1 FCC License

2 Copies of Cell Site Notice to Land Owners

3 Notifications of County Judge Executive and Newspaper

4 Universal Soil Bearing Analysis

5 Tower Design

6 FAA and KAZC Application

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

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 CONSTRUCT A REPLACEMENT TOWER IN BREATHITT COUNTY, KENTUCKY	)	CASE NO. 2020-00235

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 Breathitt County, pursuant to KRS 278.020 Subsection 1 and 807 KAR 5:001, East Kentucky Network, LLC is seeking the Commission's approval to construct a 300-foot self-supporting telecommunications tower on a tract of land located at 10024 KY Hwy 15, Bethany, Kentucky 41313 (37°39'03.93033"N 83°26'20.17969"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 Breathitt 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 reside or 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 records of the Property 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 reside or own property within 500 feet of the proposed tower or who own property 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.

Breathitt County has no formal local planning unit. In absence of this unit, the Breathitt County Judge Executive's Office was notified by certified mail, return receipt requested of East Kentucky Network, LLC's proposal and informed of its right to intervene. The Breathitt 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 Jackson Times, August 5, 2020, edition. Enclosed in Exhibit 3 is a copy of that notice. The Jackson Times is the newspaper with the largest circulation in Breathitt 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 Allstate Tower, Inc. and will be constructed under their

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

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

FAA and Kentucky Airport Zoning Commission applications 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 28, 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 Deed for the site location along with a lot description.

The proposed construction site is on a rugged mountaintop in close proximity to the existing tower. There is an existing 300' tower owned by East Kentucky Network, LLC on the

property which cannot meet the needs of East Kentucky Network, LLC and will be removed upon construction of the proposed tower.

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

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

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

Exhibit 11 contains a vertical sketch of the tower supplied by James W. Caudill, Kentucky registered professional engineer.

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

[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

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

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

SUBMITTED BY: Lynn Haney DATE: 7/31/2020
Lynn Haney, Regulatory Compliance Director

APPROVED BY: W A Gillum DATE: 7/31/2020
W.A. Gillum, General Manager

ATTORNEY: Krystal Branham DATE: 7/31/2020
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
Attn.: Regulatory Compliance Department
101 Technology Trail
Ivel, KY 41642

1

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

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
Pamela L Gist Esq
8300 Greensboro Drive
McLean, VA 22102
P:(703)584-8665
F:(703)584-8695
E:pgist@fcclaw.com

Ownership and Qualifications

Radio Service Type Mobile

Regulatory Status Common Carrier Interconnected Yes

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

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

Demographics

Race

Ethnicity

Gender

2

EXHIBIT 2 – LIST OF PROPERTY OWNERS

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

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

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

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

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

LIST OF PROPERTY OWNERS

Colin G. and Shirley Holcomb
P.O. Box 312
Campton, KY 41301

Darrel Miller and Brenda Miller
746 Lakeside Drive
Jackson, KY 41339

Larry T Henson and Kathy Henson
128 Turnip Road
Jackson, KY 41339

Angela M. Raleigh
P.O. Box 329
Jackson, KY 41339

Appalachian WIRELESS
www.appalachianwireless.com

EAST KENTUCKY NETWORK, LLC
www.ekn.com

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

July 31, 2020

Colin G. and Shirley Holcomb
P.O. Box 312
Campton, KY 41301

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00235)

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 Breathitt County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 10024 KY Hwy 15, Bethany, 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. 2020-00235 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

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

Appalachian WIRELESS
www.appalachianwireless.com

EAST KENTUCKY NETWORK, LLC
www.ekn.com

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

July 31, 2020

Darrel Miller and Brenda Miller
746 Lakeside Drive
Jackson, KY 41339

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00235)

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 Breathitt County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 10024 KY Hwy 15, Bethany, 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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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

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

Appalachian WIRELESS
www.appalachianwireless.com

EAST KENTUCKY NETWORK, LLC
www.ekn.com

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

July 31, 2020

Angela M. Raleigh
P.O. Box 329
Jackson, KY 41339

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00235)

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 Breathitt County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 10024 KY Hwy 15, Bethany, 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. 2020-00235 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

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

Appalachian WIRELESS
www.appalachianwireless.com

EAST KENTUCKY NETWORK, LLC
www.ekn.com

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

July 31, 2020

Larry T. Henson and Kathy Henson
128 Turnip Road
Jackson, KY 41339

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00235)

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 Breathitt County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 10024 KY Hwy 15, Bethany, 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.

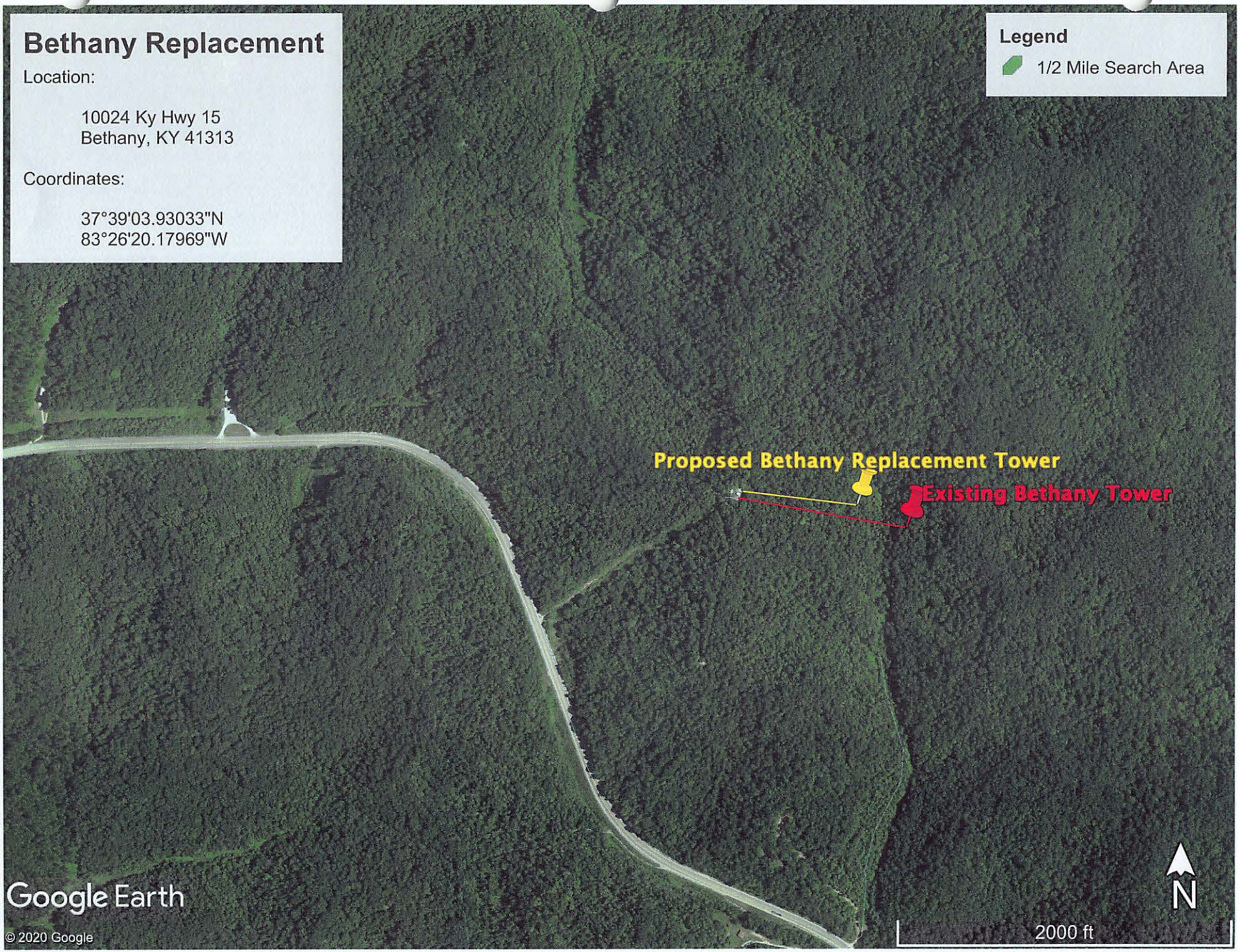
Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2020-00235 in your correspondence.

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

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1


Bethany Replacement
Location:
10024 Ky Hwy 15
Bethany, KY 41313
Coordinates:
37°39'03.93033"N
83°26'20.17969"W
Legend
1/2 Mile Search Area
Proposed Bethany Replacement Tower
Existing Bethany Tower
Google Earth
© 2020 Google
N
2000 ft

3

Appalachian WIRELESS
www.appalachianwireless.com

EAST KENTUCKY NETWORK, LLC
www.ekn.com

VIA: U.S. CERTIFIED MAIL

July 31, 2020

Jeffrey Noble, Judge Executive
1137 Main Street
Jackson, KY 41339

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00235)

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 Breathitt County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land at 10024 KY HWY 15, Bethany, 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 Breathitt 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. 2020-00235 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

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure

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

EAST KENTUCKY NETWORK

To:	The Jackson Times Attn: Classifieds	**From:**	Raina Helton Regulatory Compliance Assistant
Email:	Advertising.jacksontimes@gmail.com	**Date:**	July 30, 2020
Re:	PUBLIC NOTICE ADVERTISEMENT	**Pages:**	1

Please place the following Public Notice Advertisement in The Jackson Times to be ran on August 5, 2020.

PUBLIC NOTICE:

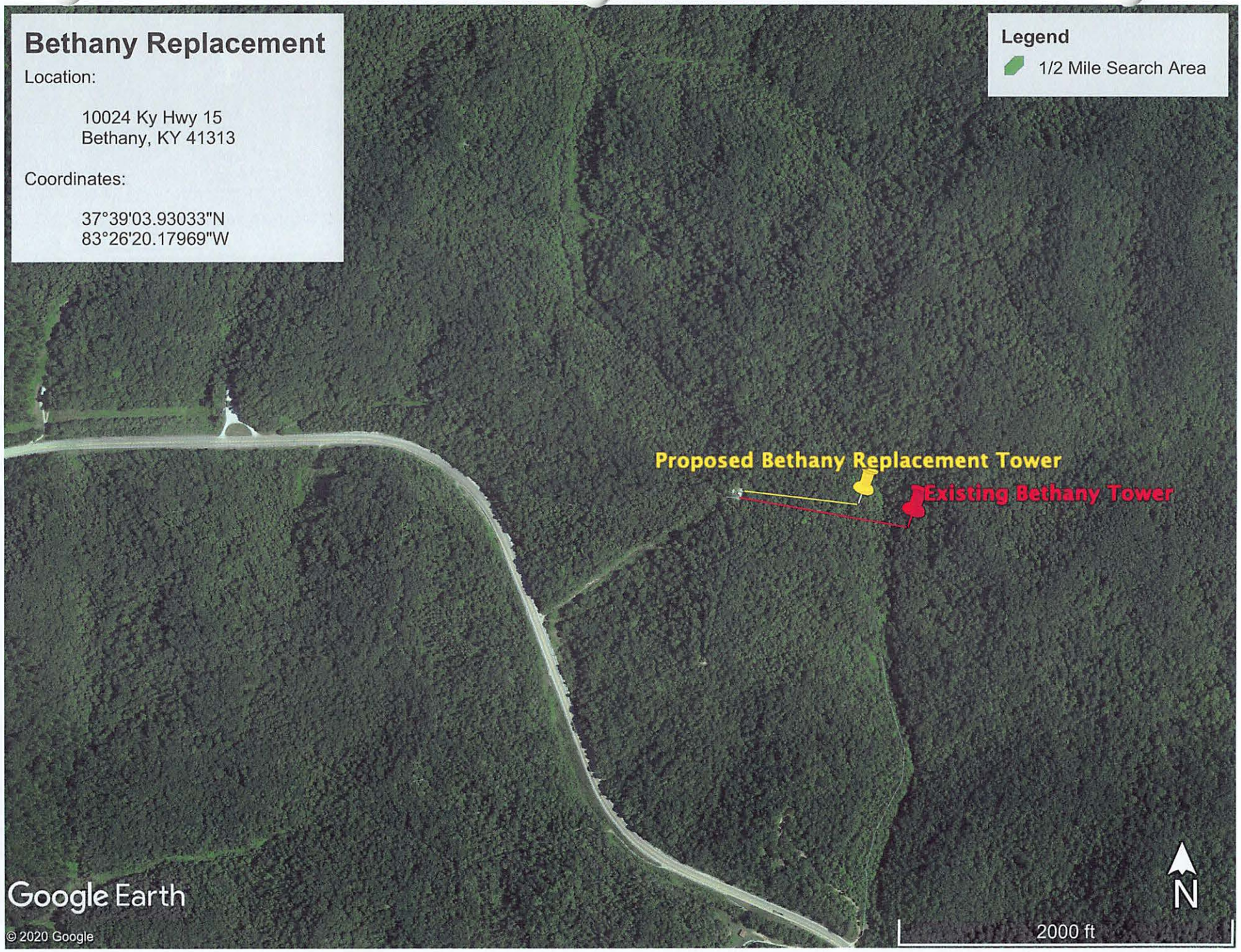
RE: Public Service Commission of Kentucky (CASE NO. 2020-00235)

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 off of 10024 KY HWY 15, Bethany, Kentucky. The proposed tower will be a 300 foot self-supporting tower with attached antennas. If you would like to respond to this notice, please contact the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to Case No. 2020-00235.

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


Bethany Replacement
Location:
10024 Ky Hwy 15
Bethany, KY 41313
Coordinates:
37°39'03.93033"N
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Legend
1/2 Mile Search Area
Proposed Bethany Replacement Tower
Existing Bethany Tower
Google Earth
© 2020 Google
N
2000 ft

4

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

EAST KENTUCKY ENGINEERING, LLC.

APPALACHIAN WIRELESS
Geotechnical Investigation on the Bethany Tower Site Breathitt County, Kentucky EKYENG Project No. 165-000-0106

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

STATE OF KENTUCKY
RICHARD D. SMITH
20215
LICENSED PROFESSIONAL ENGINEER

_____, 20215, April 23rd, 2020

EXECUTIVE SUMMARY

A geotechnical investigation has been performed on the Bethany Tower Site, located in Breathitt County, Kentucky. This site is readily accessible. A location map is shown in Figure 1 of this report. Three (3) borings were advanced to a maximum depth of 40.0 ft. The following geotechnical considerations were identified:

- Borings utilized for this study encountered thin soils to 1 ft, sandstone to 10 ft, and very weathered sandstone from 10.0 ft to 40.0 ft.
- This site is on a forested knob adjacent to an existing tower.
- **The allowable bearing capacities are estimated at 4 tsf on the weathered sandstone unit from 1340 to 1310.**
- The 2015 International Building Code seismic site classification for this site is "A".
- If during the foundation design it becomes necessary to lower, raise, or change the footer configuration, 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.

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 Bethany Property, in Breathitt County, Kentucky. A site location map is shown in Figure No. 1.

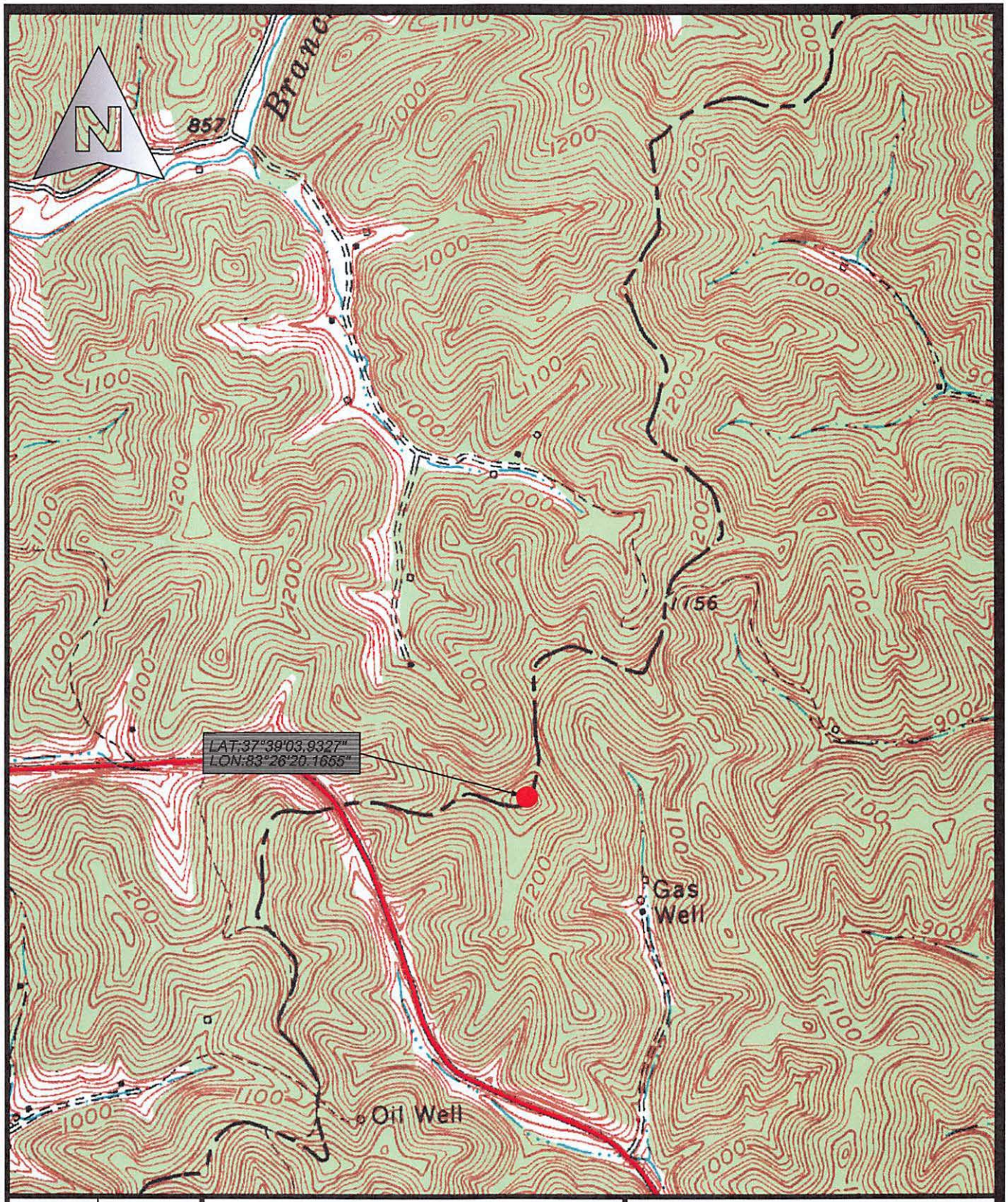
Three (3) borings were advanced to a maximum depth of 40.0 ft. Horn and Associates, Inc. provided drilling services to obtain these borings. Logs of the borings along with a boring location plan are included in Appendix A and Appendix D. The purpose of these services is to provide information and geotechnical 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 footings are anticipated to be 4 ft diameter drilled piers socketed into bedrock. The pier spacing is estimated to be on 33 ft x 33 ft centers with an estimated base of the tower at 1346.5 ft. Based on the information provided, we estimate the structural loads will be like the following conditions.

CONDITION	LOAD
Total Shear	40 Kips
Axial Load	50 Kips

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



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

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

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

3.0 SITE DESCRIPTION & HISTORICAL MINING

3.1 GENERAL INFORMATION

The site location is on a forested knob adjacent to an existing tower in Breathitt County, Kentucky. The current surface elevation is approximately 1345.0 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.

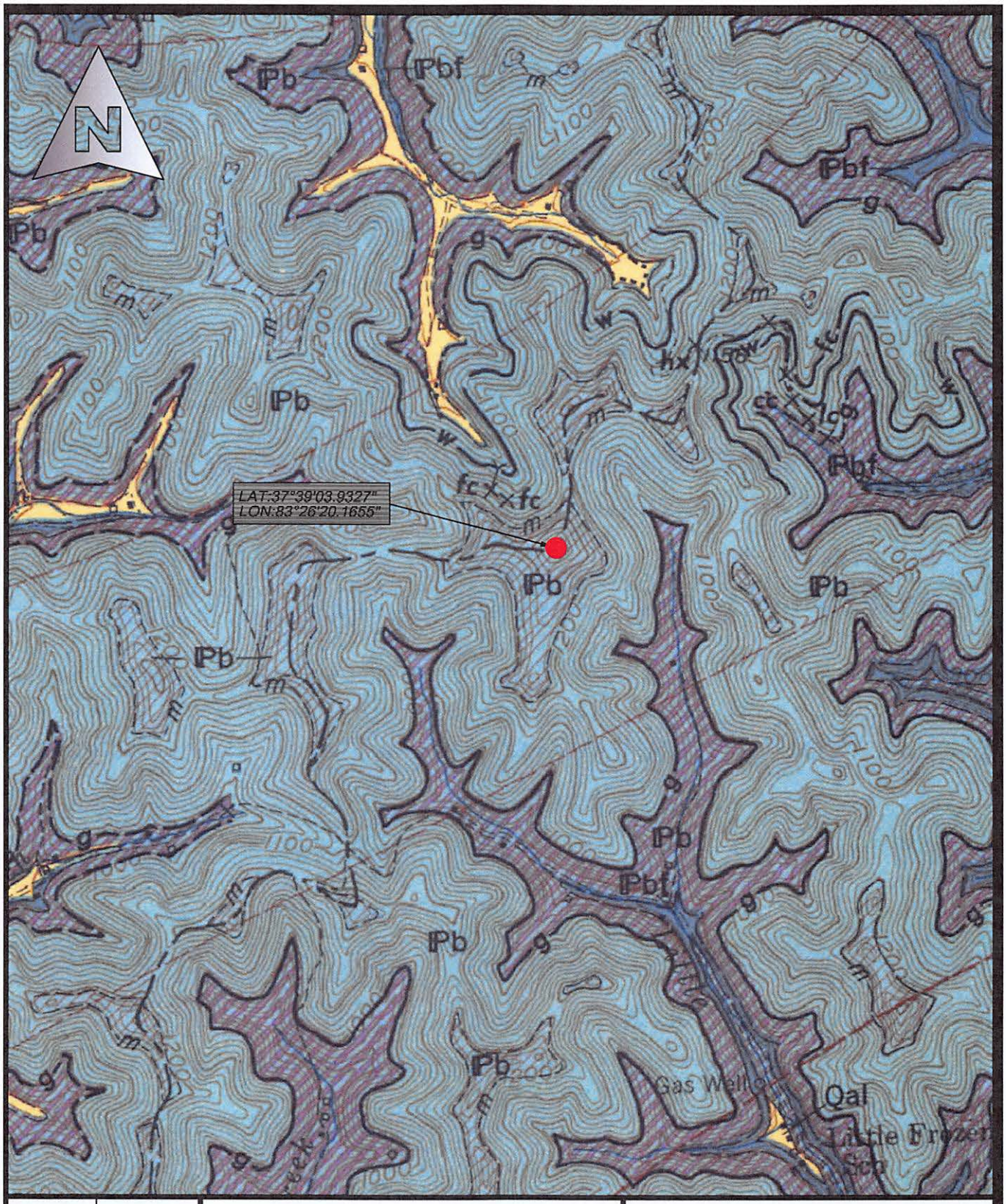
3.4 FLOOD HAZARD

A potential flood determination was conducted by EKYENG. For this determination, the FEMA Flood Map Service was reviewed for this location. The flood map for the selected area is number **21025C0050C-210023.** The flood zone for this area is Zone X and is an area of minimal flood hazard. A FIRMette map is included in Appendix E of this report.

4.0 FIELD EXPLORATION

4.1 SITE INFORMATION

The proposed site is located on a forested knob, adjacent to an existing tower, in Breathitt County, Kentucky. The site lies within the Landsaw Quadrangle. The site is readily accessible by conventional exploratory equipment. Drilled pier locations were determined based on the information provided. Foundation



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

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

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

dimensions were estimated to be centered on a 33 ft x 33 ft x 33 ft pattern for this report.

4.2 BORING DATA

Three (3) borings were made in the relative positions shown on the Site Map in Appendix D. The boring logs and resulting data are included in Appendix A. These borings were made with a track-mounted boring rig using hollow-stem augers and employing standard penetration resistance methods (ASTM D-1586, which includes 140-pound hammer, 30-inch drop, and two-inch-O.D. split-spoon sampler) at maximum depth intervals of five feet or at major changes in stratum, whichever occurred first. The disturbed split-spoon samples were visually classified, logged, sealed in moisture-proof jars, and taken to the EKYENG laboratory for study. The depths where these "A"-type split-spoon samples were collected are noted on the boring logs. The results of the natural moisture contents by boring and interval are shown in Table 2.

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

SAMPLE NO.	DEPTH INCREMENT, (FT.)	NATURAL MOISTURE CONTENT, %
B1 S-1	0.0 – 1.3	10.0%
B1 S-2	2.0 – 2.4	7.1%
B2 S-1	0.0 – 1.5	11.1%
B2 S-2	2.0 – 2.8	8.4%
B3 S-1	0.0 – 1.5	13.5%
B3 S-2	2.0 – 3.5	13.4%
B3 S-3	4.5 – 4.9	8.9%

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	0.0-0.2	6-16-50/.3	Gravel
B-1	0.2-10.0	38*	Sandstone
B-1	10.0-35.0	16*	Weathered Sandstone
B-2	0.0-1.0	1-3-8	Topsoil/Gravel
B-2	1.0-10.0	38*	Sandstone
B-2	10.0- 40.0	0	Very Weathered Sandstone
B-3	0.0-0.2	1-1-1	Topsoil
B-3	0.2-4.6	6-10-14	Sandy Silt
B-3	4.6-10.0	54*	Sandstone
B-3	10.0-40.0	10*	Very Weathered Sandstone

The borings encountered very weathered sandstone. The three borings were 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. These borings are between 0.2 ft and 40.0 ft in depth. The position at which the core was taken is indicated on the boring logs and shown on the boring location map in Appendix D.

4.3 GROUNDWATER

Groundwater in Eastern Kentucky is characterized by water flowing through a system of internal fractures that lead to an alluvial aquifer near the bottom of valley floors. Large, defined aquifers other than the alluvium is not common,

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

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 2018 Kentucky Building Code. In addition, an S_{DS} coefficient of 0.104 g was calculated, and an S_{D1} coefficient of 0.047 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 tri-pole tower with separate pier foundations. 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.

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 – 1.0	Ignore	Ignore	Ignore	Ignore	Ignore

Approx. Depth (ft.)	Allowable Skin Friction (psf.)	Allowable End Bearing Pressure (psf.)	Effective Unit Weight (pcf.)	Cohesion (psf.)	Internal Angle of Friction (Degrees)
Sandstone 1.0 – 10.0	2500	12,000	165	----------	33
Weathered SS 10.0- 40.0	1500	10,000	160	----------	30

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.

It is furthermore recommended that other slabs-on-grade be supported on 4 to 6-inch layer of relatively clean granular material such as sand and gravel or crushed stone. This is to help distribute concentrated loads and equalize moisture conditions beneath the slab. Proper drainage must be incorporated into this granular layer to preclude future wet areas in the finished slab-on-grade. However, all topsoil and/or other deleterious materials encountered during site preparation must be removed and replaced with 4000 psi. concrete below the foundation base. Provided that a minimum of 4 inches of granular material is placed below the new slab-on-grade, a modulus of subgrade reaction (k30) of 100 lbs./cu. in. can be used for design of the slabs.

Support structure for this tower can be placed as needed. It is recommended that test pits are examined to ensure that any of these structures are on the competent materials. If pockets of soft, loose or otherwise unsuitable material are encountered in the footing excavations and it is inconvenient to lower the footings,

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

5.3 BURIED UTILITIES

Excavations for buried utility pipelines should follow the guidelines set forth in this report. Depending on the pipeline material, a minimum thickness of at least 0.5 feet of select fine-grained granular bedding material should be used beneath all below-grade pipes, with a minimum cover thickness of at least 3 feet to afford an "arching" effect and reduce stresses on the pipe. The cover thickness may be reduced if the external loading condition on the pipe is relatively light or if the pipe is designed to withstand the external loading condition. It is not recommended that "pea-gravel" or other "open-work" aggregates be used for trench backfill since these materials are nearly impossible to compact and tend to pond water within their interstices.

6.0 WARRANTY

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

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

6.1 SUBSURFACE EXPLORATION

Subsurface exploration is normally accomplished by test borings, although test pits are sometimes employed. The method of determining the boring location and the surface elevation at the boring is noted in the report and is presented on the Boring Location Plan or on the boring log. The location and elevation of the boring should be considered accurate only to the degree inherent with the method used.

The boring log includes sampling information, description of the materials recovered, approximate depth of boundaries between soil and rock strata and groundwater data. The boring log represents conditions specifically at the location and time the boring was made. The boundaries between different soil strata are indicated at specific depths; however, these depths are in fact approximate and are somewhat dependent upon the frequency of sampling (The transition between soil strata is often gradual). Free groundwater level readings

are made at the times and under conditions stated on the boring logs (Groundwater levels change with time and season). The borehole does not always remain open sufficiently long enough for the measured water level to coincide with the groundwater table.

6.2 LABORATORY AND FIELD TESTS

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

6.3 ANALYSIS AND RECOMMENDATIONS

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

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

The geotechnical engineering report states our understanding as to the location, dimensions and structural features proposed for the site. Any significant changes in the nature, design, or location of the site improvements MUST be communicated to the geotechnical engineer such that the geotechnical analysis, conclusions, and recommendations can be appropriately adjusted. The geotechnical engineer should be given the opportunity to review all drawings that have been prepared based on their recommendations.

6.4 CONSTRUCTION MONITORING

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

6.5 GENERAL

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

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 Bethany Property located in Breathitt County, Kentucky. Specific design and construction recommendations have been provided in the various sections of the report. The report shall, therefore, be used in its entirety. This report is not a bidding

document and shall not be used for that purpose. Anyone reviewing this report must interpret and draw their conclusions regarding specific construction techniques and methods that were chosen. EKYENG is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploratory and laboratory test data presented in this report.

SPECIFICATIONS

I – GENERAL

1.0 STANDARDS AND DEFINITIONS

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

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

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

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

1.2 DEFINITIONS

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

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

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

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

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

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

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.

II - ENGINEERED FILL BENEATH STRUCTURES
CLEARING AND GRADING SPECIFICATIONS

1.0 GENERAL CONDITIONS

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

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

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

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

2.0 SUBSURFACE CONDITIONS

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

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

3.0 SITE PREPARATION

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

All cut and fill areas shall be properly stripped. Topsoil will be removed to its full depth and stockpiled for use in finish grading. Any rubbish, organic and other objectionable soils, and other deleterious material shall be disposed of off the site, or as directed by the Owner or his designated representative if on site disposal is

provided. In no case shall such objectionable material be allowed in or under the fill unless specifically authorized in writing.
Prior to the addition of fill, the original ground shall be compacted to job specifications as outlined below. Special notice shall be given to the proposed fill area now. If wet spots, spongy conditions, or groundwater seepage is found, corrective measures must be taken before the placement of fill.

4.0 FORMATION OF FILL AREAS

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

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

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

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

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

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.

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.

5. Mobile equipment, operating adjacent to an open excavation or approaching the edge of an excavation, must have one of the following when the operator's view is obstructed:
   - Warning System
   - Mechanical Signals
   - Barricades
   - Stop Logs
   - Hand Signals

6. The contractor must check the atmosphere for hazardous gases and oxygen deficiencies when excavating four feet or greater around landfills, or when hazardous substances are stored nearby, and when the contractor expects there could be any exposure to the workers.

7. When hazardous atmospheric conditions exist, or when conditions could change, the contractor must make emergency rescue equipment readily available including breathing apparatus, safety harnesses with life lines and a basket stretcher.

8. When workers enter bell-bottom pier holes or other deep and confined excavations, the worker must wear (always while performing work in the confined space) a separate life line attached to a harness. The line must be attended by someone above while work is being performed. The worker must check for hazardous atmospheric conditions prior to entry.

9. The contractor must ensure that water does not accumulate in open excavations and must inspect the excavation prior to allowing workers to re-enter after heavy rains.

10. Adjacent structures (buildings, walls, etc.) must be supported or secured to prevent worker exposure to unsafe conditions and damage to existing structures.

11. A registered professional engineer must approve operations when a contractor underpins existing structures to ensure worker safety and prevent damage to existing structures.

12. Workers must not be exposed to loose soil and rock or materials in and around excavations. Materials, such as removed soil and rock, must not be stored closer than two feet from the edge of the excavation.

13. Daily inspections of the excavation, the adjacent areas and protective systems must be made by a "competent person" for evidence of possible cave-ins, indications of failure of protective systems, hazardous atmospheres or other hazardous conditions. The "competent person" must

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.

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 Contractors survey crew will verify alignment with instruments. If plumbness and alignment are not within tolerance as determined by the Contractors survey crew, the casing will be extracted and re-aligned as necessary.

2.2 The drill rig will remove soil and bedrock material from within the casing to the drilled pier design tip elevation. A steel casing or "Sonotube" shall be inserted into the borehole to preclude cave-ins and/or instability in the borehole.

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

3.0 INSTALLATION OF THE REBAR CAGE

3.1 An epoxy coated spiral reinforcing steel cage will be installed while in the drilled pier borehole.

3.2 To assist in assuring that the reinforcing steel cage does not settle during concrete pumping, a mat of reinforcing steel bars will be installed across the bottom of the reinforcing steel cage perpendicular to the vertical axis of the cage. The exact number of bars will be determined and installed by the Structural Engineer. The number of rebar boots used on the bottom of the cage will also be determined by the Structural Engineer.

3.3 The reinforcing steel cage will be lowered into the drilled pier borehole, while drilled pier spacers are placed at intervals as required by the Structural Engineer. The reinforcing steel cage will be checked for alignment by the Contractors survey crew.

3.4 The crane will remain attached to the reinforcing steel cage while the concrete pump outlet pipe is lowered to just above the bottom of the drilled pier. The concrete pump pipe sections will be welded together to assure that do not separate during pumping.

4.0 CONCRETING OF THE DRILLED PIER

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

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.

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

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.

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. Coal the forms prior to placing of reinforcing steel as required in form work.

4. Secure firmly in correct position, all reinforcement and other items to be encased and remove therefrom all coating including ice and frost.

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

accompanied by a time slip issued at the batching plant, bearing the time of charging of the mixer drum with the cement and aggregates.

C. Transporting of Concrete from Mixer to Place of Final Deposit: Transportation shall be done as rapidly as practical by means which shall prevent the separation or loss of the ingredients. If chutes are used, they shall be at a slope not flatter than one vertical to two horizontal. Buggies or carts shall be equipped with pneumatic rubber tires or surfaces of runways shall be sufficiently smooth or both so as not to cause separation or segregation of concrete ingredients. Concrete shall not be allowed to drop freely more than 4 feet. Where greater drops are required, canvas "elephant trunks" or galvanized iron chutes equipped with suitable hopper heads shall be employed and a sufficient number placed to ensure that the concrete may be effectively compacted into horizontal layers not exceeding 12 inches in thickness with minimum lateral movements.

D. Depositing of Concrete: Depositing of concrete shall:

1. Proceed continuously after once starting until reaching the end of a section of construction joint location shown on the drawings, or as approved by the Owner. The operations shall be conducted so that no concrete is deposited on concrete sufficiently hardened to cause formation of seams, and planes of weakness.
2. Be as near as practical to its final position in the forms.
3. Proceed to maintain constantly a top surface which is approximately level.
4. Be placed before initial set has occurred, and in no event after it has contained its water content for more than 90 minutes.
5. Be thoroughly worked and compacted by means of suitable tools to provide impermeability, durability and strength and shall be thoroughly worked around reinforcements and embedded items and into corners of forms and to be free from voids, pockets or honeycombing. Care shall be taken to provide impermeability.

E. Vibration Equipment: Vibration equipment shall be of the appropriate type and shall, always, be adequate in number of units and power of each unit to properly consolidate all concrete.

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

9.0 CURING

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 is 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 corrects, protrusions removed, and holes filled.

APPENDIX A BORING LOGS

HORN AND ASSOCIATES, INC
216 N. Main Street - Winchester, KY 40391
Ph: 800-729-2802 Fax: 859-744-5892

FIELD BORING LOG

Project Name: BETHANY TOWER
Federal Project No.:
State Project No.:
Drilling/Sampling Method: HSA / NX
Boring Diameter: 6"

Hole Number: B-1
Total Depth: 35.0
Location: AS STAKED
Surface Elevation: N/A
Date Started: 4/21/20
Date Completed: 4/21/20
Driller: G. HOLM
Weather:

From To	Soil and Rock Description	Sample/Run Interval	Blow Counts/RQD	Sample/Run No.	Sample Type	% Recovery
0.0 0.2	GRAVEL	0.0/1.3	6-16-50/.3	S-1	SPT	
0.2 35.0	V. WEATHERED SANDSTONE	2.0/2.4	50/.4	S-2	SPT	
	LOST WATER @ 25.0'	4.5/9.5	38	R-1	NX	60
	TERMINATED @ 35.0'	9.5/15.0	7	R-2	↓	25
		15/20	0	R-3	↓	36
		20/25	0	R-4	↓	34
		25/30	28	R-5	↓	58
		30/35	36	R-6	NX	58

Water Level @ Drilling: 25.5
24 Hr. Water Level:
7 Day Water Level:
Moving/Delay Time:
Hammer Weight: 140 lbs.
Hammer Drop: 30 in.

HORN AND ASSOCIATES, INC
216 N. Main Street - Winchester, KY 40391
Ph: 800-729-2802 Fax: 859-744-5892

FIELD BORING LOG

Project Name: BETHANY TOWER
Federal Project No.:
State Project No.:
Drilling/Sampling Method: HSA / NX
Boring Diameter: 6"

Hole Number: B-2 Total Depth: 40.0
Location: AS STAKED
Surface Elevation: N/A
Date Started: 4/21/20 Date Completed: 4/21/20
Driller: G. HORN. Weather:

From / To	Soil and Rock Description	Sample/Run Interval	Blow Counts/RQD	Sample/Run No.	Sample Type	% Recovery
0.0 / 1.0	TOPSOIL / GRAVEL	0.0 / 1.5	1-3-8	S-1	SPT	
1.0 / 40.0	V. WEATHERED SANDSTONE	2.0 / 2.8	50/.3	S-2	SPT	
	LOST WATER @ 37.0'	4.5 / 9.5	38	R-1	NY	80
	TD @ 40.0'	9.5 / 15.0	0	R-2		35
		15 / 20	0	R-3		18
		20 / 25	0	R-4		0
		25 / 30	0	R-5		0
		30 / 35	0	R-6		20
		~~30 / 35~~				
		35 / 40	0	R-7	NX	0

Water Level @ Drilling: 39 24 Hr. Water Level: 7 Day Water Level:
Moving/Delay Time: Hammer Weight: 140 lbs. Hammer Drop: 30 in.

HORN AND ASSOCIATES, INC
216 N. Main Street - Winchester, KY 40391
Ph: 800-729-2802 Fax: 859-744-5892

FIELD BORING LOG

Project Name: BETHANY TOWER
Federal Project No.:
State Project No.:
Drilling/Sampling Method: HSA / NX
Boring Diameter: 6"

Hole Number: B-3 Total Depth: 40.0
Location: AS SHOWN
Surface Elevation: N/A
Date Started: 4-21-20 Date Completed: 4-22-20
Driller: G. HORN Weather:

From / To	Soil and Rock Description	Sample/Run Interval	Blow Counts/RQD	Sample/Run No.	Sample Type	% Recovery
0.0 / .2	TOPSOIL	0.0 / 1.5	1-1-1	S-1	SPT	
.2 / 4.6	SANDY SILT	2.0 / 3.5	6-10-14	S-2	SPT	
4.6 / 40	V. WEATHERED SANDSTONE	4.5 / 4.9	50/.4	S-3	SPT	
	LOST WATER @ 20	5 / 10	64	R-1	NX	100
	TD @ 40.0	10 / 15	8	R-2	"	26
		15 / 20	0	R-3	"	0
		20 / 25	20	R-4	"	58
		25 / 30	0	R-5	"	12
		30 / 35	0	R-6	"	30
		35 / 40	70	R-7	NX	84

Water Level @ Drilling: 35 24 Hr. Water Level: 7 Day Water Level:
Moving/Delay Time: Hammer Weight: 140 lbs. Hammer Drop: 30 in.

APPENDIX B CORE PHOTOGRAPHS


Bethany Tower
Hole B-1
Run-5 25.0-30.0
Rec: 2.9 RQD: 1.4
Run-6 30.0-35.0
Rec: 2.9 RQD: 1.8


Bethany Tower
Hole B-2
Run-1 4.5-9.5
Rec: 4.0 RaD: 1.9
Run-2 9.5-15.0
Rec: 1.9 RaD: 0.0
Run-3 15.0-20.0
Rec: 0.9 RaD: 0.0
Run-4 20.0-25.0
Rec: 0.0 RaD: 0.0
Run-5 25.0-30.0
Rec: 0.0 RaD: 0.0
Run-6 30.0-35.0
Rec: 1.0 RaD: 0.0
Run-7 35.0-40.0
Rec: 0.0 RaD: 0.0
-N.WL CORE TOP

EAST KENTUCKY ENGINEERING, LLC.

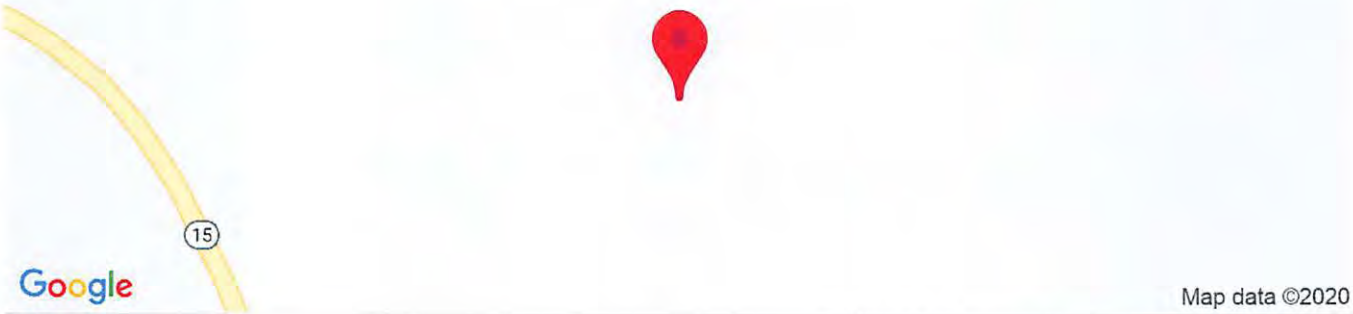
EAST KENTUCKY ENGINEERING, LLC.

APPENDIX C SEISMIC DATA

OSHPD

Bethany Tower

Latitude, Longitude: 37.65109, -83.43893



Date	5/8/2020, 12:27:50 PM
Design Code Reference Document	IBC-2015
Risk Category	IV
Site Class	A - Hard Rock

Type	Value	Description
S_S	0.195	MCE_R ground motion. (for 0.2 second period)
S_1	0.088	MCE_R ground motion. (for 1.0s period)
S_{MS}	0.156	Site-modified spectral acceleration value
S_{M1}	0.07	Site-modified spectral acceleration value
S_{DS}	0.104	Numeric seismic design value at 0.2 second SA
S_{D1}	0.047	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	A	Seismic design category
F_a	0.8	Site amplification factor at 0.2 second
F_v	0.8	Site amplification factor at 1.0 second
PGA	0.094	MCE_G peak ground acceleration
F_{PGA}	0.8	Site amplification factor at PGA
PGA_M	0.075	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
SsRT	0.195	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.211	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.088	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.097	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.6	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.925	Mapped value of the risk coefficient at short periods
C_{R1}	0.904	Mapped value of the risk coefficient at a period of 1 s

DISCLAIMER

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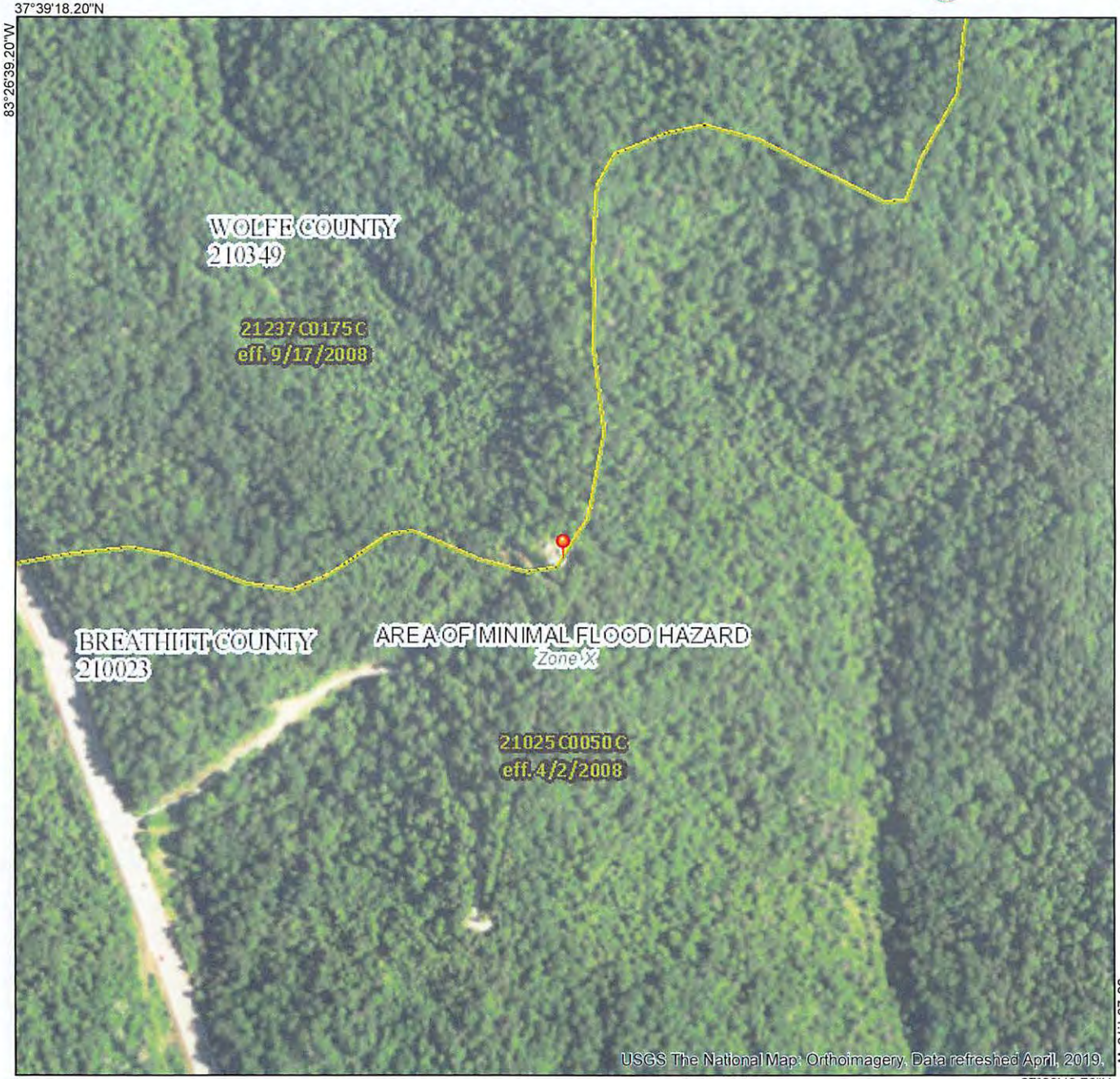
APPENDIX D PHOTOGRAPHS

APPENDIX E
MAPS

National Flood Hazard Layer FIRMette

FEMA



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
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

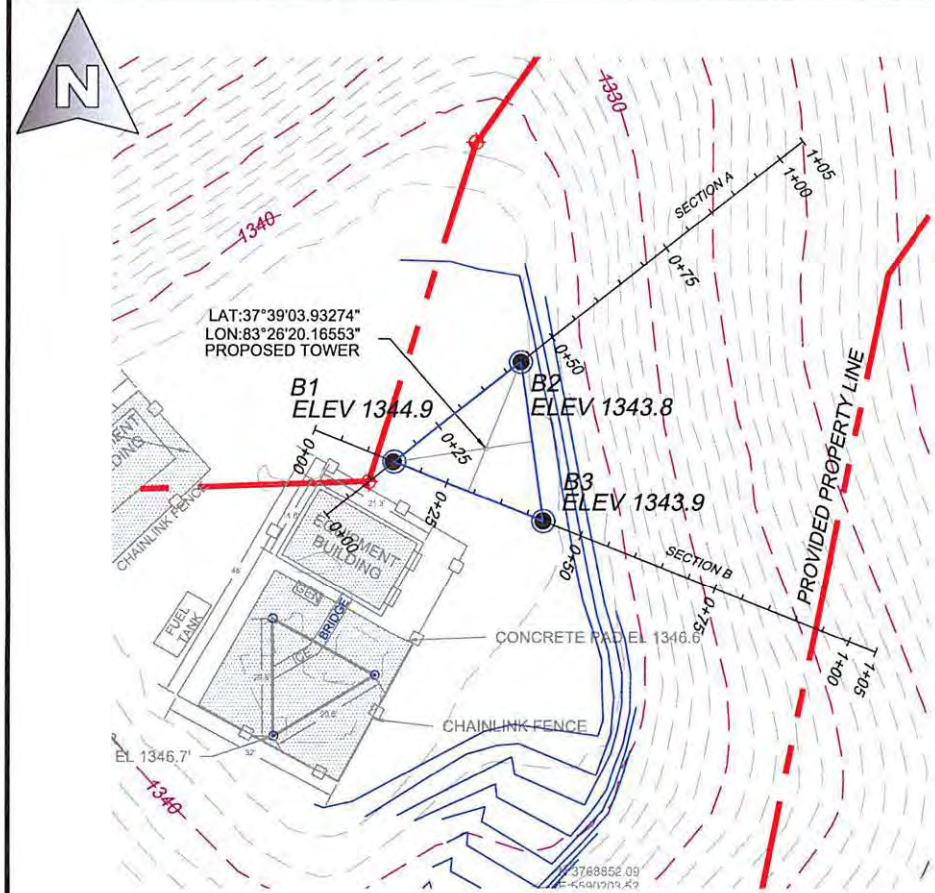
N

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

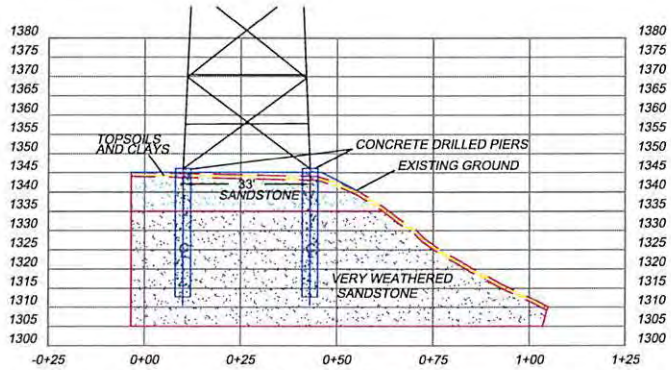
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/15/2020 at 11:36:21 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.

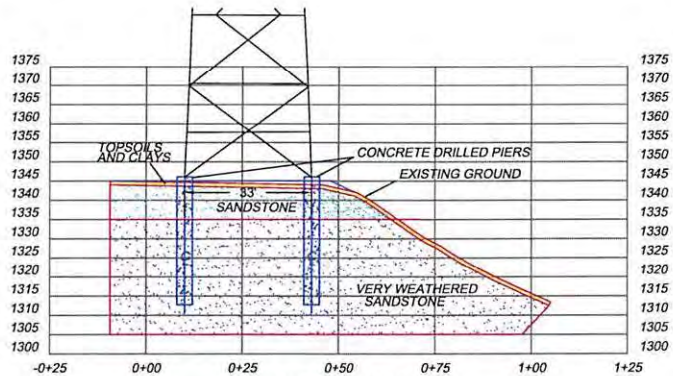
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory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



PLAN VIEW
1" = 20'



SECTION A
1" = 30'



SECTION B
1" = 30'

East Kentucky Engineering, LLC

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

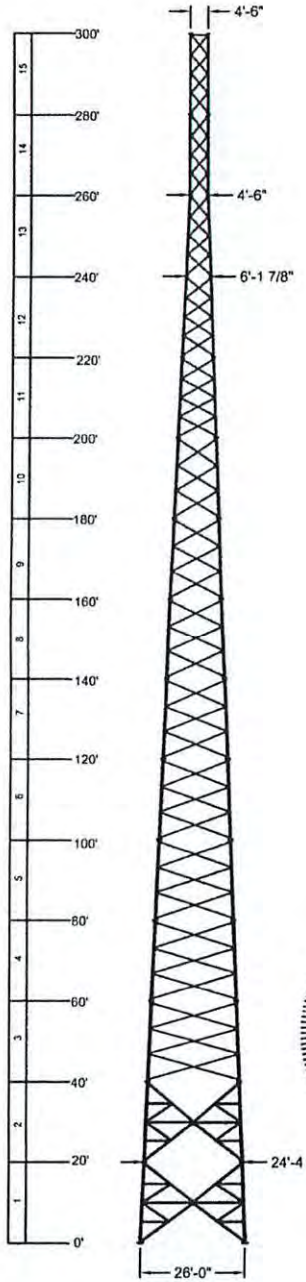
0' 20' 40'

Drawn by:RDS	4/14/2020
Job #:165-0106	Scale:1" = AS NOTED
File Location:	

STATE OF KENTUCKY
RICHARD D. SMITH
19215
LICENSED PROFESSIONAL ENGINEER
4/14/2020

APPALACHIAN WIRELESS
PROPOSED TOWER LOCATION
BETHANY SITE
BREATHITT COUNTY, KENTUCKY

5

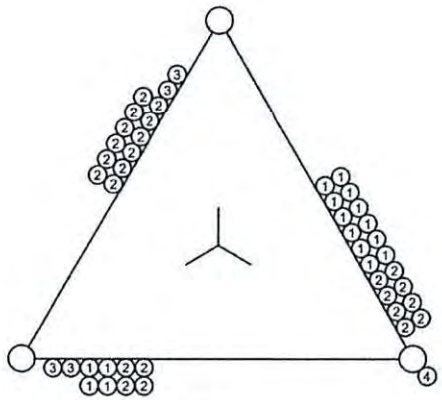


MEMBER INFORMATION

SECTION	ELEVATION	FACE SIZE	LEG DIA.	DIAGONALS	HORIZONTALS	RED. HORZ/DAGS	INNER BRACING	GIRTS	# OF BAYS
1	0' - 20'	26'-0"	Ø5"	2L 3" x 3/16"	2L 2 1/2" x 3/16"	2L 2" x 1/8"	2L 2" x 3/16"	N/A	4 - MOD X
2	20' - 40'	24'-4 1/8"	Ø5"	2L 3" x 3/16"	2L 2 1/2" x 3/16"	2L 2" x 1/8"	2L 2" x 3/16"	N/A	4 - MOD X
3	40' - 60'	22'-8 5/16"	Ø5"	L 4" x 1/4"	N/A	N/A	N/A	N/A	3 - X
4	60' - 80'	21'-0 7/16"	Ø4 3/4"	L 4" x 1/4"	N/A	N/A	N/A	N/A	3 - X
5	80' - 100'	19'-4 5/8"	Ø4 1/2"	L 3 1/2" x 1/4"	N/A	N/A	N/A	N/A	3 - X
6	100' - 120'	17'-8 3/4"	Ø4 1/2"	L 3 1/2" x 1/4"	N/A	N/A	N/A	N/A	3 - X
7	120' - 140'	16'-0 15/16"	Ø4 1/4"	L 3" x 1/4"	N/A	N/A	N/A	N/A	3 - X
8	140' - 160'	14'-5 1/16"	Ø4 1/4"	L 3" x 3/16"	N/A	N/A	N/A	N/A	3 - X
9	160' - 180'	12'-9 1/4"	Ø4"	L 3" x 3/16"	N/A	N/A	N/A	N/A	3 - X
10	180' - 200'	11'-1 3/8"	Ø3 3/4"	L 2 1/2" x 3/16"	N/A	N/A	N/A	N/A	3 - X
11	200' - 220'	9'-5 9/16"	Ø3 1/4"	L 2" x 3/16"	N/A	N/A	N/A	N/A	4 - X
12	220' - 240'	7'-9 11/16"	Ø3"	L 2" x 1/8"	N/A	N/A	N/A	N/A	4 - X
13	240' - 260'	6'-1 7/8"	Ø2 3/4"	L 2" x 1/8"	N/A	N/A	N/A	N/A	4 - X
14	260' - 280'	4'-6"	Ø2 1/2"	L 2" x 1/8"	N/A	N/A	N/A	N/A	4 - X
15	280' - 300'	4'-6"	Ø1 3/4"	L 1 1/2" x 1/8"	N/A	N/A	N/A	L 1 1/2" x 1/8"	4 - X

ANTENNA INFORMATION

ELEVATION	ANTENNA	LINE
295'	(12) NN-65A-M	(6) 1-5/8" HELIAX + (4) 7/8" HYBRID
295'	(12) ERICSSON-2212 (BEHIND ANTENNA)	N/A
285'	(12) NN-65A-M	(6) 1-5/8" HELIAX + (4) 7/8" HYBRID
285'	(12) ERICSSON-2212 (BEHIND ANTENNA)	N/A
275'	(12) NN-65A-M	(4) 7/8" HYBRID
275'	(12) ERICSSON-2212 (BEHIND ANTENNA)	N/A
265'	(12) NN-65A-M	(4) 1-5/8" HELIAX + (4) 7/8" HYBRID
265'	(12) ERICSSON-2212 (BEHIND ANTENNA)	N/A
240'	(2) 6' HP DISH	(2) EW63
200'	(12) NN-65A-M	(4) 7/8" HYBRID
200'	(12) ERICSSON-2212 (BEHIND ANTENNA)	N/A
190'	(12) NN-65A-M	(4) 7/8" HYBRID
190'	(12) ERICSSON-2212 (BEHIND ANTENNA)	N/A
180'	(2) 8' HP DISH	(2) EW63



PLAN VIEW

PLAN VIEW REF:
1) 1 5/8" HELIAX
2) 7/8" HYBRID
3) EW63
4) STEP BOLTS

DESIGN NOTES:
1) TOWER LEGS ARE CONSTRUCTED OF SOLID ROUND BAR MATERIAL.
2) SOLID ROUND 0.75" AND LARGER ASTM A-572 GRADE : 50 KSI MIN.
3) SOLID ROUND 0.625" AND SMALLER IS ASTM A-36 GRADE : 36 KSI MIN.
4) ALL ANGLE MATERIAL IS ASTM A-529 : 50 KSI MIN.
5) ALL BRACE AND FLANGE BOLTS ARE A325-X
6) THIS TOWER IS DESIGNED FOR STEP BOLTS UP ONE LEG FOR CLIMBING WITH SAFETY CLIMB DEVICE.
7) (6) ø2" x 6'-0" LONG (F1554-GR.105) ANCHOR BOLTS PER LEG.
8) THIS TOWER IS DESIGNED FOR A 90 M.P.H. WIND SPEED WITH NO ICE AND A 30 M.P.H. WIND SPEED WITH 0.75" ICE IN ACCORDANCE WITH THE TIA/EIA-222-G STANDARD. ICE IS CONSIDERED TO INCREASE IN THICKNESS WITH HEIGHT.
9) DEFLECTIONS BASED ON A 60 M.P.H. WIND.
10) TOWER DESIGNED TO EXPOSURE C; STRUCTURE CLASS II; TOPO. CAT 1.

STATE OF KENTUCKY
KEITH M. EATON
15953
LICENSED PROFESSIONAL ENGINEER

Keith M. Eaton
5-18-2020

BASE REACTIONS:(FACTORED)

TOTAL SHEAR	= 87 KIPS
AXIAL LOAD	= 253 KIPS
UPLIFT / LEG	= 584 KIPS
COMP. / LEG	= 676 KIPS
O.T. MOMENT	= 14411 FT-K

APPROX. WEIGHT
65.92 KIPS

ALLSTATE TOWER
PITTSBURG TANK TOWER GROUP
ALLSTATE TOWER INC.
P.O. BOX 25
HENDERSON, KY 42419
PHONE: (270) 830-8512
FAX: (270) 830-8475
WWW.PTTG.COM

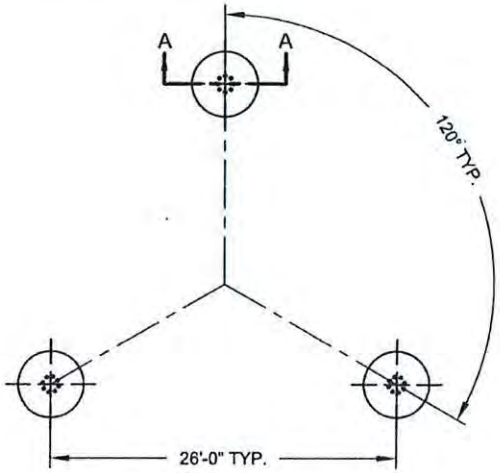
REV #	DESCRIPTION	DATE	BY

UNLESS OTHERWISE NOTED DIMENSIONS ARE IN: INCHES
TOLERANCE BANDS:
.X +3/32"/-0 ANGLES +/- 2°
.XX +3/32"/-0
.XXX +1/16"/-0 HOLES +Ø1/16"/-0

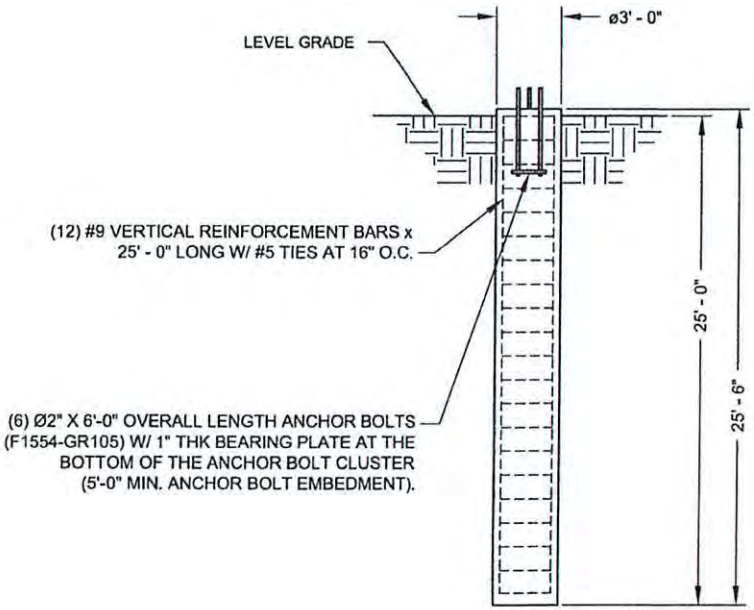
SCALE: NTS
DRAWN BY: JJT
DATE: 5/15/2020

DESCRIPTION:
TOWER OVERVIEW
APPALACHIAN WIRELESS
'BETHANY' 300' SST
WILHURST, BREATHITT CO., KY

FILE NAME: FT087179A - A
DESIGN: FT087179r1
SHEET: A



PLAN VIEW



SECTION A-A
(3 REQUIRED)

TOTAL VOLUME OF CONCRETE PER CAISSON = 6.7 CY

TOTAL VOLUME OF CONCRETE FOR (3) CAISSONS = 20.1 CY

REINFORCEMENT BAR SPLICING:

1. ALL LAP SPLICES SHALL CONFORM TO ACI 318 REQUIREMENTS.
2. REFER TO CHART BELOW WHEN REINFORCMENT BAR SPLICING IS NECESSARY.

REINFORCING BAR SIZE	LAP SPLICE LENGTH
3	15"
4	19"
5	24"
6	28"
7	41"
8	47"
9	53"
10	60"
11	66"

FOUNDATION INSTALLATION/DESIGN NOTES:

1. THIS FOUNDATION IS DESIGNED TO MEET ALL STANDARDS SET FORTH BY ACI 318: AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ANSI/TIA/EIA 222-G: STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. THIS FOUNDATION IS DESIGNED UTILIZING THE GEOTECHNICAL REPORT PREPARED BY EAST KENTUCKY ENGINEERING, LLC, PROJECT NO. 165-000-0106, DATED 4-23-2020. THE FOUNDATION CONTRACTOR SHALL INSTALL THE FOUNDATIONS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
3. ALL WORK PERFORMED FROM THESE DRAWINGS SHOULD BE BY QUALIFIED CONTRACTORS EXPERIENCED IN TOWER FOUNDATION CONSTRUCTION.
4. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AFTER 28 DAYS. COPIES OF THE CONCRETE CYLINDER TEST REPORTS SHALL BE SENT TO THE RESIDENT ENGINEER / INSPECTOR.
5. MINIMUM CONCRETE COVER FOR REINFORCING BARS SHALL BE 3". ALL REINFORCING BARS SHALL BE GRADE 60 REBAR (MIN YIELD = 60KSI).
6. FIELD BENDING OR WELDING OF REINFORCEMENT BARS IS NOT PERMITTED.
7. PROVIDE CHAMFERS AT ALL EXPOSED CORNERS OF CONCRETE.
8. SOME DETAIL HAS BEEN PURPOSELY OMITTED TO CLARIFY ILLUSTRATION.

STATE OF KENTUCKY
KEITH M. EATON
15953
LICENSED PROFESSIONAL ENGINEER

Keith M. Eaton
5-18-2020

REV #	DESCRIPTION	DATE	BY

UNLESS OTHERWISE NOTED DIMENSIONS ARE IN: INCHES

TOLERANCE BANDS:
.X +3/32" / -0 ANGLES +/- 2°
.XX +3/32" / -0
.XXX +1/16" / -0 HOLES +.01/16" / -0

SCALE: NTS

DRAWN BY: KE/JJT

DATE: 5/15/2020

ALLSTATE TOWER
PITTSBURG TANK TOWER GROUP
ALLSTATE TOWER INC.
P.O. BOX 25
HENDERSON, KY 42419
PHONE: (270) 830-8512
FAX: (270) 830-8475
WWW.PTTG.COM

DESCRIPTION:
CAISSON FOUNDATION DESIGN
APPALACHIAN WIRELESS
'BETHANY' 300' SST
WILHURST, BREATHITT CO., KY

FILE NAME: FT-087179 - B

DESIGN: FT-087179r1

SHEET: B

6

Federal Aviation Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Add a New Case (Off Airport) - Desk Reference Guide V_2018.2.1

Add a New Case (Off Airport) for Wind Turbines - Met Towers (with WT Farm) - WT-Barge Crane - Desk Reference Guide V_2018.2.1

Project Name: EAST -000583181-20 **Sponsor:** East Kentucky Network, LLC

Details for Case : Bethany

Show Project Summary

Case Status

ASN: 2020-ASO-18597-OE
Status: Accepted
Public Comments: None

Date Accepted: 06/22/2020
Date Determined:
Letters: None
Documents: 06/10/2020 2C Map .pdf

Project Documents:
None

Construction / Alteration Information

Notice Of: Alteration
Duration: Permanent
if Temporary : Months: Days:
Work Schedule - Start: 09/01/2020
Work Schedule - End: 09/30/2020

For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type: Antenna Tower
Structure Name: Bethany
FDC NOTAM:
NOTAM Number:
FCC Number: 1208289
FCC ASR Registration
Prior ASN: 2020-ASO-15941-OE

Structure Details

Latitude: 37° 39' 3.93" N
Longitude: 83° 26' 20.18" W
Horizontal Datum: NAD83
Site Elevation (SE): 1346 (nearest foot) PASSED
Structure Height (AGL): 310 (nearest foot)
Current Height (AGL): 320 (nearest foot)
**** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal***

Minimum Operating Height (AGL): (nearest foot)
**** For aeronautical study of a crane or construction equipment the maximum height should be listed above as the Structure Height (AGL). Additionally, provide the minimum operating height to avoid delays if impacts are identified that require negotiation to a reduced height. If the Structure Height and minimum operating height are the same enter the same value in both fields.***

Requested Marking/Lighting: White-medium intensity
Other :
Recommended Marking/Lighting:
Current Marking/Lighting: Dual-red and medium intensity
Other :
Nearest City: Bethany
Nearest State: Kentucky
Description of Location: Located off of Hwy 15 near Bethany in Breathitt County, KY
On the Project Summary page upload any certified survey.
Description of Proposal: Replace the existing 320' structure with a new 300' tower with top mounted antennas (overall height of 310' AGL)

Proposed Frequency Bands

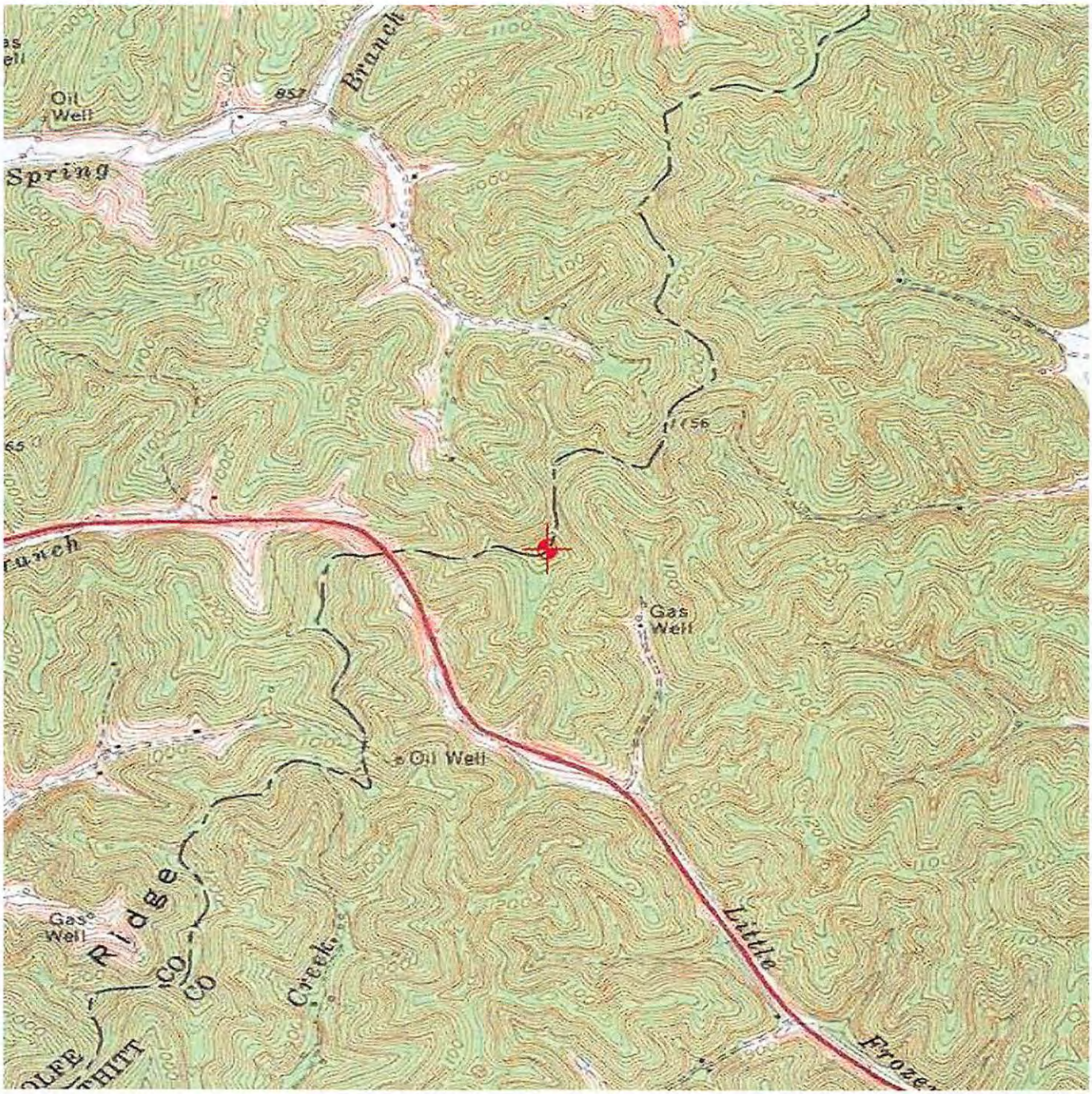
Select any combination of the applicable frequencies/powers identified in the Colo Void Clause Coalition, Antenna System Co-Location, Voluntary Best Practices, effective 21 Nov 2007, to be evaluated by the FAA with your filing. If not within one of the frequency bands listed below, manually input your proposed frequency(ies) and power using the Add Specific Frequency link.

Add Specific Frequency

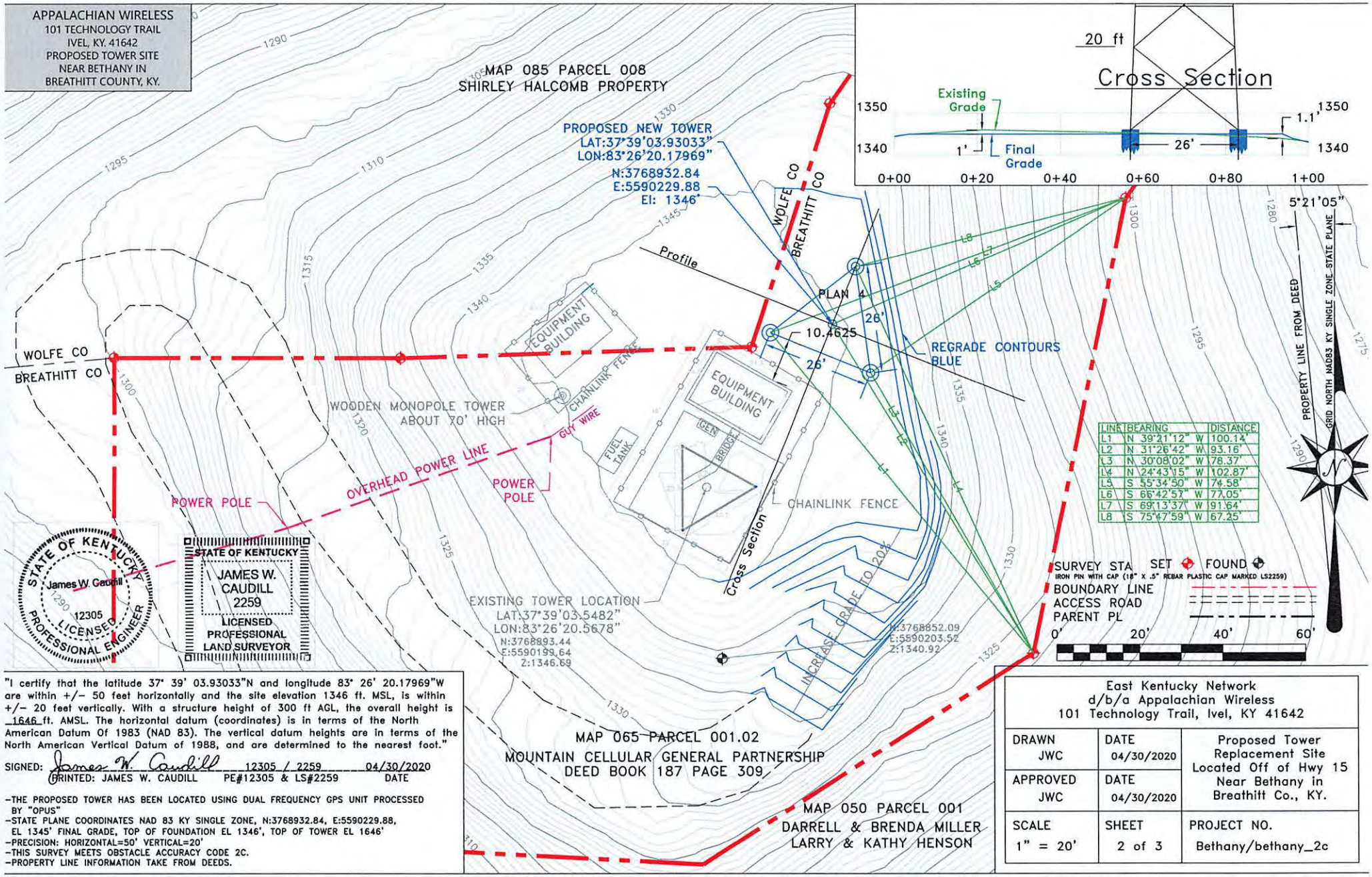
Low Freq	High Freq	Freq Unit	ERP	ERP Unit
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	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

Previous Back to Search Result Next

Close Print


Oil Well
Spring
Branch
Gas Well
Oil Well
Gas Well
Ridge
Creek
Little

APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL, KY. 41642
PROPOSED TOWER SITE
NEAR BETHANY IN
BREATHITT COUNTY, KY.



LINE	BEARING	DISTANCE
L1	N 39°21'12" W	100.14'
L2	N 31°26'42" W	93.16'
L3	N 30°08'02" W	78.37'
L4	N 24°43'15" W	102.87'
L5	S 55°34'50" W	74.58'
L6	S 66°42'57" W	77.05'
L7	S 69°13'37" W	91.64'
L8	S 75°47'59" W	67.25'

STATE OF KENTUCKY
James W. Caudill
12305
LICENSED
PROFESSIONAL ENGINEER

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

"I certify that the latitude 37° 39' 03.93033"N and longitude 83° 26' 20.17969"W are within +/- 50 feet horizontally and the site elevation 1346 ft. MSL, is within +/- 20 feet vertically. With a structure height of 300 ft AGL, the overall height is 1646 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 12305 / 2259 04/30/2020
PRINTED: JAMES W. CAUDILL PE#12305 & LS#2259 DATE

-THE PROPOSED TOWER HAS BEEN LOCATED USING DUAL FREQUENCY GPS UNIT PROCESSED BY "OPUS"
-STATE PLANE COORDINATES NAD 83 KY SINGLE ZONE, N:3768932.84, E:5590229.88, EL 1345' FINAL GRADE, TOP OF FOUNDATION EL 1346', TOP OF TOWER EL 1646'
-PRECISION: HORIZONTAL=50' VERTICAL=20'
-THIS SURVEY MEETS OBSTACLE ACCURACY CODE 2C.
-PROPERTY LINE INFORMATION TAKE FROM DEEDS.

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

DRAWN JWC	DATE 04/30/2020	Proposed Tower Replacement Site Located Off of Hwy 15 Near Bethany in Breathitt Co., KY.
APPROVED JWC	DATE 04/30/2020	
SCALE 1" = 20'	SHEET 2 of 3	PROJECT NO. Bethany/bethany_2c

KENTUCKY TRANSPORTATION CABINET

KENTUCKY AIRPORT ZONING COMMISSION

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

APPLICANT (*name*) East Kentucky Network, LLC	**PHONE** 606-339-1006	**FAX** 606-339-1363	**KY AERONAUTICAL STUDY #**	
ADDRESS (*street*) 101 Technology Trail	**CITY** Ivel		**STATE** KY	**ZIP** 41642
APPLICANT'S REPRESENTATIVE (*name*) East Kentucky Network, LLC	**PHONE** 606-339-1006	**FAX** 606-339-1363		
ADDRESS (*street*) 101 Technology Trail	**CITY** Ivel		**STATE** KY	**ZIP** 41642
APPLICATION FOR ☐ New Construction ☒ Alteration ☐ Existing **DURATION** ☐ Permanent ☐ Temporary (*months* *days*)			**WORK SCHEDULE** Start 9/1/2020 End 9/30/2020	
TYPE ☐ Crane ☐ Building ☒ Antenna Tower ☐ Power Line ☐ Water Tank ☐ Landfill ☐ Other	**MARKING/PAINTING/LIGHTING PREFERRED** ☐ Red Lights & Paint ☒ White- medium intensity ☐ White- high intensity ☐ Dual- red & medium intensity white ☐ Dual- red & high intensity white ☐ Other			
LATITUDE 37°39'03.93"	**LONGITUDE** 83°26'20.18"		**DATUM** ☒ NAD83 ☐ NAD27 ☐ Other	
NEAREST KENTUCKY City Bethany County Breathitt	**NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT** Stanton Airport			
SITE ELEVATION (AMSL, *feet*) 1346	**TOTAL STRUCTURE HEIGHT** (AGL, *feet*) 310		**CURRENT** (*FAA aeronautical study #*) 2020-ASO-18597-OE	
OVERALL HEIGHT (*site elevation plus total structure height, feet*) 1656			**PREVIOUS** (*FAA aeronautical study #*) 2020-ASO-15941-OE	
DISTANCE (*from nearest Kentucky public use or Military airport to structure*) 13.8			**PREVIOUS** (*KY aeronautical study #*)	
DIRECTION (*from nearest Kentucky public use or Military airport to structure*) SSW				

DESCRIPTION OF LOCATION (*Attach USGS 7.5 minute quadrangle map or an airport layout drawing with the precise site marked and any certified survey.*)
Located off of Hwy 15 neat Bethany in Breathitt County, KY

DESCRIPTION OF PROPOSAL
Replace the existing 320' structure with a new 300' tower with top mounted antennas (overall height of 310' AGL)

FAA Form 7460-1 (*Has the "Notice of Construction or Alteration" been filed with the Federal Aviation Administration?*)
☐ No ☒ Yes, when? June 22, 2020

CERTIFICATION (*I hereby certify that all the above entries, made by me, are true, complete, and correct to the best of my knowledge and belief.*)
PENALITIES (*Persons failing to comply with KRS 183.861 to 183.990 and 602 KAR 050 are liable for fines and/or imprisonment as set forth in KRS 183.990(3). Noncompliance with FAA regulations may result in further penalties.*)

NAME	**TITLE**	**SIGNATURE**	**DATE**
Cindy McCarty	In-House Counsel	*/s/ Cindy McCarty*	June 22, 2020

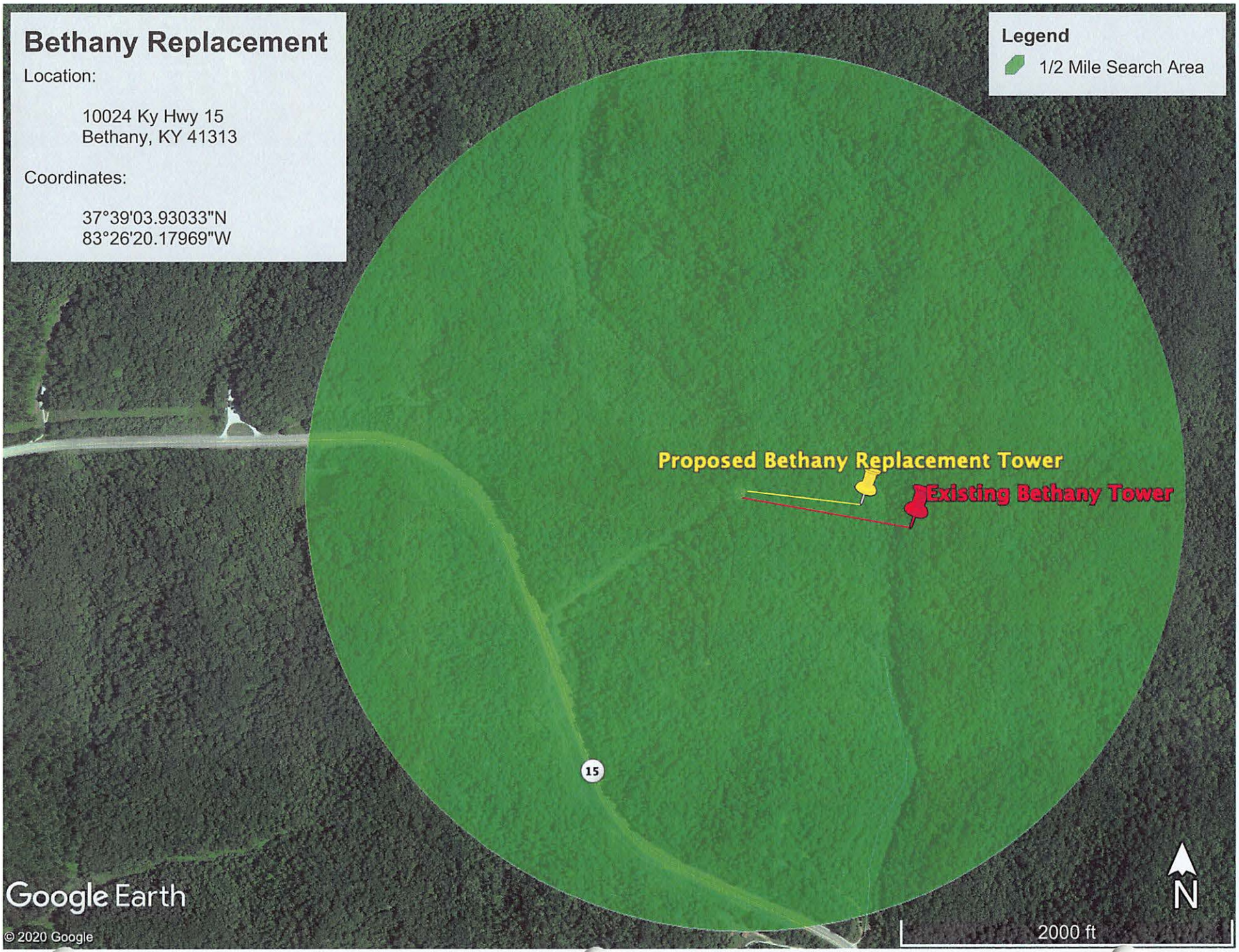
COMMISSION ACTION
☐ Chairperson, KAZC
☐ Administrator, KAZC
☐ Approved
☐ Disapproved
SIGNATURE
DATE

7

Driving Directions for Bethany

1. Beginning at 1137 Main Street, Jackson, Kentucky, head southwest on Main Street toward Court Street.
2. Drive 289ft and turn left at the 1st cross street onto Court Street.
3. Turn left onto College Ave. Then turn left onto Brown street.
4. Drive .2 miles and turn right onto Main Street then turn left onto Washington Avenue.
5. Drive .4 miles and turn left onto KY 15 N/KY-30 W.
6. Drive 7.1 miles and turn right onto KY 15.
7. Tower access road will be on your right (sign posted).
8. Take the gravel road and drive .8 miles staying to the left (sign will be posted).

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


Bethany Replacement
Location:
10024 Ky Hwy 15
Bethany, KY 41313
Coordinates:
37°39'03.93033"N
83°26'20.17969"W
Legend
1/2 Mile Search Area
Proposed Bethany Replacement Tower
Existing Bethany Tower
15
Google Earth
© 2020 Google
2000 ft
N

8

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DEED

This Deed of Conveyance, made and entered into this 25th day of April, 1998, by and between DARRELL MILLER and his wife, BRENDA J. MILLER, residents of 7 Hollands Dr., Jackson, Kentucky 41339; and LARRY T. HENSON and his wife, KATHY HENSON, residents of 287 Twin Rd., Jackson, Kentucky 41339, parties of the first part (hereinafter "Grantors"); and MOUNTAINEER CELLULAR GENERAL PARTNERSHIP, a Kentucky partnership having a mailing address of P. O. Box 1148, Hindman, Kentucky 41822, party of the second part (hereinafter "Grantee"),

WITNESSETH:

That said Grantors, for and in consideration of the sum of FIVE THOUSAND DOLLARS ($5,000.00), of which Twenty-five Dollars was previously paid under that certain Option Agreement dated November 5, 1997, the remainder being paid upon the execution hereof, the receipt and adequacy of all of which is hereby acknowledged, have bargained and sold and by these presents do hereby bargain, sell, grant and convey unto Grantee, its successors and assigns forever, a tract of land lying and being in Breathitt County, Kentucky, and more particularly described as follows:

> Lying and being in the head of Frozen Creek and bounded as follows:
>
> Beginning on a #4 rebar on top of a high knob in the head of Frozen Creek on the Wolfe, Breathitt County line, east of Route 15, Latitude is 37 39 04 and the Longitude is 83 26 20, and being a corner to Colin and Shirley Halcomb, witness a #4 rebar on the center of the ridge SW 10 42 05, 75.55 feet; thence with the county line and the Halcomb line along the center of the ridge NE 23 00 00, 61.48 feet to a #4 rebar; thence NE 40 32 45, 40.42 feet to a #4 rebar at the base of a twelve inch hickory; thence down the hill SE 73 41 11, 78.42 feet; thence around the side of the hill SW 40 32 45, 50.00 feet; thence SW 16 45 41, 112.04 feet; thence SW 62 42 27, 94.59 feet; thence NW 81 42 22, 142.97 feet; thence up the hill NE 05 26 10, 115.00 feet to a #4 rebar at the base of a thirty inch chestnut oak on top of the

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ridge at the Halcomb line, witness a #4 rebar on the center of the ridge NW 89 46 25, 102.67 feet; thence with Halcomb's line and the center of the ridge SE 84 33 50, 69.64 feet to a #4 rebar; thence SE 86 31 00, 84.73 feet to the beginning, containing 0.75 acres.

SOURCE OF TITLE: Being a part of the same property conveyed to the Grantors by deed from Willie Dixon dated February 24, 1972 and recorded in Deed Book 122, page 469 in the Breathitt County Clerk's Office.

RIGHT OF WAY AND EASEMENT: For the consideration paid herein, Grantors further grant and convey to Grantee, its successors and assigns, a permanent right of way and easement across Grantors' adjacent properties for (i) the construction of a roadway for ingress to and egress from the above-described property, and (ii) the running of utility lines across said properties for connection with the Grantee's communications tower. The property affected by this easement is the same as that cited in the source of title above.

TO HAVE AND TO HOLD the same, together with the appurtenances thereunto belonging unto Grantee, its successors and assigns forever, with covenants of General Warranty.

IN TESTIMONY WHEREOF, witness the signatures of Grantors on this the day and year first above written.

5.00 TAX pd
8-6-98

GRANTORS:

DARRELL MILLER

BRENDA J. MILLER

LARRY T. HENSON

KATHY HENSON

CERTIFICATE OF PARTIES

We, the undersigned Grantors and Grantee, do hereby certify, pursuant to KRS Chapter 382, that the above stated consideration in the amount of $5,000.00 is the true, correct and full consideration paid for the property herein conveyed. We further certify our that falsification of the stated consideration or sale price of the property is a Class D felony, subject to one to five years imprisonment and fines up to $10,000.00.

GRANTORS:

DARRELL MILLER

BRENDA J. MILLER

LARRY T. HENSON

KATHY HENSON

GRANTEE:

MOUNTAINEER CELLULAR GENERAL PARTNERSHIP

By: WILLIAM K. GRIGSBY
Managing Partner

312

STATE OF KENTUCKY)
COUNTY OF Breathitt)SS

I hereby certify that the foregoing deed was produced to me and duly acknowledged before me by DARRELL MILLER and his wife, BRENDA J. MILLER, parties thereto, to be their act and deed, and that the foregoing Certificate of Parties was duly subscribed and sworn to before me by DARRELL MILLER and his wife, BRENDA J. MILLER, on this the 24 day of April, 1998.

Linda K. Coleman
Notary Public

My commission expires 12-8-2000.

STATE OF KENTUCKY)
COUNTY OF Breathitt)SS

I hereby certify that the foregoing deed was produced to me and duly acknowledged before me by LARRY T. HENSON and his wife, KATHY HENSON, parties thereto, to be their act and deed, and that the foregoing Certificate of Parties was duly subscribed and sworn to before me by LARRY T. HENSON and his wife, KATHY HENSON, on this the 24 day of April, 1998.

Linda K. Coleman
Notary Public

My commission expires 12-8-2000.

STATE OF KENTUCKY)
)SS
COUNTY OF KNOTT)

I hereby certify that the foregoing Certificate of Parties was duly subscribed and sworn to before me by William K. Grigsby, managing partner of Mountaineer Cellular General Partnership, on this the 27th day of April, 1998.

Barbara Howard
Notary Public

My commission expires 6/7/2001.

STATE OF KENTUCKY)
)SS
COUNTY OF BREATHITT)

I, TONY G. WATTS, Clerk of Breathitt County, do hereby certify that the foregoing instrument was on the 6th day of Aug., 1998, lodged in my office for record and that it, the foregoing, and this my certificate have been duly recorded in my said office in Deed Book 182, page 309.

Witness my hand on this the 6th day of Aug., 1998.

TONY G. WATTS, CLERK
By: Steven Robinson D.C.

This instrument prepared without examination of title by:

Robin J. Collins
ROBIN JOHNSON COLLINS
ATTORNEY AT LAW
P.O. BOX 176
LACKEY, KY 41643

FILED
98 AUG 6 PM 2 06
BREATHITT COUNTY CLERK

A:4894MC

9

APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL, KY. 41642
PROPOSED TOWER SITE
NEAR BETHANY IN
BREATHITT COUNTY, KY.

MAP 085 PARCEL 008
SHIRLEY HALCOMB PROPERTY

PROPOSED NEW TOWER
LAT:37°39'03.93033"
LON:83°26'20.17969"
N:3768932.84
E:5590229.88
El: 1346'

WOLFE CO
BREATHITT CO

Profile

PLAN 4

10.4625

26'

REGRADE CONTOURS
BLUE

WOODEN MONOPOLE TOWER
ABOUT 70' HIGH

GUY WIRE

OVERHEAD POWER LINE

POWER POLE

POWER POLE

EQUIPMENT BUILDING

CHAINLINK FENCE

FUEL TANK

GEN

BRIDGE

EQUIPMENT BUILDING

CHAINLINK FENCE

Cross Section

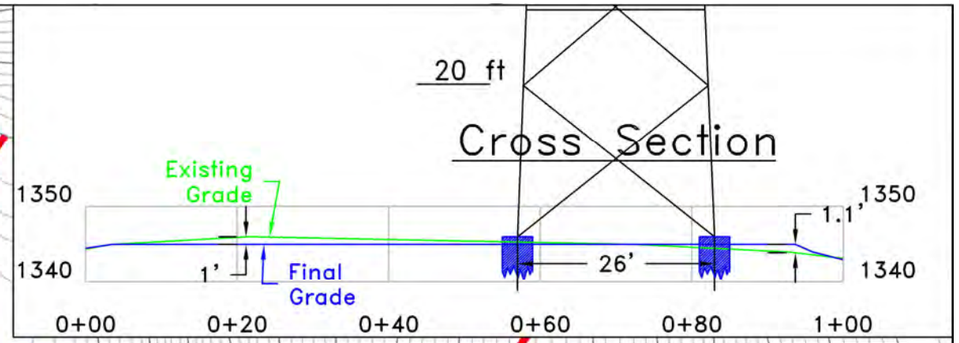
EXISTING TOWER LOCATION
LAT:37°39'03.5482"
LON:83°26'20.5678"
N:3768893.44
E:5590199.64
Z:1346.69

INCREASE GRADE TO 20%

N:3768852.09
E:5590203.52
Z:1340.92

MAP 065 PARCEL 001.02
MOUNTAIN CELLULAR GENERAL PARTNERSHIP
DEED BOOK 187 PAGE 309

MAP 050 PARCEL 001
DARRELL & BRENDA MILLER
LARRY & KATHY HENSON



LINE	BEARING	DISTANCE
L1	N 39°21'12" W	100.14'
L2	N 31°26'42" W	93.16'
L3	N 30°08'02" W	78.37'
L4	N 24°43'15" W	102.87'
L5	S 55°34'50" W	74.58'
L6	S 66°42'57" W	77.05'
L7	S 69°13'37" W	91.64'
L8	S 75°47'59" W	67.25'

5°21'05"

PROPERTY LINE FROM DEED

GRID NORTH NAD83 KY SINGLE ZONE STATE PLANE

SURVEY STA SET ◆ FOUND ◆
IRON PIN WITH CAP (18" X .5" REBAR PLASTIC CAP MARKED LS2259)
BOUNDARY LINE
ACCESS ROAD
PARENT PL

0' 20' 40' 60'

STATE OF KENTUCKY
James W. Caudill
12305
LICENSED PROFESSIONAL ENGINEER

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

"I certify that the latitude 37° 39' 03.93033"N and longitude 83° 26' 20.17969"W are within +/- 50 feet horizontally and the site elevation 1346 ft. MSL, is within +/- 20 feet vertically. With a structure height of 300 ft AGL, the overall height is 1646 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 12305 / 2259 04/30/2020
PRINTED: JAMES W. CAUDILL PE#12305 & LS#2259 DATE

-THE PROPOSED TOWER HAS BEEN LOCATED USING DUAL FREQUENCY GPS UNIT PROCESSED BY "OPUS"
-STATE PLANE COORDINATES NAD 83 KY SINGLE ZONE, N:3768932.84, E:5590229.88, EL 1345' FINAL GRADE, TOP OF FOUNDATION EL 1346', TOP OF TOWER EL 1646'
-PRECISION: HORIZONTAL=50' VERTICAL=20'
-THIS SURVEY MEETS OBSTACLE ACCURACY CODE 2C.
-PROPERTY LINE INFORMATION TAKE FROM DEEDS.

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

DRAWN JWC	DATE 04/30/2020	Proposed Tower Replacement Site Located Off of Hwy 15 Near Bethany in Breathitt Co., KY.
APPROVED JWC	DATE 04/30/2020	
SCALE 1" = 20'	SHEET 2 of 3	PROJECT NO. Bethany/bethany_2c

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APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL, KY. 41642
PROPOSED TOWER REPLACEMENT
OFF HWY 15 NEAR BETHANY
IN BREATHITT COUNTY, KY.

APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL, KY. 41642
TOWER REPLACEMENT
NEAR BETHANY IN BREATHITT COUNTY

MAP 85 PARCEL 8
COLIN G. AND SHIRLEY HOLCOMB
P.O. BOX 312
CAMPTON, KY 41301
DEED BOOK 97 PAGE 61

MAP 85 PARCEL 11
ANGELA M. RALEIGH
P.O. BOX 329
JACKSON, KY 41339

MAP 65 PARCEL 1.02
MOUNTAIN CELLULAR
GENERAL PARTNERSHIP
P.O. BOX 1148
HINDMAN, KY 41822

PROPOSED NEW TOWER
LAT:37°39'03.93033"
LON:83°26'20.17969"

500'

AFFECTED AREA BOUNDARY

EXISTING TOWER LOCATION
LAT:37°39'03.5482"
LON:83°26'20.5678"

Wolfe Co

Breathitt Co

Highway 15

EXISTING ACCESS ROAD

MAP 50 PARCEL 1
DARREL MILLER AND
BRENDA MILLER
746 LAKESIDE DRIVE
JACKSON, KY 41339
AND
LARRY T. HENSON AND
KATHY HENSON
128 TURNIP ROAD
JACKSON, KY 41339
DEED BOOK 171 PAGE 594

0 200' 400' 600'

N

NAD83 KY SINGLE ZONE

LEGEND
SURVEY STA SET FOUND
IRON PIN WITH CAP (18" X .5" REBAR PLASTIC CAP MARKED LS2259)
PROPERTY LINE
COUNTY LINE
HIGHWAY
ACCESS ROAD
CHAINLINK FENCE

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 BREATHITT COUNTY PROPERTY VALUATION ADMINISTRATION OFFICE IN JACKSON, KY.

James W. Caudill — 12305 — 04/30/2020
JAMES W. CAUDILL — P.E.# — DATE

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

PROPOSED SITE PLAN AND STRUCTURE LOCATION
BETHANY TOWER APPALACHIAN WIRELESS

DRAWN *JWC*	DATE *04/30/2020*	*MOUNTAINEER CELLULAR EAST OF HWY 15 NEAR COMMUNITY OF BETHANY IN BREATHITT CO., KY*
APPROVED *JWC*	DATE *04/30/2020*	
SCALE *1" = 200'*	SHEET *1 of 3*	PROJECT NO. *Bethany/BethanyPVA*

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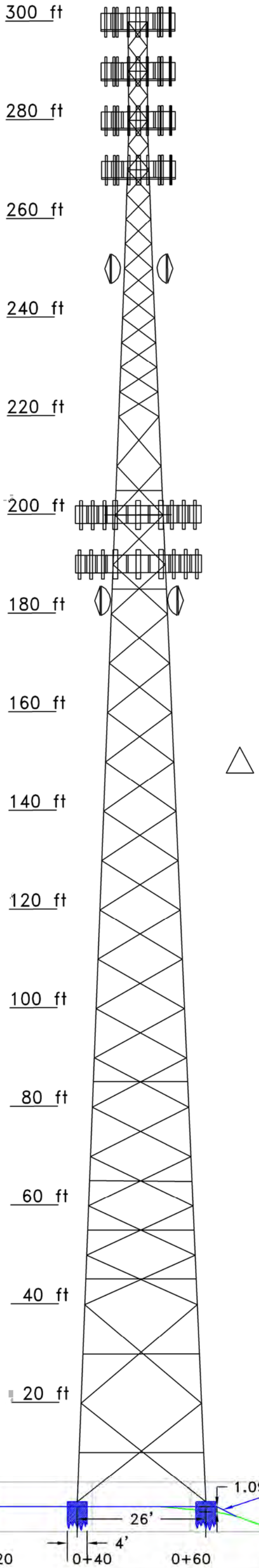
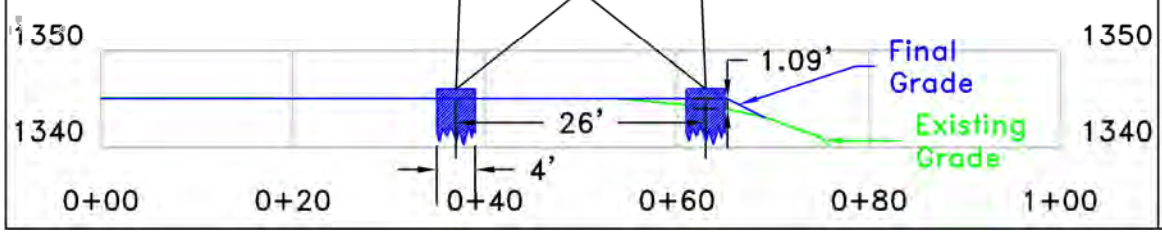
APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL, KY. 41642
PROPOSED TOWER SITE
NEAR BETHANY IN
BREATHITT COUNTY, KY.





PROFILE WITH TOWER

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

James W. Caudill — 12305 — 04/30/2020
JAMES W. CAUDILL — PE #. — DATE

PRELIMINARY DESIGN
NOTE: FOUNDATION AND TOWER DIMENSIONS ARE ESTIMATED FOR PLANNING PURPOSES. DRAWING WILL BE REVISED WHEN DESIGNS ARE FINALIZED.
NOTE: SEE FOUNDATION DRAWINGS FOR DETAILS

04/30/2020

SCALE 1" = 20'

0' 20' 40' 60'

East Kentucky Network d/b/a Appalachian Wireless 101 Technology Trail, Ivel, KY 41642		
DRAWN JWC	DATE 04/30/2020	Proposed Tower Replacement Site Located Off of Hwy 15 Near Bethany in Breathitt Co., KY.
APPROVED JWC	DATE 04/30/2020	
SCALE 1" = 20'	SHEET 3 of 3	PROJECT NO. Bethany/bethany_pro

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

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

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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