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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) CASE NO. 2019-00198
CONSTRUCT A TOWER IN POWELL COUNTY,)
KENTUCKY.)

East Kentucky Network, LLC d/b/a Appalachian Wireless was granted authorization to provide cellular service in the KY-10 Cellular Market Area (CMA452) by the Federal Communications Commission (FCC). 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 Commonwealth of Kentucky.

In an effort to improve service in Powell 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 400-foot guyed tower on a tract of land located at 798 Baker Hill Estates, Slade, Powell County, Kentucky 40380 (37°47'41.6660"N 83°40'06.9836"W). A map and detailed directions to the site can be found in Exhibit 7.

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

within 500 feet of the proposed Tower or contiguous to the property upon which construction is proposed were notified by certified mail return receipt requested of East Kentucky Network, LLC's proposed construction and informed of their right to intervene. They were given the docket number under which this application is filed. Enclosed in Exhibit 2 is a copy of that notification.

Powell County has no formal local planning unit. In absence of this unit, the Powell 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 Powell 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 Clay City Times, July 4, 2019 edition. Enclosed is a copy of that notice in Exhibit 3. The Clay City Times is the newspaper with the largest circulation in Powell County.

A geologist was employed to determine soil and rock types and to ascertain the distance to solid bedrock. The geotechnical report is enclosed as Exhibit 4.

A copy of the tower design information is enclosed as Exhibit 5. The proposed tower has been designed by engineers at World Tower 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 applications are included as Exhibit 6.

No Federal Communications Commission approval is required prior to construction of this facility. Once service is established from this tower we must immediately notify the Federal Communications Commission of its operation. Prior approval is needed only if the proposed

facility increases the size of the cellular geographic service area. This cell site will not expand the cellular geographic service area.

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

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

Two notice signs meeting the requirements prescribed by 807 KAR 5:063, Section 1(2), measuring at least two (2) feet in height and four (4) feet in width and containing all required language in letters of required height, have been posted, one at a visible location on the proposed site and one on the nearest public road. The two signs were posted on July 1, 2019, 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 in a rural community in close proximity to the existing tower. There is an existing 380' tower owned by East Kentucky Network, LLC on the property which cannot meet the needs of East Kentucky Network, LLC and will be removed upon construction of the proposed tower.

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

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

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

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

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

[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

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

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

SUBMITTED BY: Lynn Haney DATE: 7/1/2019
Lynn Haney, Regulatory Compliance Director

APPROVED BY: W.A. Gillum DATE: 7/1/19
W.A. Gillum, General Manager

ATTORNEY: Krystal Branham DATE: 7/1/19
Hon. Krystal Branham, Attorney

CONTACT INFORMATION:

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

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

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

Mailing Address:

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

ULS License

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

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

Market

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

Dates

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

Five Year Buildout Date

10/17/1996

Control Points

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

Licensee

FRN	0001786607	Type	Limited Liability Company
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Licensee

East Kentucky Network, LLC d/b/a Appalachian Wireless 101 Technology Trail Ivel, KY 41642	P:(606)477-2355
---	-----------------

Contact

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

Radio Service Type Mobile

Regulatory Status Common Carrier Interconnected Yes

Alien Ownership

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

Basic Qualifications

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

Demographics

Race

Ethnicity

Gender

EXHIBIT 2 – 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

Wilma Henry and Samantha Wilson
C/O Wilma Henry
575 Baker Estates
Pine Ridge, KY 41360

United States Forest Service
761 S. Laurel Road
London, KY 40744

Dell L. Sasser
P.O. Box 728
Jackson, KY 41339

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

July 3, 2019

Wilma Henry and Samantha Wilson
C/O Wilma Henry
575 Baker Estates
Pine Ridge, KY 41360

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2019-00198)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a replacement facility to provide cellular telecommunications service in Powell County. The facility will include a 400' -foot guyed tower with attached antennas extending upwards, and an equipment shelter located on a tract of land at 798 Baker Hill Estates, Slade. 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. 2019-00198 in your correspondence.

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

Sincerely,



Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

July 3, 2019

United States Forest Service
761 S. Laurel Road
London, KY 40744

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

Sincerely,

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

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

July 3, 2019

Dell L. Sasser
P.O. Box 728
Jackson, KY 41339

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2019-00198)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a replacement facility to provide cellular telecommunications service in Powell County. The facility will include a 400' -foot guyed tower with attached antennas extending upwards, and an equipment shelter located on a tract of land at 798 Baker Hill Estates, Slade. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

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Sincerely,

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

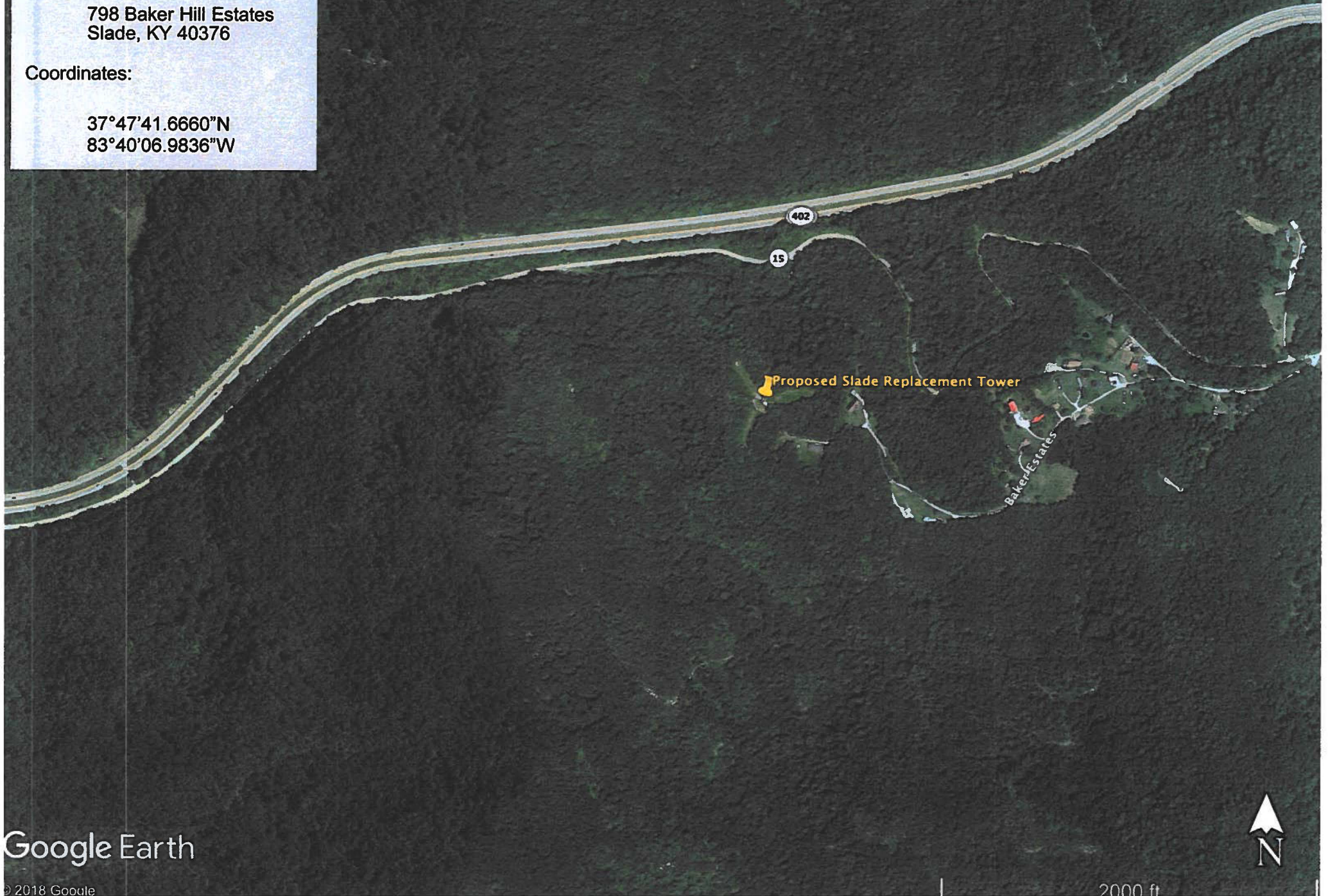
Slade . placement

Location:

798 Baker Hill Estates
Slade, KY 40376

Coordinates:

37°47'41.6660"N
83°40'06.9836"W



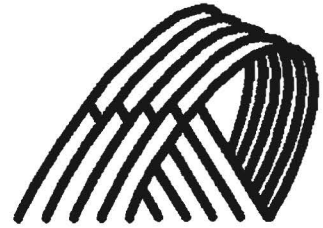
Google Earth

© 2018 Google

2000 ft

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

EAST KENTUCKY NETWORK



To: Clay City Times

Attn: Classifieds

From: Raina Helton

Regulatory Compliance Assistant

Email: cctads@hatfieldnewspapers.net

Date: June 27, 2019

Re: PUBLIC NOTICE ADVERTISEMENT

Pages: 1

Please place the following Public Notice Advertisement in the Clay City Times to be ran on July 4, 2019

PUBLIC NOTICE:

RE: Public Service Commission of Kentucky (CASE NO. 2019-00198)

Public Notice is hereby given that East Kentucky Network, LLC, dba Appalachian Wireless has applied to the Kentucky Public Service Commission to replace an existing cellular telecommunications tower on a tract of land located at 798 Baker Hill Estates, Slade, Powell County, Kentucky. The proposed tower will be a 400 foot guyed 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. 2018-00198.

If you have any questions about the placement of the above mentioned notice, please call me at 606-477-2355, ext. 1005.

Thank you,

Raina Helton
Regulatory Compliance Assistant

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



VIA: U.S. CERTIFIED MAIL

July 3, 2019

James D. Anderson Jr. , Judge Executive
P.O. 506
Stanton, KY 40380

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2019-00198)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a replacement facility to provide cellular telecommunications service in Powell County. The facility will include a 400'-foot guyed tower with attached antennas extending upwards, and an equipment shelter located on a tract of land at 798 Baker Hill Estates, Slade, Powell 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 Powell 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. 2019-00198 in your correspondence.

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Sincerely,

Lynn Haney
Regulatory Compliance Director
Enclosure

Slade Replacement

Location:

798 Baker Hill Estates
Slade, KY 40376

Coordinates:

37°47'41.6660"N
83°40'06.9836"W

Proposed Slade Replacement Tower

Google Earth

© 2018 Google

2000 ft





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

EAST KENTUCKY ENGINEERING, LLC.

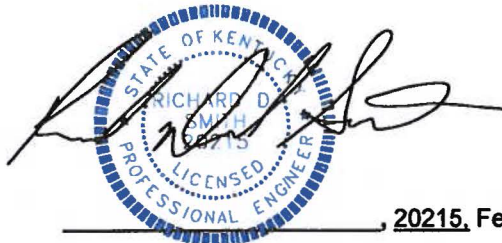
**APPALACHIAN WIRELESS
Geotechnical Investigation on the
Slade Tower Site
Powell County, Kentucky
EKYENG Project No. 165-000-0079**

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, February 28th, 2019



EAST KENTUCKY ENGINEERING, LLC.

EXECUTIVE SUMMARY

1.0 INTRODUCTION

2.0 PROJECT DESCRIPTION

3.0 SITE DESCRIPTION & HISTORICAL MINING

3.1 GENERAL INFORMATION

3.2 SURFACE MINING

3.3 UNDERGROUND MINING

4.0 FIELD EXPLORATION

4.1 SITE INFORMATION

4.2 BORING DATA

4.3 GROUNDWATER

4.4 SEISMIC SITE CLASSIFICATION

5.0 DISCUSSION AND RECOMMENDATIONS

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5.2 SHALLOW MAT FOUNDATIONS RECOMMENDATIONS

5.3 ANCHORS

5.4 BURIED UTILITIES

6.0 WARRANTY

6.1 SUBSURFACE EXPLORATION

6.2 LABORATORY AND FIELD TEST

6.3 ANALYSIS AND RECOMMENDATIONS

6.4 CONSTRUCTION MONITORING

6.5 GENERAL

SPECIFICATIONS

I – GENERAL

II – ENGINEERED FILL BENEATH STRUCTURES CLEARING AND GRADING SPECIFICATIONS

III – GUIDELINES FOR EXCAVATIONS AND TRENCHING

IV – GENERAL CONCRETE SPECIFICATIONS

V – DRILLED PIER INSTALLATION

APPENDIX A – BORING LOGS

APPENDIX B – CORE PHOTOGRAPHS

APPENDIX C – SEISMIC DATA

APPENDIX D – PHOTOGRAPHS

APPENDIX E – MAPS



EAST KENTUCKY ENGINEERING, LLC.

EXECUTIVE SUMMARY

A geotechnical investigation has been performed on the Slade Tower Site, located in Powell County, Kentucky. This site is readily accessible. A location map is shown in Figure 1 of this report. Five (5) borings were advanced to a maximum depth of 29.7 ft. The following geotechnical considerations were identified:

- Borings utilized for this study encountered thin soils with sandstone immediately below to a depth of 29.7 ft.
- The estimated maximum base elevation of tower mat foundation is 1293 ft.
- This site is on a forested point, next to an existing tower.
- **The allowable bearing capacities is estimated at 4 tsf on this sandstone unit from 1288' to 1278'.**
- The 2015 International Building Code seismic site classification for this site is "B".
- If during the foundation design it becomes necessary to lower or raise the footer, alternate design recommendations can be provided by EKYENG.
- Close monitoring of the construction operations discussed herein will be critical in achieving the design subgrade support. We, therefore, recommend that EKYENG is retained to monitor this portion of the work.

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



EAST KENTUCKY ENGINEERING, LLC.

1. INTRODUCTION

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

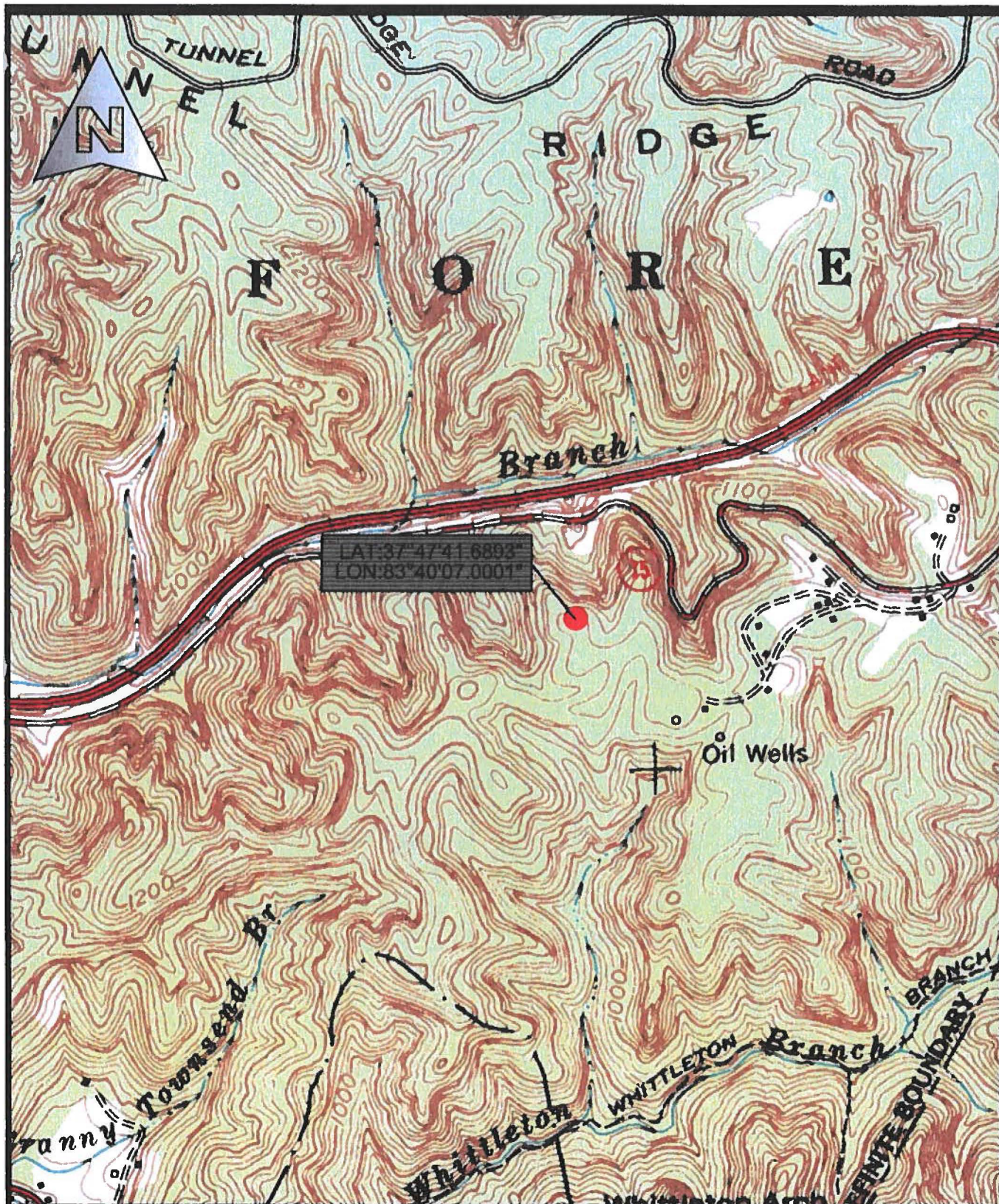
Five (5) borings were advanced to a maximum depth of 29.7 ft. Horn and Associates, Inc. provided drilling services to obtain these borings. Logs of the borings along with a boring location plan are included in Appendix A and Appendix D. The purpose of these services is to provide information and geotechnical engineering recommendations about subsurface conditions, earthwork, seismic considerations, groundwater conditions and foundation design.

2.0 PROJECT DESCRIPTION

The proposed communication facility will consist of a self-supporting tower of undetermined height and ancillary support areas. The footing area is estimated to be 12.5 ft. X 12.5 ft. with an estimated base of the tower footer elevation at 1293.0 ft. Based on information provided, we estimate the structural loads will be like the following conditions;

CONDITION	LOAD
Total Shear	40 Kips
Axial Load	50 Kips

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



Drawn: RDS	Date: 3/18/2019
Job: 165-079	Scale: 1"=1000'

APPALACHIAN WIRELESS
EXCERPT FROM USGS QUAD
LOCATION MAP
SLADE
FIGURE NO 1

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



EAST KENTUCKY ENGINEERING, LLC.

3.0 SITE DESCRIPTION & HISTORICAL MINING

3.1 GENERAL INFORMATION

The site location is on a forested point, next to an existing tower in Powell County, Kentucky. The current surface elevation is approximately 1293.6 ft. Research on the historical mining was conducted by obtaining previous mine license maps from the "Kentucky Mine Mapping Information System" (KMMIS).

3.2 SURFACE MINING

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

3.3 UNDERGROUND MINING

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

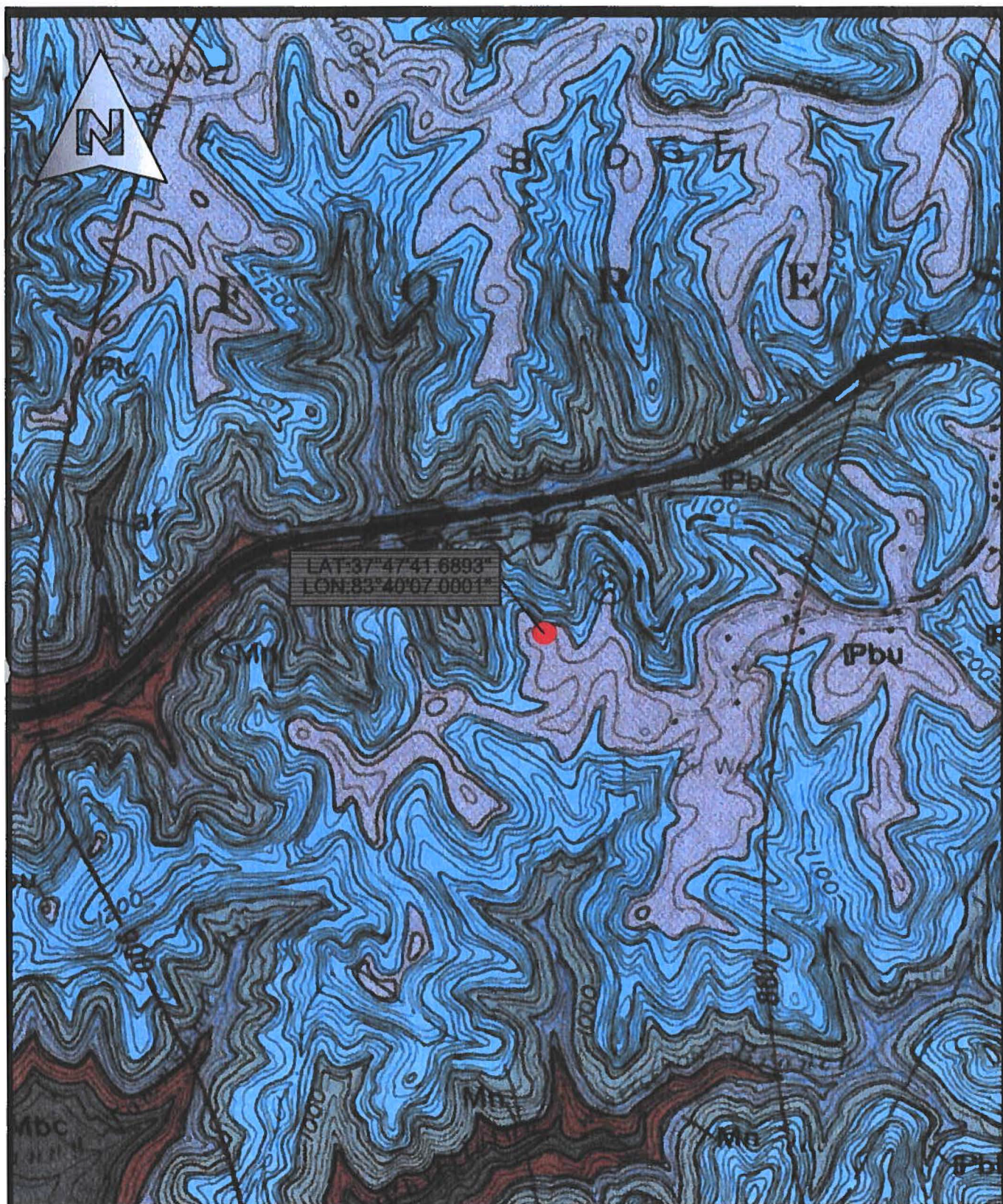
4.0 FIELD EXPLORATION

4.1 SITE INFORMATION

The proposed site is located on a forested point, next to an existing tower in Powell County, Kentucky. The site lies within the Slade Quadrangle. The site is readily accessible by conventional exploratory equipment. An estimated pad location was determined based on the information provided. Foundation dimensions were estimated to be a 12.5 ft. X 12.5 ft. footer for this report.

4.2 BORING DATA

Five (5) borings were made in the relative positions shown on the Site Map in Appendix D. The boring logs and resulting data are included in Appendix A. These borings were made with a track mounted boring rig using hollow-stem augers and employing standard penetration resistance methods (ASTM D-1586, which includes 140-pound hammer, 30-inch drop, and two-inch-O.D. split-spoon



Drawn: RDS	Date: 3/18/2019
Job: 165-079	Scale: 1"=1000'

APPALACHIAN WIRELESS
EXCERPT FROM GEOLOGIC QUAD
LOCATION MAP
SLADE
FIGURE NO 2

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



EAST KENTUCKY ENGINEERING, LLC.

sampler) at maximum depth intervals of five feet or at major changes in stratum, whichever occurred first. The disturbed split-spoon samples were visually classified, logged, sealed in moisture-proof jars, and taken to the EKYENG laboratory for study. The depths where these "A"-type split-spoon samples were collected are noted on the boring logs. The results of the natural moisture contents by boring and interval are shown in Table 2.

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

SAMPLE NO.	DEPTH INCREMENT, (FT.)	NATURAL MOISTURE CONTENT, %
B1 S-1	0.0 – 1.5	21.3%
B1 S-2	4.0 – 4.2	10.9%
B2 S-1	0.0 – 1.5	14.4%
B2 S-2	4.0 – 5.5	15.0%
B2 S-3	6.5 – 6.6	9.6%
B3 S-1	0.0 – 1.5	11.7%
B3 S-2	4.0 – 4.3	5.9%
B4 S-1	0.0 – 1.5	15.3%
B4 S-2	4.0 – 4.7	9.3%
B5 S-1	0.5 – 1.5	15.6%
B5 S-2	4.0 – 4.7	7.3%



EAST KENTUCKY ENGINEERING, LLC.

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

TABLE NO. 3
STANDARD PENETRATIONS

SAMPLE NO.	DEPTH INCREMENT	BLOW COUNT / RQD *	DESCRIPTION
B-1	0.0-1.5	1-1-2	Br. Sandy Clay
B-1	4.0-4.2	50/.2	Brn.Wthrd SS W/H2O Stains
B-1	4.2-14.2	4.3*	Brn.Wthrd SS W/H2O Stains
B-2	0.0-1.5	1-1-2	Br. Sandy Clay
B-2	4.0-5.5	4-2-11	Poorly Cemented Sandstone
B-2	6.5-6.6	50/.1	Br. Weathered SS
B-2	6.6-16.6	7-3	Br. Weathered SS
B-3	0.0-1.5	2-5-7	Br. Sandy Clay
B-3	4.0-4.3	50/.3	Br. Poorly Cemented SS
B-3	4.3-14.3	0.9*	Br. Weathered SS
B-3	14.3-19.3	0.7*	Br. Weathered SS
B-3	19.3-24.3	2.4*	Br. Weathered SS
B-4	0.0-1.5	1-2-2	Br. Sandy Clay
B-4	4.0-4.7	25-50/.2	Br. Weathered SS
B-4	4.7-14.7	2.9*	Br. Weathered SS w/Clay Streaks
B-4	14.7-18.7	0*	Br. Weathered SS w/Clay Streaks
B-4	18.7-23.7	0*	Br. Weathered SS w/Clay Streaks
B-4	23.7-28.7	0.6*	Br. Weathered SS w/Clay Streaks
B-5	0.0-1.5	1-2-2	Br. Sandy Clay W/DGA
B-5	4.0-4.7	30-50/.2	Br. Weathered SS
B-5	4.7-9.7	0*	Br. Severely Weathered SS w/ Clay Streaks
B-5	9.7-14.7	0*	Br. Severely Weathered SS w/ Clay Streaks



EAST KENTUCKY ENGINEERING, LLC.

SAMPLE NO.	DEPTH INCREMENT	BLOW COUNT / RQD *	DESCRIPTION
B-5	14.7-19.7	1.0*	Br. Severely Weathered SS w/ Clay Streaks
B-5	19.7-24.7	1.1*	Br. Severely Weathered SS w/ Clay Streaks
B-5	24.7-29.7	0*	Br. Severely Weathered SS w/ Clay Streaks

The borings encountered sandy clays to a depth of 5.1 ft. The five borings were extended by "NX" size rock core that were taken to confirm the presence of rock at the site and to determine its physical characteristics. The core was made with "NX" size diamond coring equipment. These borings are between 14.2 ft and 29.7 ft in depth. The position at which the core was taken is indicated on the boring logs and shown on the boring location map in Appendix D.

4.3 GROUNDWATER

Groundwater in Eastern Kentucky is characterized by water flowing through a system of internal fractures that lead to an alluvial aquifer near the bottom of valley floors. Large, defined aquifers other than the alluvium is not common, especially in higher elevations such as where this tower site is proposed. Therefore, groundwater should not be a concern in this area. During the site investigation, no groundwater resources were observed.

4.4 SEISMIC SITE CLASSIFICATION

Based on the encountered soil conditions at the project site, the site classification was determined to be "Site Class B" per the 2015 Kentucky Building Code. In addition, an S_{Ds} coefficient of 0.133 g was calculated, and an S_{D1} coefficient of 0.059 g was also calculated for design based on the aforementioned building code.



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5.0 DISCUSSION AND RECOMMENDATIONS

5.1 GENERAL

The structure will be guyed 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 SHALLOW MAT FOUNDATIONS RECOMMENDATIONS

It is expected that shallow foundations will be used at the base of the proposed tower. It should be noted that the material type and bearing capacity can vary significantly due to the inconsistency of the underlying material. Based on the laboratory and field testing, visual inspection of the materials and practical experience we have estimated that the **allowable bearing capacity at this site will be 4 tsf within the sandstone unit from an elevation of 1288 ft to 1278 ft.**

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 (k_{30}) of 100 lbs./cu. in. can be used for design of the slabs.

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



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

5.3 ANCHORS

There are currently three anchors associated with this tower. The existing depths and dimensions are unknown. Anchor blocks used to restrain the tower are designed to resist both vertical (uplift) and horizontal components of tensile forces in the guy wires. Uplift forces are resisted by the dead weight of the anchor block and friction between the sides of the anchor block and surrounding soils, provided the sides of the block were cast in direct contact with undisturbed natural materials or properly compacted and approved fill.

The horizontal component can be resisted by the passive pressure of soil acting on the vertical side of the block facing the tower and friction between the block and the underlying soil. Allowable coefficient of friction values of 0.2 and 0.4 times the effective normal force (in excess of uplift force) transferred by the block to the



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Subgrade can be used to determine allowable frictional sliding resistance for the underlying natural soils and highly weathered sandstone, respectively.

The following table presents the allowable design criteria for the tower's anchor blocks. In the table, the allowable side friction and lateral pressure values have safety factors of approximately 2. Design parameters shown in the table are applicable to the natural, undisturbed soils and engineered backfill, but should not be applied to disturbed materials or newly placed fill materials. Engineered backfill is considered on-site soils that are placed in standard Proctor dry density (ASTM D-698). The backfill should be placed at a workable percent compaction. Because soil strength varies due to frost action and moisture variation, and the proximity to rock, we recommend neglecting passive and frictional resistances for the soils within three (4) feet of the ground surface.

TABLE NO. 4

Guy No. (Depth) FT.	Eff Unit Weight (PSF)	Allowable Side Friction		Allowable Passive Pressure		Estimated Shear Strength	
		Initial Value	Increase Per Foot of Depth	Initial Value	Increase Per Foot of Depth	Undrained Cohesion (PSF)	Angle of Friction (Degrees)
B1							
0.0-4.2	120	30	---	---	---	---	---
4.2-10.0	140	2000	---	5000	150	6,000+	28
10.0-15.0	145	2500	---	12000	150	6,000+	28
B2							
0.0-4.0	120	30	---	---	---	---	---
4.0-6.5	120	30	10	500	120		
6.5-10.0	140	2000	---	8,000	150	6,000+	28
10.0-15.0	145	2500	---	12,000	150	6,000+	28
B3							
0.0-4.3	120	30	---	---	---	---	---
4.3-10.0	140	2000	10	8,000	150	6,000+	28
10.0-15.0	145	2500	---	12,000	150	6,000+	28



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5.4 BURIED UTILITIES

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

6.0 WARRANTY

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

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

6.1 SUBSURFACE EXPLORATION

Subsurface exploration is normally accomplished by test borings, although test pits are sometimes employed. The method of determining the boring location and



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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



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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



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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 Slade Property located in Powell 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.



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SPECIFICATIONS

I – GENERAL

1.0 STANDARDS AND DEFINITIONS

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

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

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

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

1.2 DEFINITIONS

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

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

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

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

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

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



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2.0 GENERAL CONDITIONS

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

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

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

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

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

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



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II - ENGINEERED FILL BENEATH STRUCTURES CLEARING AND GRADING SPECIFICATIONS

1.0 GENERAL CONDITIONS

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

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

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

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

2.0 SUBSURFACE CONDITIONS

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

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

3.0 SITE PREPARATION

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

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



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

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

4.0 FORMATION OF FILL AREAS

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

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

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

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

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



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

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

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

5.0 SLOPE RATIO AND STORM WATER RUN-OFF

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

6.0 GRADING

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

7.0 COMPACTING

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

8.0 TESTING AND INSPECTION SERVICES

Testing and inspection services will be provided by the Owner.



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GUIDELINES FOR EXCAVATIONS AND TRENCHES

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

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

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

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

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



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



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stop work immediately and remove workers from the excavation when conditions change and pose a threat to their safety.

- 14.** Workers must not be exposed to fall hazards associated with excavations. Protective walkways or bridges with standard guard rails must be provided.
- 15.** All wells, pits, shafts etc. must be barricaded or covered. After completion of work, all wells, pits, shafts etc. must be backfilled.



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IV - GENERAL CONCRETE SPECIFICATIONS

1.0 GENERAL

It is the intent of this specification to secure, for every part of the work, concrete of homogenous structure which, when hardened, will have the required strength and resistance to weathering. To this end, the limiting values of concrete and the requirements hereinafter specified must be met. Standard tests of the cement, aggregates, concrete and reinforcement will be made by the Owner as it sees fit. The Contractor shall furnish the material for all required samples plus such labor as required to obtain samples. The Contractor shall provide to authorized representatives of the Owner, convenient access to all parts of the work of all concreting operations for the purpose of sampling and inspection.

2.0 SCOPE

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

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

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

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

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

3.0 MATERIALS

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

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

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



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

2. Coarse Aggregate: Cement concrete shall consist of crushed rock or screened gravel and shall be composed essentially of clean, hard, strong and impermeable particles, resistant to wear and frost and free from deleterious amounts of organic matter, loam, clay, salts, mica, and soft, thin, elongated, laminated or disintegrated stone, and shall be inert to water and cement.

- B. Portland Cement: Portland cement shall conform to ASTM Specification C150. Type I or Type II Portland Cement shall be used provided that they are not intermixed during any one batch. Type II Portland Cement shall not be used unless indicated on the plans.

- C. Water: Water for mixing and curing shall be clean, fresh, and free from deleterious materials.

- D. Metal Reinforcement: Rebar shall be Grade 60 and with deformations conforming to ASTM Specification A305. Welded wire mesh shall conform to W4 x W4 size and be of Grade 60 steel.

- E. Admixtures: Except as herein noted, admixtures shall not be used.

1. Under adverse weather conditions only retarding or accelerating agents containing no chloride may be used.
2. Air-Entraining Agent shall be used for all concrete will give an entrained air range of not less than 4 percent but no greater than 8 percent in the finished product. Under no circumstances shall the air-entraining be interground with cement.
3. Approval in writing shall be required from Owner prior to the use of any admixture.

4.0 FORM

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

5.0 INSERTS, ETC.

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



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6.0 REINFORCEMENT

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

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

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

7.0 CONCRETE

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

8.0 DEPOSITING CONCRETE

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

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

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



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

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



EAST KENTUCKY ENGINEERING, LLC.

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

9.0 CURING

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

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

10.0 CONCRETE FINISHES

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

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

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



EAST KENTUCKY ENGINEERING, LLC.

APPENDIX A BORING LOGS

[illegible]

Water Level @ Drilling 3.5 1120
Moving/Delay Time

24 Hr. Water Level _____
 Hammer Weight 140 lbs.

7 Day Water Level _____
Hammer Drop 30 in.

4.

216 N. Main Street - Winchester, KY 40391
Ph: 800-729-2802 Fax: 859-744-6892

Page 5 of 1

Water Level @ Drilling H2O 2.0 24 Hr. Water Level _____ 7 Day Water Level _____
Moving/Delay Time _____ Hammer Weight 140 lbs. Hammer Drop 30 in.

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

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

Water Level @ Drilling	<u>120 - 2.0</u>	24 Hr. Water Level	<u> </u>	7 Day Water Level	<u> </u>
Moving/Delay Time		Hammer Weight	140 lbs.	Hammer Drop	30 in.

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

Page 5 of 7

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

HORN

AND ASSOCIATES, INC
 Winchester, KY 40391
 Fax: 859-744-6892

FIELD BORING LOG

Page 1 of 1

[illegible]

Water Level @ Drilling

24 Hr. Water Level

7 Day Water Level

Moving/Delay Time

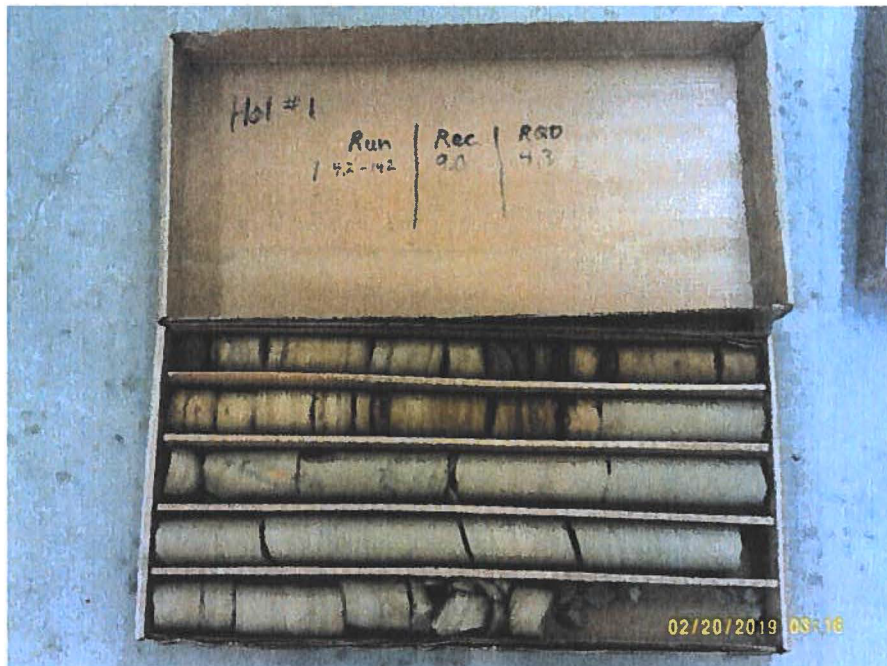
Hammer Weight 140 lbs.

Hammer Drop	30 in.
-------------	--------



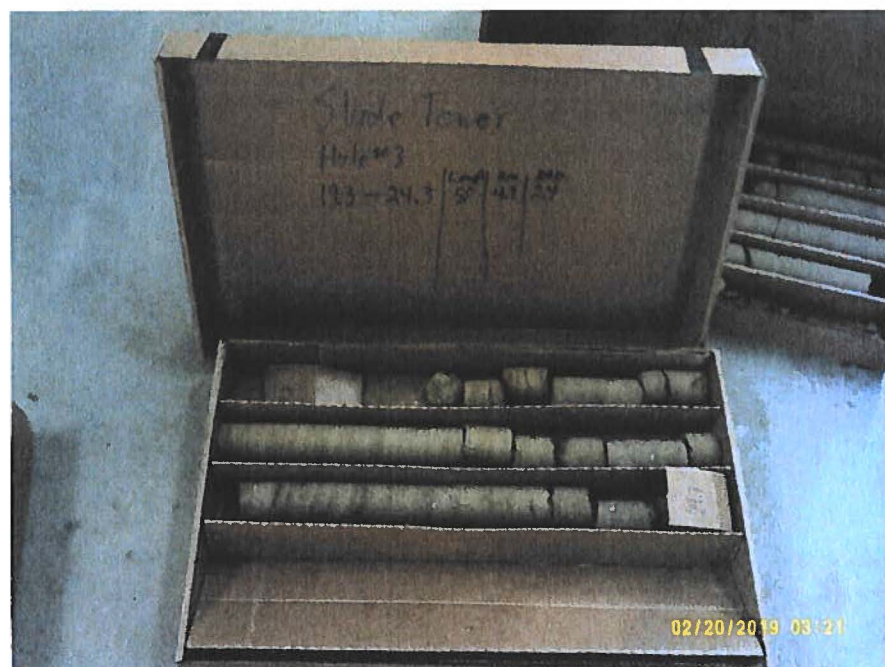
EAST KENTUCKY ENGINEERING, LLC.

APPENDIX B CORE PHOTOGRAPHS





EAST KENTUCKY ENGINEERING, LLC.





EAST KENTUCKY ENGINEERING, LLC.





EAST KENTUCKY ENGINEERING, LLC.





EAST KENTUCKY ENGINEERING, LLC.

APPENDIX C SEISMIC DATA



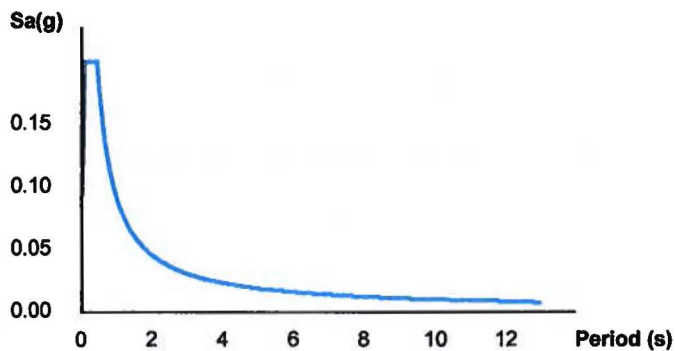
Hazards by Location

Search Information

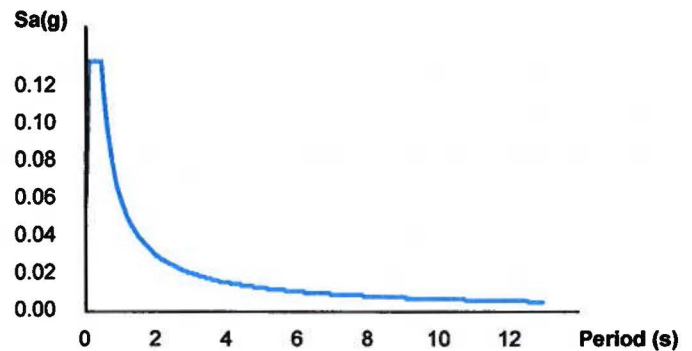
Coordinates: 37.794914, -83.668611
Elevation: 1228 ft
Timestamp: 2019-03-18T17:57:17.963Z
Hazard Type: Seismic
Reference Document: IBC-2015
Risk Category: IV
Site Class: B



MCE_R Horizontal Response Spectrum



Design Horizontal Response Spectrum



Basic Parameters

Name	Value	Description
S_S	0.199	MCE _R ground motion (period=0.2s)
S_1	0.088	MCE _R ground motion (period=1.0s)
S_{MS}	0.199	Site-modified spectral acceleration value
S_{M1}	0.088	Site-modified spectral acceleration value
S_{DS}	0.133	Numeric seismic design value at 0.2s SA
S_{D1}	0.059	Numeric seismic design value at 1.0s SA

Additional Information

Name	Value	Description
SDC	A	Seismic design category
F_a	1	Site amplification factor at 0.2s
F_v	1	Site amplification factor at 1.0s
CR_S	0.927	Coefficient of risk (0.2s)

3/18/2019

ATC Hazards by Location

CR ₁	0.902	Coefficient of risk (1.0s)
PGA	0.098	MCE _G peak ground acceleration
F _{PGA}	1	Site amplification factor at PGA
PGA _M	0.098	Site modified peak ground acceleration
T _L	12	Long-period transition period (s)
SsRT	0.199	Probabilistic risk-targeted ground motion (0.2s)
SsUH	0.215	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	1.5	Factored deterministic acceleration value (0.2s)
S1RT	0.088	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.098	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.6	Factored deterministic acceleration value (1.0s)
PGAd	0.6	Factored deterministic acceleration value (PGA)

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey [Seismic Design Web Services](#).

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EAST KENTUCKY ENGINEERING, LLC.

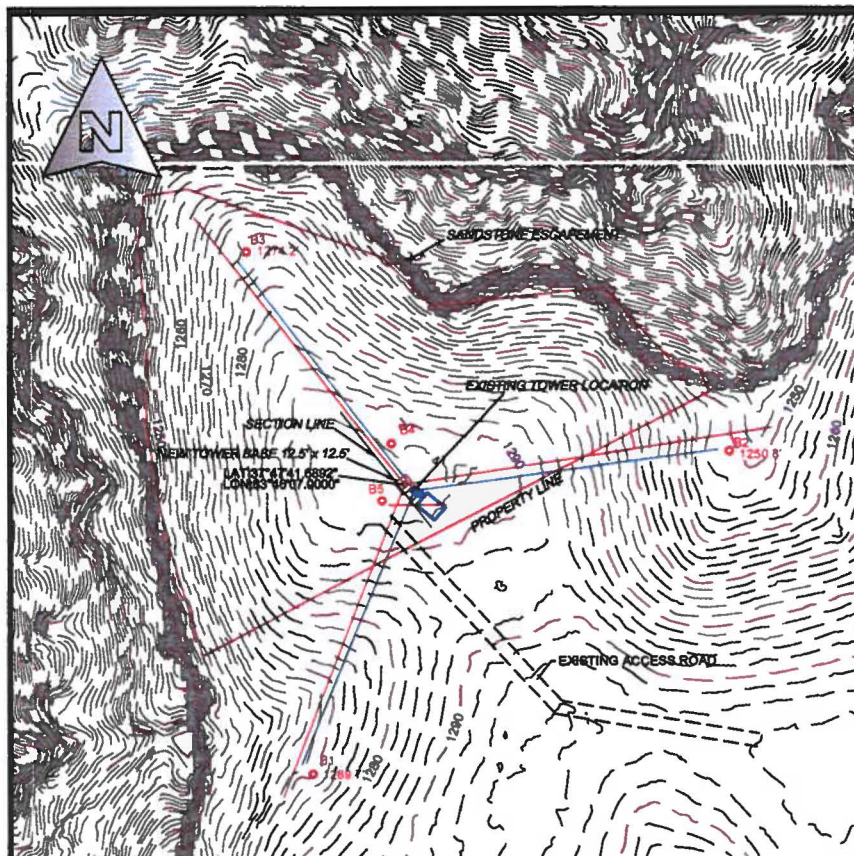
APPENDIX D PHOTOGRAPHS



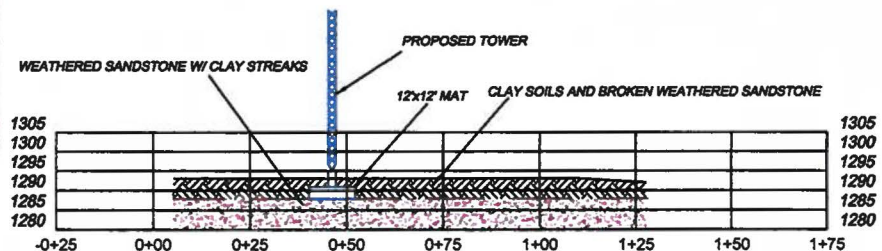


EAST KENTUCKY ENGINEERING, LLC.

<p>APPENDIX E MAPS</p>
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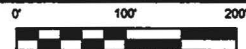
PLAN VIEW
1" = 100'



SECTION
1" = 30'

East Kentucky Engineering, LLC

Hazard Location
230 Swartz
Hazard, KY 41701
(606) 551-1050
Email: rds@kyengr.com



Drawn by: RDS 2/28/2019
Job #: 165-0079 Scale: 1" = 100'
File Location:

**APPALACHIAN
WIRELESS
SLADE SITE
POWELL COUNTY KENTUCKY**

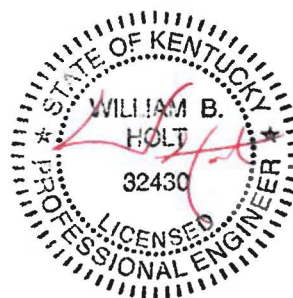


World Tower
COMPANY, INC.

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

**400' TYPE 36SR TOWER
FOR: APPALACHIAN WIRELESS
SITE: SLADE
POWELL COUNTY, KY
DESIGN PACKAGE**

03/22/19



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

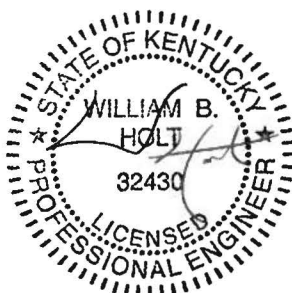
GUY WIRE DATA

ELEV.	SIZE	BREAK STRENGTH	INITIAL TENSION	CUT LENGTH			SHACKLE	THIMBLE	TURN BUCKLE
				240'(-20')	240'(-27')	240'(-37')			
380'	3/4 EHS	58300	5830	495'	500'	510'	1	7/8	1 1/4 X 24
340'	5/8 EHS	42400	4240	460'	465'	475'	3/4	3/4	1 X 18
270'	1/2 EHS	26900	2690	405'	410'	420'	5/8	5/8	7/8 X 18
2@210'	1/2 EHS	26900	2690	2@360'	2@365'	2@375'	5/8	5/8	7/8 X 18
140'	1/2 EHS	26900	2690	315'	320'	325'	5/8	5/8	7/8 X 18
70'	7/16 EHS	20800	2080	285'	290'	290'	5/8	1/2	3/4 X 12

GENERAL NOTES

1. WELDED CONNECTIONS SHALL CONFORM TO THE LATEST REVISION OF THE AMERICAN WELDING SOCIETY AWS.D 1.1.
2. TOWER AND ALL FABRICATED ACCESSORIES ARE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.
3. ALL BOLTS SHALL BE GALVANIZED ACCORDING TO THE STANDARD SPECIFICATION FOR ZINC COATING OF IRON AND STEEL HARDWARE ASTM A153.
4. LEG STEEL IS 50 KSI MIN. YIELD SOLID ROUND AND BRACING STEEL IS 36 KSI MIN. YIELD SOLID ROUND.
5. ALL STRUCTURAL BOLTS ARE ASTM A325.
6. GUY LENGTHS SHOWN ARE CHORD LENGTHS PLUS 30'.
7. TOWER SECTIONS ARE NUMBERED CONSECUTIVELY FROM BASE TO TOP.
8. TOWER SHOULD BE INSPECTED IN ACCORDANCE WITH TIA-222-G EVERY 3 YEARS.
9. TOWER INSPECTION SHOULD ONLY BE PERFORMED BY EXPERIENCED QUALIFIED PERSONNEL. FOR ASSISTANCE IN PROPER MAINTENANCE OF YOUR TOWER, CALL WORLD TOWER @ 270-247-3642.

03/22/19



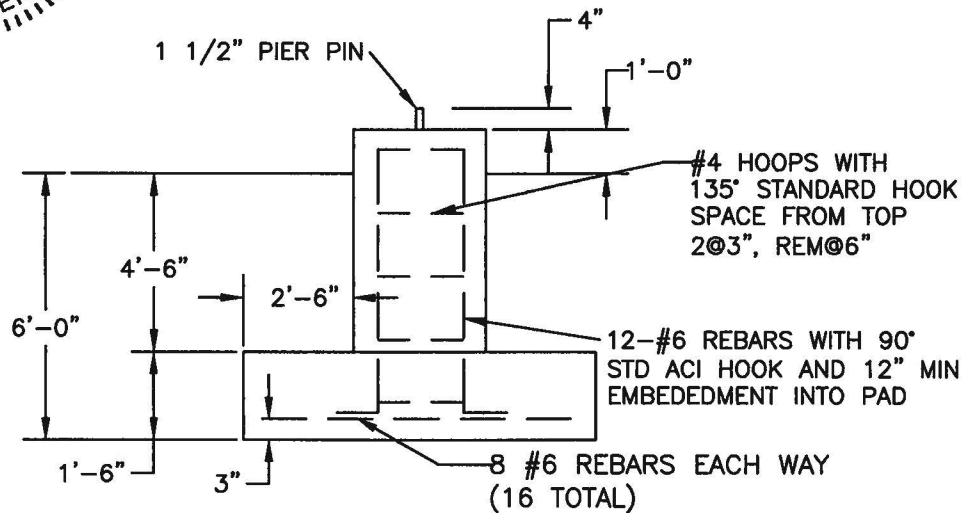
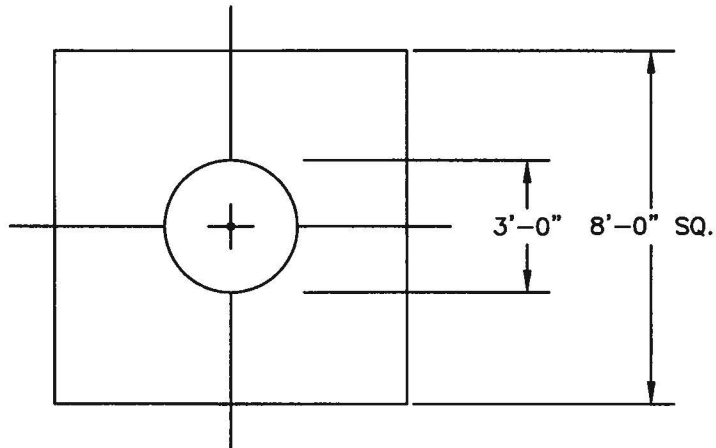
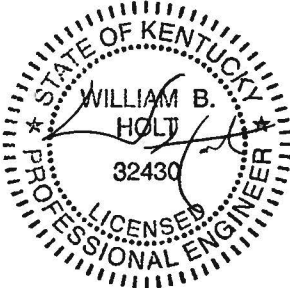
TITLE: 400' TYPE 36SR TOWER
FOR: APPALACHIAN WIRELESS
SITE: SLADE
POWELL COUNTY, KY

WORLD TOWER

SCALE NONE	DWN. LKG	CKD.	DATE 3-20-19
FILE			DWG. NO. Q19185T

5.0 CU. YDS.
CONCRETE REQ'D.

03/22/19



GENERAL NOTES

1. CONCRETE TO HAVE 3000 PSI MIN. COMPRESSIVE STRENGTH AFTER 28 DAYS.
2. ALL REINFORCEMENT STEEL IS DEFORMED AND MEETS THE STRENGTH REQUIREMENTS OF ASTM A615 GRADE 60.
3. EMBEDDED STEEL TO HAVE 3" MIN. CONCRETE COVER.
4. FOUNDATION IS BASED UPON CUSTOMER SUPPLIED SOILS REPORT BY EAST KENTUCKY ENGINEERING, LLC. PROJECT NUMBER 165-000-0079 DATED FEBRUARY 28, 2019.
5. FINAL BEARING ELEVATION SHOULD BE AT OR BELOW 1288'.

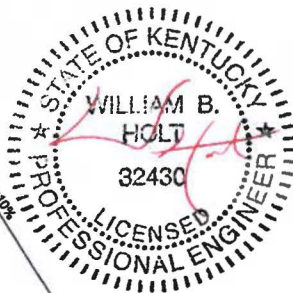
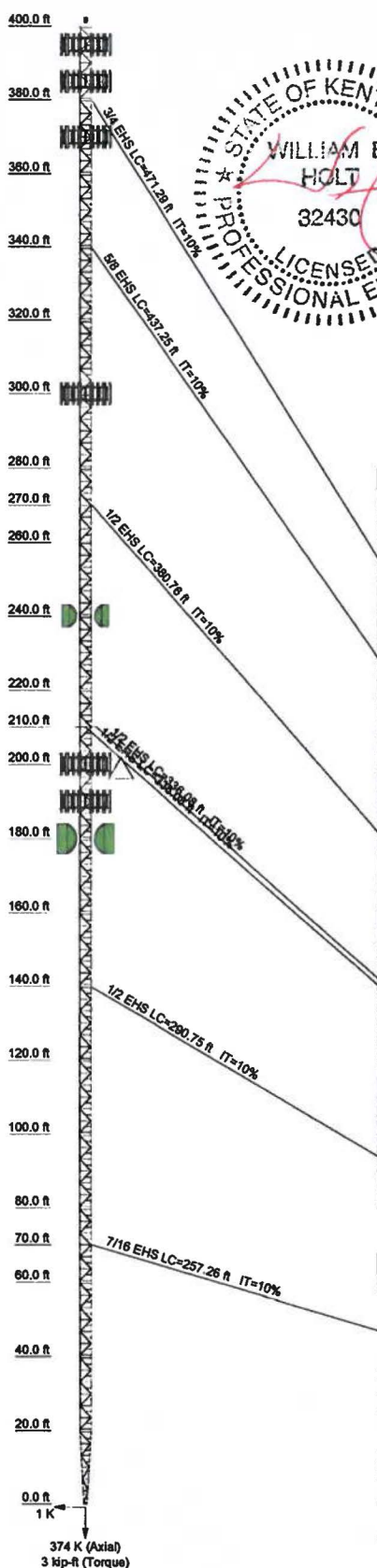
REACTIONS	
SHEAR	1.0 MAX KIPS
DOWNLOAD	374.0 KIPS

TITLE: BASE DETAILS
400' TYPE 36SR TOWER
FOR: APPALACHIAN WIRELESS
SITE: SLADE
POWELL COUNTY, KY

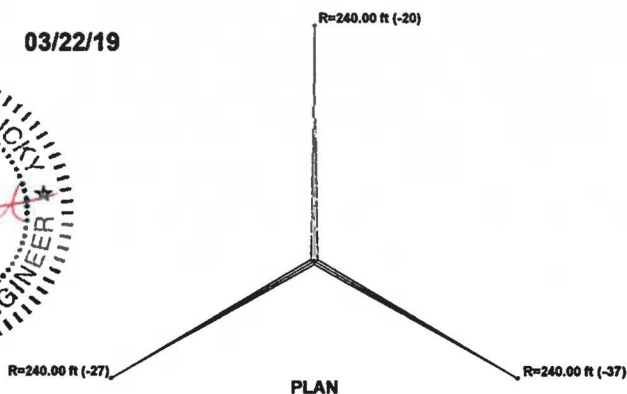
WORLD TOWER

SCALE	NONE	DWN.	LKG	CKD.	DATE	3-20-19
FILE					DWG. NO.	Q19185B

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T20	T21	T22
Legs	SR 1 1/2	SR 2 1/2	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4	SR 2 1/4
Leg Grade	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8	SR 1 1/8
Diagonal Grade	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8
Top Glits	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8
Bottom Glits	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4
Horizontals	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4	SR 3/4
Sec. Horizontals	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4
Top Guy Pull-Offs	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1 1/4
Face Width (ft)	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687	0.791687
# Panels @ (ft)	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2	6 x 1/2
Weight (K)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8



03/22/19



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Beacon Lighting	400	(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	300
Lighting Rod 5/8x4'	400	(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	300
WD13X53 Antenna Mounting Frame	395	(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	300
WD13X53 Antenna Mounting Frame	395	(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	300
WD13X53 Antenna Mounting Frame	395	(4) RRU-12	300
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	395	(4) RRU-12	300
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	395	(4) RRU-12	300
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	395	Dish Mount	240
(4) RRU-12	395	Dish Mount	240
(4) RRU-12	395	6 FT DISH	240
(4) RRU-12	395	6 FT DISH	240
WD13X53 Antenna Mounting Frame	385	(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	200
WD13X53 Antenna Mounting Frame	385	(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	200
WD13X53 Antenna Mounting Frame	385	(4) RRU-12	200
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	385	(4) RRU-12	200
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	385	(4) RRU-12	200
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	385	WD13X53 Antenna Mounting Frame	200
(4) RRU-12	385	WD13X53 Antenna Mounting Frame	200
(4) RRU-12	385	WD13X53 Antenna Mounting Frame	200
WD13X53 Antenna Mounting Frame	370	(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	190
WD13X53 Antenna Mounting Frame	370	(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	190
WD13X53 Antenna Mounting Frame	370	(4) RRU-12	190
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	370	(4) RRU-12	190
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	370	WD13X53 Antenna Mounting Frame	190
(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	370	WD13X53 Antenna Mounting Frame	190
(4) RRU-12	370	(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	190
(4) RRU-12	370	(4) Commscope NN-65A-M w/ mt. pipe* (54.9" x 26.9" x 7.1")	190
WD13X53 Antenna Mounting Frame	300	8 FT DISH	180
WD13X53 Antenna Mounting Frame	300	8 FT DISH	180
WD13X53 Antenna Mounting Frame	300	Dish Mount	180
		Dish Mount	180

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Powell County, Kentucky.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 89.00 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 30.00 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.00 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. Ultimate 3-second gust wind speed of 115 mph converted to a nominal 3-second gust wind speed of 89 mph.
9. TOWER RATING: 99.4%

ALL REACTIONS ARE FACTORED

World Tower Company		Job: 400' Type 36SR - Run Q19185	
1213 Compressor Drive		Project: Slade, KY	
Mayfield, KY		Client: Appalachian Wireless	
Phone: (270) 247-3642		Drawn by: WBH	App'd:
FAX:		Code: TIA-222-G	Date: 03/18/19
		Path: G:\World Tower\2018\KY\Q19185\Slade\Analysis\Q19185.gr	Scale: NTS
		Dwg No. E-1	

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Add a new Case Off Airport - Desk Reference Guide V_2018 2.1

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

Project Name: EAST -000518706-19

Sponsor: East Kentucky Network, LLC

Details for Case : Slade

[Show Project Summary](#)

Case Status

ASN: 2019-ASO-13220-OE
Status: Accepted

Public Comments: None

Date Accepted: 04/09/2019
Date Determined:
Letters: None
Documents: 04/09/2019 Slade 2C .pdfProject Documents:
None

Construction / Alteration Information

Notice Of: Alteration
Duration: Permanent
If Temporary: Months: Days:Work Schedule - Start: 06/01/2019
Work Schedule - End: 06/30/2019

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

State Filing: Filed with State

Structure Summary

Structure Type: Antenna Tower
Structure Name: Slade
FDC NOTAM:
NOTAM Number:
FCC Number: 1042397
Prior ASN: 2009-ASO-2958-OE

Structure Details

Latitude: 37° 47' 41.67" N
Longitude: 83° 40' 6.98" W
Horizontal Datum: NAD83
Site Elevation (SE): 1294 (nearest foot) PASSED
Structure Height (AGL): 420 (nearest foot)
Current Height (AGL): 420 (nearest foot)

* For notice of alteration or existing provide the current
AGL height of the existing structure.
Include details in the Description of Proposal

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

Requested Marking/Lighting: White-medium intensity

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: Dual-red and medium intensity

Other :

Nearest City: Stanton
Nearest State: Kentucky
Description of Location: Approximately 1.1 km East of Slade
(Powell), KY
Description of Proposal: Replace the existing 420' structure
with a new 400' tower with top
mounted antennas (overall height of
420' AGL) with change in lighting for
the replacement tower.

Proposed Frequency Bands

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

Add Specific Frequency

Low Freq	High Freq	Freq Unit	ERP	ERP Unit
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2495	2690	MHz	500	W

Close

Print





KENTUCKY TRANSPORTATION CABINET
KENTUCKY AIRPORT ZONING COMMISSION

TC 55-2
Rev. 06/2016
Page 2 of 2

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

APPLICANT (name) East Kentucky Network, LLC		PHONE 606-339-1006	FAX 606-339-1363	KY AERONAUTICAL STUDY #	
ADDRESS (street) 101 Technology Trail		CITY Ivel		STATE Kentucky	ZIP 41642
APPLICANT'S REPRESENTATIVE (name) Cindy McCarty		PHONE 606-339-1006	FAX 606-339-1363		
ADDRESS (street) 101 Technology Trail		CITY Ivel		STATE Kentucky	ZIP 41642
APPLICATION FOR <input type="checkbox"/> New Construction <input checked="" type="checkbox"/> Alteration <input type="checkbox"/> Existing				WORK SCHEDULE	
DURATION <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary (months days)				Start 6/1/19 End 6/30/19	
TYPE <input type="checkbox"/> Crane <input type="checkbox"/> Building <input checked="" type="checkbox"/> Antenna Tower <input type="checkbox"/> Power Line <input type="checkbox"/> Water Tank <input type="checkbox"/> Landfill <input type="checkbox"/> Other		MARKING/PAINTING/LIGHTING PREFERRED <input type="checkbox"/> Red Lights & Paint <input checked="" type="checkbox"/> White- medium intensity <input type="checkbox"/> White- high intensity <input type="checkbox"/> Dual- red & medium intensity white <input type="checkbox"/> Dual- red & high intensity white <input type="checkbox"/> Other			
LATITUDE 37 ° 47 ' 41.67 "		LONGITUDE 83° 40 ' 06.98 "		DATUM <input checked="" type="checkbox"/> NAD83 <input type="checkbox"/> NAD27 <input type="checkbox"/> Other	
NEAREST KENTUCKY City Slade County Powell		NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT Stanton Airport			
SITE ELEVATION (AMSL, feet) 1294		TOTAL STRUCTURE HEIGHT (AGL, feet) 420'		CURRENT (FAA aeronautical study #) 2019-ASO-13220-OE	
OVERALL HEIGHT (site elevation plus total structure height, feet) 1714				PREVIOUS (FAA aeronautical study #) 2009-ASO-2958-OE	
DISTANCE (from nearest Kentucky public use or Military airport to structure) 9 nm				PREVIOUS (KY aeronautical study #)	
DIRECTION (from nearest Kentucky public use or Military airport to structure) ESE					
DESCRIPTION OF LOCATION (Attach USGS 7.5 minute quadrangle map or an airport layout drawing with the precise site marked and any certified survey.) Approximately 3.1 km East of Slade (Powell), KY					
DESCRIPTION OF PROPOSAL Applicant requests to replace the existing 420' structure with a new 400' tower with top mounted antennas (overall height of 420' AGL) with change in lighting for the replacement tower from Syle E to Style D.					
FAA Form 7460-1 (Has the "Notice of Construction or Alteration" been filed with the Federal Aviation Administration?) <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes, when? 4/9/19					
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.)					
PENALTIES (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 Cindy McCarty	TITLE In-House Counsel	SIGNATURE 		DATE April 9, 2019	
COMMISSION ACTION		<input type="checkbox"/> Chairperson, KAZC <input type="checkbox"/> Administrator, KAZC			
<input type="checkbox"/> Approved		SIGNATURE		DATE	
<input type="checkbox"/> Disapproved					

Driving Directions for Slade Replacement

1. Beginning at 525 Washington Street, Stanton, KY, head south on Washington Street toward Atkinson Street and travel approximately 0.2 miles.
2. Turn left onto Boone Street and travel approximately 0.2 miles.
3. Turn right onto North Main Street and travel approximately 0.6 miles.
4. Turn left to merge onto Bert T. Combs Mountain Parkway East toward Campton and travel approximately 0.2 miles.
5. Merge onto Bert T. Combs Mountain Parkway East and travel approximately 10.1 miles.
6. Take exit 33 for KY-11 toward Slade/Beattyville and travel approximately 0.1 miles.
7. Turn left onto KY-11 North and travel approximately 0.1 miles.
8. Turn right onto KY-15 South and travel approximately 3.0 miles.
9. Sharp right onto Baker Hill Estates and travel approximately 0.6 miles.
10. Turn left at intersection and travel approximately 0.14 miles. The site is straight ahead at 798 Baker Hill Estates, Slade, KY 40376.

Prepared By:

Daryl Bartley

Cell Site Compliance Agent

East Kentucky Network, LLC

dba Appalachian Wireless

606-791-0310

dbartley@ekn.com

Slade Replacement

Location:

798 Baker Hill Estates
Slade, KY 40376

Coordinates:

37°47'41.6660"N
83°40'06.9836"W

Existing Slade Tower

Proposed Slade Replacement Tower

Baker Estates

Google Earth

© 2018 Google

2000 ft



128

DEED

This Deed of Conveyance, made and entered into this 2nd day of September, 1995, by and between WILLIAM G. HENRY and his wife, WILMA HENRY, residents of 575 Baker Estates, Pine Ridge, Kentucky 41360, parties of the first part (hereinafter "Grantors"), WILLIAM K. GRIGSBY and his wife, JANET T. GRIGSBY, residents of P. O. Box 114, Hindman, Kentucky 41822, parties of the second part (hereinafter "Grantees"),

WITNESSETH:

That said Grantors, for and in consideration of an even exchange of property, the receipt and adequacy of which is hereby acknowledged, have bargained and sold and by these presents do hereby bargain, sell, grant and convey unto Grantees, their heirs and assigns forever, a tract of land lying and being in Powell County, Kentucky, and more particularly described as follows:

Beginning on a 10" pine located on the edge of the cliff a corner to William Henry's Parcel #2 and a corner to Billy J. Spencer, thence around the top of the cliff and the line of said Spencer NW 07 21 20, 110.23 feet to 4" twin maple, thence NE 00 04 43, 93.41 feet to a 10" hickory, thence NE 10 24 52, 81.71 feet to an 8" pine, thence NE 03 10 42, 73.40 feet to a 5" pine, thence NE 16 39 56, 46.20 feet to a 2" pine, thence SE 89 14 19, 37.76 feet to an 11" pine, thence SE 60 44 50, 178.20 feet to a 22" pine, thence SE 35 59 06, 60.41 feet to a 22" pine, thence SE 86 26 16, 147.12 feet to a 20" hemlock, thence SE 33 14 20, 87.51 feet to a 14" oak, thence SE 64 57 25, 24.54 feet to a #20 nail and the line of William Henry's Parcel #1, thence with said Henry's Parcel #1 line SE 14 37 04, 20.96 feet to a 4" concrete post and the line of Henry's Parcel #2, thence with the line of Henry's Parcel #2 SW 72 08 19, 70.44 feet to a #4 rebar, thence SW 72 08 23, 203.35 feet to a railroad spike set in an 8" twin maple, thence SW 72 08 23, 33.00 feet to a #4 rebar, thence SW 72 08 23, 92.39 feet to a #4 rebar, thence SW 72 08 22, 93.73 feet to the beginning containing 2.48 acres.

SEP 7 AM 9 28
POWELL COUNTY CLERK
STANTON, KY

129

SOURCE OF TITLE: Being a part of Parcel #2 of the property conveyed to Grantors recorded at Deed Book 110, page 587 in the Powell County Clerk's Office.

RIGHT OF WAY AND EASEMENT

For the consideration paid herein, Grantors further grant and convey to Grantees, their heirs and assigns, a permanent right of way and easement across Grantors' adjacent properties for purposes of (i) ingress to and egress from the above-described property, and (ii) placement and maintenance of anchors and guy wires to support a telecommunications tower which will be constructed on the above-described property, together with the right to cut and remove any brush or trees that may interfere with the telecommunications operations. This right of way and easement shall be "appurtenant" to the above described 2.48-acre tract. The right of way and easement are portions of Parcel #1 and Parcel #2 of the property described in the deed of conveyance to Grantors recorded at Deed Book 110, page 587 in the Powell County Clerk's Office.

TO HAVE AND TO HOLD the same, together with the appurtenances thereunto belonging unto Grantees, their heirs and assigns forever, with covenants of General Warranty.

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

GRANTORS:

William G. Henry
William G. Henry

Wilma Henry
Wilma Henry

130

CERTIFICATE OF PARTIES

We, the undersigned Grantors and Grantee, do hereby certify, pursuant to KRS Chapter 382, that the consideration for this conveyance is an equal exchange of property having a value of \$8750.00. We further certify our understanding that falsification of the stated consideration or sale price of the property is a Class D felony, subject to one to five years imprisonment and fines up to \$10,000.00.

GRANTORS:

William G. Henry
William G. Henry
Wilma Henry
Wilma Henry

GRANTEES:

William K. Grigsby
William K. Grigsby
Janet T. Grigsby
Janet T. Grigsby

STATE OF KENTUCKY)
)SS
COUNTY OF POWELL)

I hereby certify that the foregoing deed was produced to me and duly acknowledged before me by William G. Henry and his wife, Wilma Henry, parties thereto, to be their act and deed, and that the foregoing Certificate of Parties was duly subscribed and sworn to before me by William G. Henry and his wife, Wilma Henry, on this the 2nd day of September, 1995.

Mable S. Gipe
Notary Public

My commission expires March 10, 1999

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STATE OF KENTUCKY)
)SS
COUNTY OF KNOTT)

I hereby certify that the foregoing Certificate of Parties was duly subscribed and sworn to before me by William K. Grigsby and his wife, Janet T. Grigsby, on this the _____ day of _____, 1995.

Notary Public

My commission expires _____.

STATE OF KENTUCKY)
)SS
COUNTY OF POWELL)

I, David S. Frazier, Clerk of Powell County, do hereby certify that the foregoing instrument was on the 7 day of Sept, 1995, lodged in my office for record and that it, the foregoing, and this my certificate have been duly recorded in my said office in Deed Book 123, page 128.

Witness my hand on this the 7 day of Sept., 1995.

DAVID S. FRAZIER, CLERK

By: David Frazier D.C.

This instrument prepared without examination of title by:

Robin J. Collins
ROBIN JOHNSON COLLINS
ATTORNEY AT LAW
P.O. BOX 1006
HINDMAN, KY 41822
(606)785-0933

A:3774MC

RECORDED
BOOK 123
PAGE 128

DEED

This Deed of Conveyance, made and entered into this 20th day of July, 1995, by and between WILLIAM K. GRIGSBY and his wife, JANET T. GRIGSBY, residents of P. O. Box 114, Hindman, Kentucky 41822, parties of the first part (hereinafter "Grantors"), and MOUNTAINEER CELLULAR GENERAL PARTNERSHIP, a Kentucky partnership having a mailing address of P. O. Box 789, Hindman, Kentucky 41822, party of the second part (hereinafter "Grantee"),

WITNESSETH:

That said Grantors, for and in consideration of the sum of Ten Thousand Dollars (\$10,000.00), cash in hand paid, the receipt and adequacy of which is hereby acknowledged, have bargained and sold and by these presents do hereby bargain, sell, grant and convey unto Grantee, its successors and assigns forever, a tract of land lying and being in Powell County, Kentucky, and more particularly described as follows:

Beginning on a 10" pine located on the edge of the cliff a corner to William Henry's Parcel #2 and a corner to Billy J. Spencer, thence around the top of the cliff and the line of said Spencer NW 07 21 20, 110.23 feet to a 4" twin maple, thence NE 00 04 43, 93.41 feet to a 10" hickory, thence NE 10 24 52, 81.71 feet to an 8" pine, thence NE 03 10 42, 73.40 feet to a 5" pine, thence NE 16 39 56, 46.20 feet to a 2" pine, thence SE 89 14 19, 37.76 feet to an 11" pine, thence SE 60 44 50, 178.20 feet to a 22" pine, thence SE 35 59 06, 60.41 feet to a 22" pine, thence SE 86 26 16, 147.12 feet to a 20" hemlock, thence SE 33 14 20, 87.51 feet to a 14" oak, thence SE 64 57 25, 24.54 feet to a #20 nail and the line of William Henry's Parcel #1, thence with said Henry's Parcel #1 line SE 14 37 04, 20.96 feet to a 4" concrete post and the line of Henry's Parcel #2, thence with the line of Henry's Parcel #2 SW 72 08 19, 70.44 feet to a #4 rebar, thence SW 72 08 23, 203.35 feet to a railroad spike set in an 8" twin maple, thence SW 72 08 23, 33.00 feet to a #4 rebar, thence SW 72 08 23, 92.39 feet to a #4 rebar, thence SW 72 08 22, 93.73 feet to the beginning containing 2.48 acres.

'95 OCT 13 AM 8 29

RECORDED
STANTON, KY

RIGHT OF WAY AND EASEMENT

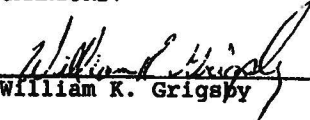
Included in this conveyance is that certain permanent right of way and easement across the property of William G. Henry and Wilma Henry, said right of way and easement being for purposes of (i) ingress to and egress from the above-described 2.48 acre tract, and (ii) placement and maintenance of anchors and guy wires to support a telecommunications tower which will be constructed on the above-described 2.48 acre tract, together with the right to cut and remove any brush or trees that may interfere with the telecommunications operations. This right of way and easement is considered to be "appurtenant" to the above described 2.48 acre tract.

SOURCE OF TITLE: Being the same property, right of way and easement conveyed to Grantors by deed from William G. Henry, et ux, dated September 2, 1995 and recorded at Deed Book 123, page 128 in the Powell County Clerk's Office.


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

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

GRANTORS:



William K. Grigsby



Janet T. Grigsby

CERTIFICATE OF PARTIES

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

GRANTORS:

GRANTORS:

William K. Grigsby
William K. Grigsby

Janet T. Grigsby

GRANTEE:

**MOUNTAINEER CELLULAR
GENERAL PARTNERSHIP**

By: William K. Grigsby
William K. Grigsby
Managing Partner

STATE OF KENTUCKY)
) SS
COUNTY OF KNOTT)

I hereby certify that the foregoing deed was produced to me and duly acknowledged before me by William K. Grigsby and his wife, Janet T. Grigsby, parties thereto, to be their act and deed, and that the foregoing Certificate of Parties was duly subscribed and sworn to before me by William K. Grigsby and his wife, Janet T. Grigsby, on this the 21st day of September, 1995.

Notary Public

My commission expires 12-31-64

STATE OF KENTUCKY)
COUNTY OF KNOTT)SS
)

I hereby certify that the foregoing Certificate of Parties was duly subscribed and sworn to before me by William K. Grigsby, managing partner of Mountaineer Cellular General Partnership, on this the 21st day of September, 1995.

[Signature]
Notary Public

My commission expires 12/31/97.

STATE OF KENTUCKY)
COUNTY OF POWELL)SS
)

I, David S. Frazier, Clerk of Powell County, do hereby certify that the foregoing instrument was on the 13 day of Oct., 1995, lodged in my office for record and that it, the foregoing, and this my certificate have been duly recorded in my said office in Deed Book 123, page 380.

Witness my hand on this the 13 day of Oct., 1995.

RECORDED
BOOK 133
PAGE 380

DAVID S. FRAZIER, CLERK
By: Jackie Wernan D.C.

This instrument prepared without examination of title by:

Robin J. Collins
ROBIN JOHNSON COLLINS
ATTORNEY AT LAW
P.O. BOX 1006
HINDMAN, KY 41822
(606)785-0933

A:3788MC

APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL, KY. 41642
TOWER REPLACEMENT
SLADE TOWER SITE
POWELL COUNTY

LINE	BEARING	DISTANCE
L1	S 04°54'20" W	16.63'
L2	S 08°42'34" E	23.14'
L3	S 13°39'26" E	17.74'
L4	S 22°45'15" E	12.62'
L5	S 28°39'31" E	20.45'

EAST KENTUCKY NETWORK LLC
MOUNTAINEER CELLULAR GENERAL PARTNERSHIP
DEED BOOK 123 PAGE 380

LEGEND

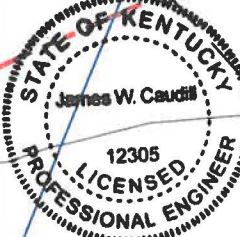
SURVEY STA SET FOUND
IRON PIN WITH CAP (1/8" X .5" REBAR PLASTIC CAP MARKED LS2259)

BOUNDARY LINE ---
ACCESS ROAD ==
FENCE ---o---o---o---

- THE PROPOSED TOWER HAS BEEN LOCATED USING
- STATE PLANE COORDINATES NAD 83 KY SINGLE ZONE
N:3819719.95, E:5522592.07, EL 1294' EXISTING GRD
TOP OF PROPOSED FOUNDATION EL 1294'-TOP TOWER EL 1694'
- PRECISION: HORIZONTAL=50' VERTICAL=20'
- THIS SURVEY MEETS OBSTACLE ACCURACY CODE 1A.
- PROPERTY LINE INFORMATION TAKEN FROM DEEDS

"I certify that the latitude 37° 47' 41.6660"N and longitude 83° 40' 06.9836"W are within +/- 50 feet horizontally; and the site elevation 1294 ft. MSL, is within +/- 20 feet vertically. With a structure height of 400 ft AGL, the overall height is 1694 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 6/14/19
PRINTED: JAMES W. CAUDILL PE #12305 & LS #2259



EAST KENTUCKY NETWORK LLC
MOUNTAINEER CELLULAR GENERAL PARTNERSHIP
DEED BOOK 123 PAGE 380

OLD TOWER BASE
LAT:37°47'41.6374"
LON:83°40'06.8867"
N:3819717.23
E:5522599.91
EL:1293.69' TOP PIN

LAT:37°47'41.6660"
LON:83°40'06.9836"
N:3819719.95
E:5522592.07
EL: 1294'

New Tower Base 8' x 8'

PAD EL 1293.16'
PAD EL 1293.35'

GENERATOR
ICE BRIDGE

EQUIPMENT
BUILDING

FLOOR EL 1293'

ROOF EL 1303.5'

WILMA HENRY & SAMANTHA WILSON
575 BAKER ESTATES
DEED BOOK 196 PAGE 547



PROPOSED SITE PLAN AND STRUCTURE LOCATION
SLADE TOWER SITE

DRAWN JWC	DATE 06/14/19	SLADE TOWER AS-BUILT STRUCTURES AND PROPOSED NEW TOWER PLACEMENT LOCATED NR BAKER ESTS. IN POWELL CO
APPROVED	DATE	
SCALE 1" = 10'	SHEET 2 OF 3	PROJECT NO. SLADE/SLADE10_2C

APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL, KY. 41642
SLADE EXISTING TOWER SITE
OFF HIGHWAY 15 NEAR SLADE
IN POWELL COUNTY, KY.

MOUNTAIN PARKWAY

UNITED STATES
FOREST SERVICE
761 S. LAUREL ROAD
LONDON, KY 40744

UNITED STATES
FOREST SERVICE
761 S. LAUREL ROAD
LONDON, KY 40744

PVA# 54P-00-00-007.00
DONALD AND VICKIE LAWSON
608 GEVEDON ROAD
PINE RIDGE, KY 41360
DB106 PG324

PVA# 54P-00-00-008.00
BRITTANY BOJORQUEZ
P.O. BOX 33
POTSDAM, OH 45361
DB191 PG756

PVA# 54P-00-00-005.05
VICKIE HOLLON
720 SPRING BRANCH
CAMPTON, KY 41301
DB152 PG474

PVA# 54P-00-00-011.00
DELL L. SASSER
P.O. BOX 728
JACKSON, KY 41339
DEED BOOK 81 PAGE 206

PVA# 54P-00-00-010.03
EAST KENTUCKY NETWORK, LLC
(MOUNTAINEER CELLULAR
GENERAL PARTNERSHIP)
101 TECHNOLOGY TRAIL
IVEL, KY 41642
DEED BOOK 123 PAGE 380

NEW TOWER LOCATION
LAT:37°47'41.6660"
LON:83°40'06.9836"
N:3819719.95
E:5522592.07
EL: 1294'

PVA# 54P-00-00-010.00
WILMA HENRY AND
SAMANTHA WILSON
C/O WILMA HENRY
575 BAKER ESTATES
PINE RIDGE, KY 41360
DEED BOOK 196 PAGE 547

UNITED STATES
FOREST SERVICE
761 S. LAUREL ROAD
LONDON, KY 40744

PVA# 54P-00-00-009.00
WILLIAM G. AND WILMA HENRY
575 BAKER HILL ESTATES
PINE RIDGE, KY 41360
DEED BOOK 124 PAGE 562

PVA# 54P-00-00-005.02
BRITTANY ADKINS
TIFFANY ADKINS AND
JADE ADKINS
286 BAKER HILL ESTATES
PINE RIDGE, KY 41360
DB188 PG757

PVA# 54P-00-00-005.11
ERNIE AND CONNIE SOWERS
366 BAKER HILL ESTATES
PINE RIDGE, KY 41360
DEED BOOK 139 PAGE 775

PVA# 54P-00-00-005.03
MARCUS AND JACKIE ADKINS
286 BAKER HILL ESTATES
PINE RIDGE, KY 41360
DB192 PG596

PVA# 54P-00-00-005.00
DENZIL LEDFORD
200 BAKER HILL ESTATES
PINE RIDGE, KY 41360
DB154 PG758
(LOTS AND HOUSE)

PVA# 54P-00-00-010.02
SAMUEL SHARP AND
CHARLOTTE HANNIGAN
135 JESSELIN DRIVE
LEXINGTON, KY 40503
DB167 PG473

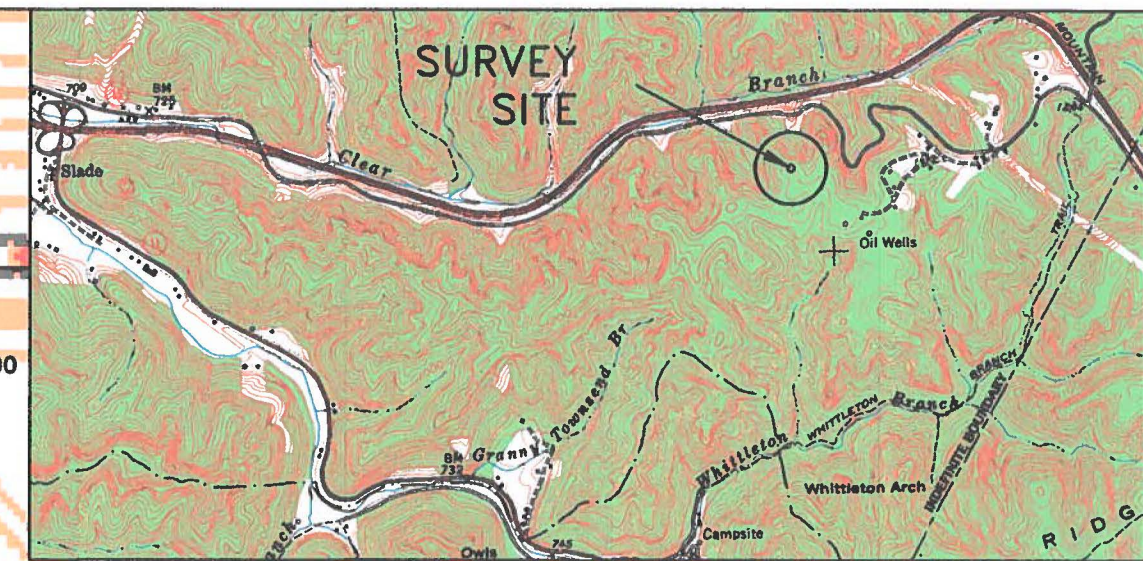
PVA# 54P-00-00-005.06
GRACIE E. LANE
105 BAKER HILL ESTATES
PINE RIDGE, KY 41360
DB166 PG93 (LOT AND HOUSE)
DB166 PG97 (MOBILE HOME)

PVA# 54P-00-00-005.00
BILLY BOYD
9365 OLD HIGHWAY 45
PINE RIDGE, KY 41360
DB161 PG487 (BAKER STORE)

PVA# 54P-00-00-005.09
ELISHA AND POLLY SHORT
265 BAKER HILL ESTATES
PINE RIDGE, KY 41360
DB114 PG513

PVA# 54P-00-00-007.01
ALEX CRANFORD
44 RIDGEVIEW DRIVE
GADSDEN, AL 35901
DB190 PG35

VICINITY MAP - NO SCALE



LEGEND

- BOUNDARY LINE PVA
- ACCESS ROAD
- POWER LINES

J W CAUDILL ENGINEERING

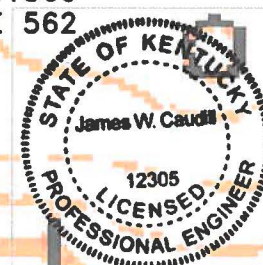
9283 HWY 15 STE. C ISOM, KY 41824

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

JAMES W. CAUDILL 12305 06/14/19
P.E.# DATE

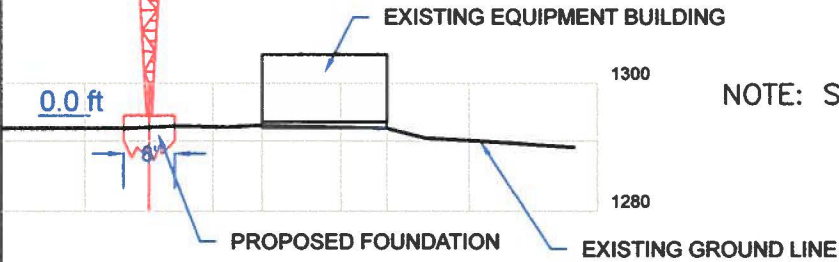
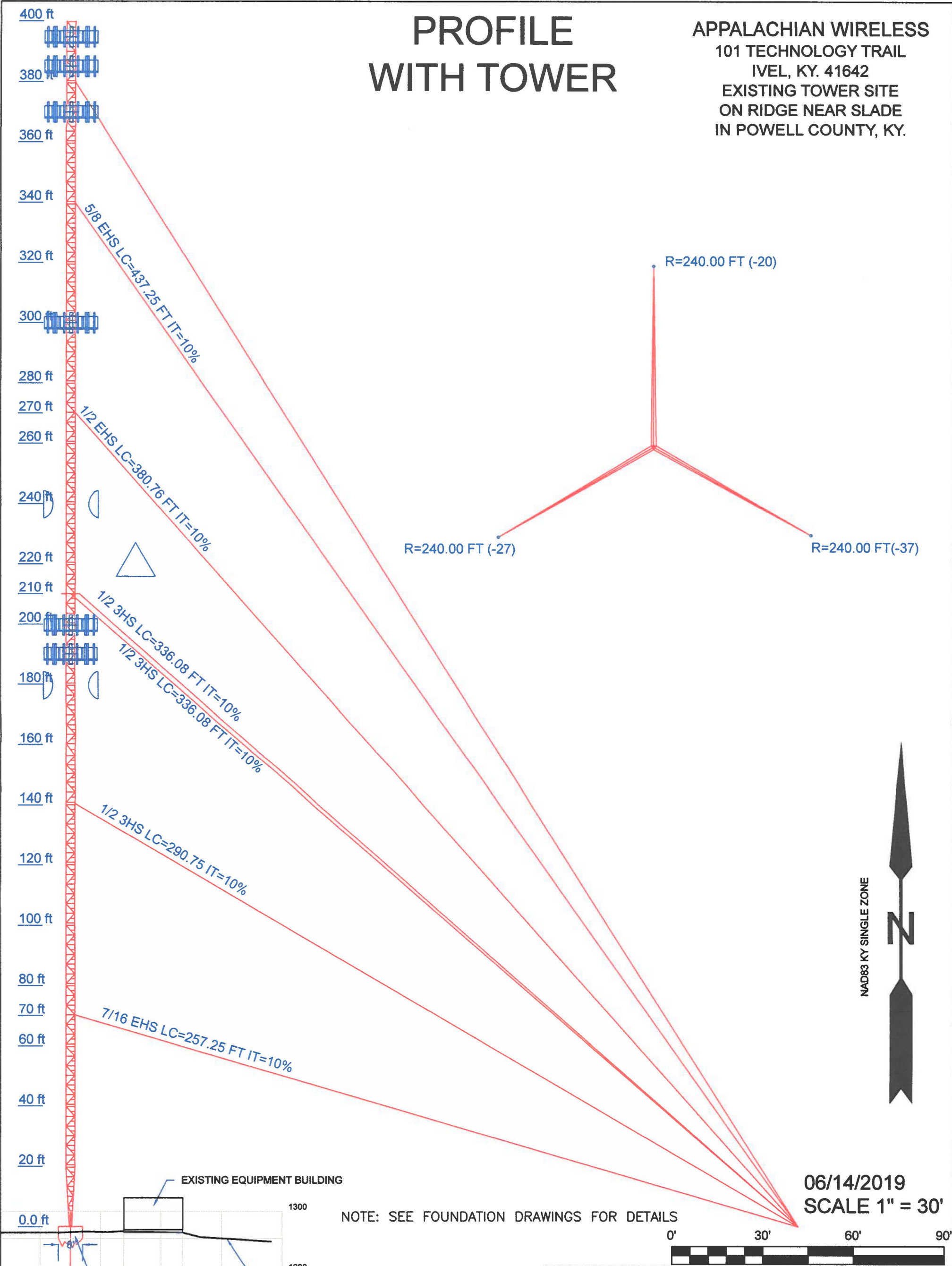
SITE PLAN AND STRUCTURE LOCATION
SLADE TOWER APPALACHIAN WIRELESS

DRAWN JWC	DATE 06/14/2019	STRUCTURES AND PROPERTY OWNERS WITHIN 500' RICHARD CALLOWAY TRACT OFF OF BAKER BRANCH ROAD NEAR SLADE IN POWELL CO., KY.
APPROVED	DATE 06/14/2019	
SCALE 1" = 200'	SHEET 1 OF 3	PROJECT NO. SLADE/SLADE200PVA



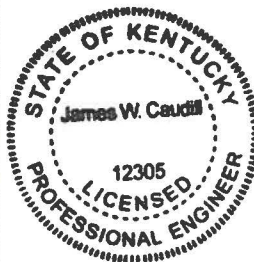
PROFILE WITH TOWER

APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL, KY. 41642
EXISTING TOWER SITE
ON RIDGE NEAR SLADE
IN POWELL COUNTY, KY.



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

James W. Caudill 12305 6-14-19
JAMES W. CAUDILL PE #. DATE



EXISTING SITE PLAN AND STRUCTURE LOCATION SLADE TOWER APPALACHIAN WIRELESS		
DRAWN JWC	DATE 06/14/19	DETAIL SITE PLAN MOUNTAINEER CELLULAR TRACT OFF OF BAKER BR ROAD NR SLADE IN POWELL COUNTY, KY
APPROVED	DATE	
SCALE 1" = 30'	SHEET 3 OF 3	PROJECT NO. SLADE/SLADEPRO30

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