

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

In the matter of:

THE APPLICATION OF EAST KENTUCKY NETWORK)
LIMITED LIABILITY COMPANY FOR THE ISSUANCE)
OF A CERTIFICATE OF PUBLIC CONVENIENCE AND) CASE NO. 2020-00268
NECESSITY TO CONSTRUCT A REPLACEMENT)
TOWER IN FLOYD 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 Floyd 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 at 9281 KY Route 80, Langley, Floyd County, Kentucky (37°30'15.1154"N 82°47'35.0441"W). A map and detailed directions to the site can be found in Exhibit 7.

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.

Floyd County has no formal local planning unit. In absence of this unit, the Floyd 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 Floyd 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 The Floyd County Chronicle & Times, August 26, 2020, edition. Enclosed in Exhibit 3 is a copy of that notice. The Floyd County Chronicle & Times is the newspaper with the largest circulation in Floyd 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, Inc. 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 approvals 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.

East Kentucky Network, LLC will finance the subject Construction with earned surplus in its General Fund.

Estimated Cost of Construction	\$ 350,000.00
Annual Operation Expense of Tower	\$ 12,500.00

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 August 12, 2020, 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 First Amendment to Lease Agreement for the site location along with a lot description.

The proposed construction site is on a very rugged mountaintop in close proximity to the existing tower. There is an existing 300' tower owned by East Kentucky Network, LLC on the property which cannot meet the needs of East Kentucky Network, LLC and will be removed upon construction of the proposed tower.

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 James W. Caudill, Kentucky registered professional engineer.


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


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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:  DATE: 8/20/2020
Lynn Haney, Regulatory Compliance Director

APPROVED BY:  DATE: 8/20/2020
W.A. Gillum, General Manager

ATTORNEY:  DATE: 8/19/2020
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	Amendment 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
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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	P:(703)584-8665
Pamela L Gist Esq	F:(703)584-8696
8300 Greensboro Drive	E:pgist@fcclaw.com
McLean, VA 22102	

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

M. Lynn Parrish
P.O. Box 2096
Pikeville, KY 41501

Melanie Conley Warfield, Et Al
C/O Judelle Conley
1865 Gayle Drive
Lexington, KY 40505

Board of Education of Floyd County
C/O Henry Webb
106 North Front
Prestonsburg, KY 41653

Carla Keathley
P.O. Box 1244
Martin, KY 41649

Carl and Katie Dudley
C/O Virgie Yahr
480 Hayes Branch
Langley, KY 41645

Keith and Michelle Bailey
572 Hayes Branch Road
Langley, KY 41645

Clinton Terry
P.O. Box 151
Langley, KY 41645

Creed Land, LLC
P.O. Box 2725
Pikeville, KY 41501

Arnold Turner Estate
C/O Joan Chaffins
P.O. Box 289
McDowell, KY 41647

Gladys Hayes Hicks
C/O Linda Brown
1207 Turkey Creek Road
Langley, KY 41645

Edgel Hayes
C/O Peggy Mattingly
131 N. Hanover Avve.
Lexington, KY 40502

Christian and Crystal Smith
1544 Turkey Creek Road
Langley, KY 41645



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

August 21, 2020

M. Lynn Parrish
P.O. Box 2096
Pikeville, KY 41501

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00268)

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 Floyd 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 9281 KY RT 80, Langley, Floyd 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. 2020-00268 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

August 21, 2020

Melanie Conley Warfield, Et Al
C/O Judelle Conley
1865 Gayle Drive
Lexington, KY 40505

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00268)


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Regulatory Compliance Director
Enclosure 1



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C/O Henry Webb
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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

August 21, 2020

Carla Keathley
P.O. Box 1244
Martin, KY 41649

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Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

August 21, 2020

Carl and Katie Dudley
C/O Virgie Yahr
480 Hayes Branch
Langley, KY 41645

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Sincerely,

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

August 21, 2020

Keith and Michelle Bailey
572 Hayes Branch Road
Langley, KY 41645

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00268)

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Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

August 21, 2020

Clinton Terry
P.O. Box 151
Langley, KY 41645

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Sincerely,

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Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

August 21, 2020

Edgel Hayes
C/O Peggy Mattingly
131 N. Hanover Avve.
Lexington, KY 40502

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00268)

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Sincerely,



Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

August 21, 2020

Creed Land, LLC
P.O. Box 2725
Pikeville, KY 41501

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00268)

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Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

August 21, 2020

Arnold Turner Estate
C/O Joan Chaffins
P.O. Box 289
McDowell, KY 41647

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Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

August 21, 2020

Gladys Hayes Hicks
C/O Linda Brown
1207 Turkey Creek Road
Langley, KY 41645

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Sincerely,

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Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

August 21, 2020

Christian and Crystal Smith
1544 Turkey Creek Road
Langley, KY 41645

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00268)

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Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

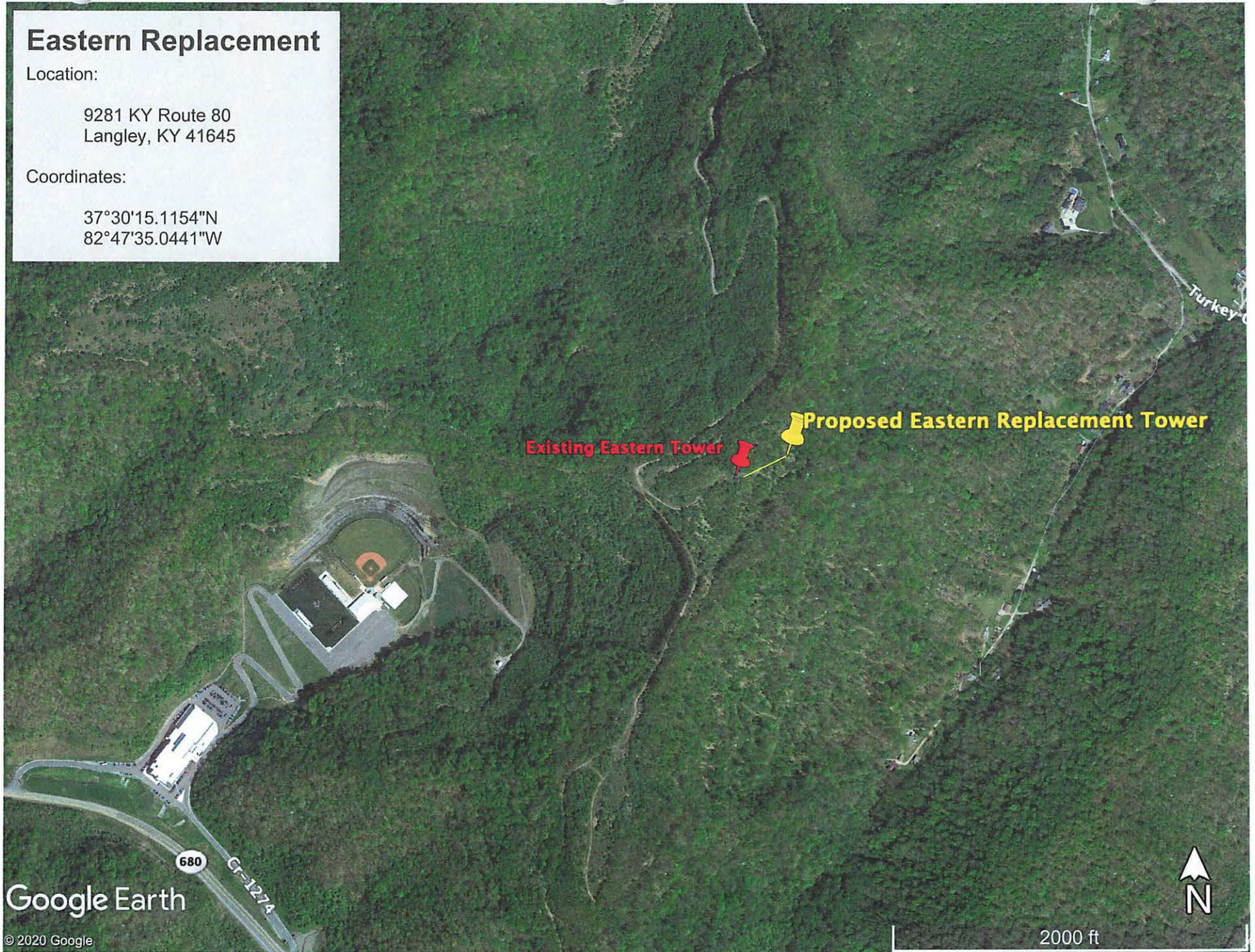
Eastern Replacement

Location:

9281 KY Route 80
Langley, KY 41645

Coordinates:

37°30'15.1154"N
82°47'35.0441"W



Google Earth

© 2020 Google

2000 ft

Exhibit 3

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

EAST KENTUCKY
NETWORK



To: The Floyd County Chronicle and Times **From:** Raina Helton
Attn: Classifieds Regulatory Compliance Assistant

Email: classads@news-expressky.com **Date:** August 13, 2020

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

Please place the following Public Notice Advertisement in The Floyd County Chronicle Times to be ran on August 26, 2020.

PUBLIC NOTICE:

RE: Public Service Commission of Kentucky (CASE NO. 2020-00268)

Public Notice is hereby given that East Kentucky Network, LLC, dba Appalachian Wireless has applied to the Kentucky Public Service Commission to construct a replacement cellular telecommunications tower on a tract of land located on 9281 KY RT 80, Langley, Floyd 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. 2020-00268.

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 Assistant

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.

VIA: U.S. CERTIFIED MAIL

August 21, 2020

Robert Williams, Judge Executive
149 S Central Ave.
Prestonsburg, KY 41653

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00268)

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 replacement facility to provide cellular telecommunications service in Floyd 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 on 9281 KY RT 80, Langley, Floyd 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 Floyd 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. 2020-00268 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
Regulatory Compliance Director
Enclosure

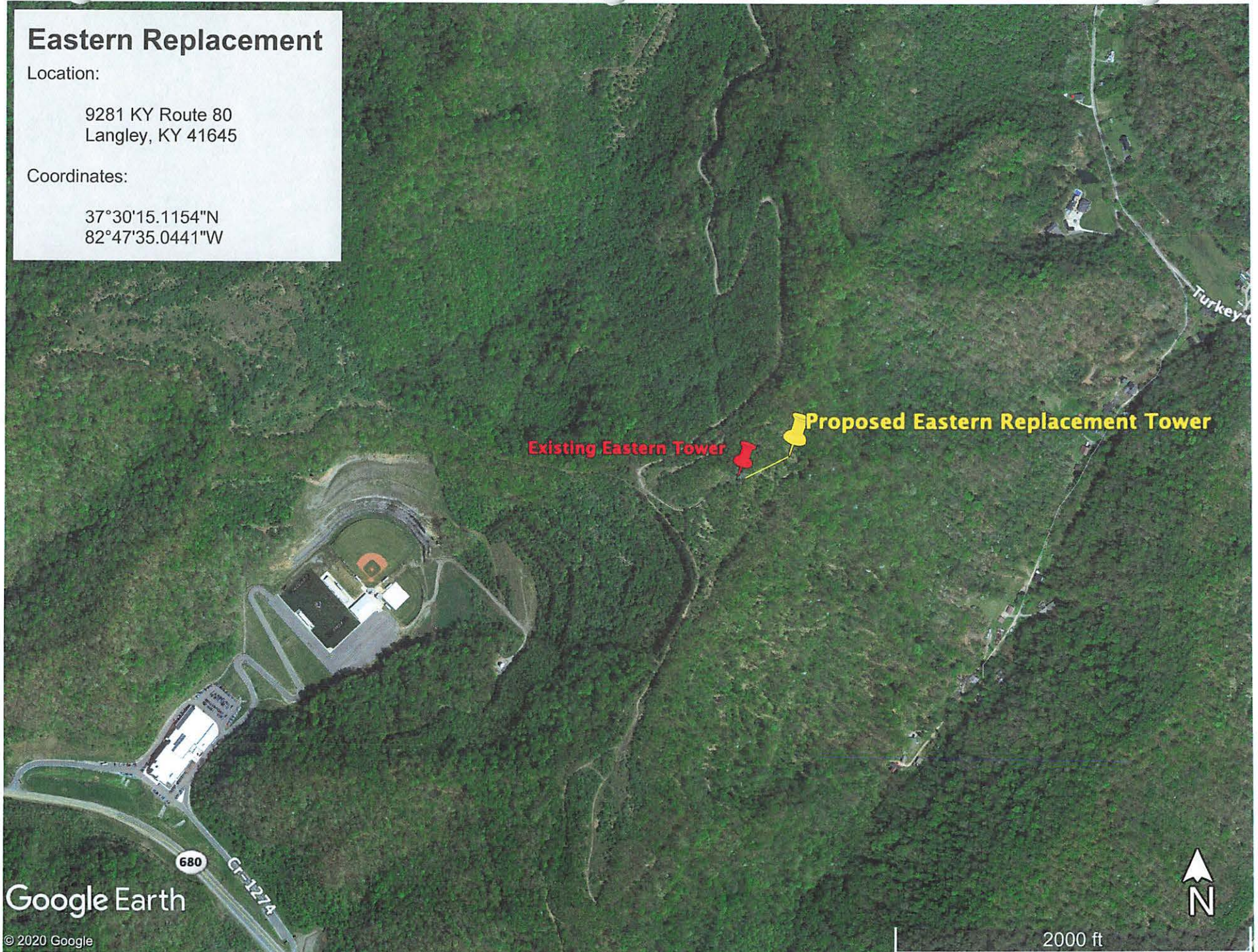
Eastern Replacement

Location:

9281 KY Route 80
Langley, KY 41645

Coordinates:

37°30'15.1154"N
82°47'35.0441"W



Google Earth

© 2020 Google

2000 ft

Exhibit 4



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

EAST KENTUCKY ENGINEERING, LLC.

**APPALACHIAN WIRELESS
Geotechnical Investigation on the
Eastern Tower Site
Floyd County, Kentucky
EKYENG Project No. 165-000-0095**

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, December 5th, 2019



EAST KENTUCKY ENGINEERING, LLC.

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EXECUTIVE SUMMARY

A geotechnical investigation has been performed on the Eastern Tower Site, located in Floyd County, Kentucky. This site is readily accessible. A location map is shown in Figure 1 of this report. Four (4) borings were advanced to a maximum depth of 39.5 ft. The following geotechnical considerations were identified:

- Borings utilized for this study encountered mine spoil and weathered shale.
- The estimated maximum base elevation of the tower mat foundation is 1419.8 ft.
- This site is on a previously mined forested point adjacent to an existing tower.
- **The allowable bearing capacities are estimated to be at 2000 psf once the subgrade is undercut and backfilled to the recommended specifications. Details of the necessary remediations is included in Section 5 of this report.**
- The 2018 Kentucky Building Code seismic site classification for this site is "C."
- 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 Eastern Property, in Floyd County, Kentucky. A site location map is shown in Figure No. 1.

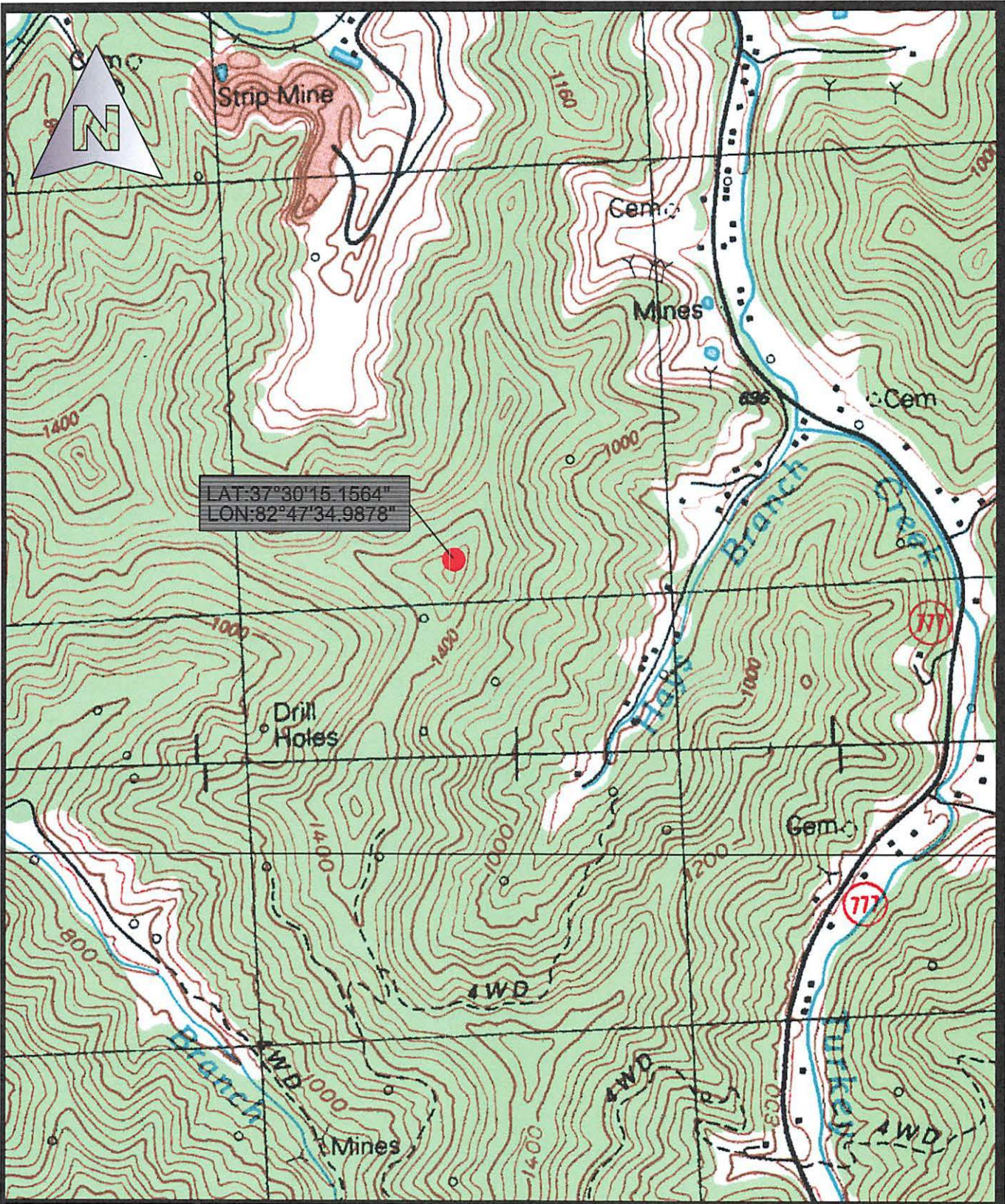
Four (4) borings were advanced to a maximum depth of 39.5 ft. Horn and Associates, Inc. provided drilling services to obtain these borings. Logs of the borings along with a boring location plan are included in Appendix A and Appendix E. The purpose of these services is to provide information and geotechnical 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 ft X 43 ft with an estimated base of the tower footer elevation at 1419.8 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 11/29/2019
 Job: 165-095 Scale: 1"=1000'

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

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



3.0 SITE DESCRIPTION & HISTORICAL MINING

3.1 GENERAL INFORMATION

The site location is on a forested point adjacent to an existing tower in Floyd County, Kentucky. The current surface elevation is approximately 1424 ft. Research on historical mining was conducted by obtaining previous mine license maps from the "Kentucky Mine Mapping Information System" (KMMIS).

3.2 SURFACE MINING

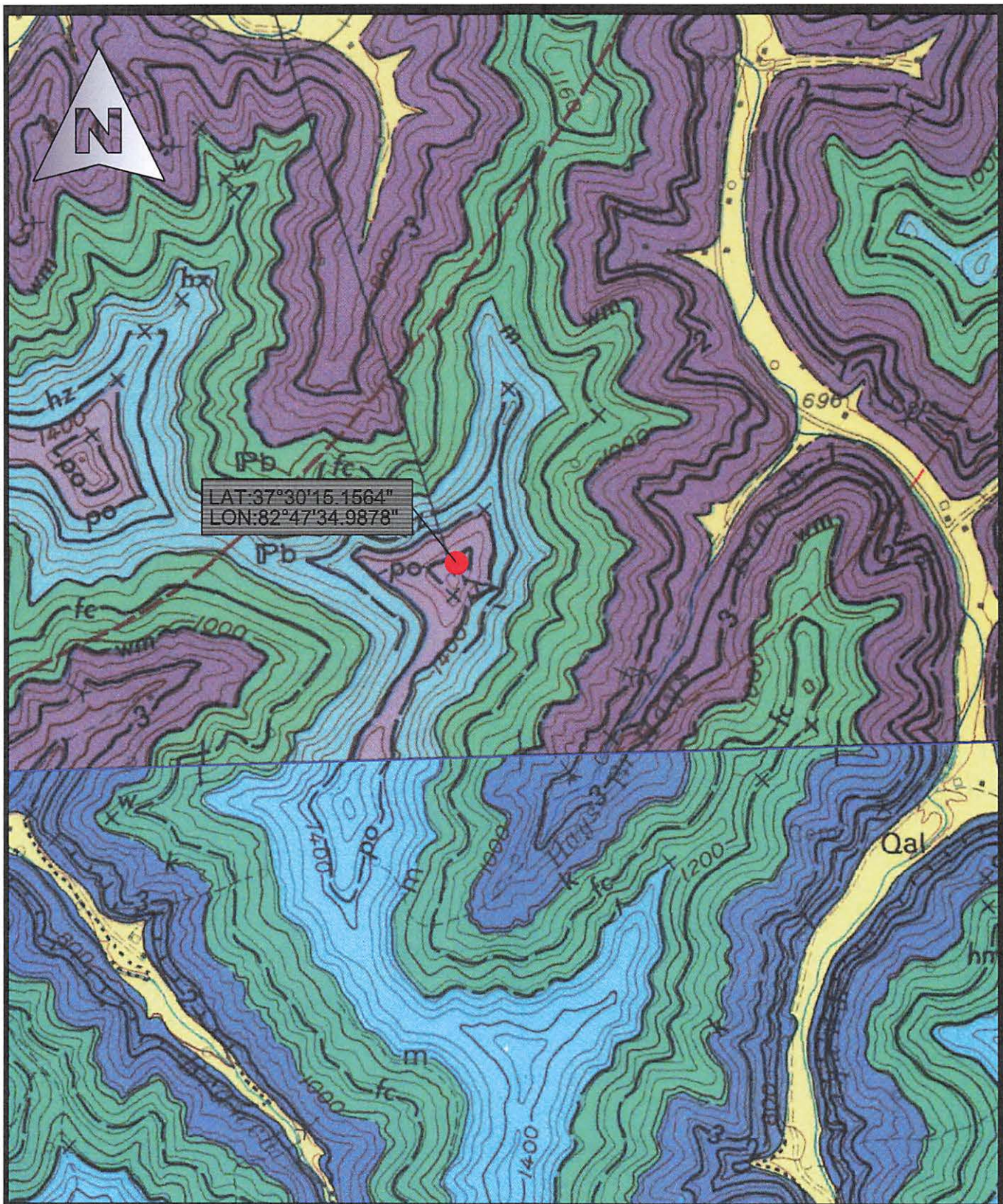
Surface mining was conducted by Coal Mac at this proposed tower location. Mining at this site was completed in the early 1990s. At this site the Peach Orchard seams were mined and backfilled with mine spoil.

3.3 UNDERGROUND MINING

There has been underground mining in the Elkhorn No. 1 Seam. Mining was completed in the mid 1980s by Elkhorn Coal Company. The coal was extracted by room and pillar mining methods, at an approximate elevation of 750 ft. Some secondary mining (pillar extraction) was conducted within the area of influence beneath the footprint of this structure.

3.4 FLOOD HAZARD

A potential 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 **21071C0195E-210069**. The flood zone for this area is Zone X and is an area of minimal flood hazard. A FIRMette map is included in Appendix E of this report.



Drawn: RDS Date: 11/29/19

Job: 165-0093 Scale: 1"=1000'

APPALACHIAN WIRELESS
 EXCERPT FROM GEOLOGIC QUAD
 LOCATION MAP
 EASTERN TOWER SITE
 FIGURE NO 2

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



4.0 FIELD EXPLORATION

4.1 SITE INFORMATION

The proposed site is located on a previously surface mined forested point in Floyd County, Kentucky. The site lies within the Martin Quadrangle. The site is readily accessible by conventional exploratory equipment. An estimated pad location was determined based on the information provided. Foundation dimensions were estimated to be at 43' X 43' ft mat footer for this report.

4.2 BORING DATA

Four (4) borings were made in the relative positions shown on the Site Map in Appendix E. The boring logs and resulting data are included in Appendix A. These borings were made with a track-mounted boring rig using hollow-stem augers and employing standard penetration resistance methods (ASTM D-1586, which includes 140-pound hammer, 30-inch drop, and two-inch-O.D. split-spoon sampler) at maximum depth intervals of five feet or at major changes in stratum, whichever occurred first. The disturbed split-spoon samples were visually classified, logged, sealed in moisture-proof jars, and taken to the EKYENG laboratory for study. The depths where these "A"-type split-spoon samples were collected are noted on the boring logs. The results of the natural moisture contents by boring and interval are shown in Table 2.

TABLE 2
RESULTS OF NATURAL MOISTURE CONTENT TESTS (ASTM D-4643)

SAMPLE NO.	DEPTH INCREMENT, (FT.)	NATURAL MOISTURE CONTENT, %
B1 S-1	0.0 - 1.5	16.7%
B1 S-2	2.0 - 3.5	14.3%



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B1 S-3	4.5 - 6.0	10.6%
B1 S-4	7.0 - 8.5	13.2%
B1 S-5	9.5 - 11.0	14.9%
B1 S-6	14.5 - 16.0	12.1%
B1 S-7	19.5 - 21.0	5.2%
B1 S-8	24.5 - 24.8	4.4%
B2 S-1	0.0 - 1.5	14.7%
B2 S-2	2.0 - 3.5	14.5%
B2 S-3	4.5 - 6.0	14.6%
B2 S-4	7.0 - 8.5	12.0%
B2 S-5	9.5 - 11.0	Wood
B2-S-6	14.5 - 16.0	9.8%
B2-S-7	19.5 - 21.0	13.1%
B3 S-1	0.0 - 1.5	12.1%
B3 S-2	2.0 - 3.5	13.7%
B3 S-3	4.5 - 6.0	13.6%
B3 S-4	7.0 - 8.5	Coal - Dirt Mix
B3 S-5	9.5 - 11.0	Wood
B3-S-6	14.5 - 16.0	10.2%
B3-S-7	19.5 - 21.0	11.9%
B4-S-1	0.0 - 1.5	11.8%
B4-S-2	2.0 - 3.5	13.3%
B4-S-3	4.5 - 6.0	13.3%



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B4-S-4	7.0 – 8.5	13.7%
B4-S-5	9.5 – 11.0	13.8%
B4-S-6	14.5 – 16.0	10.0%
B4-S-7	19.5 – 21.0	9.6%

The position at which the cores were taken is indicated on the boring logs and shown on the sitemap in Appendix E. The corresponding blow counts are shown in Table No. 3.

TABLE NO. 3
STANDARD PENETRATIONS

SAMPLE NO.	DEPTH INCREMENT	BLOW COUNT /RQD *	DESCRIPTION
B-1	0.0 – 1.5	1-4-5	Topsoil – Mine Spoil
B-1	2.0 – 3.5	3-5-6	Mine Spoil
B-1	4.5 – 6.0	3-8-5	Mine Spoil
B-1	7.0 – 8.5	3-2-2	Mine Spoil
B-1	9.5 – 11.0	2-3-2	Mine Spoil
B-1	14.5 – 16.0	3-3-4	Mine Spoil
B-1	19.5 – 21.0	9-6-9	Mine Spoil
B-1	24.5 – 24.8	50/.3*	Gray Shale
B-1	29.5 – 39.5	4.9*	Gray Shale
B-2	0.0 – 1.5	1-2-3	Topsoil – Mine Spoil
B-2	2.0 – 3.5	4-5-5	Mine Spoil
B-2	4.5-6.0	2-2-2	Mine Spoil
B-2	7.0-8.5	19-44-26	Wood
B-2	9.5 – 11.0	14-24-12	Wood
B-2	14.5 – 16.0	4-5-7	Mine Spoil



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SAMPLE NO.	DEPTH INCREMENT	BLOW COUNT /RQD *	DESCRIPTION
B-2	19.5 - 21.0	1-2-1	Mine Spoil
B-3	0.0 – 1.5	3-3-4	Topsoil – Mine Spoil
B-3	2.0 – 3.5	4-3-3	Mine Spoil
B-3	4.5 – 6.0	7-4-2	Mine Spoil
B-3	7.0 – 8.5	7-8-7	Mine Spoil
B-3	9.5 – 11.0	10-10-5	Wood – Mine Spoil
B-3	14.5 – 16.0	4-2-1	Mine Spoil
B-3	19.5-21.0	2-6-8	Mine Spoil
B-4	0.0 – 1.5	2-4-2	Topsoil – Mine Spoil
B-4	2.0 – 3.5	4-7-8	Mine Spoil
B-4	4.5 - 6.0	3-3-3	Mine Spoil
B-4	7.0 – 8.5	1-4-3	Mine Spoil
B-4	9.5 – 11.0	3-3-5	Mine Spoil
B-4	14.5 – 16.0	3-3-3	Mine Spoil
B-4	19.5 – 21.0	3-5-8	Mine Spoil

The borings encountered mine spoil to a depth of 24.5 ft. The four borings were extended by “NX” size rock core that were taken to confirm the presence of rock at the site and to determine its physical characteristics. The core was made with “NX” size diamond coring equipment. These borings are between 24.5 ft and 39.5 ft in depth. The position at which the core was taken is indicated on the boring logs and shown on the boring location map in Appendix D.

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.



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Therefore, groundwater should not be a concern in this area. During the site investigation, groundwater was encountered at an approximate depth of 7 ft. This can be attributed to heavy rainfall prior to drilling. If perched groundwater is encountered during excavations, dewatering solutions can be provided by EKYENG.

4.4 SEISMIC SITE CLASSIFICATION

Based on the encountered soil conditions at the project site, the site classification was determined to be "Site Class C" per the 2018 Kentucky Building Code. In addition, an S_{DS} coefficient of 0.153 g, and an S_{D1} coefficient of 0.096 g was 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. 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. The underlying soils are predominantly mine spoil to a depth of approximately 29 ft. It is our understanding that you wish to use a shallow mat foundation; therefore we have made the following recommendations.

5.2 SHALLOW MAT FOUNDATIONS RECOMMENDATIONS

Typically, we do not recommend shallow foundations on sites consisting of mine spoils. Settlement can and is likely to occur once the final structure's loading is in place. No settlement calculations have been evaluated for this report. If shallow foundations are used, 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



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practical experience we have estimated that **the allowable bearing capacity at this site will be 2,000 psf once the following remediation is completed.**

If shallow foundations are used, we recommend that the site is over excavated to a minimum of eight ft. below the footing subgrade and ten ft. plus the footing depth outside the footing area. Any large rock and unsuitable material be removed and backfilled with a select backfill or dense grade aggregate. Well, graded soils or dense grade aggregate stone is to be placed in 8-inch horizontal lifts, compacted to not less than 95% of the maximum density as determined by the standard Proctor dry unit weight (ASTM D-968) and within +2% and -2% of the optimum moisture content. This remediation should assist in preventing differential settlement. Specifications for this backfill is included in Section II of the Appendices of this report.

It is furthermore recommended that the slabs-on-grade be supported on 4 to 6-inch layer of relatively clean granular material such as sand and gravel or clean 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. 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 design of the slabs.

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



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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 SUBSIDENCE

Detailed subsidence analysis is beyond the scope of this report. Our research found one underground mine that is under the potential area of influence for subsidence beneath the proposed footprint of this structure. This area of influence is typically considered a 15-degree angle projected down from a flat surface 25 ft. outside the structure to the depth of mining. The underlying mine is in the Elkhorn No.1 Seam (760ft in elevation). Room and pillar mining was conducted, and some secondary mining (pillar recovery) was done based upon map review.

This mine and its elevation is 340 ft below the proposed tower location. Based on all information researched on subsidence, site inspections for subsidence issues and the no previous subsidence issues with the adjacent tower there should not be a subsidence issue for this proposed structure.



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5.4 BURIED UTILITIES

Excavations for buried utility pipelines should follow the guidelines set forth 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 "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 insure 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 method of determining the boring location and the surface elevation at the boring is noted in the report and is presented on the Boring Location Plan or on the boring log. The location and elevation of the



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boring 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 boring was made. The boundaries between different soil strata are indicated at specific depths; however, these depths are in fact 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 borehole does 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 made at the locations shown in a boring location drawing included. Soil variations may exist between borings, and these variations may not become evident until construction. If significant variations are then noted, the geotechnical



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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 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.



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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.

This report has been prepared for the exclusive use of Appalachian Wireless, for specific application to the proposed cellular tower located on the Eastern Property located in Floyd 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 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.



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.



EAST KENTUCKY ENGINEERING, LLC.

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.



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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 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,



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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.

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

The operations on earth work 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 continuously, 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



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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 be maintained always during benching and filling of the benches, to ensure that all water is drained away from the fill area.

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.



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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
 - 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.



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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 life lines 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 life line attached to a harness. The line must be 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



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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 guard rails 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.



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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 the purpose of 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

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



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- 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 provided that 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 ASTH Specification A305. Welded wire mesh shall conform to W4 x W4 size and be of Grade 60 steel.
- 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.



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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.

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.
 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



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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:
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.



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- 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.

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.



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APPENDIX A BORING LOGS

HORN AND ASSOCIATES, INC.

Drilling Division
4215 Bybee Road - Winchester Ky 40391

FIELD BORING LOG

Page 1 of

Project Name <u>CosPro Tower App Wire</u>	Hole Number <u>B-1</u>	Total Depth <u>39.5</u>
Federal Project No. <u>LANGLEY, KY</u>	Location _____	
State Project No. _____	Surface Elevation _____	
Method of Drilling/Sampling <u>SFT NX</u>	Date Started <u>11-25-14</u>	Date Completed <u>11-25-14</u>
Boring Diameter <u>3 1/4</u>	Driller <u>Grant</u>	Weather _____

From To	Soil and Rock Description	Sample/Run Interval	Blow Counts/RQD	Sample/Run No.	Sample Type	% Recovery
0.0		0.0 1.5	1-1.5	S-1	SFT	
0.3	Top So. 1	2.0 3.5	3-5-6	S-2		
0.3		4.5 6.0	3-2-3	S-3		
R15	So. 1	7.0 8.5	3-2-2	S-4		
R15		9.5 11.0	2-3-2	S-5		
34.5	Gr. Sh	14.5 16.0	3-3-4	S-6		
		19.5 21.0	4-6-4	S-7		
	T/A @ 34.5	27.5 29.0	5-3	S-8	SFT	
	1 Box	29.5 39.5	4.7	R-1	NX	9.5

Water Level @ Drilling 7.0 24 Hr. Water Level _____ 7 Day Water Level _____

Moving/Delay Time _____ Hammer Wt. 140 lbs. Hammer Drop 30 in.

Drilling Division
4215 Bybee Road -- Winchester Ky 40391

Project Name pastor tower AW Hole Number B-2 Total Depth 21.0
 Federal Project No. LANGLEY, KY Location _____
 State Project No. _____ Surface Elevation _____
 Method of Drilling/Sampling SFT Date Started 11-26-19 Date Completed 11-26-5
 Boring Diameter 3 1/4 Driller Grant Weather _____

From To	Soil and Rock Description	Sample/Run Interval	Blow Counts/RQD	Sample/Run No.	Sample Type	% Recovery
0.0		0.0 1.5	1-2-3	S-1	SFT	
0.2	Topsoil	1.0 3.5	4-5-5	S-2		
0.2		4.5 6.0	2-2-2	S-3		
7.0	Spoil	7.0 8.5	19-24-26	S-4		
		4.5 11.0	14-24-12	S-5		
	blacked	14.5 16.0	4-5-7	S-6		
1.0		19.5 21.0	1-2-1	S-7	SFT	
11.0	wood					
21.0	Spoil					
	7.0 to 21.0					

Water Level @ Drilling _____ 24 Hr. Water Level _____ 7 Day Water Level _____
 Moving/Delay Time _____ Hammer Wt. 140 lbs. Hammer Drop 30 in.

Project Name <u>Eastern Tower App with</u> Federal Project No. <u>LANGLEY, KY</u> State Project No. _____ Method of Drilling/Sampling <u>SPT</u> Boring Diameter <u>8 1/4"</u>	Hole Number <u>B-3</u> Total Depth <u>21.0</u> Location _____ Surface Elevation _____ Date Started <u>11-26-14</u> Date Completed <u>11-26-14</u> Driller <u>Grant</u> Weather _____
--	--

From To	Soil and Rock Description	Sample/Run Interval	Blow Counts/RQD	Sample/Run No.	Sample Type	% Recovery
0.0 0.2	T.S	0.0 1.5	3-3-4	S-1	SPT	
0.2 0.5	Spoil	1.5 2.0	4-3-3	S-2	SPT	
0.5 7.5	Wood	2.0 9.5	2-4-2	S-3	SPT	
7.5 14.0	Spoil	7.0 9.5	7-8-7	S-4		
14.0 19.5		9.5 11.0	10-10-5	S-5		
19.5 21.0		14.5 16.0	4-2-1	S-6		
		19.5 21.0	2-6-8	S-7	SPT	

Water Level @ Drilling _____ 24 Hr. Water Level _____ 7 Day Water Level _____
 Moving/Delay Time _____ Hammer Wt. 140 lbs. Hammer Drop 30 in.

FIELD BORING LOG

Project Name <u>Eastern Tower App wire</u>	Hole Number <u>B-4</u>	Total Depth <u>21.0</u>
Federal Project No. <u>LIMOLEY, KY</u>	Location _____	
State Project No. _____	Surface Elevation _____	
Method of Drilling/Sampling _____	Date Started _____	Date Completed _____
Boring Diameter _____	Driller _____	Weather _____

From To	Soil and Rock Description	Sample/Run Interval	Blow Counts/RQD	Sample/Run No.	Sample Type	% Recovery
0.0	Top Soil	0.0 - 1.5	2-1-2	S-1	SFY	
0.2		1.5 - 3.5	4-7-8	S-2		
0.2	Spoil	3.5 - 6.0	3-3-3	S-3		
2.0		6.0 - 9.5	1-1-3	S-4		
21.0		TD @ 21.0	9.5 - 11.0	3-3-5		S-5
			11.0 - 14.5	3-3-3		S-6
			14.5 - 21.0	3-5-8		S-7

Water Level @ Drilling _____ 24 Hr. Water Level _____ 7 Day Water Level _____
 Moving/Delay Time _____ Hammer Wt. 140 lbs. Hammer Drop 30 in.



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APPENDIX B CORE PHOTOGRAPHS





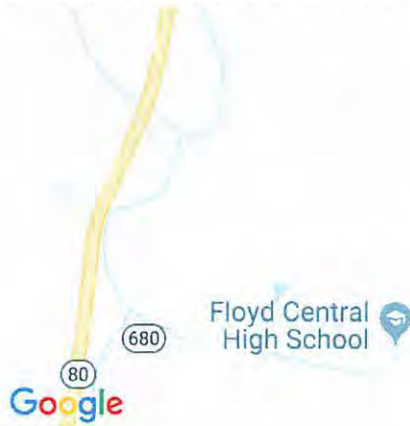
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APPENDIX C SEISMIC DATA



Eastern Tower Site

Latitude, Longitude: 37.504210, -82.793052



Map data ©2019

Date 12/28/2019, 2:24:29 PM
Design Code Reference Document IBC-2015
Risk Category II
Site Class C - Very Dense Soil and Soft Rock

Type	Value	Description
S_S	0.191	MCE_R ground motion. (for 0.2 second period)
S_1	0.085	MCE_R ground motion. (for 1.0s period)
S_{MS}	0.229	Site-modified spectral acceleration value
S_{M1}	0.144	Site-modified spectral acceleration value
S_{DS}	0.153	Numeric seismic design value at 0.2 second SA
S_{D1}	0.096	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	B	Seismic design category
F_a	1.2	Site amplification factor at 0.2 second
F_v	1.7	Site amplification factor at 1.0 second
PGA	0.092	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	0.11	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
S_{sRT}	0.191	Probabilistic risk-targeted ground motion. (0.2 second)
S_{sUH}	0.208	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
S_{sD}	1.5	Factored deterministic acceleration value. (0.2 second)
S_{1RT}	0.085	Probabilistic risk-targeted ground motion. (1.0 second)
S_{1UH}	0.094	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S_{1D}	0.6	Factored deterministic acceleration value. (1.0 second)
PGA_d	0.6	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.917	Mapped value of the risk coefficient at short periods
C_{R1}	0.907	Mapped value of the risk coefficient at a period of 1 s

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APPENDIX D PHOTOGRAPHS





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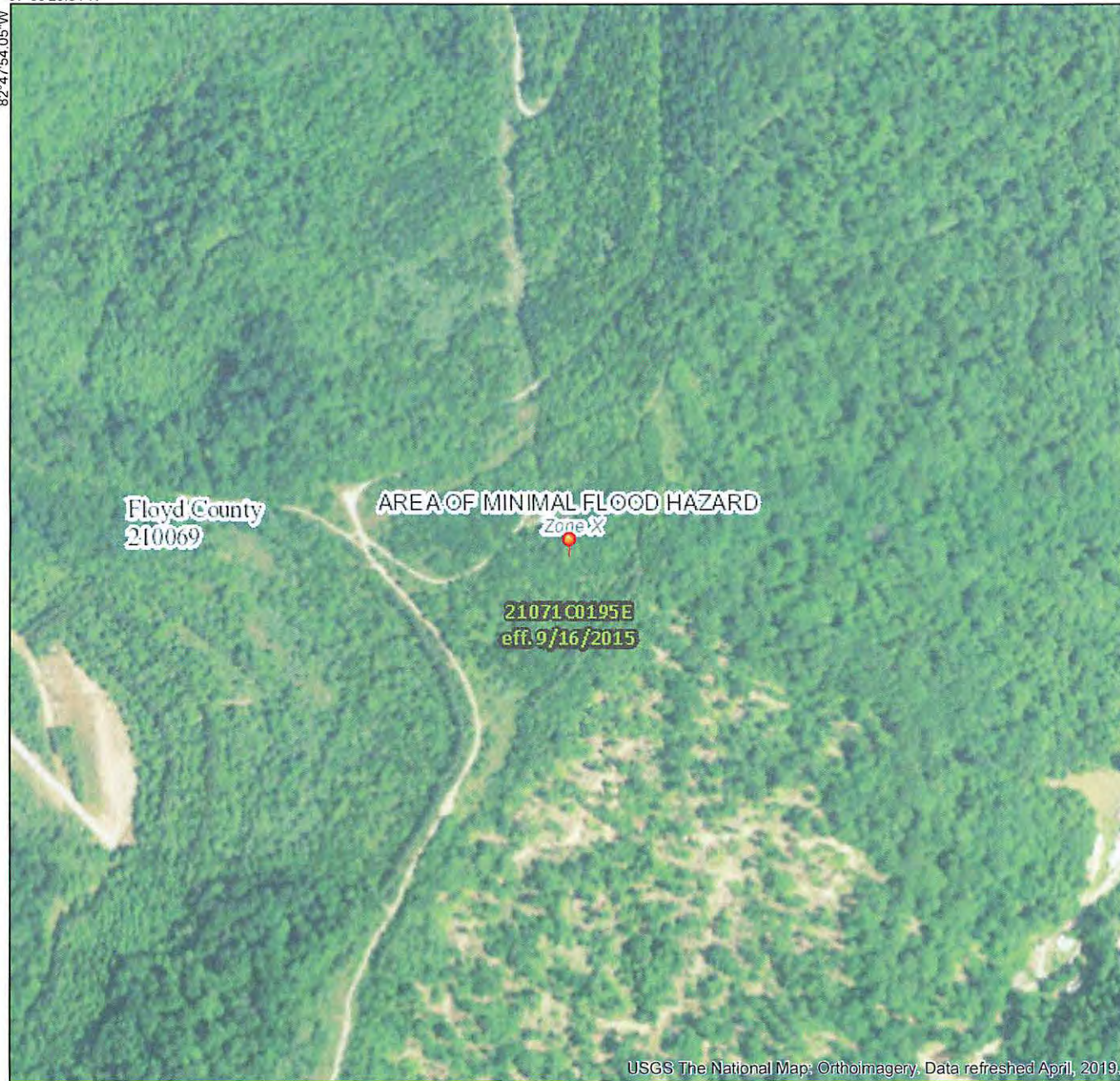
**APPENDIX E
MAPS**

National Flood Hazard Layer FIRMette



37°30'28.51"N

82°47'54.05"W



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

0 250 500 1,000 1,500 2,000 Feet 1:6,000

82°47'16.59"W

Legend

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

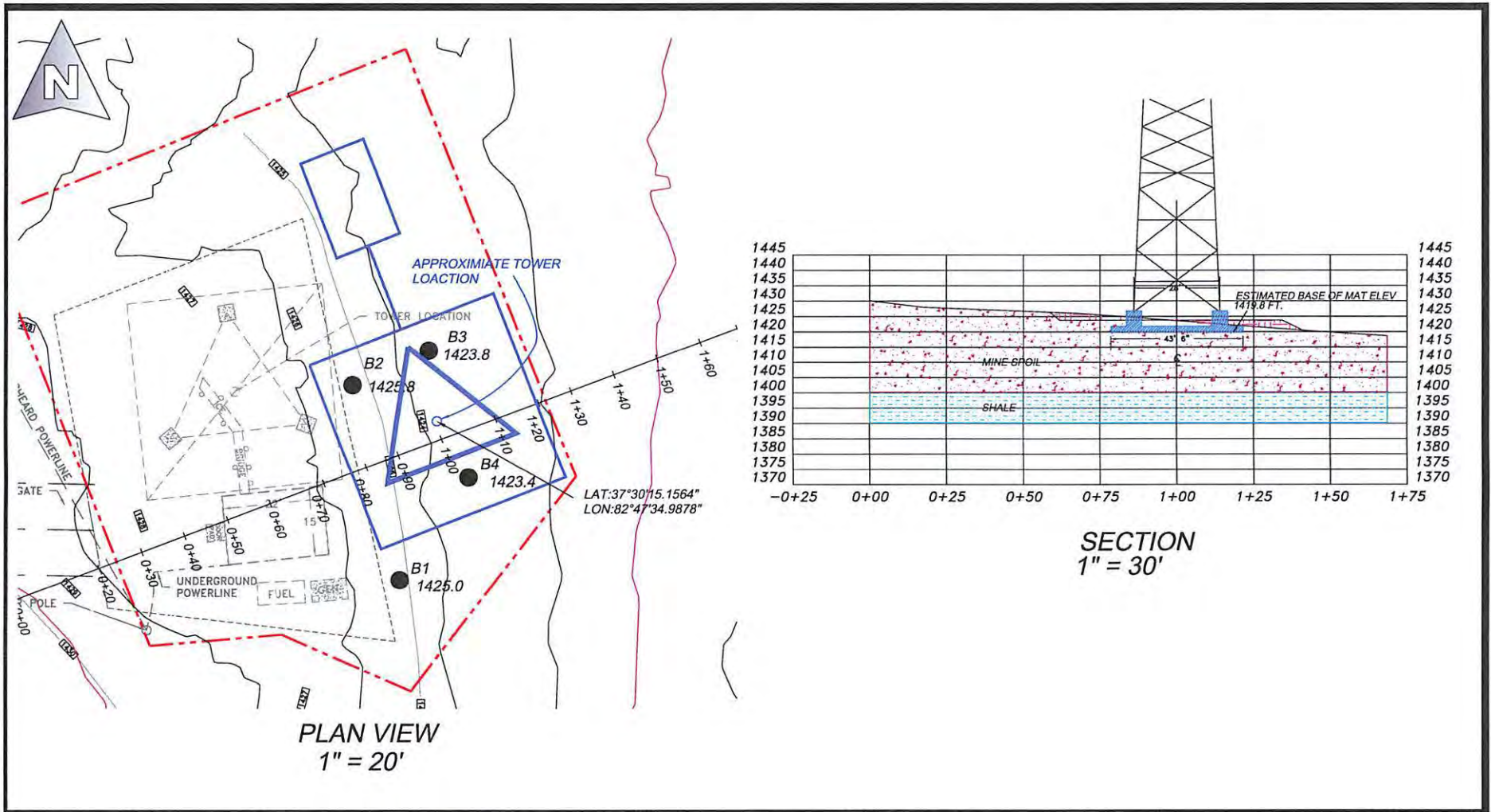
SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		53 Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		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 **11/15/2019 at 11:11:24 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.



East Kentucky Engineering, LLC

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



0' 20' 40'



Drawn by: RDS	Date: 12/05/2019
Job #: 165-0095	Scale: 1" = AS NOTED
File Location:	

APPALACHIAN
WIRELESS
EASTERN SITE
FLOYD COUNTY, KENTUCKY

Exhibit 5



World Tower
COMPANY, INC.

1213 Compressor Drive
P.O. Box 508
Mayfield, KY 42066
270-247-3642
FAX: 270-247-0909
E-mail: worldtower@worldtower.com
Web: www.worldtower.com

300' MODEL WSST TOWER
FOR: APPALACHIAN WIRELESS
SITE: EASTERN
FLOYD COUNTY, KY
DESIGN PACKAGE

02/05/2020



Fabrication, Installation, and Maintenance of TV, AM, FM, & Wireless Communications Towers

GENERAL NOTES

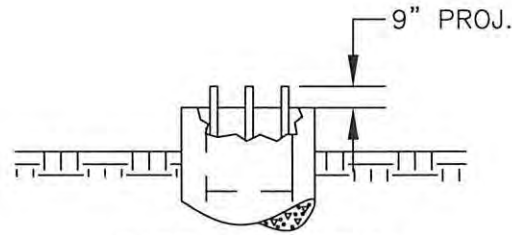
1. WELDED CONNECTIONS SHALL CONFORM TO THE LATEST REVISION OF THE AMERICAN WELDING SOCIETY AWS. D 1.1.
2. TOWER AND ALL FABRICATED ACCESSORIES ARE HOT-DIP GALVANIZED.
3. ALL BOLTS SHALL BE GALVANIZED ACCORDING TO THE STANDARD SPECIFICATION FOR ZINC COATING OF IRON AND STEEL HARDWARE ASTM A153.
4. LEG STEEL IS 50 KSI MIN YIELD SOLID ROUND OR PIPE AND BRACING STEEL IS 36 KSI MIN YIELD SOLID ROUND OR STRUCTURAL ANGLE.
5. ALL STRUCTURAL BOLTS ARE ASTM A325X, THREADS EXCLUDED FROM SHEAR PLANE.
6. TOWER SHOULD BE INSPECTED IN ACCORDANCE WITH TIA-222-G EVERY 5 YEARS.
7. TOWER INSPECTION SHOULD ONLY BE PERFORMED BY EXPERIENCED QUALIFIED PERSONNEL. FOR ASSISTANCE IN PROPER MAINTENANCE OF YOUR TOWER, CALL WORLD TOWER AT 270-247-3642.

02/05/2020



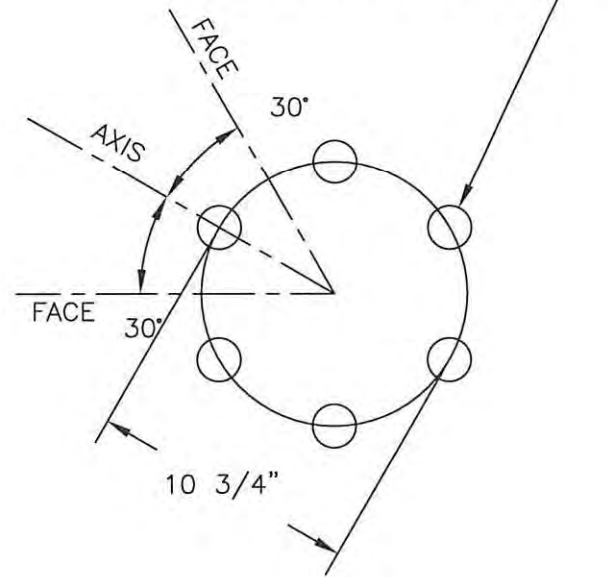
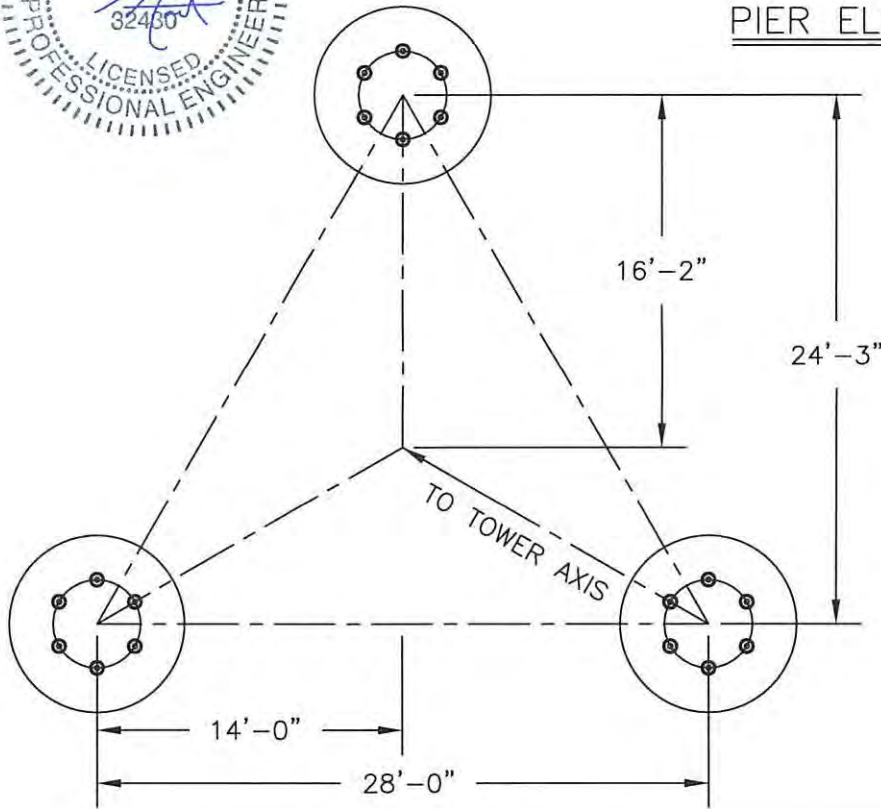
WORLD TOWER			
TITLE: 300' MODEL WSST TOWER FOR: APPALACHIAN WIRELESS SITE: EASTERN FLOYD COUNTY, KY			
SCALE	DWN. LKG	CKD.	DATE 1-31-20
FILE	DWG. NO. Q200055N		

02/05/2020



PIER ELEVATION

ANCHOR BOLTS
(6) 1 1/2" ϕ X 72"
ASTM F1554-105
EQUALLY SPACED WITH
TOP TEMPLATE AND
EMBEDDED PLATE

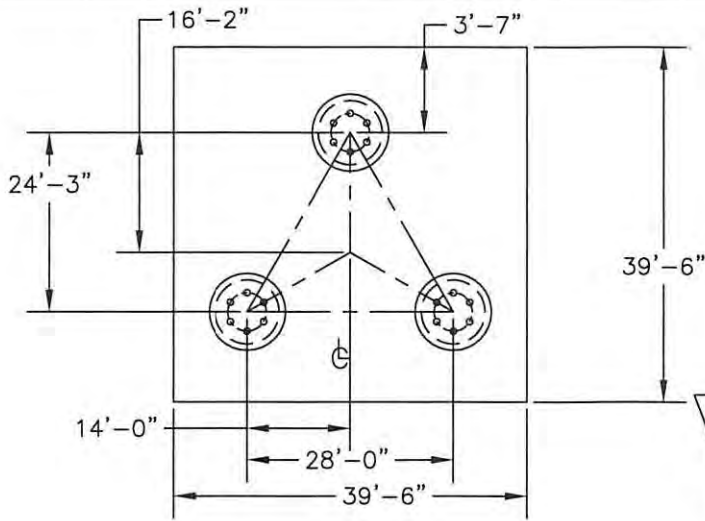


TITLE:

300' MODEL WSST TOWER
FOR: APPALACHIAN WIRELESS
SITE: EASTERN
FLOYD COUNTY, KY

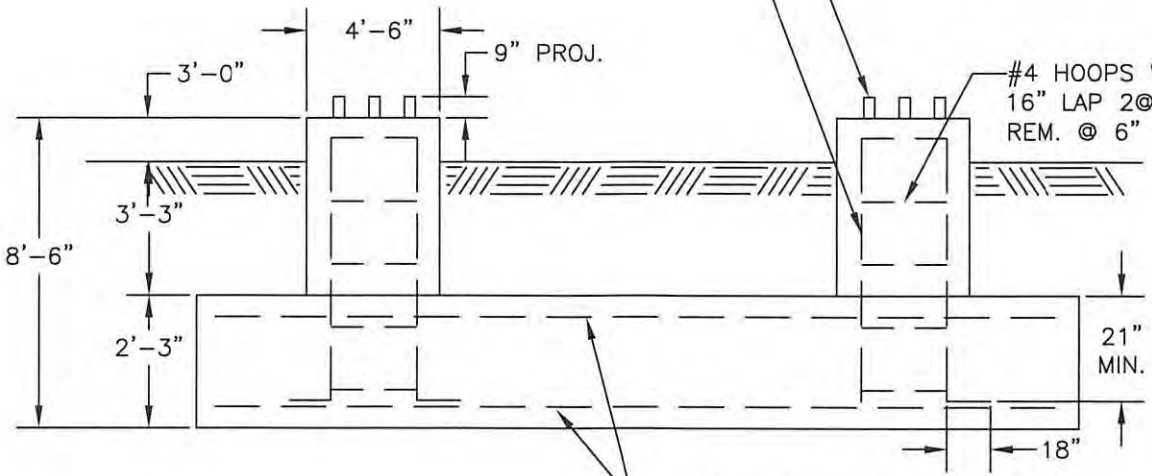
WORLD TOWER

SCALE	NONE	DWN.	LKG	CKD.	DATE	1-31-20
FILE				DWG. NO.	Q200055AB	



141.1 CU. YDS.
CONCRETE REQ'D.

BASE REACTIONS	
OTM:	14365.0 FT. KIPS
COMP.	628.0 KIPS
UPLIFT	536.0 KIPS
SHEAR (3 LEGS)	83.0 KIPS
WT. NO ICE	108.0 KIPS
WT. 3/4" ICE	330.0 KIPS



26 #8 VERT. REBARS
WITH 90° A.C.I. BEND
AT BOTTOM

ANCHOR BOLTS
EMBEDDED PLATE AT BOTTOM

#4 HOOPS WITH
16" LAP 2@3",
REM. @ 6"

48-#9 REBARS
EACH WAY TOP AND BOTTOM
(192 TOTAL)

GENERAL NOTES

1. CONCRETE TO HAVE 4500 PSI MIN. COMPRESSIVE STRENGTH AFTER 28 DAYS.
2. ALL REINFORCMENT STEEL IS DEFORMED AND MEETS THE STRENGTH REQUIREMENTS OF ASTM A615 GRADE 60.
3. EMBEDDED STEEL TO HAVE 3" MIN. CONCRETE COVER.
4. FOUNDATION DESIGN IS BASED ON CUSTOMER SUPPLIED SOIL DATA ADDENDUM FROM EAST KENTUCKY ENGINEERING, LLC. PROJECT NUMBER 165-000-0095-1 DATED JANUARY 27, 2020.

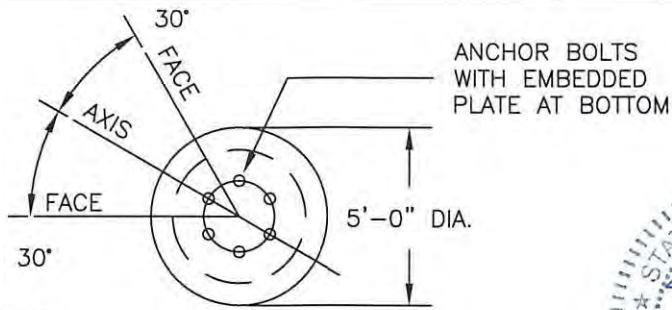
02/05/2020



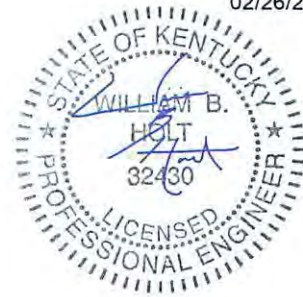
TITLE: FOUNDATION DETAIL
300' WSST TOWER
FOR: APPALACHIAN WIRELESS
SITE: EASTERN
FLOYD COUNTY, KY

WORLD TOWER

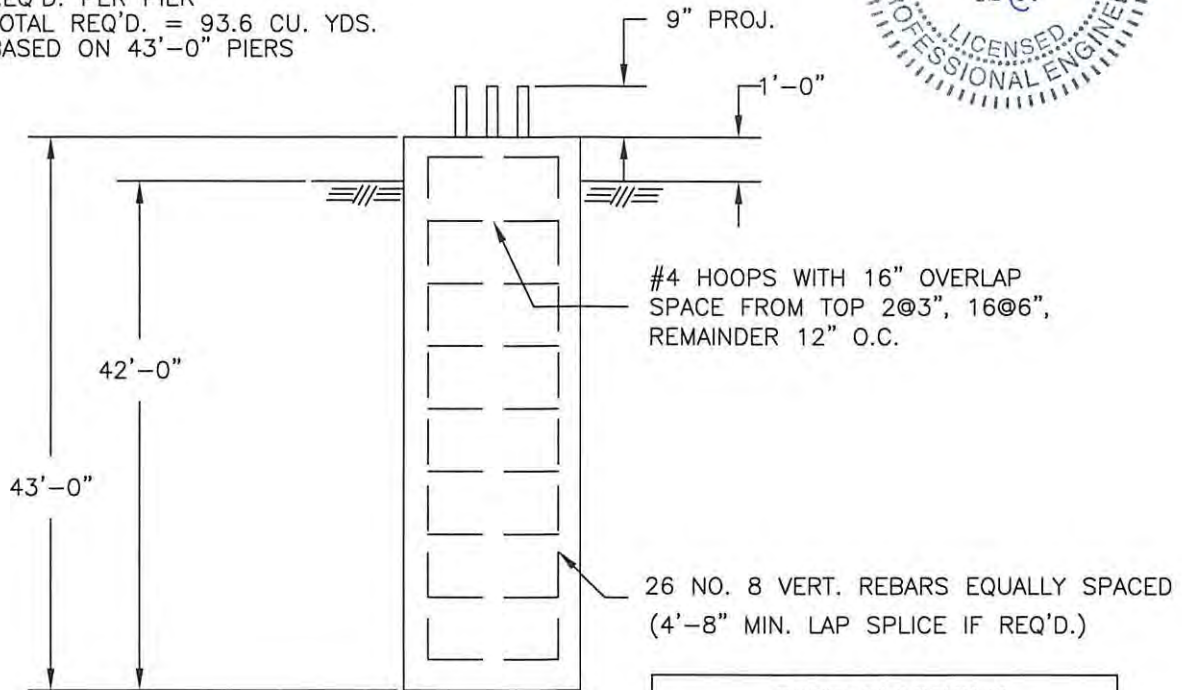
SCALE NONE	DWN.	LKG	CKD.	DATE 1-31-20
FILE	DWG. NO. Q200055F			



02/26/2020



31.2 CU. YDS. CONCRETE
REQ'D. PER PIER
TOTAL REQ'D. = 93.6 CU. YDS.
BASED ON 43'-0" PIERS



BASE REACTIONS	
OTM:	14365.0 FT. KIPS
COMP.	628.0 KIPS
UPLIFT	536.0 KIPS
SHEAR (3 LEGS)	83.0 KIPS
WT. NO ICE	108.0 KIPS
WT. 3/4" ICE	330.0 KIPS

GENERAL NOTES

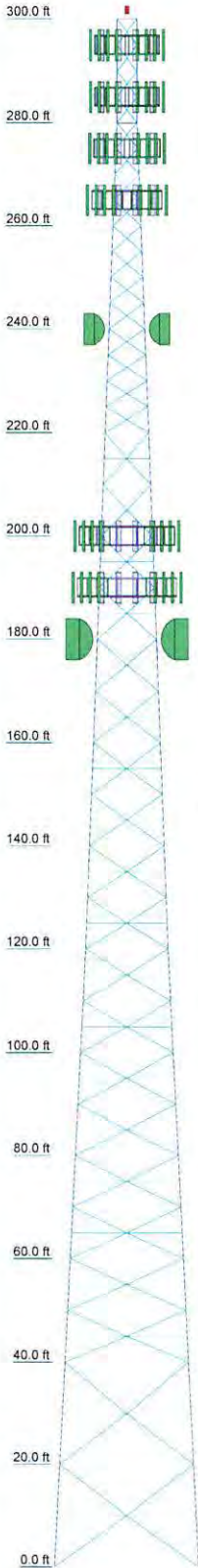
1. CONCRETE TO HAVE 4500 PSI MIN. COMPRESSIVE STRENGTH AFTER 28 DAYS.
2. ALL REINFORCEMENT STEEL IS DEFORMED AND MEETS THE STRENGTH REQUIREMENTS OF ASTM A615 GRADE 60.
3. EMBEDDED STEEL TO HAVE 3" MIN. CONCRETE COVER.
4. FOUNDATION DESIGN IS BASED ON CUSTOMER SUPPLIED SOIL DATA
ADDENDUM FROM EAST KENTUCKY ENGINEERING, LLC. PROJECT
PROJECT NUMBER 165-000-0095-2 DATED FEBRUARY 14, 2020.

TITLE: ALTERNATIVE FOUNDATION DETAIL
300' WSST TOWER
FOR: APPALACHIAN WIRELESS
SITE: EASTERN
FLOYD COUNTY, KY

WORLD TOWER

SCALE	NONE	DWN.	LKG	CKD.	DATE	2-25-20
FILE				DWG. NO.	Q200055F2	

Section	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	SR 4 3/4	SR 4 1/4	SR 4 1/2	SR 4 1/2	SR 4 1/4	SR 4 1/4	SR 4	SR 4	SR 3 3/4	SR 3 1/2	SR 3 1/4	SR 3	SR 2 3/4	SR 2 1/2	SR 1 3/4
Leg Grade	L4x4x1/4	L3x3x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3x3x3/16	L3x3x3/16	L3x3x3/16	L3x3x3/16	L2x2x3/16	L2x2x3/16	L2x2x3/16
Diagonal Grade	L4x4x1/4	L3x3x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3x3x3/16	L3x3x3/16	L3x3x3/16	L3x3x3/16	L2x2x1/8	L2x2x1/8	L2x2x1/8
Top Girts	L4x4x1/4	L3x3x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L2 1/2x2 1/2x3/16	L2x2x3/16	L2x2x3/16	L2x2x1/8	L2x2x1/8	L2x2x1/8	L2x2x1/8
Red Horizontals	L3x3x3/16	L3x3x3/16	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	N.A.	L2 1/2x2 1/2x3/16	L2x2x3/16	L2x2x1/8	L2x2x1/8	L2x2x1/8	L2x2x1/8
Red Diagonals	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	N.A.	L2 1/2x2 1/2x3/16	L2x2x3/16	L2x2x1/8	L2x2x1/8	L2x2x1/8	L2x2x1/8
Inner Bracing	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	N.A.	L2 1/2x2 1/2x3/16	L2x2x3/16	L2x2x1/8	L2x2x1/8	L2x2x1/8	L2x2x1/8
Face Width (ft)	28	26	24	22	20	18	16	14.5	13	11.5	10	8.5	7	5.5	4
# Panels @ (ft)	4 @ 10	4 @ 10	4 @ 10	4 @ 10	4 @ 10	4 @ 10	4 @ 10	4 @ 10	52 @ 5	52 @ 5	52 @ 5	52 @ 5	52 @ 5	52 @ 5	52 @ 5
Weight (K)	60.3	61.9	63.5	65.1	66.7	68.3	69.9	71.5	73.1	74.7	76.3	77.9	79.5	81.1	82.7



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 Floyd 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: 100%

02/05/2020

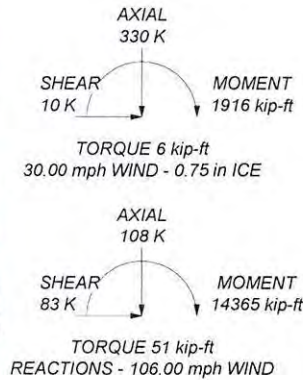


ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:

DOWN: 628 K
SHEAR: 53 K

UPLIFT: -536 K
SHEAR: 46 K



World Tower Company		Job: 300' WSST Tower / Run Q200055	
1212 Compressor Drive		Project: Eastern	
Mayfield, KY 42066		Client: Appalachian Wireless	Drawn by: WBH
World Tower	Phone: (270) 247-3642	Code: TIA-222-G	Date: 01/20/20
	FAX: (270) 247-0909	Path: D:\World Tower\2019\KY\Q200055 Eastern\Analysis\Q200055.en	Scale: NTS
			Dwg No. E-1

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-1156-OE
 Prior Study No.
 1988-ASO-342-OE

Issued Date: 02/04/2020

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 Eastern
 Location: Eastern, KY
 Latitude: 37-30-15.12N NAD 83
 Longitude: 82-47-35.04W
 Heights: 1427 feet site elevation (SE)
 310 feet above ground level (AGL)
 1737 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)

See attachment for additional condition(s) or information.

The use of a 24-hour medium intensity flashing white light system in urban/populated areas is not normally recommended due to their tendency to merge with background lighting in these areas at night. This makes it extremely difficult for some types of aviation operations, ie. med-evac and police helicopters to see these structures.

The use of a 24-hour medium intensity flashing white light system in urban and rural areas often results in complaints.

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 08/04/2021 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 (817) 222-5933, or andrew.hollie@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2020-ASO-1156-OE.

Signature Control No: 427789270-429850188

(DNE)

Andrew Hollie
Specialist

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

cc: FCC

Additional information for ASN 2020-ASO-1156-OE

Since the tower is within the confines of VR-093, request NVG compatible lighting on the replacement tower

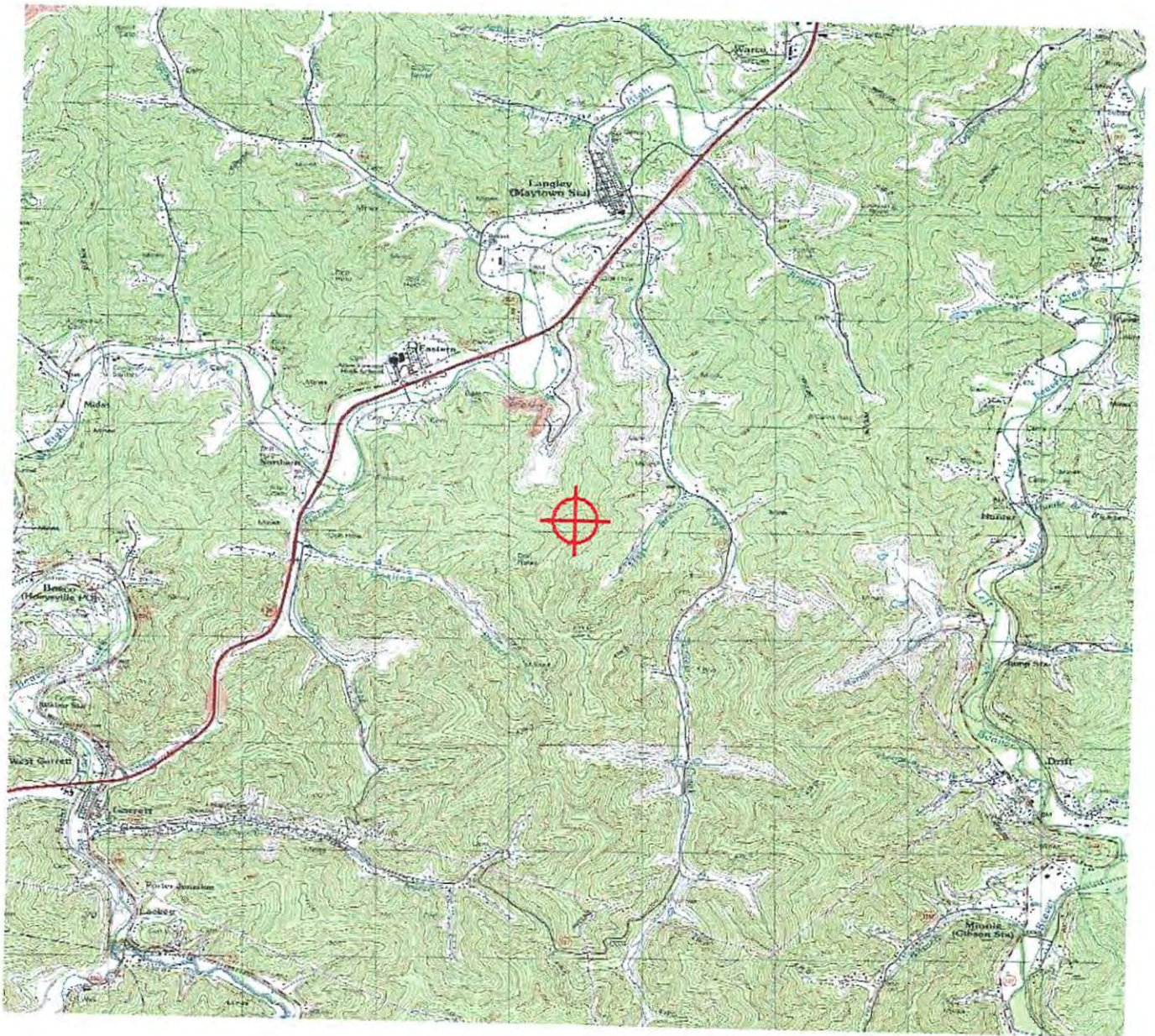
Case Description for ASN 2020-ASO-1156-OE

Replace the existing 325' structure with a new 300' tower with top mounted antennas (overall height of 310' AGL) with change in lighting for replacement tower.

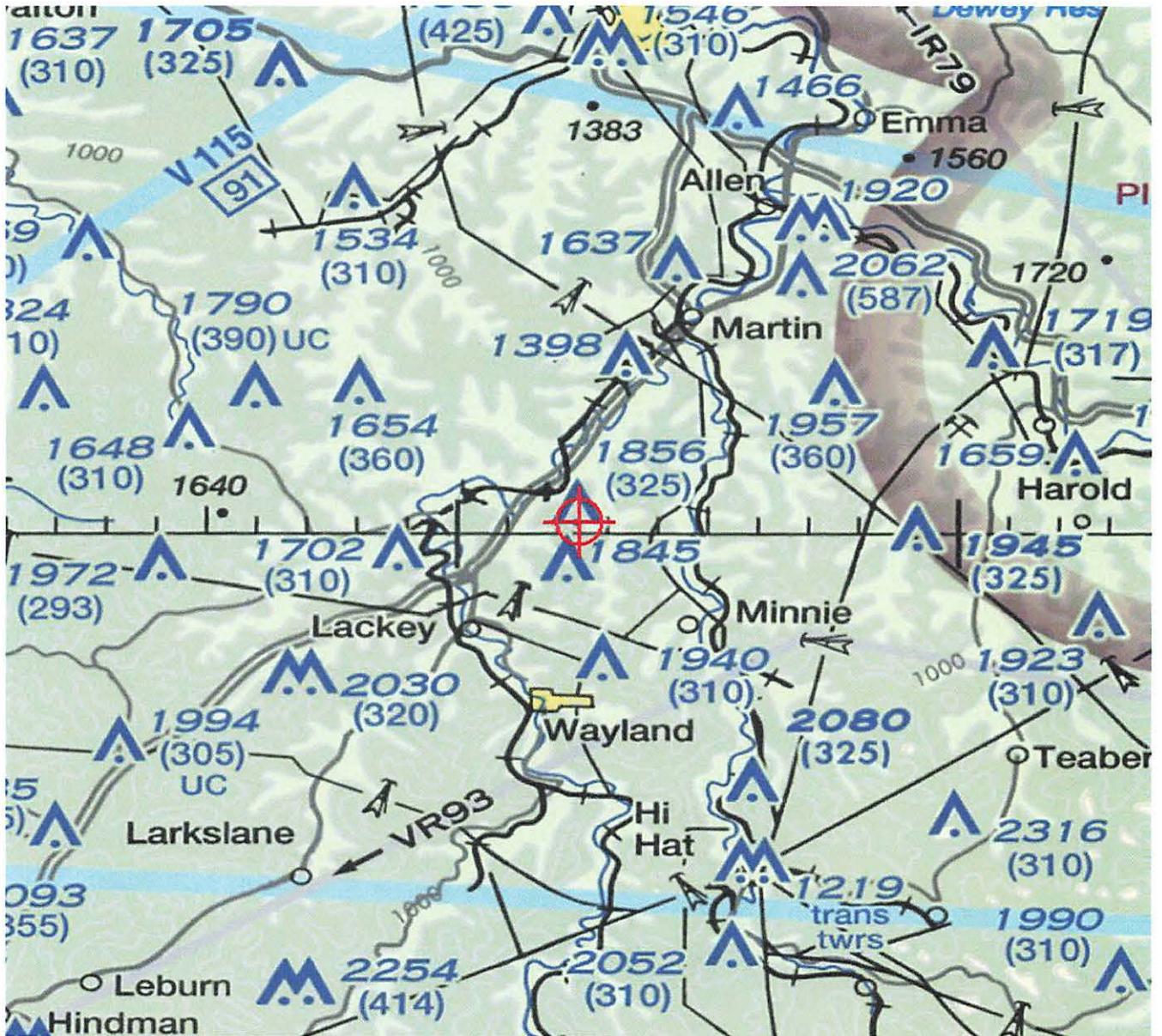
Frequency Data for ASN 2020-ASO-1156-OE

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

TOPO Map for ASN 2020-ASO-1156-OE



Sectional Map for ASN 2020-ASO-1156-OE





KENTUCKY AIRPORT ZONING COMMISSION

Andy Beshear
Governor

421 Buttermilk Pike
Covington, KY 41017
www.transportation.ky.gov
859-341-2700

March 5, 2020

APPROVAL OF APPLICATION

APPLICANT:

East KY Network LLC (Ivel KY)
East KY Network LLC (Ivel KY)
101 Technology Trail
Ivel, KY 41642

SUBJECT: AS-036-PBX-2020-017

STRUCTURE: Antenna Tower
LOCATION: Eastern, KY
COORDINATES: 37° 30' 15.12" N / 82° 47' 35.04" W
HEIGHT: 310' AGL/1737' AMSL

The Kentucky Airport Zoning Commission has approved your application for a permit to construct 310' AGL/ 1737' AMSL Antenna Tower near Eastern, KY 37° 30' 15.12" N / 82° 47' 35.04" 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.

Medium Intensity White Obstruction Lighting is required.

A handwritten signature in cursive script that reads "John Houlihan".

John Houlihan
Administrator



An Equal Opportunity Employer M/F/D

Exhibit 7

Driving Directions for Eastern

Starting at the intersection of Court Street and Central Avenue head east and drive .3 miles to the intersection of Central Avenue and South Lake Drive. Turn left onto South Lake Drive and drive 2.6 miles and turn right onto KY-80 and drive 11.7 miles. Exit to your left onto a gravel road. (sign will be posted). Take the gravel road and stay to your left. Drive approximately 1.9 miles to the site (sign will be posted here).

Prepared By:
Daryl Bartley
Appalachian Wireless
606-477-2355

Eastern Replacement


Location:

9281 KY Route 80
Langley, KY 41645

Coordinates:

37°30'15.1154"N
82°47'35.0441"W

Legend

 1/2 Mile Search Area

Existing Eastern Tower



Proposed Eastern Replacement Tower

Google Earth

© 2020 Google

2000 ft



Exhibit 8

FIRST AMENDMENT TO LEASE AGREEMENT

THIS FIRST AMENDMENT TO LEASE AGREEMENT ("Amendment") is made and entered this 13th day of August, 2020, with an effective date of August 13, 2020 by and between **M. LYNN PARRISH**, an individual with an address of P.O. Box 2096, Pikeville, Kentucky 41502, and **THURMAN W. BARKER**, an individual with an address of P.O. Box 2146, Pikeville, Kentucky 41502 ("Lessors"), a Kentucky limited liability company, with a mailing address of P.O. Box 2725, Pikeville, Kentucky 41502, and **EAST KENTUCKY NETWORK, LLC D/B/A APPALACHIAN WIRELESS** ("Lessee"), a Kentucky limited liability company, with an address of 101 Technology Trail, Ivel, Kentucky 41642.

WHEREAS, Lessor and Lessee, as successor in interest to Appalachian Cellular General Partnership by merger, are parties to that certain Lease Agreement dated January 28, 1998 (the "Lease"); and

WHEREAS, Lessors and Lessee desire to amend the Agreement as set forth herein;

NOW THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Lessors and Lessee hereby agree as follows:

1. The fourth paragraph beginning on Page 1 of the Lease shall be replaced in its entirety with the following:

"NOW, THEREFORE, in consideration of the sum of Forty-Five Thousand Dollars (\$45,000.00), cash in hand paid, the receipt of which is hereby acknowledged, and in further consideration of the covenants and conditions herein contained, said Parties of the First Part do hereby let, lease, demise and set over unto ACGP, its

successors and assigns, that certain tract or parcel of land located on the waters of Right Beaver Creek, near Eastern, Floyd County, Kentucky and being a part of the same property acquired by Lynn Parrish by Deed of Conveyance dated January 11, 1989, recorded in Deed Book 324, Page 561, and by Deed of Conveyance to Thurman Barker, dated April 27, 1987, recorded in Deed Book 309, Page 551, both of record in the Floyd County Clerk's Office. See also Deed of Conveyance to M. Lynn Parrish and Thurman W. Barker, dated May 5, 2020, recorded in Deed Book 654, Page 355 of the Floyd 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 James W. Caudill, Licensed Professional Land Surveyor."

2. The last sentence of Paragraph 2. is replaced with the following:

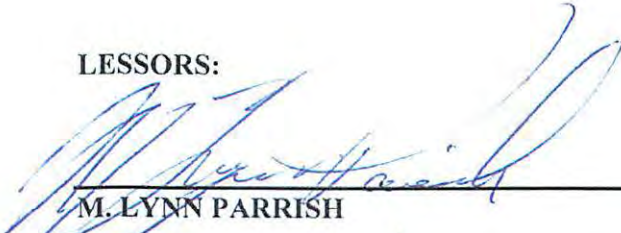
"The parties hereto recognize that technology in the communications field is advancing at a rapid rate and that this site may be used for any other purpose deemed necessary or desirable to carry out the objectives of Lessee, that being to transmit and receive signals and communications by wire, fiber optics, radio, satellite, or other methods."

3. The property description attached hereto and made a part hereof as **Exhibit A** is hereby added to the Lease.


4. The plat map **attached** hereto and made a part hereof as **Exhibit B** is hereby added to the Lease.
5. Capitalized terms contained herein, unless otherwise defined, are intended to have the same meaning and effect as that set forth in the Lease.
6. Except as expressly amended herein, all terms of the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, Lessors and Lessee have caused this Amendment to be executed on the above-mentioned date.

LESSORS:




M. LYNN PARRISH



THURMAN W. BARKER

COMMONWEALTH OF KENTUCKY
COUNTY OF Pike

The foregoing instrument was acknowledged before me on this 12 day of August, 2020, by M. Lynn Parrish and Thurman W. Barker, Lessors.



Notary Public
Commission No.: 635720

My Commission Expires 12/05/2023

LESSEE:

EAST KENTUCKY NETWORK, LLC
d/b/a APPALACHIAN WIRELESS

W A Gillum

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

COMMONWEALTH OF KENTUCKY
COUNTY OF Floyd

The foregoing instrument was acknowledged before me on this 13th day of August, 2020, by W.A. Gillum, CEO/General Manager of East Kentucky Network, LLC d/b/a Appalachian Wireless.

Rainie La'Neil Helton

Notary Public
Commission No.: KY NP375

My Commission Expires 2-6-2024



This instrument was prepared by:

Krystal Branham

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

LOT DESCRIPTION

Property of
M. Lynn Parrish
P.O. Box 2096
Pikeville, KY 41502
and Thurman Barker
P.O. Box 2146
Pikeville, KY 41502
Off of State Highway 80
Near Eastern in Floyd Co., Ky.
February 28, 2020

A certain tract or parcel of land lying in Floyd County, Kentucky, and being a portion of the same tract of land conveyed to M. Lynn Parrish (90% int.) and Thurman Barker (10% int.), by Deed of Conveyance dated July 18, 1986 and recorded in Deed Book 302 Page 133, Deed of Conveyance dated July 25, 1986 and recorded in Deed Book 302 Page 137, Deed of Conveyance dated April 27, 1987 and recorded in Deed Book 309 Page 551, and Deed of Conveyance dated January 11, 1989 and recorded in Deed Book 324 Page 561, of the records of the Floyd County Court Clerk's office. Property is further bounded and described as follows:

Lot 1A

Beginning on a iron pin (found) on a property corner shared by Lynn Parrish/Thurman Barker (Deed Book 324 Page 561), Keith and Michelle Bailey (Deed Book 515 Page 225), Carl and Katie Dudley (Deed Book 486 Page 566), and Board of Education of Floyd County (Deed Book 608 Page 73), said point being where a high knob stood before strip mining; thence with the line of Lynn Parrish North 66 deg 30 min 05 sec West, a distance of 30.85 feet to a found iron pin with cap marked "Summit LS2661" on property line shared by Lynn Parrish and Board of Education of Floyd County; thence continuing with line of Parrish South 85 deg 13 min 01 sec West, a distance of 29.00 feet to a found iron pin on said line; thence leaving the line of Lynn Parrish and Board of Education of Floyd County and severing the property of Parrish North 21 deg 41 min 03 sec West, a distance of 44.55 feet to a set iron pin with cap marked "LS2259" located on the line of a previous lease to East Kentucky Network recorded in Deed Book 415 Page 622; thence leaving said E. KY. Network lease North 32 deg 46 min 27 sec East, a distance of 95.36 feet to a set iron pin with cap marked "LS2259" located on the line of said previous lease and establishing a new line of lease; thence with old line of lease North 68 deg 16 min 52 sec East, a distance of 22.41 feet to a found iron pin at the corner of the previous lease; thence leaving the line of the previous lease and establishing new line of lease South 51 deg 47 min 20 sec East, a distance of 85.75 feet to a set iron pin with cap marked "LS2259" on the property line shared between Lynn Parrish and Keith and Michelle Bailey; thence with Parrish line South 37 deg 20 min 55 sec West, a distance of 50.17 feet to a found iron pin on corner of old lease line; thence with Parrish line and line of E. KY. Network lease South 37 deg 20 min 55 sec West, a distance of 58.90 feet to the point of the beginning. Containing a calculated area of 11,302 square feet or 0.26 acres.

Also to be included is an access road from the public road to Lot 1A. Also to be included is a right to install fiber and utility lines in or along said access road and/or such other location to be agreed upon by the parties.

Unless stated otherwise, any monument referred to herein as "set iron pin with cap" is a set 1/2" diameter rebar, at least eighteen (18") in length, with a plastic cap stamped "LS-2259". All bearings stated herein are referred to NAD83, KY single zone of the Kentucky state plane system.

This survey was performed on February 28, 2020 by James W. Caudill, a Kentucky Licensed Professional Land Surveyor No. 2259.



James W. Caudill
James W. Caudill, PLS #2259



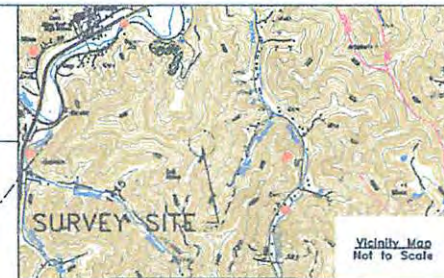
APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL, KY. 41642
PROPOSED TOWER SITE
OFF HWY 80 NEAR EASTERN
IN FLOYD CO., KY.

PVA #040-00-00-002.00
Old Lot Line
1303.54 Sq. Feet
0.26 Acres

Found Iron Pin

Legend

- 1/2" re-bar set with a plastic cap
Stamped J.W. Caudill, PLS #2259
Unless otherwise noted.
- Monument - Found - Type Noted
- Utility Pole



STATE OF KENTUCKY
JAMES W. CAUDILL
2259
LICENSED PROFESSIONAL LAND SURVEYOR

Power Pole

Found Iron Pin
w/ Cap Marked
Summit LS2661

N 68°20'02" E
77.60'

Existing Lot Line

New Lot
11302.04 Sq. Feet
0.26 Acres

PVA #040-00-00-002.00

Proposed New Lot Line
11302.04 Sq. Feet
0.26 Acres

Access Road

Overhead Powerline

PVA #040-00-00-002.01
Leasee - E. KY. Network
d/b/a Appalachian Wireless
101 Technology Trail
Ivel, KY 41642
Deed Book 415 Page 622

Existing Tower

Proposed New Tower

SURVEYOR'S STATEMENTS

The survey shown hereon was conducted under my direct supervision. The method used was random traverse with sideshots. The mathematical error of closure was 1:41,800. The bearings and distances were not adjusted for closure. The basis for the bearings Grid North, NAD83 KY Single Zone. This is a "Rural" survey. This plat of survey represents a Boundary Survey and complies with 201 KAR 18:150

James W. Caudill
James W. Caudill

2259 02/28/2020
PLS No. 2259 Date

PVA #040-00-00-002.00
M. Lynn Parrish (90% Int.)
P.O. Box 2096
Pikeville, KY 41502
Deed Book 324 Page 561
Deed Book 309 Page 551
Deed Book 302 Page 133
Deed Book 302 Page 137
Thurman Barker (10% Int.)
P.O. Box 2146
Pikeville, KY 41502
Deed Book 309 Page 551
Deed Book 302 Page 133
Deed Book 302 Page 137

GATE

Building

Existing Fence to be Reworked Later After Construction

Found Iron Pin

PVA #045-00-00-035.00
Keith and Michelle Bailey
572 Hayes Branch Road
Langley, KY 41645
Deed Book 515 Page 225



Access Road

Power Pole

Found Iron Pin

U.G. Powerline

Fuel

GEN

Generator Pad

Found Iron Pin
w/ Cap Marked
Summit LS2661

PVA #045-00-00-020.00
Carl and Katie Dudley
c/o Judelle Conley
1865 Gayle Drive
Lexington, KY 41645
Deed Book 486 Page 565

NAD83 KY Single Zone

PLAT OF SURVEY		
DRAWN JWC	DATE 02/28/2020	Subdivision of the Property of M. Lynn Parrish Deed Book 324 Page 56
APPROVED JWC	DATE 02/28/2020	
SCALE 1" = 20'	SHEET 1 of 1	SURVEYED BY JAMES W. CAUDILL LS2259 2999 PERKINS/MADDEN ROAD AMBURGEE, KY 41773 PHONE 606-642-3217

EXHIBIT

B

PVA #045-00-00-035.00
Board of Education
of Floyd County
105 North Front
Prestonsburg, KY 41653
Deed Book 608 Page 73

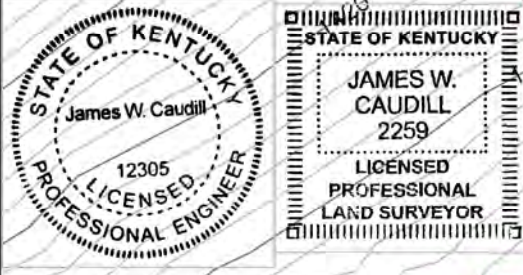
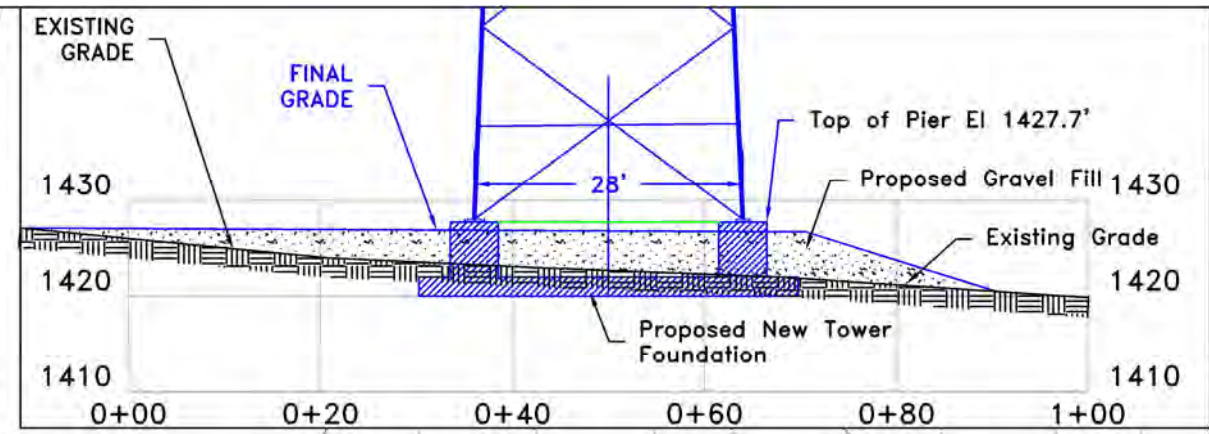
Exhibit 9

I certify that the latitude 37° 30' 15.29868"N and longitude 82° 47' 34.82530"W are within +/- 50 feet horizontally; and the site elevation 1427.7 ft. MSL, is within +/- 20 feet vertically. With a structure height of 300 ft AGL, the overall height is 1727.7 ft, AMSL. The horizontal datum (coordinates) is in terms of the North American Datum Of 1983 (NAD 83). The vertical datum heights are in terms of the North American Vertical Datum of 1988, and are determined to the nearest foot."

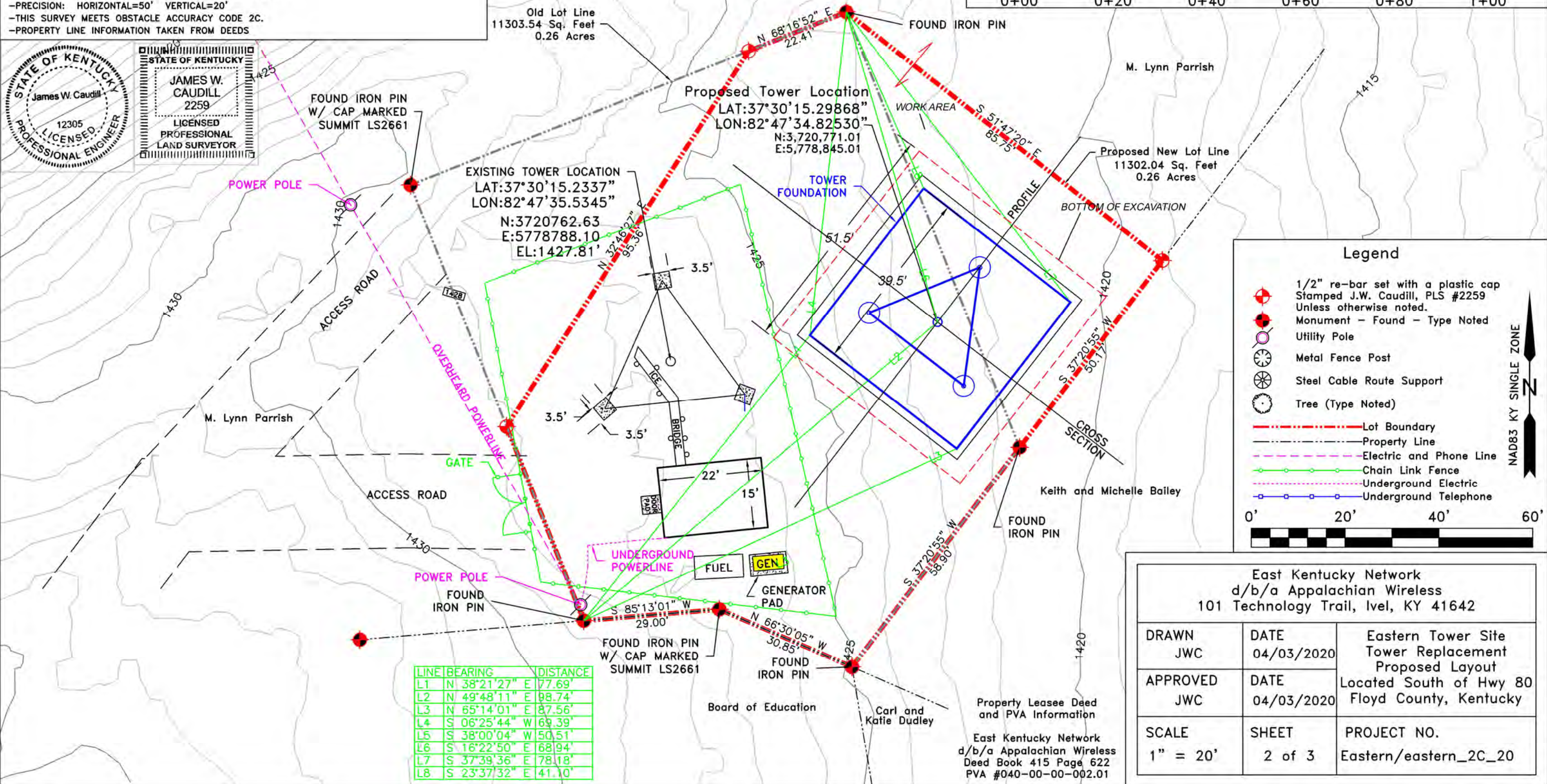
SIGNED: *James W. Caudill* PE 12305 LS 2259 04/03/2020
 PRINTED: JAMES W. CAUDILL PE #12305 & LS #2259 DATE

- THE PROPOSED TOWER HAS BEEN LOCATED USING DUAL FREQUENCY GPS UNIT PROCESSED BY "OPUS"
- STATE PLANE COORDINATES NAD 83 KY SINGLE ZONE N:3720771.01, E:5778845.01, EL 1426.7' FINAL GRADE, TOP OF FOUNDATION EL 1427.7'-TOP TOWER EL 1727.7'
- PRECISION: HORIZONTAL=50' VERTICAL=20'
- THIS SURVEY MEETS OBSTACLE ACCURACY CODE 2C.
- PROPERTY LINE INFORMATION TAKEN FROM DEEDS

APPALACHIAN WIRELESS
 101 TECHNOLOGY TRAIL
 IVEL, KY. 41642
 PROPOSED TOWER REPLACEMENT
 OFF HWY 80 NEAR EASTERN
 IN FLOYD COUNTY, KY.



STATE OF KENTUCKY
 JAMES W. CAUDILL
 2259
 LICENSED PROFESSIONAL LAND SURVEYOR



LINE	BEARING	DISTANCE
L1	N 38°21'27" E	77.69'
L2	N 49°48'11" E	88.74'
L3	N 65°14'01" E	87.56'
L4	S 06°25'44" W	69.39'
L5	S 38°00'04" W	50.51'
L6	S 18°22'50" E	68.94'
L7	S 37°39'36" E	78.18'
L8	S 23°37'32" E	41.10'

Legend

- 1/2" re-bar set with a plastic cap
Stamped J.W. Caudill, PLS #2259
Unless otherwise noted.
- Monument - Found - Type Noted
- Utility Pole
- Metal Fence Post
- Steel Cable Route Support
- Tree (Type Noted)
- Lot Boundary
- Property Line
- Electric and Phone Line
- Chain Link Fence
- Underground Electric
- Underground Telephone

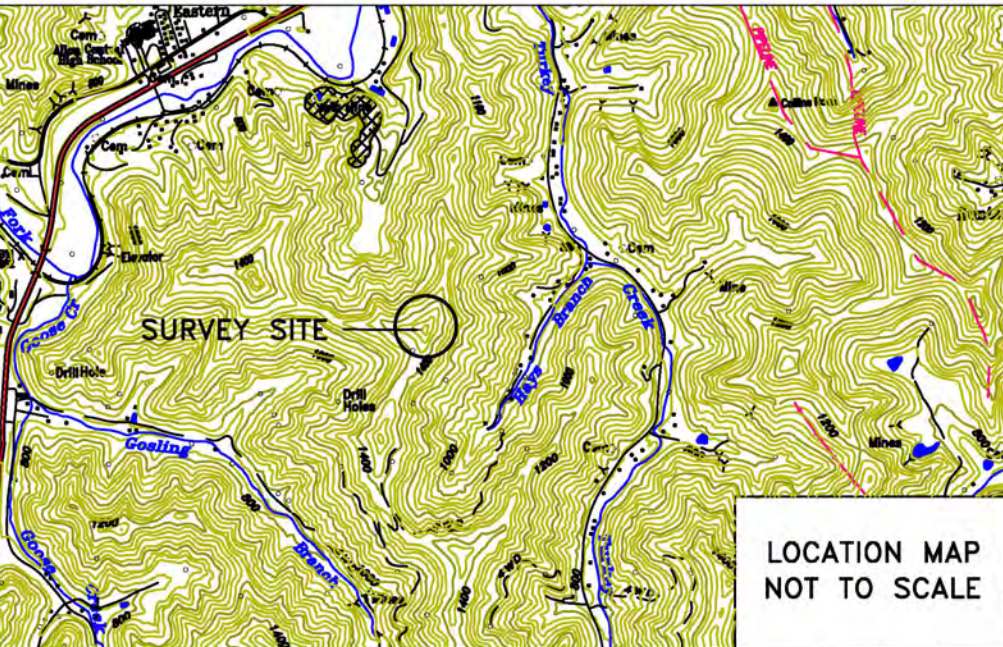
0' 20' 40' 60'

NAD83 KY SINGLE ZONE

East Kentucky Network d/b/a Appalachian Wireless 101 Technology Trail, Ivel, KY 41642		
DRAWN JWC	DATE 04/03/2020	Eastern Tower Site Tower Replacement Proposed Layout Located South of Hwy 80 Floyd County, Kentucky
APPROVED JWC	DATE 04/03/2020	
SCALE 1" = 20'	SHEET 2 of 3	PROJECT NO. Eastern/eastern_2C_20

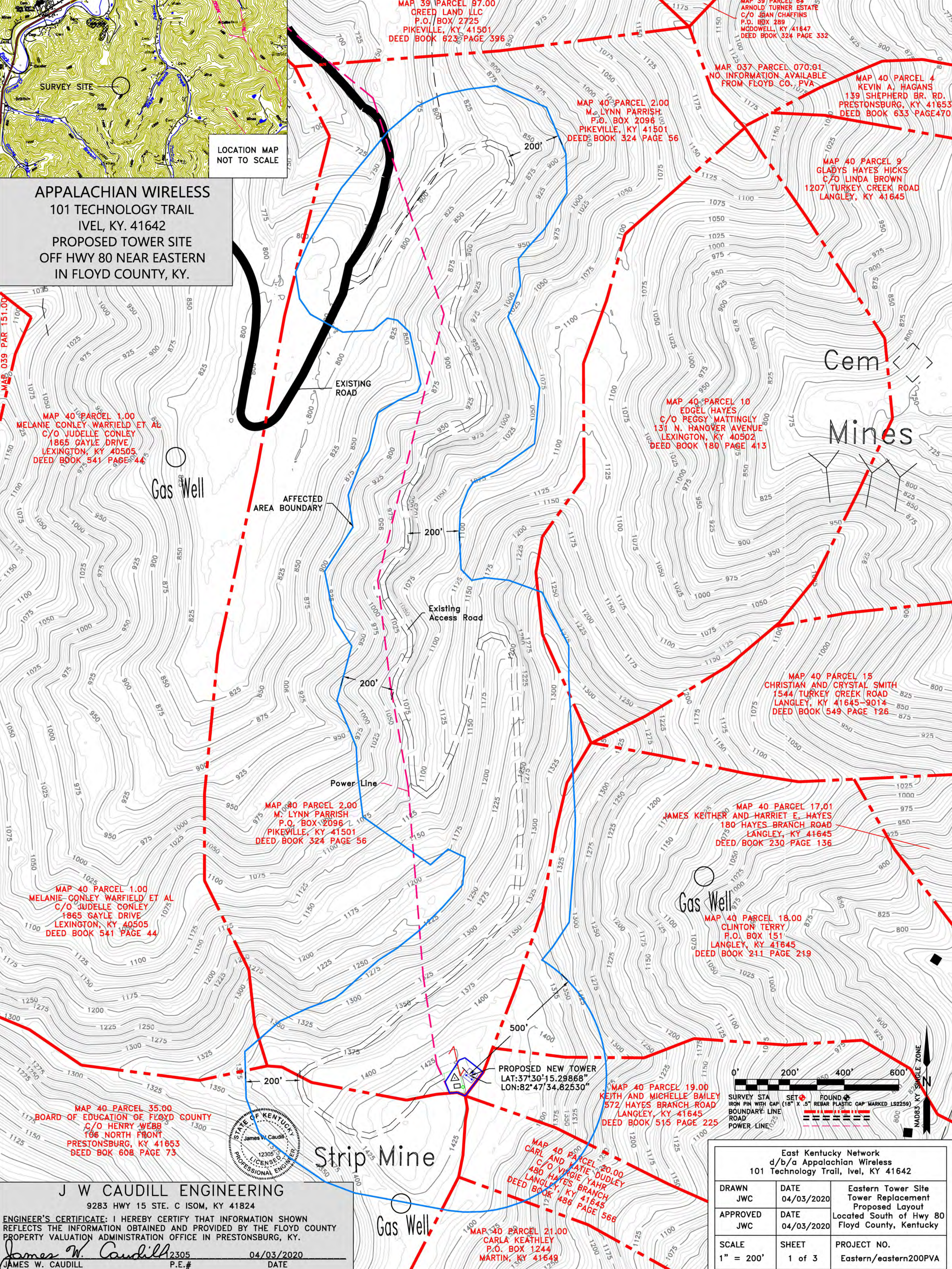
Property Leasee Deed and PVA Information
 East Kentucky Network
 d/b/a Appalachian Wireless
 Deed Book 415 Page 622
 PVA #040-00-00-002.01

Exhibit 10



LOCATION MAP
NOT TO SCALE

APPALACHIAN WIRELESS
 101 TECHNOLOGY TRAIL
 IVEL, KY. 41642
 PROPOSED TOWER SITE
 OFF HWY 80 NEAR EASTERN
 IN FLOYD COUNTY, KY.



MAP 39 PARCEL 97.00
 CREED LAND LLC
 P.O. BOX 2725
 PIKEVILLE, KY 41501
 DEED BOOK 623 PAGE 396

MAP 39 PARCEL 64
 ARNOLD TURNER ESTATE
 C/O JOAN CHAFFINS
 P.O. BOX 289
 MCDOWELL, KY 41647
 DEED BOOK 324 PAGE 332

MAP 037 PARCEL 070.01
 NO INFORMATION AVAILABLE
 FROM FLOYD CO. PVA

MAP 40 PARCEL 4
 KEVIN A. HAGANS
 139 SHEPHERD BR. RD.
 PRESTONSBURG, KY 41653
 DEED BOOK 633 PAGE 470

MAP 40 PARCEL 2.00
 M. LYNN PARRISH
 P.O. BOX 2096
 PIKEVILLE, KY 41501
 DEED BOOK 324 PAGE 56

MAP 40 PARCEL 9
 GLADYS HAYES HICKS
 C/O LINDA BROWN
 1207 TURKEY CREEK ROAD
 LANGLEY, KY 41645

MAP 039 PAR 151.00
 MELANIE CONLEY WARFIELD ET AL
 C/O JUDELLE CONLEY
 1865 GAYLE DRIVE
 LEXINGTON, KY 40505
 DEED BOOK 541 PAGE 44

MAP 40 PARCEL 10
 EDGEL HAYES
 C/O PEGGY MATTINGLY
 131 N. HANOVER AVENUE
 LEXINGTON, KY 40502
 DEED BOOK 180 PAGE 413

MAP 40 PARCEL 15
 CHRISTIAN AND CRYSTAL SMITH
 1544 TURKEY CREEK ROAD
 LANGLEY, KY 41645-9014
 DEED BOOK 549 PAGE 126

MAP 40 PARCEL 2.00
 M. LYNN PARRISH
 P.O. BOX 2096
 PIKEVILLE, KY 41501
 DEED BOOK 324 PAGE 56

MAP 40 PARCEL 17.01
 JAMES KEITH AND HARRIET E. HAYES
 180 HAYES BRANCH ROAD
 LANGLEY, KY 41645
 DEED BOOK 230 PAGE 136

MAP 40 PARCEL 1.00
 MELANIE CONLEY WARFIELD ET AL
 C/O JUDELLE CONLEY
 1865 GAYLE DRIVE
 LEXINGTON, KY 40505
 DEED BOOK 541 PAGE 44

MAP 40 PARCEL 18.00
 CLINTON TERRY
 P.O. BOX 151
 LANGLEY, KY 41645
 DEED BOOK 211 PAGE 219

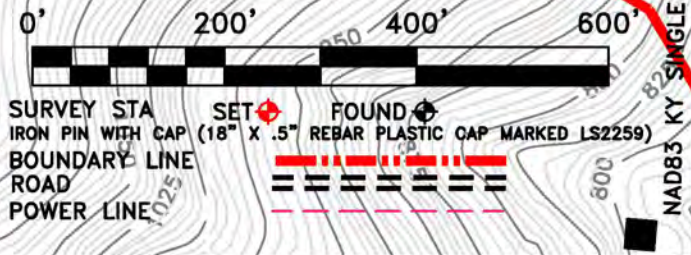
MAP 40 PARCEL 35.00
 BOARD OF EDUCATION OF FLOYD COUNTY
 C/O HENRY WEBB
 186 NORTH FRONT
 PRESTONSBURG, KY 41653
 DEED BOK 608 PAGE 73

MAP 40 PARCEL 19.00
 KEITH AND MICHELLE BAILEY
 572 HAYES BRANCH ROAD
 LANGLEY, KY 41645
 DEED BOOK 515 PAGE 225

MAP 40 PARCEL 20.00
 CARL AND KATIE DUDLEY
 C/O VIRGIE YAHR
 LANGLEY, KY 41645
 DEED BOOK 486 PAGE 566

MAP 40 PARCEL 21.00
 CARLA KEATHLEY
 P.O. BOX 1244
 MARTIN, KY 41649

PROPOSED NEW TOWER
 LAT: 37°30'15.29868"
 LON: 82°47'34.82530"



J W CAUDILL ENGINEERING
 9283 HWY 15 STE. C ISOM, KY 41824

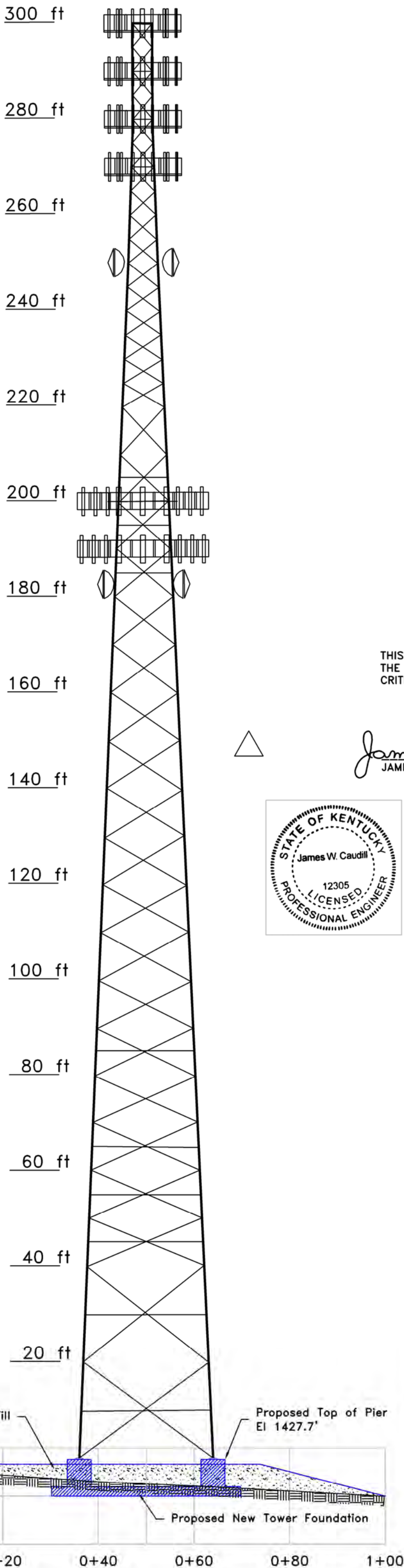
ENGINEER'S CERTIFICATE: I HEREBY CERTIFY THAT INFORMATION SHOWN REFLECTS THE INFORMATION OBTAINED AND PROVIDED BY THE FLOYD COUNTY PROPERTY VALUATION ADMINISTRATION OFFICE IN PRESTONSBURG, KY.

James W. Caudill 12305 04/03/2020
 JAMES W. CAUDILL P.E.# DATE

East Kentucky Network d/b/a Appalachian Wireless 101 Technology Trail, Ivel, KY 41642		
DRAWN JWC	DATE 04/03/2020	Eastern Tower Site Tower Replacement Proposed Layout
APPROVED JWC	DATE 04/03/2020	Located South of Hwy 80 Floyd County, Kentucky
SCALE 1" = 200'	SHEET 1 of 3	PROJECT NO. Eastern/eastern200PVA

Exhibit 11

APPALACHIAN WIRELESS
 101 TECHNOLOGY TRAIL
 IVEL, KY. 41642
 PROPOSED TOWER REPLACEMENT
 OFF HWY 80 NEAR EASTERN
 IN FLOYD COUNTY, KY.



PROFILE WITH TOWER

THIS IS A VERTICAL PROFILE SKETCH OF THE TOWER INDICATING THE PROPOSED ANTENNA AND DISH ELEVATIONS. NO DESIGN CRITERIA WAS CONSIDERED IN THE PREPARATION OF THIS DRAWING.



James W. Caudill 12305 04/03/2020
 JAMES W. CAUDILL PE #. DATE



NOTE: SEE FOUNDATION DRAWINGS FOR DETAILS

04/03/2020
 SCALE 1" = 20'



East Kentucky Network d/b/a Appalachian Wireless 101 Technology Trail, Ivel, KY 41642		
DRAWN JWC	DATE 04/03/2020	Eastern Tower Site Tower Replacement Proposed Layout Located South of Hwy 80 Floyd County, Kentucky
APPROVED JWC	DATE 04/03/2020	
SCALE 1" = 20'	SHEET 3 of 3	PROJECT NO. Eastern/easternPRO20

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	SelectTel, Inc. d/b/a SelectTel 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

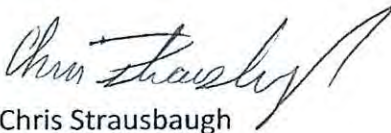
Kentucky Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, KY 40602-0615

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