

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the matter of:

THE APPLICATION OF EAST KENTUCKY NETWORK,)	
LLC FOR THE ISSUANCE OF A CERTIFICATE OF)	
PUBLIC CONVENIENCE AND NECESSITY TO)	CASE NO. 2021-00148
CONSTRUCT A TOWER IN LAWRENCE)	
COUNTY, KENTUCKY)	

East Kentucky Network, LLC d/b/a Appalachian Wireless, was granted authorization to provide cellular service in the KY-9 Cellular Market Area (CMA451) by the Federal Communications Commission (FCC). FCC license is included as Exhibit 1. East Kentucky Network, LLC merger documents were filed with the Commission on February 2, 2001 in Case No. 2001-022. East Kentucky Network, LLC is a Kentucky Limited Liability Company that was organized on June 16, 1998. East Kentucky Network, LLC is in good standing with the state of Kentucky.

In an effort to improve service in Lawrence County, pursuant to KRS 278.020 Subsection 1 and 807 KAR 5:001, East Kentucky Network, LLC is seeking the Commission's approval to construct a 300-foot self-supporting tower on a tract of land located near 5030 North Highway 201, Webbville, Lawrence County, Kentucky (38°05'33.61" N 82°50'20.94" W). A map and detailed directions to the site can be found in Exhibit 7.

Construction of the proposed tower is required by public convenience and necessity. Due to increasing demand for telecommunications service, the proposed tower is necessary to provide adequate coverage. The proposed tower will improve service in Lawrence County by providing an interconnection between East Kentucky Network, LLC's other sites thereby forming a cohesive network.

Exhibit 2 is a list of all Property owners according to the Property Valuation Administrator's record who own property within 500 feet of the proposed Tower and all property owners who own property contiguous to the property upon which construction is proposed in accordance with the Property Valuation Administrator's record.

Pursuant to 807 KAR 5:063 Section 1(1)(l), Section 1(m) and Section 2, all affected property owners according to the Property Valuation Administrator's record who own property within 500 feet of the proposed Tower or contiguous to the property upon which construction is proposed were notified by certified mail return receipt requested of East Kentucky Network, LLC's proposed construction and informed of their right to intervene. They were given the docket number under which this application is filed. Enclosed in Exhibit 2 is a copy of that notification.

Lawrence County has no formal local planning unit. In absence of this unit, the Lawrence County Judge Executive's office was notified by certified mail, return receipt requested, of East Kentucky Network, LLC's proposal and informed of their right to intervene. The Lawrence County Judge Executive's office was also given the docket number under which this application is filed. Enclosed in Exhibit 3 is a copy of that notification.

Notice of the location of the proposed construction was published in The Big Sandy News, April 14, 2021 edition. Enclosed is a copy of that notice in Exhibit 3. The Big Sandy News is the newspaper with the largest circulation in Lawrence County.

A geologist was employed to determine soil and rock types and to ascertain the distance to solid bedrock. The geotechnical report is enclosed as Exhibit 4.

A copy of the tower design information is enclosed as Exhibit 5. The proposed tower has been designed by engineers at World Tower Company and will be constructed under their

supervision. Their qualifications are evidenced in Exhibit 5 by the seal and signature of the registered professional engineer responsible for this project.

The tower will be erected by S & S Tower Services of St. Albans, West Virginia. S & S Tower Services has vast experience in the erection of communications towers. Their qualifications are described in Exhibit 13.

FAA and Kentucky Airport Zoning Commission determinations are included as Exhibit 6.

No Federal Communications Commission approval is required prior to construction of this facility. Once service is established from this tower we must immediately notify the Federal Communications Commission of its operation. Prior approval is needed only if the proposed facility increases the size of the cellular geographic service area. This cell site will not expand the cellular geographic service area.

Two notice signs meeting the requirements prescribed by 807 KAR 5:063, Section 1(2), measuring at least two (2) feet in height and four (4) feet in width and containing all required language in letters of required height, have been posted, one at a visible location on the proposed site and one on the nearest public road. The two signs were posted on April 9, 2021, and will remain posted for at least two weeks after filing of this application as specified.

Enclosed in Exhibit 8 is a copy of East Kentucky Network, LLC's Memorandum of Lease for the site location along with a lot description.

The proposed construction site is on a very rugged mountain top some feet from the nearest structure. Prior to construction, the site was wooded.

East Kentucky Network, LLC's operation will not affect the use of nearby land nor its value. No more suitable site exists in the area. A copy of the search area map is enclosed in Exhibit 7. No other tower capable of supporting East Kentucky Network, LLC's load exists in the general area; therefore, there is no opportunity for co-location of our facilities with anyone else.

Enclosed, and filed as Exhibit 9 is a survey of the proposed tower site signed by a Kentucky registered professional engineer.

Exhibit 10 is a map in one (1) inch equals 200 feet scale identifying every structure and every owner of real estate within 500 feet of the proposed tower and all property owners who own contiguous property to the property upon which construction is proposed.

Exhibit 11 contains a vertical sketch of the tower supplied by Steve Haywood, Kentucky registered professional engineer.

Enclosed as Exhibit 12 is a list of utilities, corporations, or persons with whom the tower is likely to compete.

[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

WHEREFORE, Applicant, having met the requirements of KRS 278.020(1), 278.650, 278.665, and all applicable rules and regulations of the PSC, respectfully requests that the PSC accept the foregoing Application for filing and grant a Certificate of Public Convenience and Necessity to construct and operate the proposed tower.

The foregoing document was prepared by Krystal Branham, Regulatory Compliance Attorney for East Kentucky Network, LLC d/b/a Appalachian Wireless. All related questions or correspondence concerning this filing should be mailed to East Kentucky Network, LLC d/b/a/ Appalachian Wireless, 101 Technology Trail, Ivel, KY 41642.

SUBMITTED BY: *Lynn Haney* DATE: *4/14/2021*
Lynn Haney, Regulatory Compliance Director

APPROVED BY: *W.A. Gillum* DATE: *4/14/2021*
W.A. Gillum, General Manager

ATTORNEY: *Krystal Branham* DATE: *4/13/2021*
Hon. Krystal Branham, Attorney

CONTACT INFORMATION:

W.A. Gillum, General Manager
Phone: (606) 477-2355, Ext. 111
Email: wagillum@ekn.com

Lynn Haney, Regulatory Compliance Director
Phone: (606) 477-2355, Ext. 1007
Email: lhaney@ekn.com

Krystal Branham, Attorney
Phone: (606) 477-2355, Ext. 1009
Email: kbranham@ekn.com

Mailing Address:

**East Kentucky Network, LLC
d/b/a Appalachian Wireless
101 Technology Trail
Ivel, KY 41642**

1	FCC License
2	Copies of Cell Site Notice to Land Owners
3	Notifications of County Judge Executive and Newspaper
4	Universal Soil Bearing Analysis
5	Tower Design
6	FAA and KAZC Determination
7	Driving Directions from County Court House and Map to SUitable Scale
8	Memorandum of Lease for Proposed Site with Legal Description
9	Survey of Site Signed/Sealed by Professional Engineer Registered in State of Kentucky
10	Site Survey Map with Property Owners Identified in Accordance with PVA of County
11	Vertical Profile Sketch of Proposed Tower
12	List of Competitors
13	Qualifications
14	
15	

Exhibit 1

ULS License

Cellular License - KNKN880 - East Kentucky Network, LLC d/b/a Appalachian Wireless

Call Sign	KNKN880	Radio Service	CL - Cellular
Status	Active	Auth Type	Regular

Market

Market	CMA451 - Kentucky 9 - Elliott	Channel Block	B
Submarket	0	Phase	2

Dates

Grant	08/30/2011	Expiration	10/01/2021
Effective	09/04/2014	Cancellation	

Five Year Buildout Date

10/23/1996

Control Points

1 U.S. 23, HAROLD, KY

Licensee

FRN	0001786607	Type	Limited Liability Company
-----	------------	------	---------------------------

Licensee

East Kentucky Network, LLC d/b/a Appalachian Wireless 101 Technology Trail Ivel, KY 41642 ATTN W.A. Gillum, General Manager / CEO	P:(606)477-2355
--	-----------------

Contact

Lukas, Nace, Gutierrez & Sachs, LLP Pamela L Gist Esq 8300 Greensboro Drive McLean, VA 22102	P:(703)584-8665 F:(703)584-8696 E:pgist@fcclaw.com
---	--

Ownership and Qualifications

Radio Service Type	Mobile
Regulatory Status	Common Carrier Interconnected Yes

Alien Ownership

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

Basic Qualifications

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

Demographics

Race

Ethnicity

Gender

Exhibit 2

EXHIBIT 2 - LIST OF PROPERTY OWNERS

Statement Pursuant to Section 1 (1) (I) 807 KAR 5:063

Section 1 (1)(I) 1. The following is a list of every property owner who according to property valuation administrator's records, owns property within 500 feet of the proposed tower and each have been: notified by certified mail, return receipt requested, of the proposed construction,

Section 1 (1)(I) 2. Every person listed below who, according to the property valuation administrator's records, owns property within 500 feet of the proposed tower has been: Given the Commission docket number under which the application will be processed: and

Section 1 (1)(I) 3. Every person listed below who, according to property valuation administrator's records owns property within 500 feet of the proposed tower has been: Informed of his right to request intervention.

Section 2. If the construction is proposed for an area outside the incorporated boundaries of a city, the application shall state that public notices required by Section 1(1)(L) have been sent to every person who, according to the property valuation administrator, owns property contiguous to the property upon which the construction is proposed

LIST OF PROPERTY OWNERS

Buster Carter
5030 North HWY 201
Webbville, KY 41180

Thomas Trimble
834 Goldie Court
Ashland, KY 41102

David Savage
1923 Morgans Creek Road
Louisa, KY 41230

Sylvia Young
C/O Harold Young
1893 Irish Creek Road
Webbville, KY 41180

Woodrow Graham
1084 Big Branch Road
Blaine, KY 41124

Craig McNeil
15 Club Lane
Catlettsburg, KY 41129

Margaret Elswick
5306 North HWY 201
Webbville, KY 41180

Christopher Boggs- Trustee
7279 N HWY 201
Webbville, KY 41180

Phyliss Boggs
704 East Main Street
Grayson, KY 41143

Terry L. Kimbler
P.O. Box 21
Flat Gap, KY 41219

James R. Keaton
393 Little Bear Drive
Webbville, KY 41180

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

April 16, 2021

Buster Carter
5030 North HWY 201
Webbville, KY 41180

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2021-00148)

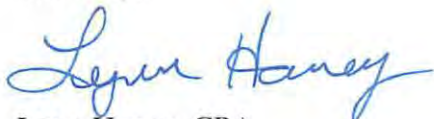
East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Lawrence County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 5030 North HWY 201, Webbville, Lawrence County. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

The Commission invites your comments regarding the proposed construction. You also have the right to intervene in this matter. The Commission must receive your initial communication within 20 days of the date of this letter as shown above.

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2021-00148 in your correspondence.

If you have any questions for East Kentucky Network, LLC, please direct them to my attention at the following address: East Kentucky Network, LLC, 101 Technology Trail, Ivel, KY 41642 or call me at 606-477-2355, Ext. 1007.

Sincerely,



Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

April 16, 2021

Thomas Trimble
834 Goldie Court
Ashland, KY 41102

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2021-00148)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Lawrence County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 5030 North HWY 201, Webbville, Lawrence County. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

The Commission invites your comments regarding the proposed construction. You also have the right to intervene in this matter. The Commission must receive your initial communication within 20 days of the date of this letter as shown above.

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2021-00148 in your correspondence.

If you have any questions for East Kentucky Network, LLC, please direct them to my attention at the following address: East Kentucky Network, LLC, 101 Technology Trail, Ivel, KY 41642 or call me at 606-477-2355, Ext. 1007.

Sincerely,

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

April 16, 2021

David Savage
1923 Morgans Creek Road
Louisa, KY 41230

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2021-00148)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Lawrence County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 5030 North HWY 201, Webbville, Lawrence County. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

The Commission invites your comments regarding the proposed construction. You also have the right to intervene in this matter. The Commission must receive your initial communication within 20 days of the date of this letter as shown above.

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2021-00148 in your correspondence.

If you have any questions for East Kentucky Network, LLC, please direct them to my attention at the following address: East Kentucky Network, LLC, 101 Technology Trail, Ivel, KY 41642 or call me at 606-477-2355, Ext. 1007.

Sincerely,

A handwritten signature in blue ink that reads "Lynn Haney".

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

April 16, 2021

Sylvia Young
C/O Harold Young
1893 Irish Creek Road
Webbville, KY 41180

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2021-00148)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Lawrence County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 5030 North HWY 201, Webbville, Lawrence County. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

The Commission invites your comments regarding the proposed construction. You also have the right to intervene in this matter. The Commission must receive your initial communication within 20 days of the date of this letter as shown above.

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2021-00148 in your correspondence.

If you have any questions for East Kentucky Network, LLC, please direct them to my attention at the following address: East Kentucky Network, LLC, 101 Technology Trail, Ivel, KY 41642 or call me at 606-477-2355, Ext. 1007.

Sincerely,

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

April 16, 2021

Woodrow Graham
1084 Big Branch Road
Blaine, KY 41124

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2021-00148)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Lawrence County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 5030 North HWY 201, Webbville, Lawrence County. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

The Commission invites your comments regarding the proposed construction. You also have the right to intervene in this matter. The Commission must receive your initial communication within 20 days of the date of this letter as shown above.

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2021-00148 in your correspondence.

If you have any questions for East Kentucky Network, LLC, please direct them to my attention at the following address: East Kentucky Network, LLC, 101 Technology Trail, Ivel, KY 41642 or call me at 606-477-2355, Ext. 1007.

Sincerely,

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

April 16, 2021

Craig McNeil
15 Club Lane
Catlettsburg, KY 41129

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2021-00148)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Lawrence County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 5030 North HWY 201, Webbville, Lawrence County. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

The Commission invites your comments regarding the proposed construction. You also have the right to intervene in this matter. The Commission must receive your initial communication within 20 days of the date of this letter as shown above.

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2021-00148 in your correspondence.

If you have any questions for East Kentucky Network, LLC, please direct them to my attention at the following address: East Kentucky Network, LLC, 101 Technology Trail, Ivel, KY 41642 or call me at 606-477-2355, Ext. 1007.

Sincerely,

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

April 16, 2021

Margaret Elswick
5306 North HWY 201
Webbville, KY 41180

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2021-00148)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Lawrence County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 5030 North HWY 201, Webbville, Lawrence County. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

The Commission invites your comments regarding the proposed construction. You also have the right to intervene in this matter. The Commission must receive your initial communication within 20 days of the date of this letter as shown above.

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2021-00148 in your correspondence.

If you have any questions for East Kentucky Network, LLC, please direct them to my attention at the following address: East Kentucky Network, LLC, 101 Technology Trail, Ivel, KY 41642 or call me at 606-477-2355, Ext. 1007.

Sincerely,



Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

April 16, 2021

Christopher Boggs- Trustee
7279 N HWY 201
Webbville, KY 41180

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2021-00148)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Lawrence County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 5030 North HWY 201, Webbville, Lawrence County. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

The Commission invites your comments regarding the proposed construction. You also have the right to intervene in this matter. The Commission must receive your initial communication within 20 days of the date of this letter as shown above.

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2021-00148 in your correspondence.

If you have any questions for East Kentucky Network, LLC, please direct them to my attention at the following address: East Kentucky Network, LLC, 101 Technology Trail, Ivel, KY 41642 or call me at 606-477-2355, Ext. 1007.

Sincerely,

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

April 16, 2021

Phylliss Boggs
704 East Main Street
Grayson, KY 41143

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2021-00148)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Lawrence County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 5030 North HWY 201, Webbville, Lawrence County. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

The Commission invites your comments regarding the proposed construction. You also have the right to intervene in this matter. The Commission must receive your initial communication within 20 days of the date of this letter as shown above.

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2021-00148 in your correspondence.

If you have any questions for East Kentucky Network, LLC, please direct them to my attention at the following address: East Kentucky Network, LLC, 101 Technology Trail, Ivel, KY 41642 or call me at 606-477-2355, Ext. 1007.

Sincerely,

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

April 16, 2021

Terry L. Kimbler
P.O. Box 21
Flat Gap, KY 41219

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2021-00148)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Lawrence County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 5030 North HWY 201, Webbville, Lawrence County. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

The Commission invites your comments regarding the proposed construction. You also have the right to intervene in this matter. The Commission must receive your initial communication within 20 days of the date of this letter as shown above.

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2021-00148 in your correspondence.

If you have any questions for East Kentucky Network, LLC, please direct them to my attention at the following address: East Kentucky Network, LLC, 101 Technology Trail, Ivel, KY 41642 or call me at 606-477-2355, Ext. 1007.

Sincerely,

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

April 16, 2021

James R. Keaton
393 Little Bear Drive
Webbville, KY 41180

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2021-00148)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Lawrence County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 5030 North HWY 201, Webbville, Lawrence County. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

The Commission invites your comments regarding the proposed construction. You also have the right to intervene in this matter. The Commission must receive your initial communication within 20 days of the date of this letter as shown above.

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2021-00148 in your correspondence.

If you have any questions for East Kentucky Network, LLC, please direct them to my attention at the following address: East Kentucky Network, LLC, 101 Technology Trail, Ivel, KY 41642 or call me at 606-477-2355, Ext. 1007.

Sincerely,



Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

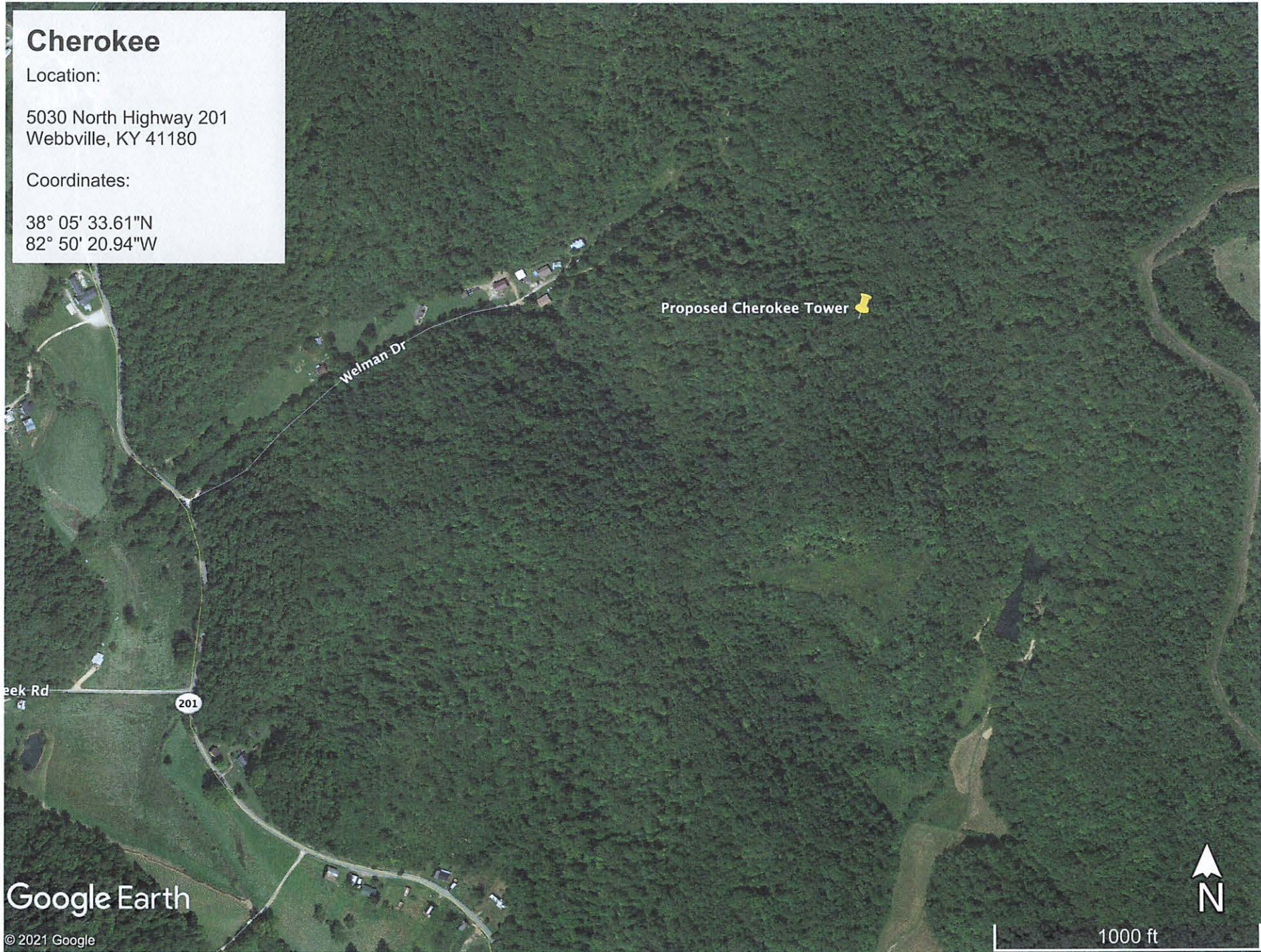
Cherokee

Location:

5030 North Highway 201
Webbville, KY 41180

Coordinates:

38° 05' 33.61"N
82° 50' 20.94"W



Creek Rd

201

Welman Dr

Proposed Cherokee Tower

Google Earth

© 2021 Google



1000 ft

Exhibit 3

VIA: U.S. CERTIFIED MAIL

April 16, 2021

Phillip L. Carter, Judge Executive
122 Main Cross Street
Louisa, KY 41230

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2021 00148)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Lawrence County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 5030 North Highway 201, Webbville, Lawrence County, Kentucky. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you are the County Judge Executive of Lawrence County.

The Commission invites your comments regarding the proposed construction. You also have the right to intervene in this matter. The Commission must receive your initial communication within 20 days of the date of this letter as shown above.

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2021-00148 in your correspondence.

If you have any questions for East Kentucky Network, LLC, please direct them to my attention at the following address: East Kentucky Network, LLC, 101 Technology Trail, Ivel, KY 41642 or call me at 606-477-2355, Ext. 1007.

Sincerely,



Lynn Haney, CPA
Regulatory Compliance Director
Enclosure

dba Appalachian Wireless
101 Technology Trail
Ivel, KY 41642
Phone: 606-477-2355
Fax: 606-791-2225

EAST KENTUCKY
NETWORK



To: The Big Sandy News
Attn: Classifieds

From: Raina Helton
Regulatory Compliance Assistant

Email: brenda@thebigsandynews.com **Date:** April 9, 2021

Re: PUBLIC NOTICE ADVERTISEMENT **Pages:** 1

Please place the following Public Notice Advertisement in The Big Sandy Times to be ran on April 14, 2021

PUBLIC NOTICE:

RE: Public Service Commission of Kentucky (CASE NO. 2021-00148)

Public Notice is hereby given that East Kentucky Network, LLC, dba Appalachian Wireless has applied to the Kentucky Public Service Commission to construct a cellular telecommunications tower on a tract of land located near 5030 North Highway 201, Webbville, Lawrence County, Kentucky. The proposed tower will be a 300-foot self-supporting tower with attached antennas. If you would like to respond to this notice, please contact the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to Case No. 2021-00148.

If you have any questions about the placement of the above-mentioned notice, please call me at 606-477-2375, ext. 1005.

Thank you,

Raina Helton
Regulatory Compliance Paralegal

The message above and the information contained in the documents transmitted are confidential and intended only for the person(s) named above. Dissemination, distribution or copying of this communication by anyone other than the person(s) named above is prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the address listed above via regular mail. Thank you.

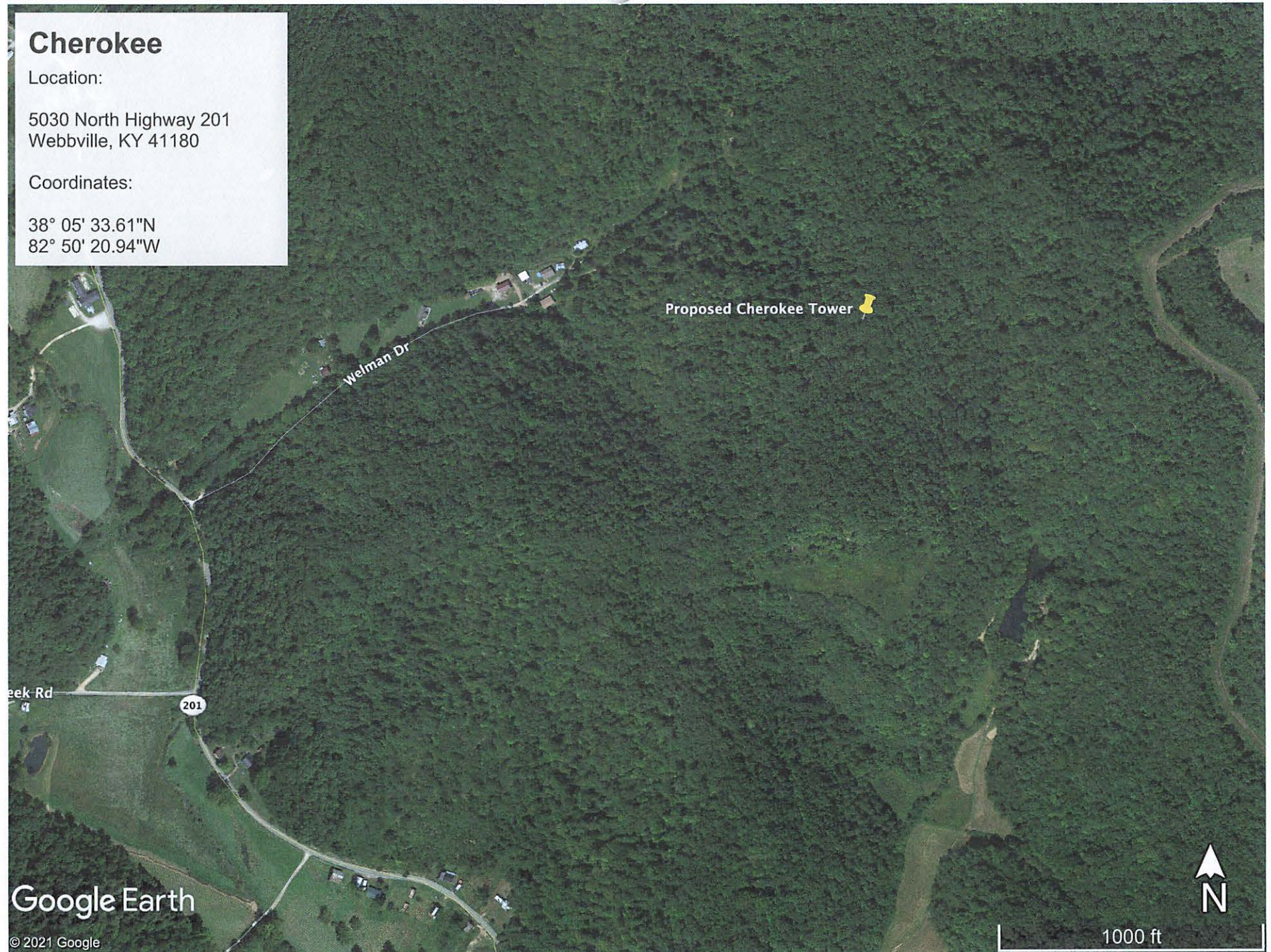
Cherokee

Location:

5030 North Highway 201
Webbville, KY 41180

Coordinates:

38° 05' 33.61"N
82° 50' 20.94"W



Google Earth

© 2021 Google

1000 ft



Exhibit 4



230 Swartz Drive • Hazard • Kentucky • 41701
Phone (606) 551-1050

EAST KENTUCKY ENGINEERING, LLC.

**APPALACHIAN WIRELESS
Geotechnical Investigation on the
Cherokee Tower Site
Lawrence County, Kentucky
EKYENG Project No. 165-000-0110**

PREPARED FOR:

Appalachian Wireless.
101 Technology Trail
Ivel, Kentucky 41642

PREPARED BY:

Richard Dirk Smith PE, PLS
President
East Kentucky Engineering
230 Swartz Drive
Hazard, Kentucky 41701



_____, 20215, November 17th, 2020



EAST KENTUCKY ENGINEERING, LLC.

EXECUTIVE SUMMARY

1.0 INTRODUCTION

2.0 PROJECT DESCRIPTION

3.0 SITE DESCRIPTION & HISTORICAL MINING

3.1 GENERAL INFORMATION

3.2 SURFACE MINING

3.3 UNDERGROUND MINING

3.4 FLOOD HAZARD

4.0 FIELD EXPLORATION

4.1 SITE INFORMATION

4.2 TRENCHING

4.3 GROUNDWATER

4.4 SEISMIC SITE CLASSIFICATION

5.0 DISCUSSION AND RECOMMENDATIONS

5.1 GENERAL

5.2 SHALLOW MAT FOUNDATIONS RECOMMENDATIONS

5.3 BURIED UTILITIES

6.0 WARRANTY

6.1 SUBSURFACE EXPLORATION

6.2 LABORATORY AND FIELD TEST

6.3 ANALYSIS AND RECOMMENDATIONS

6.4 CONSTRUCTION MONITORING

6.5 GENERAL

SPECIFICATIONS

I – GENERAL

II – ENGINEERED FILL BENEATH STRUCTURES CLEARING AND GRADING SPECIFICATIONS

III – GUIDELINES FOR EXCAVATIONS AND TRENCHING

IV – GENERAL CONCRETE SPECIFICATIONS

APPENDIX A – PHOTOGRAPHS

APPENDIX B – BORING LOGS

APPENDIX C – SEISMIC DATA

APPENDIX D – MAPS



EAST KENTUCKY ENGINEERING, LLC.

EXECUTIVE SUMMARY

A geotechnical investigation has been performed on the Cherokee Tower Site, located in Lawrence County, Kentucky. This site isn't readily accessible. A location map is shown in Figure 1 of this report. Field inspections were completed by trenching with an excavator. The following geotechnical considerations were identified:

- Trenching utilized for this study encountered clay soils and sandstone.
- Elevations were taken from aerial DEM mapping available at ArcGIS Kentucky Elevation Data, and Static GPS Surveying.
- The maximum estimated base elevation of the tower mat foundation is 990.0 ft.
- This site is on a forested ridgeline.
- **The allowable bearing capacities are estimated at 8 TSF for the sandstone rock foundations, with a tower pad elevation of 996.5.**
- The 2018 Kentucky Building Code seismic site classification for this site is "A."
- If during the foundation design it becomes necessary to lower or raise the footer, alternate design recommendations can be provided by EKYENG.
- Close monitoring of the construction operations discussed herein will be critical in achieving the design subgrade support. We, therefore, recommend that EKYENG is retained to monitor this portion of the work.

This executive summary is included to provide a general overview of the project and should not be relied upon except for the purpose it was prepared. Please rely on the complete report for the information on the findings, recommendations, and all other concerns.



EAST KENTUCKY ENGINEERING, LLC.

1. INTRODUCTION

East Kentucky Engineering (EKYENG) was retained by Mr. Stanton Neece of Appalachian Wireless to prepare a geotechnical engineering report for the proposed tower site located on the Cherokee Property, in Lawrence County, Kentucky. A site location map is shown in Figure No. 1.

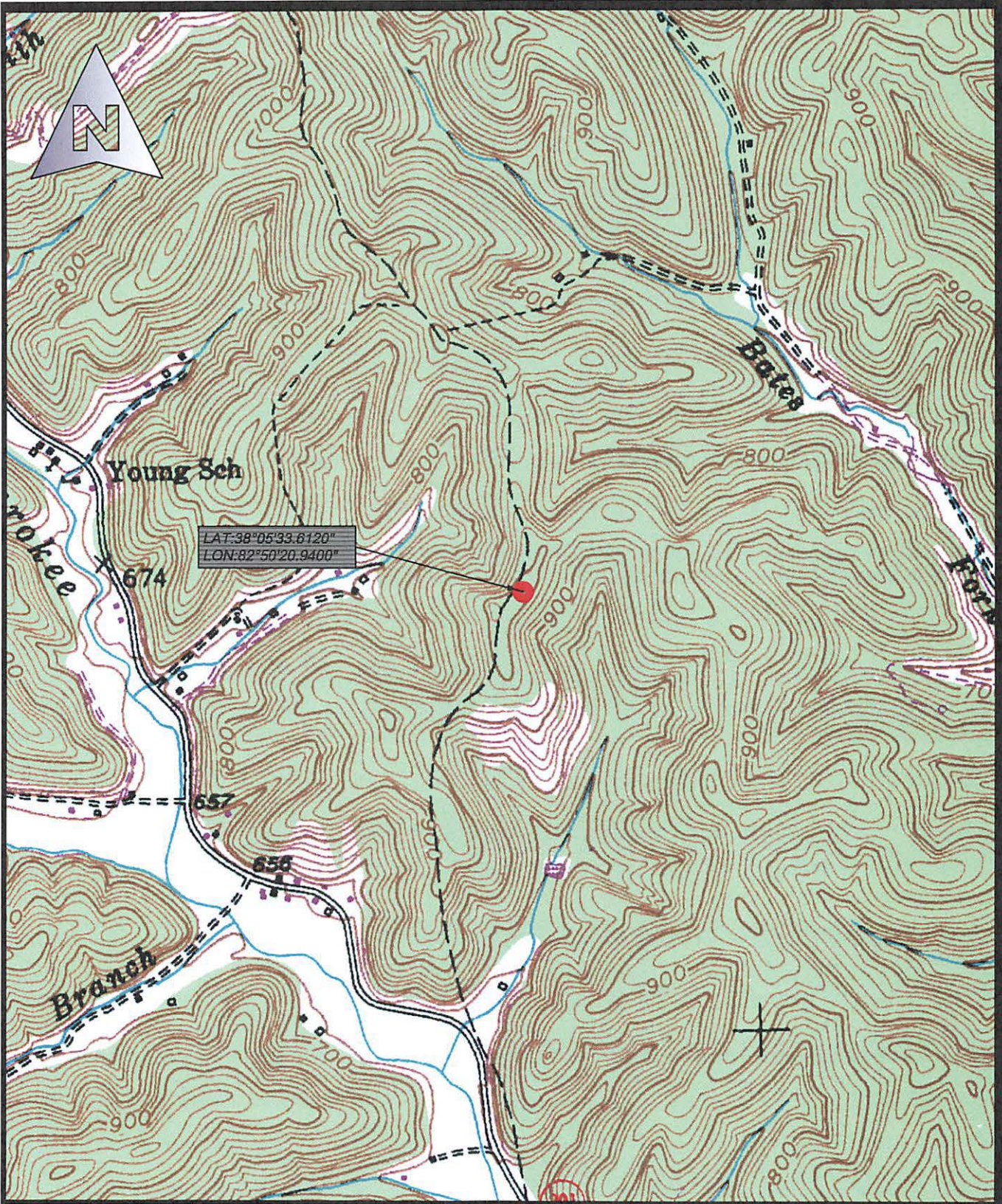
Pits were opened by trenching. The purpose of these services is to provide information and geotechnical engineering recommendations about subsurface conditions, earthwork, seismic considerations, groundwater conditions, and foundation design.

2.0 PROJECT DESCRIPTION

The proposed communication facility will consist of a self-supporting tower of undetermined height and ancillary support areas. The footing area is estimated to be 43.5 ft. X 43.5 ft. with an estimated base of the tower footer elevation at 990.0 ft. Based on the information provided, we estimate the structural loads will be like the following conditions.

CONDITION	LOAD
Total Shear	40 Kips
Axial Load	50 Kips

We anticipate that overturning will govern the structural design. If the loading is significantly different than these expected values, EKYENG should be notified to re-evaluate the recommendations provided in this report.



Drawn: RDS	5/15/2020
Job: 165-110	Scale: 1"=1000'

APPALACHIAN WIRELESS
 EXCERPT FROM USGS QUAD
 LOCATION MAP
 CHEROKEE TOWER SITE
 FIGURE NO 1

East Kentucky Engineering, LLC.
 230 Swartz Drive
 Hazard, KY 41701
 (606) 551-1050



EAST KENTUCKY ENGINEERING, LLC.

3.0 SITE DESCRIPTION & HISTORICAL MINING

3.1 GENERAL INFORMATION

The site location is on a forested ridgeline in Lawrence County, Kentucky. The current surface elevation is approximately 996 ft. Research on the historical mining was conducted by obtaining previous mine license maps from the "Kentucky Mine Mapping Information System" (KMMIS).

3.2 SURFACE MINING

No surface mining or auger mining was found during our research that would influence this site. No adverse issues from surface mining activities are expected at this site location.

3.3 UNDERGROUND MINING

No underground mines were found within the vicinity of this site. Therefore, no subsidence issues are anticipated.

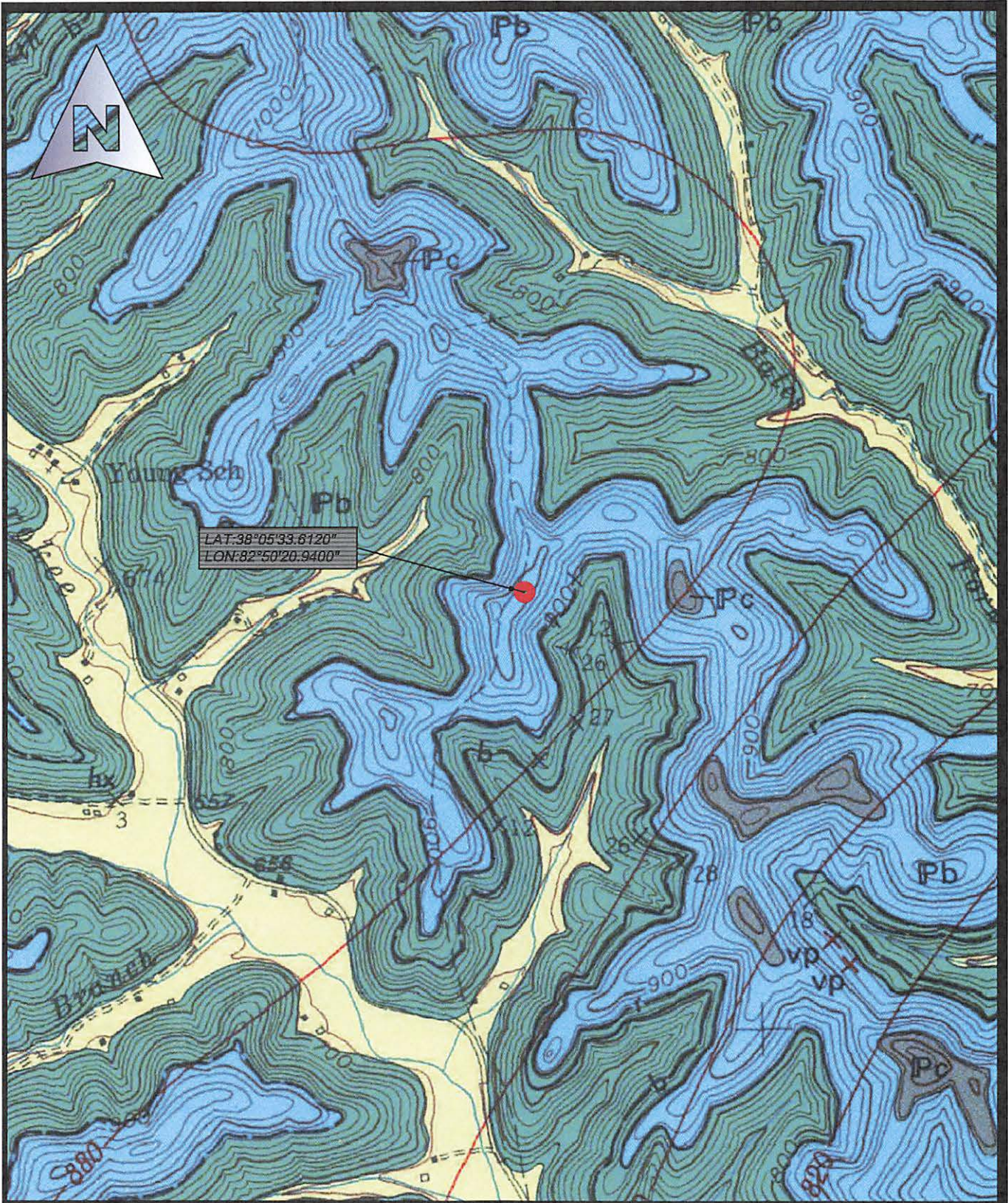
3.4 FLOOD HAZARD

A flood determination was conducted by EKYENG. For this determination, the FEMA Flood Map Service was reviewed for this location. The flood map for the selected area is number **21127C0225D-210258**. The flood zone for this area is Zone X and is an area of minimal flood Hazard. A FIRMette map is included in Appendix C of this report.

4.0 FIELD EXPLORATION

4.1 SITE INFORMATION

The proposed site is located on a forested ridgeline in Lawrence County, Kentucky. The site lies within the Blaine Quadrangle. The site is not readily accessible by conventional exploratory equipment. An estimated pad location



Drawn: RDS	5/15/2020
Job: 165-110	Scale: 1"=1000'

APPALACHIAN WIRELESS
 EXCERPT FROM GEOLOGICAL QUAD
 LOCATION MAP
 CHEROKEE TOWER SITE
 FIGURE NO 2

East Kentucky Engineering, LLC.
 230 Swartz Drive
 Hazard, KY 41701
 (606) 551-1050



EAST KENTUCKY ENGINEERING, LLC.

was determined based on the information provided. Foundation dimensions were estimated to be a 43.5 ft X 43.5 ft footer for this report.

4.2 TRENCHING

This investigation was conducted by trenching with an excavator to determine subsurface information. The combinations of trenching and visual inspections were used to evaluate the site lithology and type of materials immediately below the proposed tower site. The following soils and rock properties were found.

TABLE 2

Note: A cross-section of this information is in Appendix D of this report

Test Pit	DEPTH INCREMENT, (FT.) TO REFUSAL	SOILS TYPE
TR	0.0 / 2.6	Soils / Clays
TR	2.6 / 15.2	Sandstone

4.3 GROUNDWATER

Groundwater in Eastern Kentucky is characterized by water flowing through a system of internal fractures that lead to an alluvial aquifer near the bottom of valley floors. Large, defined aquifers other than the alluvium is not common, especially in higher elevations such as where this tower site is proposed. Therefore, groundwater should not be a concern in this area. During field test activities, no groundwater resources were observed.

4.4 SEISMIC SITE CLASSIFICATION



EAST KENTUCKY ENGINEERING, LLC.

Based on the encountered soil conditions at the project site, the site classification was determined to be "Site Class A" per the 2018 Kentucky Building Code. In addition, an S_{Ds} coefficient of 0.089 g was calculated, and an S_{D1} coefficient of 0.042 g was also calculated for design based on the aforementioned building code.

5.0 DISCUSSION AND RECOMMENDATIONS

5.1 GENERAL

The structure will be a self-supporting free-standing tri-pole tower with a mat foundation. Due to wind loading, lattice tower foundations can experience both vertical loads and horizontal loads. The vertical loads act in both an upward and downward direction as the tower attempts to overturn and can act in any directions.

5.2 SHALLOW MAT FOUNDATIONS RECOMMENDATIONS

We are recommending shallow foundations. It should be noted that the material type and bearing capacity can vary significantly due to the inconsistency of the underlying material. Based on the laboratory and field testing, visual inspection of the materials, and practical experience we have estimated that the **allowable bearing capacity of the sandstone unit at this site will be 8 TSF at the estimated mat base elevation of 990.0 ft.** The interbedded sandstone unit is present from the range of 990.0 ft to 983.0 ft. and will provide the necessary cut width to support the proposed mat without overhanging outside the rock outcrop line.

It is furthermore recommended that the slabs-on-grade be supported on a 4 to 6-inch layer of relatively clean granular material such as sand and gravel or crushed stone. This is to help distribute concentrated loads and equalize moisture conditions beneath the slab. Proper drainage must be incorporated into this granular layer to preclude future wet areas in the finished slab-on-grade.



EAST KENTUCKY ENGINEERING, LLC.

However, all topsoil and/or other deleterious materials encountered during site preparation must be removed and replaced with 4000 psi concrete below the foundation base. Provided that a minimum of 4 inches of granular material is placed below the new slab-on-grade, a modulus of subgrade reaction (k_{30}) of 100 lbs/cu in can be used for the design of the slabs.

The support structure for this tower can be placed as needed. It is recommended that test pits are examined to ensure that any of these structures are on the competent materials. If pockets of soft, loose, or otherwise unsuitable material are encountered in the footing excavations, and it is inconvenient to lower the footings, the proposed footing elevations may be re-established by backfilling after the undesirable material has been removed. The undercut excavation beneath each footing should extend to suitable bearing soils, and the dimensions of the excavation base should be determined by imaginary planes extending outward and down on a 1 (vertical) to 1 (horizontal) slope from the base perimeter of the footing. The entire excavation should then be refilled with a well-compacted engineered fill, or lean concrete (Please note that the width of the lean concrete zone should be equal or wider than the width of the overlying footing element). Special care should be exercised to remove any sloughed, loose or soft materials near the base of the excavation slopes. In addition, special care should be taken to "tie-in" the compacted fill with the excavation slopes, with benches as necessary, to ensure that no pockets of loose or soft materials will be left in place along the excavation slopes below the foundation bearing level. All Federal, State, and Local regulations should be strictly adhered to relative to excavation side-slope geometry.

5.3 BURIED UTILITIES

Excavations for buried utility pipelines should follow the guidelines outlined in this report. Depending on the pipeline material, a minimum thickness of at least 0.5 feet of select fine-grained granular bedding material should be used beneath all below-grade pipes, with a minimum cover thickness of at least 3 feet to afford an



EAST KENTUCKY ENGINEERING, LLC.

"arching" effect and reduce stresses on the pipe. The cover thickness may be reduced if the external loading condition on the pipe is relatively light or if the pipe is designed to withstand the external loading condition. It is not recommended that "pea-gravel" or other "open-work" aggregates be used for trench backfill since these materials are nearly impossible to compact and tend to pond water within their interstices.

6.0 WARRANTY

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. No other warranty, express or implied, is made.

While the services of EKYENG are a valuable and integral part of the design and construction teams, we do not warrant, guarantee, or ensure the quality or completeness of services provided by other members of those teams, the quality, completeness, or satisfactory performance of construction plans and specifications which we have not prepared, nor the ultimate performance of building site materials.

6.1 SUBSURFACE EXPLORATION

Subsurface exploration is normally accomplished by test borings, although test pits are sometimes employed. The location and elevation of the test locations should be considered accurate only to the degree inherent with the method used.

The boring log includes sampling information, description of the materials recovered, approximate depth of boundaries between soil and rock strata, and groundwater data. The boring log represents conditions specifically at the location and time the testing was conducted. The boundaries between different soil strata are indicated at specific depths; however, these depths are in fact



EAST KENTUCKY ENGINEERING, LLC.

approximate and are somewhat dependent upon the frequency of sampling (The transition between soil strata is often gradual). Free groundwater level readings are made at the times and under conditions stated on the boring logs (Groundwater levels change with time and season). The trenches and pits do not always remain open sufficiently long enough for the measured water level to coincide with the groundwater table.

6.2 LABORATORY AND FIELD TESTS

Laboratory and field tests are performed by specific ASTM standards unless otherwise indicated. All determinations included in each ASTM standard are not always required and performed. Each test report indicates the measurements and determinations made.

6.3 ANALYSIS AND RECOMMENDATIONS

The geotechnical report is prepared primarily to aid in the engineering design of site work and structural foundations. Although the information in the report is expected to be sufficient for these purposes, it is not intended to determine the cost of construction or to stand alone as a construction specification.

Our engineering report recommendations are based primarily on data from test borings or other methods made at the locations shown on the attached drawings. Soil variations may exist between test sites, and these variations may not become evident until construction. If significant variations are then noted, the geotechnical engineer should be contacted so that field conditions can be examined and recommendations revised if necessary.

The geotechnical engineering report states our understanding as to the location, dimensions and structural features proposed for the site. Any significant changes in the nature, design, or location of the site improvements **MUST** be communicated to the geotechnical engineer such that the geotechnical analysis, conclusions, and recommendations can be appropriately adjusted. The



EAST KENTUCKY ENGINEERING, LLC.

geotechnical engineer should be given the opportunity to review all drawings that have been prepared based on their recommendations.

6.4 CONSTRUCTION MONITORING

Construction monitoring is a vital element of complete geotechnical services. The field engineer/inspector is the owner's "representative" observing the work of the contractor, performing tests as required in the specifications, and reporting data developed from such tests and observations. The field engineer or inspector does not direct the contractor's construction means, methods, operations or personnel. The field inspector/engineer does not interfere with the relationship between the owner and the contractor and, except as an observer, does not become a substitute owner on site. The field inspector/engineer is responsible for his own safety but has no responsibility for the safety of other personnel at the site. The field inspector/engineer is an important member of a team whose responsibility is to watch and test the work being done and report to the owner whether that work is being carried out in general conformance with the plans and specifications.

6.5 GENERAL

The scope of our services did not include an environmental assessment for the presence or absence of hazardous or toxic materials in the soil, surface water, groundwater or air, on, within or beyond the site studied. Any statements in the report or on the boring logs regarding odors, staining of soils or other unusual items or conditions observed are strictly for the information of our client.

To evaluate the site for possible environmental liabilities, we recommend an environmental assessment, consisting of a detailed site reconnaissance, a record review, and report of findings. Additional subsurface drilling and samplings, including groundwater sampling, may be required.



EAST KENTUCKY ENGINEERING, LLC.

This report has been prepared for the exclusive use of Appalachian Wireless, for specific application to the proposed cellular tower located on the Cherokee Property located in Lawrence County, Kentucky. Specific design and construction recommendations have been provided in the various sections of the report. The report shall, therefore, be used in its entirety. This report is not a bidding document and shall not be used for that purpose. Anyone reviewing this report must interpret and draw their conclusions regarding the specific construction techniques and methods that were chosen. EKYENG is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploratory and laboratory test data presented in this report.



EAST KENTUCKY ENGINEERING, LLC.

SPECIFICATIONS

I – GENERAL

1.0 STANDARDS AND DEFINITIONS

1.1 **STANDARDS** - All standards refer to latest edition unless otherwise noted.

1.1.1 ASTM D-698-70 (Method C) "Standard Test Methods for Moisture, Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5-lb (2.5 kg.) Rammer and 12-inch (305-mm) Drop".

1.1.2 ASTM D-2922 "Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)."

1.1.3 ASTM D-1556 "Standard Test Method for Density of Soil in place by the Sand-Cone Method."

1.2 DEFINITIONS

1.2.1 Owner - In these specifications, the word "Owner" shall mean Appalachian Wireless.

1.2.2 Engineer - In these specifications, the word "Engineer" shall mean the Owner designated engineer.

1.2.3 Design Engineer - In these specifications, the words "Design Engineer" shall mean the Owner designated design engineer.

1.2.4 Contractor - In these specifications, the word "Contractor" shall mean the firm or corporation undertaking the execution of any work under the terms of these specifications.

1.2.5 Approved - In these specifications the word "approved" shall refer to the approval of the Engineer or his designated representative.

1.2.6 As Directed - In these specifications the words "as directed" shall refer to the directions to the Contractor from the Owner or his designated representative.



2.0 GENERAL CONDITIONS

- 2.1 The Contractor shall furnish all labor, material, and equipment and perform all work and services except those set-out and furnished by the Owner, necessary to complete in a satisfactory manner the site preparation, excavation, filling, compaction, grading as shown on the plans and as described therein.

This work shall consist of all mobilization clearing and grading, grubbing, stripping, removal of existing material unless otherwise stated, preparation of the land to be filled, filling of the land, spreading and compaction of the fill, and all subsidiary work necessary to complete the grading of the cut and fill areas to conform with the lines, grades, slopes, and specifications.

This work is to be accomplished under the observation of the Owner or his designated representative.

- 2.2 Prior to bidding the work, the Contractor shall examine, investigate and inspect the construction site as to the nature and location of the work, and the general and local conditions at the construction site, including, without limitation, the character of surface or subsurface conditions and obstacles to be encountered on and around the construction site; and shall make such additional investigation as he may deem necessary for the planning and proper execution of the work.

If conditions other than those indicated are discovered by the Contractor, the Owner should be notified immediately. The material which the Contractor believes to be a changed condition should not be disturbed so that the owner can investigate the condition.

- 2.3 The construction shall be performed under the direction of an experienced engineer who is familiar with the design plan.



EAST KENTUCKY ENGINEERING, LLC.

II - ENGINEERED FILL BENEATH STRUCTURES CLEARING AND GRADING SPECIFICATIONS

1.0 GENERAL CONDITIONS

The Contractor shall furnish all labor, materials, and equipment, and perform all work and services necessary to complete in a satisfactory manner the site preparation, excavation, filling, compaction and grading as shown on the plans and as described therein.

This work shall consist of all clearing and grading, removal of existing structures unless otherwise stated, preparation of the land to be filled, filling of the land, spreading and compaction of the fill, and all subsidiary work necessary to complete the grading of the cut and fill areas to conform with the lines, grades, slopes, and specifications.

This work is to be accomplished under the constant and continuous supervision of the Owner or his designated representative.

In these specifications, the terms "approved" and "as directed" shall refer to directions to the Contractor from the Owner or his designated representative.

2.0 SUBSURFACE CONDITIONS

Prior to bidding the work, the Contractor shall examine, investigate and inspect the construction site as to the nature and location of the work, and the general and local conditions at the construction site, including without limitation, the character of surface or subsurface conditions and obstacles to be encountered on and around the construction site; and shall make such additional investigation as he may deem necessary for the planning and proper execution of the work. Borings and/or soil investigations shall have been made. Results of these borings and studies will be made available by the Owner to the Contractor upon his request, but the Owner is not responsible for any interpretations or conclusions with respect thereto made by the Contractor based on such information, and the



EAST KENTUCKY ENGINEERING, LLC.

Owner further has no responsibility for the accuracy of the borings and the soil investigations.

If conditions other than those indicated are discovered by the Contractor, the Owner should be notified immediately. The material which the Contractor believes to be a changed condition should not be disturbed so that the Owner can investigate the condition.

3.0 SITE PREPARATION

Within the specified areas, all trees, brush, stumps, logs, tree roots, and structures scheduled for demolition shall be removed and disposed of.

All cut, and fill areas shall be properly stripped. Topsoil will be removed to its full depth and stockpiled for use in finish grading. Any rubbish, organic and other objectionable soils, and other deleterious material shall be disposed of off the site, or as directed by the Owner or his designated representative if on-site disposal is provided. In no case shall such objectionable material be allowed in or under the fill unless specifically authorized in writing.

Prior to the addition of fill, the original ground shall be compacted to job specifications as outlined below. Special notice shall be given to the proposed fill area now. If wet spots, spongy conditions, or groundwater seepage is found, corrective measures must be taken before the placement of fill.

4.0 FORMATION OF FILL AREAS

Fills shall be formed of satisfactory materials placed in successive horizontal layers of not more than eight (8) inches in loose depth for the full width of the cross-section. The depth of lift may be increased if the Contractor can demonstrate the ability to compact a larger lift. If compaction is accomplished using hand-tamping equipment, lifts will be limited to 4-inch loose lifts. Engineered fill placed below the structure bearing elevation shall be compacted to at least 95% of the maximum dry unit weight with a moisture content within 2% of the optimum moisture content as determined by the modified Proctor test. The top size of the material placed shall not exceed 4 inches.



EAST KENTUCKY ENGINEERING, LLC.

All material entering the fill shall be free of organic matter such as leaves, grass, roots, and other objectionable material.

The operations on earthwork shall be suspended at any time when satisfactory results cannot be obtained because of rain, freezing weather, or other unsatisfactory conditions. The Contractor shall keep the work areas graded to provide the drainage always.

The fill material shall be of the proper moisture content before compaction efforts are started. Wetting or drying of the material and manipulation to secure a uniform moisture content throughout the layer shall be required. Should the material be too wet to permit proper compaction or rolling, all work thus affected shall be delayed until the material has dried to the required moisture content. The moisture content of the fill material should be no more than two (2) percentage points higher or lower than optimum unless otherwise authorized. Sprinkling shall be done with equipment that will satisfactorily distribute the water over the disced area. Any areas inaccessible to a roller shall be consolidated and compacted by mechanical tampers. The equipment shall be operated in such a manner that hardpan, cemented gravel, clay or other chunky soil material will be broken up into small particles and become incorporated with the other material in the layer.

In the construction of filled areas, starting layers shall be placed in the deepest portion of the fill, and as placement progresses, additional layers shall be constructed in horizontal planes. Original slopes shall be continuous, vertically benched to provide horizontal fill planes. The size of the benches shall be formed so that the base of the bench is horizontal, and the back of the bench is vertical. As many benches as are necessary to bring the site to final grade shall be constructed. Filling operations shall begin on the lowest bench, with the fill being placed in horizontal eight (8) inch thick loose lifts unless otherwise authorized. The filling shall progress in this manner until the entire first bench has been filled, before any fill is placed on the succeeding benches. Proper drainage shall always be maintained during benching and filling of the benches, to ensure that all water is drained away from the fill area.



EAST KENTUCKY ENGINEERING, LLC.

Frozen material shall not be placed in the fill nor shall the fill be placed upon frozen material.

The Contractor shall be responsible for the stability of all fills made under the contract and shall replace any portion, which in the opinion of the Owner or his designated representative, has become displaced due to carelessness or negligence on the part of the Contractor. Fill damaged by inclement weather shall be repaired at the Contractor's expense.

5.0 SLOPE RATIO AND STORM WATER RUN-OFF

Slopes shall not be greater than 2 (horizontal) to 1 (vertical) in both cut and fill, or as illustrated on the construction drawings. Excavations shall be constructed in accordance with all Federal, State and local codes relative to slope geometry.

6.0 GRADING

The Contractor shall furnish, operate, and maintain such equipment as is necessary to construct uniform layers and control smoothness of grade for maximum compaction and drainage.

7.0 COMPACTING

The compaction equipment shall be approved equipment of such design, weight, and quantity to obtain the required density in accordance with these specifications.

8.0 TESTING AND INSPECTION SERVICES

Testing and inspection services will be provided by the Owner.



GUIDELINES FOR EXCAVATIONS AND TRENCHES

The following represents some general guidelines relative to the design and construction of excavations and trenches. It must be emphasized that these guidelines are not intended to represent a "safety plan," but rather are presented herein to provide general guidance regarding the design characteristics and safety measures for excavations and trenches.

1. Check with the following utilities prior to breaking ground:
 - Sewer
 - Telephone
 - Fuel
 - Electric
 - Water
 - Gas
 - Cable

When utility companies or owners do not respond to your request within 48 hours, the contractor may only then proceed provided the contractor does so with caution by using detection equipment or other acceptable means to locate utility installations.

Once the excavation is open, the contractor should protect and support the exposed underground utilities or remove installations to safeguard workers and prevent damage to exposed utilities.

2. Access and egress ramps must be designed by a "competent person" and structural ramps used for equipment must be designed by a "competent person" with qualified knowledge in structural design. In addition:
 - Ramps must be secured to prevent displacement;
 - Ramps used in lieu of steps must have cleats to prevent slipping; and



EAST KENTUCKY ENGINEERING, LLC.

- Trenching excavations four feet or greater in depth must have a stairway, ladder, ramps or other safe means to egress with lateral travel no more than 25 feet.
3. Workers must be provided with reflector garments, such as warning orange or red vests, when exposed to vehicular traffic.
 4. Contractors must not allow workers to work under or near equipment when there is danger of falling debris, spillage or equipment-related injuries.
 5. Mobile equipment, operating adjacent to an open excavation or approaching the edge of an excavation, must have one of the following when the operator's view is obstructed:
 - Warning System
 - Mechanical Signals
 - Barricades
 - Stop Logs
 - Hand Signals
 6. The contractor must check the atmosphere for hazardous gases and oxygen deficiencies when excavating four feet or greater around landfills, or when hazardous substances are stored nearby, and when the contractor expects there could be any exposure to the workers.
 7. When hazardous atmospheric conditions exist, or when conditions could change, the contractor must make emergency rescue equipment readily available including breathing apparatus, safety harnesses with lifelines and a basket stretcher.
 8. When workers enter bell-bottom pier holes or other deep and confined excavations, the worker must wear (always while performing work in the confined space) a separate lifeline attached to a harness. The line must be



EAST KENTUCKY ENGINEERING, LLC.

attended by someone above while work is being performed. The worker must check for hazardous atmospheric conditions prior to entry.

9. The contractor must ensure that water does not accumulate in open excavations and must inspect the excavation prior to allowing workers to re-enter after heavy rains.
10. Adjacent structures (buildings, walls, etc.) must be supported or secured to prevent worker exposure to unsafe conditions and damage to existing structures.
11. A registered professional engineer must approve operations when a contractor underpins existing structures to ensure worker safety and prevent damage to existing structures.
12. Workers must not be exposed to loose soil and rock or materials in and around excavations. Materials, such as removed soil and rock, must not be stored closer than two feet from the edge of the excavation.
13. Daily inspections of the excavation, the adjacent areas, and protective systems must be made by a "competent person" for evidence of possible cave-ins, indications of failure of protective systems, hazardous atmospheres or other hazardous conditions. The "competent person" must stop work immediately and remove workers from the excavation when conditions change and pose a threat to their safety.
14. Workers must not be exposed to fall hazards associated with excavations. Protective walkways or bridges with standard guardrails must be provided.
15. All wells, pits, shafts etc. must be barricaded or covered. After completion of work, all wells, pits, shafts etc. must be backfilled.



EAST KENTUCKY ENGINEERING, LLC.

IV - GENERAL CONCRETE SPECIFICATIONS

1.0 GENERAL

It is the intent of this specification to secure, for every part of the work, concrete of homogenous structure which, when hardened, will have the required strength and resistance to weathering. To this end, the limiting values of concrete and the requirements hereinafter specified must be met. Standard tests of the cement, aggregates, concrete and reinforcement will be made by the Owner as it sees fit. The Contractor shall furnish the material for all required samples plus such labor as required to obtain samples. The Contractor shall provide to authorized representatives of the Owner, convenient access to all parts of the work of all concreting operations for sampling and inspection.

2.0 SCOPE

Contractor shall furnish all materials, labor, services, transportation, tools, equipment, and related items required to complete work indicated on the drawings and/or specified.

Unless otherwise noted or as modified by more stringent requirements specified herein, all plain and reinforced concrete work shall be performed in full compliance with applicable requirements of the Building Code Requirements for Reinforced Concrete ACI 318.

Contractor shall obtain Owner's approval of all subgrades, footing bottoms, forms, and reinforcement just prior to placing concrete.

Contractor shall coordinate the work specified in this section with that specified in other sections so that all anchors, pipes and other embedded items are properly installed before concrete is placed.

Contractor shall clean all exposed concrete surfaces and obtain approval of Owner for method of cleaning.



EAST KENTUCKY ENGINEERING, LLC.

3.0 MATERIALS

All materials shall be of the respective quality specified herein, delivered, stored, and handled as to prevent inclusion of foreign matter and damage by dampness or breakage. Packaged material shall be stored in original container until ready for use. Materials showing evidence of dampness or other damage may be rejected.

- A. Fine and Coarse Aggregates: Coarse and fine aggregates shall conform to ASTM Specification C33. The maximum size of aggregate shall not be larger than one-fifth (1/5) of the narrowest dimensions between forms, or larger than three fourths (3/4) of the minimum clear spacing between reinforcement.
1. Fine Aggregate: Sand shall be composed essentially of clean, hard, strong, durable grains free of structurally weak grains, organic matter, loam, clay, silt, salt, mica or other fine materials that may affect bonding of the cement paste.
 2. Coarse Aggregate: Cement concrete shall consist of crushed rock or screened gravel and shall be composed essentially of clean, hard, strong and impermeable particles, resistant to wear and frost and free from deleterious amounts of organic matter, loam, clay, salts, mica, and soft, thin, elongated, laminated or disintegrated stone, and shall be inert to water and cement.
- B. Portland Cement: Portland cement shall conform to ASTM Specification C150. Type I or Type II Portland Cement shall be used if they are not intermixed during any one batch. Type II Portland Cement shall not be used unless indicated on the plans.
- C. Water: Water for mixing and curing shall be clean, fresh, and free from deleterious materials.
- D. Metal Reinforcement: Rebar shall be Grade 60 and with deformations conforming to ASTM Specification A305. Welded wire mesh shall conform to W4 x W4 size and be of Grade 60 steel.



EAST KENTUCKY ENGINEERING, LLC.

- E. Admixtures: Except as herein noted, admixtures shall not be used.
1. Under adverse weather conditions only retarding or accelerating agents containing no chloride may be used.
 2. Air-Entraining Agent shall be used for all concrete will give an entrained air range of not less than 4 percent but no greater than 8 percent in the finished product. Under no circumstances shall the air-entraining be interground with cement.
 3. Approval in writing shall be required from Owner prior to the use of any admixture.

4.0 FORM

Forms shall be constructed with proper shoring and cross-bracing, safeguarding the total structure and specifically lateral stability and sufficiently strong to stand vibrations of concrete and to carry, without appreciable deflection or displacement, all dead and live loads to which they may be subjected.

5.0 INSERTS, ETC.

Anchors, bolts, dowels, conduit, water stops, vent pipes and other similar built-in or concreted-in items shall be properly located, accurately positioned and secured. The Contractor shall cooperate in placing of such items with other contractors who require a fastening device for their work and he shall maintain them in proper location during the progress of his work.

6.0 REINFORCEMENT

Reinforcement at the time concrete is placed shall be free from rust, scale or other coatings that will destroy or reduce the bond.



EAST KENTUCKY ENGINEERING, LLC.

Reinforcement shall be accurately placed and securely tied at intersections and shall be securely held in position during the placing of concrete by pacers, chairs, or other approved supports.

The reinforcement of foundations, footings and other principal structural members in which the concrete is deposited against the ground shall not have less than three (3) inches of concrete between it and the ground contact surface. If concrete surfaces after removal of the forms are to be exposed to the weather or to be in contact with the ground or rock, reinforcement shall be protected with not less than two (2) inches of concrete,

7.0 CONCRETE

Concrete for the various parts of the work shall be of 4000 pounds per square inch compressive strength with a minimum 28-day cure. Contractor is responsible to provide a mix of not less than 6 bags of cement per yard of concrete and not more than 7 gallons of water per bag of cement, producing a minimum slump of 2-1/2 inches and a maximum slump of 4-1/2 inches. Concrete that exceeds the above range of maximum or minimum slump requirements may be rejected by the Owner. All concrete shall be air-entrained. Contractors are required to furnish the name or names of the company(s) that will be providing the mix. The Owner reserves the right to disapprove any concrete supplier that has been known to supply an undesirable material to the Owner on previous occasions.

8.0 DEPOSITING CONCRETE

4.1. Preparation for Placing Concrete: Before depositing concrete, the Contractor shall:

1. Remove from space to be occupied by concrete all debris, including snow, ice, and water unless otherwise permitted by Owner.
2. Provide diversion, satisfactory to Owner, of any flow of water to an excavation to avoid washing the freshly deposited concrete.



EAST KENTUCKY ENGINEERING, LLC.

3. Coat the forms prior to placing of reinforcing steel as required in form work.
 4. Secure firmly in correct position, all reinforcement and other items to be encased and remove therefrom all coating including ice and frost.
- B. Transportation of Concrete from Batch Plant: The concrete shall be delivered to the site of the work and discharge shall be completed within 90 minutes after addition of the cement and water to the aggregates. Each batch of concrete delivered at the job site shall be accompanied by a time slip issued at the batching plant, bearing the time of charging of the mixer drum with the cement and aggregates.
- C. Transporting of Concrete from Mixer to Place of Final Deposit: Transportation shall be done as rapidly as practical by means which shall prevent the separation or loss of the ingredients. If chutes are used, they shall be at a slope not flatter than one vertical to two horizontal. Buggies or carts shall be equipped with pneumatic rubber tires or surfaces of runways shall be sufficiently smooth or both so as not to cause separation or segregation of concrete ingredients. Concrete shall not be allowed to drop freely more than 4 feet. Where greater drops are required, canvas "elephant trunks" or galvanized iron chutes equipped with suitable hopper heads shall be employed and a sufficient number placed to ensure that the concrete may be effectively compacted into horizontal layers not exceeding 12 inches in thickness with minimum lateral movements.
- D. Depositing of Concrete: Depositing of concrete shall:



EAST KENTUCKY ENGINEERING, LLC.

1. Proceed continuously after once starting until reaching the end of a section of construction joint location shown on the drawings, or as approved by the Owner. The operations shall be conducted so that no concrete is deposited on concrete sufficiently hardened to cause formation of seams, and planes of weakness.
 2. Be as near as practical to its final position in the forms.
 3. Proceed to maintain constantly a top surface which is approximately level.
 4. Be placed before initial set has occurred, and in no event after it has contained its water content for more than 90 minutes.
 5. Be thoroughly worked and compacted by means of suitable tools to provide impermeability, durability and strength and shall be thoroughly worked around reinforcements and embedded items and into corners of forms and to be free from voids, pockets or honeycombing. Care shall be taken to provide impermeability.
- E. Vibration Equipment: Vibration equipment shall be of the appropriate type and shall, always, be adequate in number of units and power of each unit to properly consolidate all concrete.
- F. Monolithic Pours: Proper delivery of concrete shall be the Contractor's responsibility to make a mono-lithic pour without delays and changes of cold joints.



EAST KENTUCKY ENGINEERING, LLC.

9.0 CURING

All concrete work shall be protected from injurious action by the sun, rain, flowing water, frost and other injury and shall be covered with plastic after application of curing compound for three (3) days on pours located above ground.

Contractor shall not remove any formwork for a minimum period of 24 hours after a concrete pour without written approval of the Owner.

10.0 CONCRETE FINISHES

Finishes of all exposed concrete shall be free of defects which impair its durability or adversely affect its appearance. All such surfaces when stripped, shall be uniform in appearance and any surfaces displaying any deviations from adjacent uniform surfaces shall be rejected and subject to removal.

Finished work shall be level and plumb, true to lines, and dimensions. Finished plane surfaces shall be smooth, and as nearly perfect as practical; however, deviations from a true plane shall not exceed 1/8 inch when measured from a 6-foot straight edge placed against the surface to any point on the surface and under the straight edge.

All exposed surfaces shall have defects corrected, protrusions removed, and holes filled.



EAST KENTUCKY ENGINEERING, LLC.

APPENDIX A PHOTOGRAPHS

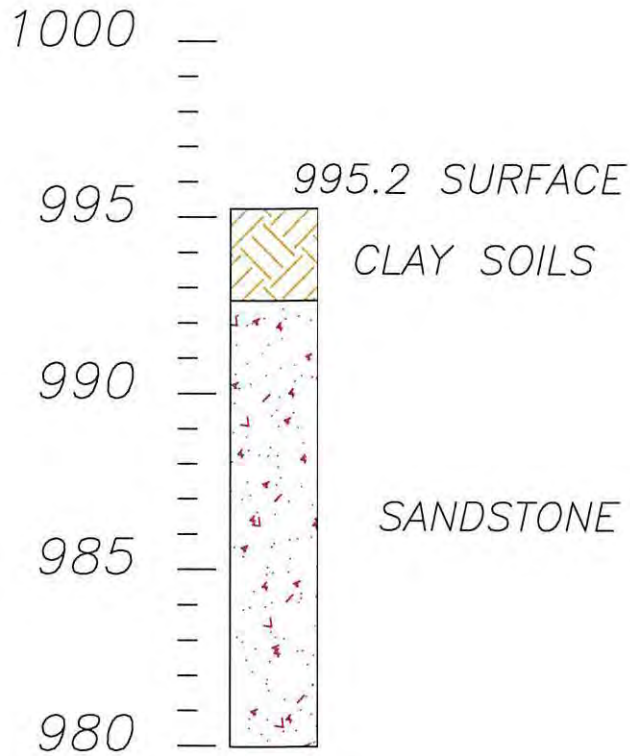




EAST KENTUCKY ENGINEERING, LLC.

<p>APPENDIX B BORING LOG</p>

BORING LOG



Drawn:	Date: 11/15/20
Job:	Scale: 1" = 5'
Drawing:	
Tool Palette EKYENG	

APPALACHIAN WIRELESS
BORING LOG
PROPOSED CHEROKEE TOWER LOCATION
LAWRENCE COUNTY



East Kentucky Engineering, LLC

230 Swartz Drive
Hazard, KY 41701
(606) 551-1050

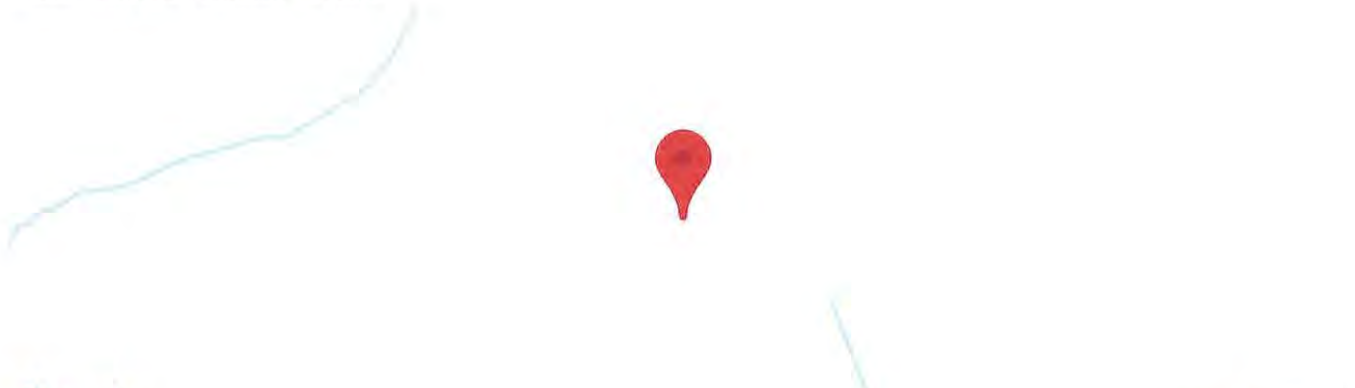


EAST KENTUCKY ENGINEERING, LLC.

APPENDIX C SEISMIC



Latitude, Longitude: 38.09267, -82.83915



Map data ©2020

Date

11/23/2020, 8:50:13 AM

Design Code Reference Document

IBC-2015

Risk Category

II

Site Class

A - Hard Rock

Type	Value	Description
S _S	0.167	MCE _R ground motion. (for 0.2 second period)
S ₁	0.078	MCE _R ground motion. (for 1.0s period)
S _{MS}	0.134	Site-modified spectral acceleration value
S _{M1}	0.063	Site-modified spectral acceleration value
S _{DS}	0.089	Numeric seismic design value at 0.2 second SA
S _{D1}	0.042	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	A	Seismic design category
F _a	0.8	Site amplification factor at 0.2 second
F _v	0.8	Site amplification factor at 1.0 second
PGA	0.079	MCE _G peak ground acceleration
F _{PGA}	0.8	Site amplification factor at PGA
PGA _M	0.064	Site modified peak ground acceleration
T _L	12	Long-period transition period in seconds
SsRT	0.167	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.181	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.078	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.087	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}	0.923	Mapped value of the risk coefficient at short periods
C _{R1}	0.903	Mapped value of the risk coefficient at a period of 1 s

DISCLAIMER

While the information presented on this website is believed to be correct, SEAOC / OSHPD and its sponsors and contributors assume no responsibility or liability for its accuracy. The material presented in this web application should not be used or relied upon for any specific application without competent examination and verification of its accuracy, suitability and applicability by engineers or other licensed professionals. SEAOC / OSHPD do not intend that the use of this information replace the sound judgment of such competent professionals, having experience and knowledge in the field of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the results of the seismic data provided by this website. Users of the information from this website assume all liability arising from such use. Use of the output of this website does not imply approval by the governing building code bodies responsible for building code approval and interpretation for the building site described by latitude/longitude location in the search results of this website.



EAST KENTUCKY ENGINEERING, LLC.

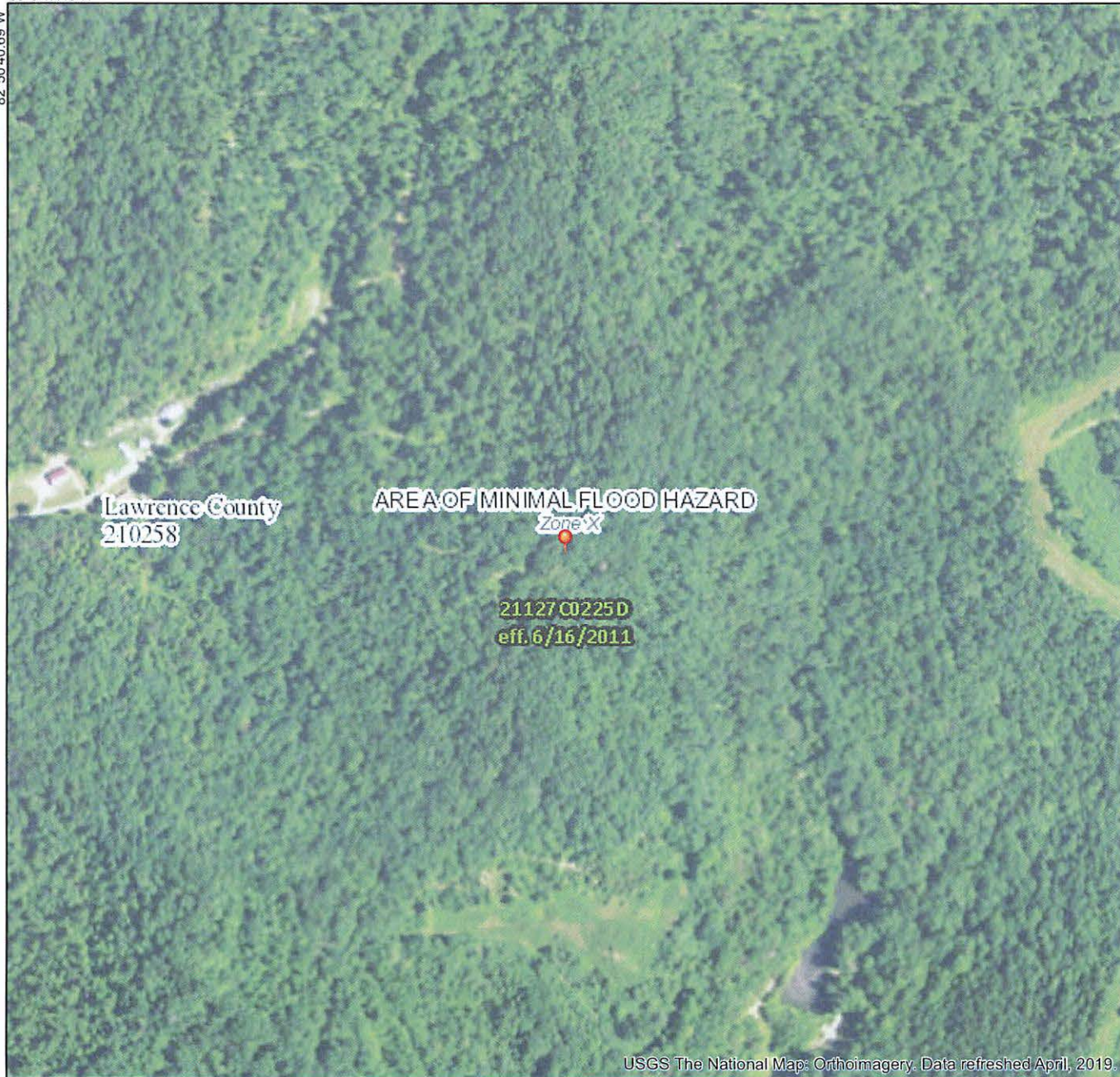
APPENDIX D MAPS

National Flood Hazard Layer FIRMette

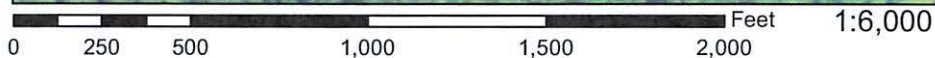


38°5'47.40"N

82°50'40.69"W



USGS The National Map: Orthoimagery. Data refreshed April, 2019.



38°5'19.08"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
MAP PANELS		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped

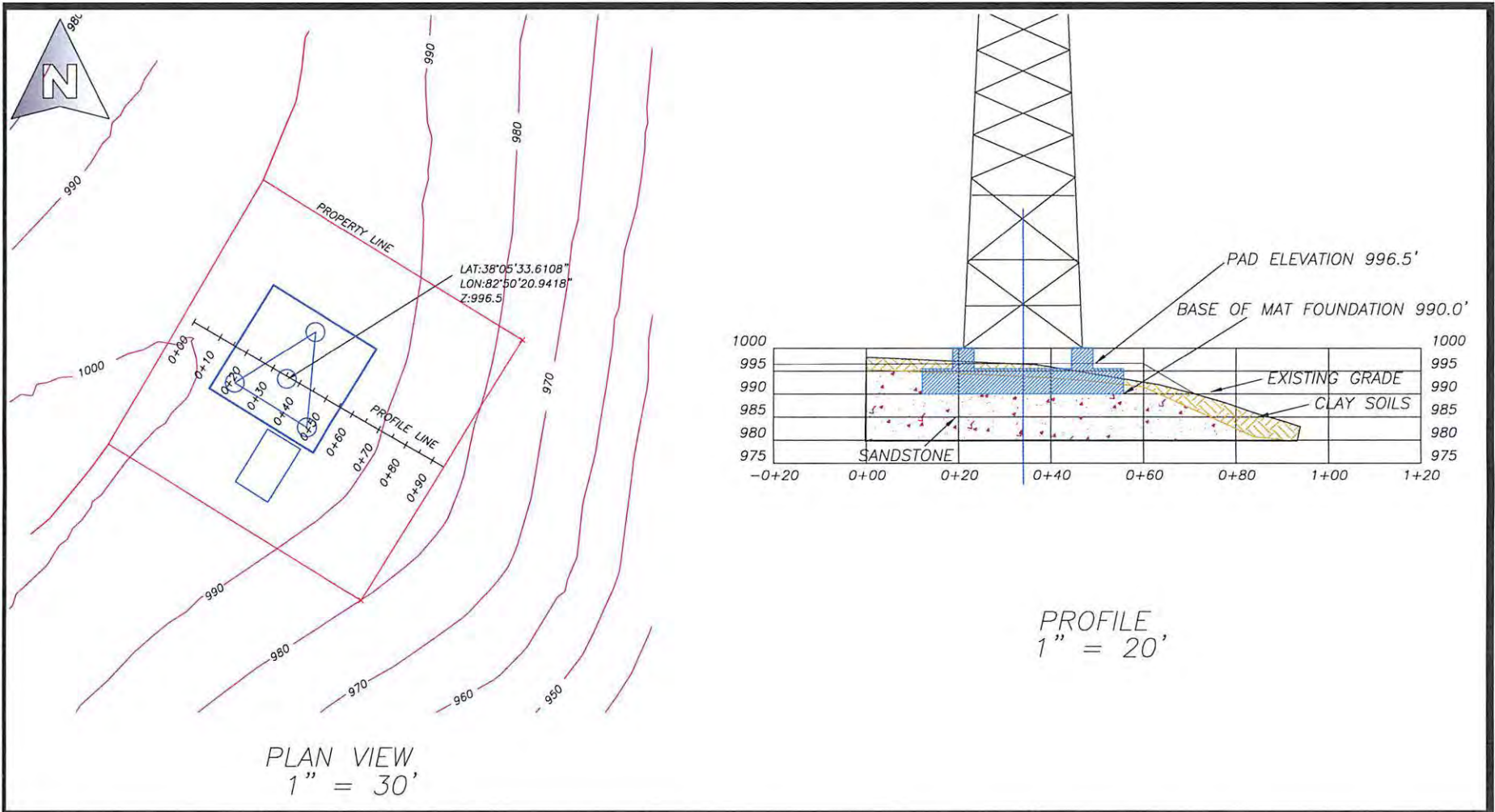
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **5/12/2020 at 10:02:35 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

82°50'3.23"W



East Kentucky Engineering, LLC

230 Swartz
Hazard, KY 41701
(606) 551-1050
Email: ekyeng@ekyeng.net

Richard D. Smith
RICHARD D. SMITH
11/20/2020
LICENSED PROFESSIONAL ENGINEER

0' 30' 40'

Drawn by: RDS 11/20/2020

Job #: 165-000-0110 Scale: 1" = AS NOTED

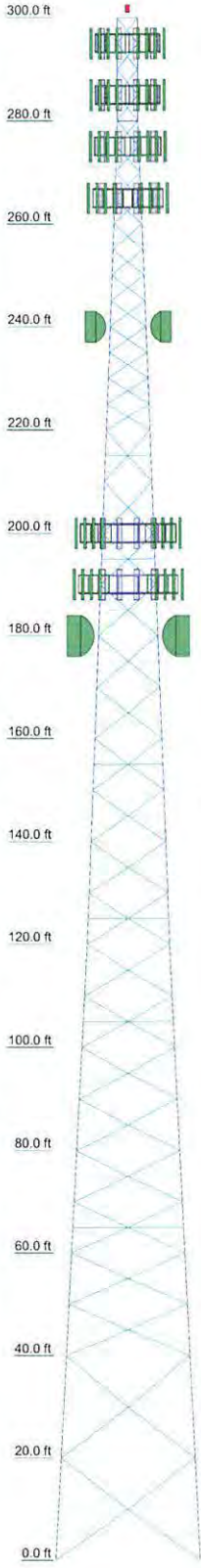
File Location:



APPALACHIAN WIRELESS
PROPOSED CHEROKEE TOWER LOCATION
LAWRENCE COUNTY
KENTUCKY

Exhibit 5

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	
Legs	SR 1 3/4	SR 2 1/2	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	SR 4 1/2	SR 4 1/2	SR 4 1/2	SR 4 3/4	SR 4 3/4	
Leg Grade																
Diagonals																
Diagonal Grade																
Top Girts																
Horizontals																
Red. Horizontals																
Red. Diagonals																
Inner Bracing																
Face Width (ft)																
# Panels @ (ft)																
Weight (K)																



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L2 1/2x2 1/2x3/16		

MATERIAL STRENGTH

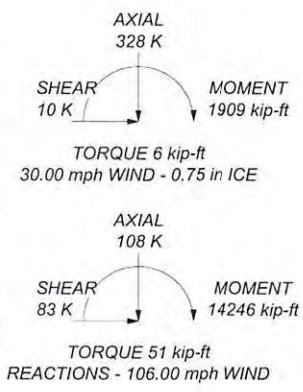
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

- ### TOWER DESIGN NOTES
1. Tower is located in Lawrence County, Kentucky.
 2. Tower designed for Exposure C to the TIA-222-G Standard.
 3. Tower designed for a 106.00 mph basic wind in accordance with the TIA-222-G Standard.
 4. Tower is also designed for a 30.00 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
 5. Deflections are based upon a 60.00 mph wind.
 6. Tower Risk Category II.
 7. Topographic Category 1 with Crest Height of 0.00 ft
 8. TOWER RATING: 99.7%

ALL REACTIONS
ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 623 K
SHEAR: 53 K

UPLIFT: -532 K
SHEAR: 45 K



World Tower Company		Job: 300' WSST Tower / Run Q210233	
1212 Compressor Drive		Project: Cherokee	
Mayfield, KY 42066		Client: Appalachian Wireless	Drawn by: WBH
Phone: (270) 247-3642		Code: TIA-222-G	Date: 04/01/21
FAX: (270) 247-0909		Scale: NTS	Dwg No. E-1
Path: E:\World Tower\2019\KY\Q210233 Cherokee\Analysis\Q210233.dwg			

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 1 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 300.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 4.00 ft at the top and 28.00 ft at the base.
This tower is designed using the TIA-222-G standard.

The following design criteria apply:

- Tower is located in Lawrence County, Kentucky.
- ASCE 7-10 Wind Data is used.
- Basic wind speed of 106.00 mph.
- Risk Category II.
- Exposure Category C.
- Topographic Category 1.
- Crest Height 0.00 ft.
- Nominal ice thickness of 0.75 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 30.00 mph is used in combination with ice.
- Temperature drop of 30 °F.
- Deflections calculated using a wind speed of 60.00 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in tower member design is 1.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 3 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	300.00-280.00	5.00	X Brace	No	No	0.00	0.00
T2	280.00-260.00	5.00	X Brace	No	No	0.00	0.00
T3	260.00-240.00	5.00	X Brace	No	No	0.00	0.00
T4	240.00-220.00	5.00	X Brace	No	No	0.00	0.00
T5	220.00-200.00	5.00	Double K	No	Yes	0.00	0.00
T6	200.00-180.00	5.00	Double K	No	Yes	0.00	0.00
T7	180.00-160.00	5.00	Double K	No	Yes	0.00	0.00
T8	160.00-140.00	5.00	Double K	No	Yes	0.00	0.00
T9	140.00-120.00	5.00	Double K	No	Yes	0.00	0.00
T10	120.00-100.00	5.00	Double K	No	Yes	0.00	0.00
T11	100.00-80.00	5.00	Double K	No	Yes	0.00	0.00
T12	80.00-60.00	5.00	Double K	No	Yes	0.00	0.00
T13	60.00-40.00	5.00	Double K	No	Yes	0.00	0.00
T14	40.00-20.00	10.00	Double K1	No	Yes	0.00	0.00
T15	20.00-0.00	10.00	Double K1	No	Yes	0.00	0.00

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 300.00-280.00	Solid Round	1 3/4	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T2 280.00-260.00	Solid Round	2 1/2	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T3 260.00-240.00	Solid Round	2 3/4	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T4 240.00-220.00	Solid Round	3	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T5 220.00-200.00	Solid Round	3 1/4	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T6 200.00-180.00	Solid Round	3 1/2	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T7 180.00-160.00	Solid Round	3 3/4	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T8 160.00-140.00	Solid Round	4	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T9 140.00-120.00	Solid Round	4	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T10 120.00-100.00	Solid Round	4 1/4	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T11 100.00-80.00	Solid Round	4 1/4	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T12 80.00-60.00	Solid Round	4 1/2	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T13 60.00-40.00	Solid Round	4 1/2	A572-50 (50 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)
T14 40.00-20.00	Solid Round	4 1/2	A572-50 (50 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)
T15 20.00-0.00	Solid Round	4 3/4	A572-50 (50 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 4 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

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 300.00-280.00	Equal Angle	L2x2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T2 280.00-260.00	Equal Angle	L2x2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 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
T5 220.00-200.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T6 200.00-180.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T7 180.00-160.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T8 160.00-140.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T9 140.00-120.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T10 120.00-100.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T11 100.00-80.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T12 80.00-60.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T13 60.00-40.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T14 40.00-20.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)
T15 20.00-0.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L4x4x1/4	A36 (36 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
T14 40.00-20.00	Equal Angle		A36 (36 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T15 20.00-0.00	Equal Angle		A36 (36 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 5 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Tower Section Geometry (cont'd)

Tower Elevation	Redundant Bracing Grade	Redundant Type	Redundant Size	K Factor
<i>ft</i>				
T14 40.00-20.00	A36 (36 ksi)	Horizontal (1) Diagonal (1)	Equal Angle L3x3x3/16	1
T15 20.00-0.00	A36 (36 ksi)	Horizontal (1) Diagonal (1)	Equal Angle L3x3x3/16	1

Tower Section Geometry (cont'd)

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_e	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
<i>ft</i>	<i>ft²</i>	<i>in</i>					<i>in</i>	<i>in</i>	<i>in</i>
T1 300.00-280.00	0.25	0.25	A36 (36 ksi)	1	1	1.06	0.00	0.00	36.00
T2 280.00-260.00	0.25	0.25	A36 (36 ksi)	1	1	1.07	0.00	0.00	36.00
T3 260.00-240.00	0.25	0.25	A36 (36 ksi)	1	1	1.07	0.00	0.00	36.00
T4 240.00-220.00	0.25	0.25	A36 (36 ksi)	1	1	1.07	0.00	0.00	36.00
T5 220.00-200.00	0.38	0.38	A36 (36 ksi)	1	1	1.07	0.00	0.00	36.00
T6 200.00-180.00	0.38	0.38	A36 (36 ksi)	1	1	1.07	0.00	0.00	36.00
T7 180.00-160.00	0.50	0.50	A36 (36 ksi)	1	1	1.07	0.00	0.00	36.00
T8 160.00-140.00	0.50	0.50	A36 (36 ksi)	1	1	1.07	0.00	0.00	36.00
T9 140.00-120.00	0.50	0.50	A36 (36 ksi)	1	1	1.07	0.00	0.00	36.00
T10 120.00-100.00	0.50	0.50	A36 (36 ksi)	1	1	1.07	0.00	0.00	36.00
T11 100.00-80.00	0.50	0.50	A36 (36 ksi)	1	1	1.07	0.00	0.00	36.00
T12 80.00-60.00	0.50	0.50	A36 (36 ksi)	1	1	1.07	0.00	0.00	36.00
T13 60.00-40.00	0.50	0.50	A36 (36 ksi)	1	1	1.07	0.00	0.00	36.00
T14 40.00-20.00	0.50	0.50	A36 (36 ksi)	1	1	1.08	0.00	0.00	36.00
T15 20.00-0.00	0.50	0.50	A36 (36 ksi)	1	1	1.08	0.00	0.00	36.00

Tower Section Geometry (cont'd)

K Factors¹

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 7 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

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
T7	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
180.00-160.00														
T8	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
160.00-140.00														
T9	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
140.00-120.00														
T10	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
120.00-100.00														
T11	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
100.00-80.00														
T12	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
80.00-60.00														
T13	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
60.00-40.00														
T14	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
40.00-20.00														
T15	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
20.00-0.00														

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	Flange	0.75	4	0.63	1	0.63	1	0.00	0	0.63	0	0.00	0	0.00	0
300.00-280.00		A325X		A325X		A325X		A325X		A325N		A325X		A325X	
T2	Flange	1.00	4	0.63	1	0.63	1	0.00	0	0.63	0	0.00	0	0.00	0
280.00-260.00		A325X		A325X		A325X		A325X		A325N		A325X		A325X	
T3	Flange	1.00	4	0.63	1	0.00	0	0.00	0	0.63	0	0.00	0	0.00	0
260.00-240.00		A325X		A325X		A325X		A325X		A325N		A325X		A325X	
T4	Flange	1.00	4	0.63	1	0.00	0	0.00	0	0.63	0	0.00	0	0.00	0
240.00-220.00		A325X		A325X		A325X		A325X		A325N		A325X		A325X	
T5	Flange	1.00	6	0.63	1	0.00	0	0.00	0	0.63	0	0.63	1	0.00	0
220.00-200.00		A325X		A325X		A325X		A325X		A325N		A325X		A325X	
T6	Flange	1.00	6	0.63	1	0.00	0	0.00	0	0.63	0	0.63	1	0.00	0
200.00-180.00		A325X		A325X		A325X		A325X		A325N		A325X		A325X	
T7	Flange	1.25	6	0.63	1	0.00	0	0.00	0	0.63	0	0.63	1	0.00	0
180.00-160.00		A325X>1"		A325X		A325X		A325X		A325N		A325X		A325X	
T8	Flange	1.25	6	0.63	1	0.00	0	0.00	0	0.63	0	0.63	1	0.00	0
160.00-140.00		A325X>1"		A325X		A325X		A325X		A325N		A325X		A325X	
T9	Flange	1.25	6	0.75	1	0.00	0	0.00	0	0.63	0	0.75	1	0.00	0
140.00-120.00		A325X>1"		A325X		A325X		A325X		A325N		A325X		A325X	
T10	Flange	1.25	6	0.75	1	0.00	0	0.00	0	0.63	0	0.75	1	0.00	0
120.00-100.00		A325X>1"		A325X		A325X		A325X		A325N		A325X		A325X	
T11	Flange	1.50	6	0.75	1	0.00	0	0.00	0	0.63	0	0.75	1	0.00	0
100.00-80.00		A325X>1"		A325X		A325X		A325X		A325N		A325X		A325X	
T12	Flange	1.50	6	0.75	1	0.00	0	0.00	0	0.63	0	0.75	1	0.00	0
80.00-60.00		A325X>1"		A325X		A325X		A325X		A325N		A325X		A325X	
T13	Flange	1.50	6	0.75	1	0.00	0	0.00	0	0.63	0	0.75	1	0.00	0
60.00-40.00		A325X>1"		A325X		A325X		A325X		A325N		A325X		A325X	

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 8 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T14 40.00-20.00	Flange	1.50	6	0.75	1	0.00	0	0.00	0	0.63	0	0.75	1	0.00	0
T15 20.00-0.00	Flange	1.50	6	0.75	1	0.00	0	0.00	0	0.63	0	0.75	1	0.00	0
		F1554-105		A325X		A325X		A325X		A325N		A325X		A325X	

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8	A	No	No	Ar (CaAa)	5.00 - 300.00	0.00	0.1	1	1	0.38	0.38		0.22
W/G LADDER RAIL*	B	No	No	Af (CaAa)	5.00 - 300.00	0.00	0	2	2	36.00	0.25		2.50
W/G LADDER RAIL*	C	No	No	Af (CaAa)	5.00 - 300.00	0.00	0	2	2	36.00	0.25		2.50

1 5/8	C	No	No	Ar (CaAa)	285.00 - 295.00	0.00	0	6	3	0.50	1.98		1.04
1 5/8	C	No	No	Ar (CaAa)	5.00 - 285.00	0.00	0	12	6	0.50	1.98		1.04
7/8	C	No	No	Ar (CaAa)	285.00 - 295.00	0.00	0	4	2	0.50	1.11		0.54
7/8	C	No	No	Ar (CaAa)	275.00 - 285.00	0.00	0	8	4	0.50	1.11		0.54
7/8	C	No	No	Ar (CaAa)	5.00 - 275.00	0.00	0	12	6	0.50	1.11		0.54

1 5/8	B	No	No	Ar (CaAa)	5.00 - 265.00	0.00	0	4	2	0.50	1.98		1.04
7/8	B	No	No	Ar (CaAa)	200.00 - 265.00	0.00	0	4	2	0.50	1.11		0.54
7/8	B	No	No	Ar (CaAa)	190.00 - 200.00	0.00	0	8	4	0.50	1.11		0.54
7/8	B	No	No	Ar (CaAa)	5.00 - 190.00	0.00	0	12	6	0.50	1.11		0.54
EW63	B	No	No	Ar (CaAa)	180.00 - 240.00	0.00	0	2	2	0.50	1.57		0.51
EW63	B	No	No	Ar (CaAa)	5.00 - 180.00	0.00	0	4	4	0.50	1.57		0.51

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
T1	300.00-280.00	A	0.000	0.000	0.750	0.000	0.00

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 9 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
T2	280.00-260.00	B	0.000	0.000	1.667	0.000	0.10
		C	0.000	0.000	34.307	0.000	0.27
		A	0.000	0.000	0.750	0.000	0.00
T3	260.00-240.00	B	0.000	0.000	7.847	0.000	0.13
		C	0.000	0.000	73.607	0.000	0.47
		A	0.000	0.000	0.750	0.000	0.00
T4	240.00-220.00	B	0.000	0.000	26.387	0.000	0.23
		C	0.000	0.000	75.827	0.000	0.48
		A	0.000	0.000	0.750	0.000	0.00
T5	220.00-200.00	B	0.000	0.000	32.684	0.000	0.25
		C	0.000	0.000	75.827	0.000	0.48
		A	0.000	0.000	0.750	0.000	0.00
T6	200.00-180.00	B	0.000	0.000	32.684	0.000	0.25
		C	0.000	0.000	75.827	0.000	0.48
		A	0.000	0.000	0.750	0.000	0.00
T7	180.00-160.00	B	0.000	0.000	46.004	0.000	0.31
		C	0.000	0.000	75.827	0.000	0.48
		A	0.000	0.000	0.750	0.000	0.00
T8	160.00-140.00	B	0.000	0.000	56.740	0.000	0.35
		C	0.000	0.000	75.827	0.000	0.48
		A	0.000	0.000	0.750	0.000	0.00
T9	140.00-120.00	B	0.000	0.000	56.740	0.000	0.35
		C	0.000	0.000	75.827	0.000	0.48
		A	0.000	0.000	0.750	0.000	0.00
T10	120.00-100.00	B	0.000	0.000	56.740	0.000	0.35
		C	0.000	0.000	75.827	0.000	0.48
		A	0.000	0.000	0.750	0.000	0.00
T11	100.00-80.00	B	0.000	0.000	56.740	0.000	0.35
		C	0.000	0.000	75.827	0.000	0.48
		A	0.000	0.000	0.750	0.000	0.00
T12	80.00-60.00	B	0.000	0.000	56.740	0.000	0.35
		C	0.000	0.000	75.827	0.000	0.48
		A	0.000	0.000	0.750	0.000	0.00
T13	60.00-40.00	B	0.000	0.000	56.740	0.000	0.35
		C	0.000	0.000	75.827	0.000	0.48
		A	0.000	0.000	0.750	0.000	0.00
T14	40.00-20.00	B	0.000	0.000	56.740	0.000	0.35
		C	0.000	0.000	75.827	0.000	0.48
		A	0.000	0.000	0.750	0.000	0.00
T15	20.00-0.00	B	0.000	0.000	56.740	0.000	0.35
		C	0.000	0.000	75.827	0.000	0.48
		A	0.000	0.000	0.563	0.000	0.00
		B	0.000	0.000	42.555	0.000	0.27
		C	0.000	0.000	56.870	0.000	0.36

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
T1	300.00-280.00	A	1.864	0.000	0.000	8.207	0.000	0.11
		B		0.000	0.000	16.580	0.000	0.44
		C		0.000	0.000	64.474	0.000	1.27
T2	280.00-260.00	A	1.851	0.000	0.000	8.153	0.000	0.11
		B		0.000	0.000	29.364	0.000	0.62
		C		0.000	0.000	100.265	0.000	2.09
T3	260.00-240.00	A	1.837	0.000	0.000	8.097	0.000	0.10
		B		0.000	0.000	67.720	0.000	1.17

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 10 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R \bar{f}^2	A_F \bar{f}^2	C_{AA} In Face \bar{f}^2	C_{AA} Out Face \bar{f}^2	Weight K
		C		0.000	0.000	101.707	0.000	2.12
T4	240.00-220.00	A	1.821	0.000	0.000	8.036	0.000	0.10
		B		0.000	0.000	89.796	0.000	1.40
		C		0.000	0.000	101.382	0.000	2.10
T5	220.00-200.00	A	1.805	0.000	0.000	7.970	0.000	0.10
		B		0.000	0.000	89.316	0.000	1.39
		C		0.000	0.000	101.030	0.000	2.09
T6	200.00-180.00	A	1.787	0.000	0.000	7.898	0.000	0.10
		B		0.000	0.000	98.555	0.000	1.63
		C		0.000	0.000	100.647	0.000	2.07
T7	180.00-160.00	A	1.767	0.000	0.000	7.819	0.000	0.10
		B		0.000	0.000	110.521	0.000	1.85
		C		0.000	0.000	100.226	0.000	2.05
T8	160.00-140.00	A	1.745	0.000	0.000	7.731	0.000	0.09
		B		0.000	0.000	109.898	0.000	1.83
		C		0.000	0.000	99.758	0.000	2.03
T9	140.00-120.00	A	1.720	0.000	0.000	7.632	0.000	0.09
		B		0.000	0.000	109.194	0.000	1.80
		C		0.000	0.000	99.230	0.000	2.01
T10	120.00-100.00	A	1.692	0.000	0.000	7.518	0.000	0.09
		B		0.000	0.000	108.386	0.000	1.78
		C		0.000	0.000	98.624	0.000	1.99
T11	100.00-80.00	A	1.658	0.000	0.000	7.383	0.000	0.09
		B		0.000	0.000	107.433	0.000	1.74
		C		0.000	0.000	97.908	0.000	1.96
T12	80.00-60.00	A	1.617	0.000	0.000	7.219	0.000	0.08
		B		0.000	0.000	106.267	0.000	1.71
		C		0.000	0.000	97.033	0.000	1.92
T13	60.00-40.00	A	1.564	0.000	0.000	7.005	0.000	0.08
		B		0.000	0.000	104.752	0.000	1.66
		C		0.000	0.000	95.897	0.000	1.87
T14	40.00-20.00	A	1.486	0.000	0.000	6.693	0.000	0.07
		B		0.000	0.000	102.549	0.000	1.59
		C		0.000	0.000	94.244	0.000	1.81
T15	20.00-0.00	A	1.331	0.000	0.000	4.556	0.000	0.04
		B		0.000	0.000	73.638	0.000	1.09
		C		0.000	0.000	68.226	0.000	1.26

Feed Line Center of Pressure

Section	Elevation ft	CP_x in	CP_z in	CP_x Ice in	CP_z Ice in
T1	300.00-280.00	0.17	3.24	0.65	2.46
T2	280.00-260.00	0.74	3.43	1.25	2.94
T3	260.00-240.00	2.53	2.06	3.34	2.01
T4	240.00-220.00	3.53	1.47	4.77	1.27
T5	220.00-200.00	3.88	1.58	5.39	1.42
T6	200.00-180.00	4.49	0.41	6.04	0.90
T7	180.00-160.00	5.28	-0.71	6.77	0.22
T8	160.00-140.00	5.63	-0.76	7.23	0.22
T9	140.00-120.00	5.56	-0.75	7.41	0.21
T10	120.00-100.00	6.15	-0.84	8.02	0.21
T11	100.00-80.00	6.17	-0.84	8.25	0.19
T12	80.00-60.00	6.28	-0.86	8.49	0.17
T13	60.00-40.00	6.20	-0.85	8.55	0.14
T14	40.00-20.00	6.89	-0.94	9.26	0.10

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 11 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
T15	20.00-0.00	5.65	-0.76	7.55	-0.01

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	1	Safety Line 3/8	280.00 - 300.00	0.6000	0.5038
T1	3	W/G LADDER RAIL*	280.00 - 300.00	0.6000	0.5038
T1	4	W/G LADDER RAIL*	280.00 - 300.00	0.6000	0.5038
T1	6	1 5/8	285.00 - 295.00	0.6000	0.5038
T1	7	1 5/8	280.00 - 285.00	0.6000	0.5038
T1	8	7/8	285.00 - 295.00	0.6000	0.5038
T1	9	7/8	280.00 - 285.00	0.6000	0.5038
T2	1	Safety Line 3/8	260.00 - 280.00	0.6000	0.5430
T2	3	W/G LADDER RAIL*	260.00 - 280.00	0.6000	0.5430
T2	4	W/G LADDER RAIL*	260.00 - 280.00	0.6000	0.5430
T2	7	1 5/8	260.00 - 280.00	0.6000	0.5430
T2	9	7/8	275.00 - 280.00	0.6000	0.5430
T2	10	7/8	260.00 - 275.00	0.6000	0.5430
T2	12	1 5/8	260.00 - 265.00	0.6000	0.5430
T2	13	7/8	260.00 - 265.00	0.6000	0.5430
T3	1	Safety Line 3/8	240.00 - 260.00	0.6000	0.6000
T3	3	W/G LADDER RAIL*	240.00 - 260.00	0.6000	0.6000
T3	4	W/G LADDER RAIL*	240.00 - 260.00	0.6000	0.6000
T3	7	1 5/8	240.00 - 260.00	0.6000	0.6000
T3	10	7/8	240.00 - 260.00	0.6000	0.6000
T3	12	1 5/8	240.00 - 260.00	0.6000	0.6000
T3	13	7/8	240.00 - 260.00	0.6000	0.6000
T4	1	Safety Line 3/8	220.00 - 240.00	0.6000	0.6000
T4	3	W/G LADDER RAIL*	220.00 - 240.00	0.6000	0.6000
T4	4	W/G LADDER RAIL*	220.00 -	0.6000	0.6000

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job	300' WSST Tower / Run Q210233	Page	12 of 30
	Project	Cherokee	Date	11:03:06 04/01/21
	Client	Appalachian Wireless	Designed by	WBH

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T4	7	1 5/8	240.00 220.00 - 240.00	0.6000	0.6000
T4	10	7/8	220.00 - 240.00	0.6000	0.6000
T4	12	1 5/8	220.00 - 240.00	0.6000	0.6000
T4	13	7/8	220.00 - 240.00	0.6000	0.6000
T4	16	EW63	220.00 - 240.00	0.6000	0.6000
T5	1	Safety Line 3/8	200.00 - 220.00	0.6000	0.6000
T5	3	W/G LADDER RAIL*	200.00 - 220.00	0.6000	0.6000
T5	4	W/G LADDER RAIL*	200.00 - 220.00	0.6000	0.6000
T5	7	1 5/8	200.00 - 220.00	0.6000	0.6000
T5	10	7/8	200.00 - 220.00	0.6000	0.6000
T5	12	1 5/8	200.00 - 220.00	0.6000	0.6000
T5	13	7/8	200.00 - 220.00	0.6000	0.6000
T5	16	EW63	200.00 - 220.00	0.6000	0.6000
T6	1	Safety Line 3/8	180.00 - 200.00	0.6000	0.6000
T6	3	W/G LADDER RAIL*	180.00 - 200.00	0.6000	0.6000
T6	4	W/G LADDER RAIL*	180.00 - 200.00	0.6000	0.6000
T6	7	1 5/8	180.00 - 200.00	0.6000	0.6000
T6	10	7/8	180.00 - 200.00	0.6000	0.6000
T6	12	1 5/8	180.00 - 200.00	0.6000	0.6000
T6	14	7/8	190.00 - 200.00	0.6000	0.6000
T6	15	7/8	180.00 - 190.00	0.6000	0.6000
T6	16	EW63	180.00 - 200.00	0.6000	0.6000
T7	1	Safety Line 3/8	160.00 - 180.00	0.6000	0.6000
T7	3	W/G LADDER RAIL*	160.00 - 180.00	0.6000	0.6000
T7	4	W/G LADDER RAIL*	160.00 - 180.00	0.6000	0.6000
T7	7	1 5/8	160.00 - 180.00	0.6000	0.6000
T7	10	7/8	160.00 - 180.00	0.6000	0.6000
T7	12	1 5/8	160.00 - 180.00	0.6000	0.6000
T7	15	7/8	160.00 - 180.00	0.6000	0.6000
T7	17	EW63	160.00 - 180.00	0.6000	0.6000
T8	1	Safety Line 3/8	140.00 -	0.6000	0.6000

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 13 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T8	3	W/G LADDER RAIL*	160.00	0.6000	0.6000
T8	4	W/G LADDER RAIL*	140.00 - 160.00	0.6000	0.6000
T8	7	1 5/8	140.00 - 160.00	0.6000	0.6000
T8	10	7/8	140.00 - 160.00	0.6000	0.6000
T8	12	1 5/8	140.00 - 160.00	0.6000	0.6000
T8	15	7/8	140.00 - 160.00	0.6000	0.6000
T8	17	EW63	140.00 - 160.00	0.6000	0.6000
T9	1	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T9	3	W/G LADDER RAIL*	120.00 - 140.00	0.6000	0.6000
T9	4	W/G LADDER RAIL*	120.00 - 140.00	0.6000	0.6000
T9	7	1 5/8	120.00 - 140.00	0.6000	0.6000
T9	10	7/8	120.00 - 140.00	0.6000	0.6000
T9	12	1 5/8	120.00 - 140.00	0.6000	0.6000
T9	15	7/8	120.00 - 140.00	0.6000	0.6000
T9	17	EW63	120.00 - 140.00	0.6000	0.6000
T10	1	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T10	3	W/G LADDER RAIL*	100.00 - 120.00	0.6000	0.6000
T10	4	W/G LADDER RAIL*	100.00 - 120.00	0.6000	0.6000
T10	7	1 5/8	100.00 - 120.00	0.6000	0.6000
T10	10	7/8	100.00 - 120.00	0.6000	0.6000
T10	12	1 5/8	100.00 - 120.00	0.6000	0.6000
T10	15	7/8	100.00 - 120.00	0.6000	0.6000
T10	17	EW63	100.00 - 120.00	0.6000	0.6000
T11	1	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T11	3	W/G LADDER RAIL*	80.00 - 100.00	0.6000	0.6000
T11	4	W/G LADDER RAIL*	80.00 - 100.00	0.6000	0.6000
T11	7	1 5/8	80.00 - 100.00	0.6000	0.6000
T11	10	7/8	80.00 - 100.00	0.6000	0.6000
T11	12	1 5/8	80.00 - 100.00	0.6000	0.6000
T11	15	7/8	80.00 - 100.00	0.6000	0.6000
T11	17	EW63	80.00 - 100.00	0.6000	0.6000
T12	1	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T12	3	W/G LADDER RAIL*	60.00 - 80.00	0.6000	0.6000
T12	4	W/G LADDER RAIL*	60.00 - 80.00	0.6000	0.6000
T12	7	1 5/8	60.00 - 80.00	0.6000	0.6000
T12	10	7/8	60.00 - 80.00	0.6000	0.6000
T12	12	1 5/8	60.00 - 80.00	0.6000	0.6000
T12	15	7/8	60.00 - 80.00	0.6000	0.6000

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 14 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T12	17	EW63	60.00 - 80.00	0.6000	0.6000
T13	1	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T13	3	W/G LADDER RAIL*	40.00 - 60.00	0.6000	0.6000
T13	4	W/G LADDER RAIL*	40.00 - 60.00	0.6000	0.6000
T13	7	1 5/8	40.00 - 60.00	0.6000	0.6000
T13	10	7/8	40.00 - 60.00	0.6000	0.6000
T13	12	1 5/8	40.00 - 60.00	0.6000	0.6000
T13	15	7/8	40.00 - 60.00	0.6000	0.6000
T13	17	EW63	40.00 - 60.00	0.6000	0.6000
T14	1	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T14	3	W/G LADDER RAIL*	20.00 - 40.00	0.6000	0.6000
T14	4	W/G LADDER RAIL*	20.00 - 40.00	0.6000	0.6000
T14	7	1 5/8	20.00 - 40.00	0.6000	0.6000
T14	10	7/8	20.00 - 40.00	0.6000	0.6000
T14	12	1 5/8	20.00 - 40.00	0.6000	0.6000
T14	15	7/8	20.00 - 40.00	0.6000	0.6000
T14	17	EW63	20.00 - 40.00	0.6000	0.6000
T15	1	Safety Line 3/8	5.00 - 20.00	0.6000	0.6000
T15	3	W/G LADDER RAIL*	5.00 - 20.00	0.6000	0.6000
T15	4	W/G LADDER RAIL*	5.00 - 20.00	0.6000	0.6000
T15	7	1 5/8	5.00 - 20.00	0.6000	0.6000
T15	10	7/8	5.00 - 20.00	0.6000	0.6000
T15	12	1 5/8	5.00 - 20.00	0.6000	0.6000
T15	15	7/8	5.00 - 20.00	0.6000	0.6000
T15	17	EW63	5.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_{AA} Front ft^2	C_{AA} Side ft^2	Weight K
Beacon Lighting	A	From Leg	0.00	0.000	300.00	No Ice	1.50	1.50	0.05
						1/2" Ice	2.00	2.00	0.07
						1" Ice	2.50	2.50	0.09
Lightning Rod 5/8x4'	C	From Leg	0.00	0.000	300.00	No Ice	0.25	0.25	0.03
						1/2" Ice	0.66	0.66	0.03
						1" Ice	0.97	0.97	0.04

WD13X53 Antenna Mounting Frame	A	From Leg	1.50	0.000	295.00	No Ice	9.71	5.18	0.40
						1/2" Ice	13.89	7.60	1.60
						1" Ice	18.07	10.02	2.80
WD13X53 Antenna Mounting Frame	B	From Leg	1.50	0.000	295.00	No Ice	9.71	5.18	0.40
						1/2" Ice	13.89	7.60	1.60
						1" Ice	18.07	10.02	2.80
WD13X53 Antenna Mounting Frame	C	From Leg	1.50	0.000	295.00	No Ice	9.71	5.18	0.40
						1/2" Ice	13.89	7.60	1.60
						1" Ice	18.07	10.02	2.80
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	A	From Leg	3.00	0.000	295.00	No Ice	12.31	4.91	0.08
						1/2" Ice	12.77	5.54	0.16
						1" Ice	13.23	6.18	0.25
(4) Commscope NN-65A-M	B	From Leg	3.00	0.000	295.00	No Ice	12.31	4.91	0.08

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job		300' WSST Tower / Run Q210233		Page	15 of 30
	Project		Cherokee		Date	11:03:06 04/01/21
	Client		Appalachian Wireless		Designed by	WBH

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C _A A ₄ Front	C _A A ₄ Side	Weight
			ft ft ft	°	ft	ft ²	ft ²	K
w/ mt. pipe* (54.9" x 26.9" x 7.1")			0			1/2" Ice 12.77	5.54	0.16
			0			1" Ice 13.23	6.18	0.25
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	C	From Leg	3.00	0.000	295.00	No Ice 12.31	4.91	0.08
			0			1/2" Ice 12.77	5.54	0.16
			0			1" Ice 13.23	6.18	0.25
(4) RRU-12	A	From Leg	2.00	0.000	295.00	No Ice 3.14	1.25	0.06
			0			1/2" Ice 3.36	1.41	0.08
			0			1" Ice 3.59	1.56	0.10
(4) RRU-12	B	From Leg	2.00	0.000	295.00	No Ice 3.14	1.25	0.06
			0			1/2" Ice 3.36	1.41	0.08
			0			1" Ice 3.59	1.56	0.10
(4) RRU-12	C	From Leg	2.00	0.000	295.00	No Ice 3.14	1.25	0.06
			0			1/2" Ice 3.36	1.41	0.08
			0			1" Ice 3.59	1.56	0.10

WD13X53 Antenna Mounting Frame	A	From Leg	1.50	0.000	285.00	No Ice 9.71	5.18	0.40
			0			1/2" Ice 13.89	7.60	1.60
			0			1" Ice 18.07	10.02	2.80
WD13X53 Antenna Mounting Frame	B	From Leg	1.50	0.000	285.00	No Ice 9.71	5.18	0.40
			0			1/2" Ice 13.89	7.60	1.60
			0			1" Ice 18.07	10.02	2.80
WD13X53 Antenna Mounting Frame	C	From Leg	1.50	0.000	285.00	No Ice 9.71	5.18	0.40
			0			1/2" Ice 13.89	7.60	1.60
			0			1" Ice 18.07	10.02	2.80
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	A	From Leg	3.00	0.000	285.00	No Ice 12.31	4.91	0.08
			0			1/2" Ice 12.77	5.54	0.16
			0			1" Ice 13.23	6.18	0.25
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	B	From Leg	3.00	0.000	285.00	No Ice 12.31	4.91	0.08
			0			1/2" Ice 12.77	5.54	0.16
			0			1" Ice 13.23	6.18	0.25
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	C	From Leg	3.00	0.000	285.00	No Ice 12.31	4.91	0.08
			0			1/2" Ice 12.77	5.54	0.16
			0			1" Ice 13.23	6.18	0.25
(4) RRU-12	A	From Leg	2.00	0.000	285.00	No Ice 3.14	1.25	0.06
			0			1/2" Ice 3.36	1.41	0.08
			0			1" Ice 3.59	1.56	0.10
(4) RRU-12	B	From Leg	2.00	0.000	285.00	No Ice 3.14	1.25	0.06
			0			1/2" Ice 3.36	1.41	0.08
			0			1" Ice 3.59	1.56	0.10
(4) RRU-12	C	From Leg	2.00	0.000	285.00	No Ice 3.14	1.25	0.06
			0			1/2" Ice 3.36	1.41	0.08
			0			1" Ice 3.59	1.56	0.10

WD13X53 Antenna Mounting Frame	A	From Leg	1.50	0.000	275.00	No Ice 9.71	5.18	0.40
			0			1/2" Ice 13.89	7.60	1.60
			0			1" Ice 18.07	10.02	2.80
WD13X53 Antenna Mounting Frame	B	From Leg	1.50	0.000	275.00	No Ice 9.71	5.18	0.40
			0			1/2" Ice 13.89	7.60	1.60
			0			1" Ice 18.07	10.02	2.80
WD13X53 Antenna Mounting Frame	C	From Leg	1.50	0.000	275.00	No Ice 9.71	5.18	0.40
			0			1/2" Ice 13.89	7.60	1.60
			0			1" Ice 18.07	10.02	2.80
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	A	From Leg	3.00	0.000	275.00	No Ice 12.31	4.91	0.08
			0			1/2" Ice 12.77	5.54	0.16
			0			1" Ice 13.23	6.18	0.25
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	B	From Leg	3.00	0.000	275.00	No Ice 12.31	4.91	0.08
			0			1/2" Ice 12.77	5.54	0.16

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job	300' WSST Tower / Run Q210233	Page	16 of 30
	Project	Cherokee	Date	11:03:06 04/01/21
	Client	Appalachian Wireless	Designed by	WBH

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
7.1"			0					
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	C	From Leg	3.00	0.000	275.00	No Ice 12.31 1/2" Ice 12.77 1" Ice 13.23	6.18 4.91 5.54	0.25 0.08 0.16
(4) RRU-12	A	From Leg	2.00	0.000	275.00	No Ice 3.14 1/2" Ice 3.36 1" Ice 3.59	1.25 1.41 1.56	0.06 0.08 0.10
(4) RRU-12	B	From Leg	2.00	0.000	275.00	No Ice 3.14 1/2" Ice 3.36 1" Ice 3.59	1.25 1.41 1.56	0.06 0.08 0.10
(4) RRU-12	C	From Leg	2.00	0.000	275.00	No Ice 3.14 1/2" Ice 3.36 1" Ice 3.59	1.25 1.41 1.56	0.06 0.08 0.10

WD13X53 Antenna Mounting Frame	A	From Leg	1.50	0.000	265.00	No Ice 9.71 1/2" Ice 13.89 1" Ice 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	B	From Leg	1.50	0.000	265.00	No Ice 9.71 1/2" Ice 13.89 1" Ice 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	C	From Leg	1.50	0.000	265.00	No Ice 9.71 1/2" Ice 13.89 1" Ice 18.07	5.18 7.60 10.02	0.40 1.60 2.80
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	A	From Leg	3.00	0.000	265.00	No Ice 12.31 1/2" Ice 12.77 1" Ice 13.23	4.91 5.54 6.18	0.08 0.16 0.25
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	B	From Leg	3.00	0.000	265.00	No Ice 12.31 1/2" Ice 12.77 1" Ice 13.23	4.91 5.54 6.18	0.08 0.16 0.25
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	C	From Leg	3.00	0.000	265.00	No Ice 12.31 1/2" Ice 12.77 1" Ice 13.23	4.91 5.54 6.18	0.08 0.16 0.25
(4) RRU-12	A	From Leg	2.00	0.000	265.00	No Ice 3.14 1/2" Ice 3.36 1" Ice 3.59	1.25 1.41 1.56	0.06 0.08 0.10
(4) RRU-12	B	From Leg	2.00	0.000	265.00	No Ice 3.14 1/2" Ice 3.36 1" Ice 3.59	1.25 1.41 1.56	0.06 0.08 0.10
(4) RRU-12	C	From Leg	2.00	0.000	265.00	No Ice 3.14 1/2" Ice 3.36 1" Ice 3.59	1.25 1.41 1.56	0.06 0.08 0.10

WD13X53 Antenna Mounting Frame	A	From Leg	1.50	0.000	200.00	No Ice 9.71 1/2" Ice 13.89 1" Ice 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	B	From Leg	1.50	0.000	200.00	No Ice 9.71 1/2" Ice 13.89 1" Ice 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	C	From Leg	1.50	0.000	200.00	No Ice 9.71 1/2" Ice 13.89 1" Ice 18.07	5.18 7.60 10.02	0.40 1.60 2.80
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	A	From Leg	3.00	0.000	200.00	No Ice 12.31 1/2" Ice 12.77 1" Ice 13.23	4.91 5.54 6.18	0.08 0.16 0.25
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	B	From Leg	3.00	0.000	200.00	No Ice 12.31 1/2" Ice 12.77 1" Ice 13.23	4.91 5.54 6.18	0.08 0.16 0.25

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job	300' WSST Tower / Run Q210233	Page	17 of 30
	Project	Cherokee	Date	11:03:06 04/01/21
	Client	Appalachian Wireless	Designed by	WBH

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	C	From Leg	3.00	0.000	200.00	No Ice	12.31	4.91	0.08
			0			1/2" Ice	12.77	5.54	0.16
			0			1" Ice	13.23	6.18	0.25
(4) RRU-12	A	From Leg	2.00	0.000	200.00	No Ice	3.14	1.25	0.06
			0			1/2" Ice	3.36	1.41	0.08
			0			1" Ice	3.59	1.56	0.10
(4) RRU-12	B	From Leg	2.00	0.000	200.00	No Ice	3.14	1.25	0.06
			0			1/2" Ice	3.36	1.41	0.08
			0			1" Ice	3.59	1.56	0.10
(4) RRU-12	C	From Leg	2.00	0.000	200.00	No Ice	3.14	1.25	0.06
			0			1/2" Ice	3.36	1.41	0.08
			0			1" Ice	3.59	1.56	0.10

WD13X53 Antenna Mounting Frame	A	From Leg	1.50	0.000	190.00	No Ice	9.71	5.18	0.40
			0			1/2" Ice	13.89	7.60	1.60
			0			1" Ice	18.07	10.02	2.80
WD13X53 Antenna Mounting Frame	B	From Leg	1.50	0.000	190.00	No Ice	9.71	5.18	0.40
			0			1/2" Ice	13.89	7.60	1.60
			0			1" Ice	18.07	10.02	2.80
WD13X53 Antenna Mounting Frame	C	From Leg	1.50	0.000	190.00	No Ice	9.71	5.18	0.40
			0			1/2" Ice	13.89	7.60	1.60
			0			1" Ice	18.07	10.02	2.80
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	A	From Leg	3.00	0.000	190.00	No Ice	12.31	4.91	0.08
			0			1/2" Ice	12.77	5.54	0.16
			0			1" Ice	13.23	6.18	0.25
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	B	From Leg	3.00	0.000	190.00	No Ice	12.31	4.91	0.08
			0			1/2" Ice	12.77	5.54	0.16
			0			1" Ice	13.23	6.18	0.25
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	C	From Leg	3.00	0.000	190.00	No Ice	12.31	4.91	0.08
			0			1/2" Ice	12.77	5.54	0.16
			0			1" Ice	13.23	6.18	0.25
(4) RRU-12	A	From Leg	2.00	0.000	190.00	No Ice	3.14	1.25	0.06
			0			1/2" Ice	3.36	1.41	0.08
			0			1" Ice	3.59	1.56	0.10
(4) RRU-12	B	From Leg	2.00	0.000	190.00	No Ice	3.14	1.25	0.06
			0			1/2" Ice	3.36	1.41	0.08
			0			1" Ice	3.59	1.56	0.10
(4) RRU-12	C	From Leg	2.00	0.000	190.00	No Ice	3.14	1.25	0.06
			0			1/2" Ice	3.36	1.41	0.08
			0			1" Ice	3.59	1.56	0.10

Dish Mount	B	From Leg	0.50	0.000	240.00	No Ice	1.62	1.62	0.02
			0			1/2" Ice	2.34	2.34	0.04
			0			1" Ice	2.69	2.69	0.06
Dish Mount	C	From Leg	0.50	0.000	240.00	No Ice	1.62	1.62	0.02
			0			1/2" Ice	2.34	2.34	0.04
			0			1" Ice	2.69	2.69	0.06
Dish Mount	B	From Leg	0.50	0.000	180.00	No Ice	1.62	1.62	0.02
			0			1/2" Ice	2.34	2.34	0.04
			0			1" Ice	2.69	2.69	0.06
Dish Mount	C	From Leg	0.50	0.000	180.00	No Ice	1.62	1.62	0.02
			0			1/2" Ice	2.34	2.34	0.04
			0			1" Ice	2.69	2.69	0.06

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 18 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz Lateral	Vert							
				ft	°	°	ft	ft	ft ²	K		
8 FT DISH	B	Paraboloid w/Shroud (HP)	From Leg	1.00	0.000			180.00	8.00	No Ice	50.30	0.25
				0						1/2" Ice	51.29	0.51
				0						1" Ice	52.28	0.78
8 FT DISH	C	Paraboloid w/Shroud (HP)	From Leg	1.00	0.000			180.00	8.00	No Ice	50.30	0.25
				0						1/2" Ice	51.29	0.51
				0						1" Ice	52.28	0.78
6 FT DISH	B	Paraboloid w/Shroud (HP)	From Leg	1.00	0.000			240.00	6.00	No Ice	28.27	0.14
				0						1/2" Ice	29.05	0.29
				0						1" Ice	29.83	0.44
6 FT DISH	C	Paraboloid w/Shroud (HP)	From Leg	1.00	0.000			240.00	6.00	No Ice	28.27	0.14
				0						1/2" Ice	29.05	0.29
				0						1" Ice	29.83	0.44

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 19 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Comb. No.	Description
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 Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	300 - 280	18.51	39	0.628	0.065
T2	280 - 260	15.88	39	0.608	0.065
T3	260 - 240	13.38	39	0.561	0.062
T4	240 - 220	11.11	39	0.497	0.058
T5	220 - 200	9.10	39	0.435	0.049
T6	200 - 180	7.35	39	0.378	0.041
T7	180 - 160	5.82	39	0.327	0.036
T8	160 - 140	4.51	39	0.279	0.030
T9	140 - 120	3.38	39	0.236	0.024
T10	120 - 100	2.45	39	0.192	0.020
T11	100 - 80	1.69	39	0.154	0.015
T12	80 - 60	1.09	39	0.117	0.012
T13	60 - 40	0.62	39	0.085	0.008
T14	40 - 20	0.29	39	0.055	0.005
T15	20 - 0	0.07	39	0.025	0.002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
300.00	Beacon Lighting	39	18.51	0.628	0.065	152550
295.00	WD13X53 Antenna Mounting Frame	39	17.85	0.624	0.065	152550
285.00	WD13X53 Antenna Mounting Frame	39	16.53	0.615	0.065	50850
275.00	WD13X53 Antenna Mounting Frame	39	15.24	0.599	0.064	30385
265.00	WD13X53 Antenna Mounting Frame	39	13.98	0.575	0.063	21551
240.00	6 FT DISH	39	11.11	0.497	0.058	18286
200.00	WD13X53 Antenna Mounting	39	7.35	0.378	0.041	22192

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 20 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
190.00	Frame WD13X53 Antenna Mounting	39	6.56	0.352	0.039	22123
180.00	Frame 8 FT DISH	39	5.82	0.327	0.036	22004

Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
T1	300 - 280	58.13	2	1.973	0.205
T2	280 - 260	49.87	2	1.911	0.203
T3	260 - 240	42.00	2	1.763	0.194
T4	240 - 220	34.88	2	1.564	0.181
T5	220 - 200	28.57	2	1.367	0.153
T6	200 - 180	23.07	2	1.187	0.129
T7	180 - 160	18.27	2	1.026	0.112
T8	160 - 140	14.14	2	0.877	0.093
T9	140 - 120	10.61	2	0.742	0.077
T10	120 - 100	7.67	2	0.603	0.063
T11	100 - 80	5.29	2	0.482	0.048
T12	80 - 60	3.40	2	0.366	0.036
T13	60 - 40	1.96	2	0.268	0.025
T14	40 - 20	0.91	2	0.173	0.015
T15	20 - 0	0.23	3	0.079	0.007

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
300.00	Beacon Lighting	2	58.13	1.973	0.205	48548
295.00	WD13X53 Antenna Mounting	2	56.05	1.962	0.204	48548
285.00	Frame WD13X53 Antenna Mounting	2	51.91	1.933	0.204	16182
275.00	Frame WD13X53 Antenna Mounting	2	47.85	1.883	0.201	9663
265.00	Frame WD13X53 Antenna Mounting	2	43.91	1.807	0.196	6864
240.00	6 FT DISH	2	34.88	1.564	0.181	5827
200.00	WD13X53 Antenna Mounting	2	23.07	1.187	0.129	7053
190.00	Frame WD13X53 Antenna Mounting	2	20.58	1.105	0.120	7036
180.00	Frame 8 FT DISH	2	18.27	1.026	0.112	7003

Bolt Design Data

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job	300' WSST Tower / Run Q210233	Page	21 of 30
	Project	Cherokee	Date	11:03:06 04/01/21
	Client	Appalachian Wireless	Designed by	WBH

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	300	Leg	A325X	0.75	4	4.58	29.82	0.154 ✓	1	Bolt Tension
		Diagonal	A325X	0.63	1	5.09	8.89	0.572 ✓	1	Member Block Shear
		Top Girt	A325X	0.63	1	0.52	8.89	0.059 ✓	1	Member Block Shear
T2	280	Leg	A325X	1.00	4	17.60	53.01	0.332 ✓	1	Bolt Tension
		Diagonal	A325X	0.63	1	6.63	8.89	0.745 ✓	1	Member Block Shear
		Top Girt	A325X	0.63	1	1.36	8.89	0.153 ✓	1	Member Block Shear
T3	260	Leg	A325X	1.00	4	31.31	53.01	0.591 ✓	1	Bolt Tension
		Diagonal	A325X	0.63	1	6.30	8.89	0.708 ✓	1	Member Block Shear
T4	240	Leg	A325X	1.00	4	42.80	53.01	0.807 ✓	1	Bolt Tension
		Diagonal	A325X	0.63	1	6.25	8.89	0.702 ✓	1	Member Block Shear
T5	220	Leg	A325X	1.00	6	34.20	53.01	0.645 ✓	1	Bolt Tension
		Diagonal	A325X	0.63	1	7.47	10.93	0.683 ✓	1	Member Block Shear
		Horizontal	A325X	0.63	1	4.53	8.89	0.510 ✓	1	Member Block Shear
T6	200	Leg	A325X	1.00	6	41.04	53.01	0.774 ✓	1	Bolt Tension
		Diagonal	A325X	0.63	1	10.21	11.09	0.920 ✓	1	Member Bearing
		Horizontal	A325X	0.63	1	5.24	8.89	0.589 ✓	1	Member Block Shear
T7	180	Leg	A325X>1'	1.25	6	49.14	72.51	0.678 ✓	1	Bolt Tension
		Diagonal	A325X	0.63	1	11.53	14.79	0.780 ✓	1	Member Bearing
		Horizontal	A325X	0.63	1	5.97	10.93	0.546 ✓	1	Member Block Shear
T8	160	Leg	A325X>1'	1.25	6	56.53	72.51	0.780 ✓	1	Bolt Tension
		Diagonal	A325X	0.63	1	11.36	15.19	0.748 ✓	1	Bolt Shear
		Horizontal	A325X	0.63	1	6.59	10.93	0.603 ✓	1	Member Block Shear
T9	140	Leg	A325X>1'	1.25	6	63.33	72.51	0.873 ✓	1	Bolt Tension
		Diagonal	A325X	0.75	1	10.82	17.84	0.607 ✓	1	Member Bearing
		Horizontal	A325X	0.75	1	7.41	13.38	0.554 ✓	1	Member Bearing
T10	120	Leg	A325X>1'	1.25	6	68.36	72.51	0.943 ✓	1	Bolt Tension
		Diagonal	A325X	0.75	1	8.01	17.84	0.449 ✓	1	Member Bearing
		Horizontal	A325X	0.75	1	8.04	13.38	0.601 ✓	1	Member Bearing
T11	100	Leg	A325X>1'	1.50	6	72.47	104.41	0.694 ✓	1	Bolt Tension
		Diagonal	A325X	0.75	1	8.21	17.84	0.461 ✓	1	Member Bearing
		Horizontal	A325X	0.75	1	8.58	17.84	0.481 ✓	1	Member Bearing
T12	80	Leg	A325X>1'	1.50	6	76.45	104.41	0.732 ✓	1	Bolt Tension
		Diagonal	A325X	0.75	1	8.66	17.84	0.486 ✓	1	Member Bearing

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 22 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

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
T13	60	Horizontal	A325X	0.75	1	9.12	17.84	0.511 ✓	1	Member Bearing
		Leg	A325X>1'	1.50	6	80.33	104.41	0.769 ✓	1	Bolt Tension
		Diagonal	A325X	0.75	1	9.41	17.84	0.528 ✓	1	Member Bearing
T14	40	Horizontal	A325X	0.75	1	9.65	17.84	0.541 ✓	1	Member Bearing
		Leg	A325X>1'	1.50	6	82.93	104.41	0.794 ✓	1	Bolt Tension
		Diagonal	A325X	0.75	1	11.89	17.84	0.667 ✓	1	Member Bearing
T15	20	Horizontal	A325X	0.75	1	10.04	17.84	0.563 ✓	1	Member Bearing
		Leg	F1554-10 5	1.50	6	86.74	124.25	0.698 ✓	1	Bolt Tension
		Diagonal	A325X	0.75	1	11.74	17.84	0.658 ✓	1	Member Bearing
		Horizontal	A325X	0.75	1	10.58	17.84	0.593 ✓	1	Member Bearing

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	300 - 280	1 3/4	20.00	5.00	137.1 K=1.00	2.41	-23.18	28.89	0.802 ¹ ✓
T2	280 - 260	2 1/2	20.02	5.00	96.1 K=1.00	4.91	-81.72	112.46	0.727 ¹ ✓
T3	260 - 240	2 3/4	20.02	5.00	87.4 K=1.00	5.94	-139.50	152.99	0.912 ¹ ✓
T4	240 - 220	3	20.02	5.00	80.1 K=1.00	7.07	-189.05	199.04	0.950 ¹ ✓
T5	220 - 200	3 1/4	20.02	5.00	73.9 K=1.00	8.30	-226.56	250.37	0.905 ¹ ✓
T6	200 - 180	3 1/2	20.02	5.00	68.6 K=1.00	9.62	-275.93	306.80	0.899 ¹ ✓
T7	180 - 160	3 3/4	20.02	5.00	64.1 K=1.00	11.04	-329.83	368.18	0.896 ¹ ✓
T8	160 - 140	4	20.02	5.00	60.1 K=1.00	12.57	-379.97	434.40	0.875 ¹ ✓
T9	140 - 120	4	20.02	5.00	60.1 K=1.00	12.57	-426.96	434.40	0.983 ¹ ✓
T10	120 - 100	4 1/4	20.03	5.01	56.6 K=1.00	14.19	-463.68	505.22	0.918 ¹ ✓
T11	100 - 80	4 1/4	20.03	5.01	56.6 K=1.00	14.19	-494.85	505.22	0.979 ¹ ✓
T12	80 - 60	4 1/2	20.03	5.01	53.4 K=1.00	15.90	-525.79	580.90	0.905 ¹ ✓

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 23 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

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	60 - 40	4 1/2	20.03	5.01	53.4 K=1.00	15.90	-556.61	580.90	0.958 ¹
T14	40 - 20	4 1/2	20.03	5.01	53.4 K=1.00	15.90	-578.99	580.90	0.997 ¹
T15	20 - 0	4 3/4	20.03	5.01	50.6 K=1.00	17.72	-610.09	661.23	0.923 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	300 - 280	L2x2x3/16	6.40	2.94	97.1 K=1.09	0.71	-5.36	14.10	0.380 ¹
T2	280 - 260	L2x2x3/16	7.30	3.49	109.7 K=1.03	0.71	-6.74	12.30	0.548 ¹
T3	260 - 240	L2x2x3/16	8.45	4.05	123.5 K=1.00	0.71	-5.74	10.38	0.553 ¹
T4	240 - 220	L2x2x3/16	9.70	4.67	142.2 K=1.00	0.71	-5.91	7.99	0.739 ¹
T5	220 - 200	L2 1/2x2 1/2x3/16	7.07	6.59	159.7 K=1.00	0.90	-7.65	7.99	0.957 ¹
T6	200 - 180	L3x3x3/16	7.62	7.14	143.7 K=1.00	1.09	-10.51	11.93	0.881 ¹
T7	180 - 160	L3x3x1/4	8.20	7.71	156.3 K=1.00	1.44	-11.49	13.31	0.863 ¹
T8	160 - 140	L3x3x1/4	8.81	8.31	168.5 K=1.00	1.44	-11.36	11.46	0.992 ¹
T9	140 - 120	L3 1/2x3 1/2x1/4	9.43	8.90	154.0 K=1.00	1.69	-11.81	16.10	0.733 ¹
T10	120 - 100	L3x3x1/4	10.30	9.76	197.9 K=1.00	1.44	-8.19	8.31	0.986 ¹
T11	100 - 80	L3 1/2x3 1/2x1/4	11.18	10.65	184.1 K=1.00	1.69	-8.77	11.26	0.779 ¹
T12	80 - 60	L3 1/2x3 1/2x1/4	12.08	11.54	199.6 K=1.00	1.69	-9.39	9.58	0.980 ¹
T13	60 - 40	L4x4x1/4	13.00	12.46	188.1 K=1.00	1.94	-10.29	12.38	0.831 ¹
T14	40 - 20	L4x4x1/4	16.40	15.83	152.0 K=1.00	1.94	-13.08	18.97	0.689 ¹
T15	20 - 0	L4x4x1/4	17.21	16.63	159.7 K=1.00	1.94	-12.72	17.19	0.740 ¹

¹ P_u / φP_n controls

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 24 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

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 $\frac{P_u}{\phi P_n}$
T5	220 - 200	L2x2x3/16	9.63	4.53	138.0 K=1.00	0.71	-4.53	8.48	0.535 ¹ ✓
T6	200 - 180	L2x2x3/16	11.13	5.27	160.5 K=1.00	0.71	-5.24	6.27	0.836 ¹ ✓
T7	180 - 160	L2 1/2x2 1/2x3/16	12.63	6.01	145.7 K=1.00	0.90	-5.97	9.60	0.622 ¹ ✓
T8	160 - 140	L2 1/2x2 1/2x3/16	14.13	6.75	163.6 K=1.00	0.90	-6.59	7.61	0.866 ¹ ✓
T9	140 - 120	L3x3x3/16	15.63	7.48	150.6 K=1.00	1.09	-7.41	10.86	0.682 ¹ ✓
T10	120 - 100	L3x3x3/16	17.50	8.41	169.3 K=1.00	1.09	-8.04	8.60	0.935 ¹ ✓
T11	100 - 80	L3x3x1/4	19.50	9.41	190.7 K=1.00	1.44	-8.58	8.95	0.959 ¹ ✓
T12	80 - 60	L3 1/2x3 1/2x1/4	21.50	10.40	179.8 K=1.00	1.69	-9.12	11.82	0.772 ¹ ✓
T13	60 - 40	L3 1/2x3 1/2x1/4	23.50	11.40	197.0 K=1.00	1.69	-9.65	9.83	0.982 ¹ ✓
T14	40 - 20	L4x4x1/4	25.00	12.15	183.3 K=1.00	1.94	-10.04	13.04	0.770 ¹ ✓
T15	20 - 0	L4x4x1/4	27.00	13.14	198.3 K=1.00	1.94	-10.58	11.15	0.949 ¹ ✓

¹ P_u / φP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	L2x2x3/16	4.00	3.56	114.3 K=1.05	0.71	-0.61	11.65	0.053 ¹ ✓
T2	280 - 260	L2x2x3/16	4.00	3.50	113.3 K=1.06	0.71	-1.25	11.79	0.106 ¹ ✓

¹ P_u / φP_n controls

Redundant Horizontal (1) 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 $\frac{P_u}{\phi P_n}$
T14	40 - 20	L3x3x3/16	6.25	6.06	122.1 K=1.00	1.09	-10.04	15.99	0.628 ¹ ✓

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 25 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T15	20 - 0	L3x3x3/16	6.75	6.55	131.9 K=1.00	1.09	-10.58	14.08	0.751 ¹ ✓

¹ P_u / φP_n controls

Redundant Diagonal (1) 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 $\frac{P_u}{\phi P_n}$
T14	40 - 20	L3x3x3/16	8.20	7.96	160.2 K=1.00	1.09	-6.59	9.59	0.687 ¹ ✓
T15	20 - 0	L3x3x3/16	8.60	8.35	168.2 K=1.00	1.09	-6.74	8.70	0.775 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 $\frac{P_u}{\phi P_n}$
T14	40 - 20	L3 1/2x3 1/2x1/4	12.50	12.50	216.1 K=1.00	1.69	-0.03	8.17	0.003 ¹ ✓
T15	20 - 0	L3 1/2x3 1/2x1/4	13.50	13.50	233.4 K=1.00	1.69	-0.02	7.01	0.003 ¹ ✓

¹ P_u / φP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	1 3/4	20.00	5.00	137.1	2.41	18.32	108.24	0.169 ¹ ✓
T2	280 - 260	2 1/2	20.02	5.00	96.1	4.91	70.42	220.89	0.319 ¹ ✓
T3	260 - 240	2 3/4	20.02	5.00	87.4	5.94	125.22	267.28	0.469 ¹ ✓

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job	300' WSST Tower / Run Q210233	Page	26 of 30
	Project	Cherokee	Date	11:03:06 04/01/21
	Client	Appalachian Wireless	Designed by	WBH

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T4	240 - 220	3	20.02	5.00	80.1	7.07	171.19	318.09	0.538 ¹
T5	220 - 200	3 1/4	20.02	5.00	73.9	8.30	205.34	373.31	0.550 ¹
T6	200 - 180	3 1/2	20.02	5.00	68.6	9.62	246.44	432.95	0.569 ¹
T7	180 - 160	3 3/4	20.02	5.00	64.1	11.04	295.06	497.01	0.594 ¹
T8	160 - 140	4	20.02	5.00	60.1	12.57	339.41	565.49	0.600 ¹
T9	140 - 120	4	20.02	5.00	60.1	12.57	380.25	565.49	0.672 ¹
T10	120 - 100	4 1/4	20.03	5.01	56.6	14.19	410.49	638.38	0.643 ¹
T11	100 - 80	4 1/4	20.03	5.01	56.6	14.19	435.16	638.38	0.682 ¹
T12	80 - 60	4 1/2	20.03	5.01	53.4	15.90	459.06	715.69	0.641 ¹
T13	60 - 40	4 1/2	20.03	5.01	53.4	15.90	482.35	715.69	0.674 ¹
T14	40 - 20	4 1/2	20.03	5.01	53.4	15.90	498.81	715.69	0.697 ¹
T15	20 - 0	4 3/4	20.03	5.01	50.6	17.72	521.00	797.42	0.653 ¹

¹ P_u / φP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	L2x2x3/16	6.40	2.94	60.0	0.43	5.09	18.74	0.272 ¹
T2	280 - 260	L2x2x3/16	7.30	3.49	70.7	0.43	6.63	18.74	0.354 ¹
T3	260 - 240	L2x2x3/16	7.57	3.62	73.3	0.43	6.30	18.74	0.336 ¹
T4	240 - 220	L2x2x3/16	8.76	4.20	84.5	0.43	6.25	18.74	0.333 ¹
T5	220 - 200	L2 1/2x2 1/2x3/16	6.56	6.08	98.3	0.57	7.47	24.84	0.301 ¹
T6	200 - 180	L3x3x3/16	7.34	6.86	91.4	0.71	10.21	30.97	0.330 ¹
T7	180 - 160	L3x3x1/4	7.62	7.13	95.8	0.94	11.53	40.86	0.282 ¹
T8	160 - 140	L3x3x1/4	8.20	7.71	103.2	0.94	10.99	40.86	0.269 ¹
T9	140 - 120	L3 1/2x3 1/2x1/4	9.43	8.90	101.7	1.10	10.82	48.00	0.225 ¹

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 27 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

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	120 - 100	L3x3x1/4	9.86	9.33	124.6	0.92	8.01	39.84	0.201 ¹
T11	100 - 80	L3 1/2x3 1/2x1/4	10.74	10.21	116.0	1.10	8.21	48.00	0.171 ¹
T12	80 - 60	L3 1/2x3 1/2x1/4	11.63	11.09	125.8	1.10	8.66	48.00	0.180 ¹
T13	60 - 40	L4x4x1/4	13.00	12.46	122.9	1.29	9.41	56.16	0.168 ¹
T14	40 - 20	L4x4x1/4	16.40	15.83	155.2	1.29	11.89	56.16	0.212 ¹
T15	20 - 0	L4x4x1/4	16.40	15.83	155.1	1.29	11.74	56.16	0.209 ¹

¹ P_u / φP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T5	220 - 200	L2x2x3/16	9.63	4.53	136.4	0.43	4.53	18.74	0.242 ¹
T6	200 - 180	L2x2x3/16	11.13	5.27	158.0	0.43	5.24	18.74	0.280 ¹
T7	180 - 160	L2 1/2x2 1/2x3/16	12.63	6.01	142.4	0.57	5.97	24.84	0.241 ¹
T8	160 - 140	L2 1/2x2 1/2x3/16	14.13	6.75	159.5	0.57	6.59	24.84	0.265 ¹
T9	140 - 120	L3x3x3/16	15.63	7.48	146.6	0.69	7.41	30.21	0.245 ¹
T10	120 - 100	L3x3x3/16	17.50	8.41	164.3	0.69	8.04	30.21	0.266 ¹
T11	100 - 80	L3x3x1/4	19.50	9.41	185.3	0.92	8.58	39.84	0.215 ¹
T12	80 - 60	L3 1/2x3 1/2x1/4	21.50	10.40	174.4	1.10	9.12	48.00	0.190 ¹
T13	60 - 40	L3 1/2x3 1/2x1/4	23.50	11.40	190.9	1.10	9.65	48.00	0.201 ¹
T14	40 - 20	L4x4x1/4	25.00	12.15	118.2	1.29	10.04	56.16	0.179 ¹
T15	20 - 0	L4x4x1/4	27.00	13.14	127.7	1.29	10.58	56.16	0.188 ¹

¹ P_u / φP_n controls

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 28 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	L2x2x3/16	4.00	3.56	75.0	0.43	0.52	18.74	0.028 ¹ ✓
T2	280 - 260	L2x2x3/16	4.00	3.50	73.7	0.43	1.36	18.74	0.073 ¹ ✓

¹ P_u / φP_n controls

Redundant Horizontal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T14	40 - 20	L3x3x3/16	6.25	6.06	77.5	1.09	10.04	35.32	0.284 ¹ ✓
T15	20 - 0	L3x3x3/16	6.75	6.55	83.7	1.09	10.58	35.32	0.300 ¹ ✓

¹ P_u / φP_n controls

Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T14	40 - 20	L3x3x3/16	8.20	7.96	101.7	1.09	6.59	35.32	0.187 ¹ ✓
T15	20 - 0	L3x3x3/16	8.60	8.35	106.8	1.09	6.74	35.32	0.191 ¹ ✓

¹ P_u / φP_n controls

Inner Bracing 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 $\frac{P_u}{\phi P_n}$
T15	20 - 0	L3 1/2x3 1/2x1/4	13.50	13.50	148.6	1.69	0.00	54.76	0.000 ¹ ✓

¹ P_u / φP_n controls

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 29 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	σP_{allow} K	% Capacity	Pass Fail
T1	300 - 280	Leg	1 3/4	3	-23.18	28.89	80.2	Pass
T2	280 - 260	Leg	2 1/2	33	-81.72	112.46	72.7	Pass
T3	260 - 240	Leg	2 3/4	63	-139.50	152.99	91.2	Pass
T4	240 - 220	Leg	3	90	-189.05	199.04	95.0	Pass
T5	220 - 200	Leg	3 1/4	117	-226.56	250.37	90.5	Pass
T6	200 - 180	Leg	3 1/2	150	-275.93	306.80	89.9	Pass
T7	180 - 160	Leg	3 3/4	183	-329.83	368.18	89.6	Pass
T8	160 - 140	Leg	4	216	-379.97	434.40	87.5	Pass
T9	140 - 120	Leg	4	249	-426.96	434.40	98.3	Pass
T10	120 - 100	Leg	4 1/4	282	-463.68	505.22	91.8	Pass
							94.3 (b)	
T11	100 - 80	Leg	4 1/4	315	-494.85	505.22	97.9	Pass
T12	80 - 60	Leg	4 1/2	348	-525.79	580.90	90.5	Pass
T13	60 - 40	Leg	4 1/2	381	-556.61	580.90	95.8	Pass
T14	40 - 20	Leg	4 1/2	414	-578.99	580.90	99.7	Pass
T15	20 - 0	Leg	4 3/4	459	-610.09	661.23	92.3	Pass
T1	300 - 280	Diagonal	L2x2x3/16	11	-5.36	14.10	38.0	Pass
							57.2 (b)	
T2	280 - 260	Diagonal	L2x2x3/16	40	-6.74	12.30	54.8	Pass
							74.5 (b)	
T3	260 - 240	Diagonal	L2x2x3/16	66	-5.74	10.38	55.3	Pass
							70.8 (b)	
T4	240 - 220	Diagonal	L2x2x3/16	91	-5.91	7.99	73.9	Pass
T5	220 - 200	Diagonal	L2 1/2x2 1/2x3/16	123	-7.65	7.99	95.7	Pass
T6	200 - 180	Diagonal	L3x3x3/16	156	-10.51	11.93	88.1	Pass
							92.0 (b)	
T7	180 - 160	Diagonal	L3x3x1/4	185	-11.49	13.31	86.3	Pass
T8	160 - 140	Diagonal	L3x3x1/4	218	-11.36	11.46	99.2	Pass
T9	140 - 120	Diagonal	L3 1/2x3 1/2x1/4	255	-11.81	16.10	73.3	Pass
T10	120 - 100	Diagonal	L3x3x1/4	284	-8.19	8.31	98.6	Pass
T11	100 - 80	Diagonal	L3 1/2x3 1/2x1/4	321	-8.77	11.26	77.9	Pass
T12	80 - 60	Diagonal	L3 1/2x3 1/2x1/4	354	-9.39	9.58	98.0	Pass
T13	60 - 40	Diagonal	L4x4x1/4	387	-10.29	12.38	83.1	Pass
T14	40 - 20	Diagonal	L4x4x1/4	426	-13.08	18.97	68.9	Pass
T15	20 - 0	Diagonal	L4x4x1/4	471	-12.72	17.19	74.0	Pass
T5	220 - 200	Horizontal	L2x2x3/16	121	-4.53	8.48	53.5	Pass
T6	200 - 180	Horizontal	L2x2x3/16	154	-5.24	6.27	83.6	Pass
T7	180 - 160	Horizontal	L2 1/2x2 1/2x3/16	187	-5.97	9.60	62.2	Pass
T8	160 - 140	Horizontal	L2 1/2x2 1/2x3/16	220	-6.59	7.61	86.6	Pass
T9	140 - 120	Horizontal	L3x3x3/16	253	-7.41	10.86	68.2	Pass
T10	120 - 100	Horizontal	L3x3x3/16	289	-8.04	8.60	93.5	Pass
T11	100 - 80	Horizontal	L3x3x1/4	319	-8.58	8.95	95.9	Pass
T12	80 - 60	Horizontal	L3 1/2x3 1/2x1/4	352	-9.12	11.82	77.2	Pass
T13	60 - 40	Horizontal	L3 1/2x3 1/2x1/4	385	-9.65	9.83	98.2	Pass
T14	40 - 20	Horizontal	L4x4x1/4	422	-10.04	13.04	77.0	Pass
T15	20 - 0	Horizontal	L4x4x1/4	467	-10.58	11.15	94.9	Pass
T1	300 - 280	Top Girt	L2x2x3/16	5	-0.61	11.65	5.3	Pass
							5.9 (b)	
T2	280 - 260	Top Girt	L2x2x3/16	36	-1.25	11.79	10.6	Pass
							15.3 (b)	
T14	40 - 20	Redund Horz 1 Bracing	L3x3x3/16	449	-10.04	15.99	62.8	Pass
T15	20 - 0	Redund Horz 1 Bracing	L3x3x3/16	472	-10.58	14.08	75.1	Pass
T14	40 - 20	Redund Diag 1 Bracing	L3x3x3/16	450	-6.59	9.59	68.7	Pass

tnxTower World Tower Company 1212 Compressor Drive Mayfield, KY 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 300' WSST Tower / Run Q210233	Page 30 of 30
	Project Cherokee	Date 11:03:06 04/01/21
	Client Appalachian Wireless	Designed by WBH

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	σP_{allow} K	% Capacity	Pass Fail	
T15	20 - 0	Redund Diag 1 Bracing	L3x3x3/16	495	-6.74	8.70	77.5	Pass	
T14	40 - 20	Inner Bracing	L3 1/2x3 1/2x1/4	436	-0.03	8.17	0.7	Pass	
T15	20 - 0	Inner Bracing	L3 1/2x3 1/2x1/4	482	-0.02	7.01	0.7	Pass	
							Summary		
							Leg (T14)	99.7	Pass
							Diagonal (T8)	99.2	Pass
							Horizontal (T13)	98.2	Pass
							Top Girt (T2)	15.3	Pass
							Redund Horz 1 Bracing (T15)	75.1	Pass
							Redund Diag 1 Bracing (T15)	77.5	Pass
							Inner Bracing (T14)	0.7	Pass
							Bolt Checks	94.3	Pass
							RATING =	99.7	Pass

Exhibit 6



Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2020-ASO-31483-OE

Issued Date: 10/26/2020

Cindy D. McCarty
 East Kentucky Network, LLC
 101 Technology Trail
 Ivel, KY 41642

**** 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 Cherokee
 Location: Cherokee, KY
 Latitude: 38-05-33.61N NAD 83
 Longitude: 82-50-20.94W
 Heights: 996 feet site elevation (SE)
 310 feet above ground level (AGL)
 1306 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 L Change 2, Obstruction Marking and Lighting, 24-hr med-strobes - Chapters 4,6(MIWOL),&12.

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)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

This determination expires on 04/26/2022 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) 553-4199, or Dianne.Marin@FAA.GOV. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2020-ASO-31483-OE.

Signature Control No: 453974681-454927757

(DNE)

Dianne Marin
Technician

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

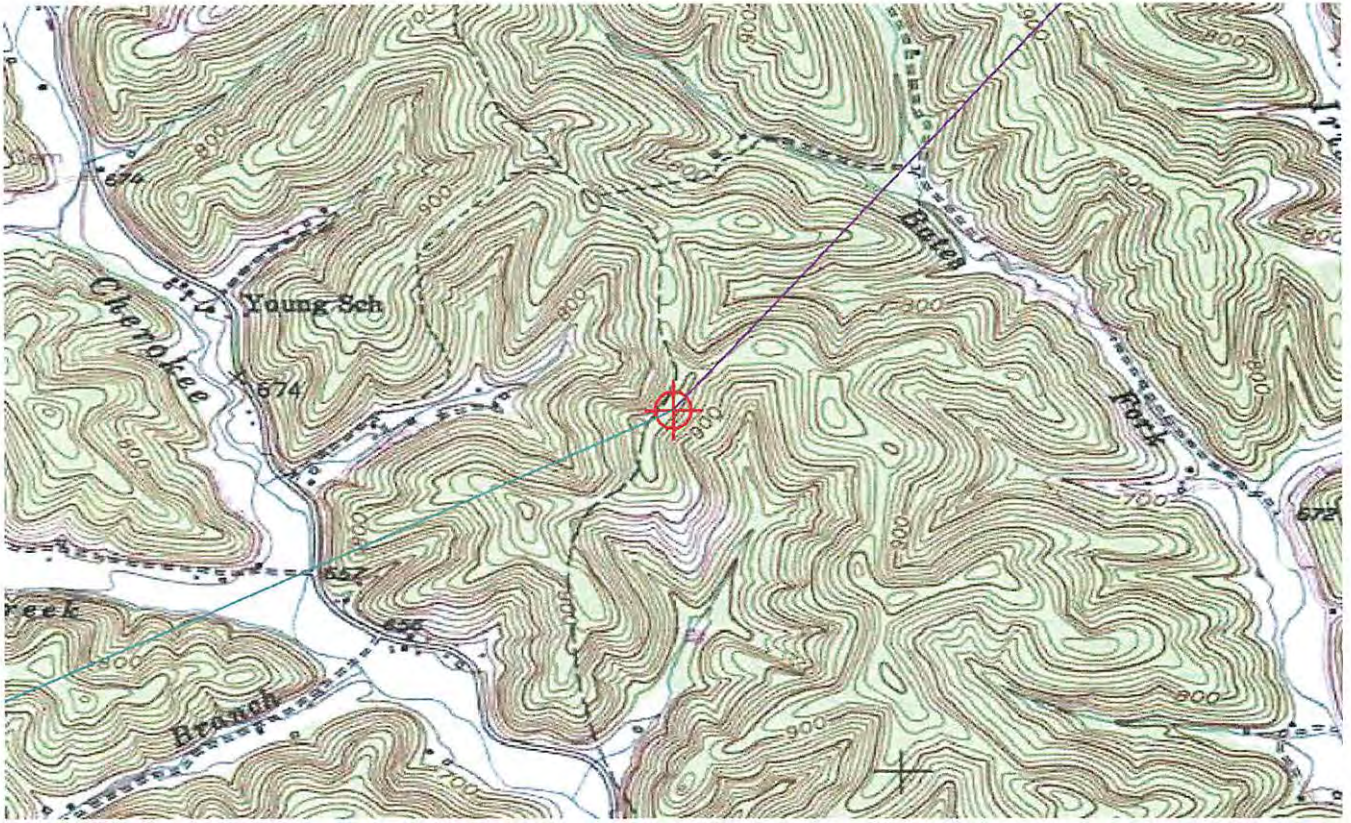
cc: FCC

Case Description for ASN 2020-ASO-31483-OE

A new 300' self supporting with top mounted antennas or other appurtenances (overall height of 310')

Frequency Data for ASN 2020-ASO-31483-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





ANDY BESHEAR
Governor

KENTUCKY AIRPORT ZONING COMMISSION

Office of Audits, 200 Mero Street, 4th floor
Frankfort, KY 40622
www.transportation.ky.gov
502-782-4043

JIM GRAY
Secretary

APPROVAL OF APPLICATION

December 16, 2020

APPLICANT

East Kentucky Network, LLC
Cindy McCarty
101 Technology Trail
Ivel, KY 41642

SUBJECT: AS-LAWRENCE-9KY9-2020-134

STRUCTURE: Antenna Tower
LOCATION: Cherokee, KY
COORDINATES: 38° 5' 33.61" N / 82° 50' 20.94" W
HEIGHT: 310' AGL/1306' AMSL

The Kentucky Airport Zoning Commission has approved your application for a permit to construct 310' AGL/1306' AMSL Antenna Tower near Cherokee, KY 38° 5' 33.61" N / 82° 50' 20.94" W.

This permit is valid for a period of 18 Month(s) from its date of issuance. If construction is not completed within said 18-Month period, this permit shall lapse and be void, and no work shall be performed without the issuance of a new permit.

MIWOL Obstruction Lighting Required.

Randall S. Royer

Randall S. Royer, Executive Director
Office of Audits
Acting Administrator
Randall.Royer@ky.gov
Jason.Salazar-Munoz@ky.gov



An Equal Opportunity Employer M/F/D

Exhibit 7

Driving Directions for Cherokee

1. Beginning on Main Cross Street in front of the Lawrence County Courthouse in Louisa, Kentucky.
2. Travel approximately 200' to the intersection of Main Cross Street and Madison Avenue.
3. Turn right onto Madison Avenue.
4. Drive Four Tenths of a mile to the intersection of Madison Avenue and KY-32.
5. Turn left onto KY-32 West.
6. Continue on KY-32 West for .8 miles.
7. Turn slight right and continue on KY-32 West for 16.7 miles.
8. Turn right onto KY-201.
9. Travel 4.9 miles.
10. Site entrance will on the right (sign posted).
11. Walk one mile to the top of the hill (sign posted).

Prepared By:

Daryl Bartley

Cell Site Compliance Agent

East Kentucky Network, LLC

d/b/a Appalachian Wireless

(606) 791-0310 (cell)

(606) 339-1369 (fax)

dbartley@ekn.com

Cherokee


Location:

5030 North Highway 201
Webbville, KY 41180

Coordinates:

38° 05' 33.61"N
82° 50' 20.94"W

Legend

 1/2 Mile Search Area

Proposed Cherokee Tower 

Welman Dr

201

Google Earth

© 2021 Google



1000 ft

Exhibit 8

MEMORANDUM OF LEASE

THIS MEMORANDUM OF LEASE is made and entered into on this 11th day of September, 2020, with a commencement date of September 1, 2020 (the “**Commencement Date**”), by and between **BUSTER CARTER**, a single person, with an address of 5030 North Highway 201, Webbville, Kentucky 41180, hereinafter referred to as “**Lessor**”, and **EAST KENTUCKY NETWORK, LLC D/B/A APPALACHIAN WIRELESS**, a Kentucky limited liability company, with a mailing address of 101 Technology Trail, Ivel, Kentucky, 41642, hereinafter referred to as “**Lessee**.”

WITNESSETH

1. **Demised Premises.** For good and valuable consideration, Lessor leased to Lessee, and Lessee has leased from Lessor that certain tract of real estate located in Lawrence County, Kentucky, and being a portion of the same land conveyed to Lessor by Deed dated May 10, 1993, and recorded on June 2, 1993, in Deed Book 217, Page 106, in the Lawrence County Clerk’s Office. Said property is more particularly described in the description **attached** hereto and made a part hereof as **Exhibit A** and the plat **attached** hereto and made a part hereof as **Exhibit B**, prepared by Peter Howard, Licensed Professional Land Surveyor (hereinafter referred to as the “**Premises**”). The Lessor has also granted unto Lessee full and complete rights of ingress, egress and regress to and from the Premises over any property owned by Lessor and other associated rights for installation of utilities, maintenance, and other purposes. Lessee has the absolute right to assign, sublease, sublicense or otherwise transfer, in whole or in part, the Leased Premises and the easements and rights-of-way.

2. **Term.** The initial term of the Lease is for a period of five (5) years from the Commencement Date set forth above.

3. **Renewals.** The Lease shall automatically renew for an additional seven (7) terms of five (5) years each, unless Lessee provides sixty (60) days written notice prior to the end of the current term that it does not wish to renew.

4. **Binding Effect.** All of the terms, conditions, and covenants hereof shall be binding and inure to the benefit of the parties and their respective heirs, representatives, successors, and assigns.

5. **Purpose.** This Memorandum of Lease is prepared solely for the purpose of recordation, and is not intended to, nor shall it be deemed to, modify any of the terms and conditions set forth in the Lease, nor to construe any of the rights, duties or responsibilities of Lessor and Lessee. In the event of any conflict between the terms and conditions of this Memorandum and the terms and conditions of the Lease, the terms and conditions of the Lease shall supersede and control.

[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

IN WITNESS WHEREOF, Lessor and Lessee have caused their names to be signed hereto, as of the date(s) indicated below.

LESSOR:

Buster Carter
BUSTER CARTER

COMMONWEALTH OF KENTUCKY

COUNTY OF Floyd

The foregoing instrument was acknowledged before me on this 11th day of September, 2020, by Buster Carter, Lessor.

Raina J. Helton

Notary Public

Commission No.: KYNP375

My Commission Expires 2-19-2024



[SIGNATURES CONTINUE ON NEXT PAGE.]

LESSEE:

EAST KENTUCKY NETWORK, LLC D/B/A
APPALACHIAN WIRELESS

WA Gillum
By: W.A. Gillum
Its: CEO/ General Manager

COMMONWEALTH OF KENTUCKY
COUNTY OF Floyd

The foregoing instrument was acknowledged before me on this 15th day of September, 2020, by W.A. Gillum, CEO/General Manager of East Kentucky Network, LLC d/b/a Appalachian Wireless, Lessee.

Raina D. Helton
Notary Public
Commission No.: KYNP375

My Commission Expires 2-6-2024

This instrument was prepared by:

Krystal Branham, Attorney
101 Technology Trail
Ivel, Kentucky 41642
(606) 477-2355



Legal Description
For Lease Agreement
Portion of Buster Carter, Deed Book 217 Page 106,
To East Kentucky Network d/b/a Appalachian Wireless


A certain tract of land located on Cherokee Creek, in the community of Cherokee, Lawrence County, Kentucky and more particularly described as follows.

Unless stated otherwise any monument referred to herein as a Re-Bar and Cap is a set ½" steel re-bar eighteen (18") in length with a yellow plastic cap stamped Summit L.S. #3949. All bearings stated herein are referred to Grid North based on Kentucky Single Zone State Plane NAD 83 coordinates.

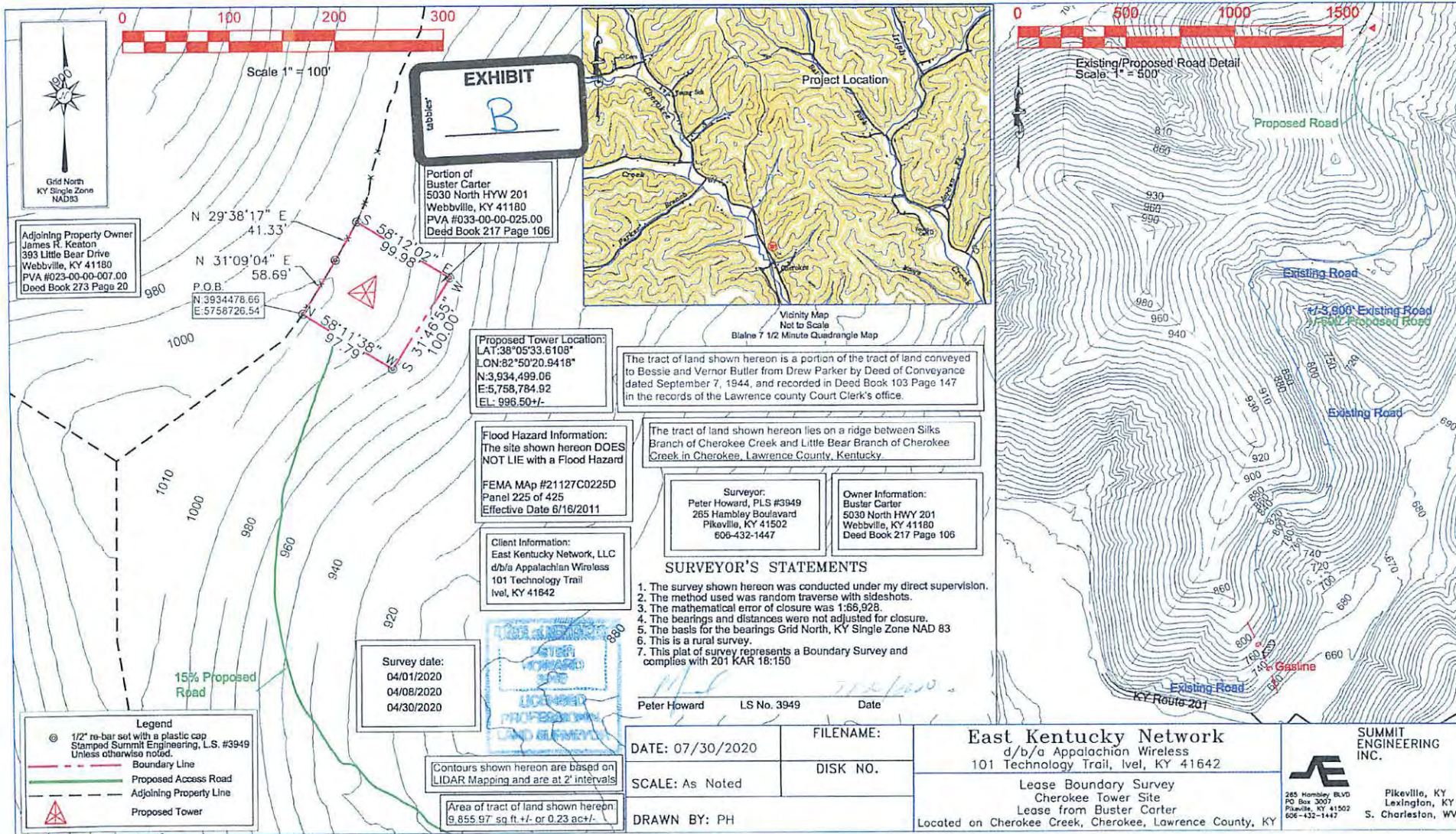
Beginning at a set Re-Bar and Cap on the center of the ridge between the land of James R. Keaton, Deed Book 273 Page 20, and Buster Carter, Deed Book 217 Page 106, and being the ridge between Silks Branch and Little Bear Branch of Cherokee Creek, Lawrence County, Kentucky, and having Kentucky State Plane NAD 83 Single Zone Coordinates of N: 3,934,478.66 E: 5,758,726.54;

Thence running with the center of the ridge and D.B. 273 Page 20 N 31°09'04" E a distance of 58.69' to a Re-Bar and Cap set in the barbed wire fence on the center of the ridge; Thence N 29°38'17" E a distance of 41.33' to a Re-Bar and Cap set in the barbed wire fence on the center of the ridge; Thence leaving the center of the ridge and Deed Book 273 Page 20 and running down the hill S 58°12'02" E a distance of 99.98' to a Re-Bar and Cap set on the hillside; Thence turning right and crossing the hillside S 31°46'55" W a distance of 100.00' to a Re-Bar and Cap set on the hillside; Thence turning right and running up the hill N 58°11'38" W a distance of 97.79' to the point of beginning and containing 0.23 acres more or less according to a survey by persons under the direct supervision of Peter Howard, PLS #3949 with Summit Engineering on April 1, 8, and 30, 2020 and being a portion of the tract of land conveyed to Bessie and Vernor Butler from Drew Parker by Deed of Conveyance dated September 7, 1944 and recorded in Deed Book 103 Page 147 in the records of the Lawrence County Court Clerk's office.


Peter Howard PLS #3949


Date: 7/30/2020



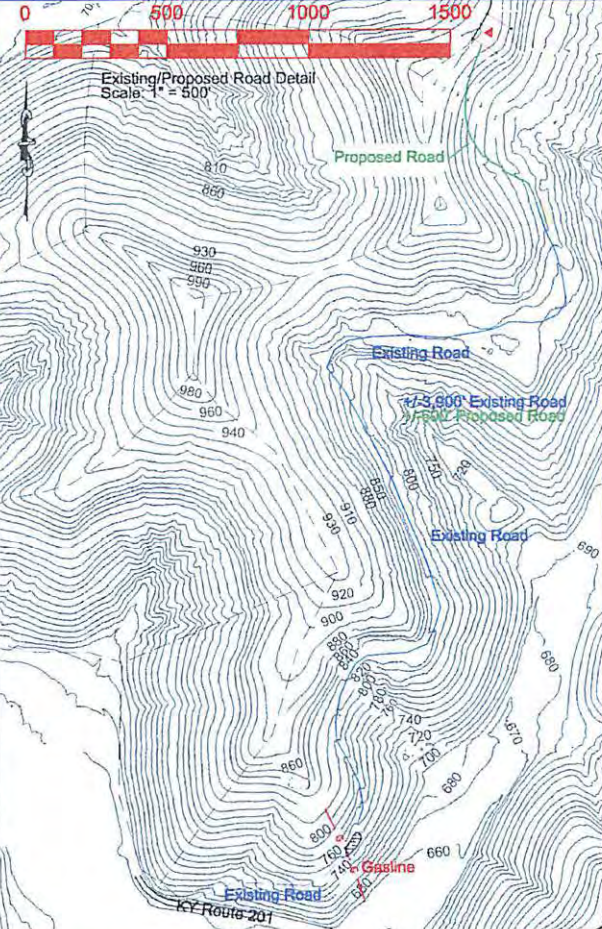
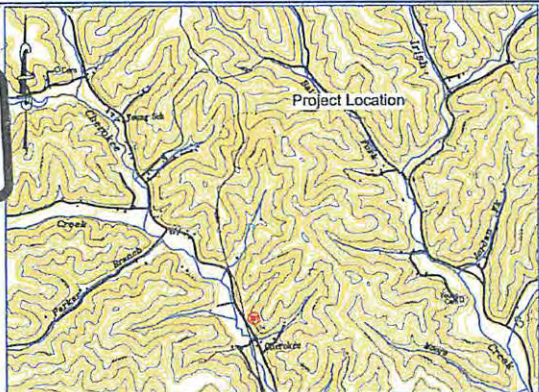


Adjoining Property Owner
James R. Keaton
393 Little Bear Drive
Webbville, KY 41180
PVA #023-00-00-007.00
Deed Book 273 Page 20

N 29°38'17" E
41.33'
N 31°09'04" E
58.69'
P.O.B.
N 3934478.66
E 5758726.54

EXHIBIT
B

Portion of
Buster Carter
5030 North HWY 201
Webbville, KY 41180
PVA #033-00-00-025.00
Deed Book 217 Page 106



Proposed Tower Location:
LAT: 38°05'33.6108"
LON: 82°50'20.9418"
N: 3,934,499.06
E: 5,758,784.92
EL: 996.50 +/-

The tract of land shown hereon is a portion of the tract of land conveyed to Bessie and Vernor Butler from Drew Parker by Deed of Conveyance dated September 7, 1944, and recorded in Deed Book 103 Page 147 in the records of the Lawrence county Court Clerk's office.

Flood Hazard Information:
The site shown hereon DOES NOT LIE with a Flood Hazard

The tract of land shown hereon lies on a ridge between Silks Branch of Cherokee Creek and Little Bear Branch of Cherokee Creek in Cherokee, Lawrence County, Kentucky

FEMA MAP #21127C0225D
Panel 225 of 425
Effective Date 6/16/2011

Surveyor:
Peter Howard, PLS #3949
265 Hambley Boulevard
Pikeville, KY 41502
606-432-1447

Owner Information:
Buster Carter
5030 North HWY 201
Webbville, KY 41180
Deed Book 217 Page 106

Client Information:
East Kentucky Network, LLC
d/b/a Appalachian Wireless
101 Technology Trail
Ivel, KY 41642

SURVEYOR'S STATEMENTS

1. The survey shown hereon was conducted under my direct supervision.
2. The method used was random traverse with sideshots.
3. The mathematical error of closure was 1:86,928.
4. The bearings and distances were not adjusted for closure.
5. The basis for the bearings: Grid North, KY Single Zone NAD 83
6. This is a rural survey.
7. This plat of survey represents a Boundary Survey and complies with 201 KAR 18:150

Survey date:
04/01/2020
04/08/2020
04/30/2020



Peter Howard LS No. 3949 Date

Legend
© 1/2" re-bar set with a plastic cap
Stamped Summit Engineering, L.S. #3949
Unless otherwise noted.
--- Boundary Line
--- Proposed Access Road
--- Adjoining Property Line
▲ Proposed Tower

Contours shown hereon are based on LIDAR Mapping and are at 2' intervals

Area of tract of land shown hereon
9,855.97 sq ft +/- or 0.23 ac +/-

DATE: 07/30/2020

FILENAME:

SCALE: As Noted

DISK NO.

DRAWN BY: PH

East Kentucky Network
d/b/a Appalachian Wireless
101 Technology Trail, Ivel, KY 41642

Lease Boundary Survey
Cherokee Tower Site
Lease from Buster Carter
Located on Cherokee Creek, Cherokee, Lawrence County, KY

SUMMIT ENGINEERING INC.

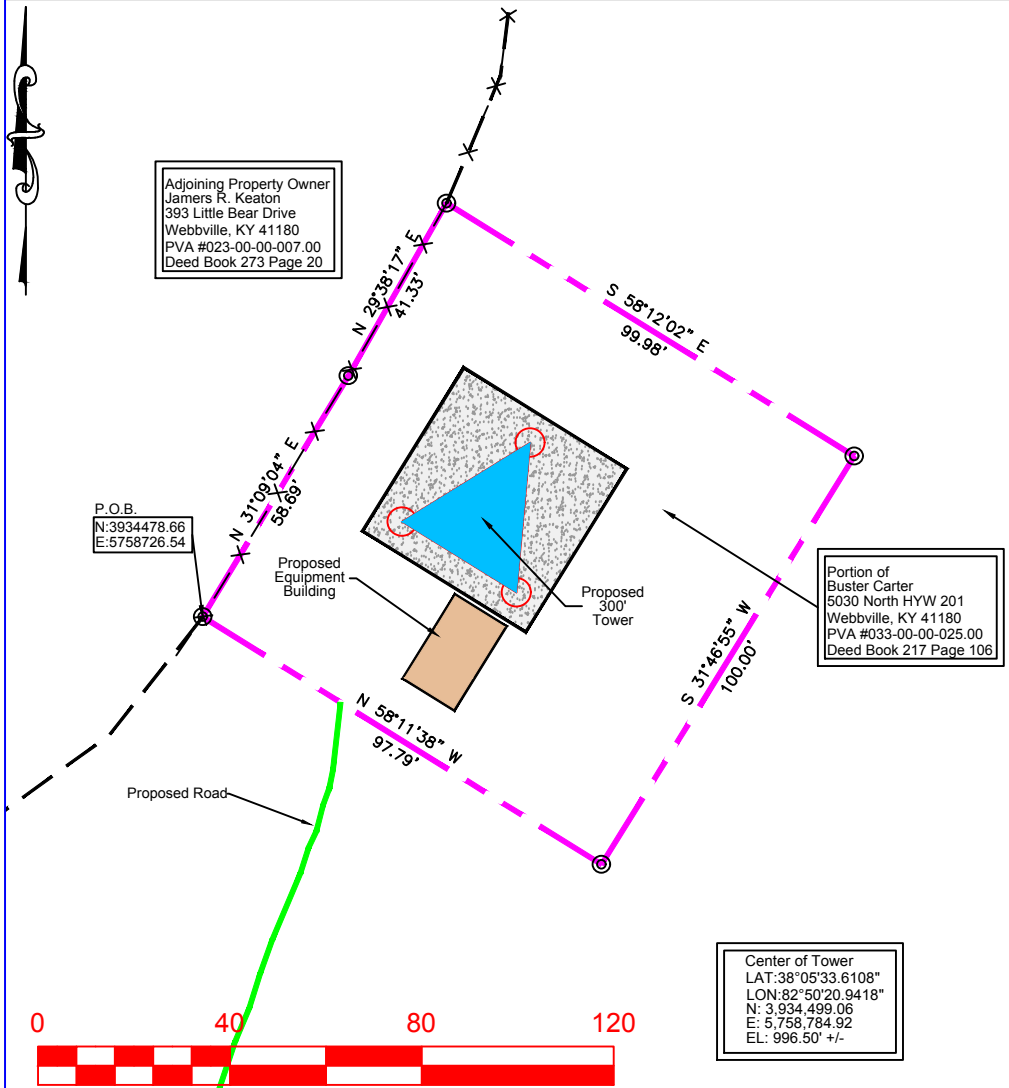
265 Hambley BLVD
PO Box 3007
Pikeville, KY 41502
606-432-1447

Pikeville, KY
Lexington, KY
S. Charleston, WV

Exhibit 9

CHEROKEE TOWER

SITE SURVEY WITH PROPOSED TOWER & BUILDING LOCATION



Legend

- 1/2" re-bar set with a plastic cap stamped Summit Engineering, L.S. #3949 unless otherwise noted.
- Boundary
- Adjoining Property Lines

Steven E. Haywood, PLS #2661
160 Lank Branch
Pikeville, KY 41501
606-432-1447

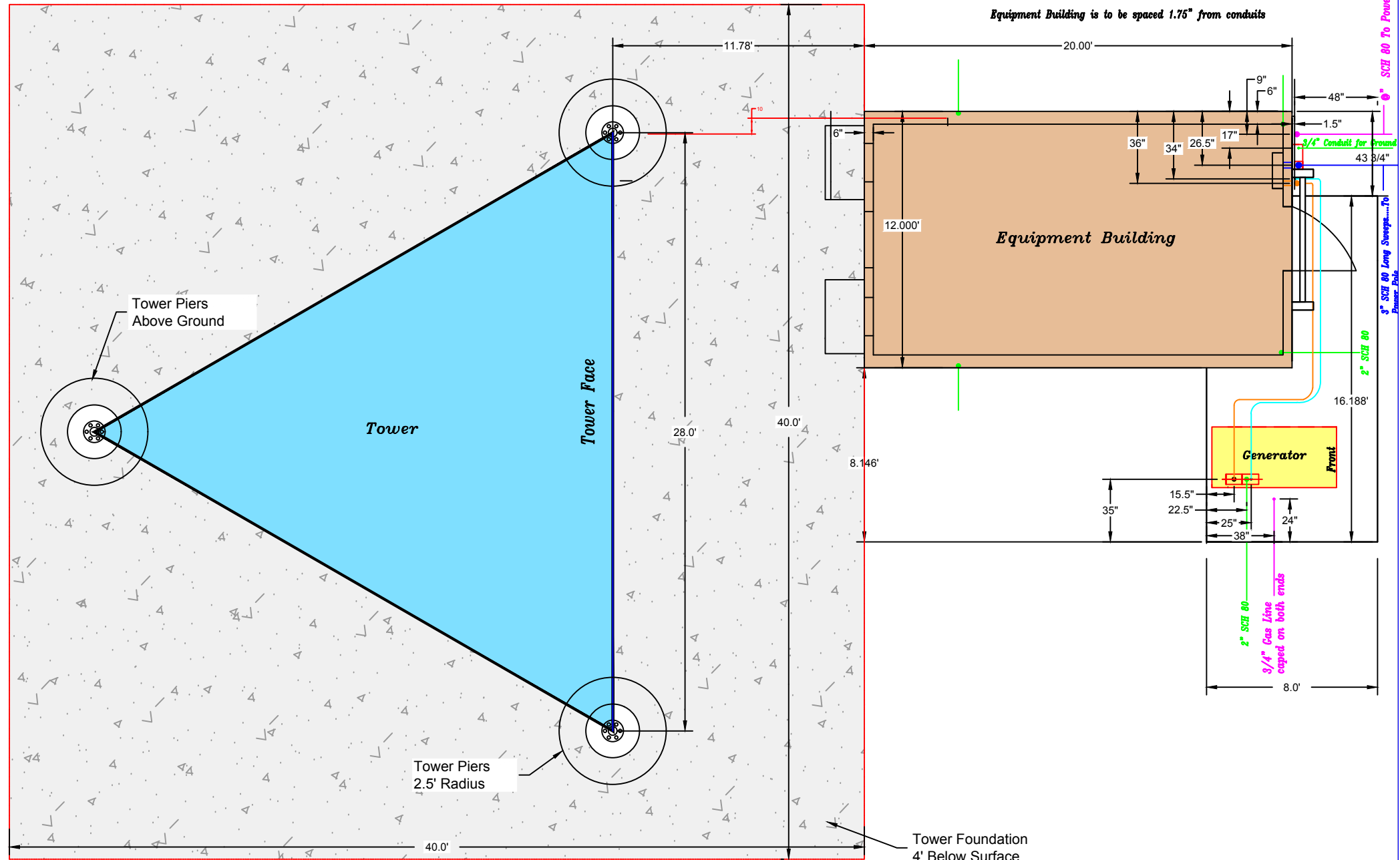
- NAD83 KY Single Zone
State Plane Coordinates
N: 3,768,429.25
E: 5,915,508.27
EL: 1844.00' (Existing Ground)

FAA Certification

In Accordance with FAA Order 8260.19G, Appendix C, I hereby certify that the Obstacle Accuracy Codes for the proposed Tower meets or exceeds accuracy 2C (+50 ft Horizontal and +20 ft Vertical).

Preliminary

Steven E. Haywood, PLS #2661 _____ Date



FAA Certification

Note: Tower Foundation & distance between Tower Legs may change due to design criteria, by others.
Note: This is a Site Plan of the tower indicating the proposed Tower & Tower Component location. No design criteria was considered in the preparation of this drawing.

Preliminary

David Rasnick PE# 12713 DATE _____

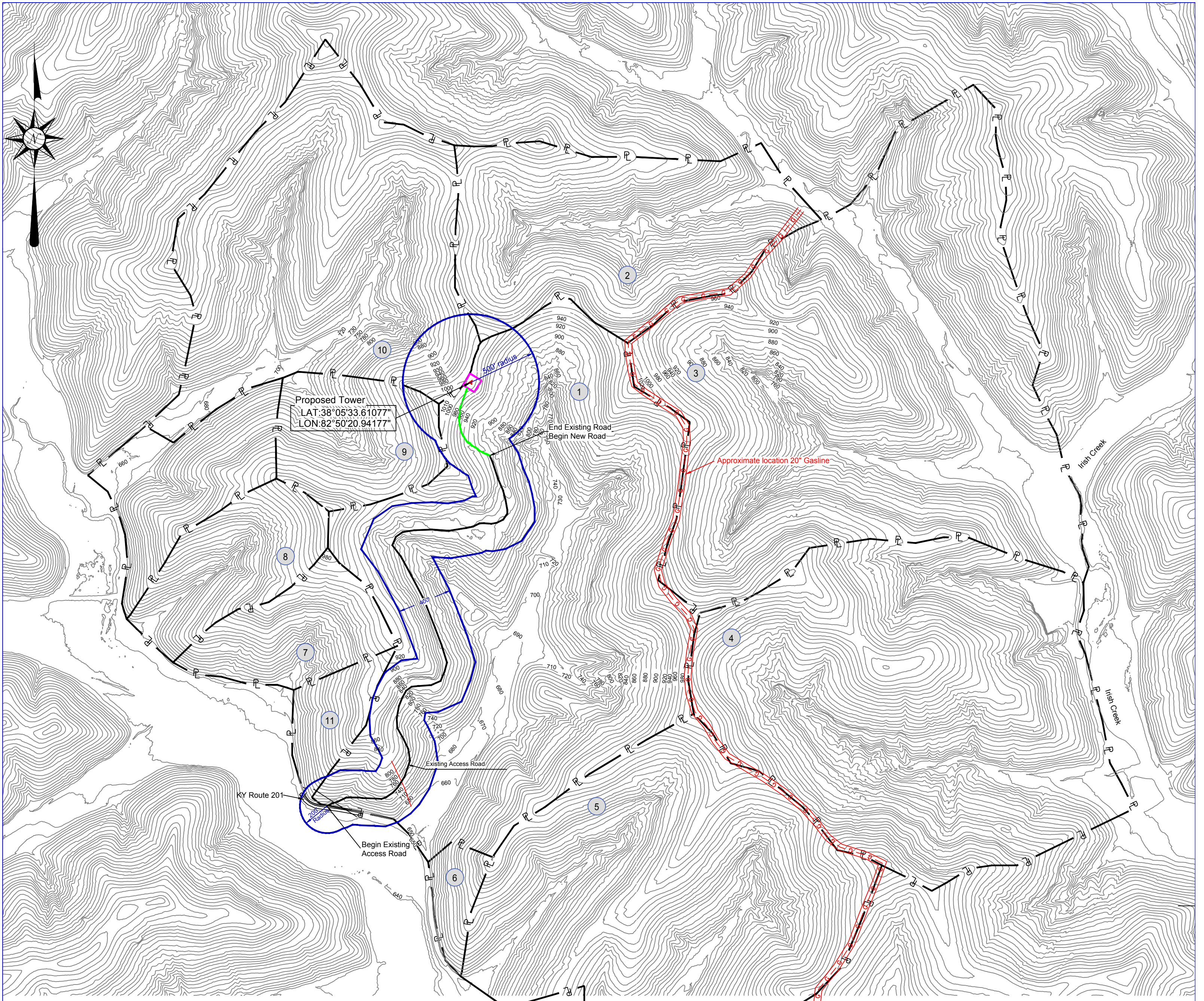


SCALE: 1" = 6'

David Rasnick #12713
160 Lank Branch
Pikeville, KY 41501
606-432-1447

EAST KENTUCKY NETWORK D/B/A APPALACHIAN WIRELESS 101 TECHNOLOGY TRAIL, IVEL, KY 41643			SUMMIT ENGINEERING, INC. 160 LANK BRANCH PIKEVILLE, KY. 41501 (606) 432-1447	
Cherokee Tower Site Map Located on the Ridge Between Silks Branch and Little Bear Branch of Cherokee Creek in Cherokee, Lawrence County, KY				
Scale: As Noted	Drawn By: PH & SH	Chk By: SH	Apprvd. By:	PER. NO:
				ATT:

Exhibit 10



- 1 Buster Carter
5030 North HWY 201
Webbville, KY 41180
PVA #033-00-00-025.00
Deed Book 217 Page 106
- 2 Thomas Trimble
834 Goldie Court
Ashland, KY 41102
PVA #032-00-00-005.00
Deed Book 339 Page 711
- 3 David Savage
1923 Morgans Creek Road
Louisia, KY 41230
PVA #033-00-00-011.00
Deed Book 290 Page 575
- 4 Sylvia Young - C/O Harold Young
1893 Irish Creek Road
Webbville, KY 41180
PVA #033-00-00-010.00
Deed Book N/A Page N/A
- 5 Woodrow Graham
1084 Big Branch Road
Blaine, KY 41124
PVA #033-00-00-021.00
Deed Book 72 Page 287
- 6 Craig McNeil
15 Cub Lane
Cattlettsburg, KY 41129
PVA #033-00-00-023.00
Deed Book 315 Page 503
- 7 Christopher Boggs - Trustee
7279 N HWY 201
Webbville, KY 41180
PVA #023-00-00-003.00
Deed Book 325 Page 603
- 8 Phyllis Boggs
704 East Main Street
Grayson, KY 41143
PVA #023-00-00-005.03
Deed Book 312 Page 537
- 9 Terry L. Kimbler
PO Box 21
Flat Gap, KY 41219
PVA #023-00-00-007.01
Deed Book 301 Page 566
- 10 James R. Keaton
393 Little Bear Drive
Webbville, KY 41180
PVA #023-00-00-007.00
Deed Book 273 Page 20
- 11 Margaret Elswick
5306 North HWY 201
Webbville, KY 41180
PVA #033-00-00-026.00
Deed Book 277 Page 418

UTILITIES	
Electric	American Electric Power 23000 U.S. 23 Louisia, KY 41230 (606)-686-2415
Telephone & Cable	Foothills Communications 1621 KY Route 40 West Staffordsville, KY 41256 (606)-673-3193
Water & Sewer	Rattlesnake Ridge Distribution PO Box 475 Grayson, KY 41143 (606)-474-7570
Natural Gas	Frontier Natural Gas PO Box 408 Prestonsburg, KY 41653 (606)-886-2431

The tract of land shown hereon is located on the ridge between Silks Branch and Little Bear Branch of Cherokee Creek in Cherokee, Lawrence County, Kentucky.

The proposed tower shown hereon is located on the same tract of land conveyed to Buster Carter by Ralph and Jean Butler et al, by deed dated May 10, 1963 and recorded in Deed Book 217 Page 106. This being the same tract of land conveyed to Bessie Butler and Vernor Butler from Drew Parker by deed dated September 7, 1944 and recorded in Deed Book 103 Page 147, all records lodged in the Lawrence County Clerk's office.

Property lines shown hereon are based on information provided by the Lawrence County PVA office.

Access from the intersection of U.S. 23 and Kentucky State Route 201. Travel North on Kentucky State Route 201 for 18.4+/- miles to the existing access road entrance on the right. Turn onto access and travel 0.82+/- miles along existing access road and newly constructed access road to the tower site.

Topography of the area surrounding the tower site is forest covered rolling hill terrain with slopes ranging from 220% to 60%. Land use within the 500' radius is undisturbed forest and hillside property. No evidence of gas wells or gaslines was observed.

Contours shown hereon were taken from Lidar Mapping.
Contour interval = 5'

Summit Engineering, Inc. makes no warranty as to the title or ownership of property.

Adjoining land owners listed are based on Property Valuation Administration (PVA) records issued by a representative from Lawrence County, to be in compliance with all statutory and regulatory requirements before the Kentucky Public Service Commission and for telecommunication.

Proposed tower site IS NOT in the 100 year flood hazard area and has an average elevation of 996.5'. Firm Map 21127C0225D Map Effective: 06/16/2011

The utility lines shown hereon represent the utilities as they were observed in the field. The lines and structures have not been marked therefor, the locations of all utilities may not be shown.

Note: Approximate gaslines shown are taken from mapping provided by the Kentucky Public Service Commission. No field surveying locations were taken on the existing gasline.

Legend	
	Lease Boundary
	Property Line From PVA Office
	Gas Line
	Electric Line
	Telephone and Cable
	Highway Right of Way
	Gas Well
	Proposed 300' Tower

Note: Property lines shown hereon have not been surveyed in the field. This map is for exhibit only and Not for the sale or transfer of property.

Steven E. Haywood, PLS #2661
160 Lank Branch
Pikeville, KY 41601
606-432-1447

Preliminary

I hereby certify that the information depicted by this map is correct to the best of my knowledge and is in accordance with the record data as found in the office of the Property Valuation Administrator of Lawrence County, Kentucky.

Steven E. Haywood, PLS #2661 Date

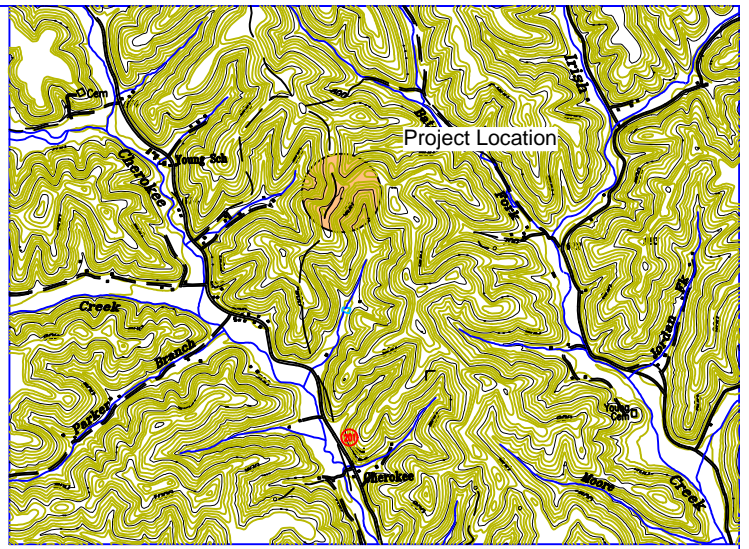


East Kentucky Network d/b/a Appalachian Wireless 101 Technology Trail, Ivel, KY 41642		SUMMIT ENGINEERING, INC. 160 Lank Branch Pikeville, KY 41601 PH 606-432-1447	
Property Owner Map Cherokee Tower Site Buster Carter Property Located in Cherokee, Lawrence County, Kentucky			
DATE: 3/24/2021	REV. DATE	SCALE: 1"=500'	PER. NO:
FILENAME:	DISK NO:	PLOT DATE:	ATT:
DRAWN BY: PH	CHK BY:	APPRVD. BY:	PAGE NO:

Exhibit 11

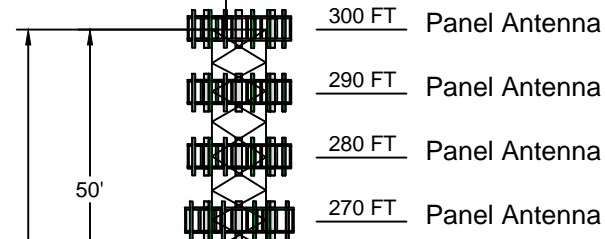
CHEROKEE TOWER

VERTICAL PROFILE SKETCH
APPALACHIAN WIRELESS



Vicinity Map
Not to Scale
Blaine 7 1/2 Minute Quadrangle Map

Lighting Rod

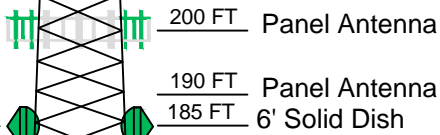


50'

65'

185'

300'



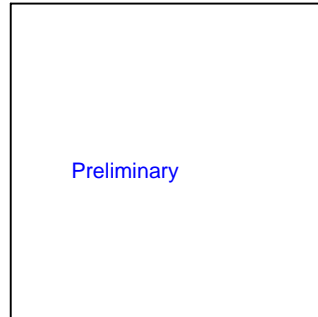
Graphic Scale
1" = 30'

Note: Tower Foundation & distance between Tower Legs may change due to design criteria, by others.

Note: This is a vertical sketch of the tower indicating the proposed antenna and dish elevations. No design criteria was considered in the preparations of this drawing.

The information shown hereon is correct to the best of my knowledge

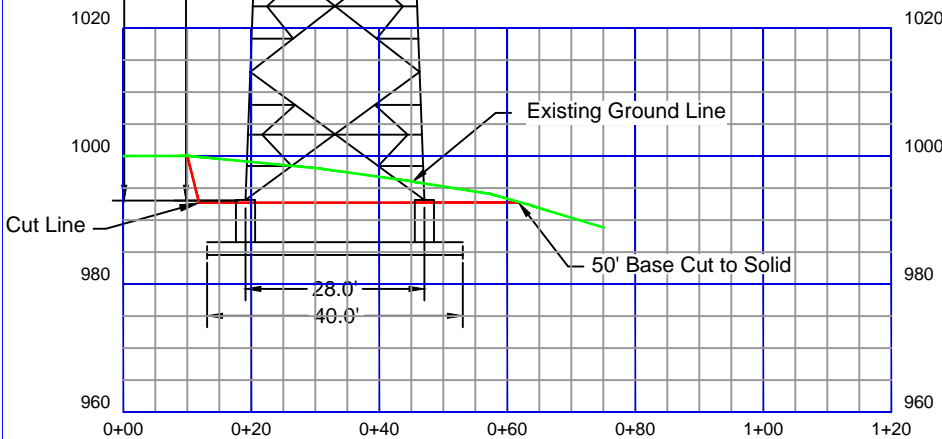
David Rasnick, PE #12713
160 Lank Branch
Pikeville, KY 41501
606-432-1447



Preliminary

David Rasnick PE #12713 Date

Lease Line



DATE: 03-24-21

SCALE: 1"=30'

DRAWN BY: PH & SH

East Kentucky Network
D/B/A/ Appalachian Wireless
101 Technology Trail, Ivel, KY 41642

Vertical Profile Sketch
Cherokee Tower
Cherokee, Lawrence County, KY

SUMMIT ENGINEERING, INC.
160 LANK BRANCH
PIKEVILLE, KY, 41501
(606) 432-1447



Exhibit 12

Utility ID	Utility Name	Utility Type	Class	City	State
4107900	365 Wireless, LLC	Cellular	D	Atlanta	GA
4109300	Access Point, Inc.	Cellular	D	Cary	NC
4108300	Air Voice Wireless, LLC	Cellular	A	Bloomfield Hill	MI
4110650	Alliant Technologies of KY, L.L.C.	Cellular	C	Morristown	NJ
44451184	Alltel Communications, LLC	Cellular	A	Basking Ridge	NJ
4110850	AltaWorx, LLC	Cellular	C	Fairhope	AL
4107800	American Broadband and Telecommunications Company	Cellular	C	Toledo	OH
4108650	AmeriMex Communications Corp.	Cellular	D	Dunedin	FL
4105100	AmeriVision Communications, Inc. d/b/a Affinity 4	Cellular	D	Virginia Beach	VA
4110700	Andrew David Balholm dba Norcell	Cellular	C	Clayton	WA
4108600	BCN Telecom, Inc.	Cellular	D	Morristown	NJ
4110550	Blue Casa Mobile, LLC	Cellular	D	Santa Barbara	CA
4108750	Blue Jay Wireless, LLC	Cellular	C	Carrollton	TX
4111050	BlueBird Communications, LLC	Cellular	C	New York	NY
4202300	Bluegrass Wireless, LLC	Cellular	A	Elizabethtown	KY
4107600	Boomerang Wireless, LLC	Cellular	B	Hiawatha	IA
4105500	BullsEye Telecom, Inc.	Cellular	D	Southfield	MI
4110050	CampusSims, Inc.	Cellular	D	Boston	MA
4100700	Cellco Partnership dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
4106600	Cintex Wireless, LLC	Cellular	D	Rockville	MD
4111000	ComApp Technologies LLC	Cellular	C	Melrose	MA
4101900	Consumer Cellular, Incorporated	Cellular	A	Portland	OR
4106400	Credo Mobile, Inc.	Cellular	A	San Francisco	CA
4108850	Cricket Wireless, LLC	Cellular	A	San Antonio	TX
4001900	CTC Communications Corp. d/b/a EarthLink Business I	Cellular	D	Grand Rapids	MI
10640	Cumberland Cellular Partnership	Cellular	A	Elizabethtown	KY
4101000	East Kentucky Network, LLC dba Appalachian Wireless	Cellular	A	Ivel	KY
4002300	Easy Telephone Service Company dba Easy Wireless	Cellular	D	Ocala	FL
4109500	Enhanced Communications Group, LLC	Cellular	D	Bartlesville	OK
4110450	Excellus Communications, LLC	Cellular	D	Chattanooga	TN
4105900	Flash Wireless, LLC	Cellular	C	Concord	NC
4104800	France Telecom Corporate Solutions L.L.C.	Cellular	D	Oak Hill	VA
4109350	Global Connection Inc. of America	Cellular	D	Norcross	GA
4102200	Globalstar USA, LLC	Cellular	B	Covington	LA
4109600	Google North America Inc.	Cellular	A	Mountain View	CA
33350363	Granite Telecommunications, LLC	Cellular	D	Quincy	MA
4106000	GreatCall, Inc. d/b/a Jitterbug	Cellular	A	San Diego	CA
10630	GTE Wireless of the Midwest dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
4110600	Horizon River Technologies, LLC	Cellular	C	Atlanta	GA
4103100	i-Wireless, LLC	Cellular	A	Newport	KY
4109800	IM Telecom, LLC d/b/a Infiniti Mobile	Cellular	D	Tulsa	OK
22215360	KDDI America, Inc.	Cellular	D	New York	NY
10872	Kentucky RSA #1 Partnership	Cellular	A	Basking Ridge	NJ
10680	Kentucky RSA #3 Cellular General	Cellular	A	Elizabethtown	KY
10681	Kentucky RSA #4 Cellular General	Cellular	A	Elizabethtown	KY
4109750	Konatel, Inc. dba telecom.mobi	Cellular	D	Johnstown	PA
4110900	Lunar Labs, Inc.	Cellular	C	Detroit	MI
4107300	Lycamobile USA, Inc.	Cellular	D	Newark	NJ
4108800	MetroPCS Michigan, LLC	Cellular	A	Bellevue	WA
4109650	Mitel Cloud Services, Inc.	Cellular	D	Mesa	AZ
4202400	New Cingular Wireless PCS, LLC dba AT&T Mobility, PCS	Cellular	A	San Antonio	TX
10900	New Par dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
4000800	Nextel West Corporation	Cellular	D	Overland Park	KS
4001300	NPCR, Inc. dba Nextel Partners	Cellular	D	Overland Park	KS

4001800	OnStar, LLC	Cellular	A	Detroit	MI
4110750	Onvoy Spectrum, LLC	Cellular	C	Plymouth	MN
4109050	Patriot Mobile LLC	Cellular	D	Southlake	TX
4110250	Plintron Technologies USA LLC	Cellular	D	Bellevue	WA
33351182	PNG Telecommunications, Inc. dba PowerNet Global Communications	Cellular	D	Cincinnati	OH
4202100	Powertel/Memphis, Inc. dba T-Mobile	Cellular	A	Bellevue	WA
4107700	Puretalk Holdings, LLC	Cellular	A	Covington	GA
4106700	Q Link Wireless, LLC	Cellular	A	Dania	FL
4108700	Ready Wireless, LLC	Cellular	B	Hiawatha	IA
4110500	Republic Wireless, Inc.	Cellular	D	Raleigh	NC
4111100	ROK Mobile, Inc.	Cellular	C	Culver City	CA
4106200	Rural Cellular Corporation	Cellular	A	Basking Ridge	NJ
4108550	Sage Telecom Communications, LLC dba TruConnect	Cellular	D	Los Angeles	CA
4109150	SelecTel, Inc. d/b/a SelecTel Wireless	Cellular	D	Freemont	NE
4106300	SI Wireless, LLC	Cellular	A	Carbondale	IL
4110150	Spectrotel, Inc. d/b/a Touch Base Communications	Cellular	D	Neptune	NJ
4200100	Sprint Spectrum, L.P.	Cellular	A	Atlanta	GA
4200500	SprintCom, Inc.	Cellular	A	Atlanta	GA
4109550	Stream Communications, LLC	Cellular	D	Dallas	TX
4110200	T C Telephone LLC d/b/a Horizon Cellular	Cellular	D	Red Bluff	CA
4202200	T-Mobile Central, LLC dba T-Mobile	Cellular	A	Bellevue	WA
4002500	TAG Mobile, LLC	Cellular	D	Carrollton	TX
4109700	Telecom Management, Inc. dba Pioneer Telephone	Cellular	D	South Portland	ME
4107200	Telefonica USA, Inc.	Cellular	D	Miami	FL
4108900	Telrite Corporation dba Life Wireless	Cellular	D	Covington	GA
4108450	Tempo Telecom, LLC	Cellular	D	Kansas City	MO
4109950	The People's Operator USA, LLC	Cellular	D	New York	NY
4109000	Ting, Inc.	Cellular	A	Toronto	ON
4110400	Torch Wireless Corp.	Cellular	D	Jacksonville	FL
4103300	Touchtone Communications, Inc.	Cellular	D	Whippany	NJ
4104200	TracFone Wireless, Inc.	Cellular	D	Miami	FL
4002000	Truphone, Inc.	Cellular	D	Durham	NC
4110300	UVNV, Inc.	Cellular	D	Costa Mesa	CA
4105700	Virgin Mobile USA, L.P.	Cellular	A	Atlanta	GA
4110800	Visible Service LLC	Cellular	C	Lone Tree	CO
4106500	WiMacTel, Inc.	Cellular	D	Palo Alto	CA
4110950	Wing Tel Inc.	Cellular	C	New York	NY
4109900	Wireless Telecom Cooperative, Inc. dba theWirelessFreeway	Cellular	D	Louisville	KY

Exhibit 13

S & S Tower Services
120 Branden Dr.
Mousie, KY 41839

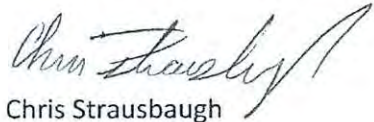
Kentucky Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, KY 40602-0615

Dear Commissioners:

The Construction Manager for the proposed communications facility will be Dave Strausbaugh. His contact information is (606) 497-6730 or dstrausbaugh010@gmail.com.

Dave has been in the industry completing civil construction and constructing towers since 1991. He has worked for S&S Tower Services since 2015 as Construction Manager overseeing the construction of telecommunications towers and sites.

Thank you,



Chris Strausbaugh
Owner
S&S Tower Services
(606) 497-5798