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SEP 06 2018

PUBLIC SERVICE COMMISSION

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 TOWER IN KNOX COUNTY, KENTUCKY	))))	CASE NO. 2018-00285

East Kentucky Network, LLC d/b/a Appalachian Wireless, was granted authorization to provide cellular service in the KY-11 Cellular Market Area (CMA453) by the Federal Communications Commission (FCC). The FCC license is included as Exhibit 1. East Kentucky Network, LLC merger documents were filed with the Commission on February 2, 2001 in Case No. 2001-022. East Kentucky Network, LLC is a Kentucky limited liability company that was organized on June 16, 1998. East Kentucky Network, LLC is in good standing with the state of Kentucky.

In an effort to improve service in Knox County, pursuant to KRS 278.020 Subsection 1 and 807 KAR 5:001, East Kentucky Network, LLC is seeking the Commission's approval to construct a 300 foot self-supporting tower on a tract of land located at 270 Mt. Pleasant Church Road, Gray, Knox County, Kentucky (36°54'51.4979"N 83°55'43.8413"W). A map and detailed directions to the site can be found in Exhibit 7.

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

Pursuant to 807 KAR 5:063 Section 1(1)(l), Section 1(m) and Section 2, all affected property owners according to the Property Valuation Administrator's records who 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.

Knox County has no formal local planning unit. In absence of this unit, the Knox County Judge Executive's office was notified by certified mail, return receipt requested of East Kentucky Network, LLC's proposal and informed of their right to intervene. The Knox 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 Barbourville Mountain Advocate, September 6, 2018 edition. Enclosed is a copy of that notice in Exhibit 3. The Barbourville Mountain Advocate is the newspaper with the largest circulation in Knox 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.

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

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

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

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

Two notice signs meeting the requirements prescribed by 807 KAR 5:063, Section 1(2), measuring at least two (2) feet in height and four (4) feet in width and containing all required language in letters of required height, have been posted, one at a visible location on the proposed site and one on the nearest public road. The two signs were posted on September 5, 2018, 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 mountaintop some feet from the nearest structure. Prior to construction, the site was wooded.

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

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

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

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

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

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

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

SUBMITTED BY: Lynn Haney DATE: 9/5/18
Lynn Haney, Regulatory Compliance Director

APPROVED BY: W A Gillum DATE: 9/5/18
W.A. Gillum, General Manager

ATTORNEY: Krystal Branham DATE: 9/5/18
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

ULS License

700 MHz Lower Band (Blocks C, D) License - WPWV284 - East Kentucky Network, LLC d/b/a Appalachian Wireless

Call Sign	WPWV284	Radio Service	WZ - 700 MHz Lower Band (Blocks C, D)
Status	Active	Auth Type	Regular

Rural Service Provider Bidding Credit

Is the Applicant seeking a Rural Service Provider (RSP) bidding credit?

Reserved Spectrum

Reserved Spectrum

Market

Market	CMA453 - Kentucky 11 - Clay	Channel Block	C
Submarket	0	Associated Frequencies (MHz)	000710.00000000-000716.00000000 000740.00000000-000746.00000000

Dates

Grant	01/24/2003	Expiration	06/13/2019
Effective	11/02/2013	Cancellation	

Buildout Deadlines

1st	06/13/2019	2nd	

Notification Dates

1st		2nd	

Licensee

FRN	0001786607	Type	Limited Liability Company

Licensee

East Kentucky Network, LLC d/b/a Appalachian Wireless
101 Technology Trail
Ivel, KY 41642
ATTN W.A. Gillum, General Manager/CEO

P:(606)477-2355

Contact

Lukas, Nace, Gutierrez & Sachs, LLP
Pamela L Gist Esq
8300 Greensboro Drive
McLean, VA 22102

P:(703)584-8665
F:(703)584-8695
E:pgist@fcclaw.com

Ownership and Qualifications

Radio Service Type	Fixed, Mobile, Radio Location		
Regulatory Status	Common Carrier, Non-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.

Tribal Land Bidding Credits
This license did not have tribal land bidding credits.

Demographics

Race

Ethnicity Gender

EXHIBIT 2 – LIST OF PROPERTY OWNERS

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

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

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

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

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

LIST OF PROPERTY OWNERS

Thoma and Sherry Brown
300 Mt. Pleasant Church Rd
Gray, KY 40734

Eddie Brasher, Cindy, Richard and Glen Baker Jr.
9 Hacienda Circle
Corbin, KY 40701

Lena McCartt
155 Mellwood Drive
Gray, KY 40734

Appalachian WIRELESS
www.appalachianwireless.com

EAST KENTUCKY NETWORK, LLC
www.ekn.com

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

September 5, 2018

Thoma and Sherry Brown
300 Mt. Pleasant Church Rd
Gray, KY 40734

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00285)

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 Knox 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 270 Mt. Pleasant Church Road, Gray, Knox County. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

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

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2018-00285 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

September 5, 2018

Eddie Brasher, Cindy, Richard and Glen Baker Jr.
9 Hacienda Circle
Corbin, KY 40701

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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.

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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

September 5, 2018

Lena McCartt
155 Mellwood Drive
Gray, KY 40734

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00285)

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 Knox 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 270 Mt. Pleasant Church Road, Gray, Knox County. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

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

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2018-00285 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


Emanuel
Location:
270 Mt. Pleasant Church Rd.
Gray, KY 40734
Coordinates:
36°54'51.50"N
83°55'42.96"W
Crows Way
25E
Old Dixie Hwy
Cr-1451
1527
Ky 1527
Warren Loop Dr
Cr-1400
Cumberland Gap Pkwy
Memphis Dr
Proposed Emanuel Site
Cr-1305L
Cr-1305M
Hill Side Ln
Poplar Branch-Arkle Rd
Cr-1305F-70
N
2000 ft

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

EAST KENTUCKY NETWORK

To:	The Barbourville Mountain Advocate Attn: Classifieds	**From:**	Raina Helton Regulatory Compliance Assistant
Email:	advertising@mountainadvocate.com	**Date:**	August 31, 2018
Re:	PUBLIC NOTICE ADVERTISEMENT	**Pages:**	1

Please place the following Public Notice Advertisement in The Barbourville Mountain Advocate to be ran on September 6, 2018.

PUBLIC NOTICE:

RE: Public Service Commission of Kentucky (CASE NO. 2018-00285)

Public Notice is hereby given that East Kentucky Network, LLC, dba Appalachian Wireless has applied to the Kentucky Public Service Commission to construct a cellular telecommunications tower on a tract of land located at 217 Mt. Pleasant Church Road, Gray, Knox County, Kentucky. The proposed tower will be a 300 foot self-supporting tower with attached antennas. If you would like to respond to this notice, please contact the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to Case No. 2018-00285.

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

Appalachian WIRELESS
www.appalachianwireless.com

EAST KENTUCKY NETWORK, LLC
www.ekn.com

VIA: U.S. CERTIFIED MAIL

September 5, 2018

J.M. Hall
P.O. Box 173
Barbourville, KY 40906

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00285)

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 Knox 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 located at 270 Mt. Pleasant Church Road, Gray, Knox County, Kentucky. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you are the County Judge Executive of Knox 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.

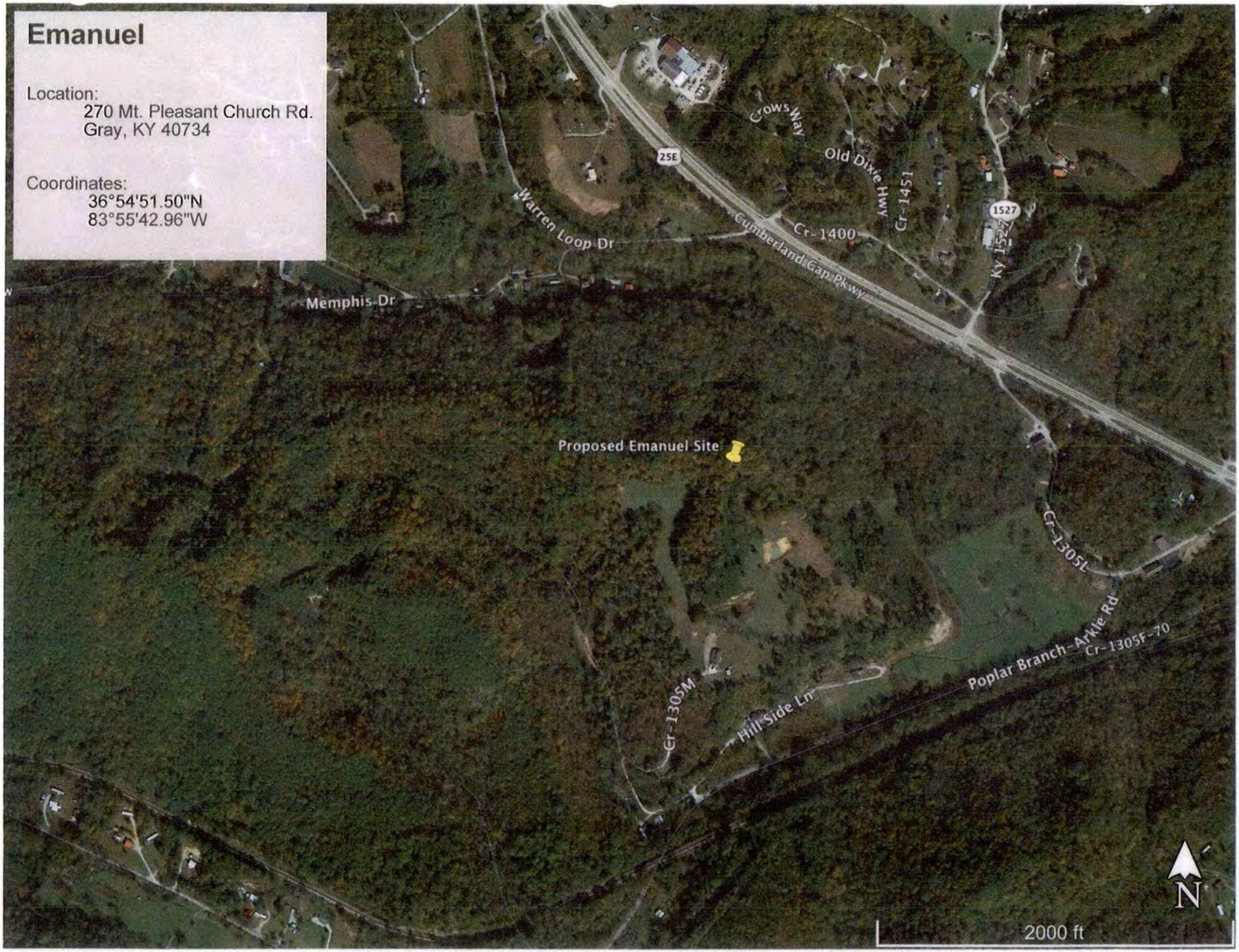
Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2018-00285 in your correspondence.

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


Emanuel
Location:
270 Mt. Pleasant Church Rd.
Gray, KY 40734
Coordinates:
36°54'51.50"N
83°55'42.96"W
Crows Way
25E
Old Dixie Hwy
Cr-1451
1527
Ky 1527
Warren Loop Dr
Cr-1400
Cumberland Gap Pkwy
Memphis Dr
Proposed Emanuel Site
Cr-1305L
Poplar Branch-Arkle Rd
Cr-1305F-70
Cr-1305M
Hill Side Ln
N
2000 ft

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

EAST KENTUCKY ENGINEERING, LLC.

APPALACHIAN WIRELESS
Geotechnical Investigation on the Emanuel Site
Knox County, Kentucky
EKYENG Project No. 165-000-0067

PREPARED FOR:
Appalachian Wireless.
101 Technology Trail
Ivel, Kentucky 41642

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

_____, 20215, July 2nd, 2018

EXECUTIVE SUMMARY

A geotechnical investigation has been performed on the Emanuel Tower Site, located in Knox County, Kentucky. This site is not readily accessible. A location map is shown in Figure 1 of this report. Trenching was conducted with the assistance of Wendell Gay Construction. The following geotechnical considerations were identified:

- Trenching utilized for this study encountered soils and sandstone, shales and a small coal seam.
- The recommended base elevation range of tower mat foundation bottom is 1254.0 ft. to 1249.0 ft. This elevation interval will place the 43.5 ft x 43.5 ft. footing on rock, based upon the rock section elevations.
- This site is on an undisturbed forest area.
- **The allowable bearing capacities of the underlying rock is estimated at 6 TSF.**
- The 2015 International Building Code seismic site classification for this site is "A."
- If during the foundation design it becomes necessary to change the base of the footer, alternate design recommendations can be provided.
- No underground or surface mining was found during our research that would impact this tower site.
- 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. Marty Thacker of Appalachian Wireless to prepare a geotechnical engineering report for the proposed tower site located on the Emanuel Property, in Knox County, Kentucky. A site location map is shown in Figure No. 1.

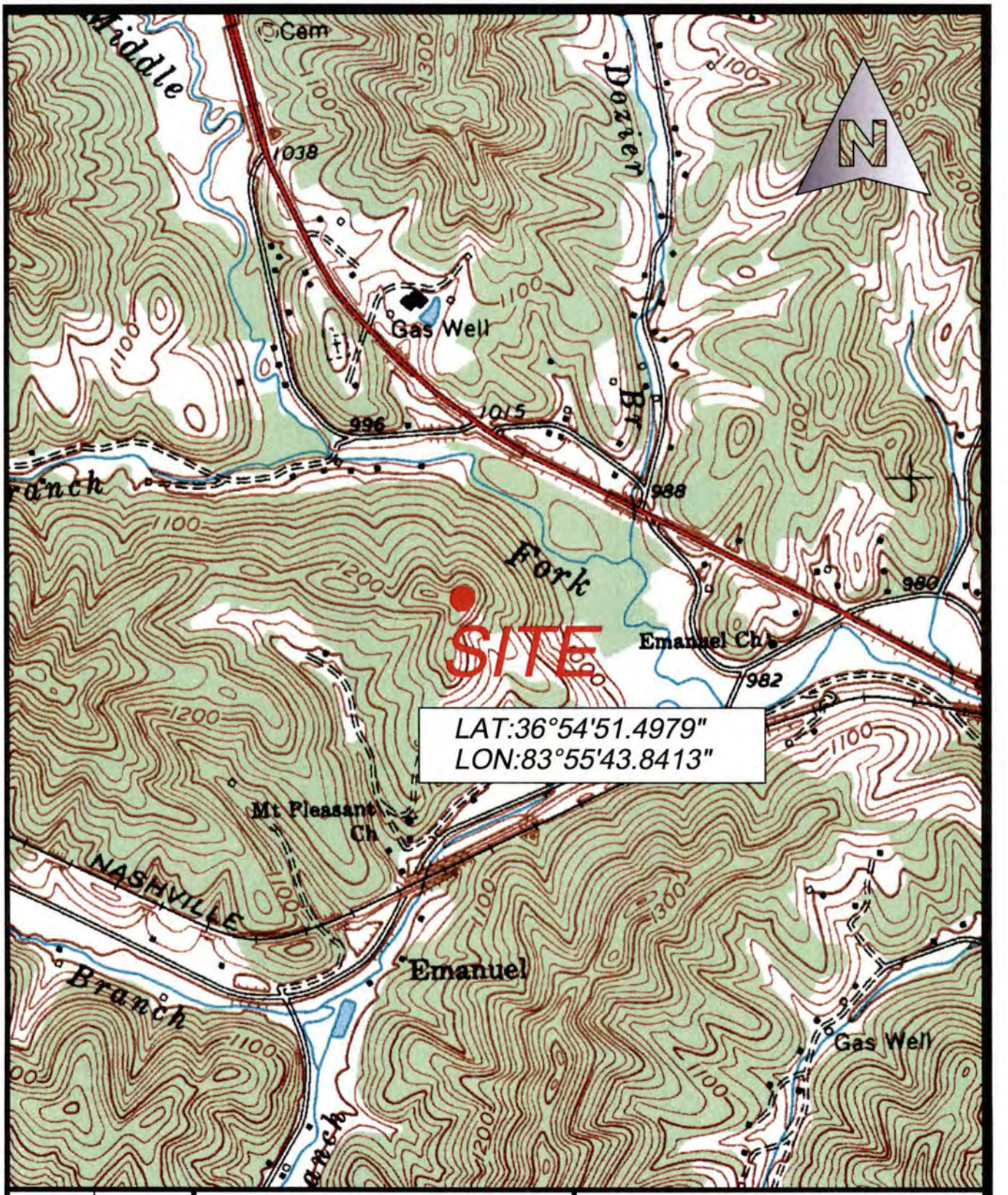
Trenching was conducted with the assistance from Wendall Gay Construction. The purpose of these services is to provide information and geotechnical engineering recommendations about subsurface conditions, earthwork, seismic considerations, groundwater conditions and foundation design.

2.0 PROJECT DESCRIPTION

The proposed communication facility will consist of a self-supporting tower of undetermined height and ancillary support areas. The footing area is estimated to be approximately 43.5 x 43.5 with an estimated base of the tower footer elevation at 1252.0 ft. Based upon information provided, we estimate the structural loads will be similar to 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	Date: 07/06/18
Job:165-067	Scale: 1"=1000'

Appalachian Wireless
USGS Quadrangle
Location Map
Emanuel Tower Site
Figure No. 1

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

3.0 SITE DESCRIPTION

3.1 GENERAL INFORMATION

The site location is on a forested point. EKYENG reviewed available historical mine maps from the Kentucky Division of Mine Safety, Kentucky Mine Mapping Information System ("KMMIS"). Based on available data, no historical mining has occurred at or near this site.

3.2 SURFACE MINING

This site in on an undisturbed forest area. No other nearby surface mining activities were found on our site investigation and during our research that would impact this site.

3.3 UNDERGROUND MINING

Our research found no underground mining that would impact this site. All underground mining activities found during our research are outside the area of influence for subsidence to be a concern.

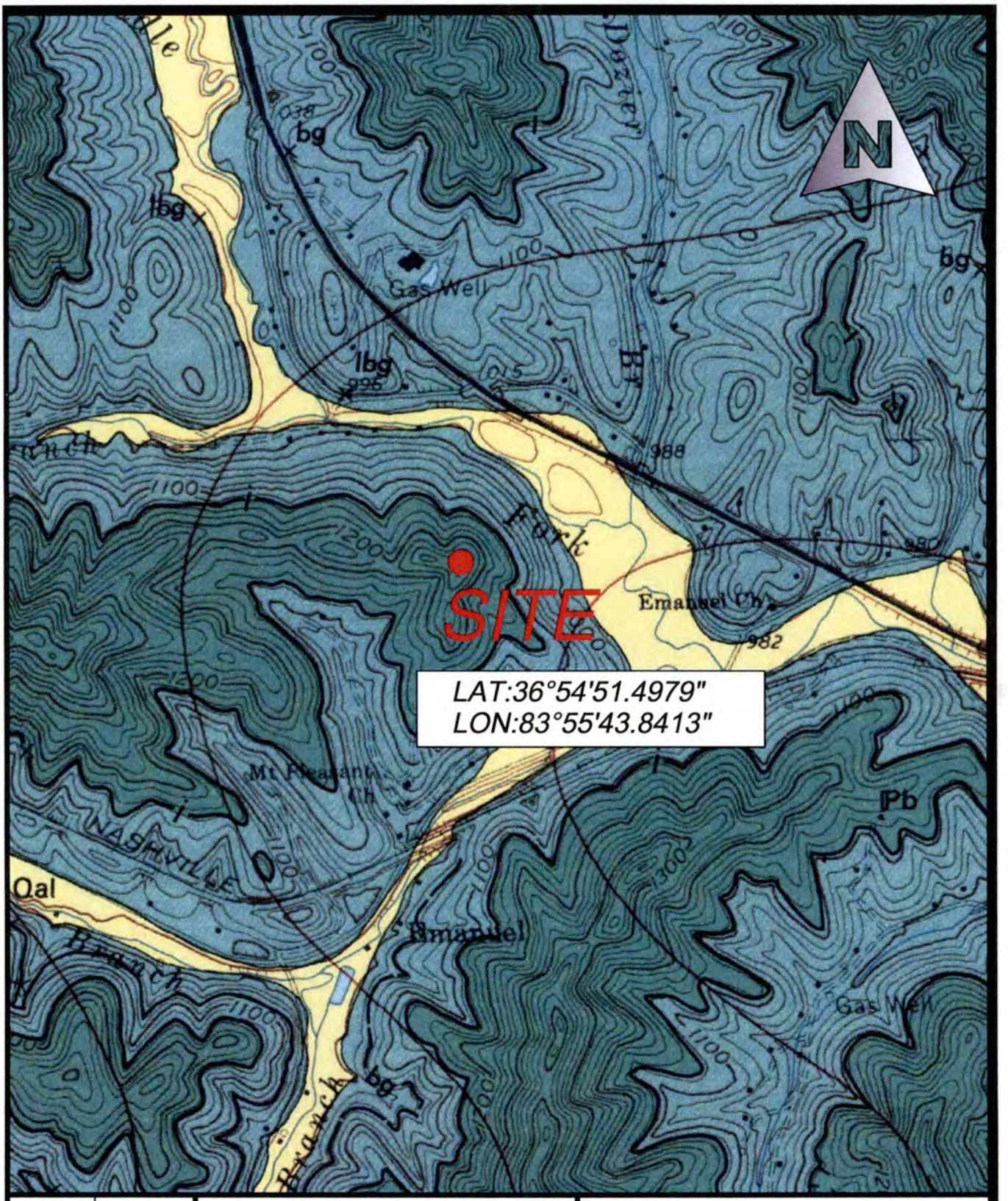
4.0 FIELD EXPLORATION

4.1 SITE INFORMATION

A boundary survey was conducted on the Emanuel property and provided to EKYENG. The proposed tower location was established and tied to the existing boundary. An estimated footer location was determined, and trenching was conducted through the slope at the proposed tower site.

4.2 TRENCHING & TEST HOLE DATA

This investigation was conducted with trenching with an excavator. The combinations of trenching and visual inspections were used to evaluate the site



Drawn: RDS	Date: 07/6/18
Job:165-067	Scale: 1"=1000'

Appalachian Wireless
Geologic Quadrangle
Location Map
Emanuel Tower Site
Figure No. 2

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

lithology and type of materials immediately below the proposed tower site. The following soils and rock properties were found.

TABLE NO. 2

Depth (Ft.)	Base Elevation (Ft.)	Strata
0.0 – 4.5	1257.5	Top Soils / Clays
4.5 – 6.3	1255.7	Sandstone
6.3 – 7.1	1254.9	Coal Seam
7.1– 7.9	1245.1	Shale
7.9-15.0	1247.0	Sandstone

A cross section of this information is in Appendix C of this report

4.3 GROUNDWATER

Groundwater in Eastern Kentucky is characterized by water flowing through a system of internal fractures that lead to an alluvial aquifer near the bottom of valley floors. Large, defined aquifers other than the alluvium are not common, especially in higher elevations such as where this tower site is proposed. Therefore, groundwater should not be a concern 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 2015 Kentucky Building Code. In addition, a S_{DS} coefficient of 0.133 g was calculated, and a S_{D1} coefficient of 0.054 g was also calculated for design based on the aforementioned building code.

5.0 DISCUSSION AND RECOMMENDATIONS

5.1 GENERAL

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

5.2 FOUNDATIONS

It is our understanding that the foundations for these structures can be designed to bear on low bearing pressure soils. This report demonstrates the different expected bearing capacities based upon the type of material encountered from the trenching and visible observations at the site. The approximate elevation of the surface of the site is 1262 ft. with an expected base of the footer at 1252 ft. in elevation.

5.3 SHALLOW FOUNDATIONS

Based upon the laboratory and field testing, visual inspection of the materials, and practical experience we have estimated that the **allowable bearing capacity of the sandstone to be a minimum of 6 tsf,** between the elevations of 1254.0 ft. to 1248.0 ft. The upper limit is determined by topography of the site to ensure that the entire footer is on the sandstone strata.

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

5.4 BURIED UTILITIES

Excavations for buried utility pipelines should follow the guidelines set forth in this report. Depending on the pipeline material, a minimum thickness of at least 0.5 feet of select fine-grained granular bedding material should be used beneath all below-grade pipes, with a minimum cover thickness of at least 3 feet to afford an "arching" effect and reduce stresses on the pipe. The cover thickness may be reduced if the external loading condition on the pipe is relatively light or if the

pipe is designed to withstand the external loading condition. It is not recommended that "pea-gravel" or other "open-work" aggregates be used for trench backfill since these materials are nearly impossible to compact and tend to pond water within their interstices.

6.0 WARRANTY

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

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

6.1 SUBSURFACE EXPLORATION

Subsurface exploration is normally accomplished by test borings, although test pits are sometimes employed. The method of determining the boring location and the surface elevation at the boring is noted in the report and is presented on the Boring Location Plan or on the boring log. The location and elevation of the 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 Emanuel

Property located in Knox 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.

III GUIDELINES FOR EXCAVATIONS AND TRENCHES

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

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

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

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

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

- Trenching excavations four feet or greater in depth must have a stairway, ladder, ramps or other safe means to egress with lateral travel no more than 25 feet.

3. Workers must be provided with reflector garments, such as warning orange or red vests, when exposed to vehicular traffic.

4. Contractors must not allow workers to work under or near equipment when there is danger of falling debris, spillage or equipment-related injuries.

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

13. Daily inspections of the excavation, the adjacent areas and protective systems must be made by a "competent person" for evidence of possible cave-ins, indications of failure of protective systems, hazardous atmospheres or other hazardous conditions. The "competent person" must stop work immediately and remove workers from the excavation when conditions change and pose a threat to their safety.

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

15. All wells, pits, shafts etc. must be barricaded or covered. After completion of work, all wells, pits, shafts etc. must be backfilled.

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 SEISMIC DATA

USGS Design Maps Summary Report

User–Specified Input

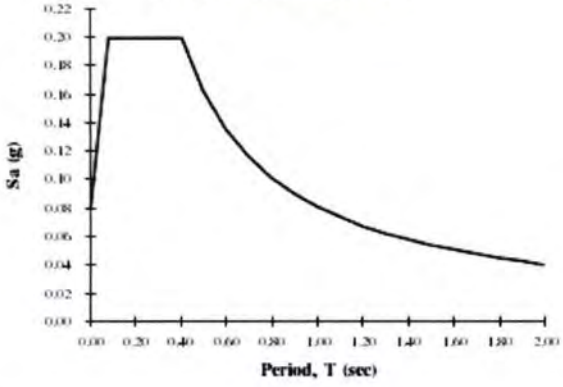
Report Title	Emanuel Tower SIte Sat July 7, 2018 17:59:02 UTC
Building Code Reference Document	2012/2015 International Building Code (which utilizes USGS hazard data available in 2008)
Site Coordinates	36.91431°N, 83.92885°W
Site Soil Classification	Site Class A – "Hard Rock"
Risk Category	IV (e.g. essential facilities)

USGS–Provided Output

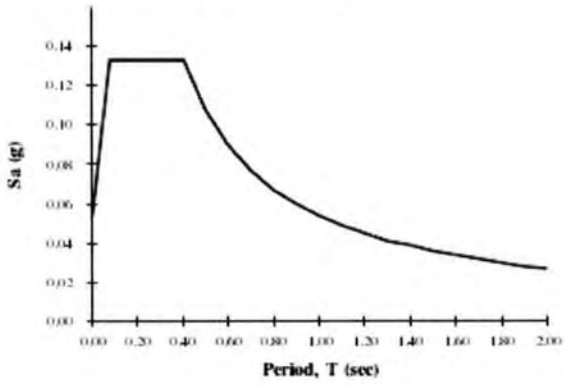
S_S =	0.249 g	S_{MS} =	0.199 g	S_{DS} =	0.133 g
S_1 =	0.101 g	S_{M1} =	0.081 g	S_{D1} =	0.054 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.

MCE_R Response Spectrum



Design Response Spectrum



APPENDIX B PHOTOGRAPHS

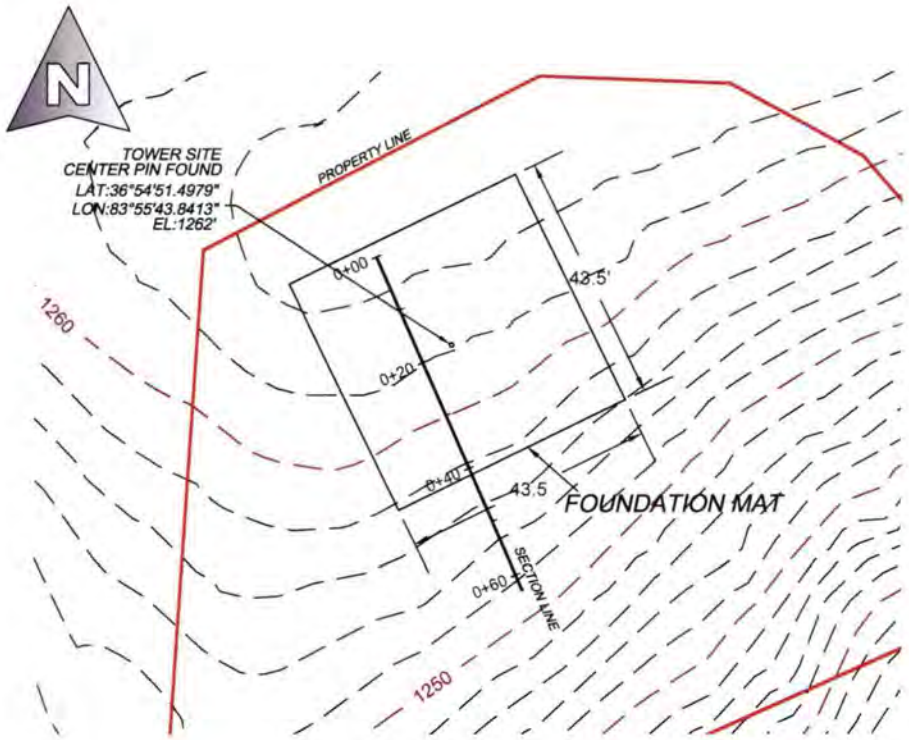
Sandstone Bottom of Trench

Sandstone Bottom of Trench

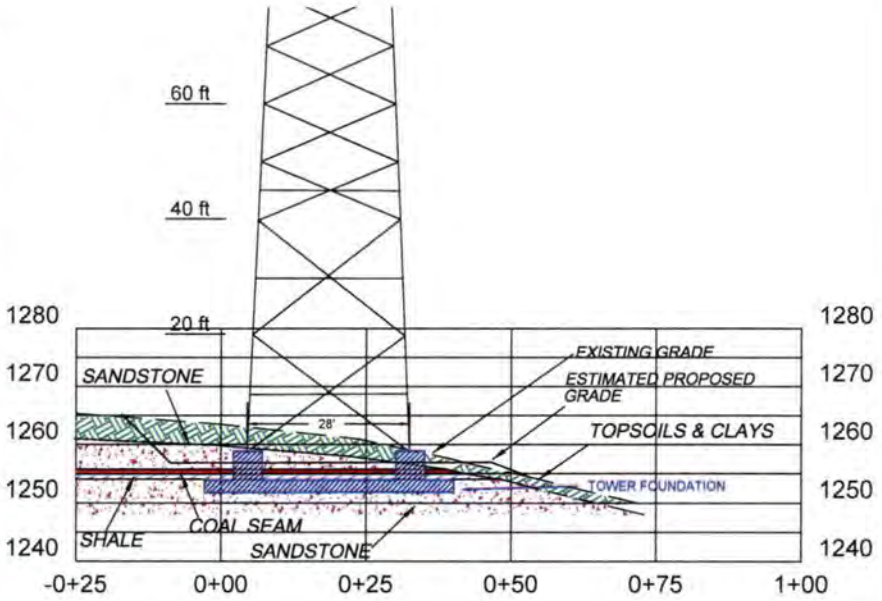
Coal Seam

Proposed Tower Location

APPENDIX C MAPS



PLAN VIEW
1" = 20'



SECTION
1" = 20'

East Kentucky Engineering, LLC
Hazard Location
230 Swartz
Hazard, KY 41701
(606) 551-1050
Email: rdsekyeng@outlook.com

STATE OF KENTUCKY
RICHARD D. SMITH
LICENSED
PROFESSIONAL ENGINEER
7/6/2018

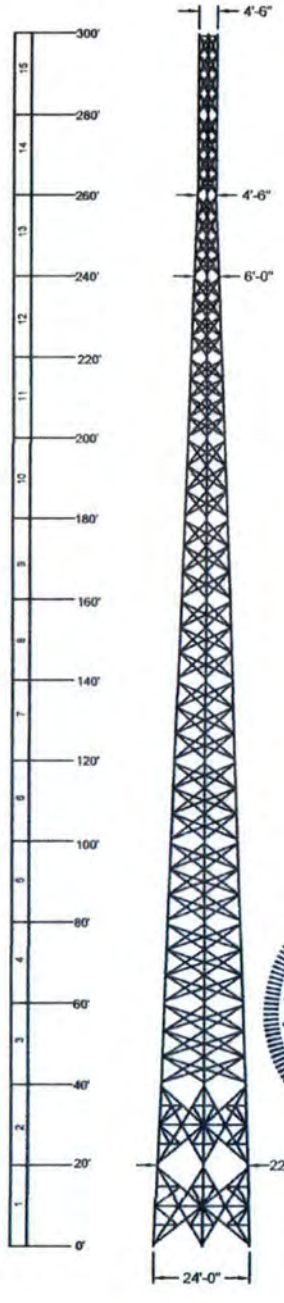
0' 30' 60'

Drawn by: RDS	Date: 6/25/2018
Job #: 165-0067	Scale: NOTED
File Location:	

APPALACHIAN
WIRELESS
EMANUEL SITE
KNOX COUNTY KENTUCKY

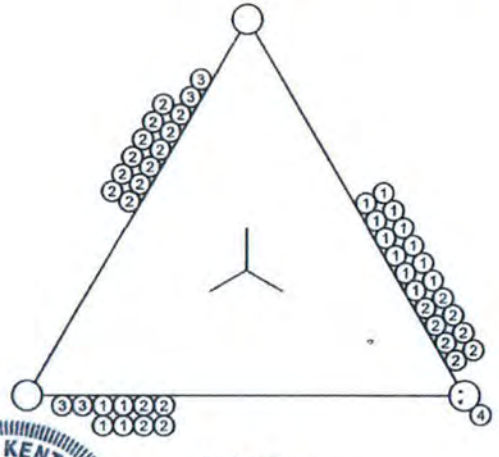
MEMBER INFORMATION

SECTION	ELEVATION	FACE SIZE	LEG DIA.	DIAGONALS	HORIZONTALS	RED. HORZ/DIAGS.	INNER BRACING	GIRTS	# OF BAYS
1	0' - 20'	24'-0"	Ø5"	2L 3" x 3/16"	2L 2 1/2" x 3/16"	2L 2" x 3/16"	2L 2" x 3/16"	N/A	4 - MOD X
2	20' - 40'	22'-6"	Ø5"	2L 3" x 3/16"	2L 2 1/2" x 3/16"	2L 2" x 3/16"	2L 2" x 3/16"	N/A	4 - MOD X
3	40' - 60'	21'-0"	Ø5"	L 4" x 1/4"	N/A	N/A	N/A	N/A	3 - X
4	60' - 80'	19'-6"	Ø4 3/4"	L 4" x 1/4"	N/A	N/A	N/A	N/A	3 - X
5	80' - 100'	18'-0"	Ø4 3/4"	L 3 1/2" x 1/4"	N/A	N/A	N/A	N/A	3 - X
6	100' - 120'	16'-6"	Ø4 1/2"	L 3 1/2" x 1/4"	N/A	N/A	N/A	N/A	3 - X
7	120' - 140'	15'-0"	Ø4 1/2"	L 3" x 1/4"	N/A	N/A	N/A	N/A	3 - X
8	140' - 160'	13'-6"	Ø4 1/4"	L 3" x 3/16"	N/A	N/A	N/A	N/A	3 - X
9	160' - 180'	12'-0"	Ø4"	L 3" x 3/16"	N/A	N/A	N/A	N/A	3 - X
10	180' - 200'	10'-6"	Ø3 3/4"	L 2 1/2" x 3/16"	N/A	N/A	N/A	N/A	3 - X
11	200' - 220'	9'-0"	Ø3 1/4"	L 2" x 3/16"	N/A	N/A	N/A	N/A	4 - X
12	220' - 240'	7'-6"	Ø3"	L 2" x 3/16"	N/A	N/A	N/A	N/A	4 - X
13	240' - 260'	6'-0"	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	L1 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

STATE OF KENTUCKY
KEITH M. EATON
15953
LICENSED PROFESSIONAL ENGINEER

Keith M. Eaton
8-28-2018

BASE REACTIONS:(FACTORED)

TOTAL SHEAR	= 84 KIPS
AXIAL LOAD	= 247 KIPS
UPLIFT / LEG	= 625 KIPS
COMP. / LEG	= 719 KIPS
O.T. MOMENT	= 14189 FT-K

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) ø1 3/4" x 5'-6" 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.

APPROX. WEIGHT
66.13 KIPS

REV #	DESCRIPTION	DATE	BY

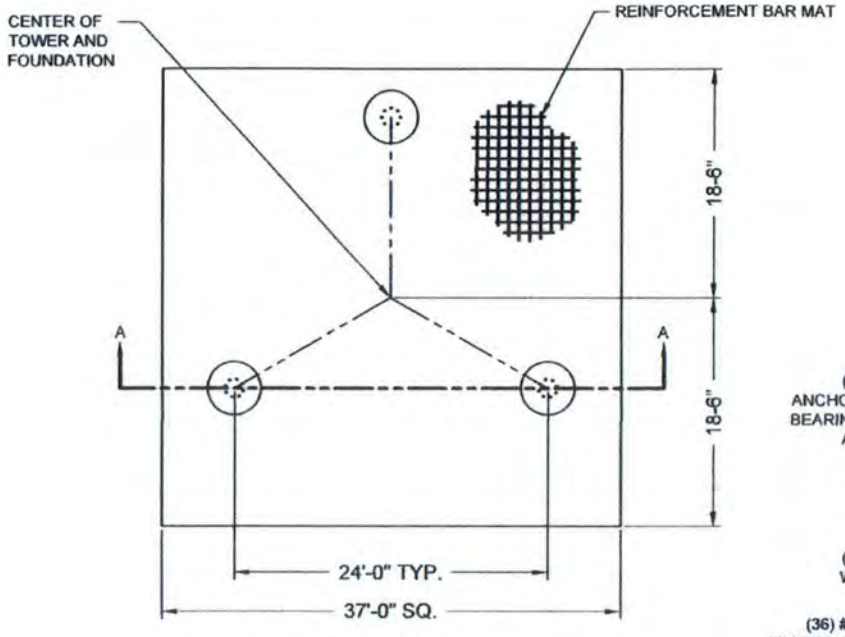
UNLESS OTHERWISE NOTED DIMENSIONS ARE IN: INCHES
TOLERANCE BANDS:
.X ±3/32"±0 ANGLES +/- 2°
.XX ±3/32"±0
.XXX +1/16"-0 HOLES +Ø1/16"-0

SCALE: NTS

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

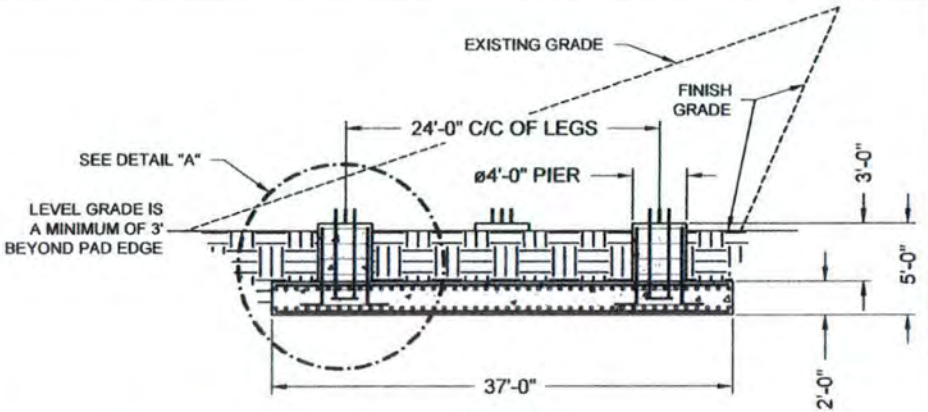
DESCRIPTION:
TOWER OVERVIEW
APPALACHIAN WIRELESS
EMANUEL, KNOX CO., KY
300' SELF SUPPORT TOWER

DRAWN BY: RC
DATE: 8/27/2018
FILE NAME: FT073728A - A
DESIGN: FT073728
SHEET: A

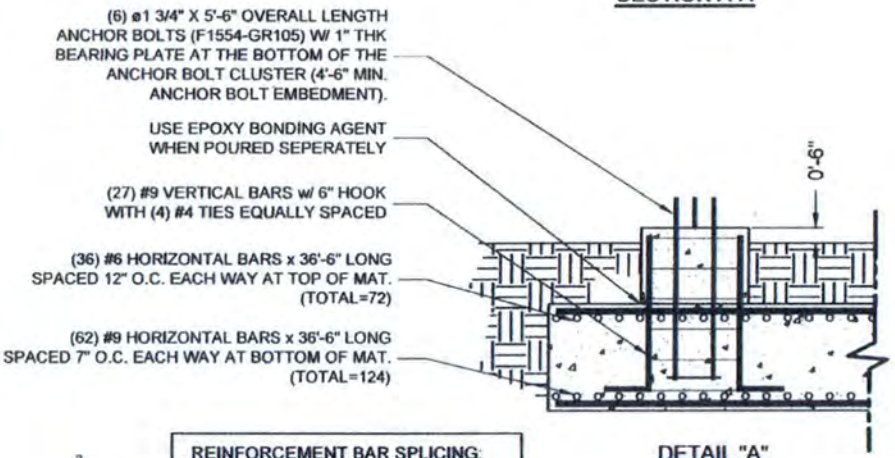


PLAN VIEW

TOTAL VOLUME OF CONCRETE = 105.6 YD^3



SECTION A-A



DETAIL "A"

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 PERFORMED BY EAST KENTUCKY ENGINEERING, LLC; DATED 7-2-2018; EKYENG PROJECT NO. 165-000-0067. 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 FOOTING EXCAVATIONS SHALL BE MANUALLY CLEANED PRIOR TO PLACING CONCRETE. COMPACT THE EXPOSED SOIL SURFACE AND ANY GRANULAR FILL UNDER THE FOUNDATION TO 90% OF THE MODIFIED PROCTOR DENSITY.
5. 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.
6. MINIMUM CONCRETE COVER FOR REINFORCING BARS SHALL BE 3". ALL REINFORCING BARS SHALL BE GRADE 60 REBAR (MIN YIELD = 60KSI).
7. FIELD BENDING OR WELDING OF REINFORCEMENT BARS IS NOT PERMITTED.
8. PROVIDE CHAMFERS AT ALL EXPOSED CORNERS OF CONCRETE.
9. BACKFILL NEAR AND AROUND THE FOUNDATIONS SHALL BE A WELL GRADED FILL MATERIAL PLACED IN 8" THICK LAYERS THAT HAS BEEN COMPACTED TO 90% OF THE MODIFIED PROCTOR DENSITY PER ASTM D1557.
10. SOME DETAIL HAS BEEN PURPOSELY OMITTED TO CLARIFY ILLUSTRATION.

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	17"
5	21"
6	26"
7	30"
8	36"
9	46"
10	58"
11	71"

STATE OF KENTUCKY
KEITH M. EATON
15953
LICENSED PROFESSIONAL ENGINEER

Keith M. Eaton
8-28-2018

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: RC

DATE: 8/27/2018

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
PAD & PIER FOUNDATION DESIGN
APPALACHIAN WIRELESS
EMANUEL, KNOX CO., KY
300' SELF SUPPORT TOWER

FILE NAME: FT073728A - B

DESIGN: FT073728

SHEET: B

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

Aeronautical Study No.
2018-ASO-7850-OE

Issued Date: 06/14/2018

Ali Kuzehkanani
East Kentucky Network, LLC
8300 Greensboro Drive, Suite 1200
Tysons, VA 22102

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

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

Structure:	Tower Emanuel (Bailey Switch)
Location:	Bailey Switch, KY
Latitude:	36-54-51.49N NAD 83
Longitude:	83-55-43.84W
Heights:	1262 feet site elevation (SE)
	310 feet above ground level (AGL)
	1572 feet above mean sea level (AMSL)

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

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 1, Obstruction Marking and Lighting, 24-hr med-strobes - Chapters 4,6(MIWOL),&12.

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

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

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

This determination expires on 12/14/2019 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.

(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

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

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

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

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

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

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

If we can be of further assistance, please contact our office at (404) 305-6531, or darin.clipper@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-ASO-7850-OE.

Signature Control No: 362905377-367821089 (DNE)
Darin Clipper
Supervisor

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

cc: FCC

Case Description for ASN 2018-ASO-7850-OE

A new 300' tower with top-mounted antennas (overall height of 310' AGL)

Frequency Data for ASN 2018-ASO-7850-OE

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

TOPO Map for ASN 2018-ASO-7850-OE

KENTUCKY AIRPORT ZONING COMMISSION

MATTHEW BEVIN
Governor

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

June 22, 2018

APPROVAL OF APPLICATION

APPLICANT:
East Kentucky Network, LLC.
East Kentucky Network, LLC.
8300 Greensboro Drive|Suite 1200
McLean, VA 22102

SUBJECT: AS-061-LOZ-2018-049

STRUCTURE:	Antenna Tower
LOCATION:	Bailey Switch, KY
COORDINATES:	36° 54' 51.49" N / 83° 55' 43.84" W
HEIGHT:	310' AGL/1572'AMSL

The Kentucky Airport Zoning Commission has approved your application for a permit to construct 310'AGL/ 1572'AMSL Antenna Tower near Bailey Switch, KY 36° 54' 51.49" N / 83° 55' 43.84" W.

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

A copy of the approved application is enclosed for your files.

Medium Intensity White Obstruction Lighting is required in accordance with 602 KAR 50:100.

John Houlihan
Administrator

MATTHEW BEVIN
Governor

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

CONSTRUCTION/ALTERATION STATUS REPORT

June 22, 2018

AERONAUTICIAL STUDY NUMBER: AS-061-LOZ-2018-049

East Kentucky Network, LLC.
East Kentucky Network, LLC.
8300 Greensboro Drive,Suite 1200
McLean, VA 22102

This concerns the permit which was issued to you by the Kentucky Airport Zoning Commission on June 22, 2018. This permit is valid for a period of 18 Month(s) from its date of issuance. If construction is not completed within the said 18-Month period, this permit shall lapse and be void, and no work shall be performed without the issuance of a new permit. When appropriate, please indicate the status of the project in the place below and return this letter to John Houlihan, Administrator, Kentucky Airport Zoning Commission, 421 Buttermilk Pike, Covington, KY, 41017. 859-341-2700.

STRUCTURE:	Antenna Tower
LOCATION:	Bailey Switch, KY
COORDINATES:	36° 54' 51.49" N / 83° 55' 43.84" W
HEIGHT:	310' AGL /1572'AMSL

CONSTRUCTION/ALTERATION STATUS

1. The project ( ) is abandoned. ( ) is not abandoned.

2. Construction status is as follows:
   Structure reached its greatest height of _____ ft. AGL
   _____ ft. AMSL on _____ (date).

   Date construction was completed. _____

   Type of obstruction marking/painting. _____

   Type of obstruction lighting. _____

   As built coordinates. _____

   Miscellaneous Information. _____

   DATE _____

   SIGNATURE/TITLE _____

2018-049

KENTUCKY TRANSPORTATION CABINET

KENTUCKY AIRPORT ZONING COMMISSION

TC 56-50
Rev. 07/2010

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

APPLICANT (*name*) East Kentucky Network, LLC c/o LLGS	**PHONE** 703-584-8667	**FAX** 703-584-8692	**KY AERONAUTICAL STUDY #** AS-061-402-2018-049	
ADDRESS (*street*) 8300 Greensboro Dr, #1200	**CITY** Tysons		**STATE** VA	**ZIP** 22102
APPLICANT'S REPRESENTATIVE (*name*) Ali Kuzehkanani	**PHONE** 703-584-8667	**FAX** 703-584-8692		
ADDRESS (*street*) 8300 Greensboro Dr, #1200	**CITY** Tysons		**STATE** VA	**ZIP** 22102
APPLICATION FOR ☒ New Construction ☐ Alteration ☐ Existing **DURATION** ☐ Permanent ☐ Temporary (*months* *days*)			**WORK SCHEDULE** Start 05/25/18 End 05/30/18	
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 36°54'51.49"	**LONGITUDE** 83°55'43.84"		**DATUM** ☒ NAD83 ☐ NAD27 ☐ Other	
NEAREST KENTUCKY City Bailey Switch County Knox	**NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT** London-Corbin Airport - Magee Field			
SITE ELEVATION (AMSL, *feet*) 1262	**TOTAL STRUCTURE HEIGHT** (AGL, *feet*) 310		**CURRENT** (*FAA aeronautical study #*)	
OVERALL HEIGHT (*site elevation plus total structure height, feet*) 1572			**PREVIOUS** (*FAA aeronautical study #*)	
DISTANCE (*from nearest Kentucky public use or Military airport to structure*) 14.6 mi			**PREVIOUS** (*KY aeronautical study #*)	
DIRECTION (*from nearest Kentucky public use or Military airport to structure*) SE				

DESCRIPTION OF LOCATION (*Attach USGS 7.5 minute quadrangle map or an airport layout drawing with the precise site marked and any certified survey.*)
Emanuel site, approximately 1.7 miles W of Bailey Switch (Knox), KY

DESCRIPTION OF PROPOSAL
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? 04/17/18

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**
Ali Kuzehkanani	Dir of Engineering	Ali Kuzehkanani	04/17/18

COMMISSION ACTION

☐ Approved
☒ Disapproved

☐ Chairperson, KAZC
☒ Administrator, KAZC

SIGNATURE

DATE 6-22-18

Driving Directions for the Emanuel Site

Beginning in Barbourville in front of the Knox County Courthouse on Court Square at the intersection of Court Square & Knox Street. Turn right onto Knox Street and drive .1 mile to traffic light #9 and turn right. Drive to traffic light #7 and turn left onto Hwy 11. Drive .2 miles and turn left onto 25E. Drive 4.6 miles to the intersection of 25E and Emanuel loop, turn left onto Emanuel loop and drive .1 miles. Turn left onto Emanuel Hollow Road. Drive .5 miles and turn right onto an unmarked gravel road. Stay to the left and drive .3 miles (sign will be posted). This is where the proposed road will start. Walk approximately .5 tenths of a mile (sign will be posted).

Prepared by:
Daryl Bartley
CELL SITE COMPLIANCE AGENT
East Kentucky Network, LLC
D/b/a Appalachian Wireless
(606) 791-0310 (cell)
dbartley@ekn.com


Emanuel
Location:
270 Mt. Pleasant Church Rd.
Gray, KY 40734
Coordinates:
36°54'51.50"N
83°55'42.96"W
Legend
1/2 Mile Search Area
Crows Way
25E
Old Dixie Hwy
Cr-1451
1527
Ky 1527
Warren Loop Dr
Cr-1400
Cumberland Gap Pkwy
Memphis Dr
Proposed Emanuel Site
Cr-1305L
Poplar Branch-Arkle Rd
Cr-1305F-70
Cr-1305M
Hill Side Ln
N
2000 ft

DEED

THIS DEED OF CONVEYANCE is made and entered into this 6th day of April, 2018, by and between **THOMAS BROWN** and **SHERRY BROWN**, a married couple, whose address is 300 Mt. Pleasant Church Road, Gray, Kentucky 40734 (hereinafter referred to as "**Grantors**"), and **EAST KENTUCKY NETWORK, LLC D/B/A APPALACHIAN WIRELESS**, a Kentucky limited liability company (hereinafter referred to as "**Grantee**"), whose address is 101 Technology Trail, Ivel, Kentucky 41642, which is also the "in care of" address to which the property tax bill for 2018 should be sent.

W I T N E S S E T H

That for and in consideration of the sum of Forty Thousand and 00/100 Dollars ($40,000.00), cash in hand paid, the receipt and sufficiency of which are hereby acknowledged, Grantors do hereby GRANT, SELL, and CONVEY to the Grantee, its successors and assigns, that certain real property on Highway 25E in Gray, Knox County, Kentucky, along with an easement, which is more particularly described in the Lot Description **attached** hereto and made a part herein as **Exhibit A** and depicted on the plat **attached** hereto and made a part herein as **Exhibit B**, prepared by James W. Caudill, Licensed Professional Land Surveyor (hereinafter referred to as the "Property").

Being a portion of the same property conveyed to Grantors by Alfred M. Burnett and his wife, Helen Burnett, by Deed dated October 29, 2009, and recorded in the Knox County Clerk's Office in Deed Book 379, Page 687.

Grantors also convey to Grantee an easement and right of way for ingress, egress, and regress from the public road to the Property where the existing road is now located by the cemetery and up the gas line to the Property. Grantors also convey to Grantee an easement and right of way

to construct, maintain and operate telephone, fiber and/or power transmission lines and poles along or near the existing road, if possible, and if not, then in a location to be mutually agreed between the parties, with Grantors' agreement not to be unreasonably withheld.

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

CONSIDERATION CERTIFICATE

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

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

GRANTORS:

THOMAS BROWN

SHERRY BROWN

COMMONWEALTH OF KENTUCKY
COUNTY OF Knox:

I, Raina Helton, a Notary Public in and for the County and State aforesaid, do hereby certify that the foregoing Deed and Consideration Certificate was this day produced, acknowledged, subscribed, and sworn to before me in the County and State aforesaid and signed by Thomas Brown and Sherry Brown, Grantors, this 10th day of April, 2018.

Notary Public

My Commission Expires: Feb 6, 2020

RAINA L. HELTON NOTARY PUBLIC ID NO. 549406 MY COMMISSION EXPIRES 2-6-2020 STATE AT LARGE, KY.

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

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

COMMONWEALTH OF KENTUCKY
COUNTY OF Floyd:

I, Raina Helton, a Notary Public in and for the County and State aforesaid, do hereby certify that the foregoing Consideration Certificate was this day produced, acknowledged, subscribed, and sworn to before me in the County and State aforesaid and signed by W.A. Gillum, in his capacity as the CEO/General Manager of East Kentucky Network, LLC d/b/a Appalachian Wireless, Grantee, this 10th day of April, 2018.

Raina L Helton
Notary Public

My Commission Expires: Feb 6, 2022.

RAINA L. HELTON NOTARY PUBLIC ID NO. 549406 MY COMMISSION EXPIRES 2-6-2022 STATE AT LARGE, KY.

This is to certify that this instrument was prepared by:

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

LOT DESCRIPTION
Property of
Thomas & Sherry Brown
300 MT Pleasant Church Road
Gray, KY 40734
Off Highway 25E Near Emanuel
March 28, 2018

EXHIBIT
tabbies
A

A portion of the property lying west of Highway 25E in Knox County of Kentucky, on ridge between Poplar Branch and Middle Fork of Richlands Creek. Being a part of the same land conveyed by deed from Alfred M. Burnett and his wife, Helen Burnett to Thomas Brown and his wife, Sherry Brown, by Deed dated October 29, 2009 and recorded in Deed Book 379 Page 687 of the Knox county Court Clerk.

Unless stated otherwise, any monument referred to herein as "set iron pin with cap" is a set ½" diameter rebar, at least eighteen (18") in length, with a plastic cap stamped "LS-2259". All bearings stated herein are referred to NAD83, KY single zone of the Kentucky state plane system. This survey preformed by James W. Caudill, LS2259, on March 28, 2018.

Lot 1A

Beginning on a set iron pin with metal cap stamped ls2259 on top of the ridge on the property of Thomas & Sherry Brown (Deed Book 379 Page 687); thence running North 65 deg 31 min 32 sec East, 21.47 feet to a set pk nail in root of 24" Hickory on the ridge, North 62 deg 07 min 40 sec East, 46.37 feet to a set pk nail in root of 28" Maple on ridge at old wire fence and the property line of Eddie, Cindy, & Richard Brashear & Glen Parker, Jr (Deed Book 162 Page 221); thence running with the fence and the Brashear/Parker line South 87 deg 26 min 28 sec East, 30.84 feet to a set pk nail in base 8" tree with wire fence, South 59 deg 09 min 35 sec East, 25.30 feet to a set iron pin with cap marked ls2259 at old stump with wire fence, South 40 deg 57 min 23 sec East, 83.34 feet to a set iron pin with cap at wire fence; thence leaving the fence and the Brashear/Parker line and running across South 65 deg 18 min 44 sec West, 193.77 feet to a set iron pin with cap marked ls2259 on a point; thence up the point North 03 deg 44 min 53 sec East, 127.92 feet to the beginning. Containing a calculated area of 16292.8 sq ft or 0.374 acres.

To be included with Lot1A is an access right of way from the Public Road to the lot; being where the existing access road is now located by the cemetery and up the gas line to the lot.

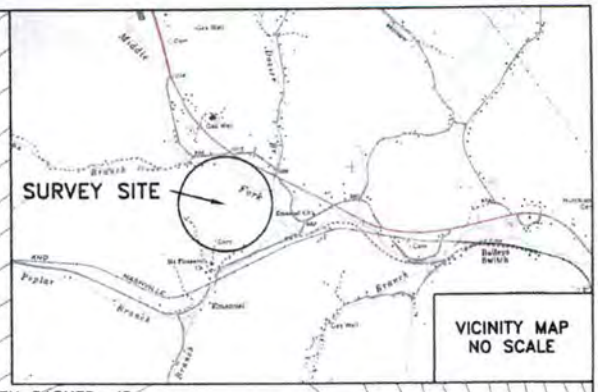
This survey was performed on March 28, 2018 by James W. Caudill, a Kentucky Licensed Professional Land Surveyor No. 2259.

STATE of KENTUCKY
JAMES W. CAUDILL
LS 2259
LICENSED PROFESSIONAL LAND SURVEYOR

James W. Caudill, PLS #2259
3-28-18

DOCUMENT NO: 232900
RECORDED:April 27,2018 02:58:00 PM
TOTAL FEES:$20.00 TRANSFER TAX:$4.00
COUNTY CLERK: MIKE COREY
DEPUTY CLERK: BEVERLY ANN DIAMOND
COUNTY: KNOX CO CLERK
BOOK: D424 PAGES: 178 - 181

APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL, KY. 41642
PROPOSED TOWER SITE
OFF HWY 25E NEAR EMANUEL
IN KNOX COUNTY, KY.



VICINITY MAP
NO SCALE

MAP 55 PARCEL 075
EDDIE, CINDY, & RICHARD BRASHEAR & GLEN PARKER, JR
9 HACIENDA CIRCLE
CORBIN, KY 40701
DEED BOOK 162 PAGE 221

LAT:36°54'51.4979"
LON:83°55'43.8413"

SET PK NAIL IN ROOT OF 28" MAPLE ON RIDGE
SET PK NAIL IN ROOT OF 24" HIC ON RIDGE
N 65°31'32" E 21.47'
S 87°26'28" E 30.84'
SET PK NAIL IN BASE 8" TREE WITH WIRE FENCE
S 59°09'35" E 25.30'
SET IRON PIN WITH CAP AT OLD STUMP WITH WIRE FENCE
N62°07'40"E 46.37'
S 40°57'23" E 83.34'
SET IRON PIN WITH METAL CAP MARKED LS2259 ON RIDGE
SET IRON PIN WITH CAP AT WIRE FENCE
N 03°44'53" E 127.92'
LOT 1A
16292.8 Sq. Feet
0.374 Acres
S 65°18'44" W 193.77'
GAS LINE
OLD WIRE FENCE
SET IRON PIN WITH CAP MARKED LS2259 ON POINT
EXISTING ACCESS ROAD

MAP 56 PARCEL 025
THOMAS & SHERRY BROWN
300 MT PLEASANT CHURCH ROAD
GRAY, KY 40734
DEED BOOK 379 PAGE 687

Beginning at a ;
thence N 65°31'32" E a distance of 21.47' to a set iron pin with metal cap on ridge;
thence N 62°07'40" E a distance of 46.37' to a set pk in root of 24" hic on ridge;
thence S 87°26'28" E a distance of 30.84' to a set pk in root of 28" maple on ridge;
thence S 59°09'35" E a distance of 25.30' to a set pk in base of 8" tree with fence;
thence S 40°57'23" E a distance of 83.34' to a set iron pin with cap at old stump & fence;
thence S 65°18'44" W a distance of 193.77' to a set iron pin with cap on point;
thence N 03°44'53" E a distance of 127.92' to a set iron pin with metal cap;
which is the point of beginning,
having an area of 16292.8 square feet, 0.374 acres

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

0' 50' 100' 150'

NAD83 KY SINGLE ZONE

N

STATE of KENTUCKY
JAMES W. CAUDILL
LS 2259
LICENSED PROFESSIONAL LAND SURVEYOR

URBAN CLASS SURVEY
I HEREBY CERTIFY THAT THIS PLAT DEPICTS A SURVEY, MADE BY ME, BY THE METHOD OF RANDOM TRAVERSE. THE BEARINGS SHOWN HEREON HAVE NOT BEEN ADJUSTED FOR CLOSURE. THIS SURVEY AND PLAT MEETS OR EXCEEDS THE MINIMUM STANDARDS OF GOVERNING AUTHORITIES. THE UNADJUSTED ERROR OF CLOSURE WAS 1 IN 10580

James W. Caudill 2259 3-28-18
JAMES W. CAUDILL LS# DATE

PLAT OF SURVEY

DRAWN JWC	DATE 03/28/18	SUBDIVISION OF THE PROPERTY OF THOMAS & SHERRY BROWN 300 MT PLEASANT CHRUCH RD GRAY, KY 40734 OFF HIGHWAY 25E DEED BOOK 379 PAGE 687
APPROVED	DATE 03/28/18	
SCALE 1" = 50'	SHEET 1 OF 1	SURVEYED BY JAMES W. CAUDILL LS2259 2999 PERKINS/MADDEN ROAD AMBURGEY, KY 41773 PHONE 606-642-3217

APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL, KY. 41642
PROPOSED TOWER SITE
OFF HWY 25E NEAR EMANUEL
IN KNOX COUNTY, KY.

MAP 55 PARCEL 075
EDDIE, CINDY, & RICHARD BRASHEAR & GLEN PARKER, JR
9 HACIENDA CIRCLE
CORBIN, KY 40701
DEED BOOK 162 PAGE 221

LAT:36°54'51.4979"
LON:83°55'43.8413"
LAT:36.9143
LON:83.9288
N:3497577.28
E:5453672.70

30.8440'
S 87°26'28" E

25.3017'
S 59°09'35" E

46.3689'
N 62°07'40" E

21.4712'
N 65°31'32" E

83.3415'
S 40°57'23" E

193.7718'
S 65°18'44" W

127.1928'
N 03°44'53" E

FINAL CONTOURS

GAS LINE

BUILDING PAD

BUILDING

PROFILE

CROSS SECTION

LOT 1A
16292.8 Sq. Feet
0.374 Acres

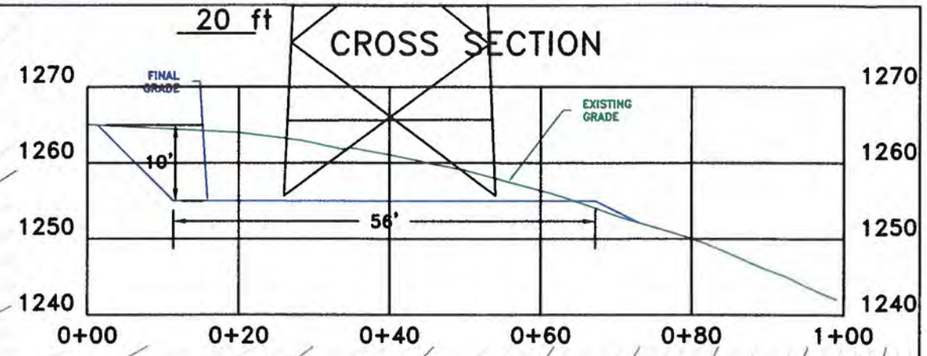
EXISTING ACCESS ROAD

EXISTING ACCESS ROAD

GAS

20 ft

CROSS SECTION



LINE	BEARING	DISTANCE
L1	S 21°58'53" W	17.58'
L2	S 42°17'59" E	34.83'
L3	S 74°42'29" E	42.55'
L4	N 88°33'08" E	35.14'
L5	N 84°51'21" E	32.57'
L6	N 55°04'16" W	114.88'
L7	N 58°43'02" W	103.18'
L8	N 63°31'05" W	98.08'
L9	N 67°53'11" W	104.45'
L10	N 76°32'22" W	128.24'
L11	N 78°34'12" W	98.44'
L12	N 89°52'44" W	135.51'

NAD83 KY SINGLE ZONE

N

0' 20' 40' 80'

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

MAP 56 PARCEL 025
THOMAS & SHERRY BROWN
300 MT PLEASANT CHURCH ROAD
GRAY, KY 40734
DEED BOOK 379 PAGE 687

"I certify that the latitude 36° 54' 51.4979"N and longitude 83° 55' 43.8413"W are within +/- 50 feet horizontally; and the site elevation 1256.0 ft. MSL, is within +/- 20 feet vertically. With a structure height of 300 ft AGL, the overall height is 1556 ft, AMSL. The horizontal datum (coordinates) is in terms of the North American Datum Of 1983 (NAD 83). The vertical datum heights are in terms of the North American Vertical Datum of 1988, and are determined to the nearest foot."

SIGNED: James W. Caudill PE #12305 & LS #2259 03/06/18

PRINTED: JAMES W. CAUDILL PE #12305 & LS #2259

-THE PROPOSED TOWER HAS BEEN LOCATED USING DUAL FREQUENCY GPS UNIT PROCESSED BY "OPUS"
-STATE PLANE COORDINATES NAD 83 KY SINGLE ZONE N:3497577.28, E:5453672.70, EL 1261.8' EXISTING GRD TOP OF PROPOSED FOUNDATION EL1256'-TOP TOWER EL1556'
-PRECISION: HORIZONTAL=0.30' VERTICAL=0.50'
-THIS SURVEY MEETS OBSTACLE ACCURACY CODE 2C.
-PROPERTY LINE INFORMATION TAKEN FROM DEEDS

STATE OF KENTUCKY
JAMES W. CAUDILL
12305
LICENSED PROFESSIONAL ENGINEER

STATE of KENTUCKY
JAMES W. CAUDILL
LS 2259
LICENSED PROFESSIONAL LAND SURVEYOR

PROPOSED SITE PLAN AND STRUCTURE LOCATION
EMANUEL TOWER APPALACHIAN WIRELESS

DRAWN JWC	DATE 03/06/18	THOMAS AND SHERRY BROWN TRACT OFF HIGHWAY 25E NEAR EMANUEL KNOX COUNTY, KY.
APPROVED	DATE	
SCALE 1" = 20'	SHEET 2 OF 3	PROJECT NO. EMANUEL/EM2C_20

Filing

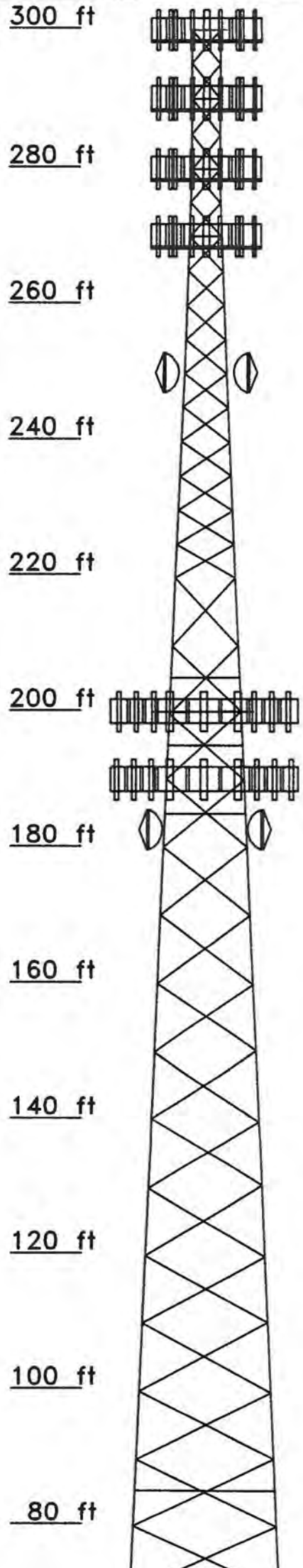
CONTAINS

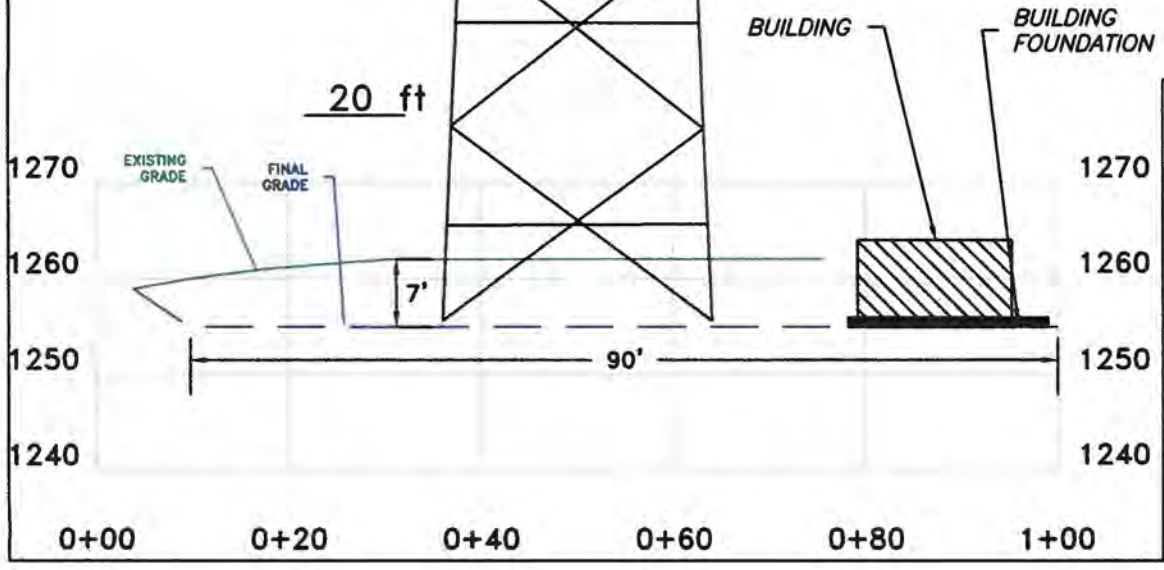
LARGE OR OVERSIZED

MAP(S)

RECEIVED ON:
(09/06/2018)

APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL, KY. 41642
PROPOSED TOWER SITE
OFF HWY 25E NEAR EMANUEL
IN KNOX 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.

STATE OF KENTUCKY · JAMES W CAUDILL · 23U5 · LICENSED PROFESSIONAL ENGINEER

James W. Caudill — 12305 — 03/06/18
JAMES W. CAUDILL — PE #. — DATE

NOTE: SEE FOUNDATION DRAWINGS FOR DETAILS

03/06/18
SCALE 1" = 20'

0' 20' 40' 60'

PROPOSED SITE PLAN AND STRUCTURE LOCATION EMANUEL TOWER APPALACHIAN WIRELESS		
DRAWN JWC	DATE 03/06/18	THOMAS AND SHERRY BROWN TRACT OFF HIGHWAY 25E NEAR EMANUEL IN KNOX COUNTY, KY
APPROVED	DATE	
SCALE 1" = 20'	SHEET 3 OF 3	PROJECT NO. EMANUEL/EMPRO20

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