	20.018	108.704	142.806	33.266	2.825	0.395	0.478

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)	153.300	160.500	119.100	104.500	62.300	124.200	155.000	148.700
Transmitting ERP (watts)	1.536	0.299	0.287	4.752	41.633	135.419	106.546	12.709

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKN666 **File Number:** 0009619100 **Print Date:** 09-08-2021

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
20	37-05-19.7 N	084-54-47.3 W	331.6	106.4	1232264

Address: 1101 PINE TOP ROAD (86918)
City: RUSSELL SPRINGS **County:** RUSSELL **State:** KY **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)	118.700	77.600	105.400	136.900	148.600	127.700	120.400	134.300
Transmitting ERP (watts)	106.145	47.603	4.827	0.278	0.215	0.233	6.909	51.527

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)	118.700	77.600	105.400	136.900	148.600	127.700	120.400	134.300
Transmitting ERP (watts)	2.313	23.146	119.606	157.272	35.853	3.353	0.454	0.536

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)	118.700	77.600	105.400	136.900	148.600	127.700	120.400	134.300
Transmitting ERP (watts)	1.748	0.347	0.313	5.295	45.951	158.160	122.299	14.137

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
22	36-45-21.5 N	085-03-35.7 W	353.6	78.6	1258266

Address: RR BOX 200 STATE ROUTE 90 (97275)
City: Albany **County:** CLINTON **State:** KY **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)	159.200	140.400	108.000	36.100	88.900	81.600	132.000	170.300
Transmitting ERP (watts)	61.485	218.225	164.915	26.293	2.922	0.471	0.954	4.500

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)	159.200	140.400	108.000	36.100	88.900	81.600	132.000	170.300
Transmitting ERP (watts)	1.000	4.591	60.220	229.906	159.544	23.590	2.912	0.466

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)	159.200	140.400	108.000	36.100	88.900	81.600	132.000	170.300
Transmitting ERP (watts)	7.041	2.307	0.511	1.072	23.419	142.307	232.641	64.969

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKN666 **File Number:** 0009619100 **Print Date:** 09-08-2021

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
23	36-44-36.2 N	085-08-34.1 W	350.5	78.0	1258265

Address: 127 North Cross (Route 6 Box 991) (94257)
City: Albany **County:** CLINTON **State:** KY **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)	181.800	142.800	72.800	100.300	157.000	167.400	157.200	193.400
Transmitting ERP (watts)	31.597	145.107	168.768	30.884	3.418	1.072	0.669	1.670

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)	181.800	142.800	72.800	100.300	157.000	167.400	157.200	193.400
Transmitting ERP (watts)	1.105	1.668	14.838	36.641	44.724	30.421	5.045	2.474

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)	181.800	142.800	72.800	100.300	157.000	167.400	157.200	193.400
Transmitting ERP (watts)	40.424	4.384	1.518	0.529	1.123	24.617	125.244	176.237

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
26	37-18-17.2 N	085-55-38.3 W	285.3	99.1	1200030

Address: 824 I CHILDRESS ROAD (37618)
City: Munfordville **County:** HART **State:** KY **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)	137.000	120.900	185.100	176.500	166.200	156.000	134.000	170.100
Transmitting ERP (watts)	87.882	116.157	30.423	3.076	0.288	0.394	1.136	15.107

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)	137.000	120.900	185.100	176.500	166.200	156.000	134.000	170.100
Transmitting ERP (watts)	0.236	4.016	34.037	111.204	87.767	11.936	0.954	0.231

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)	137.000	120.900	185.100	176.500	166.200	156.000	134.000	170.100
Transmitting ERP (watts)	0.893	0.228	0.217	2.143	29.130	110.300	94.526	17.072

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKN666 **File Number:** 0009619100 **Print Date:** 09-08-2021

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
27	36-41-54.0 N	085-41-07.0 W	286.5	90.2	1065560

Address: 403 MARTIN SUBDIVISION (87881)
City: TOMPKINSVILLE **County:** MONROE **State:** KY **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)	69.700	75.300	146.800	80.100	75.200	103.200	86.800	75.200
Transmitting ERP (watts)	**271.841**	109.386	7.417	0.800	0.553	0.537	18.630	138.505

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)	**69.700**	75.300	146.800	80.100	75.200	103.200	86.800	75.200
Transmitting ERP (watts)	1.721	**17.109**	89.000	121.386	26.164	2.348	0.328	0.400

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)	69.700	**75.300**	**146.800**	80.100	75.200	103.200	86.800	75.200
Transmitting ERP (watts)	1.247	**0.244**	**0.229**	4.118	34.693	116.367	90.021	10.295

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
28	37-21-17.2 N	085-52-24.7 W	**352.0**	83.8	1220496

Address: 2830 Frenchman's Knob Road (94236)
City: Bonnieville **County:** HART **State:** KY **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)	193.700	191.000	195.200	**238.600**	**217.000**	184.800	226.800	216.700
Transmitting ERP (watts)	184.924	99.849	11.423	**0.450**	**0.602**	0.510	8.026	87.512

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)	193.700	191.000	195.200	238.600	217.000	184.800	226.800	216.700
Transmitting ERP (watts)	2.115	37.767	246.087	328.098	100.148	**5.709**	0.676	0.788

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)	193.700	191.000	195.200	238.600	**217.000**	**184.800**	226.800	216.700
Transmitting ERP (watts)	1.310	0.350	0.339	3.061	**46.385**	170.557	144.024	26.849

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
32	37-04-19.5 N	084-59-59.4 W	317.0	78.0	1257488

Address: 227 Horn Rd (94247)
City: Russell Springs **County:** RUSSELL **State:** KY **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)	149.200	77.200	79.700	105.800	146.300	99.500	80.900	89.500
Transmitting ERP (watts)	221.223	212.121	177.242	71.356	77.801	28.148	33.937	155.008

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)	149.200	77.200	79.700	105.800	146.300	99.500	80.900	89.500
Transmitting ERP (watts)	18.208	41.435	173.839	236.936	272.788	110.954	36.898	14.156

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)	149.200	77.200	79.700	105.800	146.300	99.500	80.900	89.500
Transmitting ERP (watts)	68.660	39.848	0.532	12.732	74.296	228.506	206.369	227.920

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
33	36-50-28.6 N	086-02-47.1 W	225.9	60.7	

Address: Austin Tracy Rd (115120)
City: Lucas **County:** BARREN **State:** KY **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)	91.800	79.300	63.800	43.400	95.100	66.500	80.300	112.900
Transmitting ERP (watts)	79.481	128.527	48.267	34.537	0.275	16.613	58.629	118.330

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)	91.800	79.300	63.800	43.400	95.100	66.500	80.300	112.900
Transmitting ERP (watts)	16.424	105.957	212.448	227.867	141.232	41.336	29.497	11.208

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)	91.800	79.300	63.800	43.400	95.100	66.500	80.300	112.900
Transmitting ERP (watts)	3.736	0.847	2.276	7.728	35.347	59.316	65.492	20.964

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)	91.800	79.300	63.700	43.400	95.100	66.500	80.300	112.900
Transmitting ERP (watts)	80.215	129.717	48.867	34.856	0.278	16.767	59.174	119.427

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)	91.800	79.300	63.700	43.400	95.100	66.500	80.300	112.900
Transmitting ERP (watts)	16.576	106.934	215.086	229.984	142.541	41.717	29.770	11.312

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKN666 **File Number:** 0009619100 **Print Date:** 09-08-2021

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
33	36-50-28.6 N	086-02-47.1 W	225.9	60.7	

Address: Austin Tracy Rd (115120)
City: Lucas **County:** BARREN **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)	91.800	79.300	63.700	43.400	95.100	66.500	80.300	112.900
Transmitting ERP (watts)	3.770	0.854	2.304	7.800	35.674	59.863	66.098	21.158

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
34	36-46-44.5 N	084-56-33.7 W	396.2	78.0	1258267

Address: 9096 W. Hwy 90 (94262)
City: Monticello **County:** WAYNE **State:** KY **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)	194.500	173.000	138.200	103.300	102.200	140.500	166.900	201.300
Transmitting ERP (watts)	147.841	143.877	130.052	39.637	24.482	1.946	8.038	54.683

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)	194.500	173.000	138.200	103.300	102.200	140.500	166.900	201.300
Transmitting ERP (watts)	0.742	5.202	57.406	186.618	115.460	13.939	2.131	0.396

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)	194.500	173.000	138.200	103.300	102.200	140.500	166.900	201.300
Transmitting ERP (watts)	27.223	19.327	10.778	15.109	86.367	155.385	168.892	88.819

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
35	36-39-45.3 N	084-26-36.2 W	428.2	79.9	1275397

Address: 6135 Hwy 1651 (115765)
City: Pine Knot **County:** MCCREARY **State:** KY **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)	132.500	143.700	119.600	95.500	88.700	114.200	161.300	166.800
Transmitting ERP (watts)	69.450	261.545	232.470	44.008	2.017	0.559	0.530	4.304

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)	132.500	143.700	119.600	95.500	88.700	114.200	161.300	166.800
Transmitting ERP (watts)	0.210	0.184	2.662	25.143	50.189	30.009	3.791	0.206

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKN666 **File Number:** 0009619100 **Print Date:** 09-08-2021

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
35	36-39-45.3 N	084-26-36.2 W	428.2	79.9	1275397

Address: 6135 Hwy 1651 (115765)
City: Pine Knot **County:** MCCREARY **State:** KY **Construction Deadline:**

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)	132.500	143.700	119.600	95.500	88.700	114.200	161.300	166.800
Transmitting ERP (watts)	113.680	6.615	0.792	0.868	2.269	39.368	258.605	358.864

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
36	36-50-27.1 N	084-28-44.2 W	425.5	79.6	1233359

Address: 165 HWY 90 (114139)
City: Parkers Lake **County:** MCCREARY **State:** KY **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)	185.500	163.600	170.800	152.900	106.200	178.000	165.700	183.000
Transmitting ERP (watts)	23.185	14.817	1.670	0.153	0.104	0.150	1.655	13.513

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)	185.500	163.600	170.800	152.900	106.200	178.000	165.700	183.000
Transmitting ERP (watts)	2.683	26.605	140.903	189.301	44.170	3.813	0.542	0.629

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)	185.500	163.600	170.800	152.900	106.200	178.000	165.700	183.000
Transmitting ERP (watts)	2.063	0.405	0.373	6.243	54.676	179.706	144.196	16.857

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
37	36-41-51.7 N	085-07-19.1 W	303.9	78.0	1273817

Address: 399 Daylton Road (112920)
City: Albany **County:** CLINTON **State:** KY **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)	103.500	53.600	30.000	64.200	100.300	112.300	94.400	76.300
Transmitting ERP (watts)	255.895	112.531	6.303	1.065	0.524	0.886	15.778	134.111

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)	103.500	53.600	30.000	64.200	100.300	112.300	94.400	76.300
Transmitting ERP (watts)	1.151	13.278	68.092	80.326	20.259	1.984	0.205	0.284

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKN666 **File Number:** 0009619100 **Print Date:** 09-08-2021

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
37	36-41-51.7 N	085-07-19.1 W	303.9	78.0	1273817

Address: 399 Daylton Road (112920)
City: Albany **County:** CLINTON **State:** KY **Construction Deadline:**

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)	103.500	53.600	30.000	64.200	100.300	112.300	94.400	76.300
Transmitting ERP (watts)	0.327	0.106	0.101	1.174	12.741	41.443	34.130	5.644

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
38	36-44-13.0 N	085-42-10.0 W	309.7	91.1	1042225

Address: 3151 EDMONTON ROAD (94259)
City: TOMPKINSVILLE **County:** MONROE **State:** KY **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)	111.100	109.700	147.100	108.800	126.000	145.900	125.000	125.900
Transmitting ERP (watts)	189.524	72.806	7.444	1.950	0.393	0.557	9.583	77.626

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)	111.100	109.700	147.100	108.800	126.000	145.900	125.000	125.900
Transmitting ERP (watts)	1.067	23.007	114.837	166.790	36.523	3.864	1.339	0.493

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)	111.100	109.700	147.100	108.800	126.000	145.900	125.000	125.900
Transmitting ERP (watts)	2.199	0.335	0.702	3.359	45.136	159.373	117.688	16.866

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
39	36-38-51.6 N	085-17-33.1 W	317.0	60.7	

Address: 5163 State Park (117828)
City: Cumberland **County:** CUMBERLAND **State:** KY **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)	100.500	86.500	93.600	115.600	123.000	167.100	133.100	121.800
Transmitting ERP (watts)	24.683	224.514	184.090	16.413	0.520	0.462	0.466	0.469

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	86.500	93.600	115.600	123.000	167.100	133.100	121.800
Transmitting ERP (watts)	46.321	0.611	0.527	0.529	0.541	7.711	140.237	265.546

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKN666 **File Number:** 0009619100 **Print Date:** 09-08-2021

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
40	37-11-42.5 N	085-57-13.0 W	267.6	99.1	1224165

Address: 1515 FISHER RIDGE ROAD (37620)

City: Horse Cave **County:** HART **State:** KY **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)	148.700	170.000	148.400	148.400	138.900	116.100	137.500	147.400
Transmitting ERP (watts)	96.574	101.465	19.855	1.861	0.214	0.322	2.056	21.126

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)	148.700	170.000	148.400	148.400	138.900	116.100	137.500	147.400
Transmitting ERP (watts)	8.514	101.153	307.468	229.726	25.253	1.925	0.630	0.630

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)	148.700	170.000	148.400	148.400	138.900	116.100	137.500	147.400
Transmitting ERP (watts)	0.226	0.222	3.795	33.295	109.116	83.424	11.320	0.928

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
41	37-01-03.9 N	085-54-42.3 W	254.8	68.6	1230168

Address: 170 Robert Bishop Lane (94244)

City: Glasgow **County:** BARREN **State:** KY **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)	93.000	83.300	56.400	66.300	91.100	106.300	92.700	90.500
Transmitting ERP (watts)	104.518	139.218	43.033	2.862	0.290	0.325	1.008	15.797

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)	93.000	83.300	56.400	66.300	91.100	106.300	92.700	90.500
Transmitting ERP (watts)	0.395	3.203	50.041	189.424	165.261	28.863	1.290	0.398

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)	93.000	83.300	56.400	66.300	91.100	106.300	92.700	90.500
Transmitting ERP (watts)	11.785	0.490	0.619	0.543	8.652	98.226	207.121	111.304

Control Points:

Control Pt. No. 1

Address: 124 South Keeneland Drive (Suite 103)

City: RICHMOND **County:** MADISON **State:** KY **Telephone Number:** (859)544-4804

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKN666 **File Number:** 0009619100 **Print Date:** 09-08-2021

Waivers/Conditions:

NONE

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: CECIL J. MATHEW
NEW CINGULAR WIRELESS PCS, LLC
208 S AKARD ST., RM 1016
DALLAS, TX 75202

Call Sign	File Number
KNLF251	
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0003291192

Grant Date	Effective Date	Expiration Date	Print Date
06-02-2015	12-07-2020	06-23-2025	

Market Number	Channel Block	Sub-Market Designator
MTA026	A	15

Market Name
Louisville-Lexington-Evansvill

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-23-2000	06-23-2005		

Waivers/Conditions:

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

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

Conditions:

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

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

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNLF251 **File Number:** **Print Date:**

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

Spectrum Lease Associated with this License. See Spectrum Leasing Arrangement Letter dated 12/06/2004 and File # 0001918512.

Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNLF251 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: CECIL J MATHEW
NEW CINGULAR WIRELESS PCS, LLC
208 S AKARD ST., RM 1015
DALLAS, TX 75202

Call Sign	File Number
WPOI255	
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0003291192

Grant Date	Effective Date	Expiration Date	Print Date
05-27-2015	03-12-2020	06-23-2025	

Market Number	Channel Block	Sub-Market Designator
MTA026	A	19

Market Name
Louisville-Lexington-Evansvill

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-23-2000	06-23-2005		

Waivers/Conditions:

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

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

Conditions:

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

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

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: WPOI255 **File Number:** **Print Date:**

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

Spectrum Lease Associated with this License. See Spectrum Leasing Arrangement Letter dated 12/06/2004 and File # 0001918558.

The Spectrum Leasing Arrangement, which became effective upon approval of application file number 0001918558, was terminated on 04/14/2005. See file number 0002135370.

Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: WPOI255 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: CECIL J MATHEW
NEW CINGULAR WIRELESS PCS, LLC
208 S AKARD ST., RM 1015
DALLAS, TX 75202

Call Sign	File Number
WPOK659	0008716070
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0003291192

Grant Date	Effective Date	Expiration Date	Print Date
09-12-2019	09-12-2019	09-29-2029	09-13-2019

Market Number	Channel Block	Sub-Market Designator
BTA423	C	1

Market Name
Somerset, KY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
09-29-2004	09-29-2009		

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.

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: WPOK659 **File Number:** 0008716070 **Print Date:** 09-13-2019

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: CECIL J MATHEW
NEW CINGULAR WIRELESS PCS, LLC
208 S AKARD ST., RM 1015
DALLAS, TX 75202

Call Sign	File Number
WPXT205	
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0003291192

Grant Date	Effective Date	Expiration Date	Print Date
06-02-2015	08-31-2018	06-23-2025	

Market Number	Channel Block	Sub-Market Designator
MTA026	A	8

Market Name
Louisville-Lexington-Evansvill

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-23-2000	06-23-2005		

Waivers/Conditions:

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

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

Conditions:

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

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Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: WPXT205 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: LESLIE WILSON
NEW CINGULAR WIRELESS PCS, LLC
208 S AKARD ST., RM 1016
DALLAS, TX 75202

Call Sign	File Number
WQFA872	
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0003291192

Grant Date	Effective Date	Expiration Date	Print Date
04-14-2017	08-31-2018	04-28-2027	

Market Number	Channel Block	Sub-Market Designator
BTA423	E	7

Market Name
Somerset, KY

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

Waivers/Conditions:

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

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

Conditions:

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

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

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: WQFA872 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: FCC GROUP
NEW CINGULAR WIRELESS PCS, LLC
208 S AKARD ST., RM 2100
DALLAS, TX 75202

Call Sign	File Number
WQGA818	0009696747
Radio Service AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003291192

Grant Date	Effective Date	Expiration Date	Print Date
11-16-2021	11-16-2021	11-29-2036	11-17-2021

Market Number	Channel Block	Sub-Market Designator
CMA447	A	0

Market Name
Kentucky 5 - Barren

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: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: WQGA818 **File Number:** 0009696747 **Print Date:** 11-17-2021

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: FCC GROUP
NEW CINGULAR WIRELESS PCS, LLC
208 S AKARD ST., RM 2100
DALLAS, TX 75202

Call Sign	File Number
WQGA824	0009696759
Radio Service AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003291192

Grant Date	Effective Date	Expiration Date	Print Date
11-16-2021	11-16-2021	11-29-2036	11-17-2021

Market Number	Channel Block	Sub-Market Designator
CMA453	A	0

Market Name
Kentucky 11 - Clay

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.

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Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: WQGA824 **File Number:** 0009696759 **Print Date:** 11-17-2021

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: FCC GROUP
NEW CINGULAR WIRELESS PCS, LLC
208 S AKARD ST., RM 2100
DALLAS, TX 75202

Call Sign	File Number
WQGD755	0009778271
Radio Service AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003291192

Grant Date	Effective Date	Expiration Date	Print Date
01-10-2022	01-10-2022	12-18-2036	01-11-2022

Market Number	Channel Block	Sub-Market Designator
BEA047	C	9

Market Name
Lexington, KY-TN-VA-WV

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

Waivers/Conditions:

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

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

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

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

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: WQGD755 **File Number:** 0009778271 **Print Date:** 01-11-2022

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: FCC GROUP
NEW CINGULAR WIRELESS PCS, LLC
208 S AKARD ST. RM 2100
DALLAS, TX 75202

Call Sign	File Number
WQUZ670	0009696437
Radio Service AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003291192

Grant Date	Effective Date	Expiration Date	Print Date
11-16-2021	11-16-2021	11-29-2036	11-17-2021

Market Number	Channel Block	Sub-Market Designator
REA004	D	10

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: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: WQUZ670 **File Number:** 0009696437 **Print Date:** 11-17-2021

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

EXHIBIT B

SITE DEVELOPMENT PLAN:

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

FA NUMBER:15435106/10134060 SITE ID: KYLEX2061
PACE #: MRTNK 052247
PROJECT TRACKING #: 2457A0XDBG
SITE NAME: PARKERS LAKE
LEGACY SITE NAME: PARKER LAKE RELO

PROPERTY ADDRESS:	911 ADDRESS:
JOE NEAL ROAD	141 JOE NEAL ROAD
PARKERS LAKE, KY 42634	PARKERS LAKE, KY 42634
MCCREARY COUNTY	MCCREARY COUNTY

PROPOSED 255' SELF-SUPPORT TOWER

ZONING DRAWINGS

A/E DOCUMENT REVIEW STATUS

TITLE	SIGNATURE	DATE
HARMONI TOWERS PROP:		
HARMONI TOWERS CONST. MGR.:		
INTERCONNECT:		
HARMONI TOWERS SITE DEV. MGR.:		
PROPERTY OWNER:		

STATUS CODE:

1		ACCEPTED: WITH OR NO COMMENTS, CONSTRUCTION MAY PROCEED
2		NOT ACCEPTED: RESOLVE COMMENTS AND RESUBMIT

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR MODIFICATIONS.

PROJECT SUMMARY

SITE NAME:	PARKERS LAKE
SITE NUMBER:	KYLEX2061
TAX MAP PROPERTY ID:	099-00-00-019.00
SITE ADDRESS:	JOE NEAL ROAD PARKERS LAKE, KY 42634
911 ADDRESS:	141 JOE NEAL ROAD PARKERS LAKE, KY 42634
JURISDICTION:	MCCREARY COUNTY
TOWER OWNER:	HARMONI TOWERS 10802 EXECUTIVE CENTER DRIVE LITTLE ROCK, AR 72211
NAD83	
LATITUDE: LONGITUDE:	36° 50' 21.56" (36.839322° N) -84° 29' 06.37" (-84.485103° W)
APPLICANT:	NEW CINGULAR WIRELESS, PCS, LLC, A DELAWARE LIMITED LIABILITY COMPANY d/b/a AT&T MOBILITY MEIDINGER TOWER 462 S/ 4th STREET, SUITE 2400 LOUISVILLE, KY 40202
CO-APPLICANT:	N/A
OCCUPANCY TYPE:	UNMANNED
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION

LOCATION MAP

NO SCALE

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
1-3	SURVEY
C-1.0	500' RADIUS & ADJOINER'S DRAWING
C-1.1	OVERALL ADJOINER'S DRAWING
C-2	OVERALL SITE LAYOUT
C-3	ENLARGED COMPOUND LAYOUT
C-4	TOWER ELEVATION

DESIGN INFORMATION

A&E FIRM: B+T GROUP
1717 S. BOULDER,
SUITE 300
TULSA, OK 74119
MIKE A. SPEEDIE, PE
(918) 587-4630

SURVEYOR: POINT TO POINT
100 GOVERNORS TRACE, STE #103
PEACHTREE CITY, GA 30269
PH. (678) 565-4440

ELECTRIC DTE POWER & INDUSTRIAL
PROVIDER: 734-302-4800

TELCO WINDSTREAM
PROVIDER: XXX-XXX-XXXX

DRIVING DIRECTIONS

DEPART JUDGE EXECUTIVE OFFICE ON LOCAL ROAD(S) (NORTH)	98 YDS
TURN RIGHT (EAST) ONTO LOCAL ROAD(S)	0.3 MI
ROAD NAME CHANGES TO SHELTOWEE TRACE	0.7 MI
TURN RIGHT (SOUTH) ONTO CANTER LOOP A	0.2 MI
TURN LEFT (NORTH) ONTO CANTER LOOP	0.5 MI
TURN RIGHT TO STAY ON CANTER LOOP	0.5 MI
BEAR RIGHT (WEST) ONTO BARREN FORK RD	1.4 MI
TURN RIGHT (NORTH) ONTO US-27 [N HIGHWAY 27]	5.0 MI
TURN LEFT (WEST) ONTO JOE NEAL RD [NEAL]	0.2 MI
TURN LEFT (SOUTH) ONTO LOCAL ROAD(S)	142 YDS

ARRIVE 36.83932°N 84.48510°W

CODE COMPLIANCE

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

CODE TYPE	CODE
BUILDING/DWELLING	IBC 2015
STRUCTURAL	IBC 2015
MECHANICAL	IMC 2015
ELECTRICAL	NEC 2017

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES:

- CONSTRUCT (1) NEW 255' SELF-SUPPORT TOWER
- CONSTRUCT FENCED GRAVEL UTILITY COMPOUND WITH LOCKING ACCESS GATE, 60' x 60' WITHIN 100' x 100' LEASE AREA.
- INSTALL (1) H-FRAME W/ UTILITY EQUIPMENT.
- INSTALL NEW POWER & TELCO UTILITY SERVICES.
- CONSTRUCT 12' WIDE GRAVEL ACCESS ROAD

DO NOT SCALE DRAWINGS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11X17.
CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL KENTUCKY ONE CALL
(800) 752-6007
CALL 3 WORKING DAYS
BEFORE YOU DIG!

B+T GRP

at&t mobility corp.

HARMONI TOWERS

HARMONI TOWERS
PARKERS LAKE
PARKER LAKE RELO
FA# 15435106/10134060
PACE# MRTNK 052247
PT# 2457A0XDBG
(PROPERTY) JOE NEAL ROAD
(E911) 141 JOE NEAL ROAD
PARKERS LAKE, KY 42634
MCCREARY COUNTY
PROPOSED 255' SELF-SUPPORT TOWER

PROJECT NO: G0144645.002.01
CHECKED BY: MAS

ISSUED FOR:

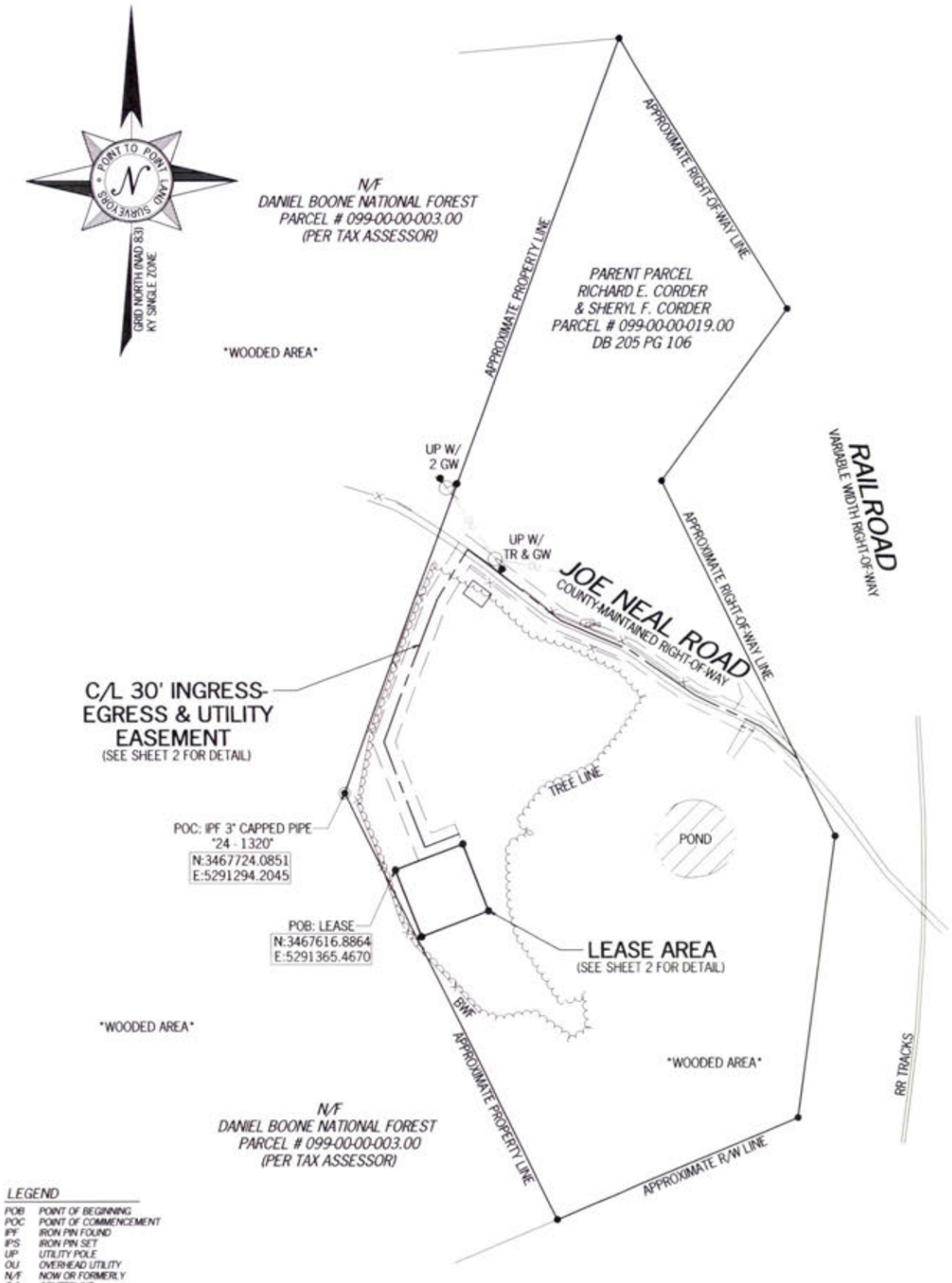
REV	DATE	DRWN	DESCRIPTION
A	12/14/21	DLS	CLIENT REVIEW
0	01/07/22	MAS	FINAL

B&T ENGINEERING, INC.
4011
Expires 12/31/22

STATE OF KENTUCKY
BRAD R. MILANOWSKI
25311
LICENSED PROFESSIONAL ENGINEER
1/4/22

TITLE SHEET

SHEET NUMBER:
T-1



LEGEND

POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
IPF	IRON PIN FOUND
IPS	IRON PIN SET
UP	UTILITY POLE
OU	OVERHEAD UTILITY
N/F	NOW OR FORMERLY
C/L	CENTERLINE
BWF	BARBED WIRE FENCE
E/P	EDGE OF PAVEMENT
TBM	TEMPORARY BENCHMARK
R/W	RIGHT-OF-WAY
HDPE	HIGH DENSITY POLYETHYLENE PIPE
INV	INVERT
RB	REBAR

TITLE EXCEPTIONS

THIS SURVEY WAS COMPLETED WITH THE AID OF TITLE WORK PREPARED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, ISSUE DATE OF MARCH 18, 2021, BEING ORDER NUMBER 34093552, FOR THE PARENT PARCEL, TO DETERMINE THE IMPACTS OF EXISTING TITLE EXCEPTIONS.

[NO EXCEPTIONS WERE CONTAINED IN THE ABOVE REFERENCED TITLE DOCUMENT.]

GPS NOTES

THE FOLLOWING GPS STATISTICS UPON WHICH THIS SURVEY IS BASED HAVE BEEN PRODUCED AT THE 95% CONFIDENCE LEVEL:

POSITIONAL ACCURACY: 0.03 FEET (HORZ) 0.23 FEET (VERT)
TYPE OF EQUIPMENT: GEOMAX ZENITH35 PRO BASE AND ROVER, DUAL FREQUENCY
TYPE OF GPS FIELD PROCEDURE: ONLINE POSITION USER INTERFACE
DATES OF SURVEY: 03/18/2021
DATUM / EPOCH: NAD_83(2011)(EPOCH:2010.0000)
PUBLISHED / FIXED CONTROL USE: N/A
GEOID MODEL: 18
COMBINED GRID FACTOR(S): 0.77745000 CENTERED ON THE GPS BASE POINT AS SHOWN HEREON.
CONVERGENCE ANGLE: 1.00001045°
BENCHMARKS USED: DK3326, DJ9538, DK7555

PARENT PARCEL

OWNER: RICHARD E. CORDER AND SHERYL F. CORDER

SITE ADDRESS: JOE NEAL ROAD, PARKERS LAKE, KY 42634

PARCEL ID: 099-00-00-019.00

AREA: 21.8 ACRES (PER TAX ASSESSOR)

ALL ZONING INFORMATION SHOULD BE VERIFIED WITH THE PROPER ZONING OFFICIALS

REFERENCE: DEED BOOK 205 PAGE 106

VICINITY MAP

NOT TO SCALE

GENERAL NOTES

* THIS SPECIFIC PURPOSE SURVEY IS FOR THE LEASED PREMISES AND EASEMENTS ONLY. THIS SPECIFIC PURPOSE SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF HARMONI TOWERS AND EXCLUSIVELY FOR THE TRANSFERRAL OF THE LEASED PREMISES AND THE RIGHTS OF EASEMENT SHOWN HEREON AND SHALL NOT BE USED AS AN EXHIBIT OR EVIDENCE IN THE FEE SIMPLE TRANSFERRAL OF THE PARENT PARCEL NOR ANY PORTION OR PORTIONS THEREOF. BOUNDARY INFORMATION SHOWN HEREON HAS BEEN COMPILED FROM TAX MAPS AND DEED DESCRIPTIONS ONLY. NO BOUNDARY SURVEY OF THE PARENT PARCEL WAS PERFORMED.

THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.

THE FIELD DATA UPON WHICH THIS SPECIFIC PURPOSE SURVEY IS BASED HAS A CLOSURE PRECISION OF ONE FOOT IN 10,000+ FEET AND AN ANGULAR ERROR OF 5.0" PER ANGLE POINT AND WAS NOT ADJUSTED FOR CLOSURE.

EQUIPMENT USED FOR ANGULAR & LINEAR MEASUREMENTS: LEICA TPS 1200 ROBOTIC & GEOMAX ZENITH 35. (DATE OF LAST FIELD VISIT: 11/16/2021)

THE 2' CONTOURS AND SPOT ELEVATIONS SHOWN ON THIS SPECIFIC PURPOSE SURVEY ARE ADJUSTED TO NAVD 88 DATUM (COMPUTED USING GEOID18) AND HAVE A VERTICAL ACCURACY OF ± 1'. CONTOURS OUTSIDE THE IMMEDIATE SITE AREA ARE APPROXIMATE.

BEARINGS SHOWN ON THIS SPECIFIC PURPOSE SURVEY ARE BASED ON GRID NORTH (NAD 83) KENTUCKY SINGLE ZONE.

PER THE FEMA FLOODPLAIN MAPS, THE SITE IS LOCATED IN AN AREA DESIGNATED AS ZONE X (AREA OF MINIMAL FLOOD HAZARD). COMMUNITY PANEL NO. : 21147C0150C DATED: 03/16/2015

NO WETLAND AREAS HAVE BEEN INVESTIGATED BY THIS SPECIFIC PURPOSE SURVEY.

ALL ZONING INFORMATION SHOULD BE VERIFIED WITH THE PROPER ZONING OFFICIALS.

ANY UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM ABOVE GROUND FIELD SURVEY INFORMATION. THE SURVEYOR MAKES NO GUARANTEES THAT ANY UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT ANY UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED ANY UNDERGROUND UTILITIES.

SURVEYOR'S CERTIFICATE

I, G. DARRELL TAYLOR, A KENTUCKY PROFESSIONAL LAND SURVEYOR, CERTIFY THAT THE INFORMATION SHOWN HEREON WAS COMPILED USING DATA FROM AN ACTUAL FIELD SURVEY MADE UNDER MY DIRECT SUPERVISION BY METHOD OF RANDOM TRAVERSE WITH SIDE SHOTS. THE UNADJUSTED PRECISION RATIO OF THE TRAVERSE EXCEEDED 1:10,000 AND WAS NOT ADJUSTED FOR CLOSURE. THIS SURVEY MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR AN URBAN SURVEY AS ESTABLISHED BY THE STATE OF KENTUCKY, PER 201 KAR 18:150 AND IN EFFECT ON THE DATE OF THIS SURVEY.

G. DARRELL TAYLOR, PLS 4179 — 12/02/2021 DATE

SURVEY NOT VALID WITHOUT SHEET 2 & 3

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

STATE of KENTUCKY
G. DARRELL TAYLOR
4179
LICENSED PROFESSIONAL LAND SURVEYOR

NO.	DATE	REVISION
1	8/11/2021	R/W UPDATE
2	12/02/2021	ING-EGR UPDATE - GJH

* SPECIFIC PURPOSE SURVEY PREPARED BY:
POINT TO POINT LAND SURVEYORS
100 Governors Trace, Ste. 103
Peachtree City, GA 30269
(p) 678.565.4440 (f) 678.565.4497
(w) pointtopointsurvey.com

SPECIFIC PURPOSE SURVEY PREPARED FOR:

HARMONI TOWERS

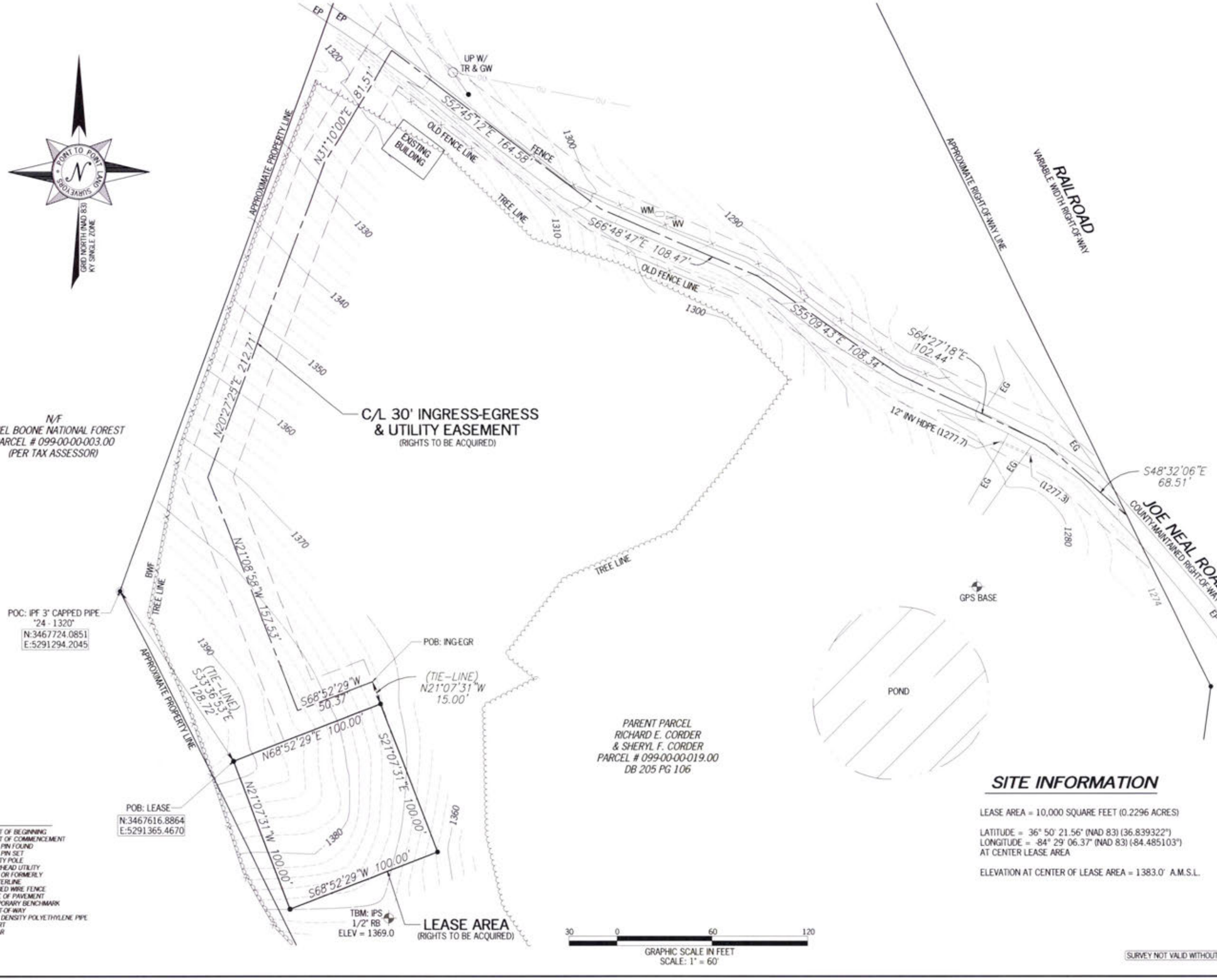
10801 EXECUTIVE CENTER DRIVE
SHANNON BLDG., STE 100
LITTLE ROCK, AR 72211

PARKERS LAKE

SITE NO.
KYLEX2061
PARKERS LAKE,
MCCREARY COUNTY,
KENTUCKY

DRAWN BY: GJH	SHEET: 1 OF 3
CHECKED BY: JKL	
APPROVED: D. MILLER	
DATE: MARCH 25, 2021	
P2P JOB #: 210275KY	

E:\Dropbox (Point To Point)\P2P Current Jobs\2021\210275KY-Parkers Lake\210275KY.pro



LEGEND

POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
IPF	IRON PIN FOUND
IPS	IRON PIN SET
UP	UTILITY POLE
OU	OVERHEAD UTILITY
N/F	NOW OR FORMERLY
C/L	CENTERLINE
BWF	BARBED WIRE FENCE
EP	EDGE OF PAVEMENT
TBM	TEMPORARY BENCHMARK
R/W	RIGHT-OF-WAY
HDPE	HIGH DENSITY POLYETHYLENE PIPE
INV	INVERT
RB	REBAR

SITE INFORMATION

LEASE AREA = 10,000 SQUARE FEET (0.2296 ACRES)

LATITUDE = 36° 50' 21.56" (NAD 83) (36.839322°)
LONGITUDE = -84° 29' 06.37" (NAD 83) (-84.485103°)
AT CENTER LEASE AREA

ELEVATION AT CENTER OF LEASE AREA = 1383.0' A.M.S.L.

SURVEY NOT VALID WITHOUT SHEET 1 & 3

STATE of KENTUCKY
G. DARRELL TAYLOR
4179
LICENSED PROFESSIONAL LAND SURVEYOR

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100 Governors Trace, Ste. 103
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SPECIFIC PURPOSE SURVEY PREPARED FOR:

HARMONI TOWERS
10801 EXECUTIVE CENTER DRIVE
SHANNON BLDG., STE 100
LITTLE ROCK, AR 72211

PARKERS LAKE

SITE NO.
KYLEX2061
PARKERS LAKE,
MCCREARY COUNTY,
KENTUCKY

DRAWN BY: GJH	SHEET: 2 OF 3
CHECKED BY: JKL	
APPROVED: D. MILLER	
DATE: MARCH 25, 2021	
P2P JOB #: 210275KY	

E:\Dropbox (Point To Point)\P2P Current Jobs\2021\210275KY-Parkers Lake\210275KY.pro

LEGAL DESCRIPTION SHEET

PARENT PARCEL

(PER COMMITMENT NO. 34093552)

AN INTEREST IN LAND, SAID INTEREST BEING OVER A PORTION OF THE FOLLOWING DESCRIBED PARENT PARCEL:

A CERTAIN TRACT OF LAND LYING AND BEING LOCATED AT PARKERS LAKE IN MCCREARY COUNTY, KENTUCKY, AND DESCRIBED AS FOLLOWS:

BEGINNING AT A LARGE PINE ON A RIDGE WELL MARKED A CORNER COMMON TO A CUMBERLAND NATIONAL FOREST UNIT; THENCE THEIR LINE S 27 E 40 POLES TO A HICKORY STAND MARKED IN THEIR LINE A CORNER TO A ELLA WALKER TRACT OF LAND; THENCE LEAVING THE SAID FOREST PARCEL AND WITH THE WALKER PARCEL REVERSING N 70 DEG. 30 MIN. E 36 POLES TO A SET STONE AND SMALL PINE ON A SLATE DUMP HER CORNER LOCATED IN THE RAILROAD RIGHT OF WAY; THENCE THEIR LINES N 26 DEG. W 44 POLES TO A BLACK OAK MARKED AT TURN OF THEIR FENCE; THENCE THEIR LINE N 36 DEG. E 18 POLES CROSSING THE DRAIN BELOW THE OLD DAM TO A SET STONE WITNESS BY A SMALL POPLAR AND MAPLE, THEIR CORNER NEAR THE RAILROAD; THENCE THEIR FENCE LINE N 32 W 27 POLES TO A SET STONE IN THEIR FENCE LINE WHERE A FOREST LINE CROSSES THE SAID RIGHT OF WAY; THENCE LEAVING THE SAID RAILWAY RIGHT OF WAY AND WITH THE SAID FOREST LINE S 20 DEG. W 68 POLES TO THE PLACE OF BEGINNING. CONTAINING 21-8/10TH ACRES MORE OR LESS.

AND BEING THE SAME PROPERTY CONVEYED TO RICHARD E. CORDER AND SHERYL F. CORDER FROM BRUCE WATTERS BY GENERAL WARRANTY DEED DATED NOVEMBER 26, 2014 AND RECORDED DECEMBER 2, 2014 IN DEED BOOK D205, PAGE 106.

TAX PARCEL NO. 099-00-00-019.00

LEASE AREA

ALL THAT TRACT OR PARCEL OF LAND LYING AND BEING IN PARKERS LAKE, MCCREARY COUNTY, KENTUCKY, AND BEING A PORTION OF THE LANDS OF RICHARD E. CORDER AND SHERYL F. CORDER, AS RECORDED IN DEED BOOK 205, PAGE 106, MCCREARY COUNTY RECORDS, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

TO FIND THE POINT OF BEGINNING, COMMENCE AT A CAPPED 3-INCH PIPE FOUND, STAMPED "24-1320", AT THE WESTERLY PROPERTY CORNER OF SAID CORDER LANDS, SAID POINT HAVING A KENTUCKY GRID NORTH, NAD 83, SINGLE ZONE VALUE OF N:3467724.0851 E:5291294.2045; THENCE RUNNING ALONG A TIE-LINE, SOUTH 33°36'53" EAST, 128.72 FEET TO A POINT HAVING A KENTUCKY GRID NORTH, NAD 83, SINGLE ZONE VALUE OF N:3467616.8864 E:5291365.4670, AND THE TRUE POINT OF BEGINNING; THENCE RUNNING, NORTH 68°52'29" EAST, 100.00 FEET TO A POINT; THENCE, SOUTH 21°07'31" EAST, 100.00 FEET TO A POINT; THENCE, SOUTH 68°52'29" WEST, 100.00 FEET TO A POINT; THENCE, NORTH 21°07'31" WEST, 100.00 FEET TO A POINT AND THE POINT OF BEGINNING.

BEARINGS BASED ON KENTUCKY GRID NORTH, NAD 83, SINGLE ZONE.

SAID TRACT CONTAINS 0.2296 ACRES (10,000 SQUARE FEET), MORE OR LESS.

30' INGRESS-EGRESS & UTILITY EASEMENT

TOGETHER WITH A 30-FOOT WIDE INGRESS-EGRESS AND UTILITY EASEMENT LYING AND BEING IN PARKERS LAKE, MCCREARY COUNTY, KENTUCKY, MEASURING 15 FEET EACH SIDE OF CENTERLINE, THE SIDE LINES OF WHICH ARE TO BE LENGTHENED AND SHORTENED TO TERMINATE AT THE WEST RIGHT-OF-WAY LINE OF AN EXISTING RAILROAD, AND BEING A PORTION OF THE LANDS OF RICHARD E. CORDER AND SHERYL F. CORDER, AS RECORDED IN DEED BOOK 205, PAGE 106, MCCREARY COUNTY RECORDS, AND BEING MORE PARTICULARLY DESCRIBED BY THE FOLLOWING CENTERLINE DATA:

TO FIND THE POINT OF BEGINNING, COMMENCE, AT A CAPPED 3-INCH PIPE FOUND, STAMPED "24-1320", AT THE WESTERLY PROPERTY CORNER OF SAID CORDER LANDS, SAID POINT HAVING A KENTUCKY GRID NORTH, NAD 83, SINGLE ZONE VALUE OF N:3467724.0851 E:5291294.2045; THENCE RUNNING ALONG A TIE-LINE, SOUTH 33°36'53" EAST, 128.72 FEET TO A POINT ON THE LEASE AREA HAVING A KENTUCKY GRID NORTH, NAD 83, SINGLE ZONE VALUE OF N:3467616.8864 E:5291365.4670; THENCE RUNNING, NORTH 68°52'29" EAST, 100.00 FEET TO A POINT; THENCE LEAVING THE LEASE AREA AND RUNNING ALONG A TIE-LINE, NORTH 21°07'31" WEST, 15.00 FEET TO A POINT AND THE TRUE POINT OF BEGINNING; THENCE, SOUTH 68°52'29" WEST, 50.37 FEET TO A POINT; THENCE, NORTH 21°08'58" WEST, 157.53 FEET TO A POINT; THENCE, NORTH 20°27'25" EAST, 212.71 FEET TO A POINT; THENCE, NORTH 31°10'00" EAST, 81.51 FEET TO A POINT; THENCE, SOUTH 52°45'12" EAST, 164.58 FEET TO A POINT; THENCE, SOUTH 66°48'47" EAST, 108.47 FEET TO A POINT; THENCE, SOUTH 55°09'43" EAST, 108.34 FEET TO A POINT; THENCE, SOUTH 64°27'18" EAST, 102.44 FEET TO A POINT; THENCE, SOUTH 48°32'06" EAST, 68.51 FEET TO THE ENDING AT A POINT ON THE WEST RIGHT-OF-WAY LINE OF AN EXISTING RAILROAD.

BEARINGS BASED ON KENTUCKY GRID NORTH, NAD 83, SINGLE ZONE.

SURVEY NOT VALID WITHOUT SHEET 1 & 2

STATE of KENTUCKY
G. DARRELL TAYLOR 4179
LICENSED PROFESSIONAL LAND SURVEYOR

NO.	DATE	REVISION
1	8/11/2021	R/W UPDATE
2	12/02/2021	ING-EGR UPDATE - GJH

* SPECIFIC PURPOSE SURVEY PREPARED BY:
POINT TO POINT LAND SURVEYORS
100 Governors Trace, Ste. 103
Peachtree City, GA 30269
(p) 678.565.4440 (f) 678.565.4497
(w) pointtopointsurvey.com

SPECIFIC PURPOSE SURVEY PREPARED FOR:

HARMONI

10801 EXECUTIVE CENTER DRIVE
SHANNON BLDG., STE 100
LITTLE ROCK, AR 72211

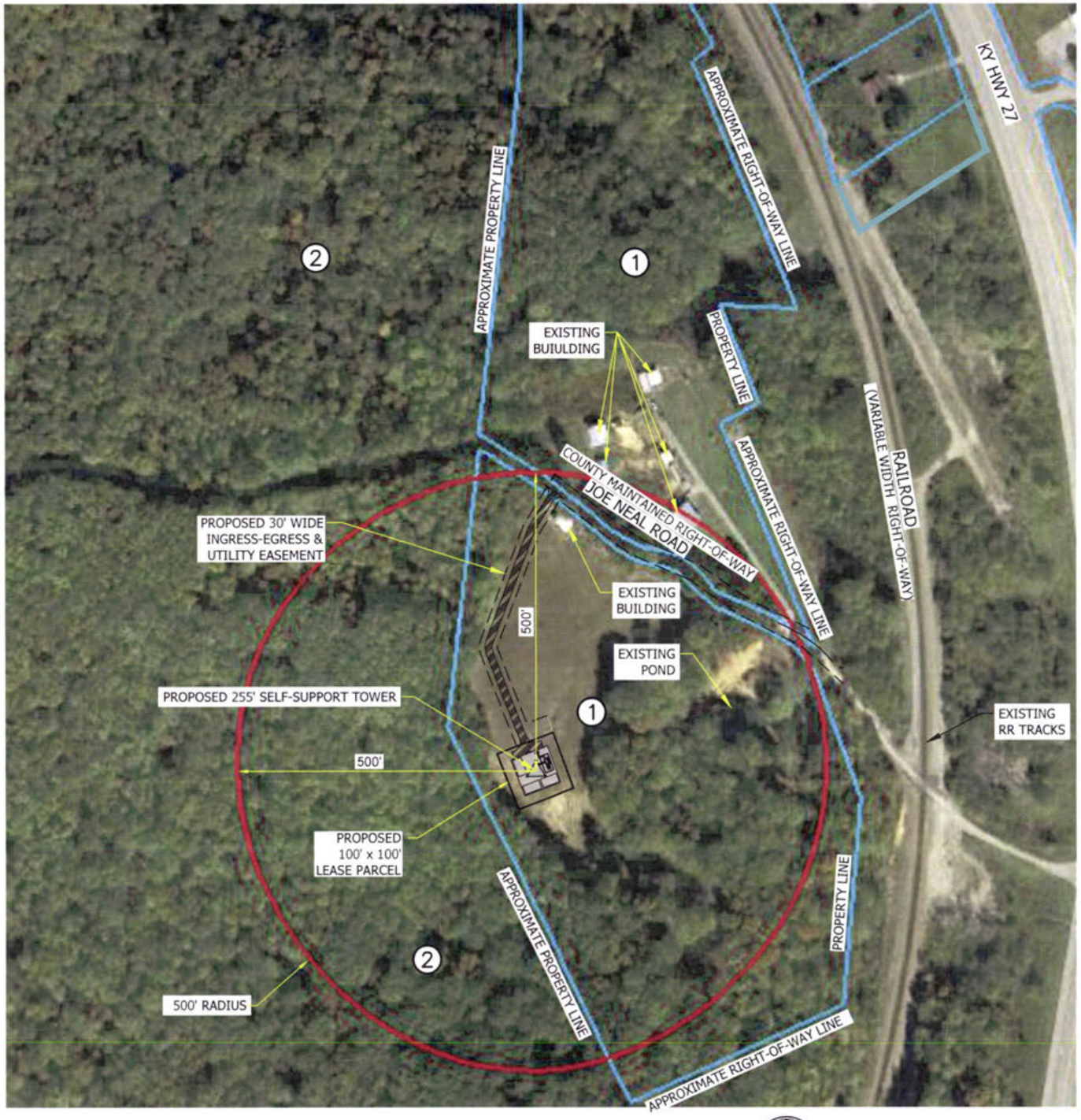
PARKERS LAKE

SITE NO.
KYLEX2061
PARKERS LAKE,
MCCREARY COUNTY,
KENTUCKY

DRAWN BY: GJH
CHECKED BY: JKL
APPROVED: D. MILLER
DATE: MARCH 25, 2021
P2P JOB #: 210275KY

SHEET: 3 OF 3

K:\Projects (Point to Point)\P2P Current Jobs\2021\210275KY Parkers Lake\210275KY.prj



#	OWNER	ADDRESS	PID	REF
1	RICHARD E. & SHERYL F. CORDER	170 HIGHWAY 90 PARKERS LAKE, KY 42634	099-00-00-019.00	DB 205 PG 106
2	DANIEL BOONE NATIONAL FOREST	-	099-00-00-003.00	TAX ASSESSOR

NOTES:

1. PVA INFORMATION WAS OBTAINED ON 12/9/2021 FROM THE OFFICIAL RECORDS OF THE COUNTY'S PROPERTY VALUATION ADMINISTRATOR.
2. THIS MAP IS FOR GENERAL INFORMATION PURPOSES ONLY AND IS NOT A BOUNDARY SURVEY.
3. NOT FOR RECORDING OR PROPERTY TRANSFER.
4. REFER TO SHEET C-1.1 FOR ADDITIONAL ADJACENT PROPERTIES BEYOND THE 500' ADJOINER'S PROPERTY RADIUS.

1 500' RADIUS & ADJOINER'S DRAWING
SCALE: 0' 100' 200' 300' 400' 1"=200'

N

CALL KENTUCKY ONE CALL
(800) 752-6007
CALL 3 WORKING DAYS
BEFORE YOU DIG!

B+T GRP

at&t mobility corp.

HARMONI

HARMONI TOWERS
PARKERS LAKE
PARKER LAKE RELO
FA# 15435106/10134060
PACE# MRTNK 052247
PT# 2457A0XDBG
(PROPERTY) JOE NEAL ROAD
(E911) 141 JOE NEAL ROAD
PARKERS LAKE, KY 42634
MCCREARY COUNTY
PROPOSED 255' SELF-SUPPORT TOWER

PROJECT NO:	G0144645.002.01
CHECKED BY:	MAS

ISSUED FOR:

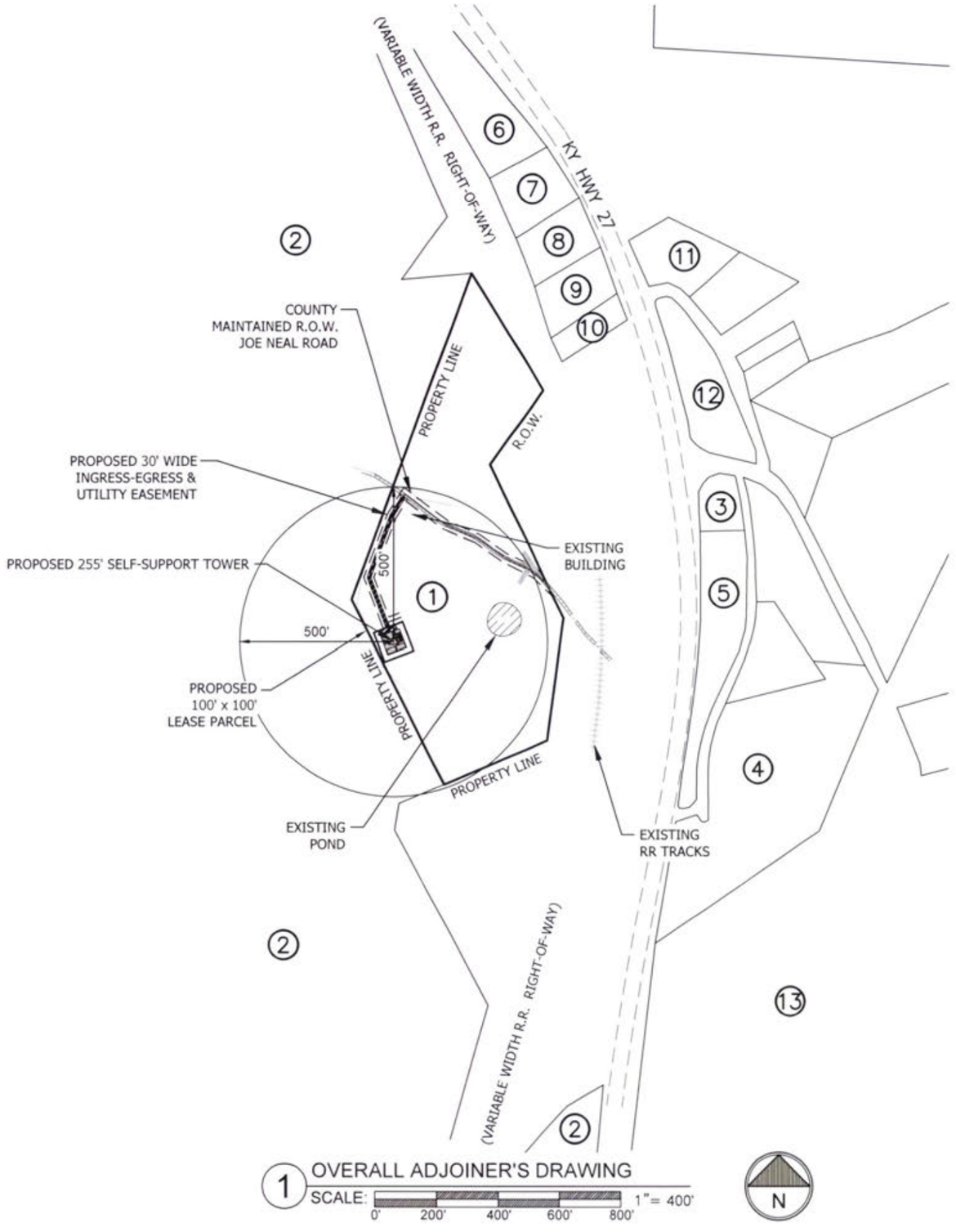
REV	DATE	DRWN	DESCRIPTION
A	12/14/21	DLS	CLIENT REVIEW
0	01/07/22	MAS	FINAL

B&T ENGINEERING, INC.
4011
Expires 12/31/22

STATE OF KENTUCKY
BRAD P. PHILAKOWSKI
25311
LICENSED PROFESSIONAL ENGINEER
1/4/22

500' RADIUS & ADJOINER'S DRAWING

SHEET NUMBER:
C-1.0



#	OWNER	ADDRESS	PID	REF
1	RICHARD E. & SHERYL F. CORDER	170 HIGHWAY 90 PARKERS LAKE, KY 42634	099-00-00-019.00	DB 205 PG 106
2	DANIEL BOONE NATIONAL FOREST	-	099-00-00-003.00	TAX ASSESSOR
3	UNKNOWN	-	099-00-00-022.00	TAX ASSESSOR
4	RICHARD E. & SHERYL F. CORDER	170 HIGHWAY 90 PARKERS LAKE, KY 42634	099-00-00-024.00	TAX ASSESSOR
5	UNKNOWN	-	099-00-00-026.00	TAX ASSESSOR
6	UNKNOWN	-	113-00-00-003.00	TAX ASSESSOR
7	FRANCIS & DEBBIE COFFEY	PO BOX 125 PARKERS LAKE, KY 42634	099-00-00-039.00	TAX ASSESSOR
8	APRIL M. & JERRY SMITH	PO BOX 897 WHITLEY CITY, KY 42653	099-00-00-038.00	TAX ASSESSOR
9	GARY OWENS	PO BOX 63 PARKERS LAKE, KY 42634	099-00-00-037.00	TAX ASSESSOR
10	UNKNOWN	-	099-00-00-035.00	TAX ASSESSOR
11	SHIRLEY W. CORDER	128 PP WALKER LN PARKERS LAKE, KY 42634	099-00-00-036.00	TAX ASSESSOR
12	DONALD LEE VANOVER	7335 HWY 90 PARKERS LAKE, KY 42634	099-00-00-030.00	TAX ASSESSOR
13	UNKNOWN	-	099-00-00-003.00	TAX ASSESSOR

NOTES:

1. PVA INFORMATION WAS OBTAINED ON 12/9/2021 FROM THE OFFICIAL RECORDS OF THE COUNTY'S PROPERTY VALUATION ADMINISTRATOR.
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at&t mobility corp

HARMONI

HARMONI TOWERS
PARKERS LAKE
PARKER LAKE RELO
FA# 15435106/10134060
PACE# MRTNK 052247
PT# 2457A0XDBG
(PROPERTY) JOE NEAL ROAD
(E911) 141 JOE NEAL ROAD
PARKERS LAKE, KY 42634
MCCREARY COUNTY
PROPOSED 255' SELF-SUPPORT TOWER

PROJECT NO:	G0144645.002.01
CHECKED BY:	MAS

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
A	12/14/21	DLS	CLIENT REVIEW
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B&T ENGINEERING, INC.
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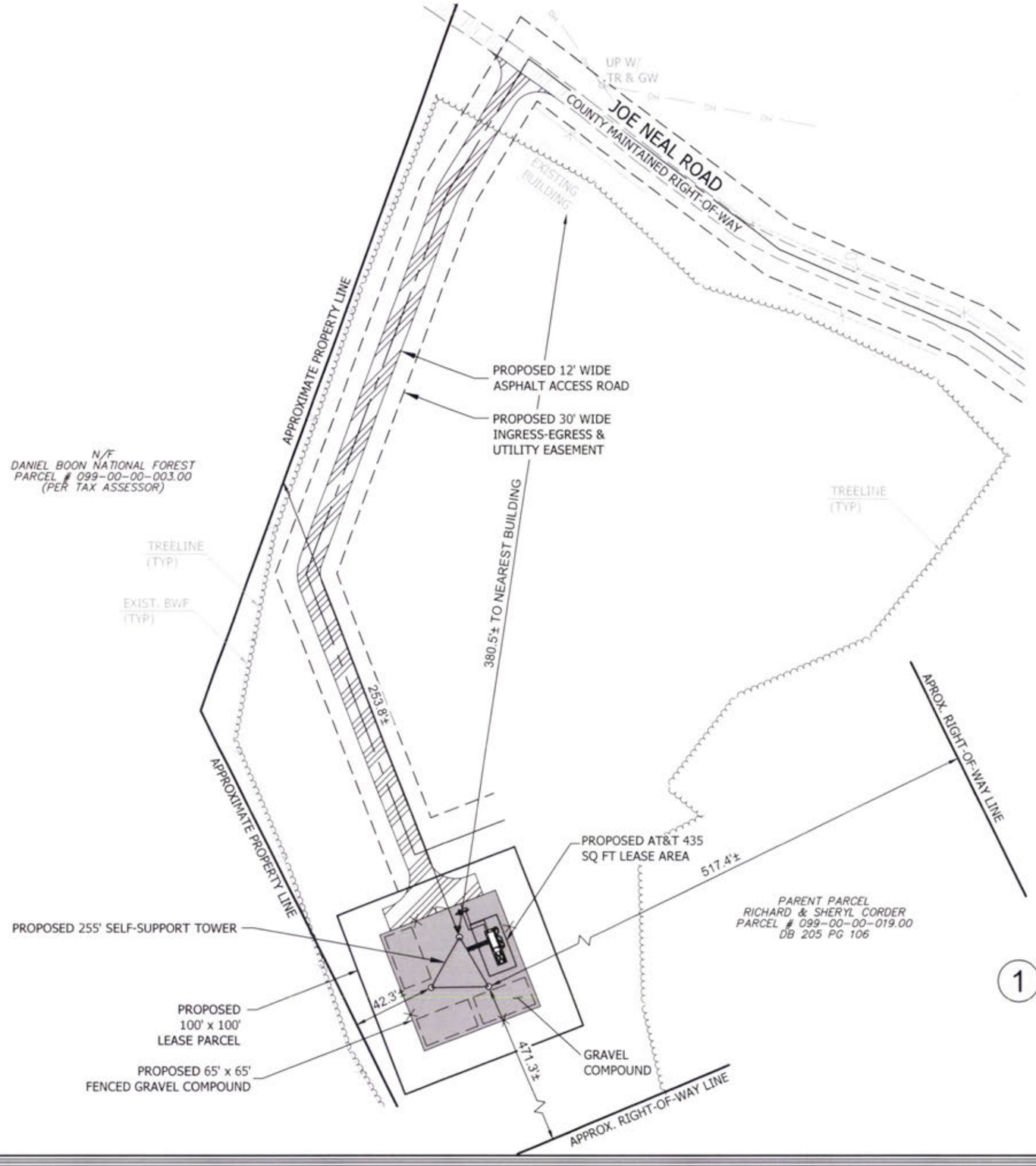
STATE OF KENTUCKY
BRAD P. MILANOWSKI
25311
LICENSED PROFESSIONAL ENGINEER
1/7/22

OVERALL ADJOINER'S DRAWING

SHEET NUMBER:
C-1.1



1 OVERALL SITE LAYOUT
SCALE: 1"=60'
0' 30' 60' 90' 120'

N

NOTES:

1. TOWER LATITUDE, LONGITUDE & ELEVATION MEET FAA"1-A" ACCURACY REQUIREMENTS.

2. CENTER OF TOWER:

LATITUDE: NORTH 36°50'21.56" (36.839322) NAD 83
LONGITUDE: WEST -84°29'06.37" (-84.485103) NAD 83
GROUND ELEVATION @ 1383.0' A.M.S.L. NAVD 88

3. THE APPROXIMATE PERPENDICULAR DISTANCES FROM THE OUTER EDGE OF THE PROPOSED TOWER TO PARENT TRACT NEAREST PROPERTY LINE ARE AS FOLLOWS:

NORTH:	253.8'±
SOUTH:	471.3'±
EAST:	517.4'±
WEST:	42.3'±

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HARMONI

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(PROPERTY) JOE NEAL ROAD
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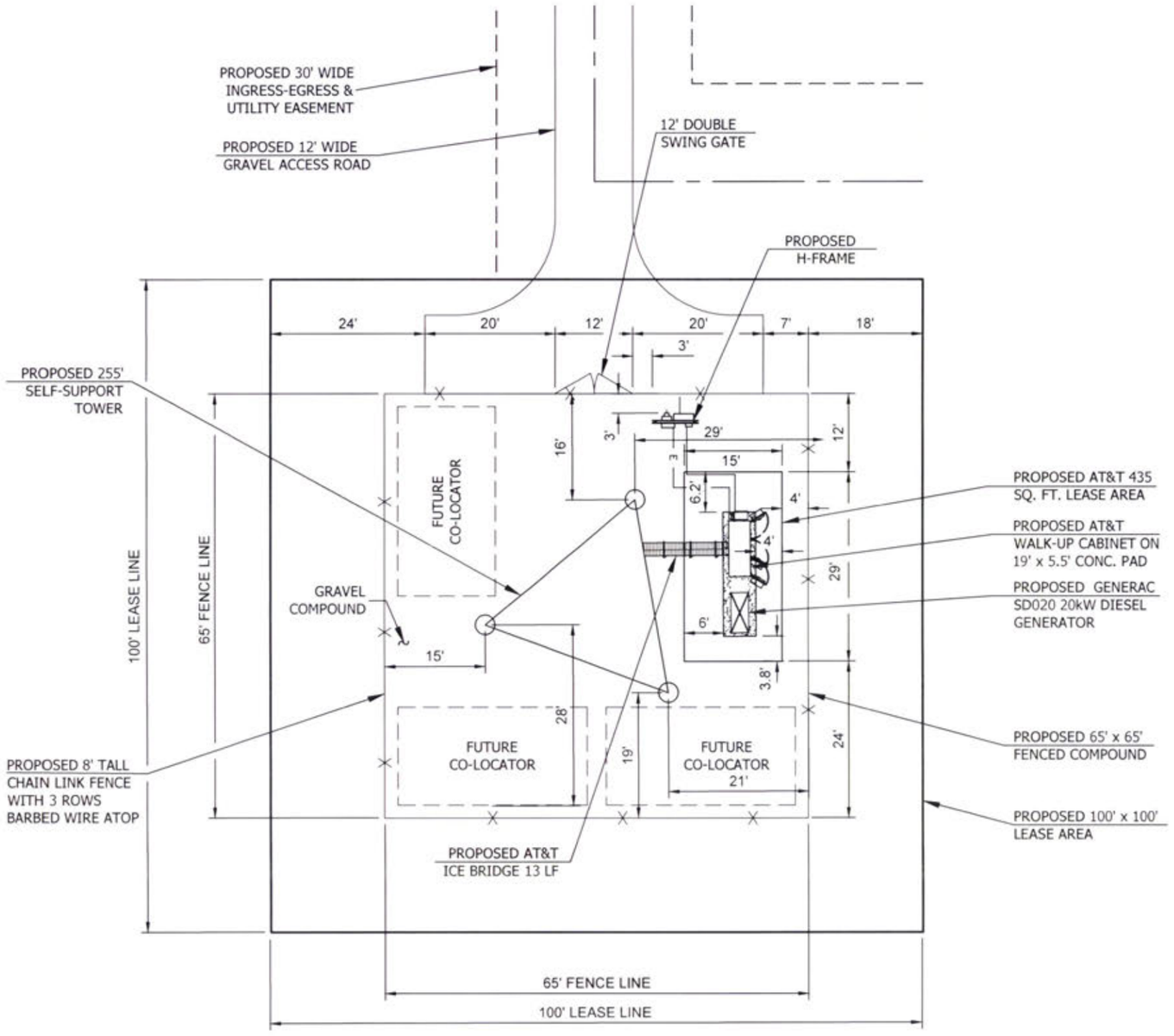
Expires 12/31/22

STATE OF KENTUCKY
BRAD P. MILANOWSKI
25311
LICENSED PROFESSIONAL ENGINEER
1/7/22

OVERALL SITE LAYOUT

SHEET NUMBER:
C-2



1 ENLARGED COMPOUND LAYOUT
SCALE: 0' 10' 20' 30' 40' 1"=20'

N

CALL KENTUCKY ONE CALL
(800) 752-6007
CALL 3 WORKING DAYS
BEFORE YOU DIG!

811

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HARMONI

HARMONI TOWERS
PARKERS LAKE
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FA# 15435106/10134060
PACE# MRTNK 052247
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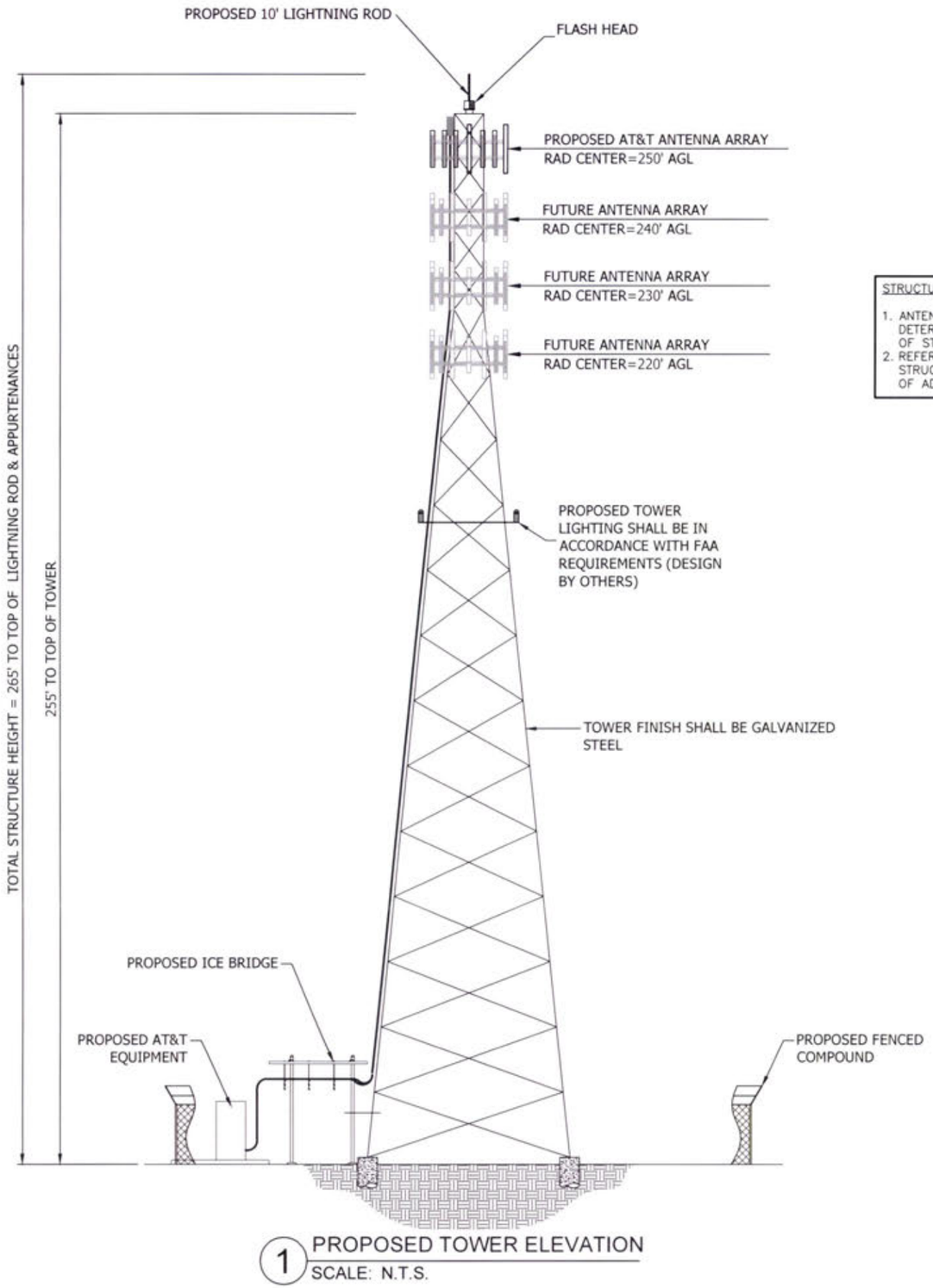
STATE OF KENTUCKY
BRAD P. MILANOWSKI
25311
LICENSED PROFESSIONAL ENGINEER
1/7/22

ENLARGED COMPOUND LAYOUT

SHEET NUMBER:
C-3



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

STRUCTURAL ANALYSIS NOTES:

1. ANTENNA PLACEMENT WAS DETERMINED WITHOUT VERIFICATION OF STRUCTURAL ANALYSIS.
2. REFER TO STRUCTURAL ANALYSIS OR STRUCTURAL LETTER FOR APPROVAL OF ADDITIONAL NEW APPURTENANCES.

B+T GRP

at&t mobility corp.

HARMONI

HARMONI TOWERS
PARKERS LAKE
PARKER LAKE RELO
FA# 15435106/10134060
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B&T ENGINEERING, INC.
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STATE OF KENTUCKY
BRAD P. MILANOWSKI
25311
LICENSED PROFESSIONAL ENGINEER
1/7/22

PROPOSED TOWER ELEVATION

SHEET NUMBER:
C-4

EXHIBIT C
TOWER AND FOUNDATION DESIGN

HARMONI TOWERS

January 21, 2022

Kentucky Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, KY 40602-0615

RE: Site Name – Parkers Lake Relo/Parkers Lake
Proposed Cell Tower
36.839322 North Latitude, 84.485103 West Longitude

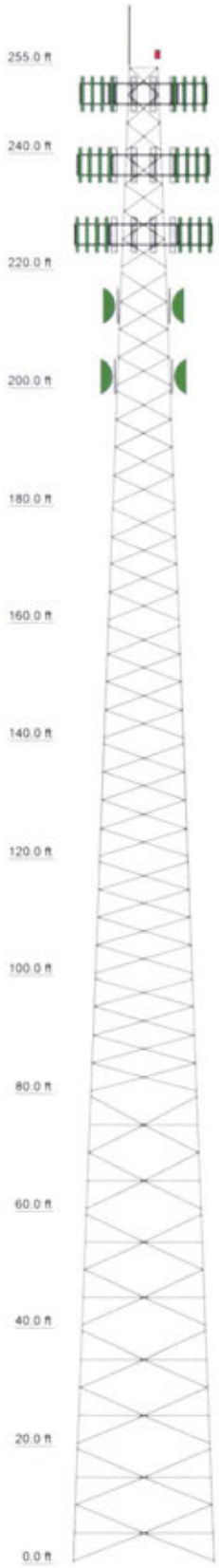
Dear Commissioners:

The Construction Manager for the proposed new communications facility will be Marshall Corbin. His contact information is (540) 287-8142 or Marshall Corbin@harmonitowers.com. Marshall has been in the industry completing civil construction and constructing towers since 1996. He has worked at Harmoni Towers LLC since 2021 completing project and construction management on new site build projects.

Thank you,

Marshall Corbin
Marshall Corbin
Construction Manager – Tennessee/Kentucky Market
Harmoni Towers LLC

Harmoni Towers LLC
11101 Anderson Drive, Suite 200
Little Rock, AR 72212
501.621.0521 | harmonitowers.com



Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Legs	SR 1 3/4	SR 2 1/4	SR 2 3/4	SR 3	SR 3 1/4		SR 3 1/2	SR 3 3/4		SR 4		SR 4 1/4	SR 4 1/2
Leg Grade	A529-50												
Diagonals	L1 3/4x1 3/4x3/16		L2x2x3/16	L2 1/2x2 1/2x3/16			L3x3x3/16	L3x3x1/4		2L2 1/2x2 1/2x3/16x3/8			2L3x3x3/16x3/8
Diagonal Grade	A36M-50												
Top Girts	A						N.A.						
Horizontals					N.A.			B		2L2x2x3/16x3/8			C
Inner Bracing					N.A.					L1 3/4x1 3/4x3/16			
Face Width (ft)	4.875	6	7.5	9	10.5	12	13.5	15	16.5	18	19.5	21	22.5
# Panels @ (ft)	3 @ 4.66667						48 @ 4.75						24
Weight (K)	0.7	1.2	1.8	2.2	2.6	2.9	3.3	3.7	4.7	4.7	5.3	5.4	6.5

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 1"x10'	255	Sector1(CaAa=10000 Sq.in)No Ice (Carrier 3)	226
Top Beacon	255		
Sector1(CaAa=13333.33 Sq.in)No Ice (Carrier 1)	250	Sector2(CaAa=10000 Sq.in)No Ice (Carrier 3)	226
Sector2(CaAa=13333.33 Sq.in)No Ice (Carrier 1)	250	Sector3(CaAa=10000 Sq.in)No Ice (Carrier 3)	226
Sector3(CaAa=13333.33 Sq.in)No Ice (Carrier 1)	250	4 1/2" OD Dish Mount (Carrier 4)	214
		4 1/2" OD Dish Mount (Carrier 4)	214
Sector1(CaAa=10000 Sq.in)No Ice (Carrier 2)	238	6' MW Dish (Carrier 4)	214
		6' MW Dish (Carrier 4)	214
Sector2(CaAa=10000 Sq.in)No Ice (Carrier 2)	238	4 1/2" OD Dish Mount (Carrier 5)	202
		4 1/2" OD Dish Mount (Carrier 5)	202
Sector3(CaAa=10000 Sq.in)No Ice (Carrier 2)	238	6' MW Dish (Carrier 5)	202
		6' MW Dish (Carrier 5)	202

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L1 3/4x1 3/4x3/16	C	2L2 1/2x2 1/2x3/16x3/8
B	2L1 3/4x1 3/4x3/16x3/8		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A529-50	50 ksi	65 ksi	A36M-50	50 ksi	65 ksi

TOWER DESIGN NOTES

1. Tower is located in McCreary County, Kentucky.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 105 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 30 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. Please see feedline plan for proper feedline placement. Deviation from plan may reduce tower capacity.

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 543 K
SHEAR: 40 K

UPLIFT: -474 K
SHEAR: 37 K

AXIAL 218 K
SHEAR 9 K *MOMENT 1609 kip-ft*
TORQUE 3 kip-ft
30 mph WIND - 1.500 in ICE

AXIAL 81 K
SHEAR 68 K *MOMENT 10739 kip-ft*
TORQUE 32 kip-ft
REACTIONS - 105 mph WIND

STATE OF KENTUCKY
BRAD [illegible] MILANOVICH
25[illegible]
PROFESSIONAL ENGINEER
2/23/22

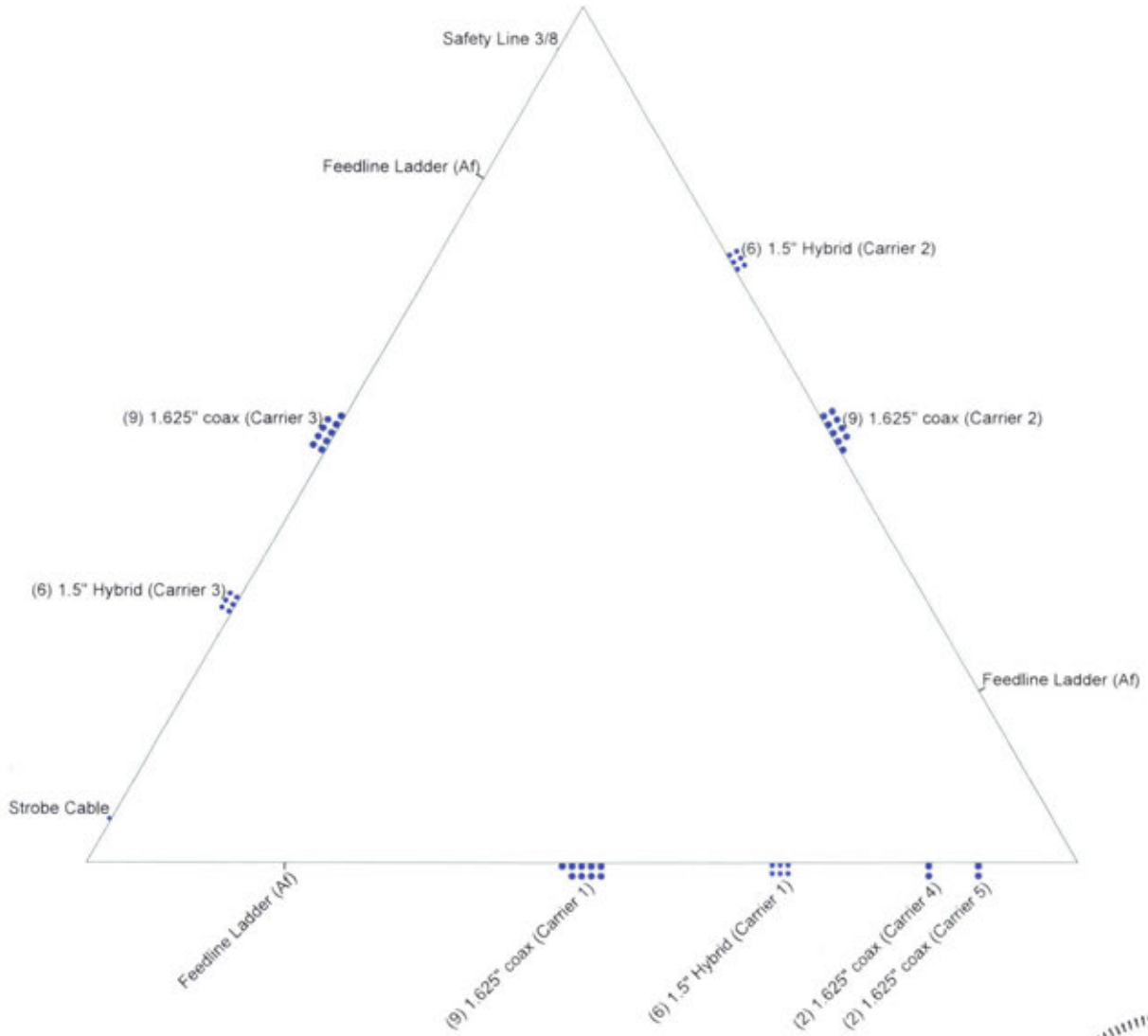
ARCOSA
TELECOM STRUCTURES

B+T Group
1717 S Boulder Ave, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: ATS#9424 - Parkers Lake (Site# KYLEX2061)
Project: 255' SST/36.839322, -84.485103
Client: Harmoni Towers | Drawn by: mwilliams | App'd:
Code: TIA-222-H | Date: 02/22/22 | Scale: NTS
Path: | Dwg No. E-1

Feed Line Plan

Round Flat App In Face App Out Face

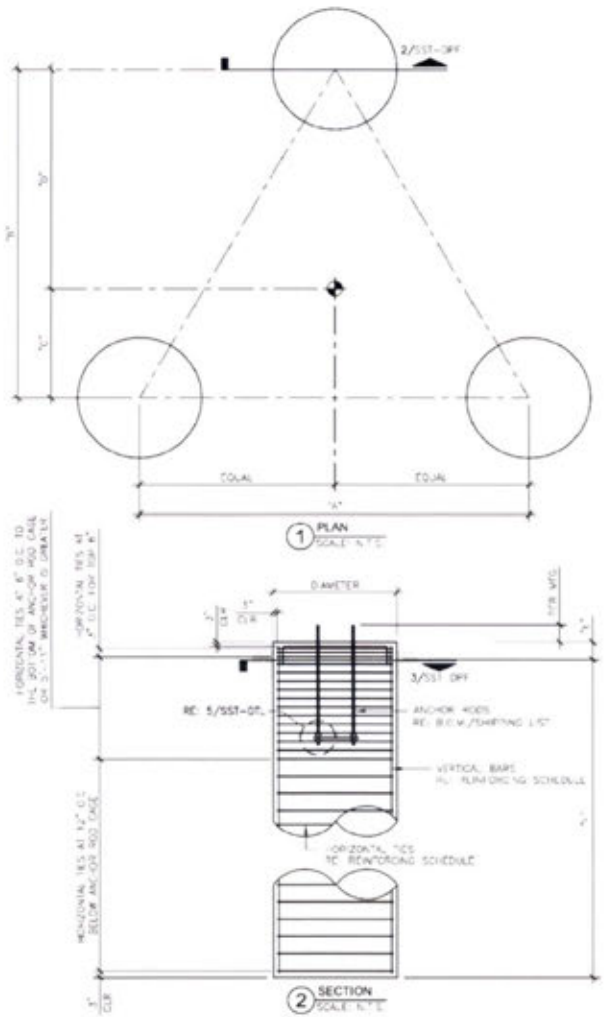


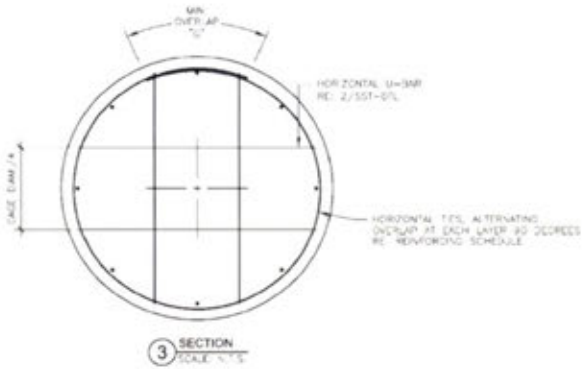
STATE OF KENTUCKY
BRAD R. MILANOWSKI
25011
LICENSED PROFESSIONAL ENGINEER
2/23/22

ARCOSA
TELECOM STRUCTURES

B+T Group
1717 S Boulder Ave, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: ATS#9424 - Parkers Lake (Site# KYLEX2061)			
Project: 255' SST/36.839322, -84.485103			
Client: Harmoni Towers	Drawn by: mwilliams	App'd:	
Code: TIA-222-H	Date: 02/22/22	Scale: NTS	
Path:		Dwg No. E-7	





NOTES:

1. REINFORCEMENT STEEL SHALL CONFIRM TO THE REQUIREMENT OF ASTM A 615 (GRADE 60) EXCEPT THAT TIES MAY BE ASTM 615 (GRADE 40) WITH 3" MINIMUM CLEAR COVER
2. REINFORCEMENT STEEL SHALL BE DETAILED, FABRICATED, BENT, AND PLACED IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE AND THE ACI 315 (LATEST EDITION)
3. THE CONTRACTOR SHALL THOROUGHLY REVIEW THE GEOTECH REPORT FOR THIS PROJECT AND FOLLOW THE RECOMMENDATIONS IN THAT REPORT WHEN CONSTRUCTING THE FOUNDATION
   GEOTECHNICAL PROPERTIES BY: ALT & WITZIG ENGINEERING
   PROJECT NUMBER: 21EV0094
   DATE: FEBRUARY 18TH, 2022
4. THIS FOUNDATION HAS BEEN DESIGNED, IN ACCORDANCE WITH THE TIA 222-H STANDARD, SPECIFICALLY FOR THE TOWER AND SOIL CONDITION REFERENCED ABOVE. IF ANYTHING DIFFERS THIS DESIGN SHALL BE CONSIDERED INVALID AND MUST BE REDESIGNED PRIOR TO CONSTRUCTION.
5. TOTAL CONCRETE VOLUME FOR ALL (3) PIERS IN CUBIC YARDS: 50.18
6. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS
7. CONCRETE MIXTURES SHALL MEET DURABILITY REQUIREMENTS OF CHAPTER 19 OF THE ACI 318-14
8. ALL CONCRETE TESTING SHALL BE IN ACCORDANCE WITH ACI 318-14. A MINIMUM OF (2) 6"X12" OR (3) 4"X8" CONCRETE CYLINDERS PER INDIVIDUAL FOUNDATION AND A MINIMUM OF (6) 6"X12" OR (6) 4"X8" CYLINDERS PER BATCH REQUIRED
9. SLUMP TEST SHALL BE MADE IN ACCORDANCE WITH ASTM C143. THE ALLOWABLE CONCRETE SLUMP SHALL BE 4 INCHES (±1") UNLESS ADMIXTURES ARE USED. ADMIXTURE SHALL BE IN ACCORDANCE WITH ASTM C494 STANDARD TYPES A, B, C, D OR E. THE ENGINEER SHALL PRE-APPROVE SUPER PLASTICIZER USE. DO NOT USE CHLORIDE-CONTAINING ADMIXTURES. AIR ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C260.
10. BACKFILL MATERIAL SHALL BE COMPACTED TO A MINIMUM UNIT WEIGHT SPECIFIED IN GEOTECH REPORT. THE SOIL SHALL BE INSTALLED IN 6" TO 8" LIFTS AND COMPACTED THOROUGHLY TO ACHIEVE APPROPRIATE UNIT WEIGHT UNLESS GEOTECH SPECIFIES OTHER COMPACTION REQUIREMENTS.
11. VERIFY ALL DIMENSIONS AGAINST MANUFACTURER'S DRAWINGS

STIPULATION FOR REUSE:

1. THIS DRAWING WAS SPECIFICALLY DESIGNED FOR USE BY THE CUSTOMER ON THIS DRAWING AT THE SPECIFIED LOCATION. USE OF THIS DRAWING FOR REFERENCE OR EXAMPLE ON ANOTHER PROJECT REQUIRES THE SERVICES OF A PROPERLY LICENSED ENGINEER

DIMENSIONING SCHEDULE	
A	24'-0"
B	20'-9 7/16"
C	6'-11 1/8"
D	13'-10 1/4"
E	0'-6"
F	22'-6"
MIN. OVERLAP "G"	2'-3"
DIAMETER	5'-0"

REINFORCING SCHEDULE	SIZE	TOTAL QTY
VERTICAL BARS	#8	54
HORIZONTAL TIES	#4	93
U-BAR HORIZONTAL	#4	12

BASE REACTIONS: (FACTORED LOADS)		
GLOBAL REACTIONS		
MOMENT	10733	63.3%
AXIAL	81	6.9%
SHEAR	68	6.9%
REACTIONS PER LEG		
COMPRESSION AXIAL	543	6.9%
COMPRESSION SHEAR	40	6.9%
UPLIFT AXIAL	474	6.9%
UPLIFT SHEAR	37	6.9%

B+T GRP
17175 BOULDER AVE #300, TULSA, OK 74119
(918) 587-4630

ARCOSA
TELECOM STRUCTURES
4020 TULL AVE. MUSKOGEE, OK 74403

ISSUED FOR:

REV	DATE	DESCRIPTION
0	02/23/22	ISSUED FOR CONSTRUCTION

COA: 4011
EXPIRES: 12/31/2022

STATE OF KENTUCKY
BRAD R. MILANOWSKI
LICENSED PROFESSIONAL ENGINEER
2/23/22

PROJECT INFORMATION

PROJECT NO: 161350.001.01
SITE NAME: PARKERS LAKE
SITE NO: 9424
CLIENT NAME: ARCOSA TELECOM STRUCTURES

DRAWN BY: MRW
CHECKED BY:

SHEET TITLE: DRILLED PIER FOUNDATION

SHEET NUMBER	REVISION
SST-DPF	0

DIMENSIONING SCHEDULE	
A	32'-0"
B	4'-0"
C	28'-0"
D	5'-7 5/16"
E	20'-9 7/16"
F	8'-5 9/16"
I	0'-6"
K	6'-0"
L	7'-0"
MIN. OVERLAP "M"	2'-1"
DIAMETER	3'-6"

REINFORCING SCHEDULE	SIZE	TOTAL QTY
VERTICAL BARS WITH 90° BEND	# 8	33
HORIZONTAL TIES	# 4	42
HORIZONTAL U-BAR (PEDESTAL)	# 4	12
TOP HORIZONTAL BARS	# 8	96
BOTTOM HORIZONTAL BARS	# 8	96
CORNER BARS	# 4	8
VERTICAL U-BARS (PAD)	# 4	96

BASE REACTIONS: (FACTORED LOADS)		
GLOBAL REACTIONS		
MOMENT	10739	K-FT
AXIAL	81	KIPS
SHEAR	68	KIPS
REACTIONS PER LEG		
COMPRESSION AXIAL	143	KIPS
COMPRESSION SHEAR	40	KIPS
UPLIFT AXIAL	474	KIPS
UPLIFT SHEAR	37	KIPS

NOTES:
1. REINFORCEMENT STEEL SHALL CONFORM TO THE REQUIREMENT OF ASTM A-615 (GRADE 60) EXCEPT THAT TIES MAY BE ASTM 615 (GRADE 40) WITH 3" MINIMUM CLEAR COVER.
2. REINFORCEMENT STEEL SHALL BE DETAILED, FABRICATED, BENT, AND PLACED IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE AND THE ACI 315 (LATEST EDITION).
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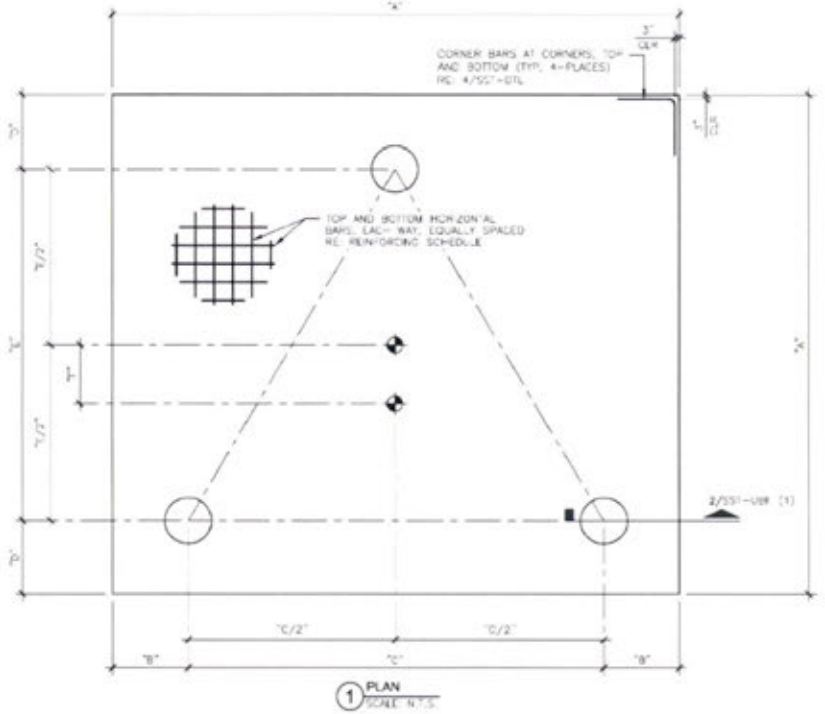
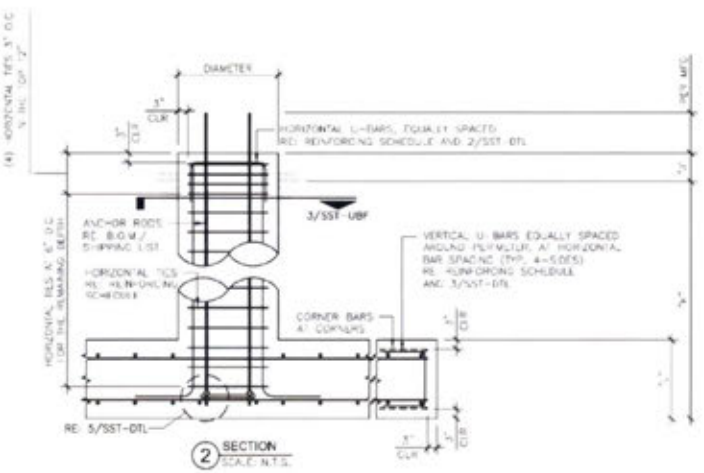
   GEOTECHNICAL PROPERTIES BY: ALT & WITZIG ENGINEERING
   PROJECT NUMBER: 21EV0094
   DATE: FEBRUARY 18TH, 2022
4. THIS FOUNDATION HAS BEEN DESIGNED, IN ACCORDANCE WITH THE TIA 222-H STANDARD, SPECIFICALLY FOR THE TOWER AND SOIL CONDITION REFERENCED ABOVE. IF ANYTHING DIFFERS THIS DESIGN SHALL BE CONSIDERED INVALID AND MUST BE REDESIGNED PRIOR TO CONSTRUCTION.
5. CONCRETE VOLUME IN CUBIC YARDS: 80.66
6. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
7. CONCRETE MIXTURES SHALL MEET DURABILITY REQUIREMENTS OF CHAPTER 19 OF THE ACI 318-14.
8. ALL CONCRETE TESTING SHALL BE IN ACCORDANCE WITH ACI 318-14. A MINIMUM OF (2) 6"X12" OR (3) 4"X8" CONCRETE CYLINDERS PER INDIVIDUAL FOUNDATION AND A MINIMUM OF (6) 6"X12" OR (6) 4"X8" CYLINDERS PER BATCH REQUIRED.
9. SLUMP TEST SHALL BE MADE IN ACCORDANCE WITH ASTM C143. THE ALLOWABLE CONCRETE SLUMP SHALL BE 4 INCHES (±1") UNLESS ADMIXTURES ARE USED. ADMIXTURE SHALL BE IN ACCORDANCE WITH ASTM C494 STANDARD TYPES A, B, C, D OR E. THE ENGINEER SHALL PRE-APPROVE SUPER PLASTICIZER USE. DO NOT USE CHLORIDE-CONTAINING ADMIXTURES. AIR ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C260.
10. BACKFILL MATERIAL SHALL BE COMPACTED TO A MINIMUM UNIT WEIGHT SPECIFIED IN GEOTECH REPORT. THE SOIL SHALL BE INSTALLED IN 6" TO 8" LIFTS AND COMPACTED THOROUGHLY TO ACHIEVE APPROPRIATE UNIT WEIGHT UNLESS GEOTECH SPECIFIES OTHER COMPACTION REQUIREMENTS.
11. VERIFY ALL DIMENSIONS AGAINST MANUFACTURER'S DRAWINGS.

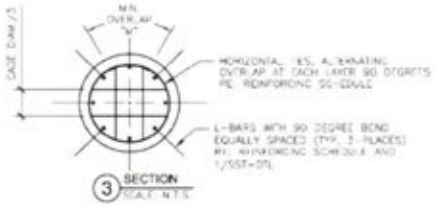
STIPULATION FOR REUSE:
1. THIS DRAWING WAS SPECIFICALLY DESIGNED FOR USE BY THE CUSTOMER ON THIS DRAWING AT THE SPECIFIED LOCATION. USE OF THIS DRAWING FOR REFERENCE OR EXAMPLE ON ANOTHER PROJECT REQUIRES THE SERVICES OF A PROPERLY LICENSED ENGINEER.



1 PLAN
SCALE: N.T.S.



2 SECTION
SCALE: N.T.S.



3 SECTION
SCALE: N.T.S.

B+T GRP
1717 S BOULDER AVE #300, TULSA, OK 74119
(918) 587-4630

ARCOSA
TELECOM STRUCTURES
4020 TULL AVE, MUSKOGEE, OK 74403

ISSUED FOR:

REV	DATE	DESCRIPTION
0	02/23/22	ISSUED FOR CONSTRUCTION

COA: 4011

EXPIRES: 12/31/2022

STATE OF KENTUCKY
BRAD R. MILANOWSKI
LICENSED PROFESSIONAL ENGINEER
2/23/22

PROJECT INFORMATION:

PROJECT NO: 161350.001.01
SITE NAME: PARKERS LAKE
SITE NO: 9424
CLIENT NAME: ARCOSA TELECOM STRUCTURES

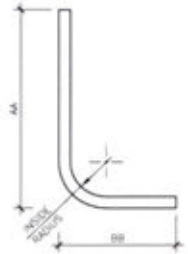
DRAWN BY: MRW
CHECKED BY:

SHEET TITLE:
UNIT BASE FOUNDATION

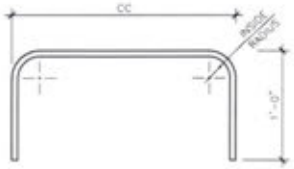
SHEET NUMBER	REVISION
SST-UBF	0

DIMENSIONING SCHEDULE	
AA*	5' 10"
BB	1' 1"
CC*	VARIES
DD*	1' 0"
EE	3' 0"

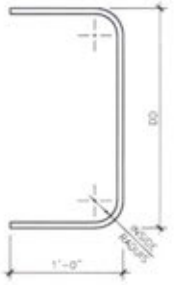
*NOTE: CONTRACTOR TO VERIFY DIMENSIONS PRIOR TO FABRICATION



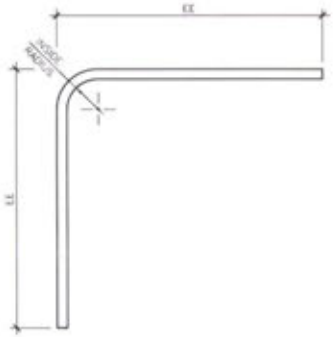
1 L-BAR
SCALE: N.T.S.



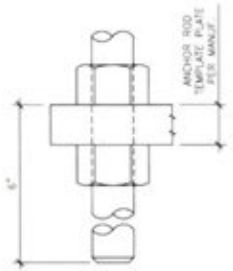
2 HORIZONTAL U-BAR
SCALE: N.T.S.



3 VERTICAL U-BAR
SCALE: N.T.S.



4 CORNER BAR
SCALE: N.T.S.



5 ANCHOR ROD DETAIL
SCALE: N.T.S.

B+T GRP
1717 S BOULDER AVE #300, TULSA, OK 74119
(918) 587-4630

ARCOSA
TELECOM STRUCTURES
4020 TULL AVE. MUSKOGEE, OK 74403

ISSUED FOR:

REV	DATE	DESCRIPTION
0	02/23/22	ISSUED FOR CONSTRUCTION

COA: 4011

EXPIRES: 12/31/2022

STATE OF KENTUCKY
BRADLEY MILANOVICH
LICENSED PROFESSIONAL ENGINEER
2/23/22

PROJECT INFORMATION:

PROJECT NO: 161350.001.01
SITE NAME: PARKERS LAKE
SITE NO: 9424
CLIENT NAME: ARCOSA TELECOM STRUCTURES

DRAWN BY: MRW
CHECKED BY:

SHEET TITLE:
DIMENSIONING DETAIL

SHEET NUMBER:	REVISION:
SST-DTL	0

SST Unit Base Foundation

Project #:	161350.001.01
Site Name:	Parkers Lake
Site #:	9424

TIA-222 Revision:	H

Top & Bot. Pad Rein. Different?:	☐
Tower Centroid Offset?:	☑
Block Foundation?:	☐
Rectangular Pad?:	☐

Superstructure Analysis Reactions		
Global Moment, **M**:	10739	ft-kips
Global Axial, **P**:	81	kips
Global Shear, **V**:	68	kips
Leg Compression, P_{comp}:	543	kips
Leg Comp. Shear, V_{u_comp}:	40	kips
Leg Uplift, P_{uplift}:	474	kips
Leg Uplift. Shear, V_{u_uplift}:	37	kips
Tower Height, **H**:	255	ft
Base Face Width, **BW**:	24	ft
BP Dist. Above Fdn, bp_{dist}:	3	in

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, **dpier**:	3.5	ft
Ext. Above Grade, **E**:	0.50	ft
Pier Rebar Size, **Sc**:	8	
Pier Rebar Quantity, **mc**:	13	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	9	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	6.00	ft
Pad Width, W_1:	32.00	ft
Pad Thickness, **T**:	2.00	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	48	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	4	ksi
Dry Concrete Density, **δc**:	150	pcf

Soil Properties		
Total Soil Unit Weight, **γ**:	110	pcf
Ultimate Net Bearing, Qnet:	13.500	ksf
Cohesion, **Cu**:	2.500	ksf
Friction Angle, **ϕ**:		degrees
SPT Blow Count, N_{blows}:		
Base Friction, **μ**:		
Neglected Depth, **N**:	3.0	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

Foundation Analysis Checks				
	Capacity	**Demand**	**Rating***	**Check**
Lateral (Sliding) (kips)	2228.81	68.00	**2.9%**	**Pass**
Bearing Pressure (ksf)	10.62	7.35	**69.2%**	**Pass**
*Overturning (kip*ft)*	11815.19	11469.19	**97.1%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	1288.37	180.00	**13.3%**	**Pass**
*Pier Flexure (Tension) (kip*ft)*	202.09	166.50	**78.5%**	**Pass**
Pier Compression (kip)	6123.66	550.79	**8.6%**	**Pass**
*Pad Flexure (kip*ft)*	3178.80	3144.64	**94.2%**	**Pass**
Pad Shear - 1-way (kips)	710.37	706.44	**94.7%**	**Pass**
Pad Shear - Comp 2-way (ksi)	0.190	0.150	**75.1%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	1585.38	108.00	**6.5%**	**Pass**
Pad Shear - Tension 2-way (ksi)	0.190	0.154	**77.1%**	**Pass**
*Flexural 2-way (Tension) (kip*ft)*	1585.38	99.90	**6.0%**	**Pass**

**Rating per TIA-222-H Section 15.5*

Structural Rating*:	**94.7%**
Soil Rating*:	**97.1%**

Drilled Pier Foundation

BU # :	161350.001.01
Site Name:	Parkers Lake
Order Number:	9424
TIA-222 Revison:	H
Tower Type:	Self Support

Applied Loads	Comp.	Uplift
Moment (kip-ft)		
Axial Force (kips)	543	474
Shear Force (kips)	40	37

Material Properties		
Concrete Strength, f'c:	4	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	40	ksi

Pier Design Data		
Depth	22.5	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 22.5' below grade		
Pier Diameter	5	ft
Rebar Quantity	18	
Rebar Size	8	
Clear Cover to Ties	3	in
Tie Size	4	
Tie Spacing	12	in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{y=0}$ (ft from TOC)	11.32	11.32
Soil Safety Factor	19.27	20.84
Max Moment (kip-ft)	317.34	293.54
Rating	*6.9%*	*6.4%*
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	457.10	457.10
End Bearing (kips)	482.21	-
Weight of Concrete (kips)	81.29	60.97
Total Capacity (kips)	939.31	518.07
Axial (kips)	624.29	474.00
Rating	*66.5%*	*91.5%*
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	11.63	9.63
Critical Moment (kip-ft)	316.94	282.56
Critical Moment Capacity	2398.13	975.81
Rating	*13.2%*	*29.0%*
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	17.54	17.54
Critical Shear (kip)	51.65	47.77
Critical Shear Capacity	504.32	250.32
Rating	*10.2%*	*19.1%*

Structural Foundation Rating	**29.0%**
Soil Interaction Rating	**91.5%**

Check Limitation	
Apply TIA-222-H Section 15.5:	☐
N/A	☐
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	☐
Shear Design Options	
Check Shear along Depth of Pier:	☑
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

Go to Soil Calculations

Soil Profile

Groundwater Depth	N/A	# of Layers	5

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Net Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3	3	115	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3	9	6	115	150	2		1.100	1.100	1.30	1.30			Cohesive
3	9	13.5	4.5	120	150	4		2.045	2.045	2.00	2.00			Cohesive
4	13.5	22	8.5	130	150	4		2.045	2.045	2.00	2.00			Cohesive
5	22	22.5	0.5	130	150	10		4.500	4.500	10.00	10.00	30		Cohesive

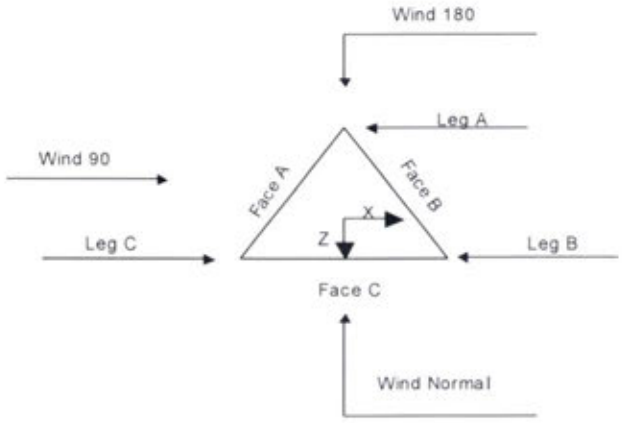
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 255.000 ft above the ground line.
The base of the tower is set at an elevation of 0.000 ft above the ground line.
The face width of the tower is 4.875 ft at the top and 24.000 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in McCreary County, Kentucky.
Tower base elevation above sea level: 1385.000 ft.
Basic wind speed of 105 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.500 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 30 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
Please see feedline plan for proper feedline placement. Deviation from plan may reduce tower capacity..
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	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	255.000-240.000			4.875	1	15.000
T2	240.000-220.000			6.000	1	20.000
T3	220.000-200.000			7.500	1	20.000
T4	200.000-180.000			9.000	1	20.000
T5	180.000-160.000			10.500	1	20.000
T6	160.000-140.000			12.000	1	20.000
T7	140.000-120.000			13.500	1	20.000
T8	120.000-100.000			15.000	1	20.000
T9	100.000-80.000			16.500	1	20.000
T10	80.000-60.000			18.000	1	20.000
T11	60.000-40.000			19.500	1	20.000
T12	40.000-20.000			21.000	1	20.000
T13	20.000-0.000			22.500	1	20.000

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	255.000-240.000	4.667	X Brace	No	No	6.000	6.000
T2	240.000-220.000	4.750	X Brace	No	No	6.000	6.000

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
T3	220.000-200.000	4.750	X Brace	No	No	6.000	6.000
T4	200.000-180.000	4.750	X Brace	No	No	6.000	6.000
T5	180.000-160.000	4.750	X Brace	No	No	6.000	6.000
T6	160.000-140.000	4.750	X Brace	No	No	6.000	6.000
T7	140.000-120.000	4.750	X Brace	No	No	6.000	6.000
T8	120.000-100.000	4.750	X Brace	No	No	6.000	6.000
T9	100.000-80.000	4.750	X Brace	No	No	6.000	6.000
T10	80.000-60.000	4.750	Double K	No	Yes	6.000	6.000
T11	60.000-40.000	4.750	Double K	No	Yes	6.000	6.000
T12	40.000-20.000	4.750	Double K	No	Yes	6.000	6.000
T13	20.000-0.000	4.750	Double K	No	Yes	6.000	6.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 255.000-240.000	Solid Round	1 3/4	A529-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T2 240.000-220.000	Solid Round	2 1/4	A529-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T3 220.000-200.000	Solid Round	2 3/4	A529-50 (50 ksi)	Equal Angle	L2x2x3/16	A36M-50 (50 ksi)
T4 200.000-180.000	Solid Round	3	A529-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36M-50 (50 ksi)
T5 180.000-160.000	Solid Round	3 1/4	A529-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36M-50 (50 ksi)
T6 160.000-140.000	Solid Round	3 1/4	A529-50 (50 ksi)	Equal Angle	L3x3x3/16	A36M-50 (50 ksi)
T7 140.000-120.000	Solid Round	3 1/2	A529-50 (50 ksi)	Equal Angle	L3x3x3/16	A36M-50 (50 ksi)
T8 120.000-100.000	Solid Round	3 3/4	A529-50 (50 ksi)	Equal Angle	L3x3x3/16	A36M-50 (50 ksi)
T9 100.000-80.000	Solid Round	4	A529-50 (50 ksi)	Equal Angle	L3x3x1/4	A36M-50 (50 ksi)
T10 80.000-60.000	Solid Round	4	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T11 60.000-40.000	Solid Round	4 1/4	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T12 40.000-20.000	Solid Round	4 1/4	A529-50 (50 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)
T13 20.000-0.000	Solid Round	4 1/2	A529-50 (50 ksi)	Double Angle	2L3x3x3/16x3/8	A36M-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 255.000-240.000	Equal Angle	L1 3/4x1 3/4x3/16	A36M-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
T10 80.000-60.000	None	Flat Bar		A36 (36 ksi)	Double Angle	2L1 3/4x1 3/4x3/16x3/8	A36M-50 (50 ksi)
T11 60.000-40.000	None	Flat Bar		A36 (36 ksi)	Double Angle	2L2x2x3/16x3/8	A36M-50 (50 ksi)
T12 40.000-20.000	None	Flat Bar		A36 (36 ksi)	Double Angle	2L2x2x3/16x3/8	A36M-50 (50 ksi)
T13 20.000-0.000	None	Flat Bar		A36 (36 ksi)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	A36M-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T10 80.000-60.000	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T11 60.000-40.000	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T12 40.000-20.000	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)
T13 20.000-0.000	Solid Round		A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36M-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 255.000-240.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T2 240.000-220.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T3 220.000-200.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T4 200.000-180.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft^2	in					in	in	in
T5 180.000-160.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T6 160.000-140.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T7 140.000-120.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T8 120.000-100.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T9 100.000-80.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	36.000	36.000	36.000
T10 80.000-60.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.000
T11 60.000-40.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.000
T12 40.000-20.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.000
T13 20.000-0.000	0.000	0.375	A36M-50 (50 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.000

Tower Section Geometry *(cont'd)*

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Single Diags X	K Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
ft															
T1 255.000-240.000	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T2 240.000-220.000	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T3 220.000-200.000	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T4 200.000-180.000	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T5 180.000-160.000	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T6 160.000-140.000	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T7 140.000-120.000	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T8 120.000-100.000	No	No	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
00										
T9	No	No	1	1	1	1	1	1	1	1
100.000-80.00 0				1	1	1	1	1	1	1
T10	No	No	1	1	1	1	1	1	1	1
80.000-60.000				1	1	1	1	1	1	1
T11	No	No	1	1	1	1	1	1	1	1
60.000-40.000				1	1	1	1	1	1	1
T12	No	No	1	1	1	1	1	1	1	1
40.000-20.000				1	1	1	1	1	1	1
T13	No	No	1	1	1	1	1	1	1	1
20.000-0.000				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	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
255.000-240.0 00														
T2	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
240.000-220.0 00														
T3	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
220.000-200.0 00														
T4	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
200.000-180.0 00														
T5	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
180.000-160.0 00														
T6	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
160.000-140.0 00														
T7	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
140.000-120.0 00														
T8	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
120.000-100.0 00														
T9	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
100.000-80.00 0														
T10	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
80.000-60.000														

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T11 60.000-40.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T12 40.000-20.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T13 20.000-0.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 255.000-240.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T2 240.000-220.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T3 220.000-200.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T4 200.000-180.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T5 180.000-160.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T6 160.000-140.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T7 140.000-120.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T8 120.000-100.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T9 100.000-80.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T10 80.000-60.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T11 60.000-40.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T12 40.000-20.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T13 20.000-0.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 255.000-240.000	Flange	0.000 A325N	0	0.625 A325X	1	0.625 A325X	1	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T2 240.000-220.000	Flange	0.750 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T3 220.000-200.000	Flange	0.750 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T4 200.000-180.000	Flange	1.000 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T5 180.000-160.000	Flange	1.000 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T6 160.000-140.000	Flange	1.000 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T7 140.000-120.000	Flange	1.000 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T8 120.000-100.000	Flange	1.250 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T9 100.000-80.000	Flange	1.250 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325N	0	0.625 A325N	0	0.000 A325X	0	0.625 A325N	0
T10 80.000-60.000	Flange	1.250 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325N	0	0.625 A325N	0	0.625 A325X	1	0.625 A325N	0
T11 60.000-40.000	Flange	1.250 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325N	0	0.625 A325N	0	0.625 A325X	1	0.625 A325N	0
T12 40.000-20.000	Flange	1.250 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325N	0	0.625 A325N	0	0.625 A325X	1	0.625 A325N	0
T13 20.000-0.000	Flange	1.500 A325N	6	0.625 A325X	1	0.000 A325X	0	0.000 A325N	0	0.625 A325N	0	0.625 A325X	1	0.625 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
1.625" coax (Carrier 1)	C	No	No	Ar (CaAa)	250.000 - 10.000	0.000	0	9	5	0.750	1.980		0.001
1.5" Hybrid (Carrier 1) **	C	No	No	Ar (CaAa)	250.000 - 10.000	0.000	-0.2	6	3	0.750	1.500		0.001
1.625" coax (Carrier 2)	B	No	No	Ar (CaAa)	238.000 - 10.000	0.000	0	9	5	0.750	1.980		0.001
1.5" Hybrid (Carrier 2) **	B	No	No	Ar (CaAa)	238.000 - 10.000	0.000	-0.2	6	3	0.750	1.500		0.001
1.625" coax	A	No	No	Ar (CaAa)	226.000 -	0.000	0	9	5	0.750	1.980		0.001

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
(Carrier 3) 1.5" Hybrid (Carrier 3) **	A	No	No	Ar (CaAa)	10.000 - 226.000	0.000	-0.2	6	3	0.750	1.500		0.001
1.625" coax (Carrier 4) **	C	No	No	Ar (CaAa)	10.000 - 214.000	0.000	-0.35	2	1	0.750	1.980		0.001
1.625" coax (Carrier 5) **	C	No	No	Ar (CaAa)	10.000 - 202.000	0.000	-0.4	2	1	0.750	1.980		0.001
Safety Line 3/8	A	No	No	Ar (CaAa)	10.000 - 255.000	0.000	0.45	1	1	0.375	0.375		0.000
Strobe Cable **	A	No	No	Ar (CaAa)	10.000 - 255.000	0.000	-0.45	1	1	1.250	1.250		0.001
Feedline Ladder (Af)	C	No	No	Af (CaAa)	10.000 - 250.000	0.000	0.3	1	1	3.000	0.250		0.008
Feedline Ladder (Af)	B	No	No	Af (CaAa)	10.000 - 238.000	0.000	0.3	1	1	3.000	0.250		0.008
Feedline Ladder (Af) **	A	No	No	Af (CaAa)	10.000 - 226.000	0.000	0.3	1	1	3.000	0.250		0.008

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight klf
**								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	255.000-240.000	A	0.000	0.000	2.438	0.000	0.014
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	27.237	0.000	0.214
T2	240.000-220.000	A	0.000	0.000	19.592	0.000	0.147
		B	0.000	0.000	49.026	0.000	0.386
		C	0.000	0.000	54.473	0.000	0.428
T3	220.000-200.000	A	0.000	0.000	57.723	0.000	0.447
		B	0.000	0.000	54.473	0.000	0.428
		C	0.000	0.000	60.809	0.000	0.455
T4	200.000-180.000	A	0.000	0.000	57.723	0.000	0.447
		B	0.000	0.000	54.473	0.000	0.428
		C	0.000	0.000	70.313	0.000	0.494
T5	180.000-160.000	A	0.000	0.000	57.723	0.000	0.447
		B	0.000	0.000	54.473	0.000	0.428

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	70.313	0.000	0.494
T6	160.000-140.000	A	0.000	0.000	57.723	0.000	0.447
		B	0.000	0.000	54.473	0.000	0.428
		C	0.000	0.000	70.313	0.000	0.494
T7	140.000-120.000	A	0.000	0.000	57.723	0.000	0.447
		B	0.000	0.000	54.473	0.000	0.428
		C	0.000	0.000	70.313	0.000	0.494
T8	120.000-100.000	A	0.000	0.000	57.723	0.000	0.447
		B	0.000	0.000	54.473	0.000	0.428
		C	0.000	0.000	70.313	0.000	0.494
T9	100.000-80.000	A	0.000	0.000	57.723	0.000	0.447
		B	0.000	0.000	54.473	0.000	0.428
		C	0.000	0.000	70.313	0.000	0.494
T10	80.000-60.000	A	0.000	0.000	57.723	0.000	0.447
		B	0.000	0.000	54.473	0.000	0.428
		C	0.000	0.000	70.313	0.000	0.494
T11	60.000-40.000	A	0.000	0.000	57.723	0.000	0.447
		B	0.000	0.000	54.473	0.000	0.428
		C	0.000	0.000	70.313	0.000	0.494
T12	40.000-20.000	A	0.000	0.000	57.723	0.000	0.447
		B	0.000	0.000	54.473	0.000	0.428
		C	0.000	0.000	70.313	0.000	0.494
T13	20.000-0.000	A	0.000	0.000	28.862	0.000	0.223
		B	0.000	0.000	27.237	0.000	0.214
		C	0.000	0.000	35.157	0.000	0.247

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	255.000-240.000	A	1.835	0.000	0.000	13.447	0.000	0.192
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	42.532	0.000	0.881
T2	240.000-220.000	A	1.821	0.000	0.000	43.269	0.000	0.779
		B		0.000	0.000	76.343	0.000	1.578
		C		0.000	0.000	84.826	0.000	1.753
T3	220.000-200.000	A	1.805	0.000	0.000	102.223	0.000	1.990
		B		0.000	0.000	84.533	0.000	1.741
		C		0.000	0.000	104.580	0.000	2.035
T4	200.000-180.000	A	1.787	0.000	0.000	101.761	0.000	1.974
		B		0.000	0.000	84.215	0.000	1.728
		C		0.000	0.000	134.082	0.000	2.452
T5	180.000-160.000	A	1.767	0.000	0.000	101.252	0.000	1.956
		B		0.000	0.000	83.865	0.000	1.714
		C		0.000	0.000	133.458	0.000	2.427
T6	160.000-140.000	A	1.745	0.000	0.000	100.687	0.000	1.936
		B		0.000	0.000	83.475	0.000	1.699
		C		0.000	0.000	132.763	0.000	2.400
T7	140.000-120.000	A	1.720	0.000	0.000	100.049	0.000	1.913
		B		0.000	0.000	83.036	0.000	1.682
		C		0.000	0.000	131.980	0.000	2.370
T8	120.000-100.000	A	1.692	0.000	0.000	99.316	0.000	1.887
		B		0.000	0.000	82.531	0.000	1.662
		C		0.000	0.000	131.080	0.000	2.335
T9	100.000-80.000	A	1.658	0.000	0.000	98.452	0.000	1.857
		B		0.000	0.000	81.936	0.000	1.639
		C		0.000	0.000	130.019	0.000	2.294

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
T10	80.000-60.000	A	1.617	0.000	0.000	97.395	0.000	1.821
		B		0.000	0.000	81.207	0.000	1.610
		C		0.000	0.000	128.721	0.000	2.245
T11	60.000-40.000	A	1.564	0.000	0.000	96.020	0.000	1.774
		B		0.000	0.000	80.261	0.000	1.574
		C		0.000	0.000	127.033	0.000	2.181
T12	40.000-20.000	A	1.486	0.000	0.000	94.020	0.000	1.707
		B		0.000	0.000	78.884	0.000	1.522
		C		0.000	0.000	124.579	0.000	2.091
T13	20.000-0.000	A	1.331	0.000	0.000	45.026	0.000	0.790
		B		0.000	0.000	38.076	0.000	0.711
		C		0.000	0.000	59.857	0.000	0.959

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	255.000-240.000	0.496	4.712	-1.209	3.502
T2	240.000-220.000	2.680	-1.335	1.485	-0.342
T3	220.000-200.000	0.580	-2.012	0.023	-0.741
T4	200.000-180.000	1.750	-0.492	1.884	1.419
T5	180.000-160.000	1.907	-0.534	2.071	1.542
T6	160.000-140.000	1.923	-0.542	2.176	1.614
T7	140.000-120.000	2.032	-0.572	2.318	1.707
T8	120.000-100.000	2.128	-0.599	2.445	1.789
T9	100.000-80.000	2.215	-0.623	2.559	1.860
T10	80.000-60.000	2.860	-0.786	3.063	2.178
T11	60.000-40.000	2.936	-0.809	3.173	2.238
T12	40.000-20.000	3.058	-0.843	3.296	2.298
T13	20.000-0.000	1.739	-0.497	1.992	1.398

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	1.625" coax	240.00 - 250.00	0.6000	0.6000
T1	2	1.5" Hybrid	240.00 - 250.00	0.6000	0.6000
T1	14	Safety Line 3/8	240.00 - 255.00	0.6000	0.6000
T1	15	Strobe Cable	240.00 - 255.00	0.6000	0.6000
T1	17	Feedline Ladder (Af)	240.00 - 250.00	0.6000	0.6000
T2	1	1.625" coax	220.00 - 240.00	0.6000	0.6000
T2	2	1.5" Hybrid	220.00 - 240.00	0.6000	0.6000
T2	4	1.625" coax	220.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T2	5	1.5" Hybrid	238.00 - 220.00	0.6000	0.6000
T2	7	1.625" coax	238.00 - 220.00	0.6000	0.6000
T2	8	1.5" Hybrid	226.00 - 220.00	0.6000	0.6000
T2	14	Safety Line 3/8	226.00 - 220.00	0.6000	0.6000
T2	15	Strobe Cable	240.00 - 220.00	0.6000	0.6000
T2	17	Feedline Ladder (Af)	240.00 - 220.00	0.6000	0.6000
T2	18	Feedline Ladder (Af)	238.00 - 220.00	0.6000	0.6000
T2	19	Feedline Ladder (Af)	226.00 - 220.00	0.6000	0.6000
T3	1	1.625" coax	220.00 - 200.00	0.6000	0.6000
T3	2	1.5" Hybrid	220.00 - 200.00	0.6000	0.6000
T3	4	1.625" coax	220.00 - 200.00	0.6000	0.6000
T3	5	1.5" Hybrid	220.00 - 200.00	0.6000	0.6000
T3	7	1.625" coax	220.00 - 200.00	0.6000	0.6000
T3	8	1.5" Hybrid	220.00 - 200.00	0.6000	0.6000
T3	10	1.625" coax	214.00 - 200.00	0.6000	0.6000
T3	12	1.625" coax	202.00 - 200.00	0.6000	0.6000
T3	14	Safety Line 3/8	220.00 - 200.00	0.6000	0.6000
T3	15	Strobe Cable	220.00 - 200.00	0.6000	0.6000
T3	17	Feedline Ladder (Af)	220.00 - 200.00	0.6000	0.6000
T3	18	Feedline Ladder (Af)	220.00 - 200.00	0.6000	0.6000
T3	19	Feedline Ladder (Af)	220.00 - 200.00	0.6000	0.6000
T4	1	1.625" coax	200.00 - 180.00	0.6000	0.6000
T4	2	1.5" Hybrid	200.00 - 180.00	0.6000	0.6000
T4	4	1.625" coax	200.00 - 180.00	0.6000	0.6000
T4	5	1.5" Hybrid	200.00 - 180.00	0.6000	0.6000
T4	7	1.625" coax	200.00 - 180.00	0.6000	0.6000
T4	8	1.5" Hybrid	200.00 - 180.00	0.6000	0.6000
T4	10	1.625" coax	200.00 - 180.00	0.6000	0.6000
T4	12	1.625" coax	200.00 - 180.00	0.6000	0.6000
T4	14	Safety Line 3/8	200.00 - 180.00	0.6000	0.6000
T4	15	Strobe Cable	200.00 - 180.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T4	17	Feedline Ladder (Af)	200.00 180.00 -	0.6000	0.6000
T4	18	Feedline Ladder (Af)	200.00 180.00 -	0.6000	0.6000
T4	19	Feedline Ladder (Af)	200.00 180.00 -	0.6000	0.6000
T5	1	1.625" coax	200.00 160.00 -	0.6000	0.6000
T5	2	1.5" Hybrid	180.00 160.00 -	0.6000	0.6000
T5	4	1.625" coax	180.00 160.00 -	0.6000	0.6000
T5	5	1.5" Hybrid	180.00 160.00 -	0.6000	0.6000
T5	7	1.625" coax	180.00 160.00 -	0.6000	0.6000
T5	8	1.5" Hybrid	180.00 160.00 -	0.6000	0.6000
T5	10	1.625" coax	180.00 160.00 -	0.6000	0.6000
T5	12	1.625" coax	180.00 160.00 -	0.6000	0.6000
T5	14	Safety Line 3/8	180.00 160.00 -	0.6000	0.6000
T5	15	Strobe Cable	180.00 160.00 -	0.6000	0.6000
T5	17	Feedline Ladder (Af)	180.00 160.00 -	0.6000	0.6000
T5	18	Feedline Ladder (Af)	180.00 160.00 -	0.6000	0.6000
T5	19	Feedline Ladder (Af)	180.00 160.00 -	0.6000	0.6000
T6	1	1.625" coax	160.00 140.00 -	0.6000	0.6000
T6	2	1.5" Hybrid	160.00 140.00 -	0.6000	0.6000
T6	4	1.625" coax	160.00 140.00 -	0.6000	0.6000
T6	5	1.5" Hybrid	160.00 140.00 -	0.6000	0.6000
T6	7	1.625" coax	160.00 140.00 -	0.6000	0.6000
T6	8	1.5" Hybrid	160.00 140.00 -	0.6000	0.6000
T6	10	1.625" coax	160.00 140.00 -	0.6000	0.6000
T6	12	1.625" coax	160.00 140.00 -	0.6000	0.6000
T6	14	Safety Line 3/8	160.00 140.00 -	0.6000	0.6000
T6	15	Strobe Cable	160.00 140.00 -	0.6000	0.6000
T6	17	Feedline Ladder (Af)	160.00 140.00 -	0.6000	0.6000
T6	18	Feedline Ladder (Af)	160.00 140.00 -	0.6000	0.6000
T6	19	Feedline Ladder (Af)	160.00 140.00 -	0.6000	0.6000
T7	1	1.625" coax	160.00 120.00 -	0.6000	0.6000
T7	2	1.5" Hybrid	140.00 120.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			140.00		
T7	4	1.625" coax	120.00 - 140.00	0.6000	0.6000
T7	5	1.5" Hybrid	120.00 - 140.00	0.6000	0.6000
T7	7	1.625" coax	120.00 - 140.00	0.6000	0.6000
T7	8	1.5" Hybrid	120.00 - 140.00	0.6000	0.6000
T7	10	1.625" coax	120.00 - 140.00	0.6000	0.6000
T7	12	1.625" coax	120.00 - 140.00	0.6000	0.6000
T7	14	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T7	15	Strobe Cable	120.00 - 140.00	0.6000	0.6000
T7	17	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T7	18	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T7	19	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T8	1	1.625" coax	100.00 - 120.00	0.6000	0.6000
T8	2	1.5" Hybrid	100.00 - 120.00	0.6000	0.6000
T8	4	1.625" coax	100.00 - 120.00	0.6000	0.6000
T8	5	1.5" Hybrid	100.00 - 120.00	0.6000	0.6000
T8	7	1.625" coax	100.00 - 120.00	0.6000	0.6000
T8	8	1.5" Hybrid	100.00 - 120.00	0.6000	0.6000
T8	10	1.625" coax	100.00 - 120.00	0.6000	0.6000
T8	12	1.625" coax	100.00 - 120.00	0.6000	0.6000
T8	14	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T8	15	Strobe Cable	100.00 - 120.00	0.6000	0.6000
T8	17	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T8	18	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T8	19	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T9	1	1.625" coax	80.00 - 100.00	0.6000	0.6000
T9	2	1.5" Hybrid	80.00 - 100.00	0.6000	0.6000
T9	4	1.625" coax	80.00 - 100.00	0.6000	0.6000
T9	5	1.5" Hybrid	80.00 - 100.00	0.6000	0.6000
T9	7	1.625" coax	80.00 - 100.00	0.6000	0.6000
T9	8	1.5" Hybrid	80.00 - 100.00	0.6000	0.6000
T9	10	1.625" coax	80.00 - 100.00	0.6000	0.6000
T9	12	1.625" coax	80.00 - 100.00	0.6000	0.6000
T9	14	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T9	15	Strobe Cable	80.00 - 100.00	0.6000	0.6000
T9	17	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T9	18	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T9	19	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T10	1	1.625" coax	60.00 - 80.00	0.6000	0.6000
T10	2	1.5" Hybrid	60.00 - 80.00	0.6000	0.6000
T10	4	1.625" coax	60.00 - 80.00	0.6000	0.6000
T10	5	1.5" Hybrid	60.00 - 80.00	0.6000	0.6000
T10	7	1.625" coax	60.00 - 80.00	0.6000	0.6000
T10	8	1.5" Hybrid	60.00 - 80.00	0.6000	0.6000
T10	10	1.625" coax	60.00 - 80.00	0.6000	0.6000
T10	12	1.625" coax	60.00 - 80.00	0.6000	0.6000
T10	14	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T10	15	Strobe Cable	60.00 - 80.00	0.6000	0.6000
T10	17	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T10	18	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T10	19	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T11	1	1.625" coax	40.00 - 60.00	0.6000	0.6000
T11	2	1.5" Hybrid	40.00 - 60.00	0.6000	0.6000
T11	4	1.625" coax	40.00 - 60.00	0.6000	0.6000
T11	5	1.5" Hybrid	40.00 - 60.00	0.6000	0.6000
T11	7	1.625" coax	40.00 - 60.00	0.6000	0.6000
T11	8	1.5" Hybrid	40.00 - 60.00	0.6000	0.6000
T11	10	1.625" coax	40.00 - 60.00	0.6000	0.6000
T11	12	1.625" coax	40.00 - 60.00	0.6000	0.6000
T11	14	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T11	15	Strobe Cable	40.00 - 60.00	0.6000	0.6000
T11	17	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T11	18	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T11	19	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T12	1	1.625" coax	20.00 - 40.00	0.6000	0.6000
T12	2	1.5" Hybrid	20.00 - 40.00	0.6000	0.6000
T12	4	1.625" coax	20.00 - 40.00	0.6000	0.6000
T12	5	1.5" Hybrid	20.00 - 40.00	0.6000	0.6000
T12	7	1.625" coax	20.00 - 40.00	0.6000	0.6000
T12	8	1.5" Hybrid	20.00 - 40.00	0.6000	0.6000
T12	10	1.625" coax	20.00 - 40.00	0.6000	0.6000
T12	12	1.625" coax	20.00 - 40.00	0.6000	0.6000
T12	14	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T12	15	Strobe Cable	20.00 - 40.00	0.6000	0.6000
T12	17	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T12	18	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T12	19	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T13	1	1.625" coax	10.00 - 20.00	0.6000	0.6000
T13	2	1.5" Hybrid	10.00 - 20.00	0.6000	0.6000
T13	4	1.625" coax	10.00 - 20.00	0.6000	0.6000
T13	5	1.5" Hybrid	10.00 - 20.00	0.6000	0.6000
T13	7	1.625" coax	10.00 - 20.00	0.6000	0.6000
T13	8	1.5" Hybrid	10.00 - 20.00	0.6000	0.6000
T13	10	1.625" coax	10.00 - 20.00	0.6000	0.6000
T13	12	1.625" coax	10.00 - 20.00	0.6000	0.6000
T13	14	Safety Line 3/8	10.00 - 20.00	0.6000	0.6000
T13	15	Strobe Cable	10.00 - 20.00	0.6000	0.6000
T13	17	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T13	18	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T13	19	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_f Front ft^2	C_AA_s Side ft^2	Weight K
Lightning Rod 1"x10'	C	From Leg	0.000 0.000 5.000	0.000	255.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.000 2.017 3.050 5.148	1.000 2.017 3.050 5.148	0.040 0.049 0.065 0.116
Top Beacon	B	From Leg	0.000 0.000 1.000	0.000	255.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.700 3.100 3.500 4.300	2.700 3.100 3.500 4.300	0.050 0.070 0.090 0.130
**									
Sector1(CaAa=13333.33 Sq in)No Ice (Carrier 1)	A	From Leg	4.000 0.000 0.000	0.000	250.000	No Ice 1/2" Ice 1" Ice 2" Ice	92.600 115.750 138.900 185.200	62.040 77.550 93.060 124.080	0.700 1.400 2.100 3.500
Sector2(CaAa=13333.33 Sq in)No Ice (Carrier 1)	B	From Leg	4.000 0.000 0.000	0.000	250.000	No Ice 1/2" Ice 1" Ice 2" Ice	92.600 115.750 138.900 185.200	62.040 77.550 93.060 124.080	0.700 1.400 2.100 3.500
Sector3(CaAa=13333.33 Sq in)No Ice (Carrier 1)	C	From Leg	4.000 0.000 0.000	0.000	250.000	No Ice 1/2" Ice 1" Ice 2" Ice	92.600 115.750 138.900 185.200	62.040 77.550 93.060 124.080	0.700 1.400 2.100 3.500
**									
Sector1(CaAa=10000 Sq in)No Ice (Carrier 2)	A	From Leg	4.000 0.000 0.000	0.000	238.000	No Ice 1/2" Ice 1" Ice 2" Ice	69.440 86.800 104.160 138.880	46.525 58.156 69.787 93.050	0.700 1.400 2.100 3.500
Sector2(CaAa=10000 Sq in)No Ice (Carrier 2)	B	From Leg	4.000 0.000 0.000	0.000	238.000	No Ice 1/2" Ice 1" Ice 2" Ice	69.440 86.800 104.160 138.880	46.525 58.156 69.787 93.050	0.700 1.400 2.100 3.500
Sector3(CaAa=10000 Sq in)No Ice (Carrier 2)	C	From Leg	4.000 0.000 0.000	0.000	238.000	No Ice 1/2" Ice 1" Ice 2" Ice	69.440 86.800 104.160 138.880	46.525 58.156 69.787 93.050	0.700 1.400 2.100 3.500
**									
Sector1(CaAa=10000 Sq in)No Ice (Carrier 3)	A	From Leg	4.000 0.000 0.000	0.000	226.000	No Ice 1/2" Ice 1" Ice 2" Ice	69.440 86.800 104.160 138.880	46.525 58.156 69.787 93.050	0.700 1.400 2.100 3.500
Sector2(CaAa=10000 Sq in)No Ice (Carrier 3)	B	From Leg	4.000 0.000 0.000	0.000	226.000	No Ice 1/2" Ice 1" Ice 2" Ice	69.440 86.800 104.160 138.880	46.525 58.156 69.787 93.050	0.700 1.400 2.100 3.500
Sector3(CaAa=10000 Sq in)No Ice (Carrier 3)	C	From Leg	4.000 0.000 0.000	0.000	226.000	No Ice 1/2" Ice 1" Ice 2" Ice	69.440 86.800 104.160 138.880	46.525 58.156 69.787 93.050	0.700 1.400 2.100 3.500
**									
4 1/2" OD Dish Mount (Carrier 4)	C	From Leg	0.500 0.000 0.000	0.000	214.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.870 2.207 2.543 3.241	1.870 2.207 2.543 3.241	0.057 0.074 0.094 0.148
4 1/2" OD Dish Mount (Carrier 4)	B	From Leg	0.500 0.000 0.000	0.000	214.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.870 2.207 2.543 3.241	1.870 2.207 2.543 3.241	0.057 0.074 0.094 0.148
**									

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
4 1/2" OD Dish Mount (Carrier 5)	C	From Leg	0.500 0.000 0.000	0.000	202.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.870 2.207 2.543 3.241	1.870 2.207 2.543 3.241	0.057 0.074 0.094 0.148
4 1/2" OD Dish Mount (Carrier 5)	B	From Leg	0.500 0.000 0.000	0.000	202.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.870 2.207 2.543 3.241	1.870 2.207 2.543 3.241	0.057 0.074 0.094 0.148
**									
**									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight K
6' MW Dish (Carrier 4)	C	Paraboloid w/o Radome	From Leg	1.000 0.000 0.000	0.000		214.000	6.000	No Ice 1/2" Ice 1" Ice 2" Ice	28.270 29.050 29.831 31.392	0.143 0.292 0.441 0.740
6' MW Dish (Carrier 4)	B	Paraboloid w/o Radome	From Leg	1.000 0.000 0.000	0.000		214.000	6.000	No Ice 1/2" Ice 1" Ice 2" Ice	28.270 29.050 29.831 31.392	0.143 0.292 0.441 0.740
**											
6' MW Dish (Carrier 5)	C	Paraboloid w/o Radome	From Leg	1.000 0.000 0.000	0.000		202.000	6.000	No Ice 1/2" Ice 1" Ice 2" Ice	28.270 29.050 29.831 31.392	0.143 0.292 0.441 0.740
6' MW Dish (Carrier 5)	B	Paraboloid w/o Radome	From Leg	1.000 0.000 0.000	0.000		202.000	6.000	No Ice 1/2" Ice 1" Ice 2" Ice	28.270 29.050 29.831 31.392	0.143 0.292 0.441 0.740
**											
**											

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

Comb. No.	Description
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	255 - 240	Leg	Max Tension	15	14.360	0.588	-0.004
			Max. Compression	2	-16.327	0.874	-0.004
			Max. Mx	2	-16.327	0.874	-0.004
			Max. My	4	-1.269	-0.028	-0.686
			Max. Vy	2	-3.034	0.874	-0.004
			Max. Vx	24	-2.289	-0.005	0.169
		Diagonal	Max Tension	2	3.505	0.000	0.000
			Max. Compression	2	-3.583	0.000	0.000
			Max. Mx	37	0.489	0.018	-0.001

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	8	-3.157	-0.001	-0.006
			Max. Vy	32	0.023	0.018	0.002
			Max. Vx	8	0.002	0.000	0.000
		Top Girt	Max Tension	23	0.403	0.000	0.000
			Max. Compression	11	-0.456	0.000	0.000
			Max. Mx	26	-0.014	-0.037	0.000
			Max. My	28	-0.018	0.000	0.001
			Max. Vy	26	0.030	0.000	0.000
			Max. Vx	28	-0.001	0.000	0.000
T2	240 - 220	Leg	Max Tension	15	58.123	2.673	-0.014
			Max. Compression	2	-64.724	1.254	-0.014
			Max. Mx	2	-64.718	-3.188	0.022
			Max. My	4	-1.283	-0.063	-1.662
			Max. Vy	2	-8.879	1.254	-0.014
			Max. Vx	4	3.576	-0.050	-0.699
		Diagonal	Max Tension	12	7.765	0.000	0.000
			Max. Compression	20	-7.332	0.000	0.000
			Max. Mx	2	-0.689	0.034	0.002
			Max. My	20	-7.305	-0.004	0.032
			Max. Vy	35	0.029	0.027	-0.003
			Max. Vx	20	-0.008	0.000	0.000
T3	220 - 200	Leg	Max Tension	15	107.694	3.299	-0.020
			Max. Compression	2	-118.825	1.084	-0.007
			Max. Mx	2	-64.745	5.668	-0.049
			Max. My	4	-4.032	-0.071	-2.489
			Max. Vy	2	-10.838	1.084	-0.007
			Max. Vx	4	4.613	0.086	-0.714
		Diagonal	Max Tension	20	8.793	0.000	0.000
			Max. Compression	20	-8.096	0.000	0.000
			Max. Mx	28	0.507	0.038	0.004
			Max. My	20	-8.052	-0.004	0.017
			Max. Vy	28	0.037	0.038	0.004
			Max. Vx	20	-0.004	0.000	0.000
T4	200 - 180	Leg	Max Tension	7	156.036	3.818	0.190
			Max. Compression	2	-170.896	0.875	-0.008
			Max. Mx	2	-118.845	6.474	-0.043
			Max. My	4	-7.216	0.356	-3.023
			Max. Vy	2	-11.261	0.875	-0.008
			Max. Vx	4	4.688	0.023	-0.413
		Diagonal	Max Tension	20	9.168	0.000	0.000
			Max. Compression	20	-9.702	0.000	0.000
			Max. Mx	30	1.455	0.058	0.004
			Max. My	20	-9.642	-0.006	0.022
			Max. Vy	34	0.050	0.058	-0.006
			Max. Vx	20	-0.005	0.000	0.000
T5	180 - 160	Leg	Max Tension	7	199.247	4.570	0.207
			Max. Compression	2	-218.077	0.171	-0.003
			Max. Mx	2	-170.916	6.486	-0.058
			Max. My	4	-11.499	0.240	-2.760
			Max. Vy	18	-12.056	0.170	0.014
			Max. Vx	4	4.860	-0.002	-0.212
		Diagonal	Max Tension	20	9.446	0.000	0.000
			Max. Compression	20	-9.510	0.000	0.000
			Max. Mx	34	0.444	0.073	-0.007
			Max. My	20	-9.435	-0.002	0.016
			Max. Vy	34	0.057	0.073	-0.007
			Max. Vx	20	-0.003	0.000	0.000
T6	160 - 140	Leg	Max Tension	7	238.991	4.265	0.184
			Max. Compression	2	-262.189	0.975	-0.010
			Max. Mx	18	-217.746	6.197	0.336
			Max. My	4	-15.163	0.185	-2.646

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	18	-13.158	0.980	0.044
			Max. Vx	4	5.113	0.021	-0.457
		Diagonal	Max Tension	20	9.765	0.000	0.000
			Max. Compression	20	-9.699	0.000	0.000
			Max. Mx	30	1.643	0.103	0.008
			Max. My	20	-9.588	-0.008	0.018
			Max. Vy	34	0.072	0.103	-0.010
			Max. Vx	20	-0.003	0.000	0.000
T7	140 - 120	Leg	Max Tension	7	276.807	4.671	0.188
			Max. Compression	18	-305.173	1.010	0.041
			Max. Mx	18	-262.120	7.533	0.358
			Max. My	4	-18.477	0.191	-3.017
			Max. Vy	18	-14.191	1.010	0.041
			Max. Vx	4	5.330	0.022	-0.467
		Diagonal	Max Tension	20	10.229	0.000	0.000
			Max. Compression	20	-10.243	0.000	0.000
			Max. Mx	34	0.444	0.123	-0.012
			Max. My	6	-8.775	0.021	-0.017
			Max. Vy	34	0.079	0.123	-0.012
			Max. Vx	28	-0.003	0.000	0.000
T8	120 - 100	Leg	Max Tension	7	313.142	4.939	0.178
			Max. Compression	18	-347.330	1.231	0.065
			Max. Mx	18	-305.198	8.083	0.344
			Max. My	4	-21.605	0.189	-3.135
			Max. Vy	18	-15.192	1.231	0.065
			Max. Vx	4	5.635	0.030	-0.717
		Diagonal	Max Tension	20	10.701	0.000	0.000
			Max. Compression	20	-10.728	0.000	0.000
			Max. Mx	34	0.463	0.145	-0.014
			Max. My	6	-9.257	0.028	-0.016
			Max. Vy	34	0.086	0.145	-0.014
			Max. Vx	28	-0.003	0.000	0.000
T9	100 - 80	Leg	Max Tension	7	348.356	6.034	0.195
			Max. Compression	18	-389.239	0.061	0.060
			Max. Mx	18	-347.359	8.800	0.360
			Max. My	4	-24.638	0.202	-3.537
			Max. Vy	18	-15.901	0.061	0.060
			Max. Vx	4	6.412	-0.020	-0.823
		Diagonal	Max Tension	20	11.511	0.000	0.000
			Max. Compression	20	-11.437	0.000	0.000
			Max. Mx	34	0.625	0.183	0.017
			Max. My	6	-10.510	0.058	-0.021
			Max. Vy	34	0.099	0.175	-0.016
			Max. Vx	28	-0.004	0.000	0.000
T10	80 - 60	Leg	Max Tension	7	382.246	6.258	0.198
			Max. Compression	18	-429.936	0.274	0.057
			Max. Mx	18	-429.910	-8.047	-0.245
			Max. My	4	-27.887	0.169	-4.032
			Max. Vy	18	-16.629	0.274	0.057
			Max. Vx	4	6.481	-0.012	-0.797
		Diagonal	Max Tension	21	12.683	0.000	0.000
			Max. Compression	18	-12.983	0.000	0.000
			Max. Mx	30	1.758	0.279	0.000
			Max. My	35	-0.140	0.000	0.007
			Max. Vy	30	-0.103	0.000	0.000
			Max. Vx	35	0.003	0.000	0.000
		Horizontal	Max Tension	18	1.709	-0.059	0.001
			Max. Compression	20	-1.791	0.000	0.000
			Max. Mx	33	0.164	-0.179	0.003
			Max. My	6	0.767	-0.049	0.005
			Max. Vy	33	0.095	-0.179	0.003

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	31	-0.002	-0.179	0.004
		Inner Bracing	Max Tension	1	0.000	0.000	0.000
			Max. Compression	29	-0.010	0.000	0.000
			Max. Mx	26	-0.009	-0.121	0.000
			Max. My	18	-0.005	0.000	-0.000
			Max. Vy	26	0.051	0.000	0.000
			Max. Vx	18	0.000	0.000	0.000
T11	60 - 40	Leg	Max Tension	7	414.647	7.247	0.221
			Max. Compression	18	-469.516	-0.621	0.025
			Max. Mx	18	-469.487	-9.376	-0.274
			Max. My	4	-31.058	0.147	-4.041
			Max. Vy	18	-17.496	-0.621	0.025
			Max. Vx	4	6.538	-0.021	-0.500
		Diagonal	Max Tension	21	13.032	0.000	0.000
			Max. Compression	19	-13.056	0.000	0.000
			Max. Mx	30	1.873	0.311	0.000
			Max. My	35	-0.022	0.000	0.007
			Max. Vy	30	0.108	0.000	0.000
			Max. Vx	35	-0.003	0.000	0.000
		Horizontal	Max Tension	18	2.011	-0.078	0.001
			Max. Compression	7	-1.891	-0.058	0.002
			Max. Mx	27	0.006	-0.220	0.005
			Max. My	6	0.730	-0.067	0.006
			Max. Vy	27	-0.110	-0.220	0.005
			Max. Vx	35	-0.002	-0.220	0.005
		Inner Bracing	Max Tension	1	0.000	0.000	0.000
			Max. Compression	29	-0.011	0.000	0.000
			Max. Mx	26	-0.010	-0.136	0.000
			Max. My	18	-0.005	0.000	-0.000
			Max. Vy	26	0.053	0.000	0.000
			Max. Vx	18	0.000	0.000	0.000
T12	40 - 20	Leg	Max Tension	7	445.483	6.727	0.193
			Max. Compression	18	-507.615	0.397	0.059
			Max. Mx	18	-507.586	-8.744	-0.237
			Max. My	4	-34.322	0.141	-3.773
			Max. Vy	18	-18.268	0.397	0.059
			Max. Vx	4	6.542	0.141	-3.773
		Diagonal	Max Tension	21	13.044	0.000	0.000
			Max. Compression	20	-13.149	0.000	0.000
			Max. Mx	30	2.055	0.339	0.000
			Max. My	35	0.229	0.000	0.008
			Max. Vy	30	0.111	0.000	0.000
			Max. Vx	35	-0.003	0.000	0.000
		Horizontal	Max Tension	18	1.867	-0.090	0.001
			Max. Compression	7	-1.795	-0.066	0.002
			Max. Mx	27	-0.049	-0.244	0.005
			Max. My	37	0.118	-0.243	0.006
			Max. Vy	33	-0.113	-0.240	0.004
			Max. Vx	35	-0.002	-0.240	0.005
		Inner Bracing	Max Tension	1	0.000	0.000	0.000
			Max. Compression	29	-0.011	0.000	0.000
			Max. Mx	26	-0.010	-0.149	0.000
			Max. My	18	-0.005	0.000	-0.000
			Max. Vy	26	0.054	0.000	0.000
			Max. Vx	18	0.000	0.000	0.000
T13	20 - 0	Leg	Max Tension	7	474.779	7.326	0.223
			Max. Compression	18	-544.485	0.000	0.000
			Max. Mx	18	-507.647	9.539	0.353
			Max. My	4	-37.554	0.152	-4.129
			Max. Vy	18	-18.843	0.000	0.000
			Max. Vx	4	6.542	0.152	-4.129

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Diagonal	Max Tension	21	13.189	0.000	0.000
			Max. Compression	20	-13.435	0.000	0.000
			Max. Mx	35	2.477	0.414	0.000
			Max. My	35	0.887	0.000	0.010
			Max. Vy	35	0.128	0.000	0.000
			Max. Vx	35	-0.003	0.000	0.000
		Horizontal	Max Tension	18	2.062	-0.131	0.002
			Max. Compression	20	-1.962	0.000	0.000
			Max. Mx	31	-0.124	-0.326	0.007
			Max. My	37	0.078	-0.324	0.009
			Max. Vy	31	0.133	-0.326	0.007
			Max. Vx	37	0.003	-0.324	0.009
		Inner Bracing	Max Tension	1	0.000	0.000	0.000
			Max. Compression	37	-0.012	0.000	0.000
			Max. Mx	35	-0.011	-0.152	0.000
			Max. My	31	-0.011	0.000	-0.000
			Max. Vy	35	-0.051	0.000	0.000
			Max. Vx	31	0.000	0.000	0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	543.327	35.029	-19.696
	Max. H_x	18	543.327	35.029	-19.696
	Max. H_z	7	-473.559	-32.061	17.913
	Min. Vert	7	-473.559	-32.061	17.913
	Min. H_x	7	-473.559	-32.061	17.913
	Min. H_z	18	543.327	35.029	-19.696
Leg B	Max. Vert	10	541.353	-34.850	-19.767
	Max. H_x	23	-471.062	31.860	17.990
	Max. H_z	23	-471.062	31.860	17.990
	Min. Vert	23	-471.062	31.860	17.990
	Min. H_x	10	541.353	-34.850	-19.767
	Min. H_z	10	541.353	-34.850	-19.767
Leg A	Max. Vert	2	540.190	0.187	39.831
	Max. H_x	21	32.354	5.323	1.597
	Max. H_z	2	540.190	0.187	39.831
	Min. Vert	15	-456.393	-0.207	-35.419
	Min. H_x	9	32.354	-5.319	1.596
	Min. H_z	15	-456.393	-0.207	-35.419

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear, K	Shear, K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	67.707	0.000	0.000	6.502	-3.005	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	81.248	-0.000	-66.993	-10664.739	-3.677	8.237
0.9 Dead+1.0 Wind 0 deg - No Ice	60.936	-0.000	-66.991	-10646.227	-2.764	8.228

Load Combination	Vertical K	Shear$_x$ K	Shear$_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 30 deg - No Ice	81.248	33.056	-54.612	-8726.118	-5366.536	32.399
0.9 Dead+1.0 Wind 30 deg - No Ice	60.936	33.057	-54.613	-8711.841	-5355.607	32.377
1.2 Dead+1.0 Wind 60 deg - No Ice	81.248	55.333	-31.634	-5085.135	-8938.926	19.911
0.9 Dead+1.0 Wind 60 deg - No Ice	60.936	55.334	-31.634	-5077.628	-8921.345	19.882
1.2 Dead+1.0 Wind 90 deg - No Ice	81.248	64.617	-1.224	-248.793	-10369.328	2.579
0.9 Dead+1.0 Wind 90 deg - No Ice	60.936	64.618	-1.224	-250.280	-10349.148	2.545
1.2 Dead+1.0 Wind 120 deg - No Ice	81.248	59.489	31.904	4964.751	-9476.091	9.015
0.9 Dead+1.0 Wind 120 deg - No Ice	60.936	59.488	31.903	4953.329	-9457.025	8.993
1.2 Dead+1.0 Wind 150 deg - No Ice	81.248	31.483	54.412	8696.156	-5033.993	11.565
0.9 Dead+1.0 Wind 150 deg - No Ice	60.936	31.484	54.413	8678.019	-5023.714	11.558
1.2 Dead+1.0 Wind 180 deg - No Ice	81.248	-0.000	61.587	9928.627	-3.666	-8.236
0.9 Dead+1.0 Wind 180 deg - No Ice	60.936	-0.000	61.589	9908.120	-2.755	-8.228
1.2 Dead+1.0 Wind 210 deg - No Ice	81.248	-31.586	54.591	8737.600	5050.578	-26.939
0.9 Dead+1.0 Wind 210 deg - No Ice	60.936	-31.587	54.592	8719.373	5042.070	-26.919
1.2 Dead+1.0 Wind 240 deg - No Ice	81.248	-59.666	32.006	4988.435	9509.780	-15.654
0.9 Dead+1.0 Wind 240 deg - No Ice	60.936	-59.664	32.005	4976.959	9492.446	-15.623
1.2 Dead+1.0 Wind 270 deg - No Ice	81.248	-64.617	-1.224	-248.791	10362.068	-2.578
0.9 Dead+1.0 Wind 270 deg - No Ice	60.936	-64.618	-1.224	-250.279	10343.712	-2.544
1.2 Dead+1.0 Wind 300 deg - No Ice	81.248	-55.156	-31.532	-5061.510	8890.687	-13.272
0.9 Dead+1.0 Wind 300 deg - No Ice	60.936	-55.157	-31.532	-5054.055	8875.019	-13.251
1.2 Dead+1.0 Wind 330 deg - No Ice	81.248	-32.953	-54.434	-8684.750	5335.301	-17.025
0.9 Dead+1.0 Wind 330 deg - No Ice	60.936	-32.954	-54.435	-8670.564	5326.249	-17.017
1.2 Dead+1.0 Ice+1.0 Temp	217.568	-0.001	-0.003	42.183	-29.188	0.001
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	217.568	-0.000	-9.330	-1511.921	-29.684	1.148
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	217.568	4.655	-7.826	-1263.698	-813.420	3.455
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	217.568	7.955	-4.565	-720.637	-1362.946	2.865
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	217.568	9.267	-0.110	19.675	-1575.501	1.341
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	217.568	8.253	4.546	788.966	-1402.583	1.143
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	217.568	4.515	7.809	1346.078	-783.261	0.866
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	217.568	-0.000	8.934	1540.886	-29.680	-1.146
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	217.568	-4.523	7.824	1349.530	725.891	-2.964

Load Combination	Vertical K	Shear$_x$ K	Shear$_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	217.568	-8.267	4.554	790.882	1346.530	-2.483
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	217.568	-9.267	-0.110	19.678	1516.138	-1.340
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	217.568	-7.940	-4.556	-718.641	1300.130	-1.524
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	217.568	-4.647	-7.811	-1260.245	752.062	-1.357
Dead+Wind 0 deg - Service	67.707	-0.000	-21.874	-3474.085	-3.028	2.688
Dead+Wind 30 deg - Service	67.707	10.794	-17.833	-2842.048	-1752.026	10.594
Dead+Wind 60 deg - Service	67.707	18.068	-10.329	-1654.538	-2917.193	6.496
Dead+Wind 90 deg - Service	67.707	21.100	-0.400	-77.137	-3383.760	0.817
Dead+Wind 120 deg - Service	67.707	19.425	10.417	1623.124	-3092.277	2.936
Dead+Wind 150 deg - Service	67.707	10.280	17.767	2840.174	-1643.697	3.793
Dead+Wind 180 deg - Service	67.707	-0.000	20.110	3242.133	-3.026	-2.688
Dead+Wind 210 deg - Service	67.707	-10.314	17.826	2853.679	1645.444	-8.808
Dead+Wind 240 deg - Service	67.707	-19.482	10.451	1630.840	3099.591	-5.102
Dead+Wind 270 deg - Service	67.707	-21.100	-0.400	-77.137	3377.715	-0.816
Dead+Wind 300 deg - Service	67.707	-18.010	-10.296	-1646.826	2897.789	-4.330
Dead+Wind 330 deg - Service	67.707	-10.760	-17.775	-2828.547	1738.178	-5.574

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-67.707	0.000	-0.000	67.707	-0.000	0.000%
2	0.000	-81.248	-66.995	0.000	81.248	66.993	0.002%
3	0.000	-60.936	-66.995	0.000	60.936	66.991	0.005%
4	33.059	-81.248	-54.617	-33.056	81.248	54.612	0.005%
5	33.059	-60.936	-54.617	-33.057	60.936	54.613	0.004%
6	55.337	-81.248	-31.636	-55.333	81.248	31.634	0.005%
7	55.337	-60.936	-31.636	-55.334	60.936	31.634	0.004%
8	64.622	-81.248	-1.224	-64.617	81.248	1.224	0.005%
9	64.622	-60.936	-1.224	-64.618	60.936	1.224	0.004%
10	59.492	-81.248	31.905	-59.489	81.248	-31.904	0.002%
11	59.492	-60.936	31.905	-59.488	60.936	-31.903	0.005%
12	31.486	-81.248	54.417	-31.483	81.248	-54.412	0.005%
13	31.486	-60.936	54.417	-31.484	60.936	-54.413	0.004%
14	0.000	-81.248	61.592	0.000	81.248	-61.587	0.005%
15	0.000	-60.936	61.592	0.000	60.936	-61.589	0.004%
16	-31.589	-81.248	54.595	31.586	81.248	-54.591	0.005%
17	-31.589	-60.936	54.595	31.587	60.936	-54.592	0.004%
18	-59.668	-81.248	32.007	59.666	81.248	-32.006	0.002%
19	-59.668	-60.936	32.007	59.664	60.936	-32.005	0.005%
20	-64.622	-81.248	-1.224	64.617	81.248	1.224	0.005%
21	-64.622	-60.936	-1.224	64.618	60.936	1.224	0.004%
22	-55.160	-81.248	-31.534	55.156	81.248	31.532	0.005%
23	-55.160	-60.936	-31.534	55.157	60.936	31.532	0.004%
24	-32.956	-81.248	-54.438	32.953	81.248	54.434	0.005%
25	-32.956	-60.936	-54.438	32.954	60.936	54.435	0.004%
26	0.000	-217.568	0.000	0.001	217.568	0.003	0.001%
27	0.000	-217.568	-9.332	0.000	217.568	9.330	0.001%
28	4.656	-217.568	-7.827	-4.655	217.568	7.826	0.001%
29	7.956	-217.568	-4.565	-7.955	217.568	4.565	0.001%
30	9.268	-217.568	-0.110	-9.267	217.568	0.110	0.001%
31	8.254	-217.568	4.546	-8.253	217.568	-4.546	0.000%
32	4.515	-217.568	7.810	-4.515	217.568	-7.809	0.001%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
33	0.000	-217.568	8.935	0.000	217.568	-8.934	0.001%
34	-4.524	-217.568	7.825	4.523	217.568	-7.824	0.001%
35	-8.268	-217.568	4.554	8.267	217.568	-4.554	0.001%
36	-9.268	-217.568	-0.110	9.267	217.568	0.110	0.001%
37	-7.941	-217.568	-4.557	7.940	217.568	4.556	0.001%
38	-4.647	-217.568	-7.812	4.647	217.568	7.811	0.001%
39	0.000	-67.707	-21.876	0.000	67.707	21.874	0.002%
40	10.795	-67.707	-17.834	-10.794	67.707	17.833	0.002%
41	18.069	-67.707	-10.330	-18.068	67.707	10.329	0.002%
42	21.101	-67.707	-0.400	-21.100	67.707	0.400	0.002%
43	19.426	-67.707	10.418	-19.425	67.707	-10.417	0.002%
44	10.281	-67.707	17.769	-10.280	67.707	-17.767	0.002%
45	0.000	-67.707	20.112	0.000	67.707	-20.110	0.002%
46	-10.315	-67.707	17.827	10.314	67.707	-17.826	0.002%
47	-19.484	-67.707	10.451	19.482	67.707	-10.451	0.002%
48	-21.101	-67.707	-0.400	21.100	67.707	0.400	0.002%
49	-18.012	-67.707	-10.297	18.010	67.707	10.296	0.002%
50	-10.761	-67.707	-17.776	10.760	67.707	17.775	0.002%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	13	0.00002896	0.00006798
3	Yes	12	0.00005201	0.00011664
4	Yes	12	0.00006438	0.00014413
5	Yes	12	0.00004779	0.00010746
6	Yes	12	0.00006070	0.00013617
7	Yes	12	0.00004420	0.00009961
8	Yes	12	0.00006444	0.00014420
9	Yes	12	0.00004786	0.00010755
10	Yes	13	0.00002892	0.00006785
11	Yes	12	0.00005194	0.00011640
12	Yes	12	0.00006469	0.00014477
13	Yes	12	0.00004809	0.00010810
14	Yes	12	0.00006080	0.00013646
15	Yes	12	0.00004429	0.00009986
16	Yes	12	0.00006471	0.00014484
17	Yes	12	0.00004811	0.00010815
18	Yes	13	0.00002894	0.00006791
19	Yes	12	0.00005198	0.00011652
20	Yes	12	0.00006444	0.00014421
21	Yes	12	0.00004786	0.00010756
22	Yes	12	0.00006069	0.00013614
23	Yes	12	0.00004420	0.00009959
24	Yes	12	0.00006436	0.00014406
25	Yes	12	0.00004777	0.00010741
26	Yes	7	0.00000001	0.00014954
27	Yes	13	0.00000001	0.00014482
28	Yes	13	0.00000001	0.00014418
29	Yes	13	0.00000001	0.00014626
30	Yes	13	0.00000001	0.00014895
31	Yes	14	0.00000001	0.00006587
32	Yes	13	0.00000001	0.00014911
33	Yes	13	0.00000001	0.00014830

34	Yes	13	0.00000001	0.00014787
35	Yes	13	0.00000001	0.00014906
36	Yes	13	0.00000001	0.00014571
37	Yes	13	0.00000001	0.00014310
38	Yes	13	0.00000001	0.00014201
39	Yes	12	0.00000001	0.00011962
40	Yes	12	0.00000001	0.00011671
41	Yes	12	0.00000001	0.00011431
42	Yes	12	0.00000001	0.00011669
43	Yes	12	0.00000001	0.00011945
44	Yes	12	0.00000001	0.00011686
45	Yes	12	0.00000001	0.00011443
46	Yes	12	0.00000001	0.00011693
47	Yes	12	0.00000001	0.00011954
48	Yes	12	0.00000001	0.00011670
49	Yes	12	0.00000001	0.00011426
50	Yes	12	0.00000001	0.00011665

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	255 - 240	13.145	47	0.438	0.076
T2	240 - 220	11.746	47	0.433	0.073
T3	220 - 200	9.879	47	0.408	0.070
T4	200 - 180	8.125	47	0.374	0.061
T5	180 - 160	6.544	47	0.332	0.051
T6	160 - 140	5.139	47	0.291	0.041
T7	140 - 120	3.925	47	0.245	0.033
T8	120 - 100	2.888	47	0.203	0.026
T9	100 - 80	2.011	47	0.165	0.018
T10	80 - 60	1.297	47	0.130	0.012
T11	60 - 40	0.765	47	0.094	0.009
T12	40 - 20	0.374	47	0.062	0.006
T13	20 - 0	0.118	47	0.029	0.003

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
255.000	Lightning Rod 1"x10'	47	13.145	0.438	0.076	343605
250.000	Sector1(CaAa=13333.33 Sq in)No Ice	47	12.679	0.437	0.075	343605
238.000	Sector1(CaAa=10000 Sq in)No Ice	47	11.558	0.432	0.073	214071
226.000	Sector1(CaAa=10000 Sq in)No Ice	47	10.433	0.417	0.071	56549
214.000	6' MW Dish	47	9.337	0.399	0.067	31253
202.000	6' MW Dish	47	8.293	0.378	0.062	25913

Maximum Tower Deflections - Design Wind

Section No	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	255 - 240	40.321	18	1.343	0.231
T2	240 - 220	36.033	18	1.328	0.225
T3	220 - 200	30.309	18	1.252	0.213
T4	200 - 180	24.927	18	1.146	0.187
T5	180 - 160	20.080	18	1.019	0.155
T6	160 - 140	15.769	18	0.892	0.127
T7	140 - 120	12.042	18	0.750	0.103
T8	120 - 100	8.861	18	0.621	0.079
T9	100 - 80	6.170	18	0.505	0.056
T10	80 - 60	3.981	18	0.400	0.038
T11	60 - 40	2.347	18	0.289	0.027
T12	40 - 20	1.149	18	0.190	0.017
T13	20 - 0	0.362	18	0.090	0.008

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
255.000	Lightning Rod 1"x10'	18	40.321	1.343	0.231	113472
250.000	Sector1(CaAa=13333.33 Sq in)No Ice	18	38.895	1.341	0.229	113472
238.000	Sector1(CaAa=10000 Sq in)No Ice	18	35.457	1.323	0.224	71508
226.000	Sector1(CaAa=10000 Sq in)No Ice	18	32.008	1.280	0.217	18588
214.000	6' MW Dish	18	28.645	1.222	0.206	10251
202.000	6' MW Dish	18	25.443	1.158	0.190	8496

Bolt Design Data

Section No	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	255	Diagonal	A325X	0.625	1	3.505	9.598	0.365 ✔	1	Member Block Shear
		Top Girt	A325X	0.625	1	0.403	9.598	0.042 ✔	1	Member Block Shear
T2	240	Leg	A325N	0.750	6	2.392	30.101	0.079 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	7.765	9.598	0.809 ✔	1	Member Block Shear
T3	220	Leg	A325N	0.750	6	9.685	30.101	0.322 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	8.793	10.740	0.819 ✔	1	Member Block Shear
T4	200	Leg	A325N	1.000	6	17.947	54.517	0.329 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	9.168	13.025	0.704 ✔	1	Member Block Shear
T5	180	Leg	A325N	1.000	6	26.004	54.517	0.477 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	9.446	13.025	0.725 ✔	1	Member Block Shear
T6	160	Leg	A325N	1.000	6	33.206	54.517	0.609 ✔	1	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
		Diagonal	A325X	0.625	1	9.765	14.168	0.689 ✔	1	Member Block Shear
T7	140	Leg	A325N	1.000	6	39.829	54.517	0.731 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	10.229	14.168	0.722 ✔	1	Member Block Shear
T8	120	Leg	A325N	1.250	6	46.132	87.220	0.529 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	10.701	14.168	0.755 ✔	1	Member Block Shear
T9	100	Leg	A325N	1.250	6	52.187	87.220	0.598 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	11.511	17.257	0.667 ✔	1	Bolt Shear
T10	80	Leg	A325N	1.250	6	58.056	87.220	0.666 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	12.683	26.051	0.487 ✔	1	Member Block Shear
		Horizontal	A325X	0.625	1	7.452	19.195	0.388 ✔	1	Member Block Shear
T11	60	Leg	A325N	1.250	6	63.705	87.220	0.730 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	13.032	26.051	0.500 ✔	1	Member Block Shear
		Horizontal	A325X	0.625	1	8.138	21.480	0.379 ✔	1	Member Block Shear
T12	40	Leg	A325N	1.250	6	69.104	87.220	0.792 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	13.044	26.051	0.501 ✔	1	Member Block Shear
		Horizontal	A325X	0.625	1	8.798	21.480	0.410 ✔	1	Member Block Shear
T13	20	Leg	A325N	1.500	6	74.243	126.472	0.587 ✔	1	Bolt Tension
		Diagonal	A325X	0.625	1	13.189	28.336	0.465 ✔	1	Member Block Shear
		Horizontal	A325X	0.625	1	9.437	26.051	0.362 ✔	1	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	255 - 240	1 3/4	15.014	4.671	128.1 K=1.00	2.405	-13.354	33.103	0.403 [1] ✔
T2	240 - 220	2 1/4	20.019	4.754	101.4 K=1.00	3.976	-57.763	84.331	0.685 [1] ✔
T3	220 - 200	2 3/4	20.019	4.754	83.0 K=1.00	5.940	-112.051	161.540	0.694 [1] ✔
T4	200 - 180	3	20.019	4.754	76.1 K=1.00	7.069	-164.526	208.347	0.790 [1] ✔
T5	180 - 160	3 1/4	20.019	4.754	70.2	8.296	-212.039	260.312	0.815 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T6	160 - 140	3 1/4	20.019	4.754	70.2 K=1.00	8.296	-256.435	260.312	0.985 [1] ✔
T7	140 - 120	3 1/2	20.019	4.754	65.2 K=1.00	9.621	-299.377	317.273	0.944 [1] ✔
T8	120 - 100	3 3/4	20.019	4.754	60.9 K=1.00	11.045	-341.522	379.106	0.901 [1] ✔
T9	100 - 80	4	20.019	4.754	57.1 K=1.00	12.566	-383.494	445.717	0.860 [1] ✔
T10	80 - 60	4	20.019	4.754	57.1 K=1.00	12.566	-419.419	445.717	0.941 [1] ✔
T11	60 - 40	4 1/4	20.019	4.754	53.7 K=1.00	14.186	-458.991	517.034	0.888 [1] ✔
T12	40 - 20	4 1/4	20.019	4.754	53.7 K=1.00	14.186	-497.389	517.034	0.962 [1] ✔
T13	20 - 0	4 1/2	20.019	4.754	50.7 K=1.00	15.904	-534.375	593.004	0.901 [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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	255 - 240	L1 3/4x1 3/4x3/16	7.166	3.605	125.9 K=1.00	0.621	-3.583	11.206	0.320 [1] ✔
T2	240 - 220	L1 3/4x1 3/4x3/16	8.697	4.343	151.7 K=1.00	0.621	-7.332	7.721	0.950 [1] ✔
T3	220 - 200	L2x2x3/16	9.987	4.964	151.2 K=1.00	0.715	-8.096	8.951	0.904 [1] ✔
T4	200 - 180	L2 1/2x2 1/2x3/16	11.329	5.625	136.4 K=1.00	0.902	-8.754	13.885	0.630 [1] ✔
T5	180 - 160	L2 1/2x2 1/2x3/16	12.706	6.303	152.8 K=1.00	0.902	-9.023	11.057	0.816 [1] ✔
T6	160 - 140	L3x3x3/16	14.108	7.005	141.0 K=1.00	1.090	-9.276	15.683	0.591 [1] ✔
T7	140 - 120	L3x3x3/16	15.529	7.705	155.1 K=1.00	1.090	-9.865	12.964	0.761 [1] ✔
T8	120 - 100	L3x3x3/16	16.963	8.412	169.4 K=1.00	1.090	-10.495	10.877	0.965 [1] ✔
T9	100 - 80	L3x3x1/4	18.408	9.124	184.9 K=1.00	1.440	-11.284	12.050	0.936 [1] ✔
T10	80 - 60	2L2 1/2x2 1/2x3/16x3/8	10.829	10.644	168.4 K=1.00	1.800	-12.525	17.598	0.712 [1] ✔
T11	60 - 40	2L 'a' > 60.948 in - 245 2L2 1/2x2 1/2x3/16x3/8	11.508	11.313	179.0 K=1.00	1.800	-13.031	15.641	0.833 [1] ✔
T12	40 - 20	2L 'a' > 64.783 in - 284 2L2 1/2x2 1/2x3/16x3/8	12.195	12.003	189.9	1.800	-13.149	13.944	0.943 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T13	20 - 0	2L 'a' > 68.729 in - 323 2L3x3x3/16x3/8 2L 'a' > 72.475 in - 362	12.889	12.687	K=1.00 168.8 K=1.00	2.180	-13.435	20.849	✔ 0.644 [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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	80 - 60	2L1 3/4x1 3/4x3/16x3/8	19.106	9.386	209.8 K=1.00	1.242	-7.452	8.079	0.922 [1] ✔
T11	60 - 40	2L 'a' > 54.035 in - 250 2L2x2x3/16x3/8	20.606	10.126	198.1 K=1.00	1.430	-8.138	10.289	0.791 [1] ✔
T12	40 - 20	2L 'a' > 58.196 in - 289 2L2x2x3/16x3/8	22.106	10.876	212.8 K=1.00	1.430	-8.798	8.936	0.985 [1] ✔
T13	20 - 0	2L 'a' > 62.506 in - 328 2L2 1/2x2 1/2x3/16x3/8 2L 'a' > 66.514 in - 367	23.606	11.616	183.8 K=1.00	1.800	-9.437	14.861	0.635 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	255 - 240	L1 3/4x1 3/4x3/16	4.913	4.767	166.5 K=1.00	0.621	-0.456	6.409	0.071 [1] ✔

[1] P_u / ϕP_n controls

Inner Bracing Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	80 - 60	L1 3/4x1 3/4x3/16	9.553	9.553	333.8	0.621	-0.010	1.596	0.006 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
					K=1.00				✔
T11	60 - 40	KL/R > 250 (C) - 255 L1 3/4x1 3/4x3/16	10.303	10.303	360.0 K=1.00	0.621	-0.011	1.372	0.008 [1] ✔
T12	40 - 20	KL/R > 250 (C) - 294 L1 3/4x1 3/4x3/16	11.053	11.053	386.2 K=1.00	0.621	-0.011	1.192	0.009 [1] ✔
T13	20 - 0	KL/R > 250 (C) - 333 L1 3/4x1 3/4x3/16	11.803	11.803	412.4 K=1.00	0.621	-0.012	1.045	0.011 [1] ✔
		KL/R > 250 (C) - 370							

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	255 - 240	1 3/4	15.014	0.500	13.7	2.405	14.360	108.238	0.133 [1] ✔
T2	240 - 220	2 1/4	20.019	0.500	10.7	3.976	58.123	178.924	0.325 [1] ✔
T3	220 - 200	2 3/4	20.019	0.500	8.7	5.940	107.694	267.281	0.403 [1] ✔
T4	200 - 180	3	20.019	0.500	8.0	7.069	156.036	318.086	0.491 [1] ✔
T5	180 - 160	3 1/4	20.019	0.500	7.4	8.296	199.247	373.310	0.534 [1] ✔
T6	160 - 140	3 1/4	20.019	0.500	7.4	8.296	238.991	373.310	0.640 [1] ✔
T7	140 - 120	3 1/2	20.019	0.500	6.9	9.621	276.807	432.951	0.639 [1] ✔
T8	120 - 100	3 3/4	20.019	0.500	6.4	11.045	313.142	497.010	0.630 [1] ✔
T9	100 - 80	4	20.019	0.500	6.0	12.566	348.356	565.487	0.616 [1] ✔
T10	80 - 60	4	20.019	0.500	6.0	12.566	382.246	565.487	0.676 [1] ✔
T11	60 - 40	4 1/4	20.019	0.500	5.7	14.186	414.647	638.381	0.650 [1] ✔
T12	40 - 20	4 1/4	20.019	0.500	5.7	14.186	445.483	638.381	0.698 [1] ✔
T13	20 - 0	4 1/2	20.019	0.500	5.3	15.904	474.779	715.694	0.663 [1] ✔

[1] P_u / ϕP_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	K	K	
T1	255 - 240	L1 3/4x1 3/4x3/16	7.435	3.736	83.5	0.360	3.505	17.567	0.200 [1] ✔
T2	240 - 220	L1 3/4x1 3/4x3/16	8.697	4.343	97.1	0.360	7.765	17.567	0.442 [1] ✔
T3	220 - 200	L2x2x3/16	9.987	4.964	96.6	0.431	8.793	21.001	0.419 [1] ✔
T4	200 - 180	L2 1/2x2 1/2x3/16	11.329	5.625	86.8	0.571	9.168	27.838	0.329 [1] ✔
T5	180 - 160	L2 1/2x2 1/2x3/16	12.706	6.303	97.2	0.571	9.446	27.838	0.339 [1] ✔
T6	160 - 140	L3x3x3/16	14.108	7.005	89.5	0.712	9.765	34.712	0.281 [1] ✔
T7	140 - 120	L3x3x3/16	15.529	7.705	98.5	0.712	10.229	34.712	0.295 [1] ✔
T8	120 - 100	L3x3x3/16	16.963	8.412	107.5	0.712	10.701	34.712	0.308 [1] ✔
T9	100 - 80	L3x3x1/4	18.408	9.124	117.7	0.939	11.511	45.794	0.251 [1] ✔
T10	80 - 60	2L2 1/2x2 1/2x3/16x3/8	10.829	10.644	164.2	1.139	12.683	55.529	0.228 [1] ✔
T11	60 - 40	2L 'a' > 60.948 in - 246 2L2 1/2x2 1/2x3/16x3/8	11.508	11.313	174.5	1.139	13.032	55.529	0.235 [1] ✔
T12	40 - 20	2L 'a' > 64.783 in - 285 2L2 1/2x2 1/2x3/16x3/8	12.195	12.003	185.1	1.139	13.044	55.529	0.235 [1] ✔
T13	20 - 0	2L 'a' > 68.729 in - 324 2L3x3x3/16x3/8 2L 'a' > 72.475 in - 363	12.889	12.687	162.1	1.424	13.189	69.423	0.190 [1] ✔

[1] P_u / ϕP_n controls

Horizontal 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	K	K	
T10	80 - 60	2L1 3/4x1 3/4x3/16x3/8	19.106	9.386	209.8	0.721	7.452	35.134	0.212 [1] ✔
T11	60 - 40	2L 'a' > 54.035 in - 250 2L2x2x3/16x3/8	20.606	10.126	196.9	0.862	8.138	42.001	0.194 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T12	40 - 20	2L 'a' > 58.196 in - 289 2L2x2x3/16x3/8	22.106	10.876	211.5	0.862	8.798	42.001	0.209 [1] ✔
T13	20 - 0	2L 'a' > 62.506 in - 328 2L2 1/2x2 1/2x3/16x3/8 2L 'a' > 64.474 in - 385	22.894	11.259	173.7	1.139	9.437	55.529	0.170 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	255 - 240	L1 3/4x1 3/4x3/16	4.913	4.767	106.5	0.360	0.403	17.567	0.023 [1] ✔

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	255 - 240	Leg	1 3/4	1	-13.354	33.103	40.3	Pass
T2	240 - 220	Leg	2 1/4	27	-57.763	84.331	68.5	Pass
T3	220 - 200	Leg	2 3/4	54	-112.051	161.540	69.4	Pass
T4	200 - 180	Leg	3	81	-164.526	208.347	79.0	Pass
T5	180 - 160	Leg	3 1/4	108	-212.039	260.312	81.5	Pass
T6	160 - 140	Leg	3 1/4	135	-256.435	260.312	98.5	Pass
T7	140 - 120	Leg	3 1/2	160	-299.377	317.273	94.4	Pass
T8	120 - 100	Leg	3 3/4	187	-341.522	379.106	90.1	Pass
T9	100 - 80	Leg	4	214	-383.494	445.717	86.0	Pass
T10	80 - 60	Leg	4	241	-419.419	445.717	94.1	Pass
T11	60 - 40	Leg	4 1/4	280	-458.991	517.034	88.8	Pass
T12	40 - 20	Leg	4 1/4	319	-497.389	517.034	96.2	Pass
T13	20 - 0	Leg	4 1/2	358	-534.375	593.004	90.1	Pass
T1	255 - 240	Diagonal	L1 3/4x1 3/4x3/16	16	-3.583	11.206	32.0 36.5 (b)	Pass
T2	240 - 220	Diagonal	L1 3/4x1 3/4x3/16	28	-7.332	7.721	95.0	Pass
T3	220 - 200	Diagonal	L2x2x3/16	55	-8.096	8.951	90.4	Pass
T4	200 - 180	Diagonal	L2 1/2x2 1/2x3/16	82	-8.754	13.885	63.0 70.4 (b)	Pass
T5	180 - 160	Diagonal	L2 1/2x2 1/2x3/16	109	-9.023	11.057	81.6	Pass
T6	160 - 140	Diagonal	L3x3x3/16	136	-9.276	15.683	59.1 68.9 (b)	Pass
T7	140 - 120	Diagonal	L3x3x3/16	163	-9.865	12.964	76.1	Pass
T8	120 - 100	Diagonal	L3x3x3/16	190	-10.495	10.877	96.5	Pass
T9	100 - 80	Diagonal	L3x3x1/4	217	-11.284	12.050	93.6	Pass
T10	80 - 60	Diagonal	2L2 1/2x2 1/2x3/16x3/8	245	-12.525	17.598	71.2	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T11	60 - 40	Diagonal	2L2 1/2x2 1/2x3/16x3/8	284	-13 031	15 641	83 3	Pass
T12	40 - 20	Diagonal	2L2 1/2x2 1/2x3/16x3/8	323	-13 149	13 944	94 3	Pass
T13	20 - 0	Diagonal	2L3x3x3/16x3/8	362	-13 435	20 849	64 4	Pass
T10	80 - 60	Horizontal	2L1 3/4x1 3/4x3/16x3/8	250	-7 452	8 079	92 2	Pass
T11	60 - 40	Horizontal	2L2x2x3/16x3/8	289	-8 138	10 289	79 1	Pass
T12	40 - 20	Horizontal	2L2x2x3/16x3/8	328	-8 798	8 936	98 5	Pass
T13	20 - 0	Horizontal	2L2 1/2x2 1/2x3/16x3/8	367	-9 437	14 861	63 5	Pass
T1	255 - 240	Top Girt	L1 3/4x1 3/4x3/16	6	-0 456	6 409	7 1	Pass
T10	80 - 60	Inner Bracing	L1 3/4x1 3/4x3/16	255	-0 010	1 596	0 6	Pass
T11	60 - 40	Inner Bracing	L1 3/4x1 3/4x3/16	294	-0 011	1 372	0 8	Pass
T12	40 - 20	Inner Bracing	L1 3/4x1 3/4x3/16	333	-0 011	1 192	0 9	Pass
T13	20 - 0	Inner Bracing	L1 3/4x1 3/4x3/16	370	-0 012	1 045	1 1	Pass
							Summary	
						Leg (T6)	98 5	Pass
						Diagonal (T8)	96 5	Pass
						Horizontal (T12)	98 5	Pass
						Top Girt (T1)	7 1	Pass
						Inner Bracing (T13)	1 1	Pass
						Bolt Checks	81 9	Pass
						RATING =	**98.5**	**Pass**

EXHIBIT D
COMPETING UTILITIES, CORPORATIONS, OR PERSONS LIST

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**

Active

Search

	Utility ID	Utility Name	Utility Type	Class	City	State
View	4111300	2600Hz, Inc. dba ZSWITCH	Cellular	D	San Francisco	CA
View	4108300	Air Voice Wireless, LLC	Cellular	B	Bloomfield Hill	MI
View	4110650	Alliant Technologies of KY, L.L.C.	Cellular	D	Morristown	NJ
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	4105700	Assurance Wireless USA, L.P.	Cellular	A	Atlanta	GA
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	4110550	Blue Casa Mobile, LLC	Cellular	D	Santa Barbara	CA
View	4111050	BlueBird Communications, LLC	Cellular	D	New York	NY
View	4202300	Bluegrass Wireless, LLC	Cellular	A	Elizabethtown	KY
View	4107600	Boomerang Wireless, LLC	Cellular	C	Hiawatha	IA

View	4105500	BullsEye Telecom, Inc.	Cellular	D	Southfield	MI
View	4100700	Cellco Partnership dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
View	4106600	Cintex Wireless, LLC	Cellular	D	Houston	TX
View	4111150	Comcast OTR1, LLC	Cellular	B	Phoeniexville	PA
View	4101900	Consumer Cellular, Incorporated	Cellular	A	Portland	OR
View	4106400	Credo Mobile, Inc.	Cellular	A	San Francisco	CA
View	4108850	Cricket Wireless, LLC	Cellular	A	San Antonio	TX
View	4111500	CSC Wireless, LLC d/b/a Altice Wireless	Cellular	D	Long Island City	NY
View	10640	Cumberland Cellular Partnership	Cellular	A	Elizabethtown	KY
View	4111650	DataBytes, Inc.	Cellular	D	Rogers	AR
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	D	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	4109500	Enhanced Communications Group, LLC	Cellular	D	Bartlesville	OK
View	4110450	Excellus Communications, LLC	Cellular	D	Chattanooga	TN
View	4112400	Excess Telecom Inc.	Cellular	C	Beverly Hills	CA
View	4105900	Flash Wireless, LLC	Cellular	C	Concord	NC
View	4104800	France Telecom Corporate Solutions L.L.C.	Cellular	D	Herndon	VA
View	4111750	Gabb Wireless, Inc.	Cellular	D	Provo	UT
View	4112300	Gen Mobile Inc.	Cellular	C	Redondo Beach	CA
View	4109350	Global Connection Inc. of America	Cellular	D	Newport	KY
View	4102200	Globalstar USA, LLC	Cellular	B	Covington	LA
View	4112050	GLOTELL US, Corp.	Cellular	D	Hallandale	FL
View	4109600	Google North America Inc.	Cellular	A	Mountain View	CA
View	33350363	Granite Telecommunications, LLC	Cellular	D	Quincy	MA
View	4111350	HELLO MOBILE TELECOM LLC	Cellular	D	Dania Beach	FL
View	4103100	i-Wireless, LLC	Cellular	B	Newport	KY
View	4112550	IDT Domestic Telecom, Inc.	Cellular	C	Newark	NJ
View	4109800	IM Telecom, LLC d/b/a Infiniti Mobile	Cellular	D	Plano	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	10680	Kentucky RSA #3 Cellular General	Cellular	A	Elizabethtown	KY

View	10681	Kentucky RSA #4 Cellular General	Cellular	A	Elizabethtown	KY
View	4109550	Kynect Communications, LLC	Cellular	D	Dallas	TX
View	4112200	Lexvor Inc.	Cellular	D	Irvine	CA
View	4111250	Liberty Mobile Wireless, LLC	Cellular	A	Sunny Isles Beach	FL
View	4111400	Locus Telecommunications, LLC	Cellular	A	Fort Lee	NJ
View	4107300	Lycamobile USA, Inc.	Cellular	D	Newark	NJ
View	4112500	Marconi Wireless Holdings, LLC	Cellular	C	Westlake Village	CA
View	4112450	Matrix Telecom, LLC dba Excel Telecommunications	Cellular	C	Irving	TX
View	4108800	MetroPCS Michigan, LLC	Cellular	A	Bellevue	WA
View	4111700	Mint Mobile, LLC	Cellular	D	Costa Mesa	CA
View	4109650	Mitel Cloud Services, Inc.	Cellular	D	Mesa	AZ
View	4111850	Mobi, Inc.	Cellular	D	Honolulu	HI
View	4109400	NetZero Wireless, Inc. dba magicJack Wireless	Cellular	D	Westlake Village	CA
View	4202400	New Cingular Wireless PCS, LLC dba AT&T Mobility, PCS	Cellular	A	San Antonio	TX
View	4112350	NewPhone Wireless, L.L.C.	Cellular	C	Houston	TX
View	4000800	Nextel West Corporation	Cellular	D	Overland Park	KS
View	4110700	Norcell, LLC	Cellular	D	Buford	GA
View	4001300	NPCR, Inc. dba Nextel Partners	Cellular	D	Overland Park	KS
View	4001800	OnStar, LLC	Cellular	A	Detroit	MI
View	4110750	Onvoy Spectrum, LLC	Cellular	D	Chicago	IL
View	4109050	Patriot Mobile LLC	Cellular	D	Irving	TX
View	4110250	Plintron Technologies USA LLC	Cellular	D	Bellevue	WA
View	33351182	PNG Telecommunications, Inc. dba PowerNet Global Communications	Cellular	D	Cincinnati	OH
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	C	Hiawatha	IA
View	4110500	Republic Wireless, Inc.	Cellular	A	Raleigh	NC
View	4106200	Rural Cellular Corporation	Cellular	A	Basking Ridge	NJ
View	4108550	Sage Telecom Communications, LLC dba TruConnect	Cellular	B	Los Angeles	CA
View	4109150	SelecTel, Inc. d/b/a SelecTel Wireless	Cellular	D	Fremont	NE
View	4110150	Spectrotel of the South LLC dba Touch Base Communications	Cellular	D	Neptune	NJ
View	4111450	Spectrum Mobile, LLC	Cellular	A	St. Louis	MO
View	4200100	Sprint Spectrum, L.P.	Cellular	A	Atlanta	GA
View	4200500	SprintCom, Inc.	Cellular	A	Atlanta	GA
View	4111600	STX Group LLC dba Twigby	Cellular	D	Murfreesboro	TN
	4202200	T-Mobile Central, LLC dba T-	Cellular	A	Bellevue	WA

View		Mobile				
View	4002500	TAG Mobile, LLC	Cellular	D	Plano	TX
View	4109700	Telecom Management, Inc. dba Pioneer Telephone	Cellular	D	Portland	ME
View	4107200	Telefonica USA, Inc.	Cellular	D	Miami	FL
View	4112100	Tello LLC	Cellular	D	Atlanta	GA
View	4108900	Telrite Corporation	Cellular	D	Covington	GA
View	4108450	Tempo Telecom, LLC	Cellular	C	Atlanta	GA
View	4109000	Ting, Inc.	Cellular	B	Toronto	ON
View	4110400	Torch Wireless Corp.	Cellular	D	Jacksonville	FL
View	4103300	Touchtone Communications, Inc.	Cellular	D	Cedar Knolls	NJ
View	4104200	TracFone Wireless, Inc.	Cellular	D	Miami	FL
View	4112250	TROOMI WIRELESS, Inc.	Cellular	C	Lehi	UT
View	4002000	Truphone, Inc.	Cellular	D	Durham	NC
View	4112600	Tube Incorporated dba Reach Mobile	Cellular	C	Chelmsford	MA
View	4110300	UVNV, Inc. d/b/a Mint Mobile	Cellular	D	Costa Mesa	CA
View	10630	Verizon Americas LLC dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
View	4110800	Visible Service LLC	Cellular	D	Basking Ridge	NJ
View	4106500	WiMacTel, Inc.	Cellular	D	Palo Alto	CA
View	4110950	Wing Tel Inc.	Cellular	D	New York	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.
2021-ASO-37318-OE

Issued Date: 10/25/2021

Andrew Smith
RESCOM Environmental Corp
PO Box 361
Petoskey, MI 49770

**** 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 Parkers Lake
Location:	Parkers Lake, KY
Latitude:	36-50-21.56N NAD 83
Longitude:	84-29-06.37W
Heights:	1383 feet site elevation (SE)
	267 feet above ground level (AGL)
	1650 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:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, a med-dual system-Chapters 4,8(M-Dual),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

This determination expires on 04/25/2023 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission (FCC) because the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (718) 553-2611, or angelique.eersteling@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ASO-37318-OE.

Signature Control No: 495060207-498600221 (DNE)
Angelique Eersteling
Technician

Attachment(s)
Case Description
Frequency Data
Map(s)

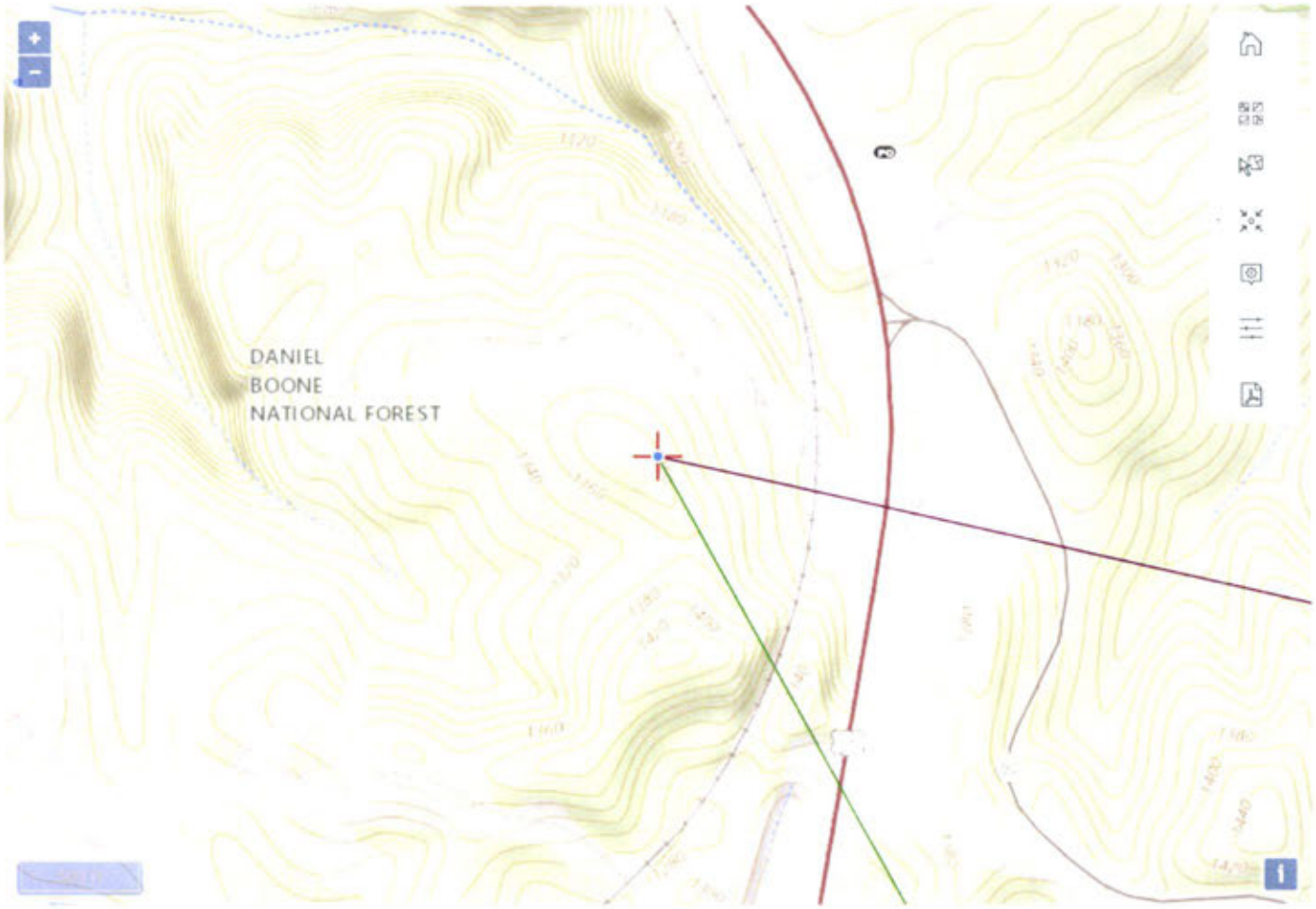
cc: FCC

Construction of telecom tower.

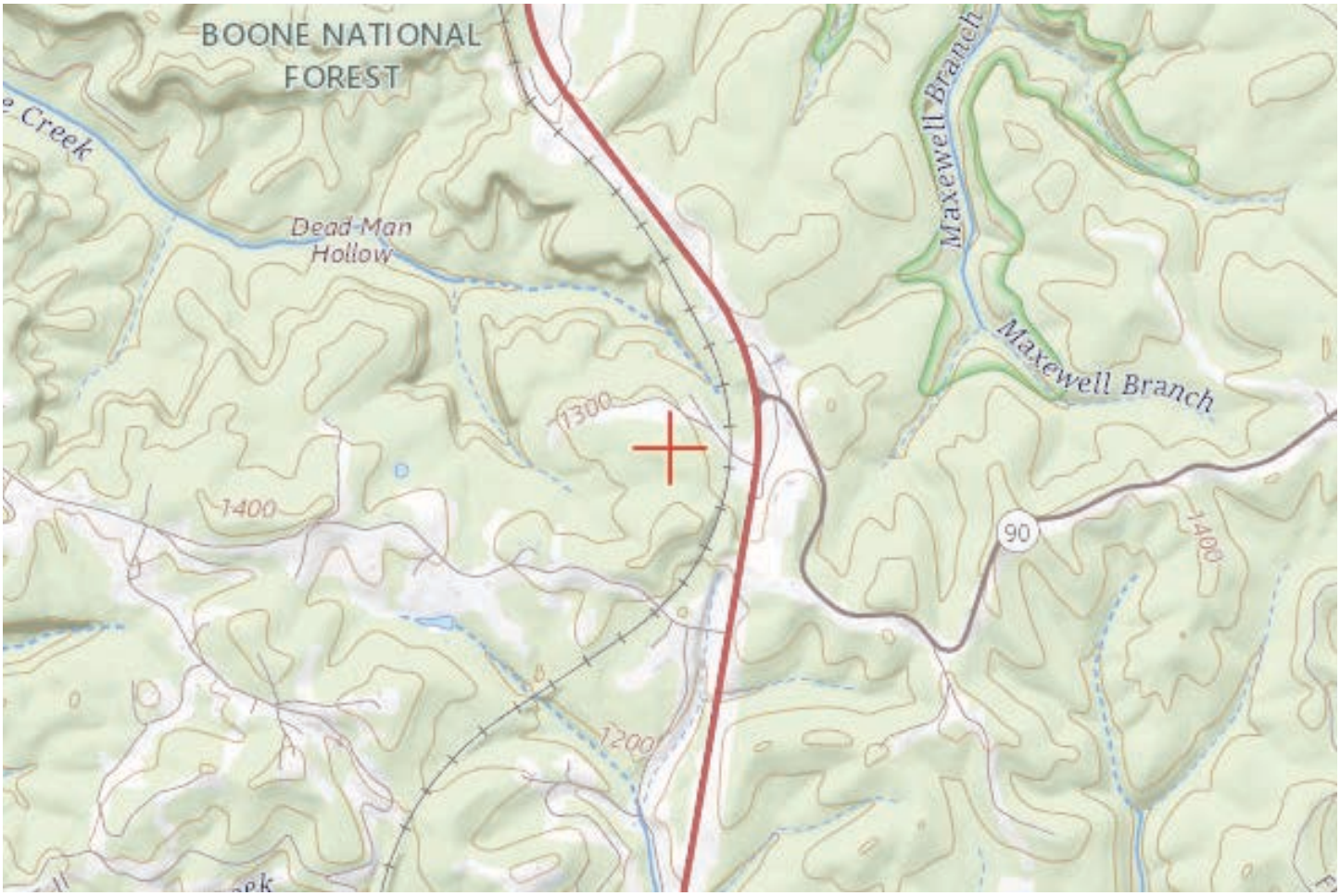
Frequency Data for ASN 2021-ASO-37318-OE

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	1000	W
614	698	MHz	2000	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

Verified Map for ASN 2021-ASO-37318-OE



TOPO Map for ASN 2021-ASO-37318-OE



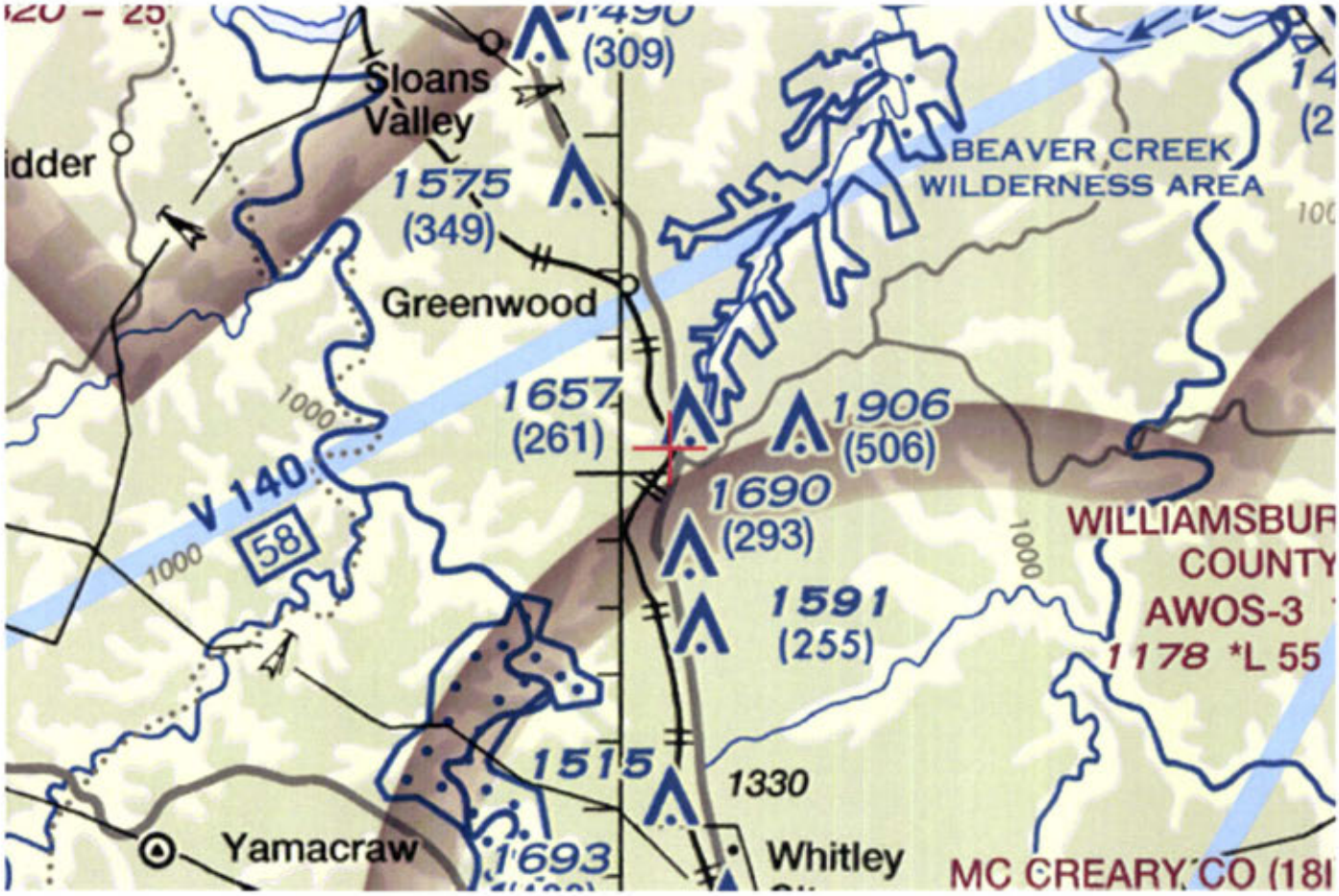

Sloans Valley
(309)
BEAVER CREEK WILDERNESS AREA
1575
(349)
Greenwood
1657
(261)
1906
(506)
1690
(293)
V 140
58
1000
1591
(255)
WILLIAMSBUR
COUNTY
AWOS-3
1178 *L 55
1515
1330
Yamacraw
1693
Whitley
MC CREARY CO (18I

EXHIBIT F
KENTUCKY AIRPORT ZONING COMMISSION

KENTUCKY TRANSPORTATION CABINET

KENTUCKY AIRPORT ZONING COMMISSION

TC 55-2
Rev. 06/2020

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

APPLICANT (*name*) Harmoni Towers	**PHONE**	**FAX**	**KY AERONAUTICAL STUDY #**	
ADDRESS (*street*) 10801 Executive Center Dr. Ste. 100	**CITY** Little Rock		**STATE** AR	**ZIP** 72211
APPLICANT'S REPRESENTATIVE (*name*) B&T Group - Patricia Parr	**PHONE** 501-232-7860	**FAX** 918-295-0265		
ADDRESS (*street*) 1717 S Boulder Ave Ste 300	**CITY** Tulsa		**STATE** OK	**ZIP** 74119
APPLICATION FOR [X] New Construction [ ] Alteration [ ] Existing **DURATION** [ ] Permanent [ ] Temporary (*months* *days*)			**WORK SCHEDULE** Start End	
TYPE [ ] Crane [ ] Building [X] Antenna Tower [ ] Power Line [ ] Water Tank [ ] Landfill [ ] Other	**MARKING/PAINTING/LIGHTING PREFERRED** [ ] Red Lights & Paint [ ] White- medium intensity [ ] White- high intensity [X] Dual- red & medium intensity white [ ] Dual- red & high intensity white [ ] Other			
LATITUDE 36 ° 50 ' 21.56 "	**LONGITUDE** -84 ° 29' 6 . 37 "		**DATUM** [X] NAD83 [ ] NAD27 [ ] Other	
NEAREST KENTUCKY Parkers Lake City County McCreary	**NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT** 18I			
SITE ELEVATION (AMSL, *feet*) 1,383 ft	**TOTAL STRUCTURE HEIGHT** (AGL, *feet*) 267 ft		**CURRENT** (*FAA aeronautical study #*) 2021-ASO-37318-OE	
OVERALL HEIGHT (*site elevation plus total structure height, feet*) 1,650 ft			**PREVIOUS** (*FAA aeronautical study #*)	
DISTANCE (*from nearest Kentucky public use or Military airport to structure*) 59,143.38 ft			**PREVIOUS** (*KY aeronautical study #*)	
DIRECTION (*from nearest Kentucky public use or Military airport to structure*)				

DESCRIPTION OF LOCATION (*Attach USGS 7.5 minute quadrangle map or an airport layout drawing with the precise site marked and any certified survey.*)

DESCRIPTION OF PROPOSAL
Harmoni Towers LLC, proposes to construct a 267' antenna tower for the purpose of enhancing the coverage of their tenants' subscribers.

FAA Form 7460-1 (*Has the "Notice of Construction or Alteration" been filed with the Federal Aviation Administration?*)
[ ] No [ ] Yes, when?

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**
Patricia Parr	Project Manager	Patricia Parr	11/17/21

COMMISSION ACTION

[ ] Chairperson, KAZC
[ ] Administrator, KAZC

[ ] Approved
[ ] Disapproved

SIGNATURE

DATE

Close Print


BOONE NATIONAL FOREST
Dead Man Hollow
Maxewell Branch
Maxewell Branch
1400
1400

EXHIBIT G
GEOTECHNICAL REPORT

SUBSURFACE INVESTIGATION &
GEOTECHNICAL RECOMMENDATIONS

HARMONI TOWER – KYLEX2061 PARKERS LAKE
PARKERS LAKE, KENTUCKY
A&W PROJECT NO: 21EV0094

PREPARED FOR:
B+T GROUP
TULSA, OKLAHOMA

PREPARED BY:
ALT & WITZIG ENGINEERING, INC.
GEOTECHNICAL DIVISION

FEBRUARY 18TH, 2022

Alt & Witzig Engineering, Inc.
6200 East Maxwell Avenue, Suite C • Evansville, Indiana 47715
Ph: (812) 422-4446 • Fax: (812) 422-8377

February 18th, 2022

B+T Group
1717 S. Boulder Ave., Suite 300
Tulsa, Oklahoma 74119
ATTN: Patricia Parr

Report of Subsurface Investigation & Geotechnical Recommendations

RE: Harmoni KYLEX2061 Tower – Parkers Lake
Parkers Lake, Kentucky
B+T Group # 144645.001.06
Alt & Witzig File: **21EV0094**

Dear Ms. Parr:

In compliance with your request, we have completed a subsurface investigation and geotechnical evaluation for the above referenced project. It is our pleasure to transmit herewith one (1) electronic copy of our report.

The purpose of this subsurface investigation was to determine the various soils profile components and the engineering characteristics of the materials encountered to provide design parameters for the design and construction of the proposed 255-foot-tall self-support communication tower.

Project Description

The site is located west of Kentucky Highway 27 in Daniel Boone National Forest (Exhibit 1). The nearest street address of the adjoining property owner is 35 Ballou Road, Parker's Lake, Kentucky. The center elevation of the tower is listed on the survey provided by the client at 1383.0 feet.

The ground surface at the time of our investigation consisted of pasture grass. The site was sloping gently downward from south to north and the slope steepened substantially immediately to the north. The subgrade was firm and well drained. The shallow soil types as mapped for this site were derived from the USDA's Web Soil Survey. A Custom Soil Resource Report for this site is included in the Appendix.

Exhibit 1: 2020 Aerial Photograph

Field Methods

The field investigation included a reconnaissance of the project site, performing one (1) soil boring near the tower center, and obtaining soil samples for laboratory testing. The apparent groundwater level at the boring location was also determined.

Laboratory Investigation

A laboratory investigation was conducted to ascertain additional pertinent engineering characteristics of the subsurface materials at the site of the proposed tower. The laboratory testing program included visual classification of all soils, and pocket penetrometer and moisture content testing of cohesive samples.

Site Specific Subsurface Conditions

At the ground surface, the boring encountered approximately six (6) inches of topsoil. Beneath the topsoil the boring encountered stiff to very stiff, gray and tan clayey silt with some organics and shale clasts. These soils are residual from weathering of the underlying bedrock. The cohesive soil gradually transitioned to a weathered shale/siltstone at depth of 9 feet below the ground surface. (Elev. 1374 feet).

The siltstone continued until to a depth of 22.5 feet below the ground surface (Elev. 1360.5) where competent limestone was encountered to the termination depth of the boring (Elev. 1358). The downhole camera inspection uncovered two small open joints at a depth of 16 feet and 22 feet below the ground surface. However, no large voids were noted in the depth investigated. Images of the core hole are presented in the appendix for reference.

Water level observations made during and upon completion of drilling operations indicated dry conditions. It should be noted that the groundwater level measurement recorded on the individual *Boring Logs* in the Appendix of this report is accurate for the specific date on which the measurements was performed. It must be understood that the groundwater level will fluctuate throughout the year. The *Boring Logs* do not indicate these fluctuations.

Seismic Parameters

An evaluation of the seismic site class has been performed for this site. The Commonwealth of Kentucky has integrated the 2015 International Building Code into the Kentucky Building Code (KBC). The seismic site class is determined by averaging soil conditions within the top 100 feet with respect to the shear wave velocity in accordance with ASCE 7. Our evaluation is based on data obtained for a single boring performed to a depth of 25 feet at this site and limited information provided by the Kentucky Geological Survey for a depth of 100 feet. A detailed report generated by data from USGS and formatted by SEAOC and OSHPD (seismicmaps.org) has been attached to this letter. Following are the summarized requested seismic parameters.

Seismic Parameters

Site Soil Classification	Site Class C
MCE Spectral Response Accelerations	$S_s = 0.217$ $S_1 = 0.101$

Geotechnical Recommendations

Information provided by B+T Group indicates that a new 255-foot-tall self-support communications tower will be constructed at this site. This investigation was conducted to provide information for use in the design and construction of the foundations for the proposed structure.

Tower Foundation Recommendations

Extended Footing or Extended Mat Foundation

The soil parameters presented in *Table 1* may be utilized for the evaluation of a shallow foundation at the tower location.

Table 1: Shallow Foundation Soil Parameters

Soil Description	Depth Below Existing Grade (feet)	Allowable Bearing Pressure (psf) FS=3	Unit Weight (pcf)	C (psf)/ Φ (°)	Adhesion (psf)
Stiff to Very Stiff Clayey Silt	3-9	4,500	120	2,500	1,750

Drilled Piers

Drilled shaft foundations may be designed using the soil parameters provided in *Table 2*. Skin friction within the soil shall not be summed for support of vertical loads for foundations that are embedded in the underlying bedrock.

Table 2: Deep Foundation Soil/Bedrock Parameters

Depth Below Grade (Feet)	Allowable Skin Friction for Gravity Loads SF=2	Design End Bearing Pressure SF=3	Effective Unit Weight (pcf)	C (psf) / Φ (°)	e50	Lateral p-y Model
3-9 Clayey Silt	650 psf	4,500 psf	115	2,000	0.006	Stiff Clay
9-13.5 Shale	1,000 psf	5,000 psf	120	4,000	0.004	Weak Rock
13.5-22 Siltstone	1,000 psf	6,000 psf	130	4,000	0.004	Weak Rock
22.5-25 Limestone	5,000 psf	10,000 psf	150	10k+	.001	Bedrock

*Skin friction may be utilized in shaft compression and tension

** The unconfined compressive strength of the limestone bedrock may be assumed to be 7,500 psi for purposes of excavation evaluation.

Equipment Building Foundation Recommendations

A net allowable bearing pressure of **3,000 psf** is recommended for evaluating continuous wall footings at this site for lightly loaded ancillary buildings. The above-suggested bearing pressure is provided assuming the footings will be founded on medium stiff natural soils or properly compacted fill materials at a minimum depth of two (2) feet below grade.

Statement of Limitations

Our subsurface investigation was conducted in accordance with guidelines set forth in the scope of services and applicable industry standards.

An inherent limitation of any geotechnical engineering study is that conclusions must be drawn based on data collected at a limited number of discrete locations. The geotechnical parameters provided in this report were developed from the information obtained from the test borings that depict subsurface conditions only at these specific locations and on the date indicated on the boring logs. Soil conditions at other locations may differ from conditions encountered at these boring locations and groundwater levels shall be expected to vary with time. The nature and extent of variations between the borings may not become evident until the course of construction.

Often, because of design and construction details that occur on a project, questions rise concerning the soil conditions. If we can give further service in these matters, please contact us at your convenience.

Sincerely,

Sincerely,
ALT & WITZIG ENGINEERING, INC.

Logan M. Folz, E.I.

David C. Harness, P.E.

APPENDIX

Boring Log
General Notes
Bedrock Core Hole Images
U.S. Seismic Design Maps
Custom Soil Resource Report

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **B+T Group**

PROJECT NAME **Harmoni KYLEX2061 Tower-Parker's Lake**

PROJECT LOCATION **Parker's Lake**

BORING # **B-1**

ALT & WITZIG FILE # **21EV0094**

Latitude 36.839322 Longitude -84.485103

DRILLING and SAMPLING INFORMATION

Date Started **2/9/22**

Date Completed **2/9/22**

Boring Method **HSA**

Driller **D. Samsel**

Hammer Wt. **140** lbs.

Hammer Drop **30** in.

Spoon Sampler OD **2** in.

Rig Type **Geoprobe 6712DT**

TEST DATA

STRATA ELEV.	SOIL CLASSIFICATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	Remarks
	SURFACE ELEVATION 1383.0											
1382.5	Brown, Moist TOPSOIL	0.5		1	SS			6		3.0	19.8	
	Gray and Tan, Stiff Clayey SILT with trace Organics and Shale Clasts		5	2	SS			15		4.5	14.3	
				3	SS			13		4.5	18.3	
1374.0		9.0		4	SS			33		4.5	17.4	
	Brown and Black Shale, Highly Weathered		10									
1369.5		13.5			RC							
	Brown Siltstone, Moderately Weathered		15									
			20									
1360.5		22.5										
	Gray Limestone											
1358.0		25.0	25									
	End of Boring at 25 feet											

Sample Type

SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater

○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

MATERIAL GRAPHICS LEGEND


IN SILTY LOAM
Indiana DOT: Silty Loam


LIMESTONE
Limestone


SHALE
Shale


SILTSTONE
Siltstone


TOPSOIL

DRILLING AND SAMPLING SYMBOLS

GROUNDWATER SYMBOLS

Apparent water level noted upon completion.

Apparent water level noted upon delayed time.

SAMPLER SYMBOLS


SS: SPLIT SPOON


RC: ROCK CORE


MC: MACRO CORE


AS: AUGER SAMPLE

WELL GRAPHICS LEGEND

GENERAL NOTES - ENVIRO (PROJECT SPECIFIC) 21EV0094 LOGS.GPJ US EVAL.GDT 2/18/22

Alt & Witzig Engineering, Inc.
4105 West 99th St.
Carmel, IN
Telephone: (317) 875-7000
Fax: (317) 876-3705

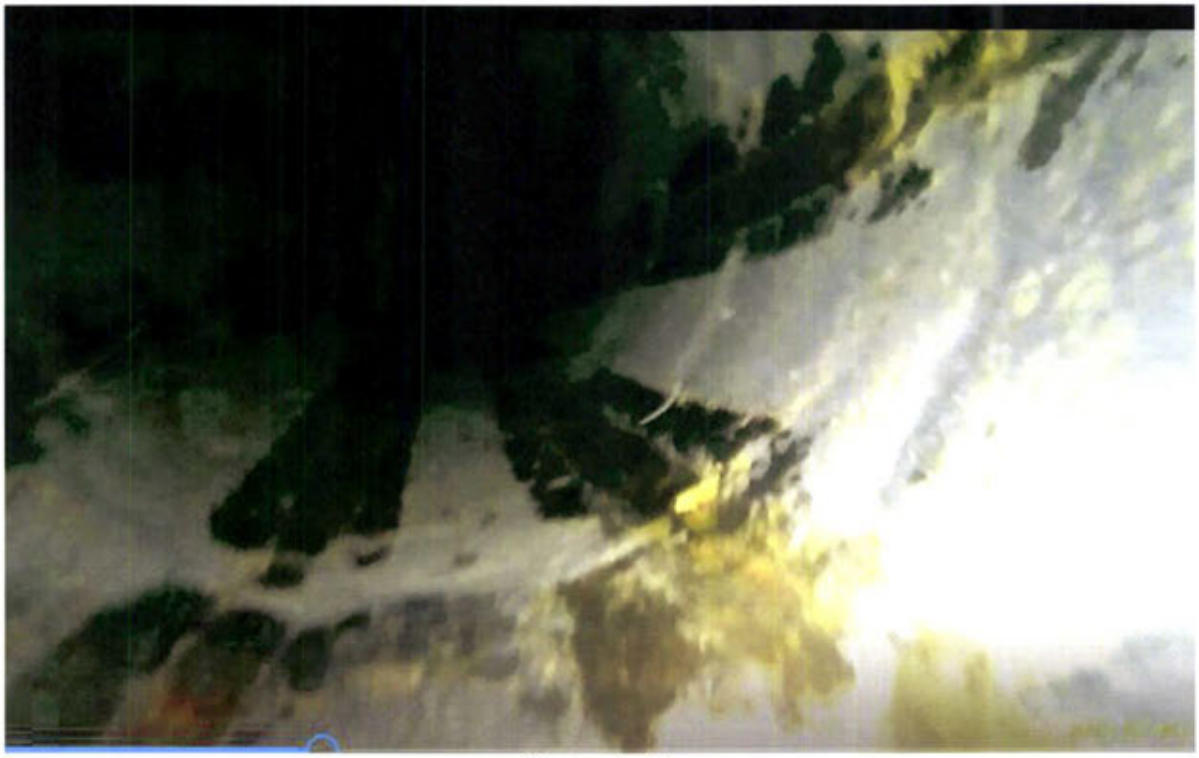
GENERAL NOTES

Project: Harmoni KYLEX2061 Tower-Parker's Lake

Location: Parker's Lake

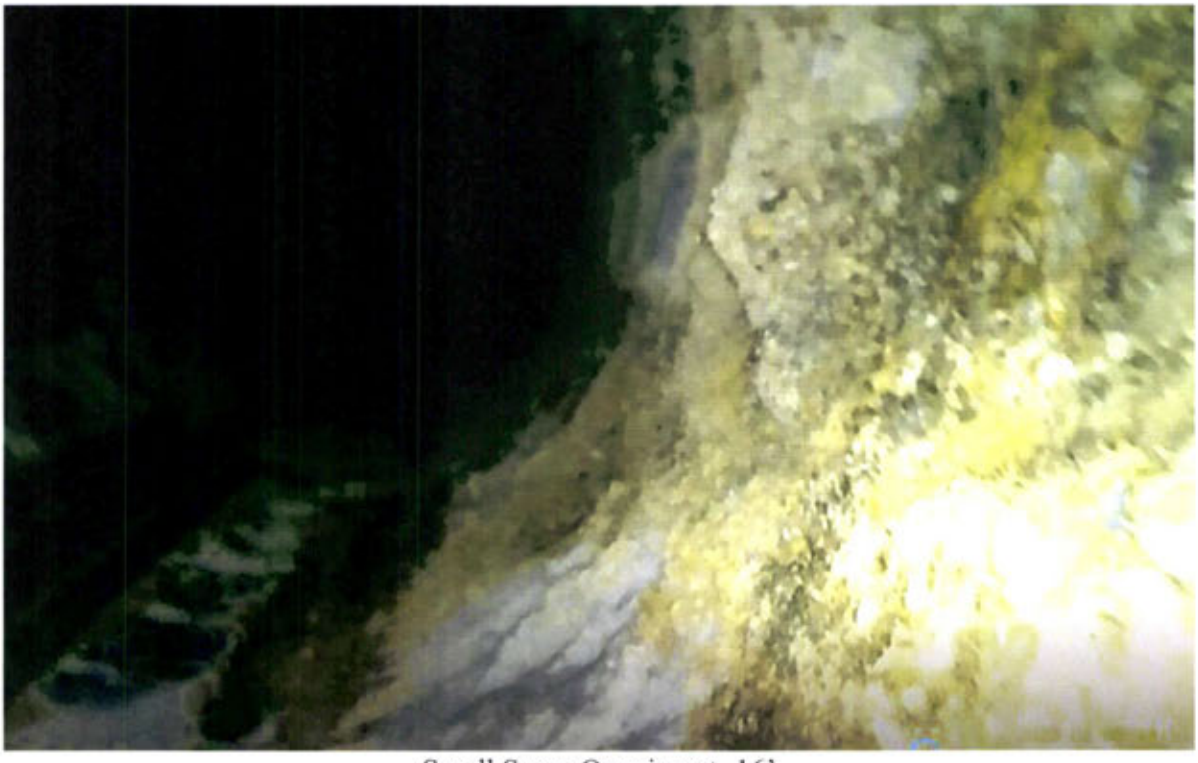
Number: 21EV0094

Photo 1



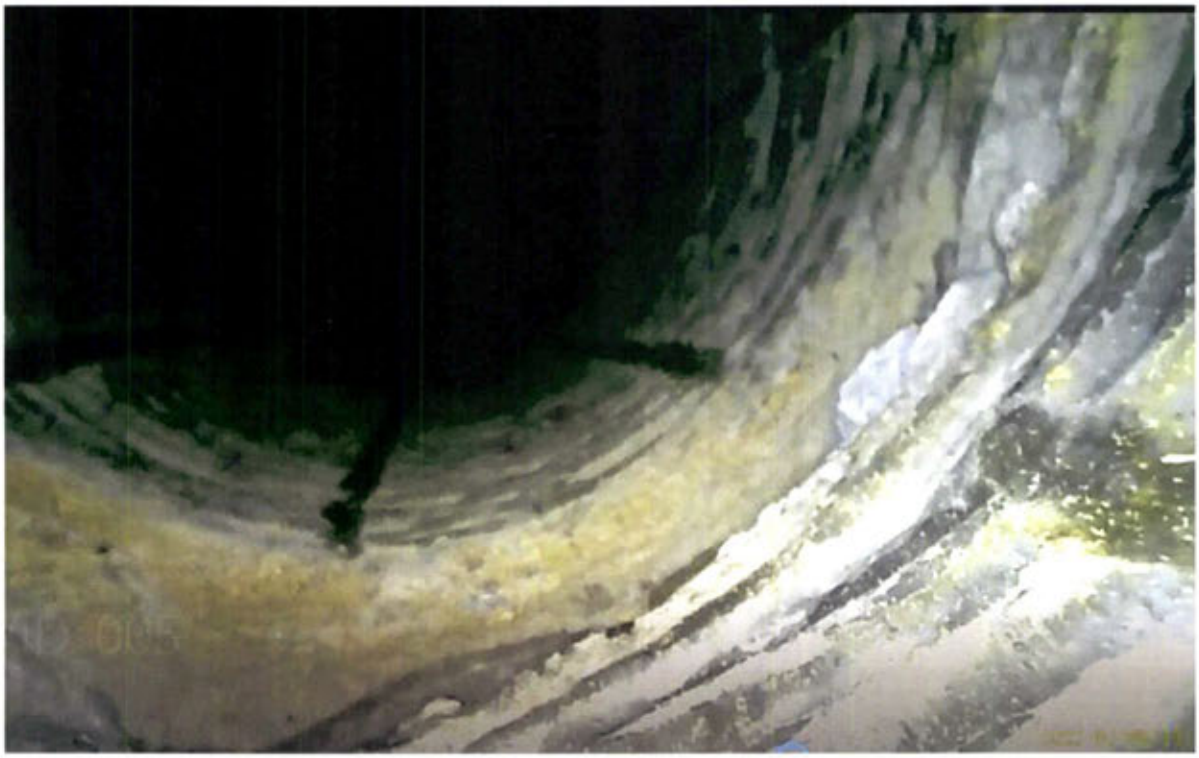
Shale at -9'

Photo 2



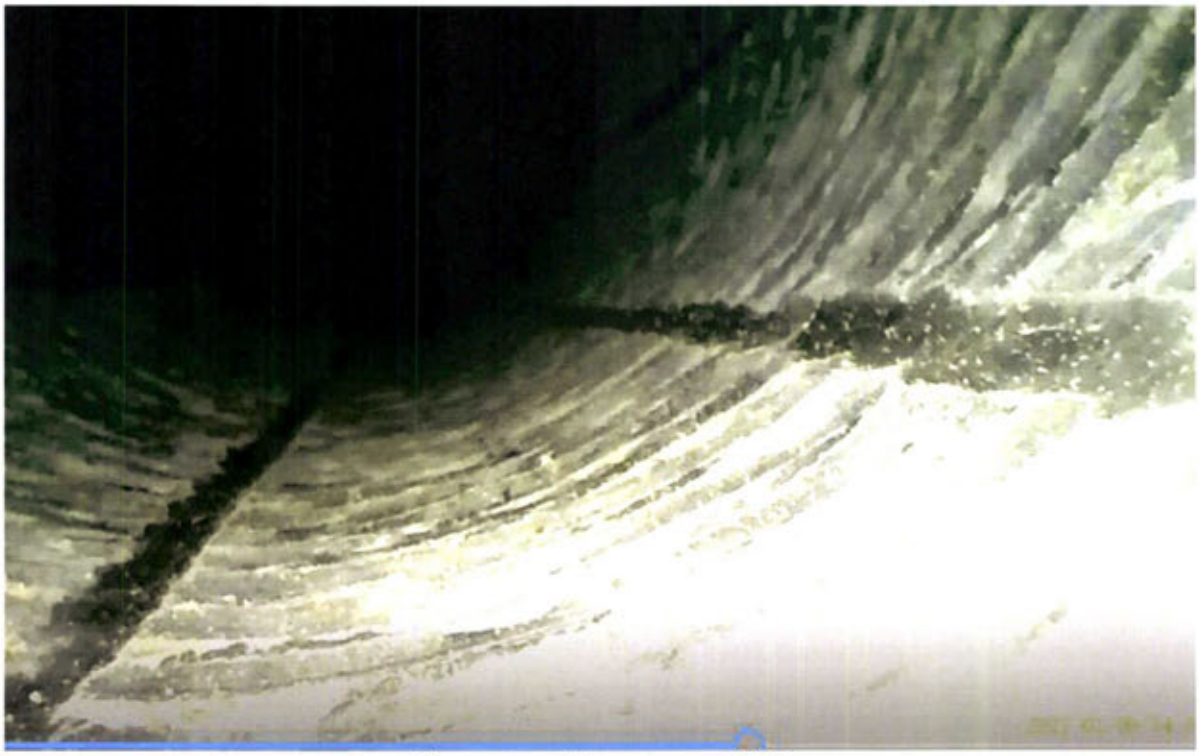
Small Seam Opening at -16'

Photo 3



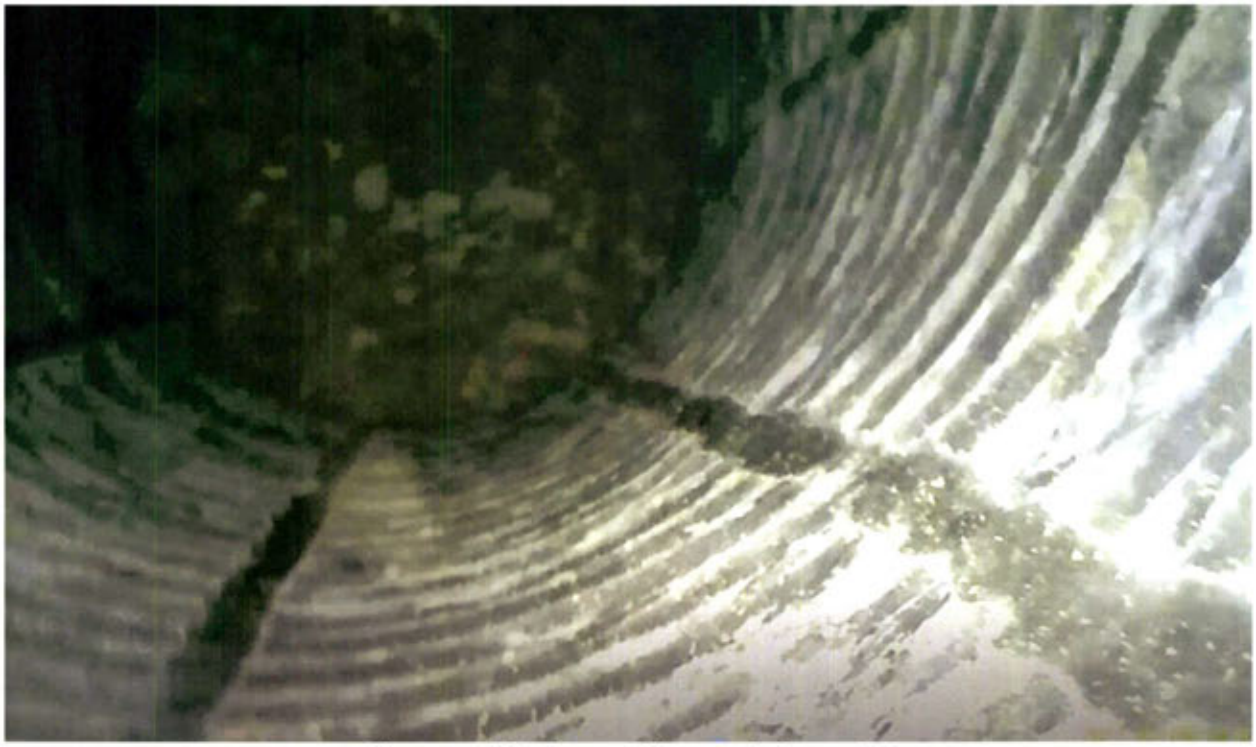
Small Seam Opening at -22'

Photo 4



Competent Limestone at -23'

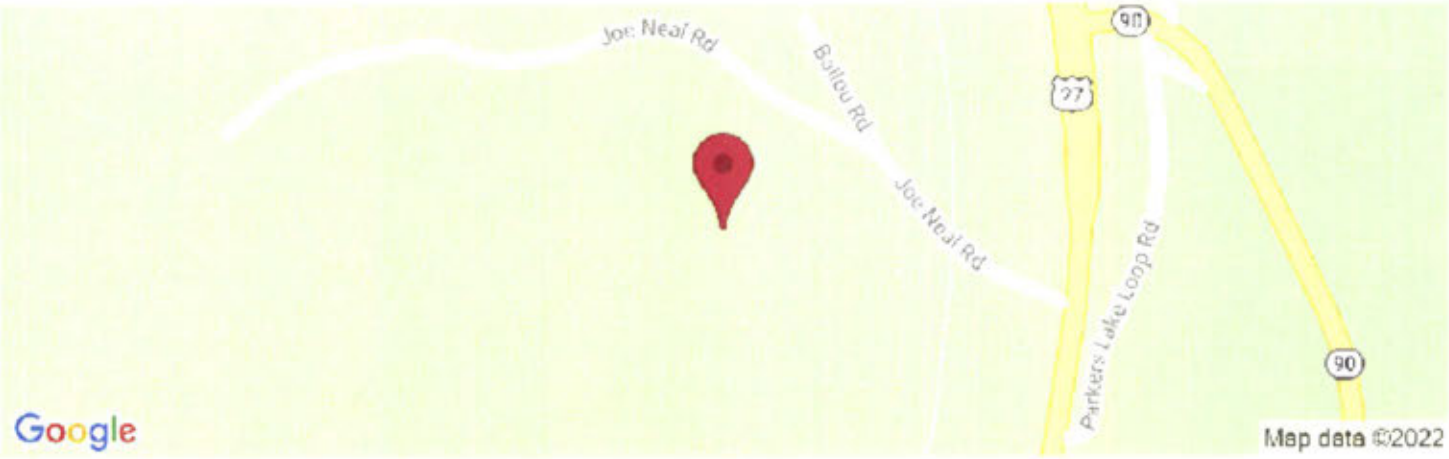
Photo 5



Closeup of the base of the core hole at -25'

OSHPD

Latitude, Longitude: 36.839322, -84.485103



Date	2/18/2022, 2:15:15 PM
Design Code Reference Document	IBC-2015
Risk Category	II
Site Class	C - Very Dense Soil and Soft Rock

Type	Value	Description
S_S	0.217	MCE_R ground motion. (for 0.2 second period)
S_1	0.101	MCE_R ground motion. (for 1.0s period)
S_{MS}	0.26	Site-modified spectral acceleration value
S_{M1}	0.172	Site-modified spectral acceleration value
S_{DS}	0.173	Numeric seismic design value at 0.2 second SA
S_{D1}	0.115	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	B	Seismic design category
F_a	1.2	Site amplification factor at 0.2 second
F_v	1.699	Site amplification factor at 1.0 second
PGA	0.102	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	0.123	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
SsRT	0.217	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.234	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.101	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.114	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.6	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.926	Mapped value of the risk coefficient at short periods
C_{R1}	0.889	Mapped value of the risk coefficient at a period of 1 s

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United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for McCreary-Whitley Area, Kentucky

February 17, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:386 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0, 5, 10, 20, 30

Feet: 0, 15, 30, 60, 90

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: McCreary-Whitley Area, Kentucky
Survey Area Data: Version 20, Sep 8, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 3, 2021—Apr 12, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3D	Wernock-Sequoia complex, 12 to 25 percent slopes	0.7	94.2%
22E	Shelocta-Sequoia complex, 20 to 35 percent slopes, rocky	0.0	5.8%
Totals for Area of Interest		**0.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

McCreary-Whitley Area, Kentucky

3D—Wernock-Sequoia complex, 12 to 25 percent slopes

Map Unit Setting

National map unit symbol: ng8r
Elevation: 800 to 2,130 feet
Mean annual precipitation: 27 to 37 inches
Mean annual air temperature: 36 to 56 degrees F
Frost-free period: 131 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Wernock and similar soils: 50 percent
Sequoia and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wernock

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Fine-silty residuum weathered from siltstone

Typical profile

H1 - 0 to 5 inches: silt loam
H2 - 5 to 25 inches: silty clay loam
H3 - 25 to 35 inches: silty clay loam
Cr - 35 to 45 inches: weathered bedrock

Properties and qualities

Slope: 12 to 25 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Sequoia

Setting

Landform: Ridges

Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 22 inches: silty clay
Cr - 22 to 30 inches: weathered bedrock

Properties and qualities

Slope: 12 to 25 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Lily

Percent of map unit: 5 percent
Hydric soil rating: No

Muse

Percent of map unit: 3 percent
Hydric soil rating: No

Rayne

Percent of map unit: 2 percent
Hydric soil rating: No

22E—Shelocta-Sequoia complex, 20 to 35 percent slopes, rocky

Map Unit Setting

National map unit symbol: ngc7
Elevation: 800 to 2,130 feet
Mean annual precipitation: 27 to 37 inches
Mean annual air temperature: 36 to 56 degrees F
Frost-free period: 131 to 170 days

Farmland classification: Not prime farmland

Map Unit Composition

Shelocta and similar soils: 55 percent
Sequoia and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shelocta

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy colluvium derived from sandstone and shale

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 48 inches: silty clay loam
H3 - 48 to 65 inches: channery silt loam

Properties and qualities

Slope: 20 to 35 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Sequoia

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 22 inches: silty clay
Cr - 22 to 30 inches: weathered bedrock

Properties and qualities

Slope: 20 to 35 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Bethesda, unstable fill

Percent of map unit: 3 percent
Hydric soil rating: No

Bouldin

Percent of map unit: 3 percent
Hydric soil rating: No

Wernock

Percent of map unit: 3 percent
Hydric soil rating: No

Highsplint

Percent of map unit: 2 percent
Hydric soil rating: No

Lily

Percent of map unit: 2 percent
Hydric soil rating: No

Fairpoint, unstable fill

Percent of map unit: 2 percent
Hydric soil rating: No

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EXHIBIT H
DIRECTIONS TO WCF SITE

Driving Directions to Proposed Tower Site

1. Beginning at 1 North Main Street, Whitley City, KY 42653, head north on Main Street toward Maple Commodity Road / Sampson Ave and travel approximately 0.1 miles.
2. Turn right onto Jesus Hill Road and travel approximately 0.1 miles.
3. Turn left onto US-27 N and travel approximately 7.7 miles.
4. Turn left onto Joe Neal Road and travel approximately 0.2 miles.
5. The site is located on the left. The E-911 address for the site is: 141 Joe Neal Road, Parkers Lake, KY 42634. The parcel address for the site is: Joe Neal Road, Parkers Lake, KY 42634.
6. The site coordinates are:
    a. North 36 deg 50 min 21.56 sec
    b. West 84 deg 29 min 06.37 sec

Prepared by:
Chris Shouse
Pike Legal Group
1578 Highway 44 East, Suite 6
P.O. Box 396
Shepherdsville, KY 40165-3069
Telephone: 502-955-4400 or 800-516-4293

EXHIBIT I
COPY OF REAL ESTATE AGREEMENT

HARMONI Site ID: KYLEX2061
Harmoni Site Name: Parkers Lake
FA No.: 15435106

OPTION AND LEASE AGREEMENT

THIS OPTION AND LEASE AGREEMENT ("**Agreement**"), dated as of the latter of the signature dates below (the "**Effective Date**"), is entered into by Richard E. Corder and Sheryl F. Corder, husband and wife, ("**Landlord**") having a mailing address of 170 Highway 90, Parkers Lake, Kentucky 42634, and Harmoni Towers LLC, a Delaware limited liability company having a mailing address of 10801 Executive Center Drive, Shannon Building, Suite 100, Little Rock AR 72211 ("**Tenant**").

BACKGROUND

Landlord owns or controls that certain plot, parcel or tract of land, as described on **Exhibit 1,** together with all rights and privileges arising in connection therewith, located at Joe Neal Road, in the City/Town of Parkers Lake, County of McCreary, State of Kentucky (collectively, the "**Property**"). Landlord desires to grant to Tenant the right to use a portion of the Property in accordance with this Agreement.

The parties agree as follows:

1. OPTION TO LEASE.

(a) Landlord grants to Tenant an exclusive option (the "**Option**") to lease a certain portion of the Property containing approximately ten thousand (10,000) square feet including the air space above such ground space, as described on attached **Exhibit 1**, (the "**Premises**"), for the placement of a Communication Facility.

(b) During the Option Term, and during the Term, 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, radio frequency testing 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 and include, without limitation, applications for zoning variances, zoning ordinances, amendments, special use permits, and construction permits (collectively, the "**Government Approvals**"), initiate the ordering and/or scheduling of necessary utilities, and otherwise to do those things on or off the 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, Landlord's title to the Property and the feasibility or suitability of the Property for Tenant's Permitted Use, all at Tenant's expense. 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 inspection. Tenant will restore the Property to its condition as it existed at the commencement of the Option Term, reasonable wear and tear and loss by casualty or other causes beyond Tenant's control excepted.

(c) In consideration of Landlord granting Tenant the Option, Tenant agrees to pay Landlord the sum of [redacted] within thirty (30) business days after the Effective Date. The Option may be exercised during an initial term of one (1) year commencing on the Effective Date (the "**Initial Option Term**") which term may be renewed by Tenant for an additional one (1) year (the "**Renewal Option Term**") upon written notification to Landlord and the payment of an additional [redacted] no later than five (5) days prior to the expiration date of the Initial Option Term. The Initial Option Term and any Renewal Option Term are collectively referred to as the "**Option Term.**"

(d) The Option may be sold, assigned or transferred at any time by Tenant without the written consent of Landlord. Upon notification to Landlord of such sale, assignment, or transfer, Tenant shall immediately be released from any and all liability under this Agreement, including the payment of any rental or other sums due, without any further action.

(e) During the Option Term, Tenant may exercise the Option by notifying Landlord in writing. If Tenant exercises the Option, then Landlord leases the Premises to Tenant subject to the terms and conditions of

this Agreement. If Tenant does not exercise the Option during the Initial Option Term or any extension thereof, this Agreement will terminate, and the parties will have no further liability to each other.

(f) If during the Option Term, or during the Term if the Option is exercised, Landlord decides to subdivide, sell, or change the status of the zoning of the Premises, Property or any of Landlord's contiguous, adjoining or surrounding property (the **"Surrounding Property,"**) or in the event of a threatened foreclosure, Landlord shall immediately notify Tenant in writing. Landlord agrees that during the Option Term, or during the Term if the Option is exercised, Landlord shall not initiate or consent to any change in the zoning of the Premises, Property or Surrounding Property or impose or consent to any other use or restriction that would prevent or limit Tenant from using the Premises for the Permitted Use. Any and all terms and conditions of this Agreement that by their sense and context are intended to be applicable during the Option Term shall be so applicable.

2. **PERMITTED USE.** Tenant may use the Premises for the transmission and reception of communications signals and the installation, construction, maintenance, operation, repair, replacement and upgrade of communications fixtures and related equipment, cables, accessories and improvements, which may include a suitable support structure (**"Structure"**), associated antennas, equipment shelters or cabinets and fencing and any other items necessary to the successful and secure use of the Premises (collectively, the **"Communication Facility"**), as well as the right to test, survey and review title on the Property; Tenant further has the right but not the obligation to add, modify and/or replace equipment in order to be in compliance with any current or future federal, state or local mandated application, including, but not limited to, emergency 911 communication services, at no additional cost to Tenant or Landlord (collectively, the **"Permitted Use"**). Landlord and Tenant agree that any portion of the Communication Facility that may be conceptually described on **Exhibit 1** will not be deemed to limit Tenant's Permitted Use. If **Exhibit 1** includes drawings of the initial installation of the Communication Facility, Landlord's execution of this Agreement will signify Landlord's approval of **Exhibit 1**. For a period of ninety (90) days following the start of construction, Landlord grants Tenant, its subtenants, licensees and sublicensees, the right to use such portions of the **Surrounding Property** as may reasonably be required during construction and installation of the Communication Facility. Tenant has the right to install and operate transmission cables from the equipment shelter or cabinet to the antennas, electric lines from the main feed to the equipment shelter or cabinet and communication lines from the Property's main entry point to the equipment shelter or cabinet, install a generator and to make other improvements, alterations, upgrades or additions appropriate for Tenant's Permitted Use including the right to construct a fence around the Premises or equipment, install warning signs to make individuals aware of risks, install protective barriers, install any other control measures reasonably required by Tenant's safety procedures or applicable law, and undertake any other appropriate means to secure the Premises or equipment at Tenant's expense. Tenant has the right to modify, supplement, replace, upgrade, expand the Communication Facility (including, for example, increasing the number of antennas or adding microwave dishes) or relocate the Communication Facility within the Premises at any time during the Term. Tenant will be allowed to make such alterations to the Property in order to ensure that the Communication Facility complies with all applicable federal, state or local laws, rules or regulations. In the event Tenant desires to modify or upgrade the Communication Facility, in a manner that requires an additional portion of the Property (the **"Additional Premises"**) for such modification or upgrade, Landlord agrees to lease to Tenant the Additional Premises, upon the same terms and conditions set forth herein, except that the Rent shall increase, in conjunction with the lease of the Additional Premises by the amount equivalent to the then-current per square foot rental rate charged by Landlord to Tenant times the square footage of the Additional Premises. Landlord agrees to take such actions and enter into and deliver to Tenant such documents as Tenant reasonably requests in order to effect and memorialize the lease of the Additional Premises to Tenant.

3. **TERM.**

(a) The initial lease term will be five (5) years (the **"Initial Term"**), commencing on the effective date of written notification by Tenant to Landlord of Tenant's exercise of the Option (the **"Term Commencement Date"**). The Initial Term will terminate on the fifth (5^{th}) anniversary of the Term Commencement Date.

(b) This Agreement will automatically renew for seventeen (17) additional five (5) year term(s) (each additional five (5) year term shall be defined as an "**Extension Term**"), upon the same terms and conditions set forth herein unless Tenant notifies Landlord in writing of Tenant's intention not to renew this Agreement at least sixty (60) days prior to the expiration of the Initial Term or then-existing Extension Term.

(c) Unless (i) Landlord or Tenant notifies the other in writing of its intention to terminate this Agreement at least six (6) months prior to the expiration of the final Extension Term, or (ii) the Agreement is terminated as otherwise permitted by this Agreement prior to the end of the final Extension Term, this Agreement shall continue in force upon the same covenants, terms and conditions for a further term of one (1) year, and for annual terms thereafter ("**Annual Term**") until terminated by either party by giving to the other party written notice of its intention to so terminate at least six (6) months prior to the end of any such Annual Term. Monthly rent during such Annual Terms shall be [redacted] If Tenant remains in possession of the Premises after the termination of this Agreement, then Tenant will be deemed to be occupying the Premises on a month-to-month basis (the "**Holdover Term**"), subject to the terms and conditions of this Agreement.

(d) The Initial Term, any Extension Terms, any Annual Terms and any Holdover Term are collectively referred to as the "**Term**".

4. RENT.

(a) Commencing on the first day of the month following the date that Tenant commences construction (the "**Rent Commencement Date**"), Tenant will pay Landlord on or before the fifth (5th) day of each calendar month in advance, [redacted] (the "**Rent**"), at the address set forth above. In any partial month occurring after the Rent Commencement Date, Rent will be prorated. The initial Rent payment will be forwarded by Tenant to Landlord within forty-five (45) days after the Rent Commencement Date.

(b) In the first year of an Extension Term, the monthly Rent will increase by [redacted] over the Rent paid during the previous five (5) year term, effective the first day of the month in which the anniversary of the Term Commencement Date occurs.

(c) All charges payable under this Agreement such as utilities and taxes shall be billed by Landlord within one (1) year from the end of the calendar year in which the charges were incurred; any charges beyond such period shall not be billed by Landlord, and shall not be payable by Tenant. The foregoing shall not apply to monthly Rent which is due and payable without a requirement that it be billed by Landlord. The provisions of this subsection shall survive the termination or expiration of this Agreement.

5. APPROVALS.

(a) Landlord agrees that Tenant's ability to use the Premises is contingent upon the suitability of the Premises and Property for the Permitted Use and Tenant's ability to obtain and maintain all Government Approvals. Landlord authorizes Tenant to prepare, execute and file all required applications to obtain Government Approvals for the Permitted Use and agrees to reasonably assist Tenant with such applications and with obtaining and maintaining the Government Approvals.

(b) Tenant has the right to obtain a title report or commitment for a leasehold title policy from a title insurance company of its choice and to have the Property surveyed by a surveyor of its choice.

(c) Tenant may also perform and obtain, at Tenant's sole cost and expense, soil borings, percolation tests, engineering procedures, environmental investigation or other tests or reports on, over, and under the Property, necessary to determine if Tenant's use of the Premises will be compatible with Tenant's engineering specifications, system, design, operations or Government Approvals.

6. TERMINATION. This Agreement may be terminated, without penalty or further liability, as follows:

(a) by either party on thirty (30) days prior written notice, if the other party remains in default under Section 15 of this Agreement after the applicable cure periods;

(b) by Tenant upon written notice to Landlord, if Tenant is unable to obtain, or maintain, any required approval(s) or the issuance of a license or permit by any agency, board, court or other governmental authority necessary for the construction or operation of the Communication Facility as now or hereafter

intended by Tenant; or if Tenant determines, in its sole discretion that the cost of or delay in obtaining or retaining the same is commercially unreasonable;

(c) by Tenant, upon written notice to Landlord, if Tenant determines, in its sole discretion, due to the title report results or survey results, that the condition of the Premises is unsatisfactory for its intended uses;

(d) by Tenant upon written notice to Landlord for any reason or no reason, at any time prior to commencement of construction by Tenant; or

(e) by Tenant upon sixty (60) days' prior written notice to Landlord for any reason or no reason, so long as Tenant pays Landlord a termination fee [redacted], provided, however, that no such termination fee will be payable on account of the termination of this Agreement by Tenant under any termination provision contained in any other Section of this Agreement, including the following: Section 5 Approvals, Section 6(a) Termination, Section 6(b) Termination, Section 6(c) Termination, Section 6(d) Termination, Section 11(d) Environmental, Section 18 Condemnation or Section 19 Casualty.

7. **INSURANCE.** During the Option Term and throughout the Term, Tenant will purchase and maintain in full force and effect such general liability policy as Tenant may deem necessary. Said policy of general liability insurance will at a minimum provide a combined single limit of [redacted] Notwithstanding the foregoing, Tenant shall have the right to self-insure such general liability coverage.

8. **INTERFERENCE.**

(a) Prior to or concurrent with the execution of this Agreement, Landlord has provided or will provide Tenant with a list of radio frequency user(s) and frequencies used on the Property as of the Effective Date. Tenant warrants that its use of the Premises will not interfere with those existing radio frequency uses on the Property, as long as the existing radio frequency user(s) operate and continue to operate within their respective frequencies and in accordance with all applicable laws and regulations.

(b) Landlord will not grant, after the Effective Date, a lease, license or any other right to any third party, if the exercise of such grant may in any way adversely affect or interfere with the Communication Facility, the operations of Tenant or the rights of Tenant under this Agreement. Landlord will notify Tenant in writing prior to granting any third party the right to install and operate communications equipment on the Property.

(c) Landlord will not, nor will Landlord permit its employees, tenants, licensees, invitees, agents or independent contractors to interfere in any way with the Communication Facility, the operations of Tenant or the rights of Tenant under this Agreement. Landlord will cause such interference to cease within twenty-four (24) hours after receipt of notice of interference from Tenant. In the event any such interference does not cease within the aforementioned cure period, Landlord shall cease all operations which are suspected of causing interference (except for intermittent testing to determine the cause of such interference) until the interference has been corrected.

(d) For the purposes of this Agreement, "interference" may include, but is not limited to, any use on the Property or Surrounding Property that causes electronic or physical obstruction with, or degradation of, the communications signals from the Communication Facility.

9. **INDEMNIFICATION.**

(a) Tenant agrees to indemnify, defend and hold Landlord harmless from and against any and all injury, loss, damage or liability , costs or expenses in connection with a third party claim (including reasonable attorneys' fees and court costs) arising directly from the installation, use, maintenance, repair or removal of the Communication Facility or Tenant's breach of any provision of this Agreement, except to the extent attributable to the negligent or intentional act or omission of Landlord, its employees, invitees, agents or independent contractors.

(b) Landlord agrees to indemnify, defend and hold Tenant harmless from and against any and all injury, loss, damage or liability , costs or expenses in connection with a third party claim (including reasonable attorneys' fees and court costs) arising directly from the actions or failure to act of Landlord, its employees,

invitees agents or independent contractors, or Landlord's breach of any provision of this Agreement, except to the extent attributable to the negligent or intentional act or omission of Tenant, its employees, agents or independent contractors.

(c) The indemnified party: (i) shall promptly provide the indemnifying party with written notice of any claim, demand, lawsuit, or the like for which it seeks indemnification pursuant to this Section and provide the indemnifying party with copies of any demands, notices, summonses, or legal papers received in connection with such claim, demand, lawsuit, or the like; (ii) shall not settle any such claim, demand, lawsuit, or the like without the prior written consent of the indemnifying party; and (iii) shall fully cooperate with the indemnifying party in the defense of the claim, demand, lawsuit, or the like. A delay in notice shall not relieve the indemnifying party of its indemnity obligation, except (1) to the extent the indemnifying party can show it was prejudiced by the delay; and (2) the indemnifying party shall not be liable for any settlement or litigation expenses incurred before the time when notice is given.

10. WARRANTIES.

(a) Each of Tenant and Landlord (to the extent not a natural person) acknowledge and represent that it is duly organized, validly existing and in good standing and has the right, power and authority or capacity, as applicable, to enter into this Agreement and bind itself hereto through the party or individual set forth as signatory for the party below.

(b) Landlord represents, warrants and agrees that: (i) Landlord solely owns the Property as a legal lot in fee simple, or controls the Property by lease or license; (ii) the Property is not and will not be encumbered by any liens, restrictions, mortgages, covenants, conditions, easements, leases, or any other agreements of record or not of record, which would adversely affect Tenant's Permitted Use and enjoyment of the Premises under this Agreement; (iii) as long as Tenant is not in default then Landlord grants to Tenant sole, actual, quiet and peaceful use, enjoyment and possession of the Premises without hindrance or ejection by any persons lawfully claiming under Landlord ; (iv) Landlord's execution and performance of this Agreement will not violate any laws, ordinances, covenants or the provisions of any mortgage, lease or other agreement binding on Landlord; and (v) if the Property is or becomes encumbered by a deed to secure a debt, mortgage or other security interest, Landlord will provide promptly to Tenant a mutually agreeable subordination, non-disturbance and attornment agreement executed by Landlord and the holder of such security interest in the form attached hereto as **Exhibit 10(b)**.

11. ENVIRONMENTAL.

(a) Landlord represents and warrants, except as may be identified in **Exhibit 11** attached to this Agreement, (i) the Property, as of the Effective Date, is free of hazardous substances, including asbestos-containing materials and lead paint, and (ii) the Property has never been subject to any contamination or hazardous conditions resulting in any environmental investigation, inquiry or remediation. Landlord and Tenant agree that each will be responsible for compliance with any and all applicable governmental laws, rules, statutes, regulations, codes, ordinances, or principles of common law regulating or imposing standards of liability or standards of conduct with regard to protection of the environment or worker health and safety, as may now or at any time hereafter be in effect, to the extent such apply to that party's activity conducted in or on the Property.

(b) Landlord and Tenant agree to hold harmless and indemnify the other from, and to assume all duties, responsibilities and liabilities at the sole cost and expense of the indemnifying party for, payment of penalties, sanctions, forfeitures, losses, costs or damages, and for responding to any action, notice, claim, order, summons, citation, directive, litigation, investigation or proceeding ("**Claims**"), to the extent arising from that party's breach of its obligations or representations under Section 11(a). Landlord agrees to hold harmless and indemnify Tenant from, and to assume all duties, responsibilities and liabilities at the sole cost and expense of Landlord for, payment of penalties, sanctions, forfeitures, losses, costs or damages, and for responding to any Claims, to the extent arising from subsurface or other contamination of the Property with hazardous substances prior to the Effective Date or from such contamination caused by the acts or omissions of Landlord during the Term. Tenant agrees to hold harmless and indemnify Landlord from, and to assume all duties, responsibilities and liabilities at the sole cost and expense of Tenant for, payment of penalties, sanctions, forfeitures, losses,

costs or damages, and for responding to any Claims, to the extent arising from hazardous substances brought onto the Property by Tenant.

(c) The indemnification provisions contained in this Section 11 specifically include reasonable costs, expenses and fees incurred in connection with any investigation of Property conditions or any clean-up, remediation, removal or restoration work required by any governmental authority. The provisions of this Section 11 will survive the expiration or termination of this Agreement.

(d) In the event Tenant becomes aware of any hazardous materials on the Property, or any environmental, health or safety condition or matter relating to the Property, that, in Tenant's sole determination, renders the condition of the Premises or Property unsuitable for Tenant's use, or if Tenant believes that the leasing or continued leasing of the Premises would expose Tenant to undue risks of liability to a government agency or other third party, Tenant will have the right, in addition to any other rights it may have at law or in equity, to terminate this Agreement upon written notice to Landlord.

12. ACCESS. At all times throughout the Term of this Agreement, and at no additional charge to Tenant, Tenant and its employees, agents, and subcontractors, will have twenty-four (24) hour per day, seven (7) day per week pedestrian and vehicular access ("**Access**") to and over the Property, from an open and improved public road to the Premises, for the installation, maintenance and operation of the Communication Facility and any utilities serving the Premises. If Tenant elects to utilize an Unmanned Aircraft System ("UAS") in connection with its installation, construction, monitoring, site audits, inspections, maintenance, repair, modification, or alteration activities at the Property, Landlord hereby grants Tenant, or any UAS operator acting on Tenant's behalf, express permission to fly over the applicable Property and Premises, and consents to the use of audio and video navigation and recording in connection with the use of the UAS. As may be described more fully in **Exhibit 1**, Landlord grants to Tenant an easement for such Access and Landlord agrees to provide to Tenant such codes, keys and other instruments necessary for such Access at no additional cost to Tenant. Upon Tenant's request, Landlord will execute a separate recordable easement evidencing this right. Landlord shall execute a letter granting Tenant Access to the Property substantially in the form attached as **Exhibit 12**; upon Tenant's request, Landlord shall execute additional letters during the Term. Landlord acknowledges that in the event Tenant cannot obtain Access to the Premises, Tenant shall incur significant damage. If Landlord fails to provide the Access granted by this Section 12, such failure shall be a default under this Agreement. In connection with such default, in addition to any other rights or remedies available to Tenant under this Agreement or at law or equity, Landlord shall pay Tenant, as liquidated damages and not as a penalty, [redacted] per day in consideration of Tenant's damages until Landlord cures such default. Landlord and Tenant agree that Tenant's damages in the event of a denial of Access are difficult, if not impossible, to ascertain, and the liquidated damages set forth above are a reasonable approximation of such damages.

13. REMOVAL/RESTORATION. All portions of the Communication Facility brought onto the Property by Tenant will be and remain Tenant's personal property and, at Tenant's option, may be removed by Tenant at any time during or after the Term. Landlord covenants and agrees that no part of the Communication Facility constructed, erected or placed on the Premises by Tenant will become, or be considered as being affixed to or a part of, the Property, it being the specific intention of Landlord that all improvements of every kind and nature constructed, erected or placed by Tenant on the Premises will be and remain the property of Tenant and may be removed by Tenant at any time during or after the Term. Tenant will repair any damage to the Property resulting from Tenant's removal activities. Any portions of the Communication Facility that Tenant does not remove within one hundred twenty (120) days after the later of the end of the Term and cessation of Tenant's operations at the Premises shall be deemed abandoned and owned by Landlord. Notwithstanding the foregoing, Tenant will not be responsible for the replacement of any trees, shrubs or other vegetation.

14. MAINTENANCE/UTILITIES.

(a) Tenant will keep and maintain the Premises in good condition, reasonable wear and tear and damage from the elements excepted. Tenant will repair any damage to the access area if directly attributable to Tenant use of the non-exclusive access. Landlord will maintain and repair the Property and access thereto and

all areas of the Premises where Tenant does not have exclusive control, in good and tenantable condition, subject to reasonable wear and tear and damage from the elements. If the Landlord adds fences and gates to the Property, Landlord will be responsible for all costs and expenses associated with installation and maintenance of fences and gates and will provide Tenant with access to the Premises pursuant to Section 12 of this Agreement.

(b) Tenant will be responsible for paying on a monthly or quarterly basis all utilities charges for electricity, telephone service or any other utility used or consumed by Tenant on the Premises. In the event Tenant cannot secure its own metered electrical supply, Tenant will have the right, at its own cost and expense, to sub-meter from Landlord. When sub-metering is required under this Agreement, Landlord will read the meter and provide Tenant with an invoice and usage data on a monthly basis. Tenant shall reimburse Landlord for such utility usage at the same rate charged to Landlord by the utility service provider. Landlord further agrees to provide the usage data and invoice on forms provided by Tenant and to send such forms to such address and/or agent designated by Tenant. Tenant will remit payment within sixty (60) days of receipt of the usage data and required forms. Landlord shall maintain accurate and detailed records of all utility expenses, invoices and payments applicable to Tenant's reimbursement obligations hereunder. Within fifteen (15) days after a request from Tenant, Landlord shall provide copies of such utility billing records to the Tenant in the form of copies of invoices, contracts and cancelled checks. If the utility billing records reflect an overpayment by Tenant, Tenant shall have the right to deduct the amount of such overpayment from any monies due to Landlord from Tenant.

(c) As noted in Section 4(c) above, any utility fee recovery by Landlord is limited to a twelve (12) month period. If Tenant submeters electricity from Landlord, Landlord agrees to give Tenant at least twenty-four (24) hours advance notice of any planned interruptions of said electricity. Landlord acknowledges that Tenant provides a communication service which requires electrical power to operate and must operate twenty-four (24) hours per day, seven (7) days per week. If the interruption is for an extended period of time, in Tenant's reasonable determination, Landlord agrees to allow Tenant the right to bring in a temporary source of power for the duration of the interruption. Landlord will not be responsible for interference with, interruption of or failure, beyond the reasonable control of Landlord, of such services to be furnished or supplied by Landlord.

(d) Tenant will have the right to install utilities on the Property and the Premises, at Tenant's expense and to improve present utilities on the Property and the Premises; by way of example, such utilities shall include overhead and underground electric, water, data transmission, and other necessary utility facilities (including guys, wires, poles, and other appurtenant equipment). Landlord hereby grants to Tenant and any service company providing utility or similar services, including electric power and telecommunications, an easement over the Property, from an open and improved public road to the Premises, and upon the Premises, for the purpose of constructing, operating and maintaining such lines, guys, wires, poles, circuits, conduits, associated equipment cabinets, and appurtenances thereto, as may from time to time be required. Upon Tenant's or service company's request, Landlord will execute a separate recordable easement evidencing this grant, at no cost to Tenant or service company.

15. DEFAULT AND RIGHT TO CURE.

(a) The following will be deemed a default by Tenant and a breach of this Agreement: (i) non-payment of Rent if such Rent remains unpaid for more than thirty (30) days after written notice from Landlord of such failure to pay; or (ii) Tenant's failure to perform any other term or condition under this Agreement within forty-five (45) days after written notice from Landlord specifying the failure. No such failure, however, will be deemed to exist if Tenant has commenced to cure such default within such period and provided that such efforts are prosecuted to completion with reasonable diligence. Delay in curing a default will be excused if due to causes beyond the reasonable control of Tenant. If Tenant remains in default beyond any applicable cure period, Landlord will have the right to exercise any and all rights and remedies available to it under law and equity.

(b) The following will be deemed a default by Landlord and a breach of this Agreement: (i) Landlord's failure to provide Access to the Premises as required by Section 12 within twenty-four (24) hours

after written notice of such failure; (ii) Landlord's failure to cure an interference problem as required by Section 8 within twenty-four (24) hours after written notice of such failure; or (iii) Landlord's failure to perform any term, condition or breach of any warranty or covenant under this Agreement within forty-five (45) days after written notice from Tenant specifying the failure. No such failure, however, will be deemed to exist if Landlord has commenced to cure the default within such period and provided such efforts are prosecuted to completion with reasonable diligence. Delay in curing a default will be excused if due to causes beyond the reasonable control of Landlord. If Landlord remains in default beyond any applicable cure period, Tenant will have: (i) the right to cure Landlord's default and to deduct the costs of such cure from any monies due to Landlord from Tenant, and (ii) any and all other rights available to it under law and equity.

16. ASSIGNMENT/SUBLEASE. Tenant will have the right to assign this Agreement or sublease the Premises and its rights herein, in whole or in part, without Landlord's consent. Upon notification to Landlord of such assignment, Tenant will be relieved of all future performance, liabilities and obligations under this Agreement to the extent of such assignment.

17. NOTICES. All notices, requests and demands hereunder will be given by first class certified or registered mail, return receipt requested, or by a nationally recognized overnight courier, postage prepaid, to be effective when properly sent and received, refused or returned undelivered. Notices will be addressed to the parties as follows:

If to Tenant:
Harmoni Towers LLC
Attn: Real Estate
10801 Executive Center Drive
Shannon Building, Suite 100
Little Rock AR 72211
REAdmin@harmonitowers.com

cc:

Harmoni Towers LLC
c/o Symphony Wireless
Attn: Legal
44 South Broadway, Suite 601
White Plains, NY 10601

For Emergencies: NOC@harmonitowers.com

If to Landlord:
Richard E. Corder and Sheryl F. Corder
170 Highway 90
Parkers Lake, KY 42634
Telephone: [redacted]

Either party hereto may change the place for the giving of notice to it by thirty (30) days' prior written notice to the other party as provided herein.

18. CONDEMNATION. In the event Landlord receives notification of any condemnation proceedings affecting the Property, Landlord will provide notice of the proceeding to Tenant within twenty-four (24) hours. If a condemning authority takes all of the Property, or a portion sufficient, in Tenant's sole determination, to render the Premises unsuitable for Tenant, this Agreement will terminate as of the date the title vests in the condemning authority. The parties will each be entitled to pursue their own separate awards in the condemnation proceeds, which for Tenant will include, where applicable, the value of its Communication

Facility, moving expenses, prepaid Rent, and business dislocation expenses. Tenant will be entitled to reimbursement for any prepaid Rent on a *pro rata* basis.

19. **CASUALTY.** Landlord will provide notice to Tenant of any casualty or other harm affecting the Property within twenty-four (24) hours of the casualty or other harm. If any part of the Communication Facility or Property is damaged by casualty or other harm as to render the Premises unsuitable, in Tenant's sole determination, then Tenant may terminate this Agreement by providing written notice to Landlord, which termination will be effective as of the date of such casualty or other harm. Upon such termination, Tenant will be entitled to collect all insurance proceeds payable to Tenant on account thereof and to be reimbursed for any prepaid Rent on a *pro rata* basis. Landlord agrees to permit Tenant to place temporary transmission and reception facilities on the Property, but only until such time as Tenant is able to activate a replacement transmission facility at another location; notwithstanding the termination of this Agreement, such temporary facilities will be governed by all of the terms and conditions of this Agreement, including Rent. If Landlord or Tenant undertakes to rebuild or restore the Premises and/or the Communication Facility, as applicable, Landlord agrees to permit Tenant to place temporary transmission and reception facilities on the Property at no additional Rent until the reconstruction of the Premises and/or the Communication Facility is completed. If Landlord determines not to rebuild or restore the Property, Landlord will notify Tenant of such determination within thirty (30) days after the casualty or other harm. If Landlord does not so notify Tenant and Tenant decides not to terminate under this Section, then Landlord will promptly rebuild or restore any portion of the Property interfering with or required for Tenant's Permitted Use of the Premises to substantially the same condition as existed before the casualty or other harm. Landlord agrees that the Rent shall be abated until the Property and/or the Premises are rebuilt or restored, unless Tenant places temporary transmission and reception facilities on the Property.

20. **WAIVER OF LANDLORD'S LIENS.** Landlord waives any and all lien rights it may have, statutory or otherwise, concerning the Communication Facility or any portion thereof. The Communication Facility shall be deemed personal property for purposes of this Agreement, regardless of whether any portion is deemed real or personal property under applicable law; Landlord consents to Tenant's right to remove all or any portion of the Communication Facility from time to time in Tenant's sole discretion and without Landlord's consent.

21. **TAXES.**

(a) Landlord shall be responsible for (i) all taxes and assessments levied upon the lands, improvements and other property of Landlord including any such taxes that may be calculated by a taxing authority using any method, including the income method (ii) all sales, use, license, value added, documentary, stamp, gross receipts, registration, real estate transfer, conveyance, excise, recording, and other similar taxes and fees imposed in connection with this Agreement and (iii) all sales, use, license, value added, documentary, stamp, gross receipts, registration, real estate transfer, conveyance, excise, recording, and other similar taxes and fees imposed in connection with a sale of the Property or assignment of Rent payments by Landlord. Tenant shall be responsible for (y) any taxes and assessments attributable to and levied upon Tenant's leasehold improvements on the Premises if and as set forth in this Section 21 and (z) all sales, use, license, value added, documentary, stamp, gross receipts, registration, real estate transfer, conveyance, excise, recording, and other similar taxes and fees imposed in connection with an assignment of this Agreement or sublease by Tenant. Nothing herein shall require Tenant to pay any inheritance, franchise, income, payroll, excise, privilege, rent, capital stock, stamp, documentary, estate or profit tax, or any tax of similar nature, that is or may be imposed upon Landlord.

(b) In the event Landlord receives a notice of assessment with respect to which taxes or assessments are imposed on Tenant's leasehold improvements on the Premises, Landlord shall provide Tenant with copies of each such notice immediately upon receipt, but in no event later than thirty (30) days after the date of such notice of assessment. If Landlord does not provide such notice or notices to Tenant in a timely manner and Tenant's rights with respect to such taxes are prejudiced by the delay, Landlord shall reimburse Tenant for any increased costs directly resulting from the delay and Landlord shall be responsible for payment of the tax or assessment set forth in the notice, and Landlord shall not have the right to reimbursement of such amount from

Tenant. If Landlord provides a notice of assessment to Tenant within such time period and requests reimbursement from Tenant as set forth below, then Tenant shall reimburse Landlord for the tax or assessments identified on the notice of assessment on Tenant's leasehold improvements, which has been paid by Landlord. If Landlord seeks reimbursement from Tenant, Landlord shall, no later than thirty (30) days after Landlord's payment of the taxes or assessments for the assessed tax year, provide Tenant with written notice including evidence that Landlord has timely paid same, and Landlord shall provide to Tenant any other documentation reasonably requested by Tenant to allow Tenant to evaluate the payment and to reimburse Landlord.

(c) For any tax amount for which Tenant is responsible under this Agreement, Tenant shall have the right to contest, in good faith, the validity or the amount thereof using such administrative, appellate or other proceedings as may be appropriate in the jurisdiction, and may defer payment of such obligations, pay same under protest, or take such other steps as permitted by law. This right shall include the ability to institute any legal, regulatory or informal action in the name of Landlord, Tenant, or both, with respect to the valuation of the Premises. Landlord shall cooperate with respect to the commencement and prosecution of any such proceedings and will execute any documents required therefor. The expense of any such proceedings shall be borne by Tenant and any refunds or rebates secured as a result of Tenant's action shall belong to Tenant, to the extent the amounts were originally paid by Tenant. In the event Tenant notifies Landlord by the due date for assessment of Tenant's intent to contest the assessment, Landlord shall not pay the assessment pending conclusion of the contest, unless required by applicable law.

(d) Landlord shall not split or cause the tax parcel on which the Premises are located to be split, bifurcated, separated or divided without the prior written consent of Tenant.

(e) Tenant shall have the right but not the obligation to pay any taxes due by Landlord hereunder if Landlord fails to timely do so, in addition to any other rights or remedies of Tenant. In the event that Tenant exercises its rights under this Section 21(e) due to such Landlord default, Tenant shall have the right to deduct such tax amounts paid from any monies due to Landlord from Tenant as provided in Section 15(b), provided that Tenant may exercise such right without having provided to Landlord notice and the opportunity to cure per Section 15(b).

(f) Any tax-related notices shall be sent to Tenant in the manner set forth in Section 17. Promptly after the Effective Date of this Agreement, Landlord shall provide the Notice address set forth in Section 17 to the taxing authority for the authority's use in the event the authority needs to communicate with Tenant. In the event that Tenant's tax address changes by notice to Landlord, Landlord shall be required to provide Tenant's new tax address to the taxing authority or authorities.

(g) Notwithstanding anything to the contrary contained in this Section 21, Tenant shall have no obligation to reimburse any tax or assessment for which the Landlord is reimbursed or rebated by a third party.

22. SALE OF PROPERTY.

(a) Landlord may sell the Property or a portion thereof to a third party, provided: (i) the sale is made subject to the terms of this Agreement; and (ii) if the sale does not include the assignment of Landlord's full interest in this Agreement, the purchaser must agree to perform, without requiring compensation from Tenant or any subtenant, any obligation of Landlord under this Agreement, including Landlord's obligation to cooperate with Tenant as provided hereunder.

(b) If Landlord, at any time during the Term of this Agreement, decides to rezone or sell, subdivide or otherwise transfer all or any part of the Premises, or all or any part of the Property or Surrounding Property, to a purchaser other than Tenant, Landlord shall promptly notify Tenant in writing, and such rezoning, sale, subdivision or transfer shall be subject to this Agreement and Tenant's rights hereunder. In the event of a change in ownership, transfer or sale of the Property, within ten (10) days of such transfer, Landlord or its successor shall send the documents listed below in this Section 22(b) to Tenant. Until Tenant receives all such documents, Tenant's failure to make payments under this Agreement shall not be an event of default and Tenant reserves the right to hold payments due under this Agreement.

i. Old deed to Property
ii. New deed to Property
iii. Bill of Sale or Transfer

iv. Copy of current Tax Bill
v. New IRS Form W-9
vi. Completed and Signed Tenant Payment Direction Form
vii. Full contact information for new Landlord including phone number(s)

(c) Landlord agrees not to sell, lease or use any areas of the Property or Surrounding Property for the installation, operation or maintenance of other wireless communication facilities if such installation, operation or maintenance would interfere with Tenant's Permitted Use or communications equipment as determined by radio propagation tests performed by Tenant in its sole discretion. Landlord or Landlord's prospective purchaser shall reimburse Tenant for any costs and expenses of such testing. If the radio frequency propagation tests demonstrate levels of interference unacceptable to Tenant, Landlord shall be prohibited from selling, leasing or using any areas of the Property or the Surrounding Property for purposes of any installation, operation or maintenance of any other wireless communication facility or equipment.

(d) The provisions of this Section shall in no way limit or impair the obligations of Landlord under this Agreement, including interference and access obligations.

23. RIGHT OF FIRST REFUSAL. Notwithstanding the provisions contained in Section 22, if at any time after the Effective Date, Landlord receives a bona fide written offer from a third party seeking any sale, conveyance, assignment or transfer, whether in whole or in part, of any property interest in or related to the Premises, including without limitation any offer seeking an assignment or transfer of the Rent payments associated with this Agreement or an offer to purchase an easement with respect to the Premises ("**Offer**"), Landlord shall immediately furnish Tenant with a copy of the Offer. Tenant shall have the right within ninety (90) days after it receives such copy to match the Offer and agree in writing (the "**Exercise Notice**") to match the financial terms of the Offer. For the avoidance of doubt, to exercise its rights under this Section 23, Tenant shall not be required to match any compensation due to parties unrelated Landlord, including but not limited to broker compensation. The Exercise Notice shall be in the form of a contract substantially similar to the Offer (matching the financial terms as set forth herein); provided, however, that Landlord and Tenant acknowledge and agree that the Exercise Notice is intended to be a letter of intent or similar, and the parties shall thereafter negotiate in good faith the documents reasonably required to consummate Tenant's exercise of its rights under this Section 23. Tenant may assign its rights under this Section 23. If Tenant chooses not to exercise this right or fails to provide written notice to Landlord within the ninety (90) day period, Landlord may sell, convey, assign or transfer such property interest in or related to the Premises pursuant to the Offer, subject to the terms of this Agreement. If Landlord attempts to sell, convey, assign or transfer such property interest in or related to the Premises without complying with this Section 23, the sale, conveyance, assignment or transfer shall be void. Tenant shall not be responsible for any failure to make payments under this Agreement and reserves the right to hold payments due under this Agreement until Landlord complies with this Section 23. Tenant's failure to exercise the right of first refusal shall not be deemed a waiver of the rights contained in this Section 23 with respect to any future proposed conveyances as described herein.

24. MISCELLANEOUS.

(a) **Amendment/Waiver.** This Agreement cannot be amended, modified or revised unless done in writing and signed by Landlord and Tenant. No provision may be waived except in a writing signed by both parties. The failure by a party to enforce any provision of this Agreement or to require performance by the other party will not be construed to be a waiver, or in any way affect the right of either party to enforce such provision thereafter.

(b) **Memorandum.** Contemporaneously with the execution of this Agreement, the parties will execute a recordable Memorandum of Lease substantially in the form attached as **Exhibit 24b.** Either party may record this Memorandum of Lease at any time during the Term, in its absolute discretion. Thereafter during the Term, either party will, at any time upon fifteen (15) business days' prior written notice from the other, execute, acknowledge and deliver to the other a recordable Memorandum of Lease.

(c) **Limitation of Liability**. Except for the indemnity obligations set forth in this Agreement, and otherwise notwithstanding anything to the contrary in this Agreement, Tenant and Landlord each waives any

claims that each may have against the other with respect to consequential, incidental or special damages, however caused, based on any theory of liability.

(d) **Compliance with Law.** Tenant agrees to comply with all federal, state and local laws, orders, rules and regulations ("**Laws**") applicable to Tenant's use of the Communication Facility on the Property. Landlord agrees to comply with all Laws relating to Landlord's ownership and use of the Property and any improvements on the Property.

(e) **Bind and Benefit.** The terms and conditions contained in this Agreement will run with the Property and bind and inure to the benefit of the parties, their respective heirs, executors, administrators, successors and assigns.

(f) **Entire Agreement.** This Agreement and the exhibits attached hereto, all being a part hereof, constitute the entire agreement of the parties hereto and will supersede all prior offers, negotiations and agreements with respect to the subject matter of this Agreement. Exhibits are numbered to correspond to the Section wherein they are first referenced. Except as otherwise stated in this Agreement, each party shall bear its own fees and expenses (including the fees and expenses of its agents, brokers, representatives, attorneys, and accountants) incurred in connection with the negotiation, drafting, execution and performance of this Agreement and the transactions it contemplates.

(g) **Governing Law.** This Agreement will be governed by the laws of the state in which the Premises are located, without regard to conflicts of law.

(h) **Interpretation.** Unless otherwise specified, the following rules of construction and interpretation apply: (i) captions are for convenience and reference only and in no way define or limit the construction of the terms and conditions hereof; (ii) use of the term "including" will be interpreted to mean "including but not limited to"; (iii) whenever a party's consent is required under this Agreement, except as otherwise stated in the Agreement or as same may be duplicative, such consent will not be unreasonably withheld, conditioned or delayed; (iv) exhibits are an integral part of this Agreement and are incorporated by reference into this Agreement; (v) use of the terms "termination" or "expiration" are interchangeable; (vi) reference to a default will take into consideration any applicable notice, grace and cure periods; (vii) to the extent there is any issue with respect to any alleged, perceived or actual ambiguity in this Agreement, the ambiguity shall not be resolved on the basis of who drafted the Agreement; (viii) the singular use of words includes the plural where appropriate and (ix) if any provision of this Agreement is held invalid, illegal or unenforceable, the remaining provisions of this Agreement shall remain in full force if the overall purpose of the Agreement is not rendered impossible and the original purpose, intent or consideration is not materially impaired.

(i) **Affiliates.** All references to "Tenant" shall be deemed to include any Affiliate of Harmoni Towers LLC using the Premises for any Permitted Use or otherwise exercising the rights of Tenant pursuant to this Agreement. "Affiliate" means with respect to a party to this Agreement, any person or entity that (directly or indirectly) controls, is controlled by, or under common control with, that party. "Control" of a person or entity means the power (directly or indirectly) to direct the management or policies of that person or entity, whether through the ownership of voting securities, by contract, by agency or otherwise.

(j) **Survival.** Any provisions of this Agreement relating to indemnification shall survive the termination or expiration hereof. In addition, any terms and conditions contained in this Agreement that by their sense and context are intended to survive the termination or expiration of this Agreement shall so survive.

(k) **W-9.** As a condition precedent to payment, Landlord agrees to provide Tenant with a completed IRS Form W-9, or its equivalent, upon execution of this Agreement and at such other times as may be reasonably requested by Tenant, including any change in Landlord's name or address.

(l) **Execution/No Option.** The submission of this Agreement to any party for examination or consideration does not constitute an offer, reservation of or option for the Premises based on the terms set forth herein. This Agreement will become effective as a binding Agreement only upon the handwritten legal execution, acknowledgment and delivery hereof by Landlord and Tenant. This Agreement may be executed in two (2) or more counterparts, all of which shall be considered one and the same agreement and shall become effective when one or more counterparts have been signed by each of the parties. All parties need not sign the same counterpart.

(m) **Attorneys' Fees.** In the event that any dispute between the parties related to this Agreement should result in litigation, the prevailing party in such litigation shall be entitled to recover from the other party all reasonable fees and expenses of enforcing any right of the prevailing party, including reasonable attorneys' fees and expenses. Prevailing party means the party determined by the court to have most nearly prevailed even if such party did not prevail in all matters. This provision will not be construed to entitle any party other than Landlord, Tenant and their respective Affiliates to recover their fees and expenses.

(n) **WAIVER OF JURY TRIAL.** EACH PARTY, TO THE EXTENT PERMITTED BY LAW, KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVES ITS RIGHT TO A TRIAL BY JURY IN ANY ACTION OR PROCEEDING UNDER ANY THEORY OF LIABILITY ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR THE TRANSACTIONS IT CONTEMPLATES.

(o) **Incidental Fees.** Unless specified in this Agreement, no unilateral fees or additional costs or expenses are to be applied by either party to the other party, including review of plans, structural analyses, consents, provision of documents or other communications between the parties.

(p) **Further Acts.** Upon request, Landlord will cause to be promptly and duly taken, executed, acknowledged and delivered all such further acts, documents, and assurances as Tenant may request from time to time in order to effectuate, carry out and perform all of the terms, provisions and conditions of this Agreement and all transactions and permitted use contemplated by this Agreement.

(q) **Force Majeure.** No party shall be liable or responsible to the other party, nor be deemed to have defaulted under or breached this Agreement, for any failure or delay in fulfilling or performing any term of this Agreement, when and to the extent such failure or delay is caused by or results from acts beyond the affected party's reasonable control, including, without limitation: (a) acts of God; (b) flood, fire, earthquake, or explosion; (c) war, invasion, hostilities (whether war is declared or not), terrorist threats or acts, riot, or other civil unrest; (d) government order or law; (e) embargoes, or blockades in effect on or after the date of this Agreement; (f) action by any governmental authority; (g) national or regional emergency; and (h) strikes, labor stoppages or slowdowns, or other industrial disturbances. The party suffering a force majeure event shall give written notice to the other party, stating the period of time the occurrence is expected to continue and shall use diligent efforts to end the failure or delay and ensure the effects of such force majeure event are minimized.

[SIGNATURES APPEAR ON NEXT PAGE]

IN WITNESS WHEREOF, the parties have caused this Agreement to be effective as of the last date written below.

"LANDLORD"

Richard E. Corder

By: Richard E Corder
Print Name: Richard E. Corder
Its: R.E.C.
Date: 12-27-21

"LANDLORD"

Sheryl F. Corder

By: Sheryl F. Corder
Print Name: Sheryl F. Corder
Its: SFC
Date: 12-27-21

"TENANT"

Harmoni Towers LLC

By: Ginger Majors
Print Name: Ginger Majors
Its: VP - Real Estate
Date: 1-17-2022

[ACKNOWLEDGMENTS APPEAR ON NEXT PAGE]

TENANT ACKNOWLEDGMENT

STATE OF ARKANSAS

COUNTY OF PULASKI

On the 17th day of January, 2022 before me personally appeared Ginger Majors, who acknowledged under oath that he/she is the VP Real Estate of Harmoni Towers LLC, the Tenant named in the attached instrument, and as such was authorized to execute this instrument on behalf of the Tenant.

CONSTANCE F. HELMICH
COMM. # 12372328
NOTARY PUBLIC
MY COMM. EXP. JUL 2, 2029
SALINE COUNTY, ARKANSAS

Notary Public: Constance F. Helmich
My Commission Expires: 7-2-2029

LANDLORD ACKNOWLEDGMENT

STATE OF KENTUCKY

COUNTY OF MCCREARY

BE IT REMEMBERED, that on this 27 day of December, 2021 before me, the subscriber, a person authorized to take oaths in the State of Kentucky, personally appeared Richard E. Corder who, being duly sworn on his/her/their oath, deposed and made proof to my satisfaction that he/she/they is/are the person(s) named in the within instrument; and I, having first made known to him/her/them the contents thereof, he/she/they did acknowledge that he/she/they signed, sealed and delivered the same as his/her/their voluntary act and deed for the purposes therein contained.

Notary Public: Barbara Rose
My Commission Expires: 6-24-24
Notary ID KYNP5494

LANDLORD ACKNOWLEDGMENT

STATE OF KENTUCKY

COUNTY OF MCCREARY

BE IT REMEMBERED, that on this 27 day of December, 2021 before me, the subscriber, a person authorized to take oaths in the State of Kentucky, personally appeared Sheryl F. Corder who, being duly sworn on his/her/their oath, deposed and made proof to my satisfaction that he/she/they is/are the person(s) named in the within instrument; and I, having first made known to him/her/them the contents thereof, he/she/they did acknowledge that he/she/they signed, sealed and delivered the same as his/her/their voluntary act and deed for the purposes therein contained.

Sheryl F. Corder

Notary Public: Barbara Rose

My Commission Expires: 6-24-24

Notary ID KYNP8494

EXHIBIT 1

DESCRIPTION OF PREMISES

to the Option and Lease Agreement dated January 17, 2022, by and between Richard E. Corder and Sheryl F. Corder, husband and wife, as Landlord, and Harmoni Towers LLC, a Delaware limited liability company, as Tenant.

The Property is legally described as follows:

Beginning at a large pine on a ridge well marked a corner common to a Cumberland National Forest unit; thence their line S 27 E 40 poles to a hickory stand marked in their line a corner to a Ella Walker tract of land; thence leaving the said forest parcel and with the Walker parcel reversing N 70 deg. 30 min. E 36 poles to a set stone and small pine on a slate dump her corner located in the railroad right of way; thence their lines N 26 deg. W 44 poles to a black oak marked at turn of their fence; thence their line N 36 deg. E 18 poles crossing the drain below the old dam to a set stone witness by a small poplar and maple, their corner near the railroad; thence their fence line N 32 W 27 poles to a set stone in their fence line where a forest line crosses the said right of way; thence leaving the said railway right of way and with the said forest line S 20 deg. W 68 poles to the place of Beginning. Containing 21-8/10th acres more or less.

AND BEING the same property conveyed to Richard E. Corder and Sheryl F. Corder from Bruce Watters by General Warranty Deed dated November 26, 2014 and recorded December 2, 2014 in Deed Book D205, Page 106.

Tax Parcel No. 099-00-00-019.00

The Premises are described and/or depicted as follows:

LEASE AREA

All that tract or parcel of land lying and being in Parkers Lake, McCreary County, Kentucky, and being a portion of the lands of Richard E. Corder and Sheryl F. Corder, as recorded in Deed Book 205, Page 106, McCreary County records, and being more particularly described as follows:

To find the point of beginning, COMMENCE at a capped 3-inch pipe found, stamped "24-1320", at the westerly property corner of said Corder lands, said point having a Kentucky Grid North, NAD 83, Single Zone value of N:3467724.0851 E:5291294.2045; thence running along a tie-line, South 33°36'53" East, 128.72 feet to a point having a Kentucky Grid North, NAD 83, Single Zone value of N:3467616.8864 E:5291365.4670, and the true POINT OF BEGINNING; Thence running, North 68°52'29" East, 100.00 feet to a point; Thence, South 21°07'31" East, 100.00 feet to a point; Thence, South 68°52'29" West, 100.00 feet to a point; Thence, North 21°07'31" West, 100.00 feet to a point and the POINT OF BEGINNING.

Bearings based on Kentucky Grid North, NAD 83, Single Zone.

Said tract contains 0.2296 acres (10,000 square feet), more or less, as shown in a survey prepared for Harmoni Towers by POINT TO POINT LAND SURVEYORS, INC. dated March 25, 2021, and last revised on December 2, 2021.

30' INGRESS-EGRESS & UTILITY EASEMENT

Together with a 30-foot wide Ingress-Egress and Utility Easement lying and being in Parkers Lake, McCreary County, Kentucky, measuring 15 feet each side of centerline, the side lines of which are to be lengthened and shortened to terminate at the west right-of-way line of an existing railroad, and being a portion of the lands of Richard E. Corder and Sheryl F. Corder, as recorded in Deed Book 205, Page 106, McCreary County records, and being more particularly described by the following centerline data:

To find the point of beginning, COMMENCE, at a capped 3-inch pipe found, stamped "24-1320", at the westerly property corner of said Corder lands, said point having a Kentucky Grid North, NAD 83, Single Zone value of N:3467724.0851 E:5291294.2045; thence running along a tie-line, South 33°36'53" East, 128.72 feet to a point on the Lease Area having a Kentucky Grid North, NAD 83, Single Zone value of N:3467616.8864 E:5291365.4670; thence running, North 68°52'29"

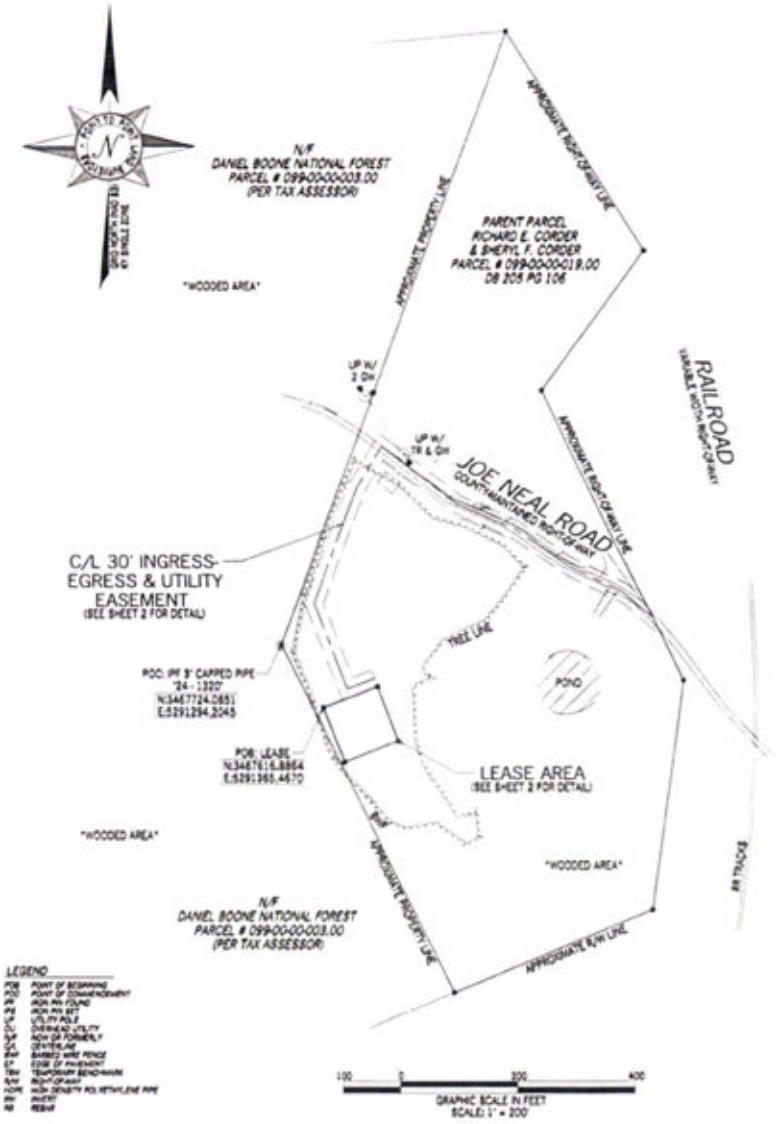
East, 100.00 feet to a point; thence leaving the Lease Area and running along a tie-line, North 21°07'31" West, 15.00 feet to a point and the true POINT OF BEGINNING; Thence, South 68°52'29" West, 50.37 feet to a point; Thence, North 21°08'58" West, 157.53 feet to a point; Thence, North 20°27'25" East, 212.71 feet to a point; Thence, North 31°10'00" East, 81.51 feet to a point; Thence, South 52°45'12" East, 164.58 feet to a point; Thence, South 66°48'47" East, 108.47 feet to a point; Thence, South 55°09'43" East, 108.34 feet to a point; Thence, South 64°27'18" East, 102.44 feet to a point; Thence, South 48°32'06" East, 68.51 feet to the ENDING at a point on the west right-of-way line of an existing railroad.

Bearings based on Kentucky Grid North, NAD 83, Single Zone.

As shown in a survey prepared for Harmoni Towers by POINT TO POINT LAND SURVEYORS, INC. dated March 25, 2021, and last revised on December 2, 2021.

Notes:

1. THIS EXHIBIT MAY BE REPLACED BY A LAND SURVEY AND/OR CONSTRUCTION DRAWINGS OF THE PREMISES ONCE RECEIVED BY TENANT.
2. ANY SETBACK OF THE PREMISES FROM THE PROPERTY'S BOUNDARIES SHALL BE THE DISTANCE REQUIRED BY THE APPLICABLE GOVERNMENT AUTHORITIES.
3. WIDTH OF ACCESS ROAD SHALL BE THE WIDTH REQUIRED BY THE APPLICABLE GOVERNMENT AUTHORITIES, INCLUDING POLICE AND FIRE DEPARTMENTS.
4. THE TYPE, NUMBER AND MOUNTING POSITIONS AND LOCATIONS OF ANTENNAS AND TRANSMISSION LINES ARE ILLUSTRATIVE ONLY. ACTUAL TYPES, NUMBERS AND MOUNTING POSITIONS MAY VARY FROM WHAT IS SHOWN ABOVE.



TITLE EXCEPTIONS

THIS SURVEY WAS COMPLETED WITH THE AID OF TITLE WORK PREPARED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, ISSUE DATE OF MARCH 18, 2021, BEING ORDER NUMBER 34093552, FOR THE PARENT PARCEL. TO DETERMINE THE IMPACTS OF EXISTING TITLE EXCEPTIONS.

[NO EXCEPTIONS WERE CONTAINED IN THE ABOVE REFERENCED TITLE DOCUMENT.]

GPS NOTES

THE FOLLOWING GPS STATISTICS UPON WHICH THIS SURVEY IS BASED HAVE BEEN PRODUCED AT THE 95% CONFIDENCE LEVEL:

POSITIONAL ACCURACY: 0.03 FEET (HOR); 0.03 FEET (VERT)
TYPE OF EQUIPMENT: SECKNAV ZENITH35 PRO BASE AND ROVER, DUAL FREQUENCY
TYPE OF GPS FIELD PROCEDURE: ONLINE POSITION USER INTERFACE
DATES OF SURVEY: 03/16/2021
DATUM / EPOCH: NAD_83(2011)(EPOCH:2010.0000)
PUBLISHED / FIXED CONTROL USE: N/A
GEOID MODEL: 18
COMBINED GRID FACTOR(S): 0.77745300 CENTERED ON THE GPS BASE POINT AS SHOWN HEREON.
CONVERGENCE ANGLE: 1.00001048°
BENCHMARKS USED: DK3326, DJ9538, DK7555

PARENT PARCEL

OWNER: RICHARD E. CORDER AND SHERYL F. CORDER

SITE ADDRESS: JOE NEAL ROAD, PARKERS LAKE, KY 42634

PARCEL ID: 099-00-00-019.00

AREA: 21.8 ACRES PER TAX ASSESSOR

ALL ZONING INFORMATION SHOULD BE VERIFIED WITH THE PROPER ZONING OFFICIALS

REFERENCE: DEED BOOK 205 PAGE 106

VICINITY MAP
NOT TO SCALE

GENERAL NOTES

* THIS SPECIFIC PURPOSE SURVEY IS FOR THE LEASED PREMISES AND EASEMENTS ONLY. THIS SPECIFIC PURPOSE SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF HARMONI TOWERS AND EXCLUSIVELY FOR THE TRANSFERRAL OF THE LEASED PREMISES AND THE RIGHTS OF EASEMENT SHOWN HEREON AND SHALL NOT BE USED AS AN EXHIBIT OR EVIDENCE IN THE FEE SIMPLE TRANSFERRAL OF THE PARENT PARCEL, NOR ANY PORTION OR PORTIONS THEREOF. BOUNDARY INFORMATION SHOWN HEREON HAS BEEN COMPILED FROM TAX MAPS AND DEED DESCRIPTIONS ONLY. NO BOUNDARY SURVEY OF THE PARENT PARCEL WAS PERFORMED.

THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.

THE FIELD DATA UPON WHICH THIS SPECIFIC PURPOSE SURVEY IS BASED HAS A CLOSURE PRECISION OF ONE FOOT IN 10,000+ FEET AND AN ANGULAR ERROR OF 5.0" PER ANGLE POINT AND WAS NOT ADJUSTED FOR CLOSURE.

EQUIPMENT USED FOR ANGULAR & LINEAR MEASUREMENTS: LEICA TPS 1200 ROBOTIC & SECKNAV ZENITH 35. (DATE OF LAST FIELD VISIT: 11/16/2020)

THE 2' CONTOURS AND SPOT ELEVATIONS SHOWN ON THIS SPECIFIC PURPOSE SURVEY ARE ADJUSTED TO NAVD 88 DATUM (COMPUTED USING GEOID18 AND HAVE A VERTICAL ACCURACY OF ± 1'. CONTOURS OUTSIDE THE IMMEDIATE SITE AREA ARE APPROXIMATE.

BEARINGS SHOWN ON THIS SPECIFIC PURPOSE SURVEY ARE BASED ON GRID NORTH (NAD 83) KENTUCKY SINGLE ZONE.

PER THE FEMA FLOODPLAIN MAPS, THE SITE IS LOCATED IN AN AREA DESIGNATED AS ZONE X (AREA OF MINIMAL FLOOD HAZARD), COMMUNITY PANEL NO.: 21147C0150C DATED: 09/16/2019

NO WETLAND AREAS HAVE BEEN INVESTIGATED BY THIS SPECIFIC PURPOSE SURVEY.

ALL ZONING INFORMATION SHOULD BE VERIFIED WITH THE PROPER ZONING OFFICIALS.

ANY UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM ABOVE GROUND FIELD SURVEY INFORMATION. THE SURVEYOR MAKES NO GUARANTEES THAT ANY UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT ANY UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED ANY UNDERGROUND UTILITIES.

SURVEYOR'S CERTIFICATE

I, G. DARRELL TAYLOR, A KENTUCKY PROFESSIONAL LAND SURVEYOR, CERTIFY THAT THE INFORMATION SHOWN HEREON WAS COMPILED USING DATA FROM AN ACTUAL FIELD SURVEY MADE UNDER MY DIRECT SUPERVISION BY METHOD OF RANDOM TRAVERSE WITH SIDE SHOTS. THE UNADJUSTED PRECISION RATIO OF THE TRAVERSE EXCEEDED 1:10,000 AND WAS NOT ADJUSTED FOR CLOSURE. THIS SURVEY MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR AN URBAN SURVEY AS ESTABLISHED BY THE STATE OF KENTUCKY, PER 201 KAR 18:150 AND IN EFFECT ON THE DATE OF THIS SURVEY.

G. DARRELL TAYLOR, PLS #4179 — 10/08/2021 DATE

SURVEY NOT VALID WITHOUT SHEET 2 & 3.

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

STATE of KENTUCKY
G. DARRELL TAYLOR
4179
LICENSED PROFESSIONAL LAND SURVEYOR

NO.	DATE	REVISION
1	8/11/2021	R/W UPDATE
2	10/08/2021	HOA/DR UPDATE - GJH

* SPECIFIC PURPOSE SURVEY PREPARED BY:

POINT TO POINT LAND SURVEYORS
100 Governors Trace, Ste. 103
Peachtree City, GA 30269
(p) 678.565.4440 (f) 678.565.4497
(w) pointtopointsurvey.com

SPECIFIC PURPOSE SURVEY PREPARED FOR:

HARMONI
10801 EXECUTIVE CENTER DRIVE
SHANNON BLDG., STE 100
LITTLE ROCK, AR 72211

PARKERS LAKE

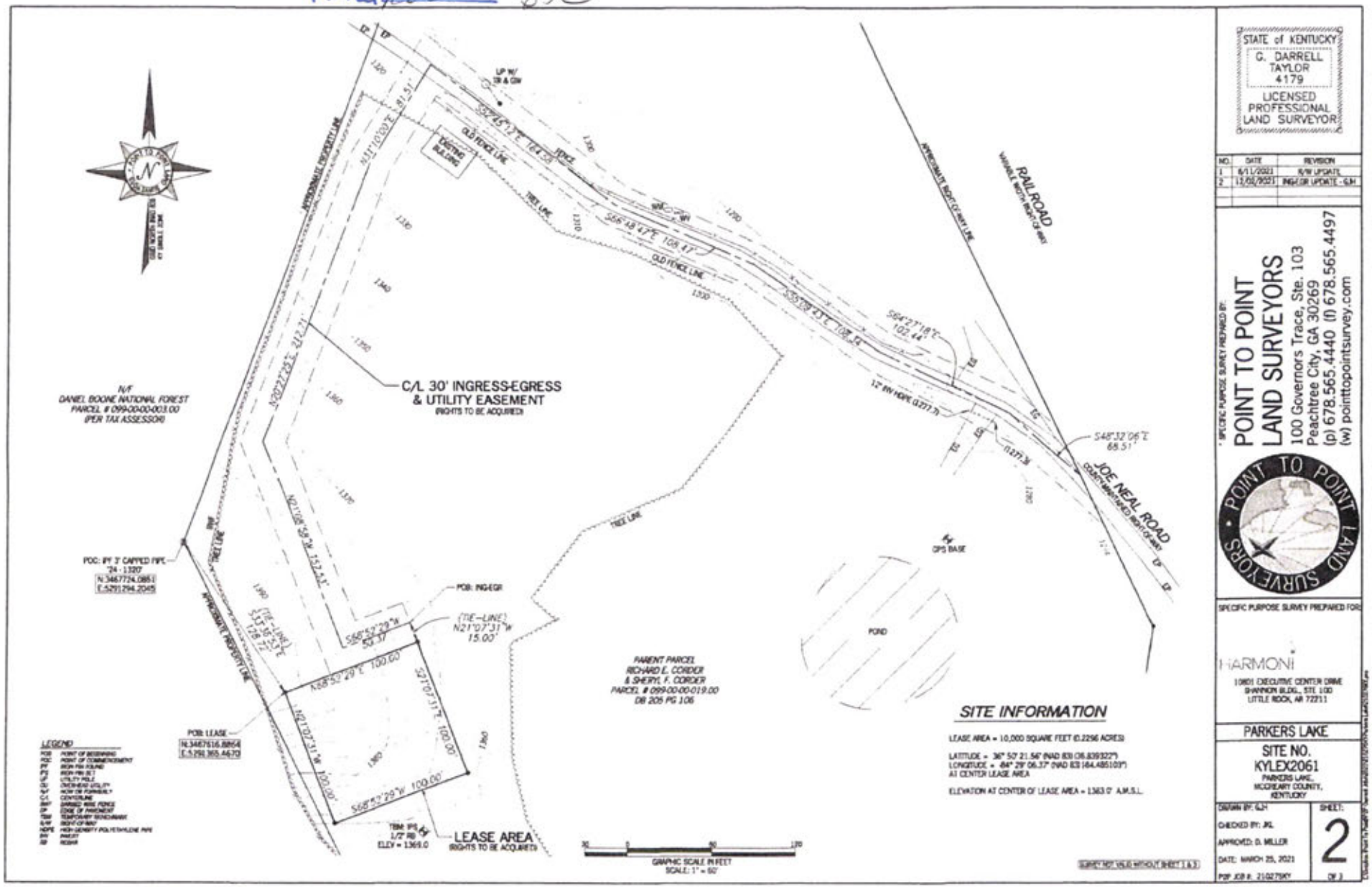
SITE NO.
KYLEX2061
PARKERS LAKE,
MCCREARY COUNTY,
KENTUCKY

DRAWN BY: GJH
CHECKED BY: JKL
APPROVED: D. MILLER
DATE: MARCH 25, 2021
P2P JOB #: 21027SKY

SHEET: 1 OF 3

Access drive to Lease area to be asphalt up to 500ft.

initial RLL 8/4/21



SITE INFORMATION

LEASE AREA = 10,000 SQUARE FEET (0.2296 ACRES)

LATITUDE = 36° 50' 21.56" (NAD 83) (36.839322°)
LONGITUDE = -84° 29' 06.37" (NAD 83) (-84.485103°)
AT CENTER LEASE AREA

ELEVATION AT CENTER OF LEASE AREA = 1363.0' A.M.S.L.

SURVEY NOT VALID WITHOUT SHEET 1 & 2

STATE of KENTUCKY
C. DARRELL TAYLOR
4179
LICENSED PROFESSIONAL LAND SURVEYOR

NO.	DATE	REVISION
1	6/11/2021	R/W UPDATE
2	12/02/2021	INGR/EGR UPDATE - G.H.

SPECIFIC PURPOSE SURVEY PREPARED BY:

POINT TO POINT
LAND SURVEYORS
100 Governors Trace, Ste. 103
Peachtree City, GA 30269
(p) 678.565.4440 (f) 678.565.4497
(w) pointtopointsurvey.com

SPECIFIC PURPOSE SURVEY PREPARED FOR:

HARMONI
10801 EXECUTIVE CENTER DRIVE
SHANNON BLDG., STE 100
LITTLE ROCK, AR 72211

PARKERS LAKE

SITE NO.
KYLEX2061
PARKERS LAKE,
MCCREARY COUNTY,
KENTUCKY

DRAWN BY: GH
CHECKED BY: JG
APPROVED: D. MILLER
DATE: MARCH 25, 2021
POP JOB #: 210275KY

SHEET: 2 OF 3

LEGAL DESCRIPTION SHEET

PARENT PARCEL

(PER COMMITMENT NO. 34093552)

AN INTEREST IN LAND, SAID INTEREST BEING OVER A PORTION OF THE FOLLOWING DESCRIBED PARENT PARCEL:

A CERTAIN TRACT OF LAND LYING AND BEING LOCATED AT PARKERS LAKE IN MCCREARY COUNTY, KENTUCKY, AND DESCRIBED AS FOLLOWS:

BEGINNING AT A LARGE PINE ON A RIDGE WELL MARKED A CORNER COMMON TO A CUMBERLAND NATIONAL FOREST UNIT; THENCE THEIR LINE S 27 E 40 POLES TO A HICKORY STAND MARKED IN THEIR LINE A CORNER TO A ELLA WALKER TRACT OF LAND; THENCE LEAVING THE SAID FOREST PARCEL AND WITH THE WALKER PARCEL REVERSING N 70 DEG. 30 MIN. E 36 POLES TO A SET STONE AND SMALL PINE ON A SLATE DUMP HER CORNER LOCATED IN THE RAILROAD RIGHT OF WAY; THENCE THEIR LINES N 26 DEG. W 44 POLES TO A BLACK OAK MARKED AT TURN OF THEIR FENCE; THENCE THEIR LINE N 36 DEG. E 18 POLES CROSSING THE DRAIN BELOW THE OLD DAM TO A SET STONE WITNESS BY A SMALL POPLAR AND MAPLE, THEIR CORNER NEAR THE RAILROAD; THENCE THEIR FENCE LINE N 32 W 27 POLES TO A SET STONE IN THEIR FENCE LINE WHERE A FOREST LINE CROSSES THE SAID RIGHT OF WAY; THENCE LEAVING THE SAID RAILWAY RIGHT OF WAY AND WITH THE SAID FOREST LINE S 20 DEG. W 68 POLES TO THE PLACE OF BEGINNING, CONTAINING 21-6/10TH ACRES MORE OR LESS.

AND BEING THE SAME PROPERTY CONVEYED TO RICHARD E. CORDER AND SHERYL F. CORDER FROM BRUCE WATTERS BY GENERAL WARRANTY DEED DATED NOVEMBER 26, 2014 AND RECORDED DECEMBER 2, 2014 IN DEED BOOK 0205, PAGE 106.

TAX PARCEL NO. 099-00-00-019.00

LEASE AREA

ALL THAT TRACT OR PARCEL OF LAND LYING AND BEING IN PARKERS LAKE, MCCREARY COUNTY, KENTUCKY, AND BEING A PORTION OF THE LANDS OF RICHARD E. CORDER AND SHERYL F. CORDER, AS RECORDED IN DEED BOOK 205, PAGE 106, MCCREARY COUNTY RECORDS, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

TO FIND THE POINT OF BEGINNING, COMMENCE AT A CAPPED 3-INCH PIPE FOUND, STAMPED "24-1320", AT THE WESTERLY PROPERTY CORNER OF SAID CORDER LANDS, SAID POINT HAVING A KENTUCKY GRID NORTH, NAD 83, SINGLE ZONE VALUE OF N:3467724.0851 E:5291294.2045; THENCE RUNNING ALONG A TIE-LINE, SOUTH 33°36'53" EAST, 128.72 FEET TO A POINT HAVING A KENTUCKY GRID NORTH, NAD 83, SINGLE ZONE VALUE OF N:3467616.8864 E:5291365.4670, AND THE TRUE POINT OF BEGINNING; THENCE RUNNING, NORTH 68°52'29" EAST, 100.00 FEET TO A POINT; THENCE, SOUTH 21°07'31" EAST, 100.00 FEET TO A POINT; THENCE, SOUTH 68°52'29" WEST, 100.00 FEET TO A POINT; THENCE, NORTH 21°07'31" WEST, 100.00 FEET TO A POINT AND THE POINT OF BEGINNING.

BEARINGS BASED ON KENTUCKY GRID NORTH, NAD 83, SINGLE ZONE.

SAID TRACT CONTAINS 0.2296 ACRES (10,000 SQUARE FEET), MORE OR LESS.

30' INGRESS-EGRESS & UTILITY EASEMENT

TOGETHER WITH A 30-FOOT WIDE INGRESS-EGRESS AND UTILITY EASEMENT LYING AND BEING IN PARKERS LAKE, MCCREARY COUNTY, KENTUCKY, MEASURING 15 FEET EACH SIDE OF CENTERLINE, THE SIDE LINES OF WHICH ARE TO BE LENGTHENED AND SHORTENED TO TERMINATE AT THE WEST RIGHT-OF-WAY LINE OF AN EXISTING RAILROAD, AND BEING A PORTION OF THE LANDS OF RICHARD E. CORDER AND SHERYL F. CORDER, AS RECORDED IN DEED BOOK 205, PAGE 106, MCCREARY COUNTY RECORDS, AND BEING MORE PARTICULARLY DESCRIBED BY THE FOLLOWING CENTERLINE DATA:

TO FIND THE POINT OF BEGINNING, COMMENCE, AT A CAPPED 3-INCH PIPE FOUND, STAMPED "24-1320", AT THE WESTERLY PROPERTY CORNER OF SAID CORDER LANDS, SAID POINT HAVING A KENTUCKY GRID NORTH, NAD 83, SINGLE ZONE VALUE OF N:3467724.0851 E:5291294.2045; THENCE RUNNING ALONG A TIE-LINE, SOUTH 33°36'53" EAST, 128.72 FEET TO A POINT ON THE LEASE AREA HAVING A KENTUCKY GRID NORTH, NAD 83, SINGLE ZONE VALUE OF N:3467616.8864 E:5291365.4670; THENCE RUNNING, NORTH 68°52'29" EAST, 100.00 FEET TO A POINT; THENCE LEAVING THE LEASE AREA AND RUNNING ALONG A TIE-LINE, NORTH 21°07'31" WEST, 15.00 FEET TO A POINT AND THE TRUE POINT OF BEGINNING; THENCE, SOUTH 68°52'29" WEST, 50.37 FEET TO A POINT; THENCE, NORTH 21°08'58" WEST, 157.53 FEET TO A POINT; THENCE, NORTH 20°27'25" EAST, 212.71 FEET TO A POINT; THENCE, NORTH 31°10'00" EAST, 81.51 FEET TO A POINT; THENCE, SOUTH 52°45'12" EAST, 164.58 FEET TO A POINT; THENCE, SOUTH 66°48'47" EAST, 108.47 FEET TO A POINT; THENCE, SOUTH 55°09'43" EAST, 108.34 FEET TO A POINT; THENCE, SOUTH 64°27'18" EAST, 102.44 FEET TO A POINT; THENCE, SOUTH 48°32'06" EAST, 68.51 FEET TO THE ENDING AT A POINT ON THE WEST RIGHT-OF-WAY LINE OF AN EXISTING RAILROAD.

BEARINGS BASED ON KENTUCKY GRID NORTH, NAD 83, SINGLE ZONE.

SURVEY NOT VALID WITHOUT SHEET 1 & 2

STATE of KENTUCKY
G. DARRELL TAYLOR
4179
LICENSED PROFESSIONAL LAND SURVEYOR

NO.	DATE	REVISION
1	8/11/2021	R/W UPDATE
2	12/02/2021	NG4DR UPDATE - GJH

* SPECIFIC PURPOSE SURVEY PREPARED BY:
POINT TO POINT LAND SURVEYORS
100 Governors Trace, Ste. 103
Peachtree City, GA 30269
(p) 678.565.4440 (f) 678.565.4497
(w) pointtopointsurvey.com

SPECIFIC PURPOSE SURVEY PREPARED FOR:

HARMONI
10801 EXECUTIVE CENTER DRIVE
SHANNON BLDG., STE 100
LITTLE ROCK, AR 72211

PARKERS LAKE

SITE NO.
KYLEX2061
PARKERS LAKE,
MCCREARY COUNTY,
KENTUCKY

DRAWN BY: GJH
CHECKED BY: JKL
APPROVED: D. MILLER
DATE: MARCH 25, 2021
PDP JOB #: 21007SKY

SHEET: 3 OF 3

EXHIBIT J
NOTIFICATION LISTING

Parkers Lake Relo – Notice List

CORDER RICHARD E & SHERYL F
170 HWY 90
PARKERS LAKE KY 42634

DANIEL BOONE NATIONAL FOREST
1700 BYPASS RD
LONDON, KY 40744

CORDER RICHARD E & SHERYL
170 HWY 90
PARKERS LAKE KY 42634

COFFEY FRANCIS & DEBBIE
PO BOX 125
PARKERS LAKE KY 42634

SMITH APRIL M & JERRY
PO BOX 897
WHITLEY CITY KY 42653

OWENS GARY
PO BOX 63
PARKERS LAKE KY 42634

CORDER SHIRLEY W
128 P P WALKER LN
PARKERS LAKE KY 42634

VANOVER DONALD LEE
7335 HWY 90
PARKERS LAKE KY 42634

MILLS ZELLA FAYE
548 VANOVER RDG RD
PARKERS LAKE KY 42634

CORDER RICHARD E & SHERYL
170 HWY 90
PARKERS LAKE KY 42634

EXHIBIT K
COPY OF PROPERTY OWNER NOTIFICATION

PIKE LEGAL

1578 Highway 44 East, Suite 6
P.O. Box 369
Shepherdsville, KY 40165-0369
Phone (502) 955-4400 or (800) 516-4293
Fax (502) 543-4410 or (800) 541-4410

Notice of Proposed Construction of Wireless Communications Facility Site Name: Parkers Lake Relo

Dear Landowner:

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility and Harmoni Towers LLC, a Delaware limited liability company have filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at 141 Joe Neal Road, Parkers Lake, KY 42634 (E-911) / Joe Neal Road, Parkers Lake, KY 42634 (PARCEL) (36° 50' 21.56" North latitude, 84° 29' 06.37" West longitude). The proposed facility will include a 2-foot tall foundation below a 255-foot tall tower, with an approximately 10-foot tall lightning arrestor attached at the top, for a total height of 267-feet, plus related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

This notice is being sent to you because the County Property Valuation Administrator's records indicate that you may own property that is within a 500' radius of the proposed tower site or contiguous to the property on which the tower is to be constructed. You have a right to submit testimony to the Kentucky Public Service Commission ("PSC"), either in writing or to request intervention in the PSC's proceedings on the application. You may contact the PSC for additional information concerning this matter at: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2022-00062 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. AT&T Mobility's radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the area. Please feel free to contact us toll free at (800) 516-4293 if you have any comments or questions about this proposal.

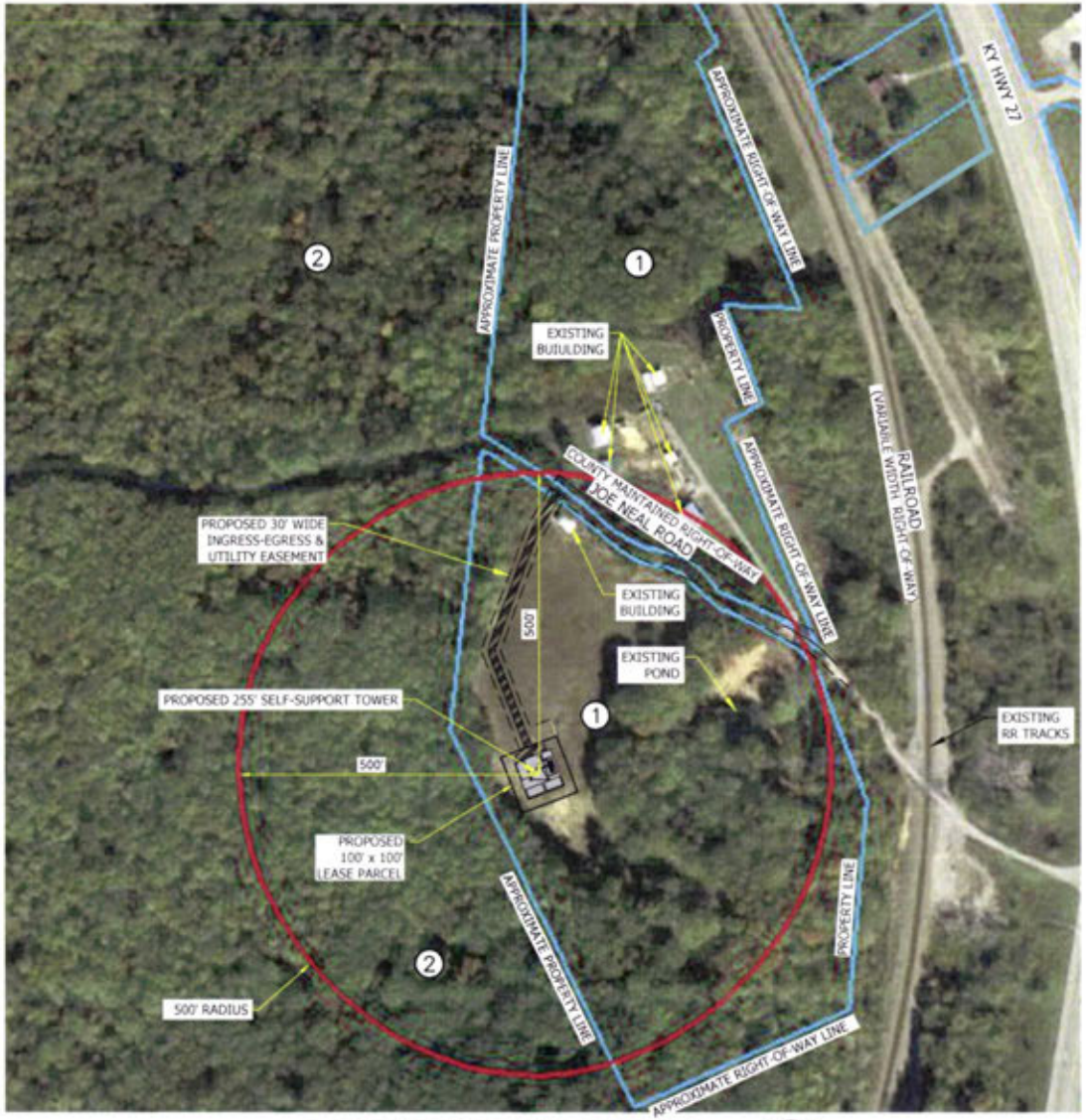
Sincerely,
David A. Pike
Attorney for Applicants

enclosures

Driving Directions to Proposed Tower Site

1. Beginning at 1 North Main Street, Whitley City, KY 42653, head north on Main Street toward Maple Commodity Road / Sampson Ave and travel approximately 0.1 miles.
2. Turn right onto Jesus Hill Road and travel approximately 0.1 miles.
3. Turn left onto US-27 N and travel approximately 7.7 miles.
4. Turn left onto Joe Neal Road and travel approximately 0.2 miles.
5. The site is located on the left. The E-911 address for the site is: 141 Joe Neal Road, Parkers Lake, KY 42634. The parcel address for the site is: Joe Neal Road, Parkers Lake, KY 42634.
6. The site coordinates are:
    a. North 36 deg 50 min 21.56 sec
    b. West 84 deg 29 min 06.37 sec

Prepared by:
Chris Shouse
Pike Legal Group
1578 Highway 44 East, Suite 6
P.O. Box 396
Shepherdsville, KY 40165-3069
Telephone: 502-955-4400 or 800-516-4293



#	OWNER	ADDRESS	PID	REF
1	RICHARD E. & SHERYL F. CORDER	170 HIGHWAY 90 PARKERS LAKE, KY 42634	099-00-00-019.00	DB 205 PG 106
2	DANIEL BOONE NATIONAL FOREST	-	099-00-00-003.00	TAX ASSESSOR

NOTES:

1. PVA INFORMATION WAS OBTAINED ON 12/9/2021 FROM THE OFFICIAL RECORDS OF THE COUNTY'S PROPERTY VALUATION ADMINISTRATOR.
2. THIS MAP IS FOR GENERAL INFORMATION PURPOSES ONLY AND IS NOT A BOUNDARY SURVEY.
3. NOT FOR RECORDING OR PROPERTY TRANSFER.
4. REFER TO SHEET C-1.1 FOR ADDITIONAL ADJACENT PROPERTIES BEYOND THE 500' ADJOINER'S PROPERTY RADIUS.

1 500' RADIUS & ADJOINER'S DRAWING
SCALE 0' 100' 200' 300' 400' 1"=200'

N

CALL KENTUCKY ONE CALL
(800) 752-6007
CALL 3 WORKING DAYS
BEFORE YOU DIG!

B+T GRP

at&t

HARMONI

HARMONI TOWERS
PARKERS LAKE
PARKER LAKE RELO
FA# 15435106/10134060
PACE# MRTNK052247
PT# 245760XDBG
(PROPERTY) JOE NEAL ROAD
(1911) 141 JOE NEAL ROAD
PARKERS LAKE, KY 42634
MCCREARY COUNTY
PROPOSED 255' SELF-SUPPORT TOWER

PROJECT NO: [illegible]
CHECKED BY: MAS

ISSUED FOR

REV	DATE	DRWN	DESCRIPTION
A	12/14/21	DLS	CLIENT REVIEW
0	01/07/22	MAS	FINAL

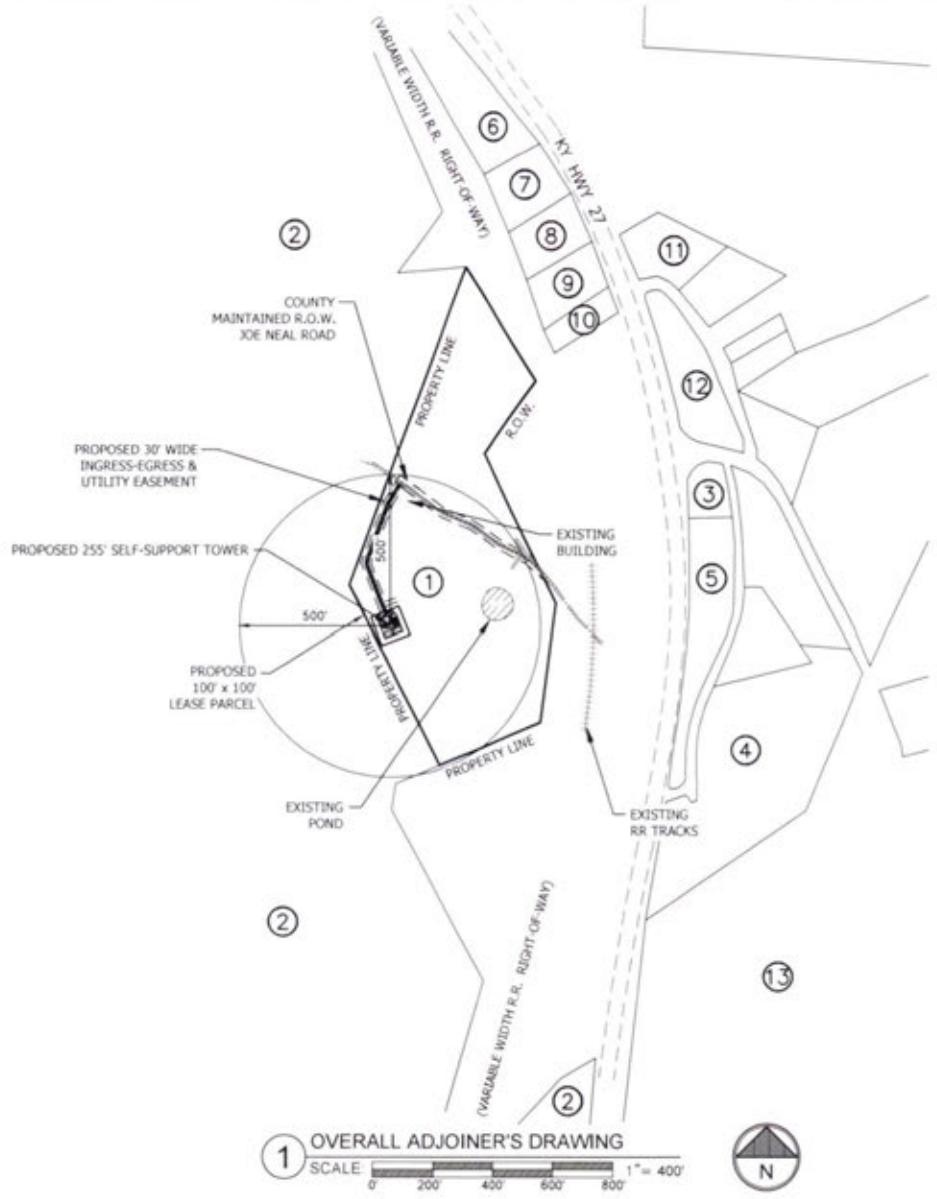
B&T ENGINEERING, INC.
4011
Expires 12/31/22

STATE OF KENTUCKY
BRAD [illegible]
25311
LICENSED PROFESSIONAL ENGINEER
1/7/22

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

500' RADIUS & ADJOINER'S DRAWING

SHEET NUMBER:
C-1.0



1 OVERALL ADJOINER'S DRAWING

SCALE: 0 200' 400' 600' 800' 1" = 400'

N

#	OWNER	ADDRESS	PID	REF
1	RICHARD E. & SHERYL F. CORDER	170 HIGHWAY 90 PARKERS LAKE, KY 42634	099-00-00-019.00	DB 205 PG 106
2	DANIEL BOONE NATIONAL FOREST	-	099-00-00-003.00	TAX ASSESSOR
3	UNKNOWN	-	099-00-00-022.00	TAX ASSESSOR
4	RICHARD E. & SHERYL F. CORDER	170 HIGHWAY 90 PARKERS LAKE, KY 42634	099-00-00-024.00	TAX ASSESSOR
5	UNKNOWN	-	099-00-00-026.00	TAX ASSESSOR
6	UNKNOWN	-	113-00-00-003.00	TAX ASSESSOR
7	FRANCIS & DEBBIE COFFEY	PO BOX 125 PARKERS LAKE, KY 42634	099-00-00-039.00	TAX ASSESSOR
8	APRIL M. & JERRY SMITH	PO BOX 897 WHITLEY CITY, KY 42653	099-00-00-038.00	TAX ASSESSOR
9	GARY OWENS	PO BOX 63 PARKERS LAKE, KY 42634	099-00-00-037.00	TAX ASSESSOR
10	UNKNOWN	-	099-00-00-035.00	TAX ASSESSOR
11	SHIRLEY W. CORDER	128 PP WALKER LN PARKERS LAKE, KY 42634	099-00-00-036.00	TAX ASSESSOR
12	DONALD LEE VANOVER	7335 HWY 90 PARKERS LAKE, KY 42634	099-00-00-030.00	TAX ASSESSOR
13	UNKNOWN	-	099-00-00-003.00	TAX ASSESSOR

NOTES:

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CALL KENTUCKY ONE CALL
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CALL 3 WORKING DAYS
BEFORE YOU DIG!

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at&t

HARMONI

HARMONI TOWERS
PARKERS LAKE
PARKER LAKE RELO
FA# 15435106/10134960
PACE# MRTNK052247
PTI# 245740XDBG
(PROPERTY) JOE NEAL ROAD
(1911) 141 JOE NEAL ROAD
PARKERS LAKE, KY 42634
MCCREARY COUNTY
PROPOSED 255' SELF-SUPPORT TOWER

PROJECT NO: [illegible]
CHECKED BY: MAS

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
A	12/14/21	DLS	CLIENT REVIEW
0	01/07/22	MAS	FINAL

B&T ENGINEERING, INC.
4011
Expires 12/31/22

STATE OF KENTUCKY
BRAD F. KILANOWSKI
25311
LICENSED PROFESSIONAL ENGINEER
1/7/22

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OVERALL ADJOINER'S DRAWING

SHEET NUMBER:
C-1.1

EXHIBIT L
COPY OF COUNTY JUDGE/EXECUTIVE NOTICE

PIKE LEGAL

1578 Highway 44 East, Suite 6
P.O. Box 369
Shepherdsville, KY 40165-0369
Phone (502) 955-4400 or (800) 516-4293
Fax (502) 543-4410 or (800) 541-4410

VIA CERTIFIED MAIL

Jimmie W. Greene, II
County Judge Executive
P. O. Box 579
1 North Main Street
Whitley City, KY 42653

RE: Notice of Proposal to Construct Wireless Communications Facility
Kentucky Public Service Commission Docket No. 2022-00062
Site Name: Parkers Lake

Dear Judge/Executive:

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility and Harmoni Towers LLC, a Delaware limited liability company have filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at 141 Joe Neal Road, Parkers Lake, KY 42634 (E-911) / Joe Neal Road, Parkers Lake, KY 42634 (PARCEL) (36° 50' 21.56" North latitude, 84° 29' 06.37" West longitude). The proposed facility will include a 2-foot tall foundation below a 255-foot tall tower, with an approximately 10-foot tall lightning arrestor attached at the top, for a total height of 267-feet, plus related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

You have a right to submit comments to the PSC or to request intervention in the PSC's proceedings on the application. You may contact the PSC at: Executive Director, Public Service Commission, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2022-00062 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. AT&T Mobility's radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the area. Please feel free to contact us with any comments or questions you may have.

Sincerely,
David A. Pike
Attorney for Applicants
enclosures

Driving Directions to Proposed Tower Site

1. Beginning at 1 North Main Street, Whitley City, KY 42653, head north on Main Street toward Maple Commodity Road / Sampson Ave and travel approximately 0.1 miles.
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6. The site coordinates are:
    a. North 36 deg 50 min 21.56 sec
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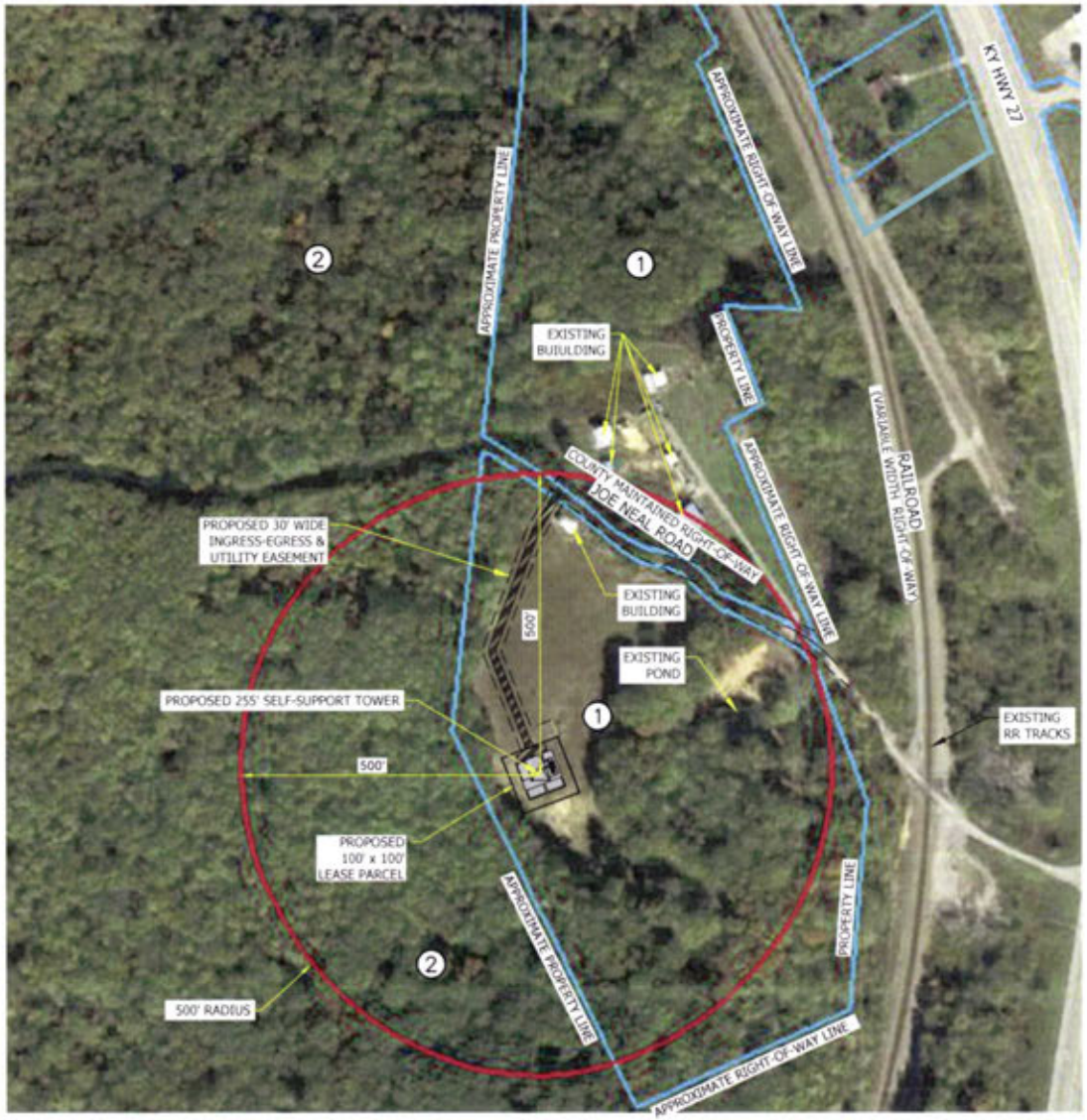
Prepared by:
Chris Shouse
Pike Legal Group
1578 Highway 44 East, Suite 6
P.O. Box 396
Shepherdsville, KY 40165-3069
Telephone: 502-955-4400 or 800-516-4293



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2	DANIEL BOONE NATIONAL FOREST	"	099-00-00-003.00	TAX ASSESSOR

NOTES:

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1 500' RADIUS & ADJOINER'S DRAWING

SCALE: 0' 100' 200' 300' 400' 1"=200'

N

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HARMONI TOWERS
PARKERS LAKE
PARKER LAKE RD
FA# 15435106/10134060
PACE # MRTNK053247
PTI# 245A0XDBG
(PROPERTY) JOE NEAL ROAD
(E911) 141 JOE NEAL ROAD
PARKERS LAKE, KY 42634
MCCREARY COUNTY
PROPOSED 255' SELF-SUPPORT TOWER

PROJECT NO: G054645.0021A
CHECKED BY: MAS

ISSUED FOR

REV	DATE	DRWN	DESCRIPTION
A	12/14/21	DLS	CLIENT REVIEW
0	01/07/22	MAS	FINAL

B&T ENGINEERING, INC.
4011
Expires 12/31/22

STATE OF KENTUCKY
BRADLEY J. ILAKOWSKI
25311
LICENSED PROFESSIONAL ENGINEER
1/7/22

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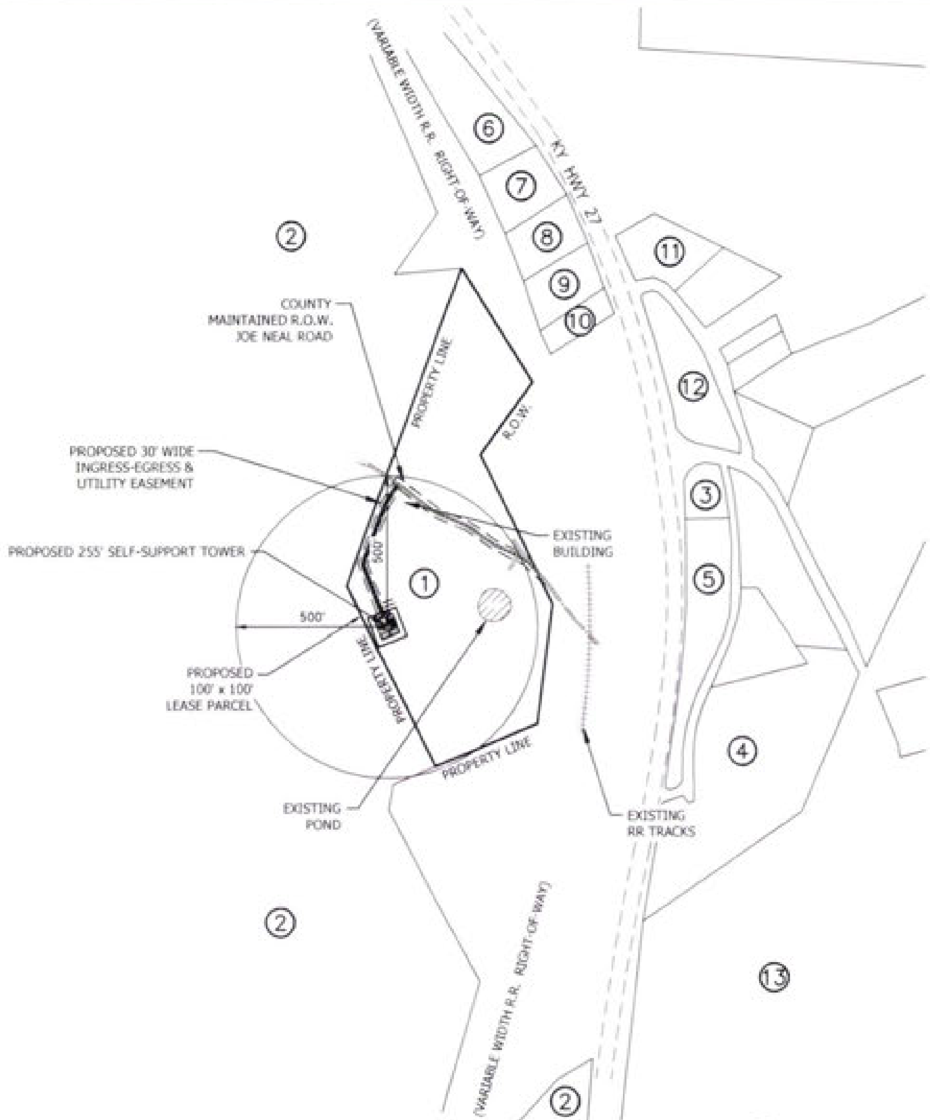
500' RADIUS & ADJOINER'S DRAWING

SHEET NUMBER:
C-1.0



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SCALE: 1" = 400' (0' 200' 400' 600' 800')

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(PROPERTY) JOE NEAL ROAD
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MCCREARY COUNTY
PROPOSED 255' SELF-SUPPORT TOWER

PROJECT NO: [illegible]
CHECKED BY: MAS

ISSUED FOR

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0	01/07/22	MAS	FINAL

B&T ENGINEERING, INC.
4011
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STATE OF KENTUCKY
BRAD R. MILANOWSKI
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LICENSED
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1/7/22

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OVERALL ADJOINER'S DRAWING

SHEET NUMBER:
C-1.1

EXHIBIT M
COPY OF POSTED NOTICES
AND NEWSPAPER NOTICE ADVERTISEMENT

SITE NAME: PARKERS LAKE RELO
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.

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility and Harmoni Towers LLC, a Delaware limited liability company 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; telephone: (800) 516-4293, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2022-00062 in your correspondence.

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility and Harmoni Towers LLC, a Delaware limited liability company 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; telephone: (800) 516-4293, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2022-00062 in your correspondence.

PIKE LEGAL

1578 Highway 44 East, Suite 6
P.O. Box 369
Shepherdsville, KY 40165-0369
Phone (502) 955-4400 or (800) 516-4293
Fax (502) 543-4410 or (800) 541-4410

VIA FAX: (606) 376-8609
VIA EMAIL: susie@tmcvoice.com

McCreary County Voice
P.O. Box 190
Whitley City, KY 42653

RE: Legal Notice Advertisement
Site Name: Parkers Lake Relo

Dear McCreary County Voice:

Please publish the following legal notice advertisement in the next edition of *The McCreary County Voice*:

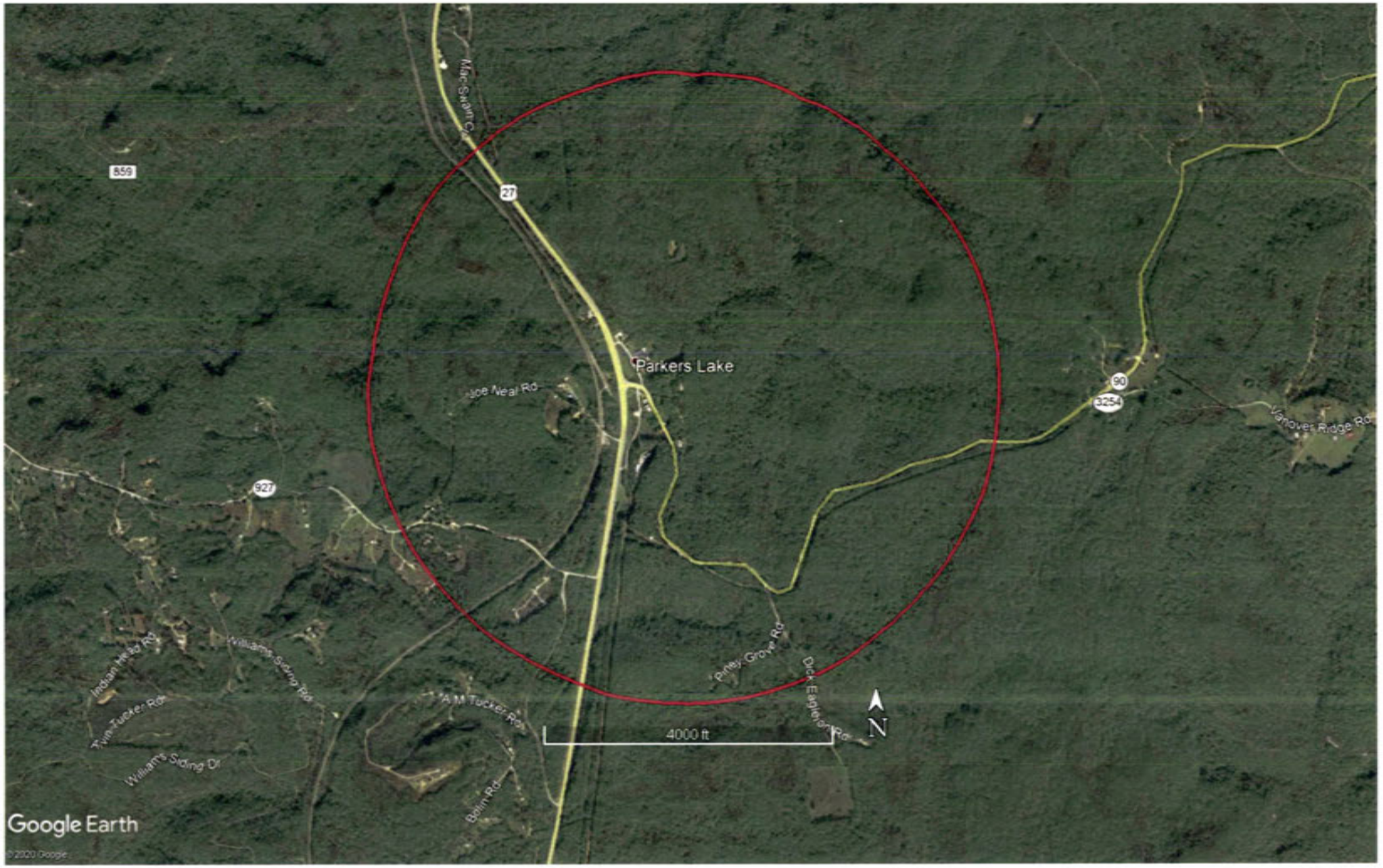
NOTICE

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility and Harmoni Towers LLC, a Delaware limited liability company have filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located on 141 Joe Neal Road, Parkers Lake, KY 42634 (E-911) / Joe Neal Road, Parkers Lake, KY 42634 (PARCEL) (36° 50' 21.56" North latitude, 84° 29' 06.37" West longitude). You may contact the PSC for additional information concerning this matter at: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2022-00062 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,
Chris Shouse
Pike Legal Group, PLLC

EXHIBIT N
COPY OF RADIO FREQUENCY DESIGN SEARCH AREA


Parkers Lake
Joe Neal Rd
Williams Siding Rd
Indian Head Rd
Twin Tucker Rd
Williams Siding Dr
A M Tucker Rd
Bellin Rd
Pitney Grove Rd
Dick Eagle Rd
Vanoves Ridge Rd
859
27
927
90
3254
4000 ft
N
Google Earth
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