

**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. 2020-00223
CONSTRUCT A TOWER IN LETCHER COUNTY,)
KENTUCKY)

East Kentucky Network, LLC, d/b/a Appalachian Wireless, was granted authorization to provide cellular service in the KY-10 Cellular Market Area (CMA452) by the Federal Communications Commission (FCC). FCC license is included as Exhibit 1. East Kentucky Network, LLC merger documents were filed with the Commission on February 2, 2001 in Case No. 2001-022. East Kentucky Network, LLC is a Kentucky Limited Liability Company that was organized on June 16, 1998. East Kentucky Network, LLC is in good standing with the state of Kentucky.

In an effort to improve service in Knott 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 100-foot telecommunications tower on a tract of land located at 822 Highway 2034, Whitesburg, Letcher County, Kentucky (37°07'11.1264"N 82°47'36.7491"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 Letcher 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 or residents 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 Public Valuation Administrator's records.

Pursuant to 807 KAR 5:063 Section 1(1)(l), Section 1(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.

Letcher County has no formal local planning unit. In absence of this unit, the Letcher 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 Letcher 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 Mountain Eagle, July 15, 2020, edition, copies of which are enclosed as Exhibit 3. The Mountain Eagle is the newspaper with the largest circulation in Letcher 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 TAPP, Inc. and will be constructed under their supervision. Their qualifications are evidenced in Exhibit 5 by the seal and signature of the registered professional engineer responsible for this project.

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

FAA approval and KAZC confirmation that a permit is not required are included as Exhibit 6.

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

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

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

Two notice signs meeting the requirements prescribed by 807 KAR 5:063, Section 1(2), measuring at least two (2) feet in height and four (4) feet in width and containing all required language in letters of required height, have been posted, one at a visible location on the proposed site and one on the nearest public road. The two signs were posted on July 9, 2020, and will remain posted for at least two weeks after filing of this application as specified.

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

The proposed construction site is on an existing telecommunications site.

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, corporation, 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, and 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 at 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: *7/15/2020*
Lynn Haney, Regulatory Compliance Director

APPROVED BY: *W.A. Gillum* DATE: *7/10/2020*
W.A. Gillum, General Manager

ATTORNEY: *Krystal Branham* DATE: *7/13/2020*
Hon. Krystal Branham, Attorney

CONTACT INFORMATION:

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

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

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

Mailing Address:

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

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

ULS License

Cellular License - KNKN809 - East Kentucky Network, LLC d/b/a Appalachian Wireless

Call Sign	KNKN809	Radio Service	CL - Cellular
Status	Active	Auth Type	Regular

Market

Market	CMA452 - Kentucky 10 - Powell	Channel Block	B
Submarket	0	Phase	2

Dates

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

Five Year Buildout Date

10/17/1996

Control Points

1 US Route 23, FLOYD, Harold, KY
P: (606)478-2355

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
P:(606)477-2355

Contact

Lukas, Nace, Gutierrez & Sachs, LLP	P:(703)584-8665
Pamela L Gist Esq	F:(703)584-8695
8300 Greensboro Drive	E:pgist@fclaw.com
McLean, VA 22102	

Ownership and Qualifications

Radio Service Type	Mobile
Regulatory Status	Common Carrier Interconnected Yes

Alien Ownership

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

Basic Qualifications

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

Demographics

Race

Ethnicity

Gender

EXHIBIT 2 - 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

Paul D. Brooks
P.O. Box 279
Whitesburg, KY 41858

W.D. Childers Realty
P.O. Box 430
Whitesburg, KY 41858

Isaac Hall and Ruby White Hall
304 Cedar Creek Road
Pikeville, KY 41501

Thacker-Grigsby Telephone Company
P.O. Box 789
Hindman, KY 41822

Letcher County Board of Education
224 Park Street
Whitesbug, KY 41858

Mae C. Amburgey
P.O. Box 54
Ermine, KY 41815

Dan Combs
Box 176
Whitesburg, KY 41858

Stephen Gregory Amburgey
C/O Melissa Crovetti
1981 Haven Lane
Green Oaks, IL 60048

Combs Cemetery
Whitesburg, KY 41858

Fultz Properties Ermine, LLC
P.O. Box 43
Mayking, KY 41837

James E. Sturgill
Box 28
Ermine, KY 41815

Interproperty Investments, Inc.
2083 Manor Drive
Lexington, KY 40502

Cornerstone Church
P.O. Box 904
Whitesburg, KY 41858

Childers Oil Co. Inc.
P.O. Box 430
Whitesburg, KY 41858

William Ronald Cain II
906 East Mt. Vernon St.
Somerset, KY 42501



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

July 16, 2020

Paul D. Brooks
P.O. Box 279
Whitesburg, KY 41858

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00233)

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 Letcher County. The facility will include a 100'-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land at 822 Highway 2034, Whitesburg, Letcher County, Kentucky. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

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

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2020-00233 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

July 16, 2020

W.D. Childers Realty
P.O. Box 430
Whitesburg, KY 41858

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00233)

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Regulatory Compliance Director
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July 16, 2020

Isaac Hall and Ruby White Hall
304 Cedar Creek Road
Pikeville, KY 41501

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P.O. Box 789
Hindman, KY 41822

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July 16, 2020

Letcher County Board of Education
224 Park Street
Whitesburg, KY 41858

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Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

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PUBLIC NOTICE

July 16, 2020

Mae C. Amburgey
P.O. Box 54
Ermine, KY 41815

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Lynn Haney, CPA
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PUBLIC NOTICE

July 16, 2020

Dan Combs
Box 176
Whitesburg , KY 41858

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Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

July 16, 2020

Stephen Gregory Amburgey
C/O Melissa Crovetti
1981 Haven Lane
Green Oaks, IL 60048

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00233)

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Lynn Haney, CPA
Regulatory Compliance Director



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

July 16, 2020

Combs Cemetery
Whitesburg, KY 41858

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Lynn Haney, CPA
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PUBLIC NOTICE

July 16, 2020

Fultz Properties Ermine, LLC
P.O. Box 43
Mayking, KY 41837

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00233)

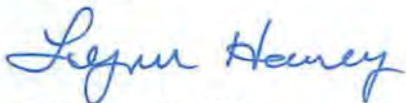
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Lynn Haney, CPA
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Enclosure 1



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PUBLIC NOTICE

July 16, 2020

James E. Sturgill
Box 28
Ermine, KY 41815

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Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

July 16, 2020

Interproperty Investments, Inc.
2083 Manor Drive
Lexington, KY 40502

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Lynn Haney, CPA
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Enclosure 1



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PUBLIC NOTICE

July 16, 2020

Cornerstone Church
P.O. Box 904
Whitesburg, KY 41858

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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 Letcher County. The facility will include a 100'-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land at 822 Highway 2034, Whitesburg, Letcher County, Kentucky. 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.

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Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2020-00233 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

July 16, 2020

Childers Oil Co. Inc.
P.O. Box 430
Whitesburg , KY 41858

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00233)

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 Letcher County. The facility will include a 100'-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land at 822 Highway 2034, Whitesburg, Letcher County, Kentucky. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

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

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2020-00233 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

July 16, 2020

William Ronald Cain II
906 East Mt. Vernon St.
Somerset, KY 42501

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00233)

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 Letcher County. The facility will include a 100'-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land at 822 Highway 2034, Whitesburg, Letcher County, Kentucky. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

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

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2020-00233 in your correspondence.

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

Sincerely,



Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

Ermine

Location:

822 Highway 2034
Whitesburg, KY 41815

Coordinates:

37°07'11.1264"N
82°47'36.7491"W



Google Earth

© 2020 Google

2034

Cs-1003

Cs-1002

Aloca

119

Ermine

Proposed Ermine Tower

Friday Branch

Garden

Hammonds Branch Rd

2000 ft



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

EAST KENTUCKY
NETWORK



To: The Mountain Eagle
Attn: Classifieds

From: Raina Helton
Regulatory Compliance Assistant

Email: Pwalker_eagle@hotmail.com

Date: July 9, 2020

Re: PUBLIC NOTICE ADVERTISEMENT

Pages: 1

Please place the following Public Notice Advertisement in The Mountain Eagle to be ran on July 15, 2020.

PUBLIC NOTICE:

RE: Public Service Commission of Kentucky (CASE NO. 2020-00223)

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 at 822 Highway 2034, Whitesburg, Letcher County, Kentucky. The proposed tower will be a 100 foot monopole tower with attached antennas. If you would like to respond to this notice, please contact the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to Case No. 2020-00223.

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

Thank you,

Raina Helton
Regulatory Compliance Assistant

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

VIA: U.S. CERTIFIED MAIL

July 16, 2020

Terry Adams, Judge Executive
156 Main Street, Suite 107
Whitesburg, KY 41858

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00233)

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 Letcher County. The facility will include a 100-foot monopole tower with attached antennas extending upwards, and an equipment shelter located on a tract of land at 822 Highway 2034, Whitesburg, Letcher 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 Letcher County.

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

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2020-00233 in your correspondence.

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

Sincerely,



Lynn Haney
Regulatory Compliance Director
Enclosure

Ermine

Location:

822 Highway 2034
Whitesburg, KY 41815

Coordinates:

37°07'11.1264"N
82°47'36.7491"W





230 Swartz Drive • Hazard • Kentucky • 41701

Phone (606) 551-1050

EAST KENTUCKY ENGINEERING, LLC.

**APPALACHIAN WIRELESS
Geotechnical Investigation on the
Ermine Tower Site
Letcher County, Kentucky
EKYENG Project No. 165-000-0105**

PREPARED FOR:

Appalachian Wireless.
101 Technology Trail
Ivel, Kentucky 41642

PREPARED BY:

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



, 20215, April 14th, 2020



EAST KENTUCKY ENGINEERING, LLC.

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SPECIFICATIONS

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APPENDIX E– MAPS



EAST KENTUCKY ENGINEERING, LLC.

EXECUTIVE SUMMARY

A geotechnical investigation has been performed on the Ermine Tower Site, located in Letcher County, Kentucky. This site is readily accessible. A location map is shown in Figure 1 of this report. One (1) boring was advanced to a maximum depth of 33.0 ft. The following geotechnical considerations were identified:

- The boring utilized for this study encountered fill material to a depth of 14.0, silts and clays to a depth of 23 feet, and sandstone to a depth of 33.0 ft.
- The estimated maximum base elevation of the tower is to be 25 to 32 ft in depth within the sandstone unit.
- This site is in a blacktop parking lot, next to an existing telecommunications building, in Ermine, KY.
- **The allowable bearing capacities are estimated at six tsf on this sandstone unit from 1150' to 1143'.** See Section 5.2 for additional recommendations.
- The 2015 International Building Code seismic site classification for this site is "A."
- If, during the foundation design, it becomes necessary to lower or raise the footer, alternate design recommendations can be provided by EKYENG.
- Close monitoring of the construction operations discussed herein will be critical in achieving the design subgrade support. We, therefore, recommend that EKYENG is retained to monitor this portion of the work.

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



EAST KENTUCKY ENGINEERING, LLC.

1. INTRODUCTION

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

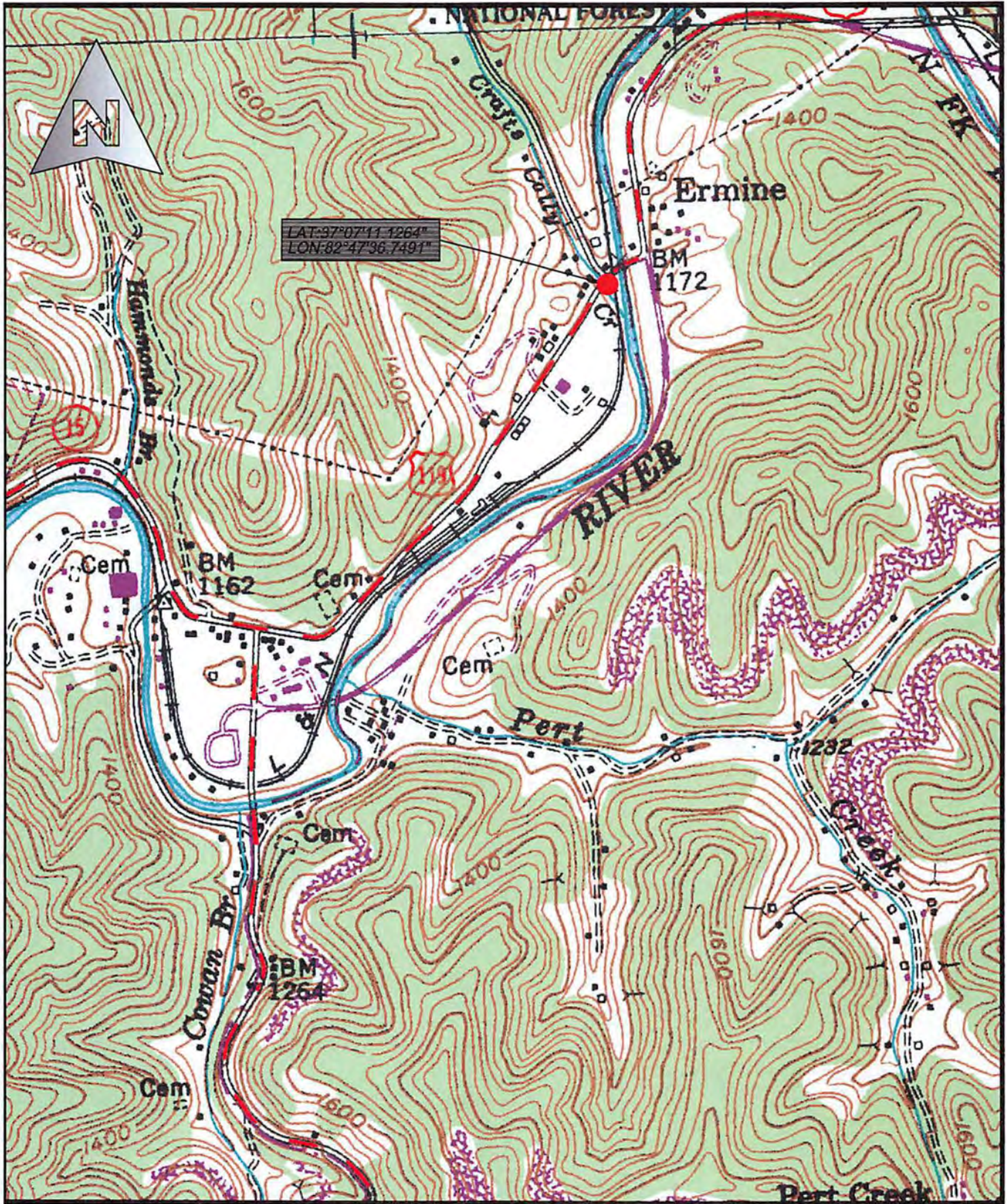
One (1) boring was advanced to a maximum depth of 33.0 ft. Horn and Associates, Inc. provided drilling services to obtain this boring. Logs of the boring along with a boring location plan are included in Appendix A and Appendix D. The purpose of these services is to provide information and geotechnical engineering recommendations about subsurface conditions, earthwork, seismic considerations, groundwater conditions and foundation design.

2.0 PROJECT DESCRIPTION

The proposed communication facility will consist of a self-supporting tower of undetermined height and ancillary support areas. The footing area is estimated to be an 8 ft diameter circular pier, with an estimated base of the tower footer elevation between **1150' to 1143'**. Based on the information provided, we estimate the structural loads will be like the following conditions;

CONDITION	LOAD
Total Shear	40 Kips
Axial Load	50 Kips

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



LAT: 37°07'11.1264"
 LON: 82°47'36.7491"

Drawn: RDS	4/14/2020
Job: 165-105	Scale: 1"=1000'

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

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



EAST KENTUCKY ENGINEERING, LLC.

3.0 SITE DESCRIPTION & HISTORICAL MINING

3.1 GENERAL INFORMATION

The site location is in a blacktop parking lot, next to an existing telecommunications building, in Letcher County, Kentucky. The current surface elevation is approximately 1176 ft. Research on the historical mining was conducted by obtaining previous mine license maps from the "Kentucky Mine Mapping Information System" (KMMIS).

3.2 SURFACE MINING

No issues from surface mining activities are expected at this site location.

3.3 UNDERGROUND MINING

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

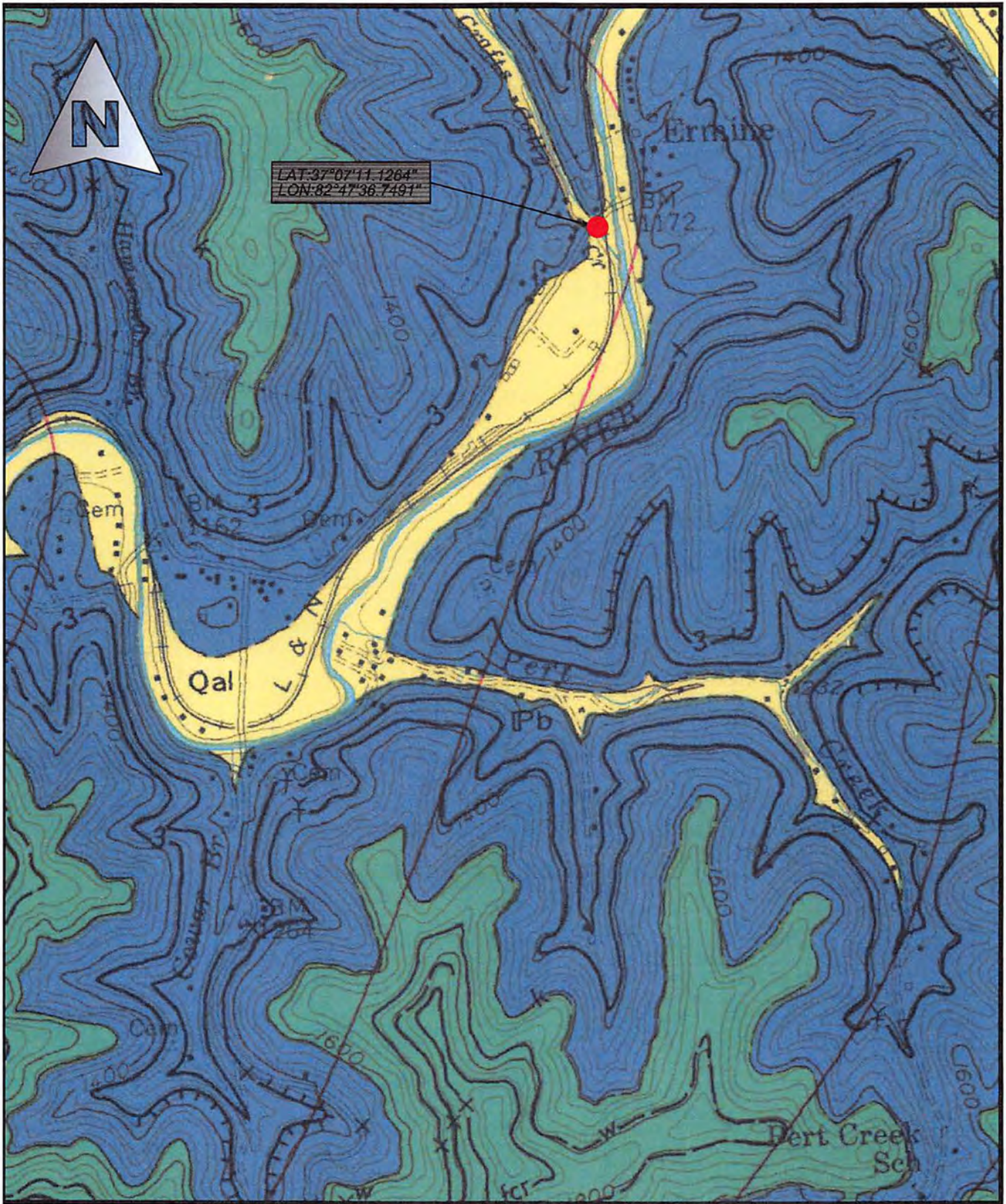
3.4 FLOOD HAZARD

A flood determination was conducted by EKYENG. For this determination, the FEMA Flood Map Service was reviewed for this location. The flood map for the selected area is number **21133C0231C-210140**. The flood zone for this area is Zone A and is an area without a base flood elevation. A FIRMette map is included in Appendix C of this report. A permit application to construct along a stream has been submitted to the Kentucky Division of Water to address this construction.

4.0 FIELD EXPLORATION

4.1 SITE INFORMATION

The proposed site is located in a blacktop parking lot in Ermine, KY, next to an existing telecommunications building, in Letcher County, Kentucky. The site lies within the Whitesburg Quadrangle. The site is readily accessible by conventional



Drawn: RDS	4/14/2020
Job: 165-105	Scale: 1"=1000'

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

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



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exploratory equipment. An estimated pad location was determined based on the information provided. Foundation dimensions were estimated to be an 8 ft. diameter circular pier footer for this report.

4.2 BORING DATA

One (1) boring was made in the relative position shown on the Site Map in Appendix D. The boring logs and resulting data are included in Appendix A. This boring was made with a track mounted boring rig using hollow-stem augers and employing standard penetration resistance methods (ASTM D-1586, which includes 140-pound hammer, 30-inch drop, and two-inch-O.D. split-spoon sampler) at maximum depth intervals of five feet or at major changes in stratum, whichever occurred first. The disturbed split-spoon samples were visually classified, logged, sealed in moisture-proof jars, and taken to the EKYENG laboratory for study. The depths where these "A"-type split-spoon samples were collected are noted on the boring logs. The results of the natural moisture contents by boring and interval are shown in Table 2.

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

SAMPLE NO.	DEPTH INCREMENT, (FT.)	NATURAL MOISTURE CONTENT, %
B1 S-1	1.5 – 3.0	10.7%
B1 S-2	4.0 – 5.5	36.3%
B1 S-3	6.5 – 8.0	15.8%
B1 S-4	9.0 – 9.4	11.1%
B1 S-5	14.0 – 15.5	23.1%



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B1 S-6	19.0 – 20.5	14.8%
--------	-------------	-------

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

TABLE NO. 3
STANDARD PENETRATIONS

SAMPLE NO.	DEPTH INCREMENT	BLOW COUNT / RQD *	DESCRIPTION
B-1 S-1	1.5-3.0	7-11-5	Blacktop, DGA, Fill Material
B-1 S-2	4.0-5.5	0-1-0	Fill Material
B-1 S-3	6.5-8.0	2-10-6	Fill Material
B-1 S-4	9.0-9.4	50/4*	Fill Material
B-1 S-5	14.0-15.5	WH**	Very Soft Silts
B-1 S-6	19.0-20.5	1-1-5	Very Soft Silts
B-1 R-1	23.0-33.0	5.0*	Gray Sandstone

***weight of hammer only.*

The boring encountered fill material to a depth of 14 ft, soft silts to a depth of 23.0 ft. The boring was extended by "NX" size rock core that was 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. This boring is between 23.0 ft. and 33.0 ft in depth and consisted of gray sandstone. The position at which the core was taken is indicated on the boring logs and shown on the boring location map in Appendix D.

4.3 GROUNDWATER

Groundwater in Eastern Kentucky is characterized by water flowing through a system of internal fractures that lead to an alluvial aquifer near the bottom of valley floors. This proposed tower is located in the alluvial valley floor and ground



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water was encountered at a depth of 20 feet. This is 3 ft above the underlying sandstone that is the proposed bearing foundation, therefore no issues are expected with groundwater.

4.4 SEISMIC SITE CLASSIFICATION

Based on the encountered soil conditions at the project site, the site classification was determined to be "Site Class A" per the 2015 Kentucky Building Code. In addition, an S_{Ds} coefficient of 0.35 g was calculated, and an S_{D1} coefficient of 0.127 g was also calculated for design based on the aforementioned building code.

5.0 DISCUSSION AND RECOMMENDATIONS

5.1 GENERAL

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

5.2 DRILLED PIER FOUNDATION RECOMMENDATIONS

If drilled piers are used for foundation support, we recommend the following design parameters.



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TABLE NO. 1

Approx. Depth (ft.)	Allowable Skin Friction (psf.)	Allowable End Bearing Pressure (psf.)	Effective Unit Weight (pcf.)	Cohesion (psf.)	Internal Angle of Friction (Degrees)
Asphalt W/Base 0 – 1.5	Ignore	Ignore	Ignore	Ignore	Ignore
Fill 0.0 - 14.0	150	Ignore	120	Ignore	27
Silts and Sands 14.0 to 23.0	75	Ignore	105	70	22
Gray Sandstone 23.0 – 33.0	2500	12,000	170	-----	33

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.

5.3 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



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always remain open sufficiently long enough for the measured water level to coincide with the groundwater table.

6.2 LABORATORY AND FIELD TESTS

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

6.3 ANALYSIS AND RECOMMENDATIONS

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

Our engineering report recommendations are based primarily on data from test borings made at the locations shown in a boring location drawing included. Soil variations may exist between borings, and these variations may not become evident until construction. If significant variations are then noted, the geotechnical 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



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

6.5 GENERAL

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

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

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



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independent conclusions, opinions or recommendations made by others based on the field exploratory and laboratory test data presented in this report.



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SPECIFICATIONS

I - GENERAL

1.0 STANDARDS AND DEFINITIONS

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

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

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

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

1.2 DEFINITIONS

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

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

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

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

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

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



EAST KENTUCKY ENGINEERING, LLC.

2.0 GENERAL CONDITIONS

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

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

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

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

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

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



EAST KENTUCKY ENGINEERING, LLC.

II - ENGINEERED FILL BENEATH STRUCTURES CLEARING AND GRADING SPECIFICATIONS

1.0 GENERAL CONDITIONS

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

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

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

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

2.0 SUBSURFACE CONDITIONS

Prior to bidding the work, the Contractor shall examine, investigate and inspect the construction site as to the nature and location of the work, and the general and local conditions at the construction site, including without limitation, the character of surface or subsurface conditions and obstacles to be encountered on and around the construction site; and shall make such additional investigation as he may deem necessary for the planning and proper execution of the work. Borings and/or soil investigations shall have been made. Results of these borings and studies will be made available by the Owner to the Contractor upon his request, but the Owner is not responsible for any interpretations or conclusions with respect thereto made by the Contractor based on such information, and the Owner further has no responsibility for the accuracy of the borings and the soil investigations.

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

3.0 SITE PREPARATION

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

All cut and fill areas shall be properly stripped. Topsoil will be removed to its full depth and stockpiled for use in finish grading. Any rubbish, organic and other objectionable soils, and other deleterious material shall be disposed of off the site,



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or as directed by the Owner or his designated representative if on site disposal is provided. In no case shall such objectionable material be allowed in or under the fill unless specifically authorized in writing.

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

4.0 FORMATION OF FILL AREAS

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

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

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

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

In the construction of filled areas, starting layers shall be placed in the deepest portion of the fill, and as placement progresses, additional layers shall be constructed in horizontal planes. Original slopes shall be continuously, vertically benched to provide horizontal fill planes. The size of the benches shall be formed so that the base of the bench is horizontal, and the back of the bench is vertical. As many benches as are necessary to bring the site to final grade shall be



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constructed. Filling operations shall begin on the lowest bench, with the fill being placed in horizontal eight (8) inch thick loose lifts unless otherwise authorized. The filling shall progress in this manner until the entire first bench has been filled, before any fill is placed on the succeeding benches. Proper drainage shall be maintained always during benching and filling of the benches, to ensure that all water is drained away from the fill area.

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

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

5.0 SLOPE RATIO AND STORM WATER RUN-OFF

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

6.0 GRADING

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

7.0 COMPACTING

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

8.0 TESTING AND INSPECTION SERVICES

Testing and inspection services will be provided by the Owner.



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GUIDELINES FOR EXCAVATIONS AND TRENCHES

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

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

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

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

2. Access and egress ramps must be designed by a "competent person" and structural ramps used for equipment must be designed by a "competent person" with qualified knowledge in structural design. In addition:
 - Ramps must be secured to prevent displacement;
 - Ramps used in lieu of steps must have cleats to prevent slipping; and
 - Trenching excavations four feet or greater in depth must have a stairway, ladder, ramps or other safe means to egress with lateral travel no more than 25 feet.
3. Workers must be provided with reflector garments, such as warning orange or red vests, when exposed to vehicular traffic.
4. Contractors must not allow workers to work under or near equipment when there is danger of falling debris, spillage or equipment-related injuries.



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5. Mobile equipment, operating adjacent to an open excavation or approaching the edge of an excavation, must have one of the following when the operator's view is obstructed:
 - Warning System
 - Mechanical Signals
 - Barricades
 - Stop Logs
 - Hand Signals
6. The contractor must check the atmosphere for hazardous gases and oxygen deficiencies when excavating four feet or greater around landfills, or when hazardous substances are stored nearby, and when the contractor expects there could be any exposure to the workers.
7. When hazardous atmospheric conditions exist, or when conditions could change, the contractor must make emergency rescue equipment readily available including breathing apparatus, safety harnesses with life lines and a basket stretcher.
8. When workers enter bell-bottom pier holes or other deep and confined excavations, the worker must wear (always while performing work in the confined space) a separate life line attached to a harness. The line must be attended by someone above while work is being performed. The worker must check for hazardous atmospheric conditions prior to entry.
9. The contractor must ensure that water does not accumulate in open excavations and must inspect the excavation prior to allowing workers to re-enter after heavy rains.
10. Adjacent structures (buildings, walls, etc.) must be supported or secured to prevent worker exposure to unsafe conditions and damage to existing structures.
11. A registered professional engineer must approve operations when a contractor underpins existing structures to ensure worker safety and prevent damage to existing structures.
12. Workers must not be exposed to loose soil and rock or materials in and around excavations. Materials, such as removed soil and rock, must not be stored closer than two feet from the edge of the excavation.
13. Daily inspections of the excavation, the adjacent areas and protective systems must be made by a "competent person" for evidence of possible cave-ins, indications of failure of protective systems, hazardous



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atmospheres or other hazardous conditions. The "competent person" must stop work immediately and remove workers from the excavation when conditions change and pose a threat to their safety.

- 14.** Workers must not be exposed to fall hazards associated with excavations. Protective walkways or bridges with standard 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



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"Sonotube" shall be inserted into the borehole to preclude cave-ins and/or instability in the borehole.

- 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.



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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
- 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 labor as required to obtain samples. The Contractor shall provide to authorized representatives of the Owner, convenient access to all parts of the work of all concreting operations for the purpose of sampling and inspection.

2.0 SCOPE

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

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

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

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

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

3.0 MATERIALS

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

A. Fine and Coarse Aggregates: Coarse and fine aggregates shall conform to ASTM Specification C33. The maximum size of aggregate shall not be larger than one-fifth (1/5) of the narrowest dimensions between forms, or larger than three fourths (3/4) of the minimum clear spacing between reinforcement.

1. Fine Aggregate: Sand shall be composed essentially of clean, hard, strong, durable grains free of structurally weak



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

2. Coarse Aggregate: Cement concrete shall consist of crushed rock or screened gravel and shall be composed essentially of clean, hard, strong and impermeable particles, resistant to wear and frost and free from deleterious amounts of organic matter, loam, clay, salts, mica, and soft, thin, elongated, laminated or disintegrated stone, and shall be inert to water and cement.
- B. Portland Cement: Portland cement shall conform to ASTM Specification C150. Type I or Type II Portland Cement shall be used provided that they are not intermixed during any one batch. Type II Portland Cement shall not be used unless indicated on the plans.
- C. Water: Water for mixing and curing shall be clean, fresh, and free from deleterious materials.
- D. Metal Reinforcement: Rebar shall be Grade 60 and with deformations conforming to ASTH Specification A305. Welded wire mesh shall conform to W4 x W4 size and be of Grade 60 steel.
- E. Admixtures: Except as herein noted, admixtures shall not be used.
 1. Under adverse weather conditions only retarding or accelerating agents containing no chloride may be used.
 2. Air-Entraining Agent shall be used for all concrete will give an entrained air range of not less than 4 percent but no greater than 8 percent in the finished product. Under no circumstances shall the air-entraining be interground with cement.
 3. Approval in writing shall be required from Owner prior to the use of any admixture.

4.0 FORM

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

5.0 INSERTS, ETC.

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



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6.0 REINFORCEMENT

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

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

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

7.0 CONCRETE

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

8.0 DEPOSITING CONCRETE

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

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

B. Transportation of Concrete from Batch Plant: The concrete shall be delivered to the site of the work and discharge shall be completed within 90 minutes after addition of the cement and water to the



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aggregates. Each batch of concrete delivered at the job site shall be accompanied by a time slip issued at the batching plant, bearing the time of charging of the mixer drum with the cement and aggregates.

- C. Transporting of Concrete from Mixer to Place of Final Deposit: Transportation shall be done as rapidly as practical by means which shall prevent the separation or loss of the ingredients. If chutes are used, they shall be at a slope not flatter than one vertical to two horizontal. Buggies or carts shall be equipped with pneumatic rubber tires or surfaces of runways shall be sufficiently smooth or both so as not to cause separation or segregation of concrete ingredients. Concrete shall not be allowed to drop freely more than 4 feet. Where greater drops are required, canvas "elephant trunks" or galvanized iron chutes equipped with suitable hopper heads shall be employed and a sufficient number placed to ensure that the concrete may be effectively compacted into horizontal layers not exceeding 12 inches in thickness with minimum lateral movements.
- D. Depositing of Concrete: Depositing of concrete shall:
1. Proceed continuously after once starting until reaching the end of a section of construction joint location shown on the drawings, or as approved by the Owner. The operations shall be conducted so that no concrete is deposited on concrete sufficiently hardened to cause formation of seams, and planes of weakness.
 2. Be as near as practical to its final position in the forms.
 3. Proceed to maintain constantly a top surface which is approximately level.
 4. Be placed before initial set has occurred, and in no event after it has contained its water content for more than 90 minutes.
 5. Be thoroughly worked and compacted by means of suitable tools to provide impermeability, durability and strength and shall be thoroughly worked around reinforcements and embedded items and into corners of forms and to be free from voids, pockets or honeycombing. Care shall be taken to provide impermeability.
- E. Vibration Equipment: Vibration equipment shall be of the appropriate type and shall, always, be adequate in number of units and power of each unit to properly consolidate all concrete.



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- F. Monolithic Pours: Proper delivery of concrete shall be the Contractor's responsibility to make a mono-lithic pour without delays and changes of cold joints.

9.0 CURING

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

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

10.0 CONCRETE FINISHES

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

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

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



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APPENDIX A BORING LOGS

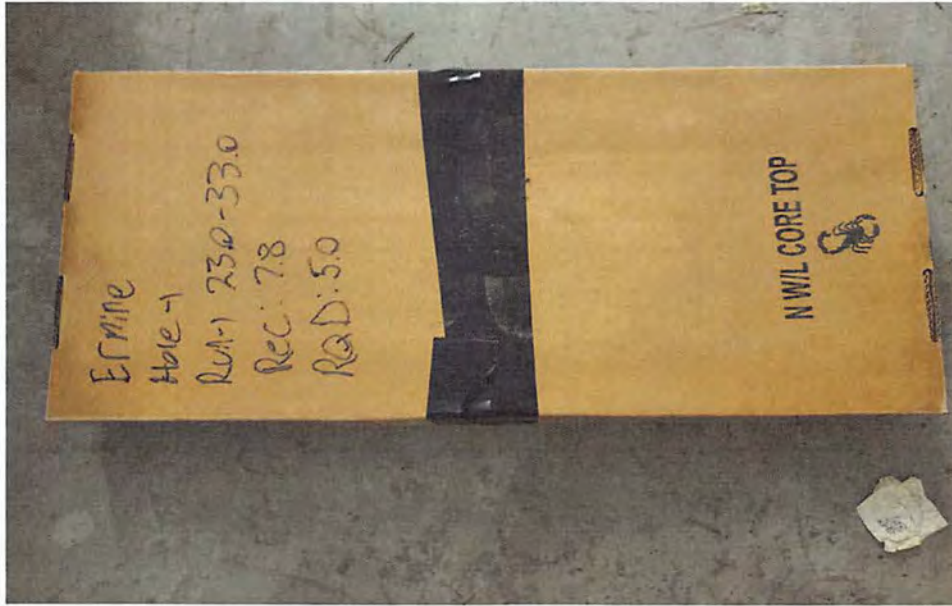


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APPENDIX B CORE PHOTOGRAPHS



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APPENDIX C SEISMIC DATA



Ermine Tower Location

Latitude, Longitude: 37.11976, -87.79354



Map data ©2020

Date	4/14/2020, 12:27:20 PM
Design Code Reference Document	IBC-2015
Risk Category	IV
Site Class	A - Hard Rock

Type	Value	Description
S _S	0.656	MCE _R ground motion. (for 0.2 second period)
S ₁	0.239	MCE _R ground motion. (for 1.0s period)
S _{MS}	0.525	Site-modified spectral acceleration value
S _{M1}	0.191	Site-modified spectral acceleration value
S _{DS}	0.35	Numeric seismic design value at 0.2 second SA
S _{D1}	0.127	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	D	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	0.352	MCE _G peak ground acceleration
F _{PGA}	0.8	Site amplification factor at PGA
PGA _M	0.282	Site modified peak ground acceleration
T _L	12	Long-period transition period in seconds
SsRT	0.656	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.775	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.239	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.289	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGA _d	0.6	Factored deterministic acceleration value. (Peak Ground Acceleration)
C _{RS}	0.847	Mapped value of the risk coefficient at short periods
C _{R1}	0.826	Mapped value of the risk coefficient at a period of 1 s

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APPENDIX D PHOTOGRAPHS



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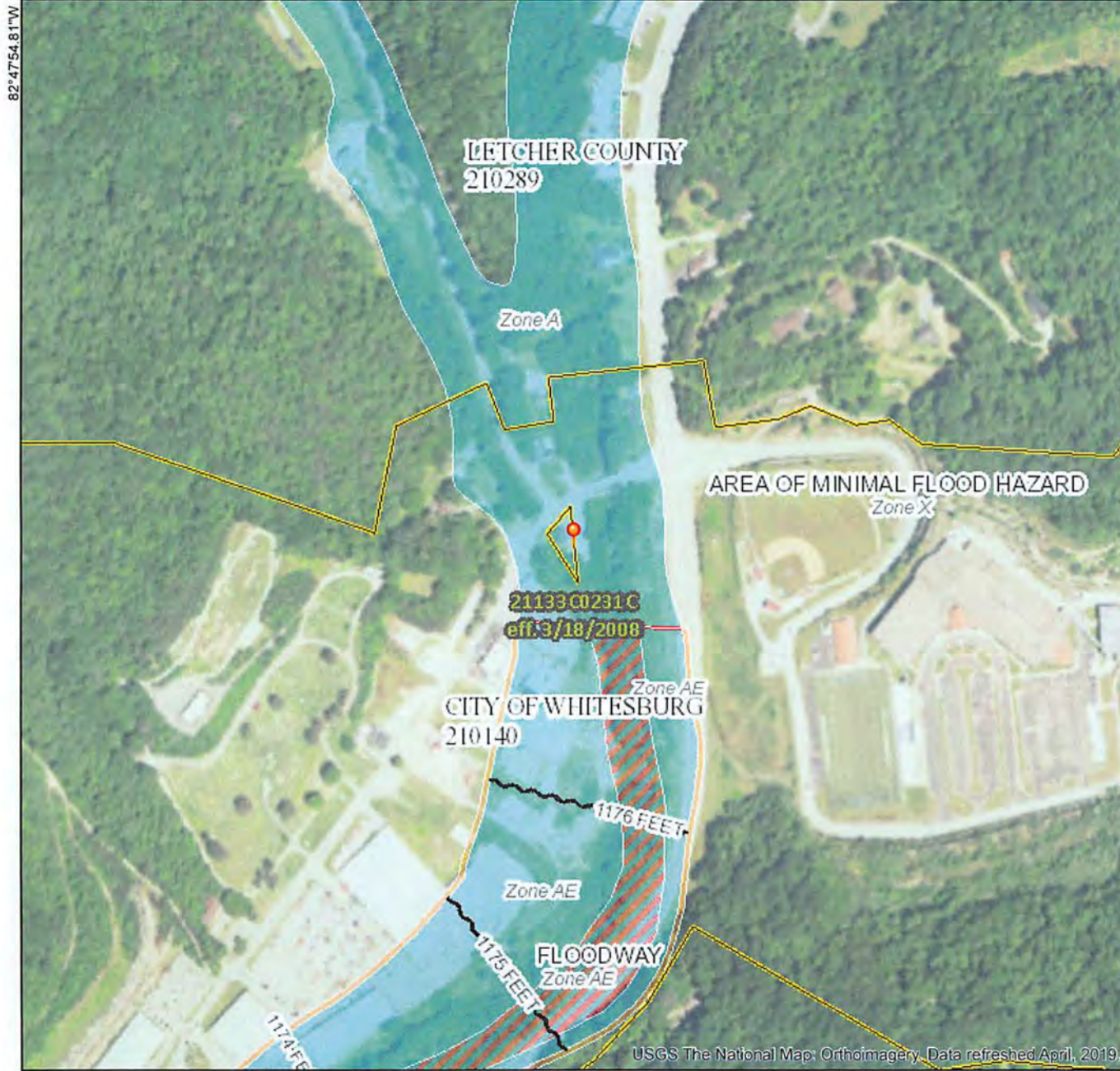
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APPENDIX E MAPS

National Flood Hazard Layer FIRMette



37°7'25.41"N



Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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

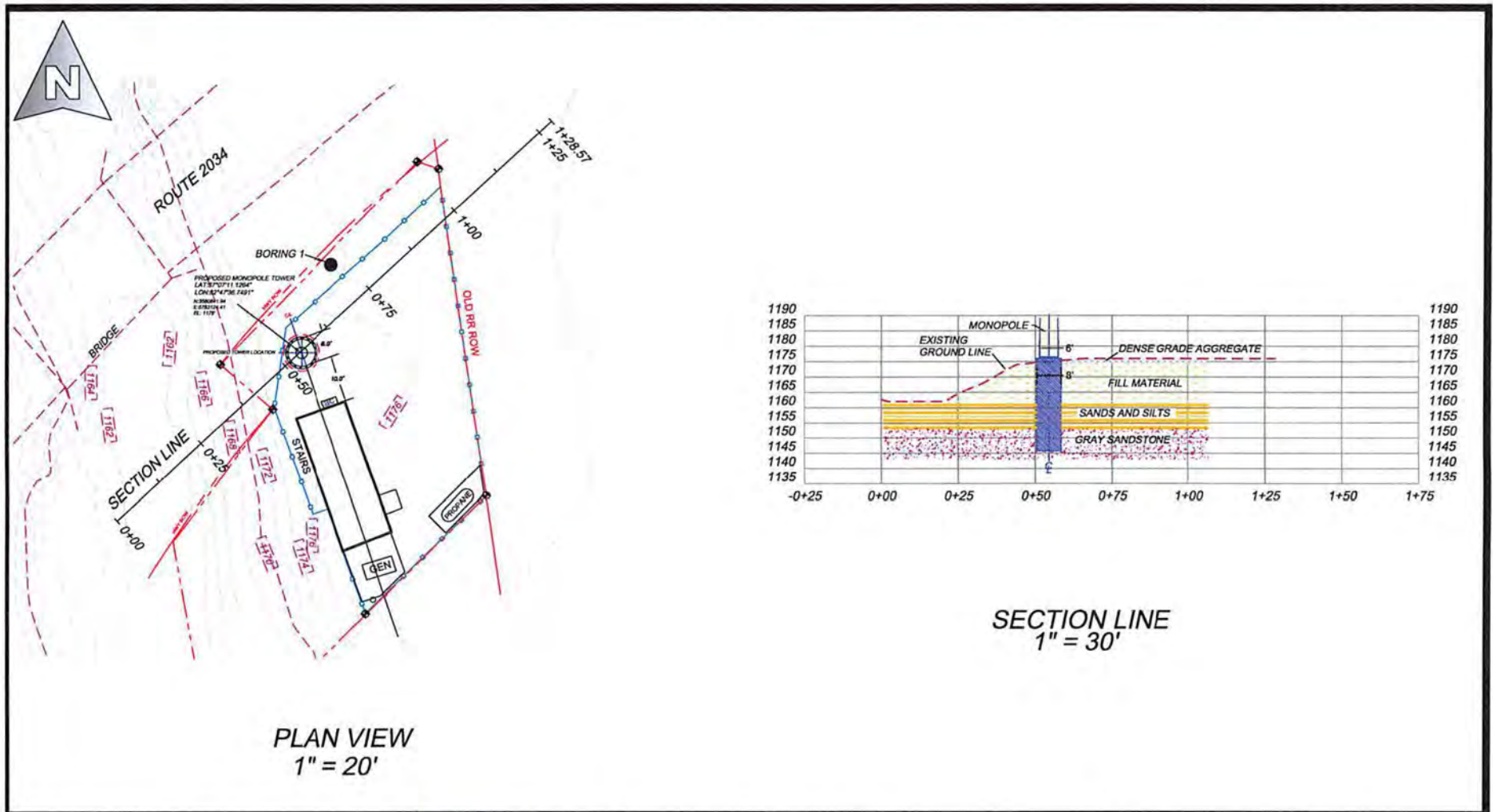
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/27/2020 at 10:27:32 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

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

37°6'56.73"N

82°47'17.35"W



East Kentucky Engineering, LLC

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



0' 20' 40'



Drawn by: RDS 4/14/2020
Job #: 165-0105 Scale: 1" = AS NOTED
File Location:

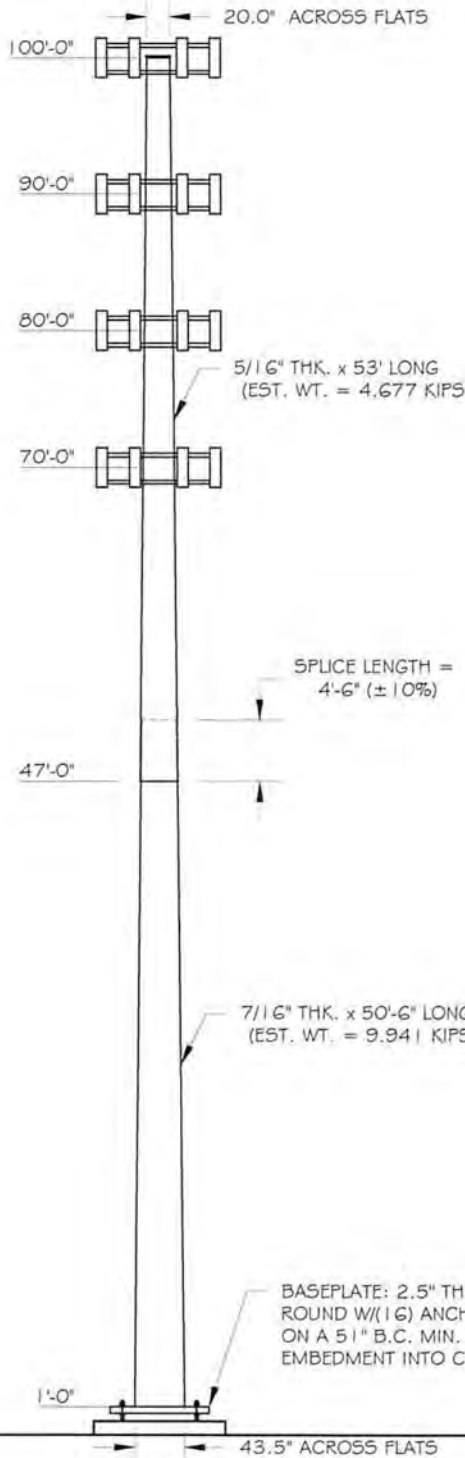
APPALACHIAN WIRELESS
PROPOSED TOWER LOCATION
ERMINE SITE
LETCHER COUNTY, KENTUCKY



TAPP

2427 Kelly Lane
Houston, Texas 77066
281-444-8277

QUALITY STEEL POLES. DELIVERED.



Page 1 of 2	Job Number: 23519-216
Eng: MFP	Customer Ref: TP-18914
	Date: 5/11/2020
Structure: 100-FT MONOPOLE	
Site: ERMINE	
Location: LETCHER CO., KY / 37°7'12", -82°47'34"	
Owner: APPALACHIAN WIRELESS	
Revision No.: Revision Date:	

DESIGN

Building Code: 2013 KENTUCKY BUILDING CODE			
Design Standard: ANSI/TIA-222-G			
Wind Speed Load Cases: ASCE-7-05 WIND SPEED			
Load Case #1: 90 MPH Design Wind Speed - V_{des} ($V_{des} = 116$ MPH)			
Load Case #2: 30 MPH Wind with 0.5" Ice Accumulation			
Load Case #3: 60 MPH Service Wind Speed			
Structure Class / Risk Category: II	Exposure Cat.: C	Topography Cat.: 3	Crest Height: 320'

STRUCTURE MEETS THE MINIMUM REQUIREMENTS OF TIA-222-H

EQUIPMENT LIST

Elev.	Description
100	(12) NN-G5A-M + (12) RRU
100	12-FT SECTOR MOUNTS
90	(12) NN-G5A-M + (12) RRU
90	12-FT SECTOR MOUNTS
80	(12) NN-G5A-M + (12) RRU
80	12-FT SECTOR MOUNTS
70	(12) NN-G5A-M + (12) RRU
70	12-FT SECTOR MOUNTS

ANTENNA FEED LINES ROUTED ON THE INSIDE OF THE POLE

STRUCTURE PROPERTIES

Cross-Section: 18-Sided	Taper: 0.24369 in/ft				
Shaft Steel: ASTM A572 GR 65	Baseplate Steel: ASTM A572 GR 50				
Anchor Rods: 2.25 in. A615 GR. 75 X 7'-0" LONG					
Sect.	Length (ft)	Thickness (in)	Splice (ft)	Top Dia. (in)	Bot Dia. (in)
1	53.00	0.3125	4.50	20.00	32.92
2	50.50	0.4375	0.00	31.19	43.50

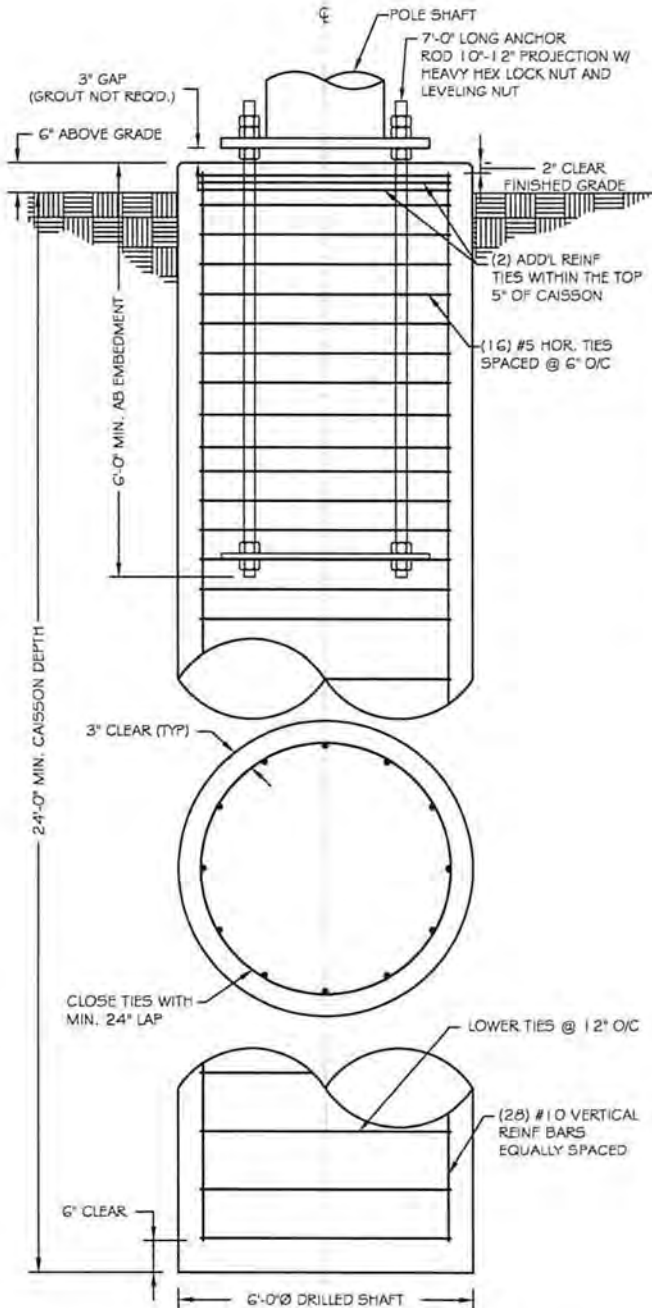


MICHAEL F. PLAHOVINSAK, P.E. #25466
Soils Fabricator - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@tppong.com

BASE REACTIONS FOR FOUNDATION DESIGN

Moment: 3887 ft-kip
Shear: 51 kip
Axial: 39 kip

Page 2 of 2	Job Number: 23519-216
Eng: MFP	Customer Ref: TP-18914
	Date: 5/11/2020
Structure:	100-FT MONOPOLE
Site:	ERMINE
Location:	LETCHER CO., KY / 37°7'12", -82°47'34"
Owner:	APPALACHIAN WIRELESS
Revision No.:	Revision Date:



CAISSON FOUNDATION

NOT TO SCALE

FOUNDATION NOTES:

- ALL FOUNDATION CONCRETE SHALL USE TYPE II CEMENT AND ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS. CONCRETE SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.46. IN AREAS OF POTENTIAL FREEZING, CONCRETE SHALL BE AIR ENTRAINED 6% ($\pm 1.5\%$). ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318, "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", LATEST EDITION.
- ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 VERTICAL BARS SHALL BE GRADE 60, AND TIES OR STIRRUPS SHALL BE A MINIMUM OF GRADE 40. THE PLACEMENT OF ALL REINFORCEMENT SHALL CONFORM TO ACI 315, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION.
- CAISSON FOUNDATION INSTALLATION SHALL BE IN ACCORDANCE WITH ACI 336, "STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF DRILLED PIERS", LATEST EDITION.
- THE CONTRACTOR SHALL DETERMINE THE MEANS AND METHODS TO SUPPORT THE EXCAVATION DURING CONSTRUCTION. THE CONTRACTOR SHALL READ THE GEOTECHNICAL REPORT AND SHALL CONSULT THE GEOTECHNICAL ENGINEER AS NECESSARY PRIOR TO CONSTRUCTION.
- FOUNDATION DESIGN IS BASED ON GEOTECHNICAL REPORT BY:
ENGINEER: EAST KENTUCKY ENGINEERING
REPORT NO.: 165-000-0105 (DATED 4/14/20)
- ESTIMATED CONCRETE VOLUME = 26 CUBIC YARDS.
- THE FOUNDATION HAS BEEN DESIGNED TO RESIST THE FOLLOWING FACTORED LOADS:
MOMENT: 3887 FT*KIPS
SHEAR: 51 KIPS
AXIAL: 39 KIPS
- GEOTECHNICAL REPORT INDICATES GROUNDWATER MAY BE ENCOUNTERED AT 20'-0" BELOW GRADE.



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tnxTower Michael F. Plahovinsak, PE 18301 State Route 161 Plain City, OH 4364 Phone: 614-398-6250 FAX: mike@mfpeng.com	Job 100-ft Monopole - MFP #23519-216	Page 1 of 6
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	Client TP-18914	Designed by JC

Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

Tower is located in Letcher County, Kentucky.

Basic wind speed of 90 mph.

Structure Class II.

Exposure Category C.

Topographic Category 3.

Crest Height 320.00 ft.

Nominal ice thickness of 0.5000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 30 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

ANSI/TIA-222-G wind speeds are Vasd winds. Refer to IBC Table 1609.3.1 for Vult wind speed conversions..

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	100.00-47.00	53.00	4.50	18	20.0000	32.9200	0.3125	1.2500	A572-65 (65 ksi)
L2	47.00-1.00	50.50		18	31.1980	43.5000	0.4375	1.7500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L1	20.2603	19.5275	956.2382	6.9891	10.1600	94.1179	1913.7347	9.7656	2.9700	9.504
	33.3796	32.3426	4344.5710	11.5757	16.7234	259.7906	8694.8588	16.1744	5.2439	16.781
L2	32.7249	42.7148	5106.2656	10.9200	15.8486	322.1905	10219.2502	21.3615	4.7209	10.791
	44.1036	59.7977	14009.4197	15.2872	22.0980	633.9678	28037.2735	29.9045	6.8860	15.739

Tower Elevation ft	Gusset Area ft ² (per face)	Gusset Thickness in	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 100.00-47.00				1	1	1			
L2 47.00-1.00				1	1	1			

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Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		$C_d A_A$ ft ² /ft	Weight plf
1 5/8"	C	No	Yes	Inside Pole	100.00 - 1.00	18	No Ice	0.00	0.92
							1/2" Ice	0.00	0.92
1 5/8"	C	No	Yes	Inside Pole	90.00 - 1.00	18	No Ice	0.00	0.92
							1/2" Ice	0.00	0.92
1 5/8"	C	No	Yes	Inside Pole	80.00 - 1.00	18	No Ice	0.00	0.92
							1/2" Ice	0.00	0.92
1 5/8"	C	No	Yes	Inside Pole	70.00 - 1.00	18	No Ice	0.00	0.92
							1/2" Ice	0.00	0.92

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	$C_d A_{A_i}$ In Face ft ²	$C_d A_A$ Out Face ft ²	Weight K
L1	100.00-47.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	2.51
L2	47.00-1.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	3.04

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	$C_d A_A$ In Face ft ²	$C_d A_A$ Out Face ft ²	Weight K
L1	100.00-47.00	A	1.325	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	2.51
L2	47.00-1.00	A	1.258	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	3.04

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	$C_d A_A$ Front ft ²	$C_d A_A$ Side ft ²	Weight K	
(4) Andrew NN-65A-M w/ mount pipe	A	From Face	3.00	0.0000	100.00	No Ice	12.41	5.04	0.08
			0.00			1/2" Ice	12.89	5.71	0.17
(4) Andrew NN-65A-M w/ mount pipe	B	From Face	3.00	0.0000	100.00	No Ice	12.41	5.04	0.08
			0.00			1/2" Ice	12.89	5.71	0.17
(4) Andrew NN-65A-M w/ mount pipe	C	From Face	3.00	0.0000	100.00	No Ice	12.41	5.04	0.08
			0.00			1/2" Ice	12.89	5.71	0.17
(12) Ericsson Radio 2212-B5	A	From Face	2.00	0.0000	100.00	No Ice	1.86	0.87	0.05

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _v A _A Front	C _v A _A Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
			0.00			1/2" Ice	2.03	1.00	0.06
12' Sector Mounts	C	None	0.00		0.0000	No Ice	30.00	30.00	1.80
**						1/2" Ice	35.00	35.00	2.60
(4) Andrew NN-65A-M w/ mount pipe	A	From Face	3.00	0.00	0.0000	No Ice	12.41	5.04	0.08
			0.00			1/2" Ice	12.89	5.71	0.17
(4) Andrew NN-65A-M w/ mount pipe	B	From Face	3.00	0.00	0.0000	No Ice	12.41	5.04	0.08
			0.00			1/2" Ice	12.89	5.71	0.17
(4) Andrew NN-65A-M w/ mount pipe	C	From Face	3.00	0.00	0.0000	No Ice	12.41	5.04	0.08
			0.00			1/2" Ice	12.89	5.71	0.17
(12) Ericsson Radio 2212-B5	A	From Face	2.00	0.00	0.0000	No Ice	1.86	0.87	0.05
			0.00			1/2" Ice	2.03	1.00	0.06
12' Sector Mounts	C	None	0.00		0.0000	No Ice	30.00	30.00	1.80
**						1/2" Ice	35.00	35.00	2.60
(4) Andrew NN-65A-M w/ mount pipe	A	From Face	3.00	0.00	0.0000	No Ice	12.41	5.04	0.08
			0.00			1/2" Ice	12.89	5.71	0.17
(4) Andrew NN-65A-M w/ mount pipe	B	From Face	3.00	0.00	0.0000	No Ice	12.41	5.04	0.08
			0.00			1/2" Ice	12.89	5.71	0.17
(4) Andrew NN-65A-M w/ mount pipe	C	From Face	3.00	0.00	0.0000	No Ice	12.41	5.04	0.08
			0.00			1/2" Ice	12.89	5.71	0.17
(12) Ericsson Radio 2212-B5	A	From Face	2.00	0.00	0.0000	No Ice	1.86	0.87	0.05
			0.00			1/2" Ice	2.03	1.00	0.06
12' Sector Mounts	C	None	0.00		0.0000	No Ice	30.00	30.00	1.80
**						1/2" Ice	35.00	35.00	2.60
(4) Andrew NN-65A-M w/ mount pipe	A	From Face	3.00	0.00	0.0000	No Ice	12.41	5.04	0.08
			0.00			1/2" Ice	12.89	5.71	0.17
(4) Andrew NN-65A-M w/ mount pipe	B	From Face	3.00	0.00	0.0000	No Ice	12.41	5.04	0.08
			0.00			1/2" Ice	12.89	5.71	0.17
(4) Andrew NN-65A-M w/ mount pipe	C	From Face	3.00	0.00	0.0000	No Ice	12.41	5.04	0.08
			0.00			1/2" Ice	12.89	5.71	0.17
(12) Ericsson Radio 2212-B5	A	From Face	2.00	0.00	0.0000	No Ice	1.86	0.87	0.05
			0.00			1/2" Ice	2.03	1.00	0.06
12' Sector Mounts	C	None	0.00		0.0000	No Ice	30.00	30.00	1.80
**						1/2" Ice	35.00	35.00	2.60

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Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 90 deg - No Ice
5	0.9 Dead+1.6 Wind 90 deg - No Ice
6	1.2 Dead+1.6 Wind 180 deg - No Ice
7	0.9 Dead+1.6 Wind 180 deg - No Ice
8	1.2 Dead+1.0 Ice+1.0 Temp
9	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
10	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
11	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
12	Dead+Wind 0 deg - Service
13	Dead+Wind 90 deg - Service
14	Dead+Wind 180 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	100 - 47	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-48.73	14.15	8.17
			Max. Mx	4	-20.66	-1464.82	-37.20
			Max. My	2	-20.85	49.17	1429.37
			Max. Vy	4	45.10	-1464.82	-37.20
			Max. Vx	2	-43.69	49.17	1429.37
			Max. Torque	2			6.59
L2	47 - 1	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-67.06	14.53	8.39
			Max. Mx	4	-38.88	-3885.58	-98.59
			Max. My	2	-38.88	110.94	3779.44
			Max. Vy	4	50.66	-3885.58	-98.59
			Max. Vx	2	-49.28	110.94	3779.44
			Max. Torque	2			6.56

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	100 - 47	20.235	13	1.6957	0.0119
L2	51.5 - 1	5.430	13	0.9983	0.0034

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Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
100.00	(4) Andrew NN-65A-M w/ mount pipe	13	20.235	1.6957	0.0119	19432
90.00	(4) Andrew NN-65A-M w/ mount pipe	13	16.719	1.5613	0.0099	9716
80.00	(4) Andrew NN-65A-M w/ mount pipe	13	13.326	1.4278	0.0080	4857
70.00	(4) Andrew NN-65A-M w/ mount pipe	13	10.180	1.2875	0.0062	3238

Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	100 - 47	82.441	4	6.9343	0.0479
L2	51.5 - 1	22.057	4	4.0616	0.0136

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
100.00	(4) Andrew NN-65A-M w/ mount pipe	4	82.441	6.9343	0.0479	4855
90.00	(4) Andrew NN-65A-M w/ mount pipe	4	68.095	6.3917	0.0398	2426
80.00	(4) Andrew NN-65A-M w/ mount pipe	4	54.254	5.8359	0.0320	1210
70.00	(4) Andrew NN-65A-M w/ mount pipe	4	41.423	5.2536	0.0247	804

Pole Design Data

Section No.	Elevation	Size	L	L _w	Kl/r	A	P _u	φP _n	Ratio P _u /φP _n
	ft		ft	ft		in ²	K	K	
L1	100 - 47 (1)	TP32.92x20x0.3125	53.00	0.00	0.0	31.2545	-20.66	2317.56	0.009
L2	47 - 1 (2)	TP43.5x31.198x0.4375	50.50	0.00	0.0	59.7977	-38.88	4442.67	0.009

Pole Bending Design Data

Section No.	Elevation	Size	M _{ax}	φM _{ax}	Ratio M _{ax} /φM _{ax}	M _{ay}	φM _{ay}	Ratio M _{ay} /φM _{ay}
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
L1	100 - 47 (1)	TP32.92x20x0.3125	1465.29	1498.63	0.978	0.00	1498.63	0.000
L2	47 - 1 (2)	TP43.5x31.198x0.4375	3886.82	3925.05	0.990	0.00	3925.05	0.000

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Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	100 - 47 (1)	TP32.92x20x0.3125	45.12	1158.78	0.039	3.79	3005.40	0.001
L2	47 - 1 (2)	TP43.5x31.198x0.4375	50.67	2221.33	0.023	3.76	7871.73	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	100 - 47 (1)	0.009	0.978	0.000	0.039	0.001	0.988	1.000	4.8.2 ✓
L2	47 - 1 (2)	0.009	0.990	0.000	0.023	0.000	1.000	1.000	4.8.2 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	100 - 47	Pole	TP32.92x20x0.3125	1	-20.66	2317.56	98.8	Pass
L2	47 - 1	Pole	TP43.5x31.198x0.4375	2	-38.88	4442.67	100.0	Pass
Summary								
Pole (L2)							100.0	Pass
RATING =							100.0	Pass

Stiffened or Unstiffened, UngROUTed, Circular Base Plate - Any Rod Material

TIA Rev G Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data	
Job #	23519-216
Site Name:	ERMINE LETCHER CO., KY
Pole Manufacturer:	Other

Anchor Rod Data	
Qty:	16
Diam:	2.25 in
Rod Material:	A615-J
Strength (Fu):	100 ksi
Yield (Fy):	75 ksi
Bolt Circle:	51 in

Plate Data	
Diam:	57 in
Thick:	2.5 in
Grade:	50 ksi
Single-Rod B-eff:	8.63 in

Stiffener Data (Welding at both sides)	
Config:	0 *
Weld Type:	Fillet
Groove Depth:	0.25 <-- Disregard
Groove Angle:	45 <-- Disregard
Fillet H. Weld:	0.25 in
Fillet V. Weld:	0.3125 in
Width:	5 in
Height:	18 in
Thick:	0.75 in
Notch:	0.5 in
Grade:	36 ksi
Weld str.:	70 ksi

Pole Data	
Diam:	43.5 in
Thick:	0.4375 in
Grade:	65 ksi
# of Sides:	18 "0" IF Round
Fu	80 ksi
Reinf. Fillet Weld	0 "0" if None

Reactions		
Mu:	3887	ft-kips
Axial, Pu:	39	kips
Shear, Vu:	51	kips
Eta Factor, η	0.5	TIA G (Fig. 4-4)

If No stiffeners, Criteria: AISC LRFD <-Only Applicable to Unstiffened Cases

Anchor Rod Results
 Max Rod (Cu+ Vu/η): 237.5 Kips
 Allowable Axial, Φ*Fu*Anet: 260.0 Kips
 Anchor Rod Stress Ratio: 91.3% **Pass**

Rigid
AISC LRFD
φ*Tn

Base Plate Results
 Base Plate Stress: 39.4 ksi
 Allowable Plate Stress: 45.0 ksi
 Base Plate Stress Ratio: 87.6% **Pass**

Flexural Check
 39.4 ksi
 45.0 ksi
 87.6% **Pass**

Rigid
AISC LRFD
φ*Fy
Y.L. Length: 26.62

n/a

Stiffener Results
 Horizontal Weld : n/a
 Vertical Weld: n/a
 Plate Flex+Shear, fb/Fb+(fv/Fv)^2: n/a
 Plate Tension+Shear, ft/Ft+(fv/Fv)^2 n/a
 Plate Comp. (AISC Bracket): n/a

Pole Results
 Pole Punching Shear Check: n/a



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

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	Client	TAPP TP-18914	Designed by	Mike

Caisson Calculation

According to ANSITIA-222-G

1. Foundation overturning resistance calculated with PLS Caisson, for Brom's method for rigid piles. Soil layers modeled after recommendations from the geotechnical report.
2. Cohesion strength for the upper 18 ft has been reduced by 50%
3. In lieu of a soil resistance factor $f_s = 0.75$ (TIA-9.4.1) an additional safety factor against soil failure of 1.33 has been applied.
4. Foundation is designed with a minimum safety factor resisting overturning of 2.0
5. Foundation has been designed with factored loads per TIA-222-G.
6. Design water table = 20 ft below grade

*** PIER PROPERTIES CONCRETE STRENGTH (ksi) = 4.00 STEEL STRENGTH (ksi) = 60.00
 DIAMETER (ft) = 6.000 DISTANCE FROM TOP OF PIER TO GROUND LEVEL (ft) = 0.50

*** SOIL PROPERTIES

LAYER	TYPE	THICKNESS (ft)	DEPTH AT TOP OF LAYER (ft)	DENSITY (pcf)	CU (pcf)	KP	PHI (degrees)
1	S	4.00	0.00	100.0		1.000	-0.00
2	S	10.00	4.00	120.0		2.663	27.00
3	S	6.00	14.00	105.0		2.198	22.00
4	S	3.00	20.00	42.6		2.198	22.00
5	S	20.00	23.00	170.0		3.392	33.00

*** DESIGN (FACTORED) LOADS AT TOP OF PIER MOMENT (ft-k) = 3987.0 VERTICAL (k) = 39.0 SHEAR (k) = 51.0
 ADDITIONAL SAFETY FACTOR AGAINST SOIL FAILURE = 1.33

*** CALCULATED PIER LENGTH (ft) = 24.500

*** CHECK OF SOILS PROPERTIES AND ULTIMATE RESISTING FORCES ALONG PIER

TYPE	TOP OF LAYER BELOW TOP OF PIER (ft)	THICKNESS (ft)	DENSITY (pcf)	CU (pcf)	KP	FORCE (k)	ARM (ft)
S	0.50	4.00	100.0		1.000	14.40	3.17
S	4.50	10.00	120.0		2.663	479.34	10.50
S	14.50	3.22	105.0		2.198	225.33	16.16
S	17.72	2.78	105.0		2.198	-229.26	19.14
S	20.50	3.00	42.6		2.198	-272.27	22.01
S	23.50	1.00	170.0		3.392	-149.15	24.01

*** SHEAR AND MOMENTS ALONG PIER

DISTANCE BELOW TOP OF PIER (ft)	WITH THE ADDITIONAL SAFETY FACTOR			WITHOUT ADDITIONAL SAFETY FACTOR		
	SHEAR (k)	MOMENT (ft-k)	(ft-k)	SHEAR (k)	MOMENT (ft-k)	(ft-k)
0.00	68.4	5242.5	51.3	3932.0		
2.45	65.0	5407.8	48.7	4056.0		
4.90	45.9	5551.1	34.4	4163.4		
7.35	-24.0	5584.9	-18.0	4188.8		
9.80	-128.4	5405.2	-96.3	4054.0		
12.25	-267.3	4927.4	-200.5	3695.7		
14.70	-438.1	4067.2	-328.6	3050.5		
17.15	-607.7	2791.2	-455.8	2093.5		
19.60	-499.1	1349.6	-374.4	1012.2		
22.05	-282.6	388.9	-212.0	291.7		
24.50	-0.0	-0.0	-0.0	-0.0		

*** TOTAL REINFORCEMENT PCT = 0.82 REINFORCEMENT AREA (in²) = 33.39
 *** USABLE AXIAL CAP. (k) = 39.0 USABLE MOMENT CAP. (ft-k) = 4204.0

For Design:

6-ft Diameter caisson x 24.5-ft long (24-ft Embedded with 0.5-ft above grade)
 Concrete strength = 4000 PSI @ 28 days. Estimated Concrete Volume = 26 CY3.
 (28) #10 Vertical Rebar. Steel Cross-Section = 35.56 in²



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

Aeronautical Study No.
 2020-ASO-6839-OE

Issued Date: 03/25/2020

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

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Monopole Ermine
 Location: Ermine, KY
 Latitude: 37-07-11.13N NAD 83
 Longitude: 82-47-36.75W
 Heights: 1176 feet site elevation (SE)
 110 feet above ground level (AGL)
 1286 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:

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)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

This determination expires on 09/25/2021 unless:

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

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

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

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

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

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

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

If we can be of further assistance, please contact our office at (718) 553-2611, or angelique.eersteling@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2020-ASO-6839-OE.

Signature Control No: 432549509-434535540
Angelique Eersteling
Technician

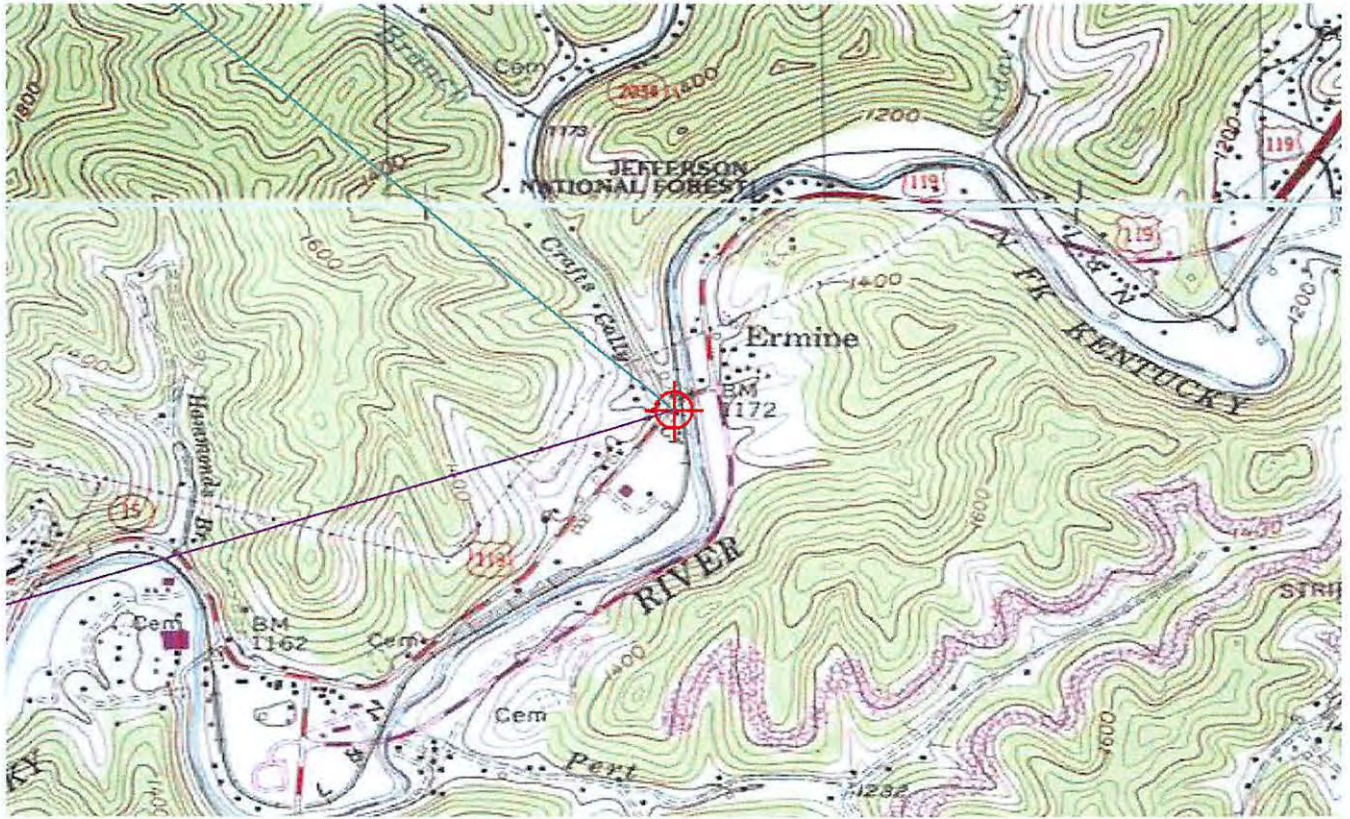
(DNE)

Attachment(s)
Frequency Data
Map(s)

cc: FCC

Frequency Data for ASN 2020-ASO-6839-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W



TOPO Map for ASN 2020-ASO-6839-OE



Fwd: Application for Construction - Ermine (Letcher County, KY)

Cindy McCarty

Wed 3/4/2020 12:43 PM

FAA/KAZC

To: Raina Helton <rhelton@ekn.com>;

Cindy D. McCarty
In-House Counsel
East Kentucky Network, LLC
d/b/a Appalachian Wireless

(606) 339-1006
(606) 339-1363 (fax)
cmccarty@ekn.com

Begin forwarded message:

From: "Houlihan, John F (KYTC)" <John.Houlihan@ky.gov>
Subject: RE: Application for Construction - Ermine (Letcher County, KY)
Date: March 4, 2020 at 11:38:07 AM EST
To: Cindy McCarty <cmccarty@ekn.com>

No permit is required from the KAZC. Thank you

Kentucky Airport Zoning Commission (KAZC)
John Houlihan, Administrator
Department of Highways, District 6
421 Buttermilk Pike
Covington, KY 41017
Desk 859-426-6973, Cell 502-330-3955

KAZC webpage: <https://transportation.ky.gov/Aviation/Pages/airportzoning.aspx>

CONFIDENTIALITY NOTICE: This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail or call (859) 426-6973 and destroy all copies of the original message.

From: Cindy McCarty <cmccarty@ekn.com>
Sent: Wednesday, March 4, 2020 10:29 AM
To: Houlihan, John F (KYTC) <John.Houlihan@ky.gov>
Cc: Compliance <compliance@ekn.com>
Subject: Application for Construction - Ermine (Letcher County, KY)

****CAUTION** PDF attachments may contain links to malicious sites. Please contact the COT Service Desk ServiceCorrespondence@ky.gov for any assistance.**

Driving Directions for Ermine

Beginning in front of the Courthouse in Letcher County on Main Street head east toward the intersection of East Main Street and Main Street. Turn right onto Main Street and drive .3 miles to the intersection of Hwy 15 and Main Street. Turn right onto Hwy 15 and drive 1.4 miles until Hwy 15 turns into Hwy 119. Stay straight on Hwy 119. Drive .9 miles to the intersection of Hwy 119 and 2034. Turn left onto 2034 and drive approximately four hundred and fifth feet to the site (signs posted).

Prepared By:

Daryl Bartley
Appalachian Wireless
(606) 791-0310

Ermine


Location:

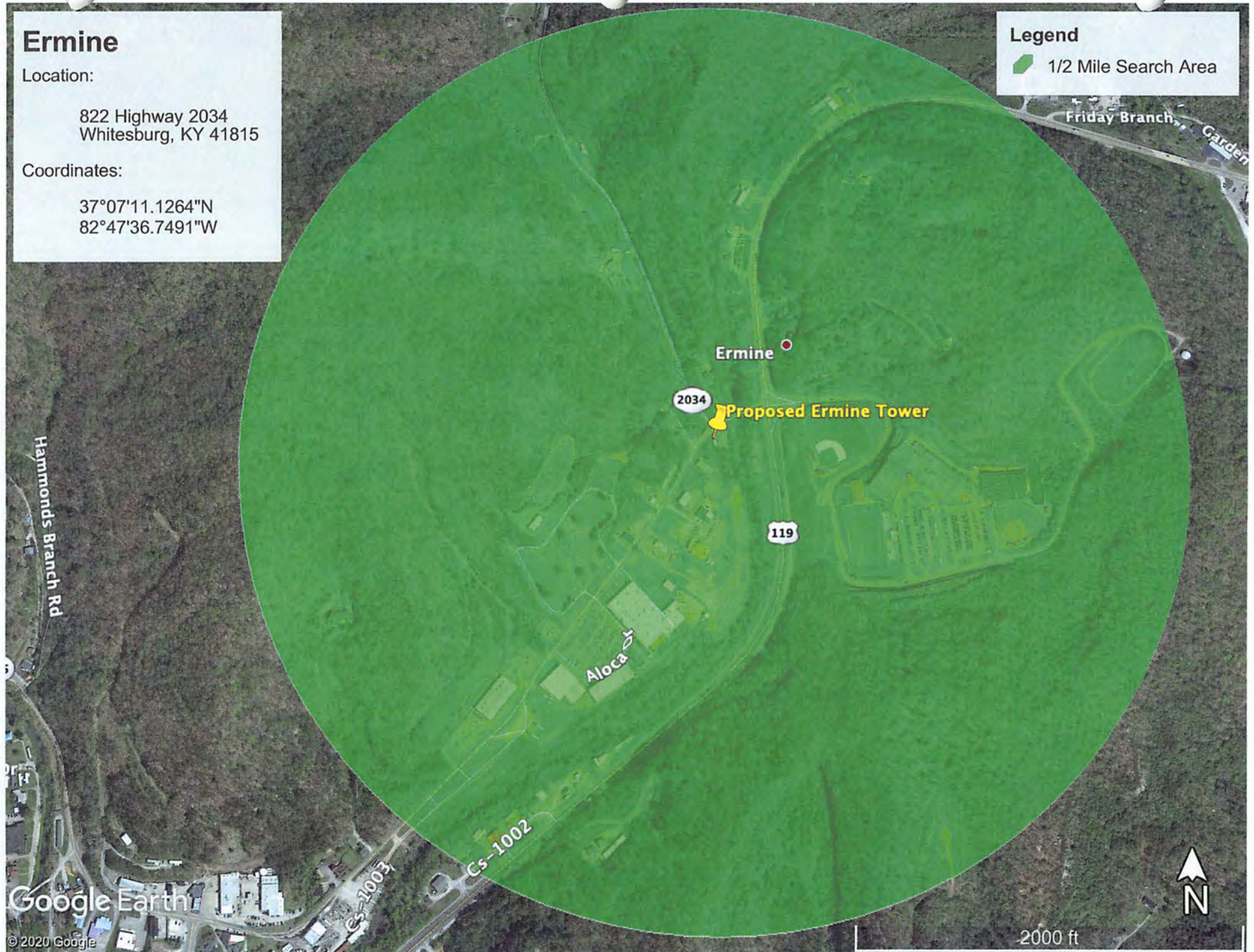
822 Highway 2034
Whitesburg, KY 41815

Coordinates:

37°07'11.1264"N
82°47'36.7491"W

Legend

 1/2 Mile Search Area



Google Earth

© 2020 Google

2000 ft



MEMORANDUM OF LEASE

THIS MEMORANDUM OF LEASE is made and entered into on this 28th day of February, 2020, with a commencement date of March 1, 2020 (the "Commencement Date"), by and between **THACKER-GRIGSBY TELEPHONE CO., INC.**, a Kentucky corporation, with a mailing address of P.O. Box 789, Hindman, Kentucky 41822, hereinafter referred to as "**Lessor**", and **EAST KENTUCKY NETWORK, LLC D/B/A APPALACHIAN WIRELESS**, a Kentucky limited liability company, with a mailing address of 101 Technology Trail, Ivel, Kentucky, 41642, hereinafter referred to as "**Lessee**."

WITNESSETH

1. **Demised Premises.** For good and valuable consideration, Lessor leased to Lessee, and Lessee has leased from Lessor that certain tract of real estate located in Letcher County, Kentucky, and being a portion of the same land conveyed to Lessor by Deed dated June 2, 2017, and recorded on June 6, 2017, in Deed Book 436, Page 666, in the Letcher County Clerk's Office. Said property is more particularly described in the description **attached** hereto and made a part hereof as **Exhibit A** and the plat **attached** hereto and made a part hereof as **Exhibit B**, prepared by James W. Caudill, Licensed Professional Land Surveyor (hereinafter referred to as the "**Premises**"). The Lessor has also granted unto Lessee full and complete rights of ingress, egress and regress to and from the Premises over any property owned by Lessor and other associated rights for installation of utilities, maintenance, and other purposes.

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



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

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

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

[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

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

LESSOR:
THACKER-GRIGSBY TELEPHONE CO., INC.

William K Grigsby
By: William K Grigsby
Its: President

COMMONWEALTH OF KENTUCKY
COUNTY OF Floyd

The foregoing instrument was acknowledged before me on this 28th day of February, 2020, by William Grigsby, President of Thacker-Grigsby Telephone Co., Inc., Lessor.

Raina La'Neil Helton
Notary Public
Commission No.: KYNP375

My Commission Expires 2-6-2024.



LESSEE:

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

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

COMMONWEALTH OF KENTUCKY
COUNTY OF FLOYD

The foregoing instrument was acknowledged before me on this 21st day of February, 2020, by W.A. Gillum, CEO/General Manager of East Kentucky Network, LLC d/b/a Appalachian Wireless, Lessee.

Raina La'Neil 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

LOT DESCRIPTION
Property of
Thacker Grigsby Telephone Company
P.O. Box 789
Hindman, Kentucky 41822
Near Ermine in Letcher County
May 20, 2019

Being a portion of the property conveyed to Thacker-Grigsby Telephone Company, Incorporated from Caudill Lumber Company, Incorporated by Deed of Conveyance dated June 2, 2017 and of record in Deed Book 436 Page 666 of the Letcher County Court Clerk's Office in Whitesburg, Kentucky.

Lot 1A

A circle with a diameter of 9 feet having a center point bearing S 31°19'33" W, a distance of 48.6183 feet, from a set pk nail in pavement being the northern most corner of lot conveyed to Thacker Grigsby Telephone Company by Deed Book 436 Page 666, and also bearing N 81°45'30" E, a distance of 17.94 feet, from a set iron pin with cap marked LS#2259 being the northwest corner of said lot. Containing a calculated area of 63.60 square feet, or 0.001 acres.

Also to be included is a right of way from the highway to the proposed tower site. This is now along the existing access, but if for any reason this access becomes blocked, then additional right of way will be provided for access to the tower site.

Also to be included is a right to utilize area adjacent to the tower site for the purposes of construction and maintenance of the tower and attachment to the existing equipment building.

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 May 20, 2019 by James W. Caudill, a Kentucky Licensed Professional Land Surveyor No. 2259.

STATE OF KENTUCKY
COUNTY OF LETCHER

I, WINSTON MEADE, CLERK OF LETCHER COUNTY, DO HEREBY CERTIFY THAT THE FOREGOING lease WAS ON THIS 10 DAY OF March 2020 LODGED IN MY OFFICE FOR RECORD AND THAT IT AND THIS CERTIFICATE HAVE BEEN RECORDED IN lease BOOK 436 PAGE 521. WITNESS MY HAND THIS 10 DAY OF March 2020

WINSTON MEADE, CLERK

BY, Donna Buck CC

James W. Caudill
James W. Caudill, PLS #2259
S-20-19





N:3,580,883.47
E:5,783,149.68
PK NAIL

N:3,580,839.37
E:5,783,106.65
SET IPC

LOT 1A
63.60 SQ. FEET
0.001 ACRES

MOUNTAIN RAIL PROPERTIES
DON CHILDRS
BOOK 292 PAGE 120

PROPOSED MONOPOLE TOWER
LAT:37°07'11.1264"
LON:82°47'36.7491"

N:3580841.94
E:5783124.41
EL: 1176'

THACKER-GRIGSBY
TELEPHONE CO.
DB 436 PG 666

NAD 83 KY SINGLE ZONE NORTH



A circle with a diameter of 9 feet having a centerpoint bearing S 31°19'33" W, a distance of 48.6183 feet, from a set pk nail being the northern most corner of lot deeded to Thacker-Grigsby Telephone Company by Deed Book 436 Page 666, and also bearing N 81°45'30" E, a distance of 17.9400 feet, from a set iron pin with cap marked LS#2259 being the northwest corner of said lot.

FUEL TANK PAD
EL 1177.5'



LEGEND

SURVEY STA	SET	FOUND
IRON PIN WITH CAP (1/8" X .5" REBAR PLASTIC CAP MARKED LS2259)	SET	FOUND
BOUNDARY LINES		
HIGHWAY		
PARENT TR LINE		
OLD RAILROAD		
CHAINLINK FENCE		

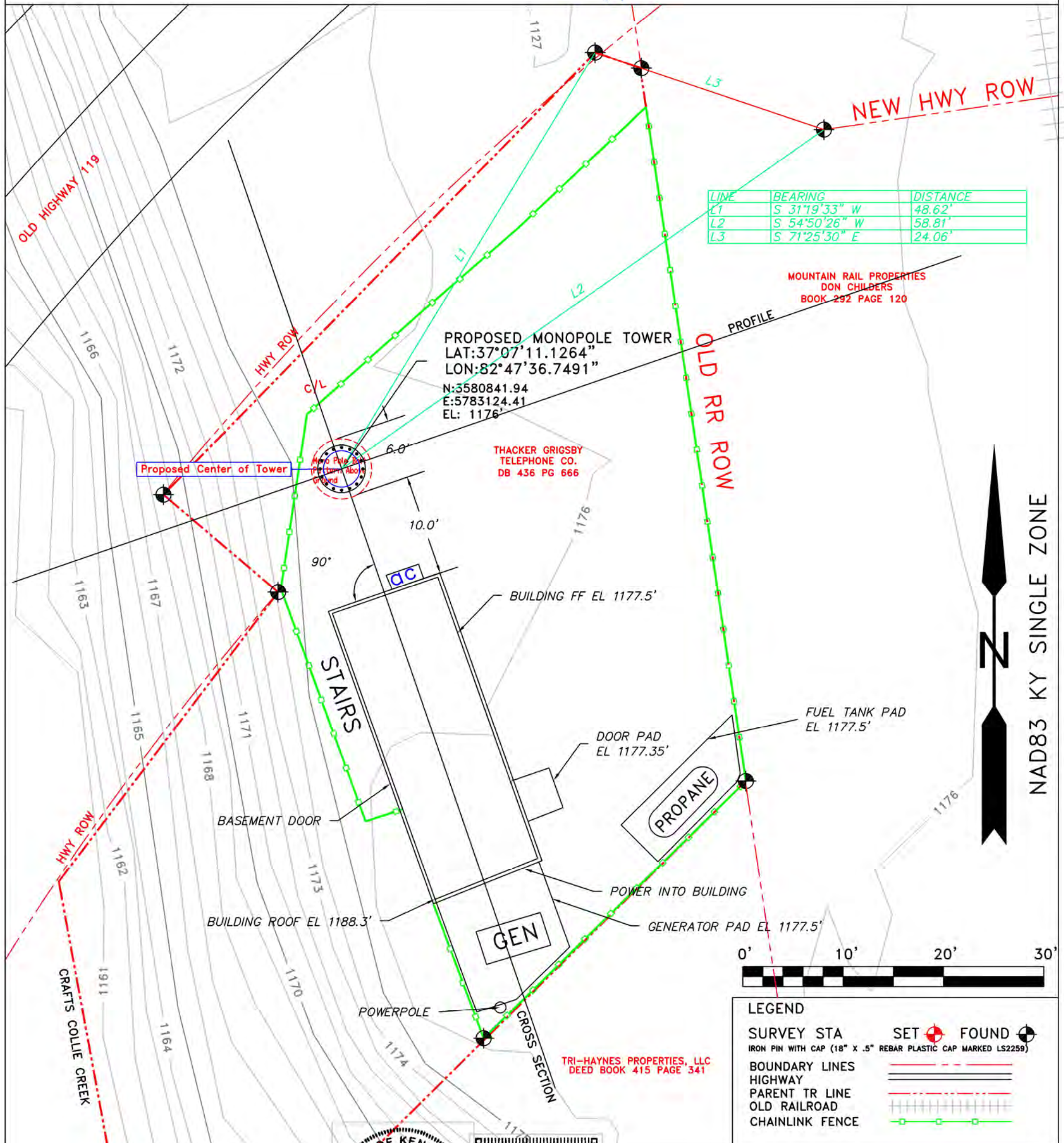
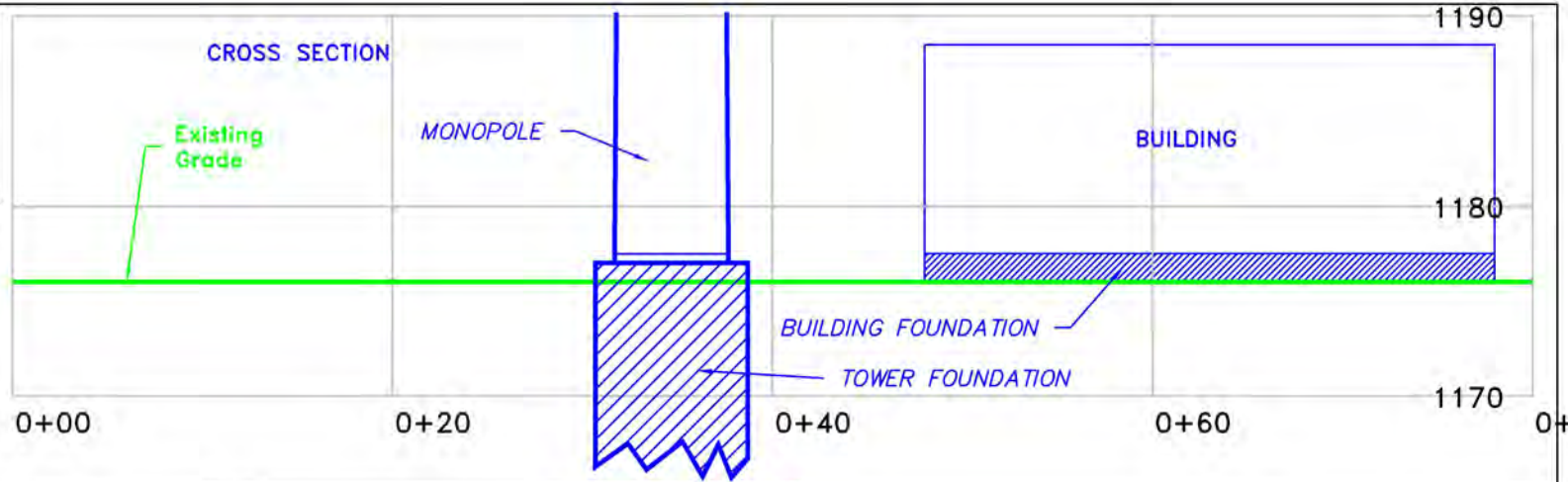
URBAN CLASS SURVEY
I HEREBY CERTIFY THAT THIS PLAT DEPICTS A SURVEY MADE BY ME, BY THE METHOD OF RANDOM TRAVERSE. THE BEARINGS SHOWN HEREON HAVE NOT BEEN ADJUSTED FOR CLOSURE. THIS SURVEY AND PLAT MEETS OR EXCEEDS THE MINIMUM STANDARDS OF GOVERNING AUTHORITIES. THE UNADJUSTED ERROR OF CLOSURE WAS 1 IN 11014.
James W. Caudill 2259 5-20-19
NAME PLS# DATE

TRI-HAYNES PROPERTIES, LLC
DEED BOOK 415 PAGE 341

KENTUCKY
JAMES W. CAUDILL
2259
LICENSED PROFESSIONAL LAND SURVEYOR

PLAT OF SURVEY		
DRAWN JWC	DATE 05/20/19	SUB DIVISION PROPERTY OF THACKER-GRIGSBY TELEPHONE CO INC P.O. BOX 789 HIRDMAN, KY 41822 DEED BOOK 436 PAGE 666
APPROVED JWC	DATE 05/20/19	
SCALE 1" = 10'	SHEET 1 of 1	SURVEYED BY JAMES W. CAUDILL LS2259 2999 PERKINS/MADDEN ROAD AMBURGEY, KY 41773

APPALACHIAN WIRELESS
 101 TECHNOLOGY TRAIL
 IVEL, KY. 41642
 PROPOSED TOWER SITE
 OFF HWY 119 NEAR ERMINE
 IN LETCHER COUNTY, KY.



LEGEND

SURVEY STA	SET	FOUND
IRON PIN WITH CAP (18" x .5" REBAR PLASTIC CAP MARKED LS2259)		
BOUNDARY LINES		
HIGHWAY		
PARENT TR LINE		
OLD RAILROAD		
CHAINLINK FENCE		

STATE OF KENTUCKY
 James W. Caudill
 12305
 LICENSED PROFESSIONAL ENGINEER

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

-THE PROPOSED TOWER HAS BEEN LOCATED USING DUAL FREQUENCY GPS UNIT PROCESSED BY "OPUS"
 -STATE PLANE COORDINATES NAD 83 KY SINGLE ZONE N:3580841.94, E:5783124.41, EL 1177' EXISTING GRD TOP OF PROPOSED FOUNDATION EL 1177'-TOP TOWER EL 1272'
 -PRECISION: HORIZONTAL=50' VERTICAL=20'
 -THIS SURVEY MEETS OBSTACLE ACCURACY CODE 2C.
 -PROPERTY LINE INFORMATION TAKEN FROM DEEDS.

"I certify that the latitude 37° 07' 11.1264"N and longitude 82° 47' 36.7491"W are within +/- 50 feet horizontally; and the site elevation 1177 ft. MSL, is within +/- 20 feet vertically. With a structure height of 100 ft AGL, the overall height is 1277 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."

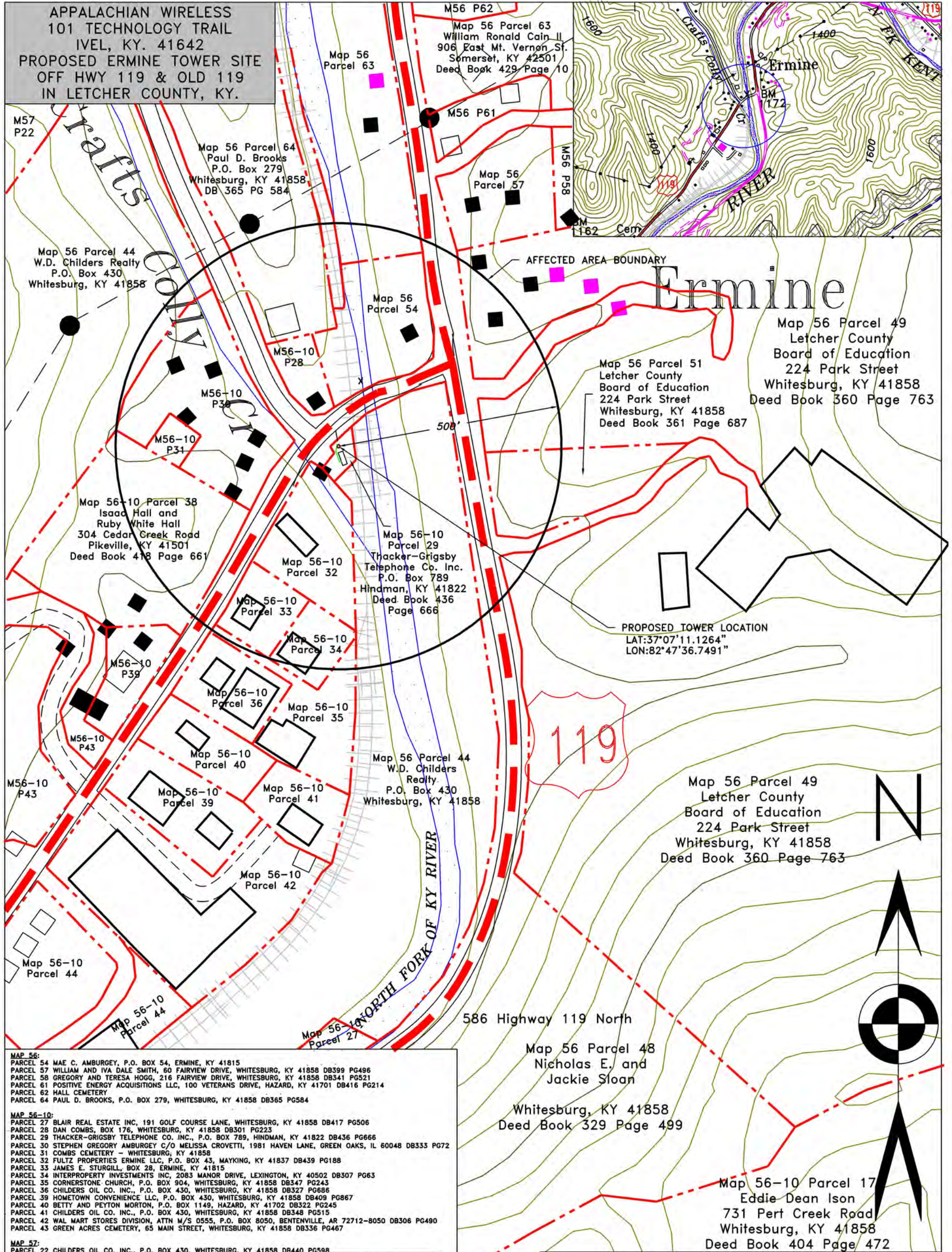
SIGNED: *James W. Caudill* PE#12305 LS #2259 06/10/2020
 PRINTED: JAMES W. CAUDILL PE #12305 & LS #2259

East Kentucky Network d/b/a Appalachian Wireless 101 Technology Trail, Ivel, KY 41642		
DRAWN JWC	DATE 06/10/2020	Thacker/Grigsby Tr. Old Ermine Post Office Off US119 & Old US119 Near North Fk. Ky. River Letcher County, Ky.
APPROVED JWC	DATE 06/10/2020	
SCALE 1" = 10'	SHEET 2 of 3	PROJECT NO. Ermine/Ermine10_2C

NAD83 KY SINGLE ZONE



APPALACHIAN WIRELESS
 101 TECHNOLOGY TRAIL
 IVEL, KY. 41642
 PROPOSED ERMINE TOWER SITE
 OFF HWY 119 & OLD 119
 IN LETCHER COUNTY, KY.



MAP 56:
 PARCEL 54 MAE C. AMBURGEY, P.O. BOX 54, ERMINE, KY 41815
 PARCEL 57 WILLIAM AND IVA DALE SMITH, 60 FAIRVIEW DRIVE, WHITESBURG, KY 41858 DB399 PG496
 PARCEL 58 GREGORY AND TERESA HOGG, 216 FAIRVIEW DRIVE, WHITESBURG, KY 41858 DB341 PG521
 PARCEL 61 POSITIVE ENERGY ACQUISITIONS LLC, 100 VETERANS DRIVE, HAZARD, KY 41701 DB416 PG214
 PARCEL 62 HALL CEMETERY
 PARCEL 64 PAUL D. BROOKS, P.O. BOX 279, WHITESBURG, KY 41858 DB365 PG584

MAP 56-10:
 PARCEL 27 BLAIR REAL ESTATE INC, 191 GOLF COURSE LANE, WHITESBURG, KY 41858 DB417 PG506
 PARCEL 28 DAN COMBS, BOX 176, WHITESBURG, KY 41858 DB301 PG223
 PARCEL 29 THACKER-GRIGSBY TELEPHONE CO. INC., P.O. BOX 789, HINDMAN, KY 41822 DB436 PG666
 PARCEL 30 STEPHEN GREGORY AMBURGEY C/O MELISSA CROVETTI, 1981 HAVEN LANE, GREEN OAKS, IL 60048 DB333 PG72
 PARCEL 31 COMBS CEMETERY - WHITESBURG, KY 41858
 PARCEL 32 FULTZ PROPERTIES ERMINE LLC, P.O. BOX 43, MAYKING, KY 41837 DB439 PG188
 PARCEL 33 JAMES E. STURGILL, BOX 28, ERMINE, KY 41815
 PARCEL 34 INTERPROPERTY INVESTMENTS INC, 2083 MANOR DRIVE, LEXINGTON, KY 40502 DB307 PG63
 PARCEL 35 CORNERSTONE CHURCH, P.O. BOX 904, WHITESBURG, KY 41858 DB347 PG243
 PARCEL 36 CHILDERS OIL CO. INC., P.O. BOX 430, WHITESBURG, KY 41858 DB327 PG686
 PARCEL 39 HOMETOWN CONVENIENCE LLC, P.O. BOX 430, WHITESBURG, KY 41858 DB409 PG867
 PARCEL 40 BETTY AND PEYTON MORTON, P.O. BOX 1149, HAZARD, KY 41702 DB322 PG245
 PARCEL 41 CHILDERS OIL CO. INC., P.O. BOX 430, WHITESBURG, KY 41858 DB348 PG515
 PARCEL 42 WAL MART STORES DIVISION, ATTN M/S 0555, P.O. BOX 8050, BENTENVILLE, AR 72712-8050 DB306 PG490
 PARCEL 43 GREEN ACRES CEMETERY, 65 MAIN STREET, WHITESBURG, KY 41858 DB336 PG467

MAP 57:
 PARCEL 22 CHILDERS OIL CO. INC., P.O. BOX 430, WHITESBURG, KY 41858 DB440 PG588

LEGEND

BOUNDARY LINE	
ACCESS ROAD	
HIGHWAY	
RAILROAD	



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 LETCHER COUNTY PROPERTY VALUATION ADMINISTRATION OFFICE IN WHITESBURG, KY.

James W. Caudill 12305 06/10/2020
 JAMES W. CAUDILL P.E.# DATE

East Kentucky Network d/b/a Appalachian Wireless 101 Technology Trail, Ivel, KY 41642		
DRAWN JWC	DATE 06/10/2020	Thacker/Grigsby Tr. Old Ermine Post Office Off US119 & Old US119 Near North Fk. Ky. River Letcher County, Ky.
APPROVED JWC	DATE 06/10/2020	
SCALE 1" = 200'	SHEET 1 of 3	PROJECT NO. Ermine/erpva200



APPALACHIAN WIRELESS
 101 TECHNOLOGY TRAIL
 IVEL, KY. 41642
 PROPOSED TOWER SITE
 OFF HWY 119 NEAR ERMINE
 IN LETCHER COUNTY, KY.

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

DRAWN JWC	DATE 06/10/2020	Thacker/Grigsby Tr. Old Ermine Post Office Off US119 & Old US119 Near North Fk. Ky. River Letcher County, Ky.
APPROVED JWC	DATE 06/10/2020	
SCALE 1" = 10'	SHEET 3 of 3	PROJECT NO. Ermine/Ermine10_Pro

PROFILE WITH TOWER

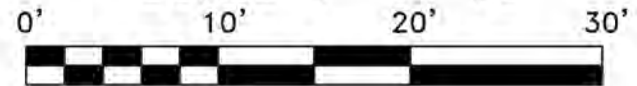
THIS IS A VERTICAL PROFILE SKETCH OF THE TOWER INDICATING THE PROPOSED ANTENNA AND DISH ELEVATIONS. NO DESIGN CRITERIA WAS CONSIDERED IN THE PREPARATION OF THIS DRAWING.

James W. Caudill 12305 06/10/2020
 JAMES W. CAUDILL PE #. DATE

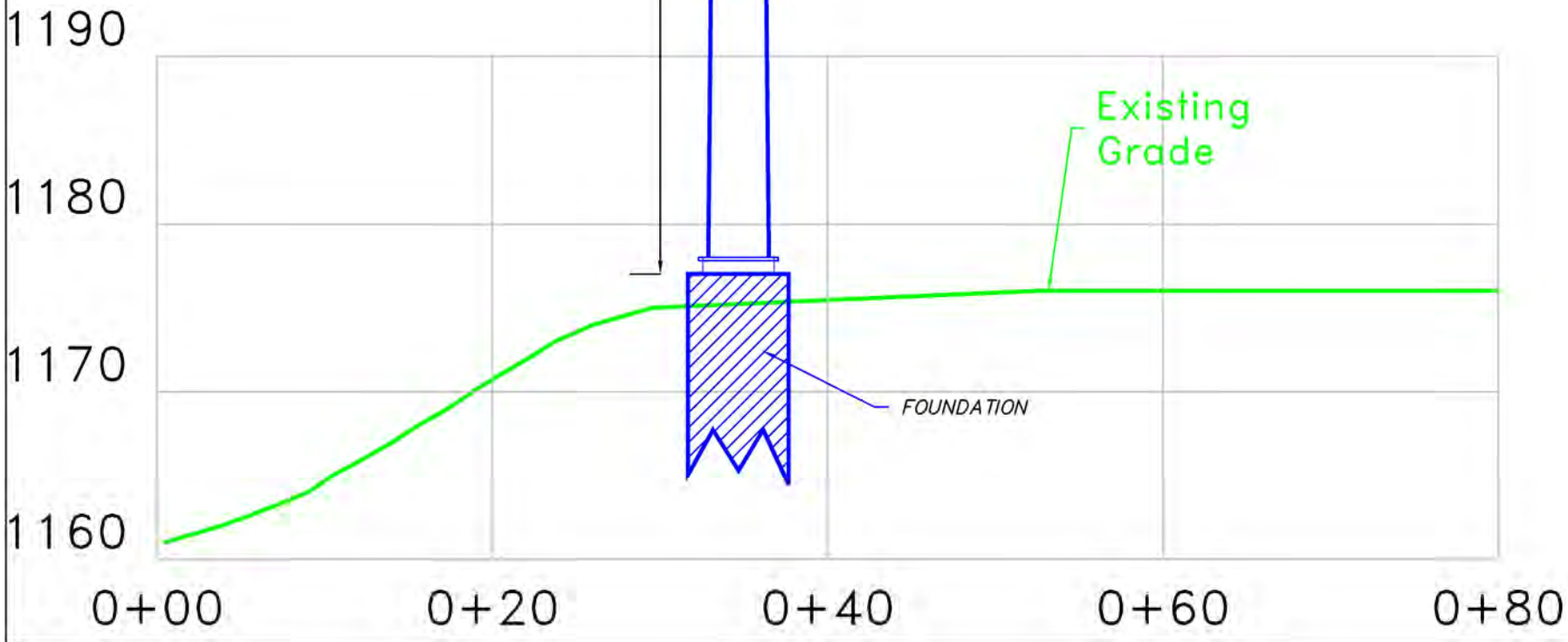
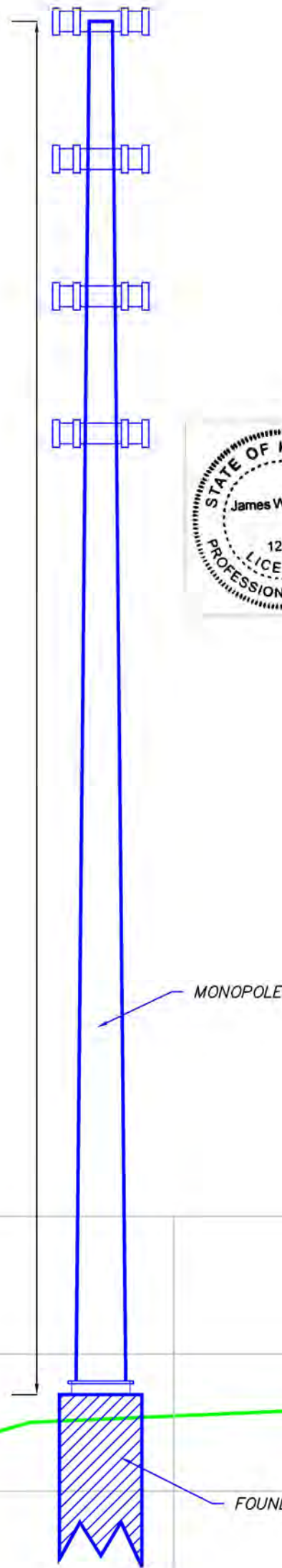


NOTE: SEE FOUNDATION DRAWINGS FOR DETAILS

06/10/2020
 SCALE 1" = 10'



100'



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, LLC	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	PiIntron 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

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

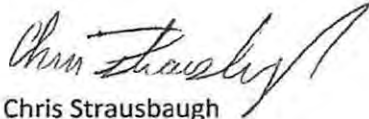
Kentucky Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, KY 40602-0615

Dear Commissioners:

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

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

Thank you,



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