

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

In the matter of:

THE APPLICATION OF EAST KENTUCKY NETWORK, )  
LLC FOR THE ISSUANCE OF A CERTIFICATE OF )  
PUBLIC CONVENIENCE AND NECESSITY TO ) CASE NO. 2022-00094  
CONSTRUCT A 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). The 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 near Dillon Branch Road, Ivel, Floyd County, Kentucky (37°36'17.67" N 82°40'04.87" W). A map and detailed directions to the site can be found in Exhibit 7.

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

Exhibit 2 is a list of all Property owners according to the Property Valuation Administrator's record who own property within 500 feet of the proposed Tower and all property owners who own

property contiguous to the property upon which construction is proposed in accordance with the Property Valuation Administrator's record.

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

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 Floyd County Chronicle and Times, March 30, 2022 edition. Enclosed is a copy of that notice in Exhibit 3. The News Journal 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 and will be constructed under their supervision. Their qualifications are evidenced in Exhibit 5 by the seal and signature of the registered professional engineer responsible for this project.

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

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

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

Two notice signs meeting the requirements prescribed by 807 KAR 5:063, Section 1(2), measuring at least two (2) feet in height and four (4) feet in width and containing all required language in letters of required height, have been posted, one at a visible location on the proposed site and one on the nearest public road. The two signs were posted on March 22, 2022, 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 Deed for the site location along with a lot description.

The proposed construction site is on a reclaimed surface mining site some distance from the nearest structure.

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.

**[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]**

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

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

SUBMITTED BY: Lynn Haney DATE: 3/23/2022  
Lynn Haney, Regulatory Compliance Director

APPROVED BY: W.A. Gillum DATE: 3/24/2022  
W.A. Gillum, General Manager

ATTORNEY: Krystal Branham DATE: 3/23/2022  
Hon. Krystal Branham, Attorney

**CONTACT INFORMATION:**

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

**Lynn Haney, Regulatory Compliance Director**  
**Phone: (606) 477-2355, Ext. 1007**  
**Email: [lhane@ekn.com](mailto:lhane@ekn.com)**

**Krystal Branham, Attorney**  
**Phone: (606) 477-2355, Ext. 1009**  
**Email: [kbranham@ekn.com](mailto: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	Deed and Easement 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	10/26/2021	Expiration	10/01/2031
Effective	10/26/2021	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 Regulatory Compliance Department	P:(606)477-2355 E:compliance@ekn.com
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### Contact

East Kentucky Network, LLC Cindy D McCarty Esq P.O. Box 41642-9057 101 Technology Trl Ivel, KY 41642 ATTN Regulatory Compliance Dept.	P:(606)477-2355 E:cmccarty@ekn.com
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### 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**

Progressive Development, LLC  
450 Stratton Branch  
Stanville, KY 41501

S.P. Davidson Estate  
C/O Samuel D. Hatcher  
P.O. Box 583  
Pikeville, KY 41501

Dallas and Janice Justice  
P.O. Box 23  
Banner, KY 41603



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 25, 2022

Progressive Development, LLC  
450 Stratton Branch  
Stanville, KY 41501

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2022-00094)

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 near Dillon Branch Road, Ivel. 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. 2022-00094 in your correspondence.

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

Sincerely,

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

Lynn Haney, CPA  
Regulatory Compliance Director  
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 25, 2022

S.P. Davidson Estate  
C/O Samuel D. Hatcher  
P.O. Box 583  
Pikeville, KY 41501

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

Sincerely,

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

Lynn Haney, CPA  
Regulatory Compliance Director  
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 25, 2022

Dallas and Janice Justice  
P.O. Box 23  
Banner, KY 41603

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2022-00094)

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Sincerely,



Lynn Haney, CPA  
Regulatory Compliance Director  
Enclosure 1

# Ivy Creek

Location:

Near Dillon Branch Road, Ivel,  
KY 41642

Coordinates:

37 36' 17.67"  
82 40' 04.87"

Ivy Creek Proposed Site

Google Earth

460

Dropping Lick Branch

Dillon Branch

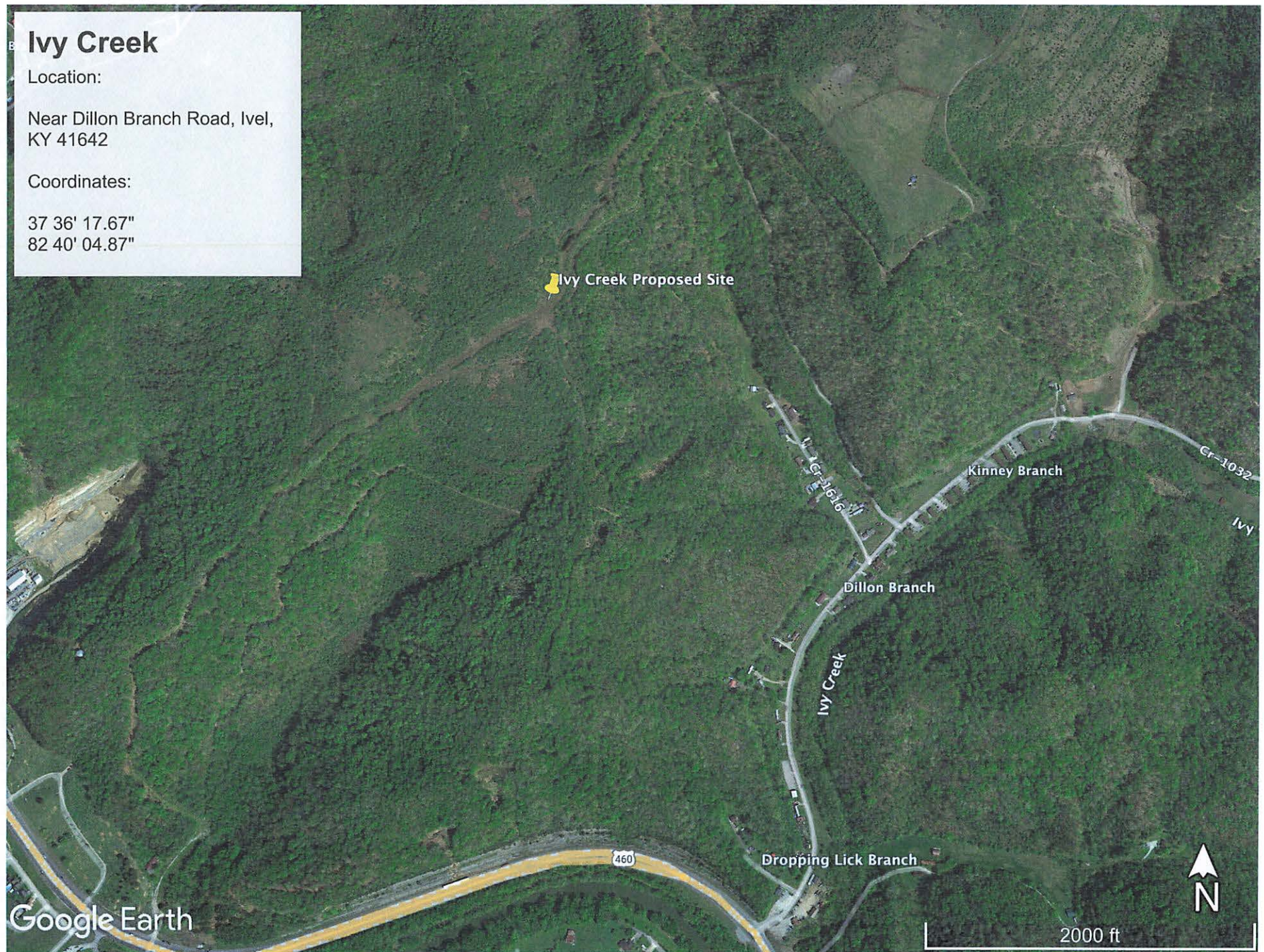
Kinney Branch

Cr-1032

Ivy



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

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**Email:** ecompton@floydct.com      **Date:** March 21, 2022

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

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**Please place the following Public Notice Advertisement in The Floyd County Chronicle Times to be ran on March 30, 2022.**

**PUBLIC NOTICE:**

RE: Public Service Commission of Kentucky (CASE NO. 2022-00094)

Public Notice is hereby given that East Kentucky Network, LLC, dba Appalachian Wireless has applied to the Kentucky Public Service Commission to construct a cellular telecommunications tower on a tract of land located near Dillon Branch Road, Ivel, 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. 2022-00094.

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

Thank you,

Raina Helton  
Regulatory Compliance Paralegal

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



VIA: U.S. CERTIFIED MAIL

March 25, 2022

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

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2022-0094)

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 Dillon Branch Road, Ivel, 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. 2022-00094 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

# Ivy Creek

Location:

Near Dillon Branch Road, Ivel,  
KY 41642

Coordinates:

37 36' 17.67"  
82 40' 04.87"

Ivy Creek Proposed Site

Google Earth

460

Dropping Lick Branch

Dillon Branch

Kinney Branch

Cr-1032

Ivy



2000 ft



# Exhibit 4



230 Swartz Drive • Hazard • Kentucky • 41701

Phone (606) 551-1050

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**EAST KENTUCKY ENGINEERING, LLC.**

**APPALACHIAN WIRELESS  
Geotechnical Investigation on the  
Ivy Creek Tower Site  
Floyd County, Kentucky  
EKYENG Project No. 165-000-0096**

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



\_\_\_\_\_, 2015, September 22<sup>nd</sup>, 2021



# EAST KENTUCKY ENGINEERING, LLC.

## **EXECUTIVE SUMMARY**

### **1.0 INTRODUCTION**

### **2.0 PROJECT DESCRIPTION**

### **3.0 SITE DESCRIPTION & HISTORICAL MINING**

3.1 GENERAL INFORMATION

3.2 SURFACE MINING

3.3 UNDERGROUND MINING

3.4 FLOOD HAZARD

### **4.0 FIELD EXPLORATION**

4.1 SITE INFORMATION

4.2 BORING DATA

4.3 GROUNDWATER

4.4 SEISMIC SITE CLASSIFICATION

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5.3 DEEP FOUNDATIONS

5.4 LATERAL AND UPLIFT FORCES ON PIERS

5.5 BURIED UTILITIES

### **6.0 WARRANTY**

6.1 SUBSURFACE EXPLORATION

6.2 LABORATORY AND FIELD TEST

6.3 ANALYSIS AND RECOMMENDATIONS

6.4 CONSTRUCTION MONITORING

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## **SPECIFICATIONS**

**I – GENERAL**

**II – ENGINEERED FILL BENEATH STRUCTURES CLEARING AND GRADING SPECIFICATIONS**

**III – GUIDELINES FOR EXCAVATIONS AND TRENCHING**

**IV – DRILLED PIER INSTALLATION**

**V – GENERAL CONCRETE SPECIFICATIONS**

**APPENDIX A – BORING LOGS**

**APPENDIX B – CORE PHOTOGRAPHS**

**APPENDIX C – SEISMIC DATA**

**APPENDIX D – PHOTOGRAPHS**

**APPENDIX E – MAPS**



## EAST KENTUCKY ENGINEERING, LLC.

### EXECUTIVE SUMMARY

A geotechnical investigation has been performed on the Ivy Creek 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 29.6 ft. The following geotechnical considerations were identified:

- Borings utilized for this study encountered mine spoil, gray shale, and gray sandstone to a depth of 29.6 ft.
- The estimated maximum pad elevation of the top of the tower mat foundation is 1225.1 ft.
- This site is on top of a previously mined fill area and due to the site geometry, we believe either a mat or drilled piers can be used at this location.
- **The allowable bearing capacities are estimated to be 2500 psf with the proposed site remediations that undercut and backfill with compacted dense grade aggregate 6 ft below and outside the bottom of the mat (See Item 5.3).**
- **If drilled piers are to be used, the geotechnical recommendations are shown in Section 5 of this report.**
- The 2018 International Building Code seismic site classification for this site is "C" for a mat foundation and "A" for a drilled pier foundation.
- 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 be 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 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 Ivy Creek Property, in Floyd County, Kentucky. A site location map is shown in Figure No. 1.

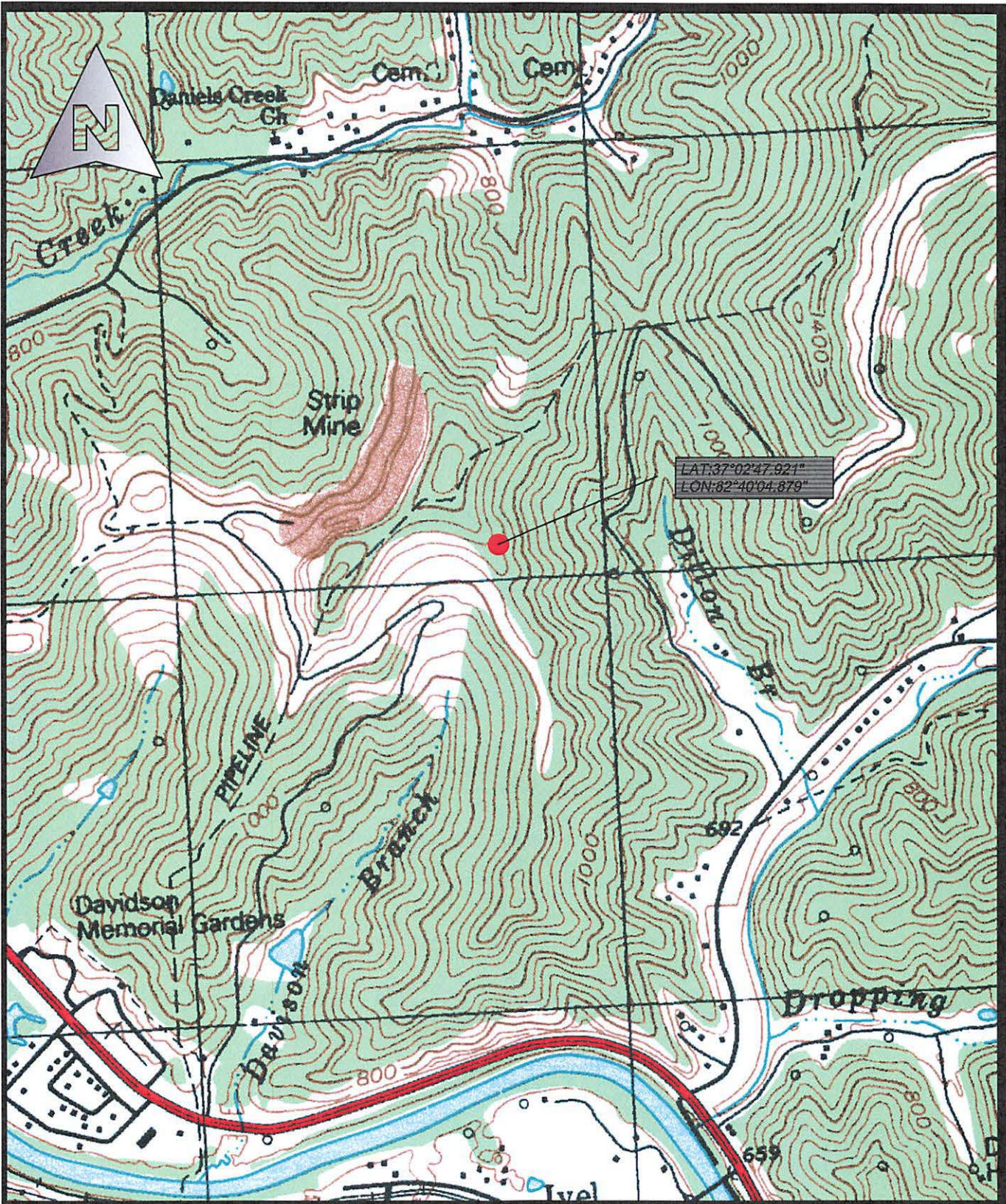
Four (4) borings were advanced to a maximum depth of 29.6 ft. Horn and Associates, Inc. provided drilling services to obtain these borings. Logs of the borings along with a boring location plan are included in Appendix A and Appendix E. The purpose of these services is to provide information and geotechnical 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 mat or drilled pier footing. The footing area is estimated to be 43.5 ft. X 43.5 ft. with an estimated base of the tower footer elevation of 1220.0 ft. based upon information provided by the client. If drilled piers are to be used we have used 4 ft diameter piers as our basis for recommendations with a rock intercept at approximately 1209.5 ft.

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	Date 10/6/21
Job:165-096	Scale: 1"=1000'

**APPALACHIAN WIRELESS**  
 EXCERPT FROM USGS QUAD  
 LOCATION MAP  
 IVY CREEK 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 top of a previously mined fill area in Floyd County, Kentucky. The current surface elevation is approximately 1226.0ft. Research on historical mining was conducted by obtaining previous mine license maps from the "Kentucky Mine Mapping Information System". At the tower locations, no surface mining has been noted. There will be no expected impacts from surface mining on this structure.

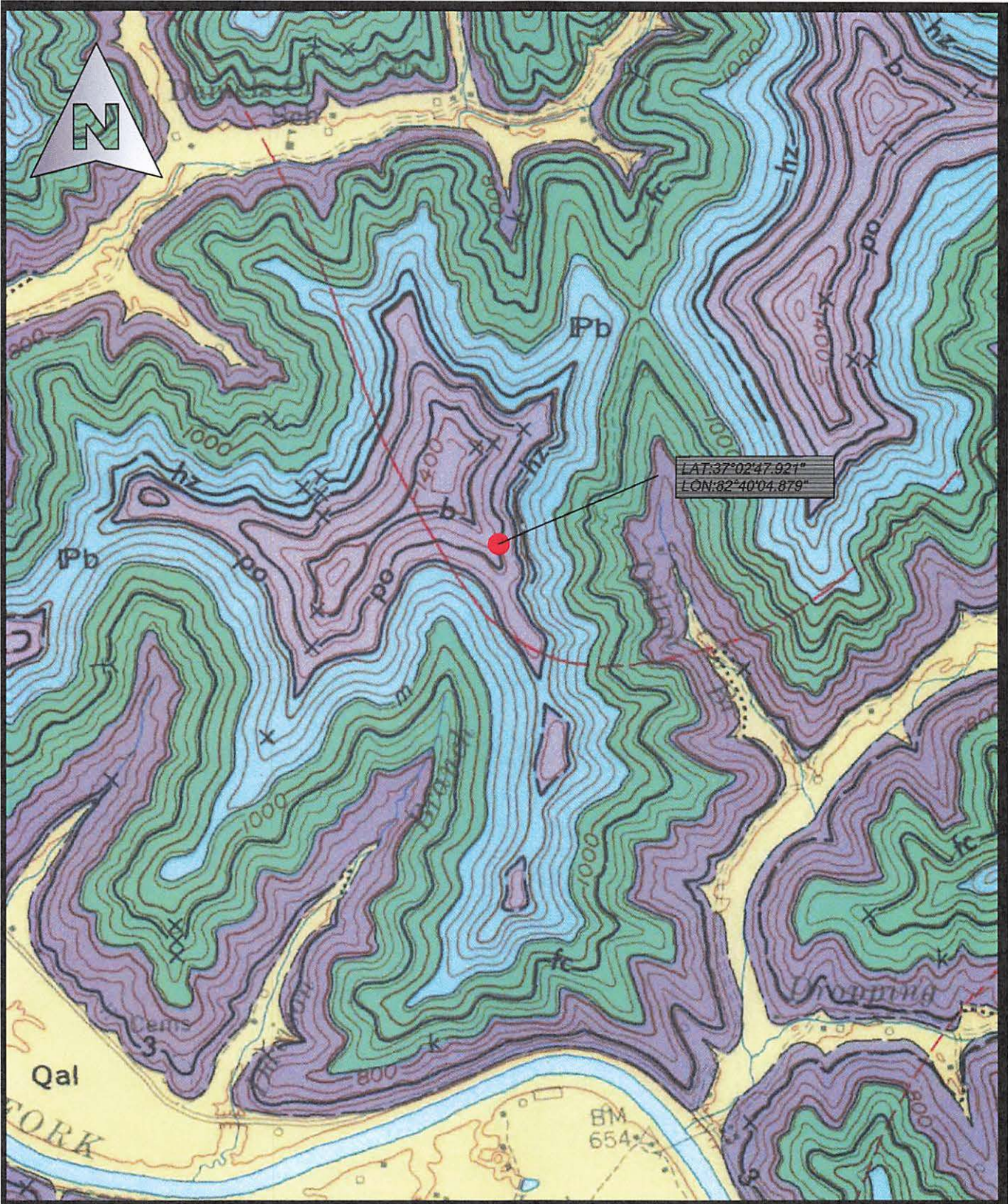
### **3.2 SURFACE MINING**

This site is located on a reclaimed mine site. The mining operations were permitted by Laurel Creek Coal Company, Inc. and are completely released from all permitting requirements from the Kentucky Department of Mine Permits and Reclamation Enforcement. Mining was conducted on the Upper and Lower Peach Orchard Seams along with the Broas Seam. The tower location appears to be located over the Lower Peach Orchard mine areas. The mine spoil is approximately 17 feet deep to the Lower Peach Orchard Mine area. Auger Mining was proposed on the Lower Peach Orchard Seam. Where the tower is located over a Lower Peach Orchard Mine Pit, no auger mining will impose any problems with this tower site. An excerpt from the mine permit map is attached to the appendix of this report.

### **3.3 UNDERGROUND MINING**

During our review of the Kentucky Mine Mapping System Database, no individual underground mine maps were found that would have a direct impact on the tower site location. The seams typically deep mined in this area are the Elkhorn's Seams and the Hazard No. 4 Seam. No mines were found in these seams that would impact this tower site.

### **3.4 FLOOD HAZARD**



Drawn: RDS	Date 10/6/21
Job: 165-096	Scale: 1"=1000'

**APPALACHIAN WIRELESS**  
**EXCERPT FROM GEOLOGIC QUAD**  
**LOCATION MAP**  
**IVY CREEK TOWER SITE**  
**FIGURE NO 2**

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



## EAST KENTUCKY ENGINEERING, LLC.

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 **21071C0210E-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.

### 4.0 FIELD EXPLORATION

#### 4.1 SITE INFORMATION

The proposed site is located on a previously disturbed mine fill in Floyd County, Kentucky. The site lies within the Harold 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 a 43.5 ft X 43.5 ft 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 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.



## EAST KENTUCKY ENGINEERING, LLC.

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

SAMPLE NO.	DEPTH INCREMENT, (FT.)	NATURAL MOISTURE CONTENT, %
B1 S-1	4.5 – 6.0	9.5%
B1 S-2	9.5 – 11.0	12.4%
B1 S-3	14.5 – 16.0	Coal
B2 S-1	4.5 – 6.0	7.9%
B2 S-2	9.5 – 11.0	10.6%
B2 S-3	14.5 – 16.0	Coal
B3 S-1	4.5 – 6.0	9.6%
B3 S-2	9.5 – 11.0	9.7%
B3 S-3	14.5 – 14.7	6.3%
B4 S-1	4.5 – 6.0	10.5%
B4 S-2	9.5 – 11.0	6.6%
B4 S-3	14.5 – 16.0	Coal

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

TABLE NO. 3  
STANDARD PENETRATIONS



## EAST KENTUCKY ENGINEERING, LLC.

SAMPLE NO.	DEPTH INCREMENT	BLOW COUNT / RQD *	DESCRIPTION
B-1	4.5-6.0	10-14-21	Mine Spoil
B-1	9.5-11.0	3-4-5	Mine Spoil
B-1	14.5-16.0	3-6-6	Mine Spoil
B-1	17.0-19.6	50/1"	Gray Shale/weathered
B-1	19.6-28.0	48*	Gray Sandstone and shale interbedded
B-1	28.0-29.4		Coal (Recovered 0.7')
B-1	29.4-29.6		Gray Shale
B-2	4.5-6.0	19-26-15	Mine Spoil
B-2	9.5-11.0	2-3-5	Mine Spoil
B-2	14.5-16.0	3-3-9	Mine Spoil
B-2	17.0-18.0		Gray shale, weathered
B-2	18.0-23.0	80*	Gray shale, sandy
B-3	4.5-6.0	4-5-4	Mine Spoil
B-3	9.5-11.0	4-15-13	Mine Spoil
B-3	14.0-15.0	50/2"	Gray shale, weathered
B-3	15.0-24.3	80*	Gray shale, sandy
B-3	24.3-25.0		Coal (Recovered 0.5')
B-4	4.5-6.0	7-8-13	Mine Spoil
B-4	9.5-11.0	22-8-9	Mine Spoil
B-4	14.5-16.0	4-4-18	Mine Spoil

The four borings were extended by an "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 15.0 ft and 29.6 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 E.



### 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 are not common, especially in higher elevations such as where this tower site is proposed. Therefore, groundwater should not be a concern. During the site investigation, no groundwater resources were observed.

### 4.4 SEISMIC SITE CLASSIFICATION

Based on the encountered soil conditions at the project site mat foundation, the site classification was determined to be "Site Class C" per the 2015 Kentucky Building Code. In addition, an  $S_{DS}$  coefficient of 0.148 g was calculated, and an  $S_{D1}$  coefficient of 0.094 g was also calculated for design based on the aforementioned building code.

If drilled piers are used for the encountered soil conditions at the project site, the site classification will be determined to be "Site Class A" per the 2015 Kentucky Building Code. In addition, an  $S_{DS}$  coefficient of 0.098 g was calculated, and an  $S_{D1}$  coefficient of 0.044 g was also calculated for design based on the aforementioned building code.

## 5.0 DISCUSSION AND RECOMMENDATIONS

### 5.1 GENERAL

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 direction.





### 5.2 SHALLOW MAT FOUNDATIONS RECOMMENDATIONS

It is expected that shallow foundations will be used at the base of the proposed tower. It should be noted that the material type and bearing capacity can vary significantly due to the inconsistency of the underlying material. To provide a suitable foundation for a shallow mat foundation, we recommend that the site be excavated down approximately six (6) feet to the underlying spoil materials below the mat footing subgrade and six (6) feet outside the footing area. Any large rock and unsuitable material shall be removed and backfilled with a select graded engineered fill or dense grade aggregate. The material is to be placed in 8-inch horizontal lifts, compacted to not less than 95% of the maximum dry density as determined in accordance with the Standard Proctor dry unit weight (ASTM D-698) and within +2% and -2% of the optimum moisture content to the new proposed base of footer. **This will increase the allowable bearing capacity to 2500 psf.** It is furthermore recommended that the slab-on-grade be supported on a 4 to 6-inch layer of relatively clean granular material such as sand and gravel or crushed stone. This is to help distribute concentrated loads and equalize moisture conditions beneath the slab. Proper drainage must be incorporated into this granular layer to preclude future wet areas in the finished slab-on-grade. 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 (k30) of 100 lbs./cu. in. can be used for the design of the slabs.

### 5.3 DEEP FOUNDATIONS - DRILLED PIER RECOMMENDATIONS

Drilled piers can also be utilized for this site. The presence of boulders in mine spoil could hamper the use of drilled piers. We recommend the following parameters for the use of piers.



TABLE NO. 3

Approx. Depth (ft.)	Allowable Skin Friction (psf.)	Allowable End Bearing Pressure (psf.)	Effective Unit Weight (pcf.)	Cohesion (psf.)	Internal Angle of Friction (Degrees)
17 - 29 Shales	1,300	12,000	140	-----	27

\* Minimum depth elevations for end bearing capacity designs.

No skin friction values have been provided for the compressible materials. The skin friction and passive resistance have a factor of safety of 2. The allowable end bearing pressure has an approximate safety factor of 3. If the drilled piers are designed using the above design parameters and socketed into solid bedrock, settlements are not anticipated to exceed ¼ inch.

#### 5.4 LATERAL AND UPLIFT FORCES ON PIERS

Lateral forces on the foundation elements can be resisted by passive lateral earth pressures against the opposite vertical face of the foundation and by friction along the soil/foundation interface. An allowable resisting passive earth pressure of 100 lbs./sq. ft., and coefficient of friction of 0.5, respectively, can be used for design purposes. The passive resistance should only be used for that portion of the piers located at a depth greater than 3 feet beneath the final grade. A factor of safety of 1.5 relative to the lateral capacity should be used in design. It should be noted that lateral movements, on the order of up to 0.5 inch, may occur to mobilize this lateral resisting force.



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Support structure for this tower can be placed as needed. It is recommended that test pits are examined to ensure that any of these structures are on the competent materials. If pockets of soft, loose, or otherwise unsuitable material are encountered in the footing excavations and it is inconvenient to lower the footings, the proposed footing elevations may be re-established by backfilling after the undesirable material has been removed. The undercut excavation beneath each footing should extend to suitable bearing soils and the dimensions of the excavation base should be determined by imaginary planes extending outward and down on a 1 (vertical) to 1 (horizontal) slope from the base perimeter of the footing. The entire excavation should then be refilled with a well-compacted engineered fill, or lean concrete (Please note that the width of the lean concrete zone should be equal to 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.

### **5.5 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.



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### 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 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.



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### **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 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



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not direct the contractor's construction means, methods, operations or personnel. The field inspector/engineer does not interfere with the relationship between the owner and the contractor and, except as an observer, does not become a substitute owner on site. The field inspector/engineer is responsible for his own safety but has no responsibility for the safety of other personnel at the site. The field inspector/engineer is an important member of a team whose responsibility is to watch and test the work being done and report to the owner whether that work is being carried out in general conformance with the plans and specifications.

### **6.5 GENERAL**

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

To evaluate the site for possible environmental liabilities, we recommend an environmental assessment, consisting of a detailed site reconnaissance, a record review, and a 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 Ivy Creek 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.



# EAST KENTUCKY ENGINEERING, LLC.

## SPECIFICATIONS

### I – GENERAL

#### 1.0 STANDARDS AND DEFINITIONS

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

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

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

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

#### 1.2 DEFINITIONS

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

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

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

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

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

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



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### **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, or as directed by the Owner or his designated representative if on site disposal is



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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 constructed. Filling operations shall begin on the lowest bench, with the fill being



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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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### III - 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 lifeline 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 - DRILLED PIER INSTALLATION

### 1.0 DRILLING PROCEDURE

- 1.1 Drilled piers will be installed with large caisson drill rigs capable of torque and crowd forces sufficient to install drilled piers at the project site given the in-situ soil conditions.
- 1.2 The drill rig kelly bar and auger will be carefully and accurately placed over the centerline of the drilled pier. The Contractor is responsible for providing necessary surveying to verify drilled pier location before, during, and after the drilled pier installation.
- 1.3 The augers are advanced downwards as they are rotated such that drilling of the soil mass is efficiently accomplished. Depending on the subsurface conditions, and the requirements for the given project, a temporary steel casing should be installed at this time to preclude caving of the soil and/or broken rock mass being penetrated.

### 2.0 CASING INSTALLATION

- 2.1 The casing will be checked for centerline accuracy and plumbness by the Contractor's survey crew. During casing installation, the Contractor's survey crew will verify alignment with instruments. If plumbness and alignment are not within tolerance as determined by the Contractor's survey crew, the casing will be extracted and re-aligned as necessary.
- 2.2 The drill rig will remove soil and bedrock material from within the casing to the drilled pier design tip elevation. A steel casing or "Sonotube" shall be inserted into the borehole to preclude cave-ins and/or instability in the borehole.



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- 2.3 The bearing surface within the drilled pier will be inspected by a registered Professional Engineer before being approved for structural concreting.

### **3.0 INSTALLATION OF THE REBAR CAGE**

- 3.1 An epoxy coated spiral reinforcing steel cage will be installed while in the drilled pier borehole.
- 3.2 To assist in assuring that the reinforcing steel cage does not settle during concrete pumping, a mat of reinforcing steel bars will be installed across the bottom of the reinforcing steel cage perpendicular to the vertical axis of the cage. The exact number of bars will be determined and installed by the Structural Engineer. The number of rebar boots used on the bottom of the cage will also be determined by the Structural Engineer.
- 3.3 The reinforcing steel cage will be lowered into the drilled pier borehole, while drilled pier spacers are placed at intervals as required by the Structural Engineer. The reinforcing steel cage will be checked for alignment by the Contractors survey crew.
- 3.4 The crane will remain attached to the reinforcing steel cage while the concrete pump outlet pipe is lowered to just above the bottom of the drilled pier. The concrete pump pipe sections will be welded together to assure that do not separate during pumping.

### **4.0 CONCRETING OF THE DRILLED PIER**

- 4.1 Concrete pumping may commence once the bearing surface has been approved in accordance with Clause 2.3





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- 4.2 A three-inch trash pump will be used to pump slurry and/or water from within the casing and from above the newly pumped concrete.
- 4.3 The concrete pump outlet pipe will maintain at least ten (10) feet of embedment into the fresh concrete. The concrete level in the casing will be monitored.
- 4.4 The casing will be completely extracted with the crane and/or vibratory hammer. Caisson clamps on the vibratory hammer (if applicable) will be adjusted to the proper dimension to withdrawal the casing.
- 4.5 The concrete will be terminated at the top of drilled pier elevation and screeded flat.
- 4.6 The upper reinforcing steel dowel cage will be lowered into the concrete to the embedment elevation. If necessary, the concrete will be vibrated to assist in placement. Alignment will be verified by the Contractors survey crew and the cage will be sufficiently braced.



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## V - 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 labour 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, labour, 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 grains, organic matter, loam, clay, silt, salt, mica or other fine materials that may affect bonding of the cement paste.



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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 underground with cement.
  3. Approval in writing shall be required from Owner prior to the use of any admixture.

### 4.0 FORM

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

### 5.0 INSERTS, ETC.

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

### 6.0 REINFORCEMENT

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



## EAST KENTUCKY ENGINEERING, LLC.

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

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

### 7.0 CONCRETE

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

### 8.0 DEPOSITING CONCRETE

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

1. Remove from space to be occupied by concrete all debris, including snow, ice, and water unless otherwise permitted by Owner.
2. Provide diversion, satisfactory to Owner, of any flow of water to an excavation to avoid washing the freshly deposited concrete.
3. Coat the forms prior to placing of reinforcing steel as required in form work.
4. Secure firmly in correct position, all reinforcement and other items to be encased and remove therefrom all coating including ice and frost.

B. Transportation of Concrete from Batch Plant: The concrete shall be delivered to the site of the work and discharge shall be completed within 90 minutes after addition of the cement and water to the aggregates. Each batch of concrete delivered at the job site shall be accompanied by a time slip issued at the batching plant, bearing the time of charging of the mixer drum with the cement and aggregates.



## EAST KENTUCKY ENGINEERING, LLC.

- 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 horizontals. 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.
- 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



## EAST KENTUCKY ENGINEERING, LLC.

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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 deflected corrects, protrusions removed, and holes filled.



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APPENDIX A BORING LOGS



Horn & Associates, Inc.  
216 N. Main St  
Winchester, KY 40391

**BORING NUMBER B-1**

PAGE 1 OF 1

CLIENT Appalachian Wireless PROJECT NAME Ivy Creek Tower  
 PROJECT NUMBER 2213.000 PROJECT LOCATION Ivel, Kentucky  
 DATE STARTED 9/10/2021 COMPLETED 9/10/2021 GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 3.0"  
 DRILLING CONTRACTOR Horn and Associates Inc GROUND WATER LEVELS:  
 DRILLING METHOD HSA/NX AT TIME OF DRILLING ---  
 LOGGED BY G. Horn CHECKED BY G. Horn AT END OF DRILLING ---  
 HOLE LOCATION As staked AFTER DRILLING ---

HORN GEOTECH COLUMN LOG - GINT STD US GDT - 9/15/21 12:36 - \\SERVER2020\SERVER\HORN GINT LOGS\IVY TOWER.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0												
5		Mine spoil	SS SS-1		10-14-21 (35)							
10			SS SS-2		3-4-5 (9)							
15			SS SS-3		3-6-6 (12)							
17.0												
19.6		Gray shale, weathered	SS SS-4		50/1"							
25		Gray sandstone and shale interbedded	RC RC-1	93	(48)							
28.0		Coal (Recovered 0.7 ft)										
29.4		Gray shale										
29.6												

Refusal at 19.6 feet.  
Bottom of borehole at 29.6 feet.





Horn & Associates, Inc.  
216 N. Main St  
Winchester, KY 40391

**BORING NUMBER B-2**

PAGE 1 OF 1

CLIENT <u>Appalachian Wireless</u>	PROJECT NAME <u>Ivy Creek Tower</u>
PROJECT NUMBER <u>2213.000</u>	PROJECT LOCATION <u>Ivel, Kentucky</u>
DATE STARTED <u>9/10/2021</u> COMPLETED <u>9/10/2021</u>	GROUND ELEVATION _____ HOLE SIZE <u>3.0"</u>
DRILLING CONTRACTOR <u>Horn and Associates Inc</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>HSA/NX</u>	AT TIME OF DRILLING <u>---</u>
LOGGED BY <u>G. Horn</u> CHECKED BY <u>G. Horn</u>	AT END OF DRILLING <u>---</u>
HOLE LOCATION <u>As staked</u>	AFTER DRILLING <u>---</u>

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0												
5			SS SS-1		19-26-15 (41)							
10		Mine spoil	SS SS-2		2-3-5 (8)							
15			SS SS-3		3-3-9 (12)							
17.0												
18.0		Gray shale, weathered										
20		Gray shale, sandy	RC RC-1	94								
23.0												

Refusal at 18.0 feet.  
Bottom of borehole at 23.0 feet.

HORN GEOTECH COLUMN LOG - GINT STD US.GDT - 9/15/21 12:36 - \\SERVER2020\SERVER\HORN GINT LOGS\IVY TOWER.GPJ



Horn & Associates, Inc.  
216 N. Main St  
Winchester, KY 40391

**BORING NUMBER B-3**

PAGE 1 OF 1

CLIENT Appalachian Wireless PROJECT NAME Ivy Creek Tower  
 PROJECT NUMBER 2213.000 PROJECT LOCATION Ivel, Kentucky  
 DATE STARTED 9/10/2021 COMPLETED 9/10/2021 GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 3.0"  
 DRILLING CONTRACTOR Horn and Associates Inc GROUND WATER LEVELS:  
 DRILLING METHOD HSA/NX AT TIME OF DRILLING ---  
 LOGGED BY G. Horn CHECKED BY G. Horn AT END OF DRILLING ---  
 HOLE LOCATION As staked AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0												
5		Mine spoil	SS SS-1		4-5-4 (9)							
10			SS SS-2		4-15-13 (28)							
14.0												
15.0		Gray shale, weathered	SS SS-3		50/2"							
20		Gray shale, sandy	RC RC-1	98	(80)							
24.3												
25.0		Coal (Recovered 0.5 ft)										

Refusal at 15.0 feet.  
Bottom of borehole at 25.0 feet.

HORN GEOTECH COLUMN LOG - GINT STD US GDT - 9/15/21 12:36 - \\SERVER2020\SERVER\HORN GINT LOGS\IVY TOWER.GPJ



Horn & Associates, Inc.  
216 N. Main St  
Winchester, KY 40391

**BORING NUMBER B-4**

PAGE 1 OF 1

CLIENT Appalachian Wireless PROJECT NAME Ivy Creek Tower  
 PROJECT NUMBER 2213.000 PROJECT LOCATION Ivel, Kentucky  
 DATE STARTED 9/10/2021 COMPLETED 9/10/2021 GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 3.0"  
 DRILLING CONTRACTOR Horn and Associates Inc GROUND WATER LEVELS:  
 DRILLING METHOD HSA/NX AT TIME OF DRILLING ---  
 LOGGED BY G. Horn CHECKED BY G. Horn AT END OF DRILLING ---  
 HOLE LOCATION As staked AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0												
5		Mine spoil	SS-1		7-8-13 (21)							
10			SS-2		22-8-9 (17)							
15			SS-3		4-4-18 (22)							
16.0												

Bottom of borehole at 16.0 feet.

HORN GEOTECH COLUMN LOG - GINT STD US.GDT - 9/15/21 12:36 - \\SERVER2020\SERVER\HORN GINT LOGS\IVY TOWER.GPJ



EAST KENTUCKY ENGINEERING, LLC.

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APPENDIX B CORE PHOTOGRAPHS



EAST KENTUCKY ENGINEERING, LLC.





EAST KENTUCKY ENGINEERING, LLC.





# EAST KENTUCKY ENGINEERING, LLC.

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APPENDIX C SEISMIC DATA
-------------------------



# Ivy Creek Tower

Latitude, Longitude: 37.604909, -82.668023



<b>Date</b>	11/2/2021, 8:12:52 PM
<b>Design Code Reference Document</b>	IBC-2015
<b>Risk Category</b>	IV
<b>Site Class</b>	C - Very Dense Soil and Soft Rock

Type	Value	Description
S <sub>S</sub>	0.185	MCE <sub>R</sub> ground motion. (for 0.2 second period)
S <sub>1</sub>	0.083	MCE <sub>R</sub> ground motion. (for 1.0s period)
S <sub>MS</sub>	0.222	Site-modified spectral acceleration value
S <sub>M1</sub>	0.141	Site-modified spectral acceleration value
S <sub>DS</sub>	0.148	Numeric seismic design value at 0.2 second SA
S <sub>D1</sub>	0.094	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	C	Seismic design category
F <sub>a</sub>	1.2	Site amplification factor at 0.2 second
F <sub>v</sub>	1.7	Site amplification factor at 1.0 second
PGA	0.088	MCE <sub>G</sub> peak ground acceleration
F <sub>PGA</sub>	1.2	Site amplification factor at PGA
PGA <sub>M</sub>	0.106	Site modified peak ground acceleration
T <sub>L</sub>	12	Long-period transition period in seconds
SsRT	0.185	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.201	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.083	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.092	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGA <sub>d</sub>	0.6	Factored deterministic acceleration value. (Peak Ground Acceleration)



Type	Value	Description
C <sub>RS</sub>	0.918	Mapped value of the risk coefficient at short periods
C <sub>R1</sub>	0.907	Mapped value of the risk coefficient at a period of 1 s

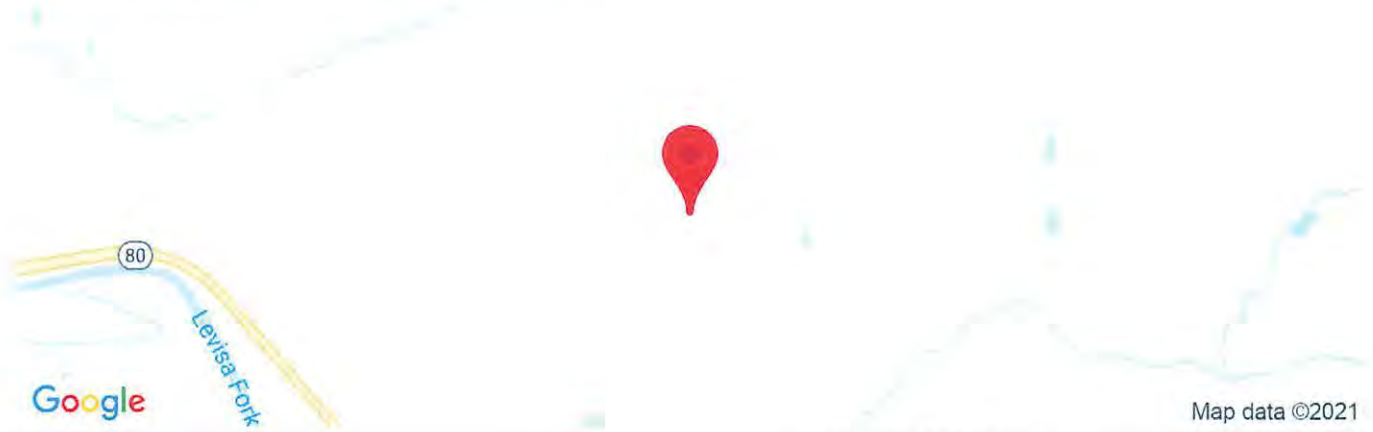
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# Ivy Creek Tower

Latitude, Longitude: 37.604909, -82.668023



<b>Date</b>	11/3/2021, 7:02:05 AM
<b>Design Code Reference Document</b>	IBC-2015
<b>Risk Category</b>	IV
<b>Site Class</b>	A - Hard Rock

Type	Value	Description
$S_s$	0.185	$MCE_R$ ground motion. (for 0.2 second period)
$S_1$	0.083	$MCE_R$ ground motion. (for 1.0s period)
$S_{MS}$	0.148	Site-modified spectral acceleration value
$S_{M1}$	0.066	Site-modified spectral acceleration value
$S_{DS}$	0.098	Numeric seismic design value at 0.2 second SA
$S_{D1}$	0.044	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	A	Seismic design category
$F_a$	0.8	Site amplification factor at 0.2 second
$F_v$	0.8	Site amplification factor at 1.0 second
PGA	0.088	$MCE_G$ peak ground acceleration
$F_{PGA}$	0.8	Site amplification factor at PGA
$PGA_M$	0.071	Site modified peak ground acceleration
$T_L$	12	Long-period transition period in seconds
$S_{sRT}$	0.185	Probabilistic risk-targeted ground motion. (0.2 second)
$S_{sUH}$	0.201	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
$S_sD$	1.5	Factored deterministic acceleration value. (0.2 second)
$S_{1RT}$	0.083	Probabilistic risk-targeted ground motion. (1.0 second)
$S_{1UH}$	0.092	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
$S_{1D}$	0.6	Factored deterministic acceleration value. (1.0 second)
PGA <sub>d</sub>	0.6	Factored deterministic acceleration value. (Peak Ground Acceleration)

Type	Value	Description
C <sub>RS</sub>	0.918	Mapped value of the risk coefficient at short periods
C <sub>R1</sub>	0.907	Mapped value of the risk coefficient at a period of 1 s

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# EAST KENTUCKY ENGINEERING, LLC.

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APPENDIX D PHOTOGRAPHS
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EAST KENTUCKY ENGINEERING, LLC.





# EAST KENTUCKY ENGINEERING, LLC.



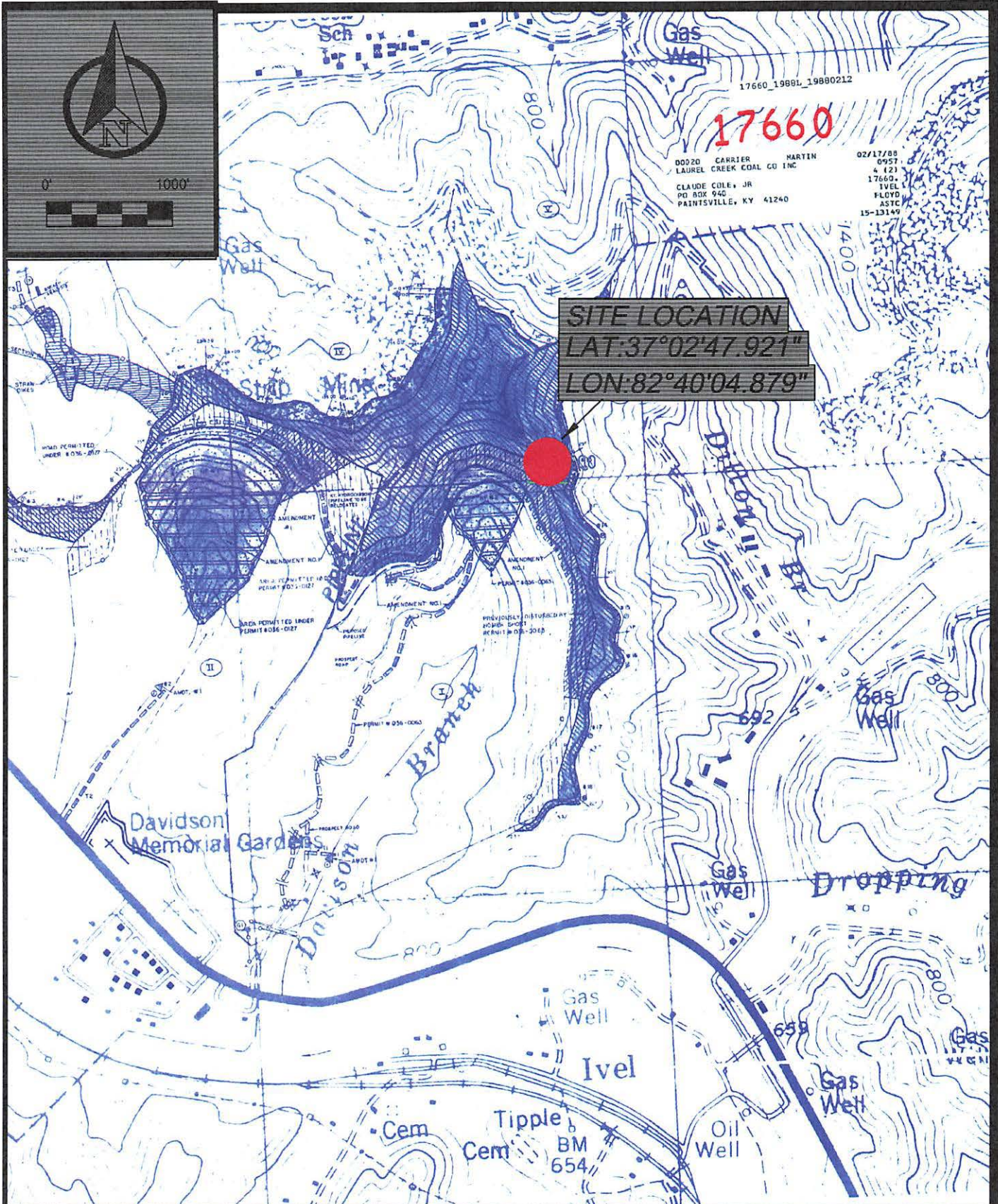




EAST KENTUCKY ENGINEERING, LLC.

---

APPENDIX E  
MAPS



17660

00020 CARRIER MARTIN 02/17/88  
 LAUREL CREEK COAL CO INC 0957  
 4 123  
 17660  
 IVEL  
 FLOYD  
 ASTIC  
 15-13149

SITE LOCATION  
 LAT: 37°02'47.921"  
 LON: 82°40'04.879"

Drawn: RDS 10/29/2021  
 Job: 165-096 Scale: 1"=1000'

Appalachian Wireless  
 Excerpt From Mine Permit Map  
 Ivy Creek Tower Site  
 Figure No. 3

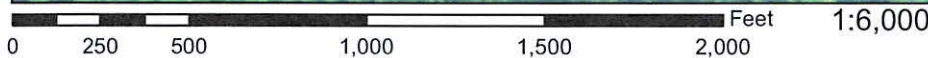
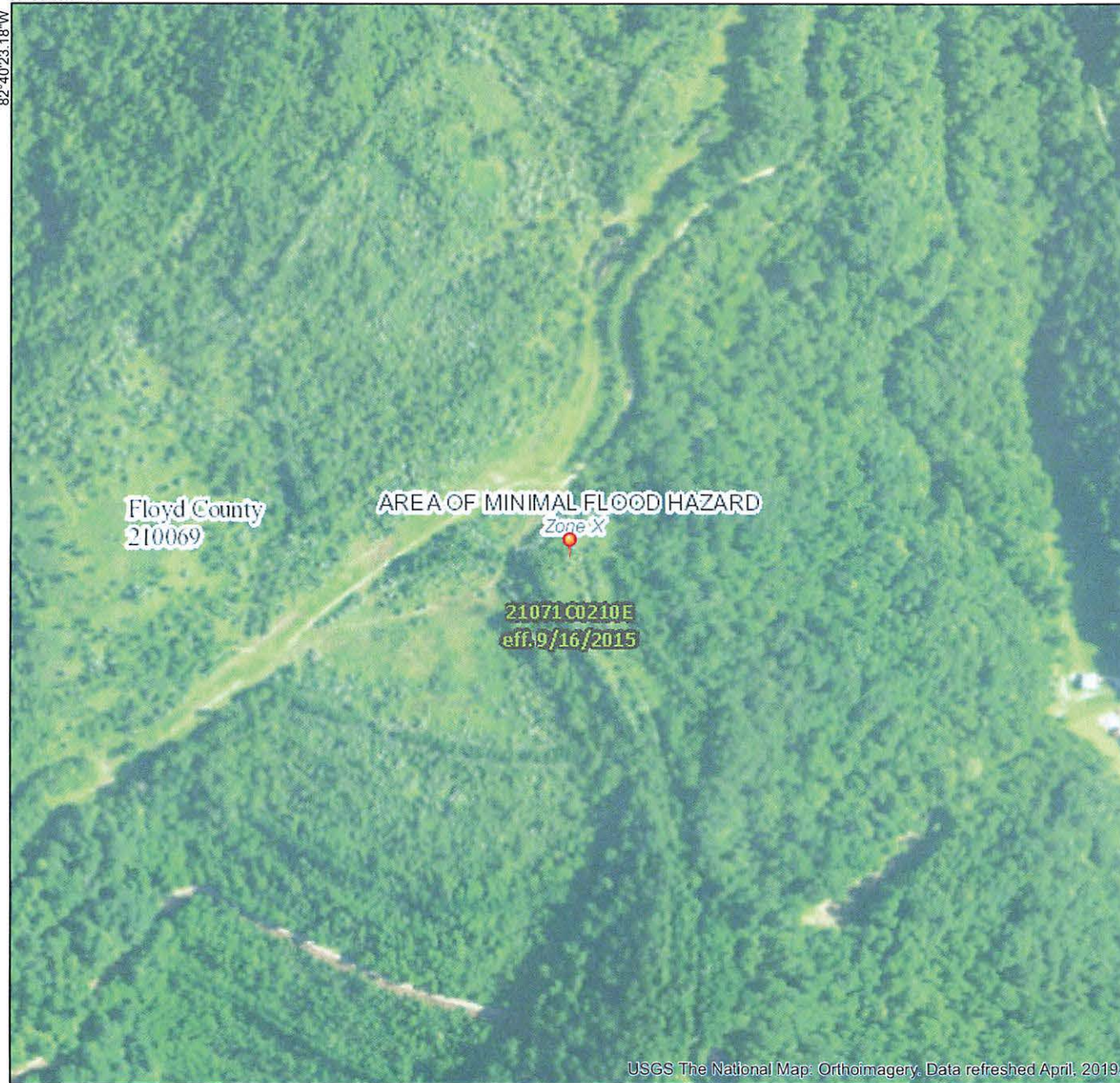
East Kentucky Engineering, LLC.  
 230 Swartz Drive  
 Hazard, KY 41701  
 (606) 551-1050

# National Flood Hazard Layer FIRMette



37°36'28.94"N

82°40'23.18"W



## Legend

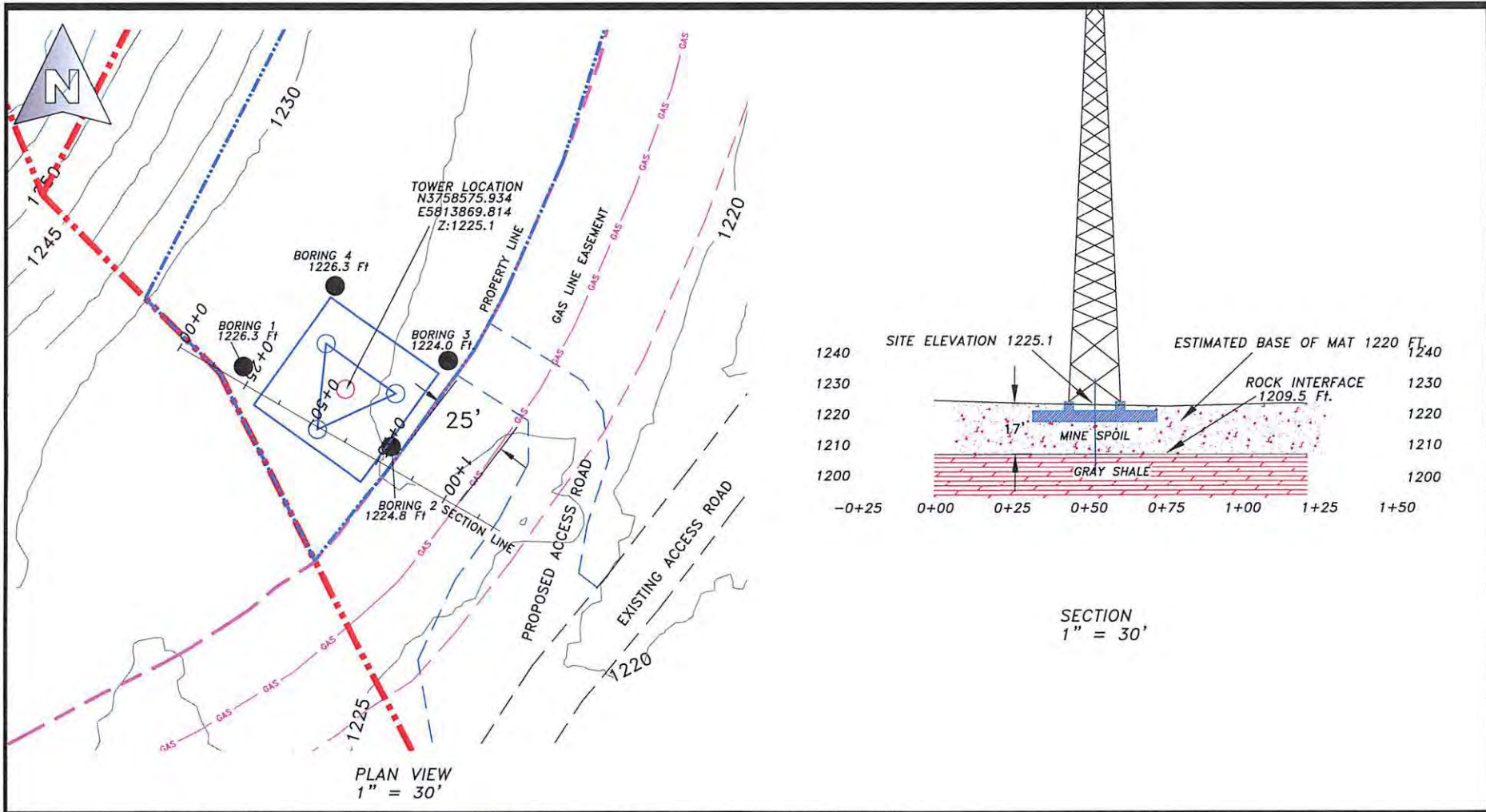
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

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

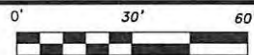
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/3/2020 at 2:26:22 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by 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](mailto:ekyeng@ekyeng.net)



Drawn by: RDS	10/29/2021
Job #: 165-000-0096	Scale: 1" = AS NOTED
File Location:	

APPALACHIAN WIRELESS  
 PROPOSED IVY CREEK TOWER LOCATION  
 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](mailto:worldtower@worldtower.com)  
Web: [www.worldtower.com](http://www.worldtower.com)

---

300' MODEL WSST TOWER  
FOR: EAST KENTUCKY NETWORK  
SITE: IVY CREEK  
FLOYD COUNTY, KY  
DESIGN PACKAGE



12-20-2021

## 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.

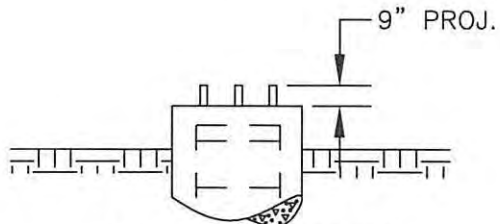


12-20-2021

### WORLD TOWER

TITLE: 300' MODEL WSST TOWER  
FOR: EAST KENTUCKY NETWORK  
SITE: IVY CREEK  
FLOYD COUNTY, KY

SCALE	DWN.	LKG	CKD.	DATE 2-20-21
FILE	DWG. NO.			Q210988N

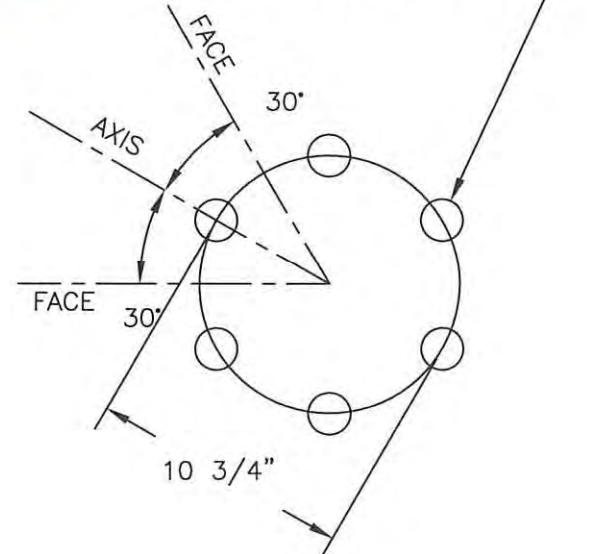
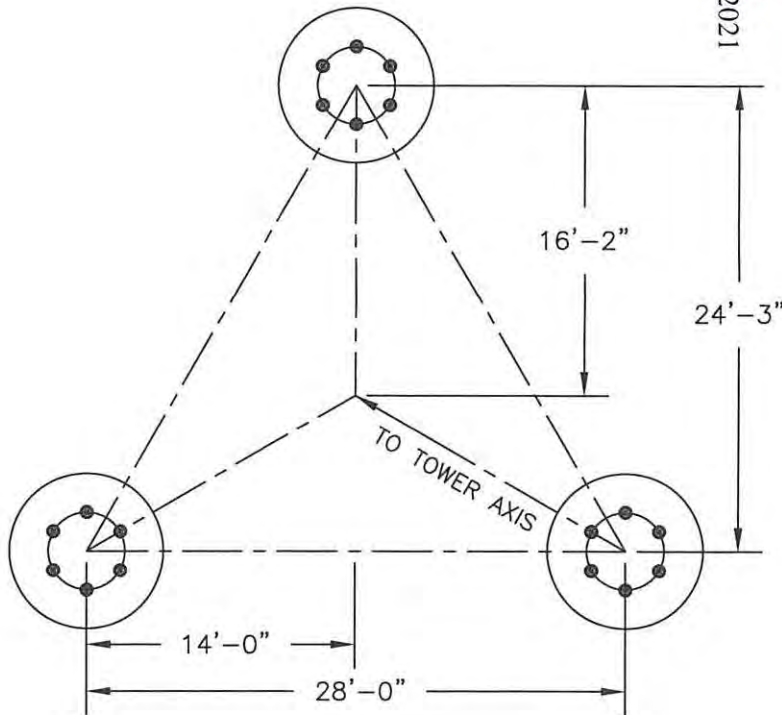


PIER ELEVATION



12-20-2021

ANCHOR BOLTS  
 (6) 1 1/2"  $\phi$  X 90"  
 ASTM F1554-105  
 EQUALLY SPACED WITH  
 TOP TEMPLATE AND  
 EMBEDDED PLATE

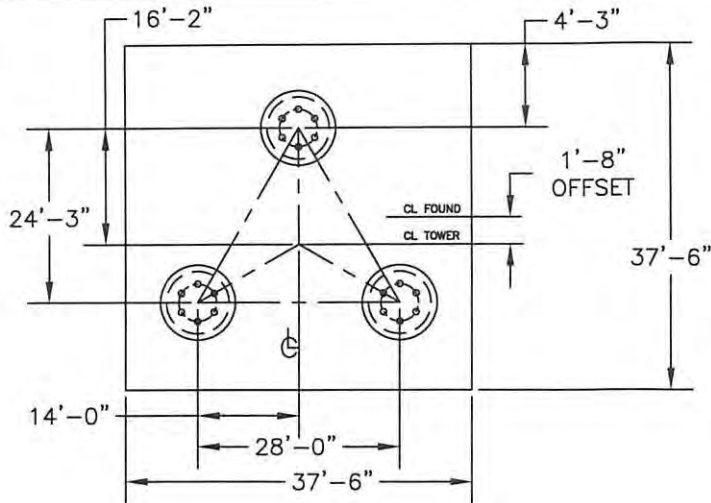


TITLE:  
 300' MODEL WSST TOWER  
 FOR: EAST KENTUCKY NETWORK  
 SITE: IVY CREEK  
 FLOYD COUNTY, KY

# WORLD TOWER

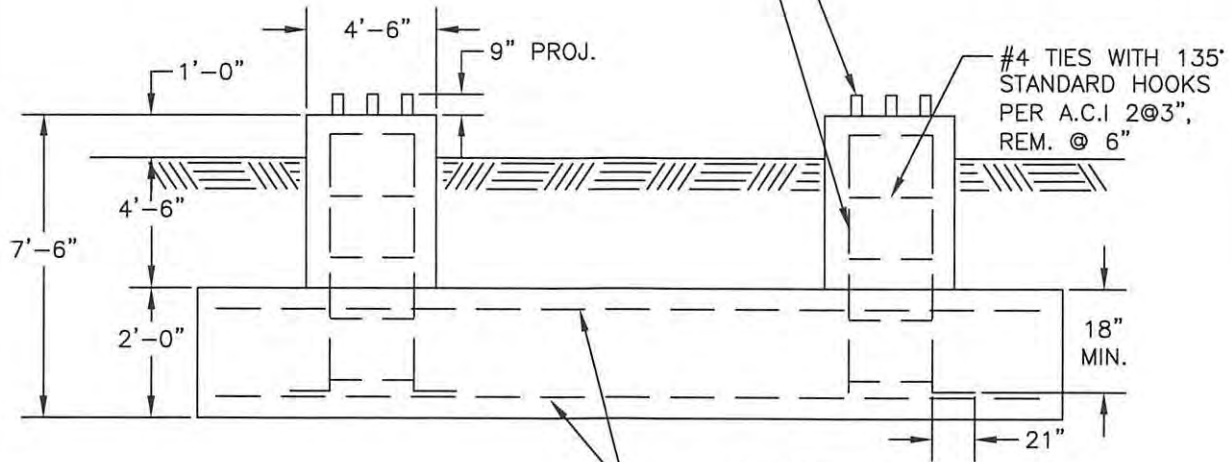
SCALE	NONE	DWN.	LKG	CKD.	DATE	2-20-21
FILE				DWG. NO.	Q210988AB	





113.9 CU. YDS.  
CONCRETE REQ'D.

BASE REACTIONS	
OTM:	14214.0 FT. KIPS
COMP.	622.0 KIPS
UPLIFT	531.0 KIPS
SHEAR (3 LEGS)	82.0 KIPS
WT. NO ICE	108.0 KIPS
WT. 3/4" ICE	328.0 KIPS



41-#10 REBARS  
EACH WAY TOP AND BOTTOM  
(164 TOTAL)

**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 FROM EAST KENTUCKY ENGINEERING, LLC. PROJECT NUMBER 165-000-0096 DATED SEPTEMBER 22, 2021.
5. **6'-0" OVEREXCAVATION AND REPLACEMENT OF SOIL REQUIRED PER SOILS REPORT. FOLLOW ALL SOILS REPORT CONSTRUCTION RECOMMENDATIONS.**



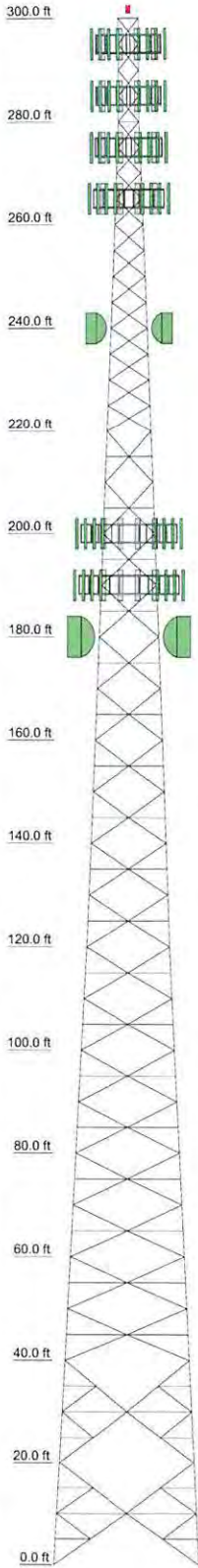
12-20-2021

TITLE: FOUNDATION DETAIL  
300' WSST TOWER  
FOR: EAST KENTUCKY NETWORK  
SITE: IYV CREEK  
FLOYD COUNTY, KY

**WORLD TOWER**

SCALE	NONE	DWN.	LKG	CKD.	DATE	2-20-21
FILE				DWG. NO.	Q210988F	

Section	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	SR 4 3/4	L4x4x1/4	SR 4 1/2	SR 4 1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	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
Diagonals								A572-50							
Diagonal Grade								A36							
Top Chords															
Horizontal	L4x4x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 3/4x1/4	L3 3/4x1/4	L3 3/4x1/4	L2 1/2x2 1/2x3/16	L2 1/2x2 1/2x3/16	L2x2x3/16	L2x2x3/16	L2x2x3/16	L2x2x3/16	L2x2x3/16	L2x2x3/16	L2x2x3/16
Red. Horizontal	L3x3x3/16														
Red. Diagonal	L3x3x3/16														
Inner Bracing	L3 1/2x3 1/2x1/4														
Face Width (ft)	26	24	22	20	18	16	14.5	13	11.5	10	8.5	7	5.5		
# Panels @ (ft)	4 @ 10								52 @ 5						
Weight (K)	60.1	6.9	6.5	6.0	5.3	4.8	4.5	4.1	3.7	3.0	2.5	2.1	1.8	1.5	1.0



**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: 99.7%



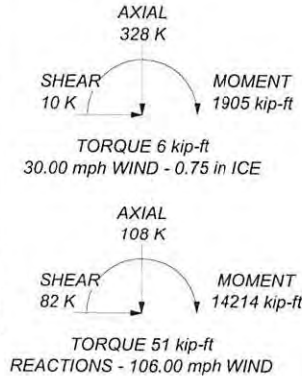
12-20-2021

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:

DOWN: 622 K  
SHEAR: 52 K

UPLIFT: -531 K  
SHEAR: 45 K



<b>World Tower</b>	Job: <b>300' WSST Tower / Job Q21-988</b>		
1213 Compressor Drive	Project: <b>Ivy Creek</b>		
Mayfield, KY 42066	Client: <b>Appalachian Wireless</b>	Drawn by: <b>kirk</b>	App'd:
Phone: (270) 247-3642	Code: <b>TIA-222-G</b>	Date: <b>12/10/21</b>	Scale: <b>NTS</b>
FAX: <b>www.worldtower.com</b>	Path: <b>C:\Tower\PE_Runs\2021\Q21-988 appalachian\Q21-988.er</b>	Dwg No: <b>E-1</b>	

# Exhibit 6



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

Aeronautical Study No.  
 2021-ASO-10809-OE

Issued Date: 05/24/2021

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 Ivy Creek  
 Location: Stanville, KY  
 Latitude: 37-36-17.67N NAD 83  
 Longitude: 82-40-04.87W  
 Heights: 1225 feet site elevation (SE)  
 310 feet above ground level (AGL)  
 1535 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, 24-hr med strobes-Chapters 4,6(MIWOL),&15.

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

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

- At least 10 days prior to start of construction (7460-2, Part 1)
- 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 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 11/24/2022 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

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

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

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

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

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

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

If we can be of further assistance, please contact our office at (817) 222-5928, or [chris.smith@faa.gov](mailto:chris.smith@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ASO-10809-OE.

**Signature Control No: 475997549-481751138**  
Chris Smith  
Specialist

( DNE )

Attachment(s)

Additional Information  
Frequency Data  
Map(s)

cc: FCC

**Additional information for ASN 2021-ASO-10809-OE**

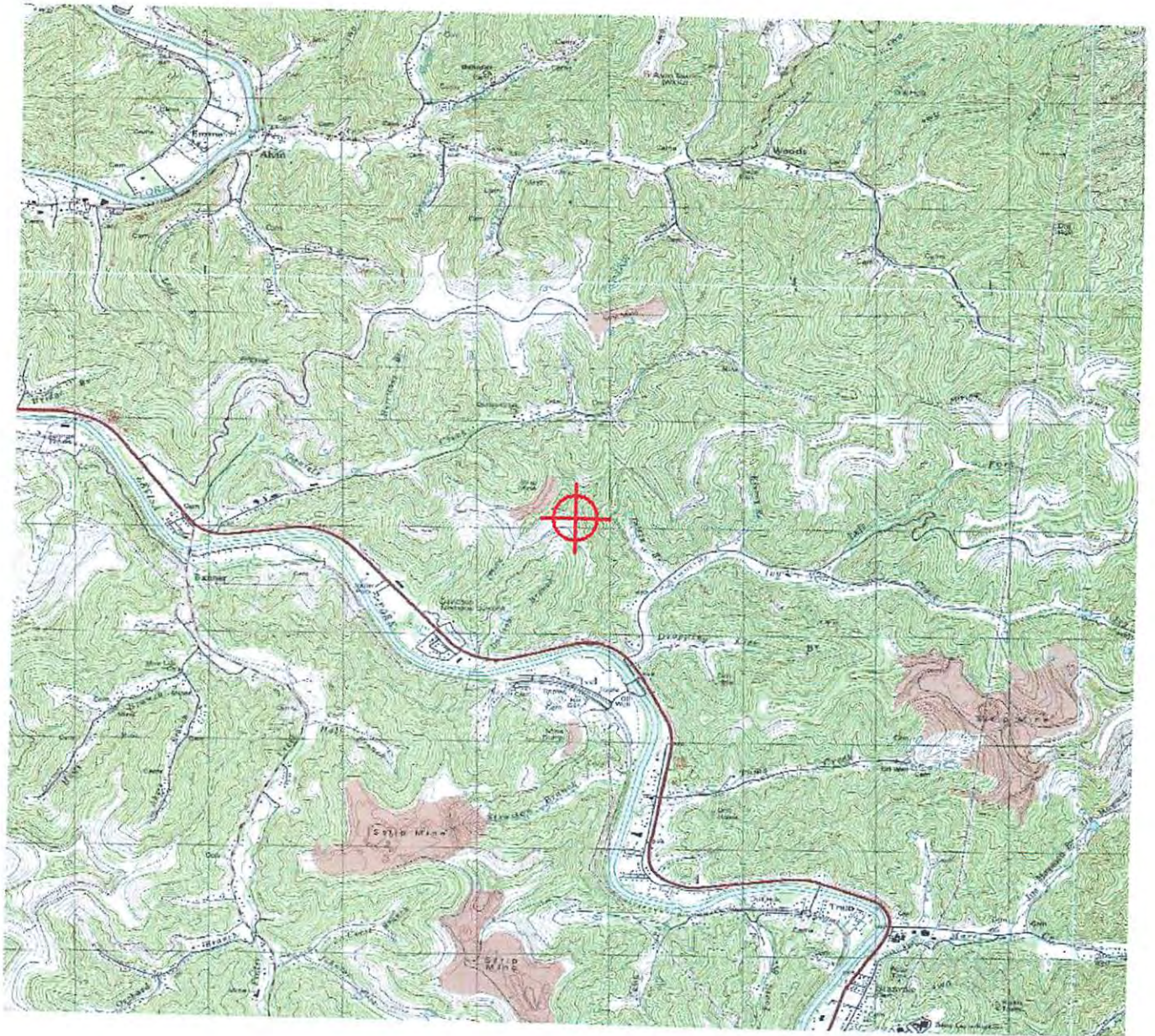
Antenna Tower (310 feet AGL) penetrates the route structure floor by 210 feet (VR-093: Floor of the MTR segment is 100 feet AGL). Ensure tower lighting complies with FAA AC 150/5345-43J for LED lighting, or NVG compatible lighting in addition to incandescent lighting, as well as all other required and applicable marking required by the FAA.

**Frequency Data for ASN 2021-ASO-10809-OE**

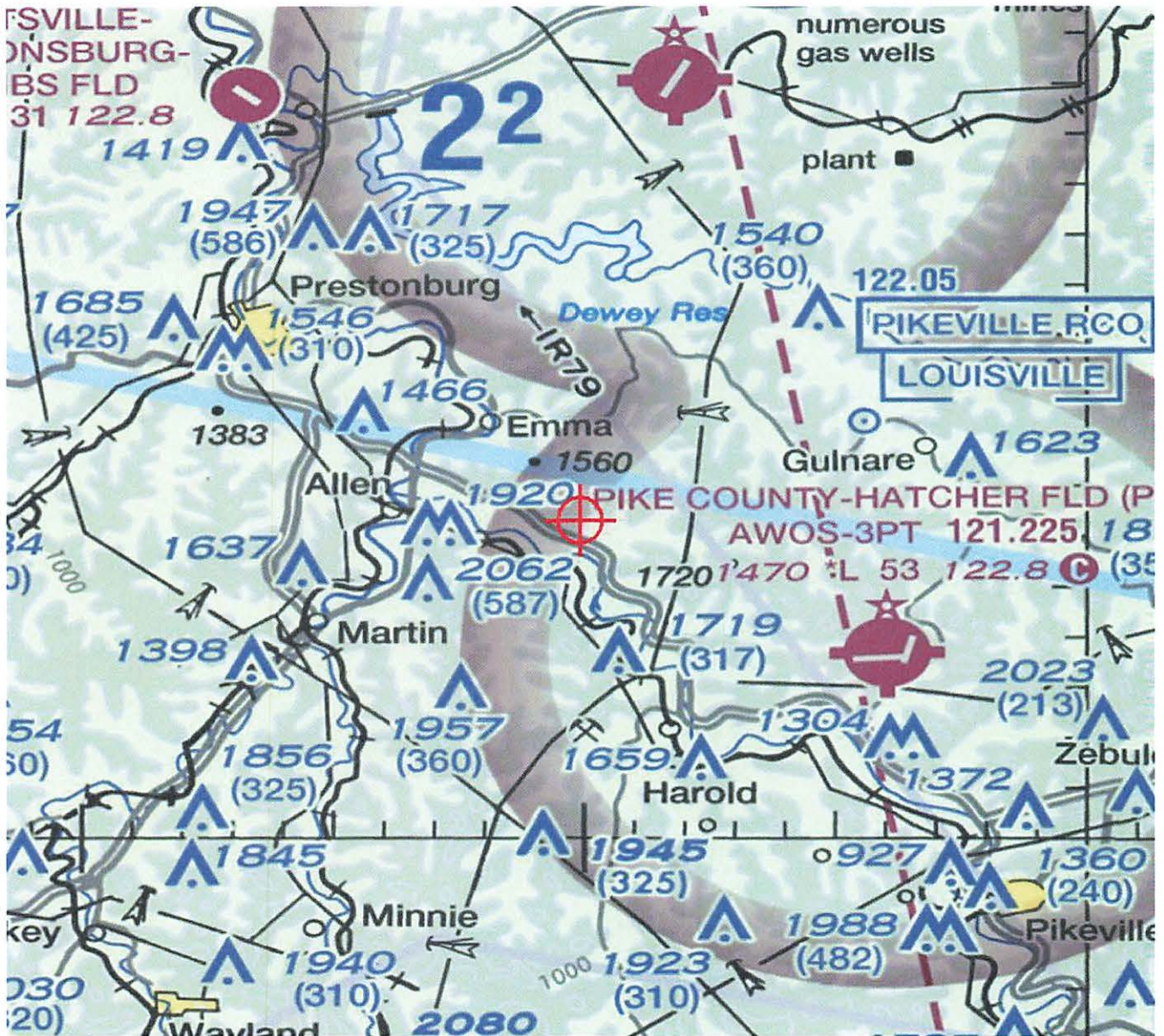
<b>LOW FREQUENCY</b>	<b>HIGH FREQUENCY</b>	<b>FREQUENCY UNIT</b>	<b>ERP</b>	<b>ERP UNIT</b>
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
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 2021-ASO-10809-OE



Sectional Map for ASN 2021-ASO-10809-OE





ANDY BESHEAR  
Governor

**KENTUCKY AIRPORT ZONING COMMISSION**  
Office of Audits, 200 Mero Street, 4th floor  
Frankfort, KY 40622  
[www.transportation.ky.gov](http://www.transportation.ky.gov)  
502-782-4043

JIM GRAY  
Secretary

**APPROVAL OF APPLICATION**

June 16, 2021

**APPLICANT**

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

SUBJECT: AS-FLOYD-PBX-2021-035

STRUCTURE: Antenna Tower  
LOCATION: Betsy Layne, KY  
COORDINATES: 37° 33' 53.2" N / 82° 37' 53.02" W  
HEIGHT: 310' AGL/1706' AMSL

The Kentucky Airport Zoning Commission has approved your application for a permit to construct 310' AGL/1706' AMSL Antenna Tower near Betsy Layne, KY 37° 33' 53.2" N / 82° 37' 53.02" 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.

No Hazard, MIWOL Obstruction Lighting Required.

***Randall S. Royer***

Randall S. Royer, Executive Director  
Office of Audits  
Acting Administrator  
[Randall.Royer@ky.gov](mailto:Randall.Royer@ky.gov)  
[Jason.Salazar-Munoz@ky.gov](mailto:Jason.Salazar-Munoz@ky.gov)



An Equal Opportunity Employer M/F/D

# Exhibit 7

## Driving Directions for Ivy Creek

1. Begin at the intersection of Court Street and Central Avenue in front of the Floyd County Courthouse headed East.
2. Drive .3 miles to the intersection of Central Avenue and South Lake Drive.
3. Turn left onto South Lake Drive.
4. Drive 2.6 miles and turn right onto KY-80.
5. Drive 2.6 miles and exit to your left onto US 23.
6. Continue 6.2 miles.
7. Turn left onto Ivy Creek Road and continue .5 miles.
8. Turn left onto a black top road with a blue gate (sign posted)
9. Continue 1 mile up the hill staying to left (sign posted at site).

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

# Ivy Creek


Location:

Near Dillon Branch Road, Ivel,  
KY 41642

Coordinates:

37 36' 17.67"  
82 40' 04.87"

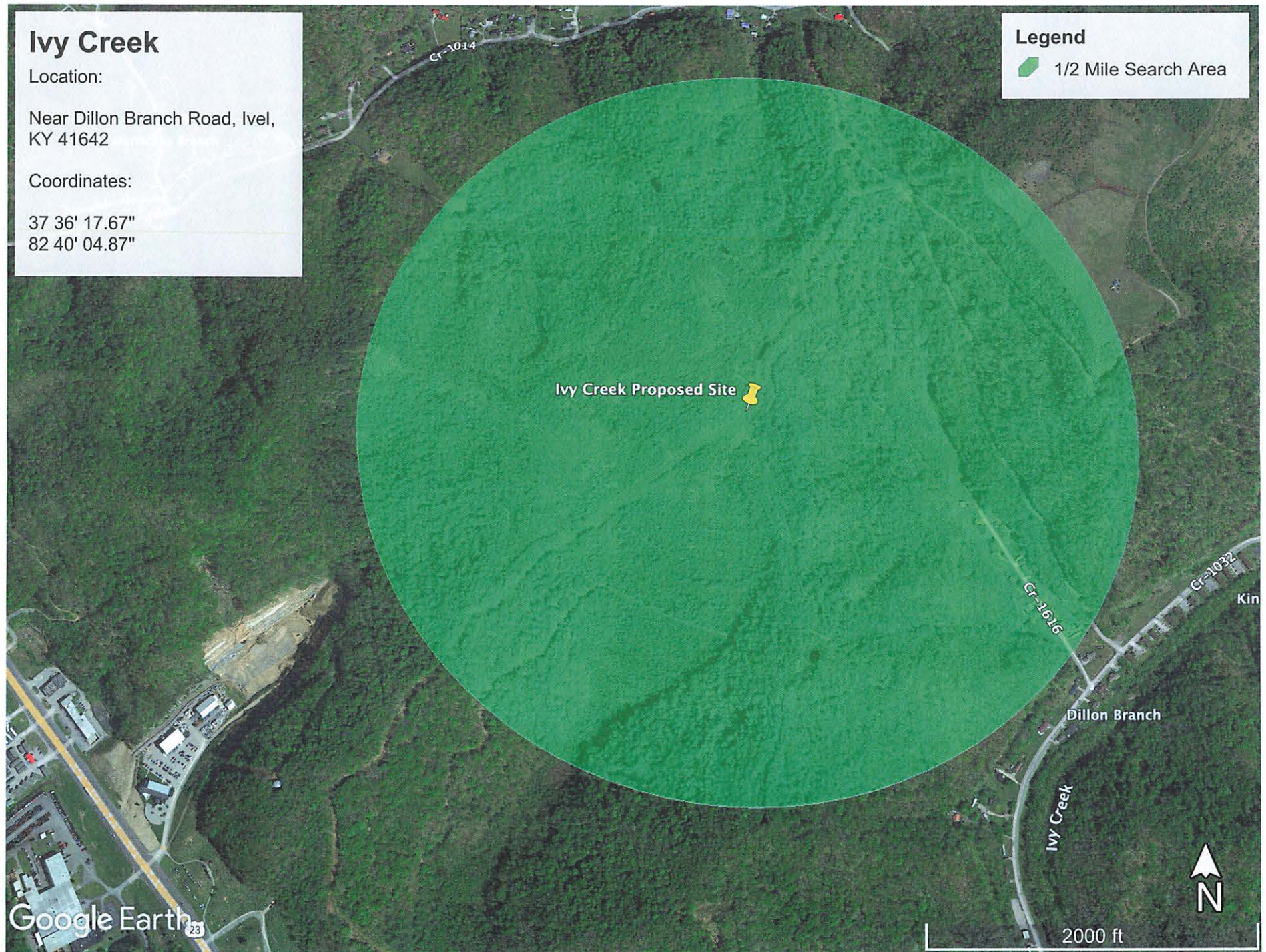
## Legend

 1/2 Mile Search Area

Ivy Creek Proposed Site 

Google Earth 

2000 ft



# Exhibit 8



**DEED**

THIS DEED OF CONVEYANCE is made and entered into this 6<sup>th</sup> day of August, 2021, by and between **PROGRESSIVE DEVELOPMENT, LLC**, a Kentucky limited liability company, whose address is 154 Tollie Lane, Pikeville, KY 41501 (hereinafter referred to as "**Grantor**"), and **EAST KENTUCKY NETWORK, LLC D/B/A APPALACHIAN WIRELESS**, a Kentucky limited liability company (hereinafter referred to as "**Grantee**"), whose address is 101 Technology Trail, Ivel, Kentucky 41642, which is also the "in care of" address to which the property tax bill for 2021 should be sent.

W I T N E S S E T H

That for and in consideration of the sum of Forty-Three Thousand and 00/100 Dollars (\$43,000.00), cash in hand paid, the receipt and sufficiency of which are hereby acknowledged, Grantor does hereby GRANT, SELL, and CONVEY to the Grantee, its successors and assigns, a portion of that certain real property conveyed to Progressive Development, LLC, by Deed of Master Commissioner dated May 27, 2008, and recorded in the Floyd County Clerk's Office in Deed Book 549, Page 352, which is more particularly described in the Lot Description **attached** hereto and made a part herein as **Exhibit A** and depicted on the plat **attached** hereto and made a part herein as **Exhibit B**, prepared by James W. Caudill, Licensed Professional Land Surveyor (hereinafter referred to as the "Property").

Grantor further grants unto Grantee full and complete rights of ingress, egress, and regress over roads located upon any property owned or controlled by Grantor to and from the Property, including that certain property conveyed to Grantor by Deed dated May 1, 2013, of record in Deed Book 597, Page 477 in the Floyd County Clerk's Office. Grantor further grants Grantee permission to construct and maintain a new road to be used exclusively by Grantee, the location



of which is generally depicted on **Exhibit C**, attached hereto and made a part herein. Grantor also grants to the Grantee a right of way and easement to construct, maintain, and operate telephone, fiber, and/or power transmission lines and poles over Grantor's property, said lines and poles to be located where feasible along the access road to the Property. Grantor shall execute instruments granting any easements requested by any utility company to provide utilities services to the Property. Grantee shall have the right, but not the obligation, to trim or remove trees, limbs, or underbrush which may interfere with its roads or power/telephone/fiber lines, wherever such roads and lines are located. Grantee shall have the absolute right to convey, assign, or otherwise transfer, in whole or in part, the easements and rights of way herein granted to Grantee, but only for purposes relating to accessing, utilizing, and/or providing utility service to the Property.

TO HAVE AND TO HOLD the same with all appurtenances and privileges thereunto belonging unto the Grantee, its successors and assigns forever, with covenant of **GENERAL WARRANTY**.

**CONSIDERATION CERTIFICATE**

The parties to this deed certify that the consideration reflected in this deed is the full consideration paid for the property and understand that falsification of the stated consideration is a class D felony, subject to one to five years imprisonment and fines up to \$10,000.00.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK.]

IN TESTIMONY WHEREOF, the parties have hereunto subscribed their names as of the date set forth herein.

GRANTORS:  
PROGRESSIVE DEVELOPMENT, LLC

Jeannie Newsome  
Jeannie Newsome  
By: Jeannie Newsome  
It's: President

COMMONWEALTH OF KENTUCKY  
COUNTY OF Pike

The foregoing instrument was acknowledged before me this 6<sup>th</sup> day of August, 2021, by Progressive Development, LLC, Grantor.

Ronald D. Heltz  
Notary Public  
Commission No.: KYNP375

My Commission Expires: 2-6-2024

[SIGNATURES CONTINUE ON NEXT PAGE.]

GRANTEE:

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 this 9<sup>th</sup> day of August,  
2021, by W.A. Gillum, CEO/General Manager of East Kentucky Network, LLC d/b/a Appalachian  
Wireless, Grantee.

Raina D. Helton

Notary Public  
Commission No.: KYNP375

My Commission Expires: 2-6-2024



This is to certify that this  
instrument was prepared by:

Krystal Branham

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

**LOT DESCRIPTION**  
Property of  
Progressive Development, LLC  
450 Stratton Branch  
Stanville, KY 41659  
Off U.S. Highway 23  
Near Ivy Creek  
in Floyd County, KY  
July 28, 2021



A certain tract or parcel of land lying and being in Floyd County, Kentucky, and being a portion of the property conveyed to Progressive Development, LLC, from William S. Kendrick, Master Commissioner, by Deed of Master Commissioner of record in Deed Book 549, Page 352, records of the Floyd County Clerk's Office. Said property being more particularly described as follows:

Lot 1A

Beginning at a found iron pin with cap (unreadable) on the line dividing the properties of Progressive Development, LLC (Deed Book 549 Page 352) and the S.P. Davidson Estate; thence with the line of Davidson North 45 deg 03 min 50 sec West, a distance of 34.52 feet to a set iron pin with cap marked LS#2259 on said property line; thence leaving the line of Davidson and severing the property of Progressive Development, LLC North 27 deg 30 min 16 sec East, a distance of 157.20 feet to a set iron pin with cap marked LS#2259 on hillside; thence a straight line across a field South 64 deg 57 min 54 sec East, a distance of 90.64 feet to a set iron pin with cap marked LS#2259 on the right of way of a gas line; thence with said gas line right of way 5 calls: South 17 deg 27 min 24 sec West, a distance of 59.35 feet to a set iron pin with cap; South 23 deg 54 min 21 sec West, a distance of 46.39 feet to a set iron pin with cap; South 28 deg 16 min 52 sec West, a distance of 21.36 feet to a set iron pin with cap; South 35 deg 47 min 35 sec West, a distance of 48.84 feet to a set iron pin with cap; South 38 deg 49 min 41 sec West, a distance of 37.69 feet to a set iron pin with cap marked LS#2259 where the gas line right of way intersects with the S.P. Davidson property line; thence with Davidson line North 27 deg 04 min 56 sec West, a distance of 68.91 feet to the point of the beginning. Containing a calculated area of 18,027.1 square feet, or 0.414 acres.

Also to be included is a right of way for an access road along the road labeled as existing road that runs from the Public Road to the lot as shown on exhibit. 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 July 28, 2021 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 23 NEAR IVY CREEK  
IN FLOYD COUNTY, KY.

EXHIBIT  
B

MAP 77 PARCEL 36.01  
S. P. DAVIDSON ESTATE  
C/O SAMUEL D. HATCHER  
P.O. BOX 583  
PIKEVILLE, KY 41501

LOT 1A  
18027.1 Sq. Feet  
0.414 Acres

MAP 92 PARCEL 15  
PROGRESSIVE DEVELOPMENT LLC  
450 STRATTON BRANCH  
STANVILLE, KY 41501  
DEED BOOK 549 PAGE 352

MAP 77 PARCEL 36.01  
S. P. DAVIDSON ESTATE  
C/O SAMUEL D. HATCHER  
P.O. BOX 583  
PIKEVILLE, KY 41501

Beginning Point  
Found Rebar/Cap

beginning at a found lpc on Davidson Line;  
thence with Davidson Line N 45°03'50" W a distance of 34.52' to a set lpc;  
thence severing Subject Property N 27°30'16" E a distance of 157.20' to a set lpc;  
thence S 64°57'54" E a distance of 90.64' to a set lpc on Gasline ROW;  
thence S 17°27'24" W a distance of 59.35' to a set lpc on Gasline ROW;  
thence S 23°54'21" W a distance of 46.39' to a set lpc on Gasline ROW;  
thence S 28°16'52" W a distance of 21.36' to a set lpc on Gasline ROW;  
thence S 35°47'35" W a distance of 48.64' to a set lpc on Gasline ROW;  
thence S 38°49'41" W a distance of 37.69' to a set lpc on Gasline ROW;  
thence leaving ROW & with Davidson-line N 27°04'56" W a distance of 68.91';  
which is the point of beginning,  
having an area of 18027.15 square feet, 0.414 acres

**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 1:12,000  
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

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

James W. Caudill  
2259  
PLS No. 2259  
07/28/21  
Date

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



**PLAT OF SURVEY**

DRAWN JWC	DATE 07/28/21	Subdivision of the Property of Progressive Development LLC 450 Stratton Branch Stanville, Ky 41501 DB 549 PG 352
APPROVED	DATE	
SCALE 1" = 50'	SHEET	SURVEYED BY JAMES W. CAUDILL LS2259 2999 PERKINS/MADDEN ROAD AMBURGEY, KY 41773 PHONE 606-642-3217



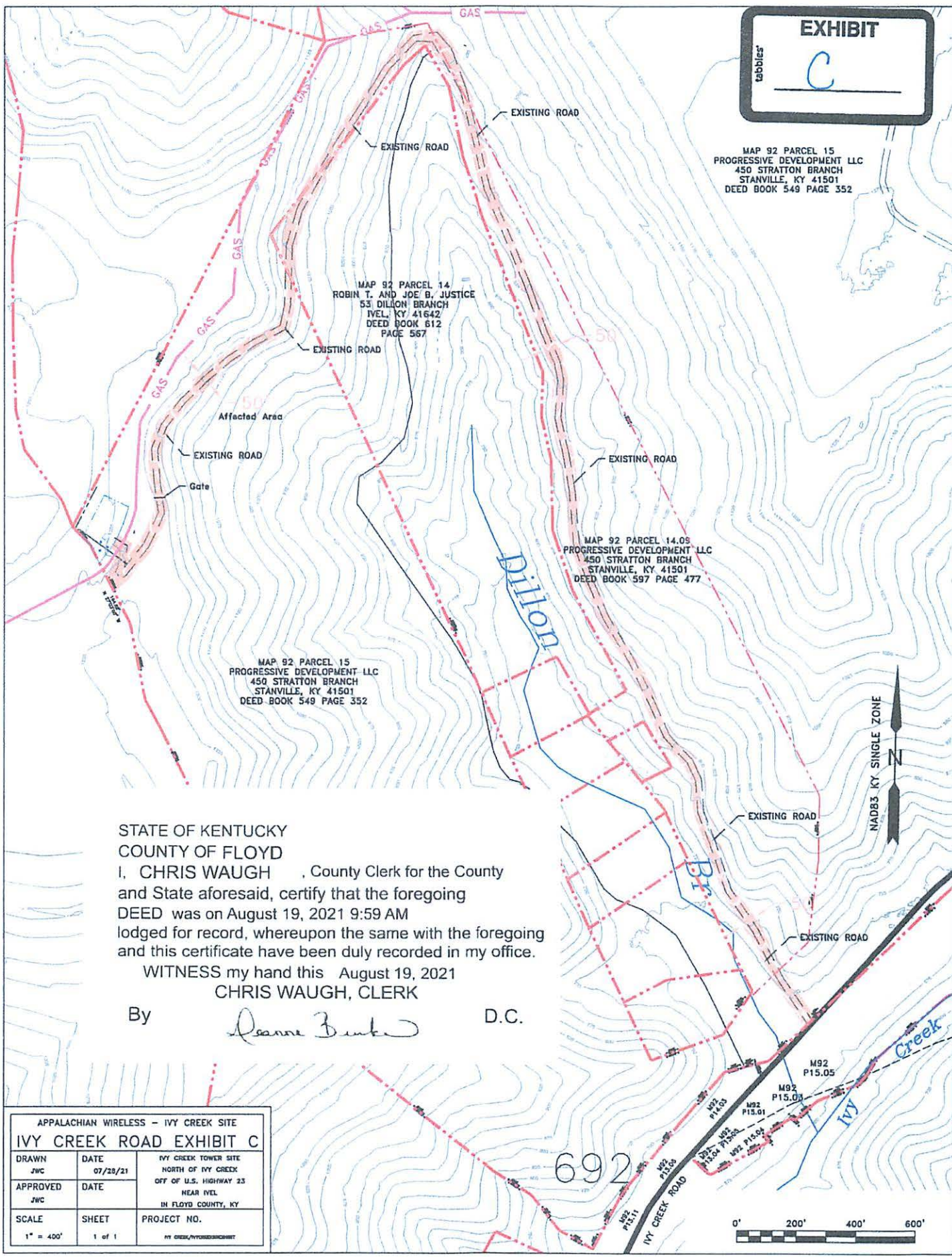
**EXHIBIT**  
 C

MAP 92 PARCEL 15  
 PROGRESSIVE DEVELOPMENT LLC  
 450 STRATTON BRANCH  
 STANVILLE, KY 41501  
 DEED BOOK 549 PAGE 352

MAP 92 PARCEL 14  
 ROBIN T. AND JDE B. JUSTICE  
 53 DILLON BRANCH  
 IVEL, KY 41642  
 DEED BOOK 612  
 PAGE 567

MAP 92 PARCEL 14.05  
 PROGRESSIVE DEVELOPMENT LLC  
 450 STRATTON BRANCH  
 STANVILLE, KY 41501  
 DEED BOOK 597 PAGE 477

MAP 92 PARCEL 15  
 PROGRESSIVE DEVELOPMENT LLC  
 450 STRATTON BRANCH  
 STANVILLE, KY 41501  
 DEED BOOK 549 PAGE 352



STATE OF KENTUCKY  
 COUNTY OF FLOYD  
 I, CHRIS WAUGH, County Clerk for the County  
 and State aforesaid, certify that the foregoing  
 DEED was on August 19, 2021 9:59 AM  
 lodged for record, whereupon the same with the foregoing  
 and this certificate have been duly recorded in my office.  
 WITNESS my hand this August 19, 2021  
 CHRIS WAUGH, CLERK

By *Deanne Bunker* D.C.

APPALACHIAN WIRELESS - IVY CREEK SITE		
IVY CREEK ROAD EXHIBIT C		
DRAWN JWC	DATE 07/20/21	IVY CREEK TOWER SITE NORTH OF IVY CREEK OFF OF U.S. HIGHWAY 23 NEAR IVEL IN FLOYD COUNTY, KY
APPROVED JWC	DATE	
SCALE 1" = 400'	SHEET 1 of 1	PROJECT NO. IVY CREEK/IVY0022020001



## EASEMENT AGREEMENT

THIS EASEMENT AGREEMENT is made and entered into this 04<sup>th</sup> day of August, 2021, by and between **ROBIN T. JUSTICE** and **JOE B. JUSTICE**, a married couple, with an address of 53 Dillon Branch, Ivel, Kentucky 41642 (hereinafter referred to as "Grantors"), and **EAST KENTUCKY NETWORK, LLC D/B/A APPALACHIAN WIRELESS**, a Kentucky limited liability company, whose address is 101 Technology Trail, Ivel, Kentucky 41642 (hereinafter referred to as "Grantee").

### WITNESSETH

That for and in consideration of the sum of Five Hundred and 00/100 Dollars (\$500.00), cash in hand paid, the receipt and sufficiency of which are hereby acknowledged, Grantors do hereby GRANT, SELL, and CONVEY to the Grantee, its successors and assigns, a non-exclusive easement on, over, and across the existing road located on that certain real property located in Ivel, Floyd County, Kentucky, and conveyed to Grantors by the Deed dated October 11, 2014, of record in Deed Book 612, Page 567 in the Floyd County Clerk's Office (hereinafter referred to as the "Property"), said existing roadway being generally shown on the plat **attached** hereto and made a part herein as **Exhibit A**, prepared by James W. Caudill, Licensed Professional Land Surveyor.

Grantors also convey to Grantee an easement and right of way to construct, maintain and operate telephone, fiber and/or power transmission lines and poles along or near the existing roads, if possible, and if not, then in a location to be mutually agreed between the parties, with Grantors' agreement not to be unreasonably withheld. Grantors shall execute instruments granting any easements requested by any utility company to provide utility services to the Property. Grantee shall have the right, but not the obligation, to maintain the easement and to trim or remove trees, limbs or underbrush which may interfere with its roads or power/telephone/fiber lines, wherever

such roads and lines are located. Grantee shall have the absolute right to convey, assign, or otherwise transfer, in whole or in part, the easement and rights of way herein granted to Grantee.


TO HAVE AND TO HOLD the same with all appurtenances and privileges thereunto belonging unto the Grantee, its successors and assigns forever, with covenant of GENERAL WARRANTY.

**[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]**



IN TESTIMONY WHEREOF, the parties have hereunto subscribed their names as of the date set forth herein.

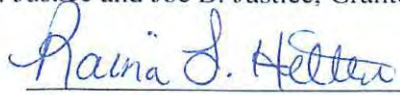
**GRANTORS:**

  
\_\_\_\_\_  
Robin T. Justice

  
\_\_\_\_\_  
Joe B. Justice

COMMONWEALTH OF KENTUCKY  
COUNTY OF FLOYD

The foregoing instrument was acknowledged before me on this 6<sup>th</sup> day of August, 2021, by Robin T. Justice and Joe B. Justice, Grantors.

  
\_\_\_\_\_  
Notary Public  
Commission No.: KYNP375

My Commission Expires 2-6-2024.



[SIGNATURES CONTINUE ON NEXT PAGE]

GRANTEE:

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 9<sup>th</sup> day of August, 2021, by W.A. Gillum, CEO/General Manager of East Kentucky Network, LLC d/b/a Appalachian Wireless.

Raina D. Helton

Notary Public  
Commission No.: KYNP375

My Commission Expires: 2-6-2024

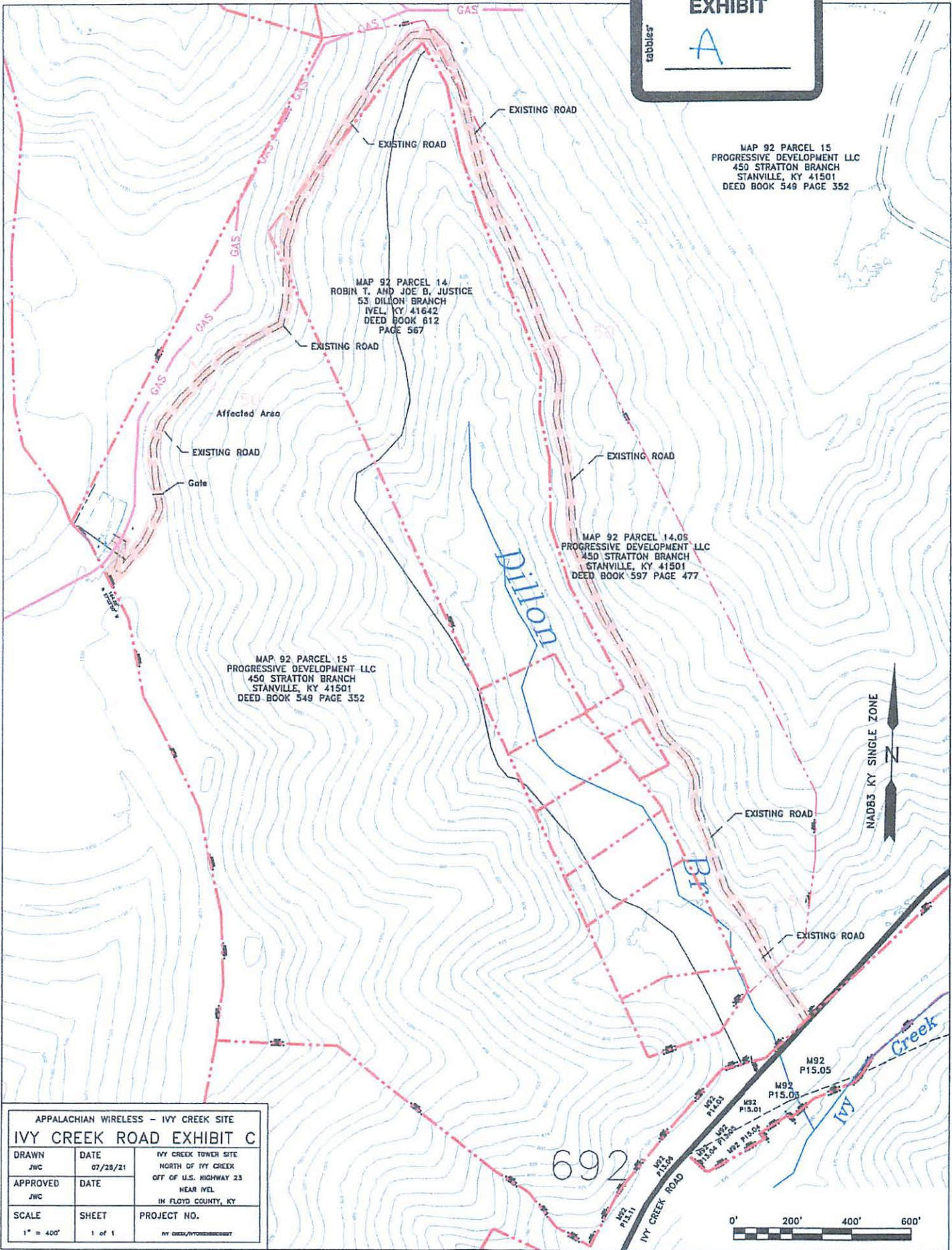


This instrument was prepared by:

Krystal Branham

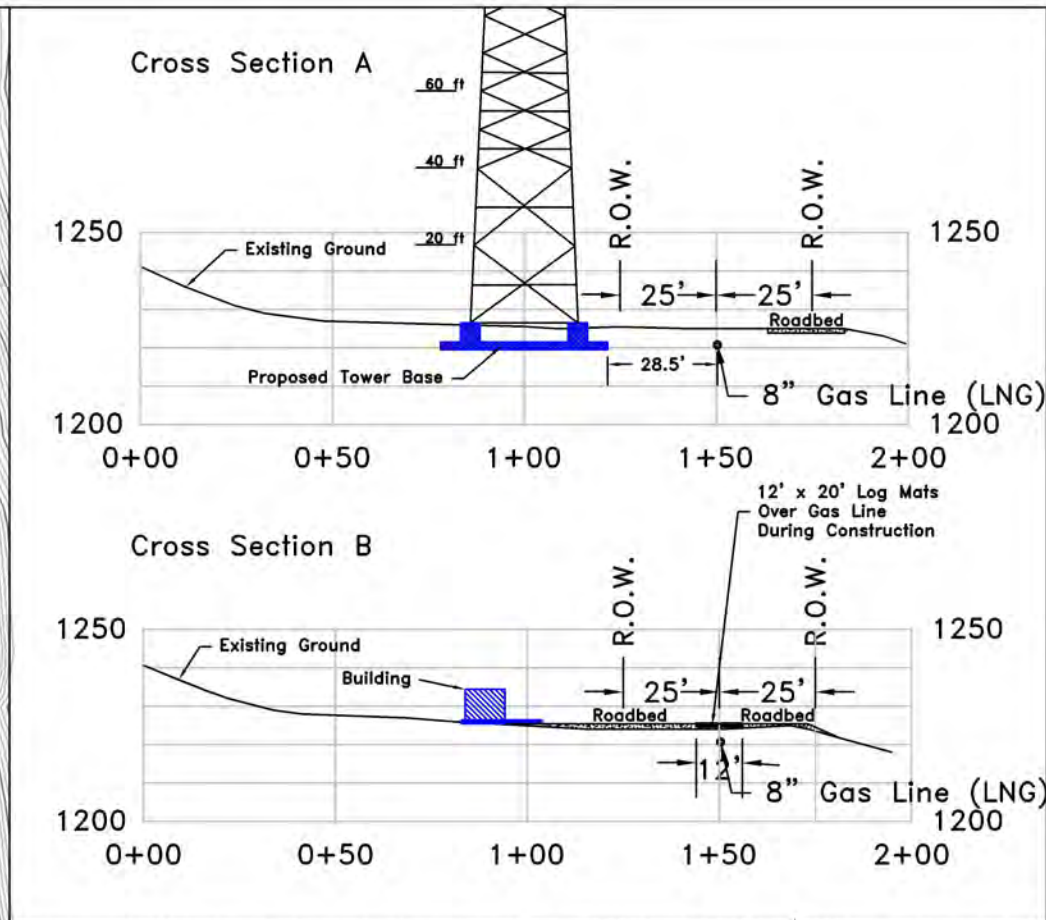
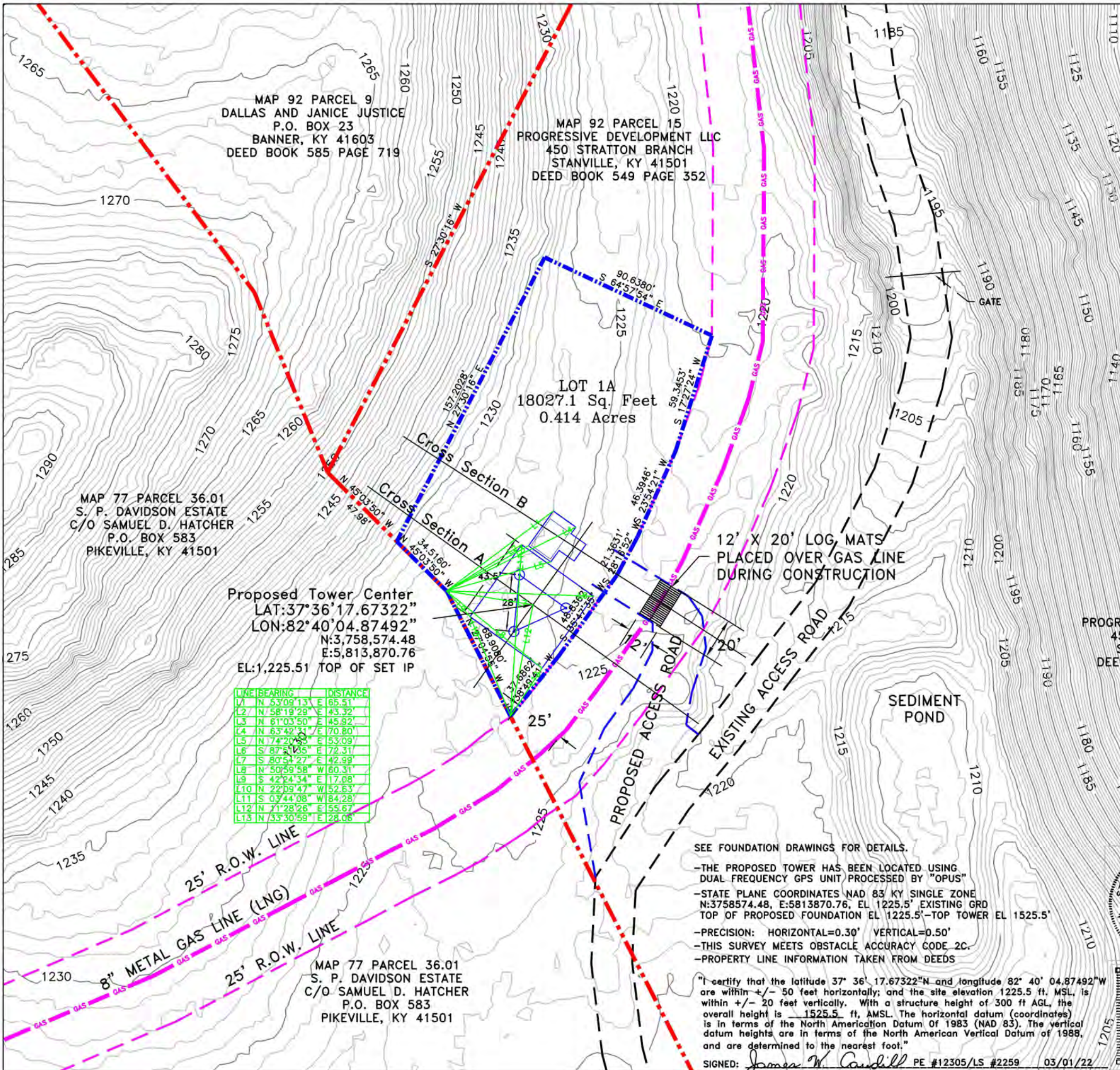
Krystal Branham, Attorney  
101 Technology Trail  
Ivel, Kentucky 41642  
(606) 477-2355

**EXHIBIT**  
 A

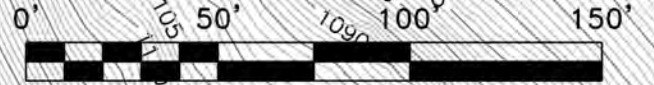


APPALACHIAN WIRELESS - IVY CREEK SITE		
IVY CREEK ROAD EXHIBIT C		
DRAWN JWC	DATE 07/29/21	IVY CREEK TOWER SITE NORTH OF IVY CREEK OFF OF U.S. HIGHWAY 23 NEAR IVEL IN FLOYD COUNTY, KY
APPROVED JWC	DATE	
SCALE 1" = 400'	SHEET 1 of 1	PROJECT NO. IVY CREEK/17020800000000

# Exhibit 9



MAP 92 PARCEL 15  
PROGRESSIVE DEVELOPMENT LLC  
450 STRATTON BRANCH  
STANVILLE, KY 41501  
DEED BOOK 549 PAGE 352



NAD83 KY SINGLE ZONE

SEE FOUNDATION DRAWINGS FOR DETAILS.

- THE PROPOSED TOWER HAS BEEN LOCATED USING DUAL FREQUENCY GPS UNIT PROCESSED BY "OPUS"
- STATE PLANE COORDINATES NAD 83 KY SINGLE ZONE N:3758574.48, E:5813870.76, EL 1225.5' EXISTING GRD TOP OF PROPOSED FOUNDATION EL 1225.5'-TOP TOWER EL 1525.5'
- PRECISION: HORIZONTAL=0.30' VERTICAL=0.50'
- THIS SURVEY MEETS OBSTACLE ACCURACY CODE 2C.
- PROPERTY LINE INFORMATION TAKEN FROM DEEDS

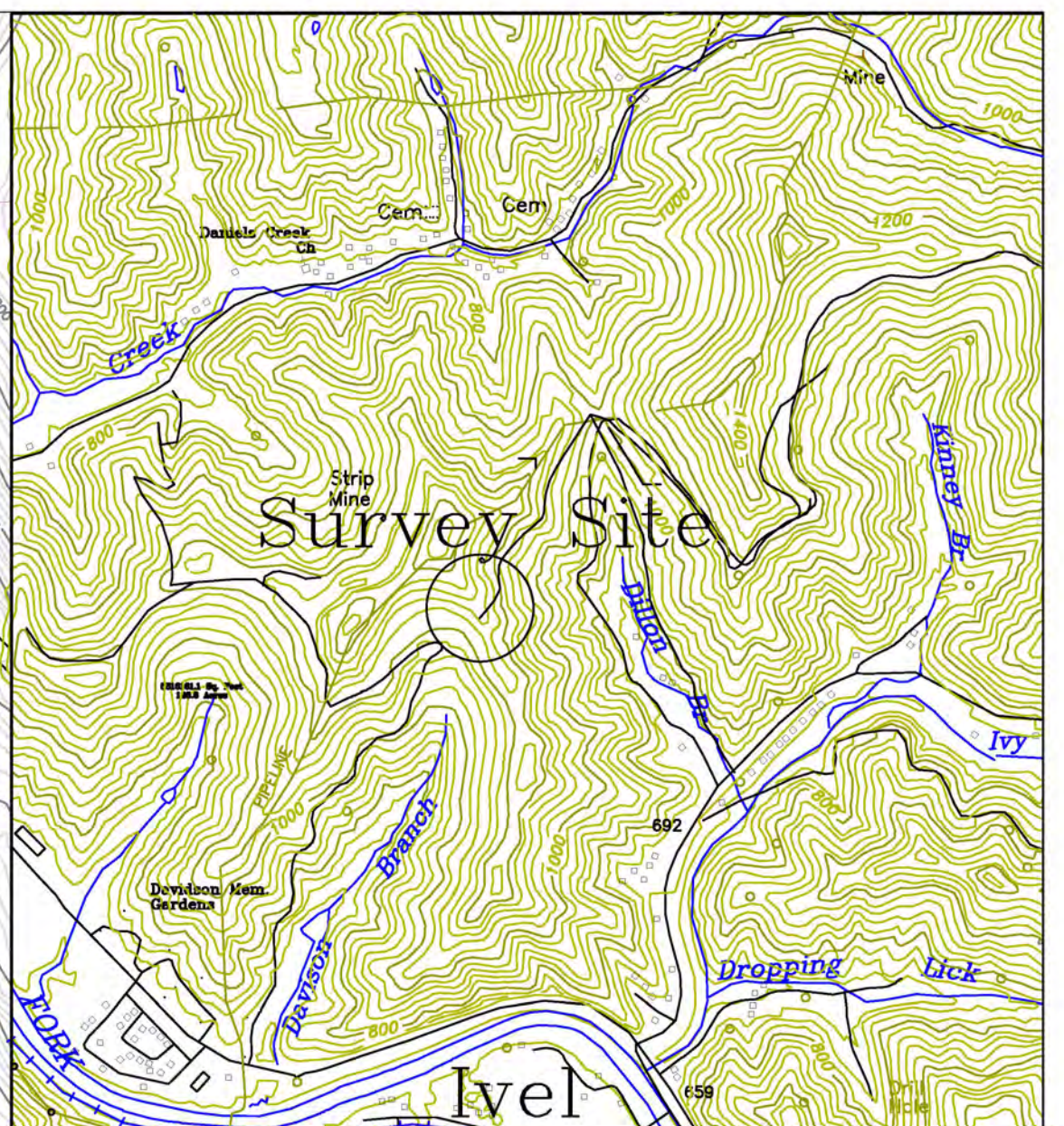
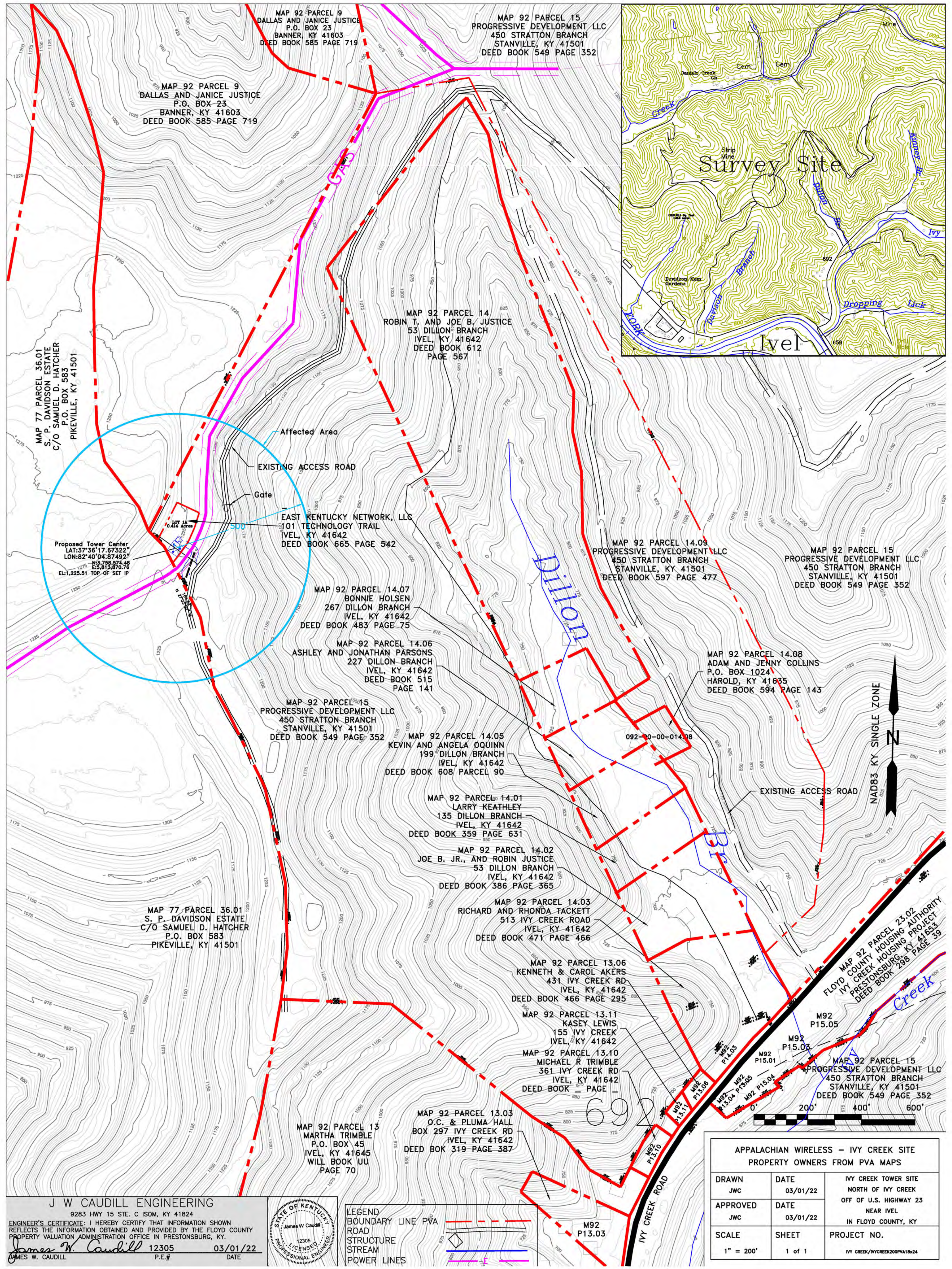
"I certify that the latitude 37° 36' 17.67322"N and longitude 82° 40' 04.87492"W are within +/- 50 feet horizontally; and the site elevation 1225.5 ft. MSL, is within +/- 20 feet vertically. With a structure height of 300 ft AGL, the overall height is 1525.5 ft, AMSL. The horizontal datum (coordinates) 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 03/01/22



APPALACHIAN WIRELESS - IVY CREEK SITE PROPOSED SITE PLAN AND STRUCTURE LOCATION		
DRAWN JWC	DATE 03/01/22	IVY CREEK TOWER SITE DETAIL SITE PLAN NORTH OF IVY CREEK OFF OF U.S. HIGHWAY 23 IN FLOYD COUNTY, KY
APPROVED JWC	DATE 03/01/22	
SCALE 1" = 50'	SHEET 2 of 3	PROJECT NO. IVY CREEK/IVYCRK_2C_50

# Exhibit 10



MAP 92 PARCEL 9  
DALLAS AND JANICE JUSTICE  
P.O. BOX 23  
BANNER, KY 41603  
DEED BOOK 585 PAGE 719

MAP 92 PARCEL 15  
PROGRESSIVE DEVELOPMENT LLC  
450 STRATTON BRANCH  
STANVILLE, KY 41501  
DEED BOOK 549 PAGE 352

MAP 77 PARCEL 36.01  
S. P. DAVIDSON ESTATE  
C/O SAMUEL D. HATCHER  
P.O. BOX 583  
PIKEVILLE, KY 41501

Proposed Tower Center  
LAT: 37°36'17.67322"  
LON: 82°40'04.87492"  
NS 758.574.48  
ES 813.870.76  
EL: 1,225.51 TOP OF SET IP

MAP 92 PARCEL 14  
ROBIN T. AND JOE B. JUSTICE  
53 DILLON BRANCH  
IVEL, KY 41642  
DEED BOOK 612  
PAGE 567

EAST KENTUCKY NETWORK, LLC  
101 TECHNOLOGY TRAIL  
IVEL, KY 41642  
DEED BOOK 665 PAGE 542

MAP 92 PARCEL 14.07  
BONNIE HOLSEN  
267 DILLON BRANCH  
IVEL, KY 41642  
DEED BOOK 483 PAGE 75

MAP 92 PARCEL 14.06  
ASHLEY AND JONATHAN PARSONS  
227 DILLON BRANCH  
IVEL, KY 41642  
DEED BOOK 515  
PAGE 141

MAP 92 PARCEL 15  
PROGRESSIVE DEVELOPMENT LLC  
450 STRATTON BRANCH  
STANVILLE, KY 41501  
DEED BOOK 549 PAGE 352

MAP 92 PARCEL 14.05  
KEVIN AND ANGELA QUINN  
199 DILLON BRANCH  
IVEL, KY 41642  
DEED BOOK 608 PARCEL 90

MAP 92 PARCEL 14.01  
LARRY KEATHLEY  
135 DILLON BRANCH  
IVEL, KY 41642  
DEED BOOK 359 PAGE 631

MAP 92 PARCEL 14.02  
JOE B. JR., AND ROBIN JUSTICE  
53 DILLON BRANCH  
IVEL, KY 41642  
DEED BOOK 386 PAGE 365

MAP 92 PARCEL 14.03  
RICHARD AND RHONDA TACKETT  
513 IVY CREEK ROAD  
IVEL, KY 41642  
DEED BOOK 471 PAGE 466

MAP 92 PARCEL 13.06  
KENNETH & CAROL AKERS  
431 IVY CREEK RD  
IVEL, KY 41642  
DEED BOOK 466 PAGE 295

MAP 92 PARCEL 13.11  
KASEY LEWIS  
155 IVY CREEK  
IVEL, KY 41642

MAP 92 PARCEL 13.10  
MICHAEL R TRIMBLE  
361 IVY CREEK RD  
IVEL, KY 41642  
DEED BOOK - PAGE -

MAP 92 PARCEL 13.03  
O.C. & PLUMA HALL  
BOX 297 IVY CREEK RD  
IVEL, KY 41642  
DEED BOK 319 PAGE 387

MAP 77 PARCEL 36.01  
S. P. DAVIDSON ESTATE  
C/O SAMUEL D. HATCHER  
P.O. BOX 583  
PIKEVILLE, KY 41501

MAP 92 PARCEL 14.08  
ADAM AND JENNY COLLINS  
P.O. BOX 1024  
HAROLD, KY 41635  
DEED BOOK 594 PAGE 143

MAP 92 PARCEL 15  
PROGRESSIVE DEVELOPMENT LLC  
450 STRATTON BRANCH  
STANVILLE, KY 41501  
DEED BOOK 549 PAGE 352

MAP 92 PARCEL 14.09  
PROGRESSIVE DEVELOPMENT LLC  
450 STRATTON BRANCH  
STANVILLE, KY 41501  
DEED BOOK 597 PAGE 477

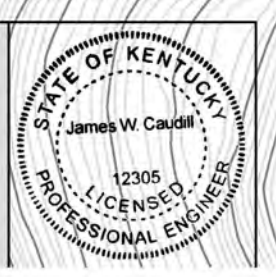
MAP 92 PARCEL 23.02  
FLOYD COUNTY HOUSING AUTHORITY  
IVY CREEK HOUSING PROJECT  
PRESTONSBURG, KY 41653  
DEED BOOK 298 PAGE 39

MAP 92 PARCEL 15  
PROGRESSIVE DEVELOPMENT LLC  
450 STRATTON BRANCH  
STANVILLE, KY 41501  
DEED BOOK 549 PAGE 352

**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 03/01/22  
JAMES W. CAUDILL P.E.# DATE



**LEGEND**

- BOUNDARY LINE PVA
- ROAD
- STRUCTURE
- STREAM
- POWER LINES

APPALACHIAN WIRELESS - IVY CREEK SITE PROPERTY OWNERS FROM PVA MAPS		
DRAWN JWC	DATE 03/01/22	IVY CREEK TOWER SITE NORTH OF IVY CREEK OFF OF U.S. HIGHWAY 23 NEAR IVEL IN FLOYD COUNTY, KY
APPROVED JWC	DATE 03/01/22	
SCALE 1" = 200'	SHEET 1 of 1	PROJECT NO. IVY CREEK/IVYCREEK200PVA18x24

# Exhibit 11



APPALACHIAN WIRELESS  
 101 TECHNOLOGY TRAIL  
 IVEL, KY. 41642  
 PROPOSED NEW TOWER  
 IVY CREEK IN FLOYD COUNTY

# PROFILE WITH TOWER

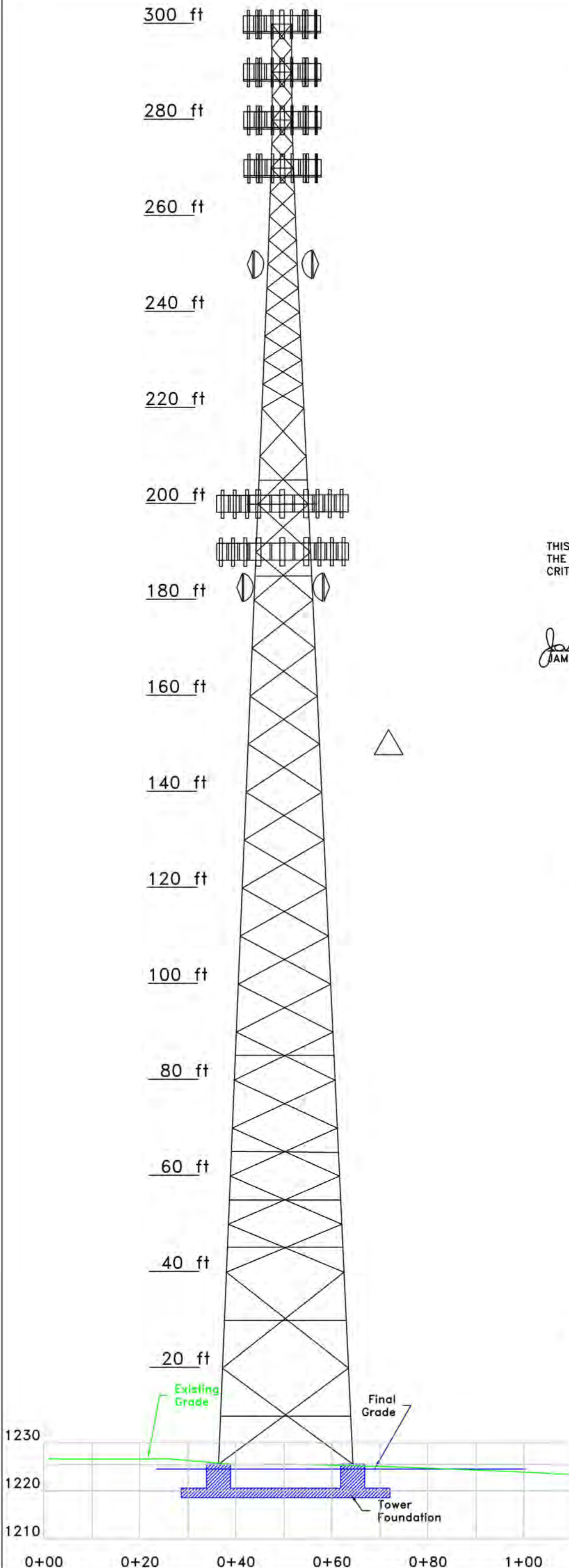
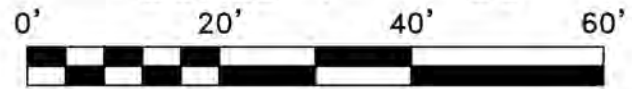
THIS IS A VERTICAL PROFILE SKETCH OF THE TOWER INDICATING THE PROPOSED ANTENNA AND DISH ELEVATIONS. NO DESIGN CRITERIA WAS CONSIDERED IN THE PREPARATION OF THIS DRAWING.

*James W. Caudill* 12305 03/01/2022  
 JAMES W. CAUDILL PE #. DATE

NOTE: SEE FOUNDATION DRAWINGS FOR DETAILS

03/01/2022

SCALE 1" = 20'



East Kentucky Network d/b/a Appalachian Wireless 101 Technology Trail, Ivel, KY 41642		
DRAWN JWC	DATE 03/01/2022	IVY CREEK TOWER SITE DETAIL SITE PLAN NORTH OF IVY CREEK OFF OF U.S. HIGHWAY 23 IN FLOYD COUNTY, KY
APPROVED JWC	DATE 03/01/2022	
SCALE 1" = 20'	SHEET 3 of 3	PROJECT NO. IVY CREEK/IVYCREEK_PRO_20

# Exhibit 12

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

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

# Exhibit 13

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

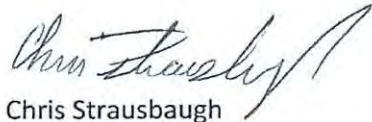
Kentucky Public Service Commission  
211 Sower Blvd.  
P.O. Box 615  
Frankfort, KY 40602-0615

Dear Commissioners:

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