

MAR 09 2018

PUBLIC SERVICE  
COMMISSION

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the matter of:

THE APPLICATION OF EAST KENTUCKY NETWORK )  
LLC FOR THE ISSUANCE OF A CERTIFICATE OF )  
PUBLIC CONVENIENCE AND NECESSITY TO ) CASE NO. 2018-00007  
CONSTRUCT A TOWER IN HARLAN COUNTY, )  
KENTUCKY )

East Kentucky Network, LLC d/b/a Appalachian Wireless, was granted authorization to provide Personal Communications Service (“PCS”) in the Middlesboro-Harlan, KY Basic Trading Area (BTA295) by the Federal Communications Commission (FCC). The FCC license is included as Exhibit 1. East Kentucky Network, LLC merger documents were filed with the Commission on February 2, 2001 in Case No. 2001-022. East Kentucky Network, LLC is a Kentucky limited liability company that was organized on June 16, 1998. East Kentucky Network, LLC is in good standing with the state of Kentucky.

In an effort to improve service in Harlan 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 180 foot self-supporting tower on a tract of land located near 11615 Hwy 522, Totz, Harlan County, Kentucky (36°56’59.1062”N 83°06’23.9039”W). A map and detailed directions to the site can be found in Exhibit 7.

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

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

Harlan County has no formal local planning unit. In absence of this unit, the Harlan 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 Harlan 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 Harlan Daily Enterprise, March 9, 2018 edition. Enclosed is a copy of that notice in Exhibit 3. The Harlan Daily Enterprise is the newspaper with the largest circulation in Harlan 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 March 8, 2018, and will remain posted for at least two weeks after filing of this application as specified.

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

The proposed construction site is on a mountaintop some feet from the nearest structure. Prior to construction, the site had been previously disturbed by logging.

Due to the steep hillside surrounding the proposed site, the property in close proximity is unsuitable for any type of development. 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.

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

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

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

SUBMITTED BY: Lynn Haney DATE: 3/8/18  
Lynn Haney, Regulatory Compliance Director

APPROVED BY: W.A. Gillum DATE: 3/8/18  
W.A. Gillum, General Manager

ATTORNEY: Krystal Branham DATE: 3/8/18  
Hon. Krystal Branham, Attorney

**CONTACT INFORMATION:**

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

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

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

**Mailing Address:**

**East Kentucky Network, LLC  
d/b/a Appalachian Wireless  
Attn: Regulatory Compliance Department  
101 Technology Trail  
Ivel, KY 41642**

ULS License

## PCS Broadband License - WQEF975 - East Kentucky Network, LLC d/b/a Appalachian Wireless

Call Sign	WQEF975	Radio Service	CW - PCS Broadband
Status	Active	Auth Type	Regular

### Rural Service Provider Bidding Credit

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

### Reserved Spectrum

Reserved Spectrum

### Market

Market	MTA044 - Knoxville	Channel Block	A
Submarket	12	Associated Frequencies (MHz)	001850.00000000-001865.00000000 001930.00000000-001945.00000000

### Dates

Grant	05/27/2015	Expiration	06/23/2025
Effective	05/27/2015	Cancellation	

### Buildout Deadlines

1st	2nd
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### Notification Dates

1st	2nd
-----	-----

### Licensee

FRN	0001786607	Type	Limited Liability Company
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### Licensee

East Kentucky Network, LLC d/b/a Appalachian Wireless 101 Technology Trail Ivel, KY 41642 ATTN W.A. Gillum, General Manager/CEO	P:(606)477-2355
--	-----------------

### Contact

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

**Tribal Land Bidding Credits**

This license did not have tribal land bidding credits.

**Demographics**

Race

Ethnicity

Gender



**EXHIBIT 2 – LIST OF PROPERTY OWNERS**

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

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

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

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

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

LIST OF PROPERTY OWNERS

E. Lucy Braun Memorial State Nature Preserve  
Commonwealth of Kentucky  
Department of Parks  
500 Mero Street  
Frankfort, KY 40601

Harlan Cumberland Coal Company  
General Delivery  
Grays Knob, KY 40829

Glen A. Curry  
11607 Highway 522  
Totz, KY 40870

Norman and Minnie Harris  
C/O Pamela H. Nogar  
P.O. Box 24  
Cumberland, KY 40831

Audrey Harris Coeburn and James Coeburn  
11869 Highway 522  
Cumberland, KY 40831

Geneva Scopa  
C/O Joe Scopa  
P.O. Box 515  
Cumberland, KY 40831

Stephen Robert Scoresik and Crystal Halcomb  
P.O. Box 711  
Cumberland, KY 40823

Jimmy Smith and Brenda K. Mullins  
11687 Highway 522  
Cumberland, KY 40823

Isabelle Smith  
C/O Curtis Smith  
P.O. Box 213  
Cumberland, KY 40823

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 9, 2018

E. Lucy Braun Memorial State Nature Preserve  
Commonwealth of Kentucky  
Department of Parks  
500 Mero Street  
Frankfort, KY 40601

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00007)

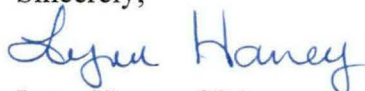
East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Harlan County. The facility will include a 180-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land at 11615 Highway 522, Totz, Harlan County, Kentucky. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

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

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2018-00007 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

March 9, 2018

Harlan Cumberland Coal Company  
General Delivery  
Grays Knob, KY 40829

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00007)

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Sincerely,



Lynn Haney, CPA  
Regulatory Compliance Director  
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 9, 2018

Glen A. Curry  
11607 Highway 522  
Totz, KY 40870

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Sincerely,



Lynn Haney, CPA  
Regulatory Compliance Director  
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 9, 2018

Norman and Minnie Harris  
C/O Pamela H. Nogar  
P.O. Box 24  
Cumberland, KY 40831

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Sincerely,



Lynn Haney, CPA  
Regulatory Compliance Director  
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 9, 2018

Audrey Harris Coeburn and James Coeburn  
11869 Highway 522  
Cumberland, KY 40831

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00007)

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Sincerely,



Lynn Haney, CPA  
Regulatory Compliance Director  
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 9, 2018

Geneva Scopa  
C/O Joe Scopa  
P.O. Box 515  
Cumberland, KY 40831

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00007)


East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Harlan County. The facility will include a 180-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land at 11615 Highway 522, Totz, Harlan County, Kentucky. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

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Sincerely,



Lynn Haney, CPA  
Regulatory Compliance Director  
Enclosure 1



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 9, 2018

Stephen Robert Scoresik and Crystal Halcomb  
P.O. Box 711  
Cumberland, KY 40823

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00007)

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Sincerely,



Lynn Haney, CPA  
Regulatory Compliance Director  
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 9, 2018

Jimmy Smith and Brenda K. Mullins  
11687 Highway 522  
Cumberland, KY 40823

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00007)

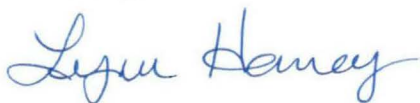
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Sincerely,



Lynn Haney, CPA  
Regulatory Compliance Director  
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 9, 2018

Isabelle Smith  
C/O Curtis Smith  
P.O. Box 213  
Cumberland, KY 40823

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00007)

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Sincerely,



Lynn Haney, CPA  
Regulatory Compliance Director  
Enclosure 1

# Totz

Location:  
11615 Hwy 522  
Totz, KY 40870

Coordinates:  
N 36°56'59.10"  
W 83°06'23.90"

Proposed Totz Tower



Google Earth

© 2018 Google



1000 ft



VIA: U.S. CERTIFIED MAIL

March 9, 2018

Dan Mosley, Judge Executive  
P.O. Box 956  
Harlan, KY 40831

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00007)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Harlan County. The facility will include a 180-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land at 11615 Highway 522, Totz, Harlan 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 Harlan 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.

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Sincerely,

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

Lynn Haney  
Regulatory Compliance Director  
Enclosure

# Totz

## Location:

11615 Hwy 522  
Totz, KY 40870

## Coordinates:

N 36°56'59.10"  
W 83°06'23.90"

Proposed Totz Tower

Google Earth

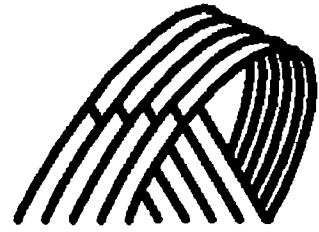
© 2018 Google

1000 ft



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

EAST KENTUCKY  
NETWORK



**To:** The Harlan Daily Enterprise  
Attn: Classifieds

**From:** Raina Helton  
Regulatory Compliance Assistant

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**Email:** Melissa.johnson@harlandaily.com

**Date:** March 1, 2018

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**Re:** PUBLIC NOTICE ADVERTISEMENT

**Pages:** 1

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**Please place the following Public Notice Advertisement In The Harlan Daily Enterprise to be ran on March 9, 2018.**

**PUBLIC NOTICE:**

RE: Public Service Commission of Kentucky (CASE NO. 2018-00007)

Public Notice is hereby given that East Kentucky Network, LLC, dba Appalachian Wireless has applied to the Kentucky Public Service Commission to construct a cellular telecommunications tower on a tract of land located at 11615 Highway 522, Totz, Harlan County, Kentucky. The proposed tower will be a 180 foot self-supporting tower with attached antennas. If you would like to respond to this notice, please contact the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to Case No. 2018-00007.

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

Thank you,

Raina Helton  
Regulatory Compliance Assistant

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



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

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**EAST KENTUCKY ENGINEERING, LLC.**

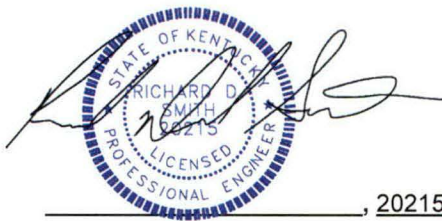
**APPALACHIAN WIRELESS  
Geotechnical Investigation on the  
Totz Tower Site  
Harlan County, Kentucky  
EKYENG Project No. 165-000-0053**

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, January 22<sup>nd</sup>, 2018





# EAST KENTUCKY ENGINEERING, LLC.

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## **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

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SPECIFICATIONS

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### EXECUTIVE SUMMARY

A geotechnical investigation has been performed on the Totz tower site, located in Harlan County, Kentucky. This site is readily accessible. A location map is shown in Figure 1 of this report. Four (4) borings were advanced to depths of 30.5 ft. The following geotechnical considerations were identified:

- Borings utilized for this study encountered sandy soils and poorly cemented weathered rock to a depth of 15.8ft. weathered shales and sandstone were found to a depth of 30.5 ft.
- The maximum estimated base elevation of tower mat foundation is 1680 ft.
- This site is over the southern face of the Pine Mountain overthrust.
- **The allowable bearing capacities of the underlying shales estimated at 3,000 psf.**
- The 2015 International Building Code seismic site classification for this site is "B".
- If during the foundation design it becomes necessary to lower the base of the footer, alternate design recommendations are included in the section of this report.
- 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 Totz Property, in Harlan County, Kentucky. A site location map is shown in Figure No. 1.

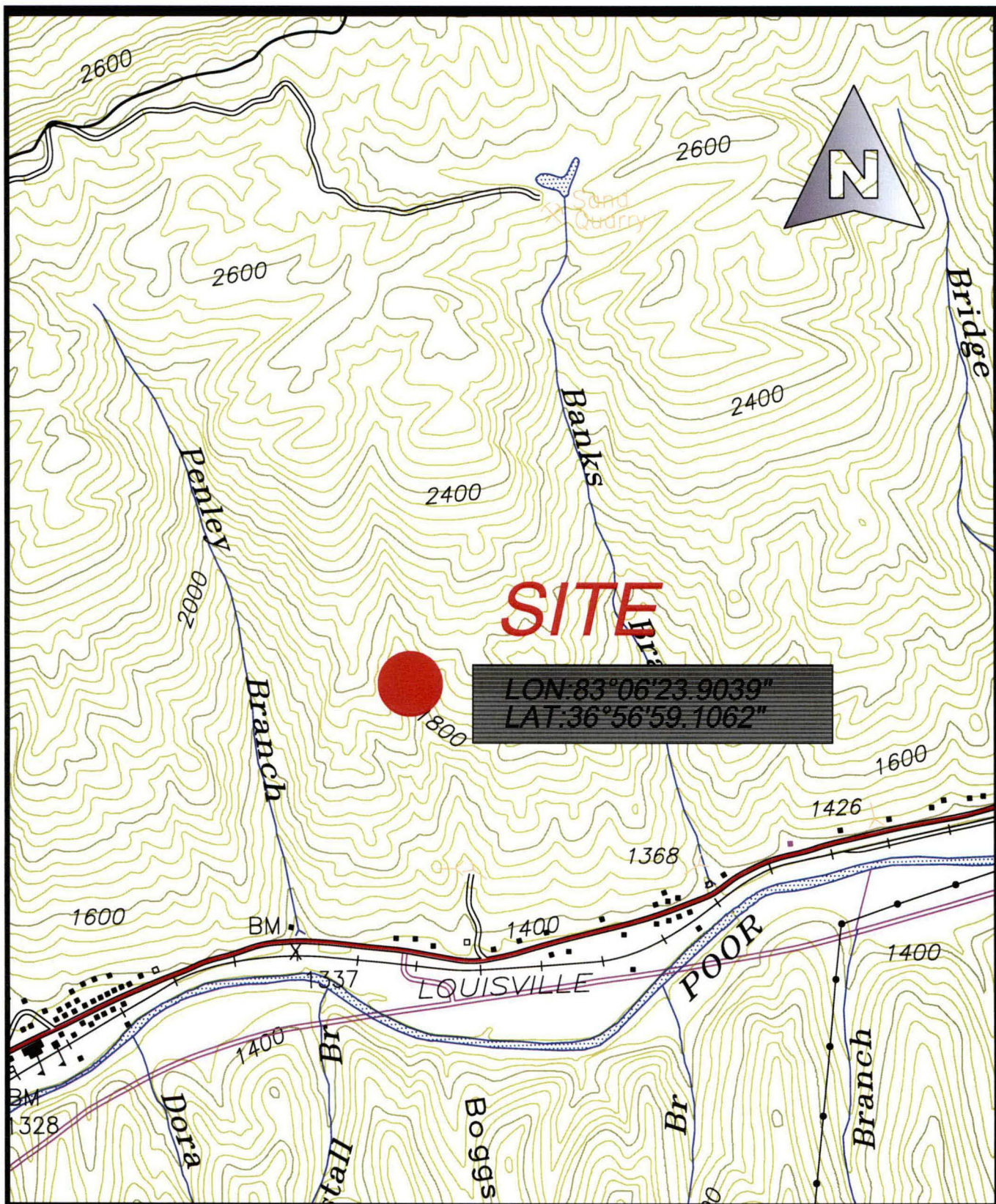
Four (4) borings were advanced to depths ranging from 25.0 ft to 30.5ft. Horn and Associates, Inc. provided drilling services to obtain these borings. Logs of the borings along with a boring location plan are included in Appendix A. The purpose of these services is to provide information and geotechnical 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 43.5 ft. X 43.5 ft. with an estimated base of the tower footer elevation at 1680 ft. Based upon information provided, we estimate the structural loads will be similar to the following conditions;

CONDITION	LOAD
Total Shear	40 Kips
Axial Load	50 Kips

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



Drawn: RDS	Date: 1/18/18
Job: 165-053	Scale: 1"=1000'

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

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



## **EAST KENTUCKY ENGINEERING, LLC.**

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

#### **3.1 GENERAL INFORMATION**

The site location is on an undisturbed slope in Harlan County, Kentucky. The current surface elevation is approximately 1680 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 preexisting surface mining was found during our research. No evidence of augering or additional surface mining was found that would impact the proposed site.

#### **3.3 UNDERGROUND MINING**

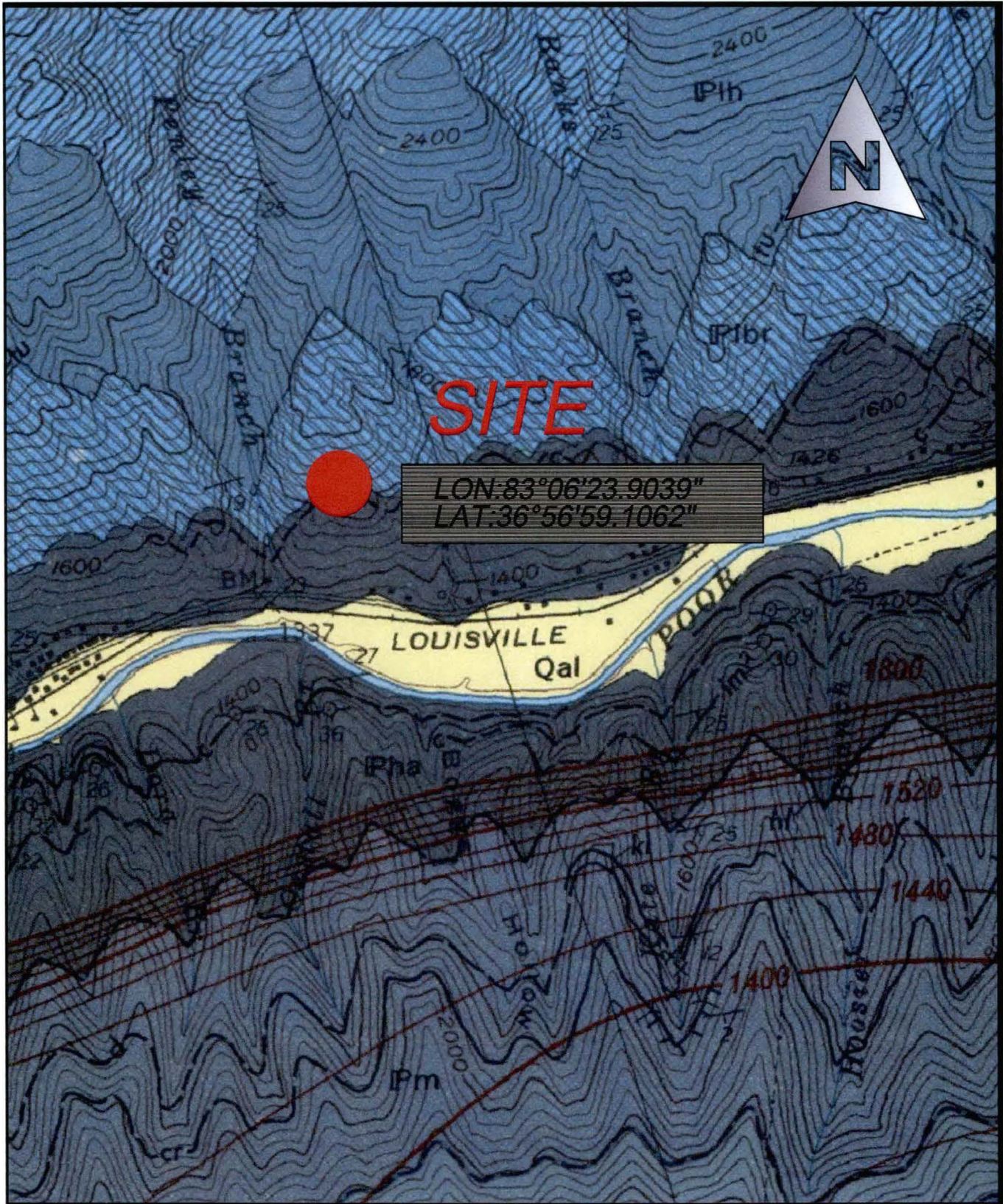
No underground mines were found within the vicinity of this site.

### **4.0 FIELD EXPLORATION**

#### **4.1 SITE INFORMATION**

The proposed site is located on an undisturbed slope in Harlan, County Kentucky. The site lies within the Louellen Quadrangle. The site is readily accessible by conventional exploratory equipment. An estimated pad location was determined based on the information provided. Foundation dimensions were estimated to be a 43.5 ft. X 43.5 ft. footer for the purpose of this report.

Visual inspections were conducted to evaluate the site lithology and type of materials immediately below the proposed tower site. The following soils and rock properties were found.



**SITE**  
 LON: 83°06'23.9039"  
 LAT: 36°56'59.1062"

Drawn: RDS	Date: 1/18/18
Job: 165-053	Scale: 1"=1000'

*Appalachian Wireless*  
 USGS GQ MAP  
 Location Map  
 Totz Tower Site  
 Figure No. 1

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



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TABLE NO. 1

Depth ft. Inclined bedding plans	Base Elevation ft.	Strata
0-16	varies	Soils-broken rock weathered
16-25	varies	Poorly cemented sandstone/shales
25-30.5	Varies	Sandstone

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

### 4.2 BORING DATA

Four (4) borings were made in the relative positions shown on the Site Map in Appendix E. The boring logs and resulting data are included in Appendix E. These borings were made with a track mounted boring rig using hollow-stem augers and employing standard penetration resistance methods (ASTM D-1586, which includes 140-pound hammer, 30-inch drop, and two-inch-O.D. split-spoon sampler) at maximum depth intervals of five feet or at major changes in stratum, whichever occurred first. The disturbed split-spoon samples were visually classified, logged, sealed in moisture-proof jars, and taken to the EKYENG laboratory for study. The depths where these "A"-type split-spoon samples were collected are noted on the boring logs. The results of the natural moisture contents by boring and interval are shown in Table 2.



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TABLE 2

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

SAMPLE NO.	DEPTH INCREMENT, (FT.)	NATURAL MOISTURE CONTENT, %
B1-S-1	1.5-3.0	13.3%
B1-S-2	4.5-5.5	14.0%
B1-S-3	6.5-8.0	7.4%
B1-S-4	9.0-10.5	9.8%
B1-S-5	14.0-15.5	COAL
B2-S-1	1.5-3.0	7.1%
B2-S-2	4.0-5.5	7.2%
B3-S-1	1.0-2.5	8.8%
B3-S-2	3.5-5.0	10.9%
B3-S-3	6.0-7.5	10.6%
B3-S-4	8.5-9.7	COAL
B3-S-5	11.0-12.5	COAL
B4-S-1	0.0-1.5	8.6%
B4-S-2	1.5-3.0	5.7%
B4-S-3	4.0-5.5	4.1%
B4-S-4	6.5-8.0	8.6%

The borings encountered topsoils to a maximum depth of 6 ft. The 4 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 vary to 30.5 ft. in depth. The position at which the core was taken are indicated on the boring logs and shown on the boring location map in Appendix D. The corresponding Rock Quality Data Ratings (RQD) are shown in Table No. 3. This boring demonstrates the full geologic column at the site. Rock-quality designation (RQD) is a rough measure of the degree of jointing or fracture in a rock mass, measured as a percentage of the drill core in lengths of 10 cm or more. High-quality rock has an





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RQD of more than 75%, low quality of less than 50%. Rock quality designation (RQD) has several definitions

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

TABLE NO. 3  
STANDARD PENETRATIONS

Boring	Run Interval	Blow Counts *RQD	Description
B1	1.5-3.0	4-4-3	Brown Clayey sand/weathered sandstone
B1	4.0-5.5	4-7-13	Brown Clayey sand/weathered sandstone
B1	6.5-8.0	5-13-13	Brown Clayey sand/weathered sandstone
B1	9.0-10.5	9-18-18	Brown Clayey sand/weathered sandstone
B1	14.0-15.5	9-20-24	Brown Clayey sand/weathered sandstone
B1	15.5-25.5	0*	Gray, Weathered Shale
B1	25.5-30.5	38*	Gray, Sandstone, Hard
B2	1.5-3.0	4-6-8	Brown Clayey sand/weathered sandstone
B2	4.0-5.5	5-5-18	Brown Clayey sand/weathered sandstone
B2	6.8-11.0	0*	Gray Sandstone
B2	11.8-16.0	0*	Gray, Sandstone, with Shale Layers
B2	16.0-21.0	22*	Gray, Sandstone, with Coal Streaks
B2	21.0-26.0	80*	Gray, Sandstone, with Coal Streaks
B3	1.0-2.5	5-15-17	Brown Clayey sand/weathered sandstone
B3	3.5-5.0	7-17-18	Brown Clayey sand/weathered sandstone
B3	6.0-7.5	5-10-11	Brown Clayey sand/weathered sandstone
B3	8.5-9.7	5-35-50/.2	Coal
B3	11.0-12.5	23-40-26	Coal
B3	12.5-15.5	0*	Gray, Shale, Brittle, Soft
B3	15.5-20.0	0*	Gray, Shale, Brittle, Soft



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Boring	Run Interval	Blow Counts *RQD	Description
B3	20.0-25.0	80*	Gray, Sandstone, Hard w/H2O Stains
B4	0.0-1.5	2-1-1	Brown, Weathered Sandstone
B4	1.5-3.0	5-7-7	Brown, Weathered Sandstone
B4	4.0-5.5	4-12-18	Brown, Weathered Sandstone
B4	6.5-8.0	6-11-15	Brown, Weathered Sandstone
B4	8.5-15.5	0*	Light Brown, Weathered Shale
B4	15.5-20.5	0*	Gray, Shale, Brittle, Soft
B4	20.5-25.5	0*	Gray, Shale, Brittle, Soft
B4	25.5-30.5	0*	Gray, Shale, Soft

### 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 boring activities, 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, a  $S_{DS}$  coefficient of 0.168 g was calculated, and a  $S_{D1}$  coefficient of 0.065 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 a self-supporting free standing tri-pole tower. Due to wind loading, lattice tower foundations can experience both vertical loads and horizontal loads. The vertical loads act in both an upward and downward direction as the tower attempts to overturn and can act in any directions.

#### 5.2 SHALLOW MAT FOUNDATIONS RECOMMENDATIONS

If shallow foundations are used, we recommend that the site be excavated through the soils and weathered shale rock a minimum of 6 feet. The proposed foundation is located on a narrow ridge line and care should be taken to insure the entire foundation is placed in the shale formation. The allowable bearing capacity for this shale is 3,000 psf. This value has been reduced due to poorly cemented rock that will be present at the foundation base.

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

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



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

### **5.3 BURIED UTILITIES**

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



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### 6.0 WARRANTY

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

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

#### 6.1 SUBSURFACE EXPLORATION

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

The boring log includes sampling information, description of the materials recovered, approximate depth of boundaries between soil and rock strata and groundwater data. The boring log represents conditions specifically at the location and time the boring was made. The boundaries between different soil strata are indicated at specific depths; however, these depths are in fact approximate and are somewhat dependent upon the frequency of sampling (The transition between soil strata is often gradual). Free groundwater level readings are made at the times and under conditions stated on the boring logs (Groundwater levels change with time and season). The borehole does not always remain open sufficiently long enough for the measured water level to coincide with the groundwater table.



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### **6.2 LABORATORY AND FIELD TESTS**

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

### **6.3 ANALYSIS AND RECOMMENDATIONS**

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

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

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

### **6.4 CONSTRUCTION MONITORING**

Construction monitoring is a vital element of complete geotechnical services. The field engineer/inspector is the owner's "representative" observing the work of the contractor, performing tests as required in the specifications, and reporting data developed from such tests and observations. The field engineer or



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

### **6.5 GENERAL**

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

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

This report has been prepared for the exclusive use of Appalachian Wireless, for specific application to the proposed cellular tower located on the Totz Property located in Harlan 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 were chosen. EKYENG is not responsible for the



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





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## SPECIFICATIONS

### I – GENERAL

#### 1.0 STANDARDS AND DEFINITIONS

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

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

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

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

#### 1.2 DEFINITIONS

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

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

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

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

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

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



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### 2.0 GENERAL CONDITIONS

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

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

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

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

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

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



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## II - ENGINEERED FILL BENEATH STRUCTURES CLEARING AND GRADING SPECIFICATIONS

### 1.0 GENERAL CONDITIONS

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

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

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

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

### 2.0 SUBSURFACE CONDITIONS

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

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

### 3.0 SITE PREPARATION

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

All cut and fill areas shall be properly stripped. Topsoil will be removed to its full depth and stockpiled for use in finish grading. Any rubbish, organic and other objectionable soils, and other deleterious material shall be disposed of off the site, or as directed by the Owner or his designated representative if on site disposal is provided. In no case shall such objectionable material be allowed in or under the fill unless specifically authorized in writing.



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

### **4.0 FORMATION OF FILL AREAS**

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

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

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

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

In the construction of filled areas, starting layers shall be placed in the deepest portion of the fill, and as placement progresses, additional layers shall be constructed in horizontal planes. Original slopes shall be continuously, vertically benched to provide horizontal fill planes. The size of the benches shall be formed so that the base of the bench is horizontal and the back of the bench is vertical. As many benches as are necessary to bring the site to final grade shall be constructed. Filling operations shall begin on the lowest bench, with the fill being placed in horizontal eight (8) inch thick loose lifts unless otherwise authorized. The filling shall progress in this manner until the entire first bench has been filled, before any fill is placed on the succeeding benches. Proper drainage shall be maintained always during benching and filling of the benches, to ensure that all water is drained away from the fill area.



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

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

### **5.0 SLOPE RATIO AND STORM WATER RUN-OFF**

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

### **6.0 GRADING**

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

### **7.0 COMPACTING**

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

### **8.0 TESTING AND INSPECTION SERVICES**

Testing and inspection services will be provided by the Owner.



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### III GUIDELINES FOR EXCAVATIONS AND TRENCHES

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

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

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

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

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



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



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

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





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### IV - GENERAL CONCRETE SPECIFICATIONS

#### 1.0 GENERAL

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

#### 2.0 SCOPE

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

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

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

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

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

#### 3.0 MATERIALS

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

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

1. Fine Aggregate: Sand shall be composed essentially of clean, hard, strong, durable grains free of structurally weak grains, organic matter, loam, clay, silt, salt, mica or other fine materials that may affect bonding of the cement paste.



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2. Coarse Aggregate: Cement concrete shall consist of crushed rock or screened gravel and shall be composed essentially of clean, hard, strong and impermeable particles, resistant to wear and frost and free from deleterious amounts of organic matter, loam, clay, salts, mica, and soft, thin, elongated, laminated or disintegrated stone, and shall be inert to water and cement.
- B. Portland Cement: Portland cement shall conform to ASTM Specification C150. Type I or Type II Portland Cement shall be used provided that they are not intermixed during any one batch. Type II Portland Cement shall not be used unless indicated on the plans.
- C. Water: Water for mixing and curing shall be clean, fresh, and free from deleterious materials.
- D. Metal Reinforcement: Rebar shall be Grade 60 and with deformations conforming to 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



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

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



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- E. Vibration Equipment: Vibration equipment shall be of the appropriate type and shall, always, be adequate in number of units and power of each unit to properly consolidate all concrete.
- F. Monolithic Pours: Proper delivery of concrete shall be the Contractor's responsibility to make a mono-lithic pour without delays and changes of cold joints.

### 9.0 CURING

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

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

### 10.0 CONCRETE FINISHES

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

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

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



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**APPENDIX A BORING LOGS**

Client Name	<u>Appalachian Wireless/EKE</u>	Hole Number	<u>B-1</u>	Total Depth	<u>30.5</u>
Project Name	<u>Totz Tower</u>	Location	<u>as staked</u>		
Site Location	<u>Totz, KY</u>	Surface Elevation	<u>N/A</u>		
Drilling/Sampling Method	<u>HAS/NX</u>	Date Started	<u>1/16/2018</u>	Date Completed	<u>1/16/2018</u>
Boring Diameter	<u>8'</u>	Driller	<u>T Jenkins</u> Weather _____		

From To	Soil and Rock Description	Sample/Run Interval	Blow Counts/RQD	Sample/Run No.	Sample Type	% Recovery
0.0 - 15.5	Brown, Clayey Sand/Weathered Sandstone, Poorly Cemented, Auger Refusal @ 15.5"	1.5 3.0	4-4-3	1	spt	
		4.0 5.5	4-7-13	2	spt	
15.5-26.1	Gray, Weathered Shale	6.5 8.0	5-13-13	3	spt	
		9.0 10.5	9-18-18	4	spt	
26.1-30.5	Gray, Sandstone, Hard	14.0 15.5	9-20-24	5	spt	
		15.5 25.5	0	R1	NX	6%
		25.5 30.5	38	R2	NX	98%
	Boring Terminated @ 30.5'					

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

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

Client Name	<u>Appalachian Wireless/EKE</u>	Hole Number	<u>B-2</u>	Total Depth	<u>26.0</u>
Project Name	<u>Totz Tower</u>	Location	<u>as staked</u>		
Site Location	<u>Totz, KY</u>	Surface Elevation	<u>N/A</u>		
Drilling/Sampling Method	<u>HAS/NX</u>	Date Started	<u>1/16/2018</u>	Date Completed	<u>1/16/2018</u>
Boring Diameter	<u>8'</u>	Driller	<u>T Jenkins</u>	<u>Weather</u>	

From To	Soil and Rock Description	Sample/Run Interval	Blow Counts/RQD	Sample/Run No.	Sample Type	% Recovery
0.0 - 6.8	Brown, Clayey Sand/Weathered Sandstone, Poorly Cemented, Auger Refusal @ 6.8"	1.5 3.0	4-8-8	1	spt	
		4.0 5.5	5-5-18	2	spt	
6.8-7.3	Gray, Sandstone	6.8 11.0	0	R1	NX	10%
		11.8 16.0	0	R2	NX	70%
7.3-12.3	Brown, Clayey Sand/Weathered Sandstone, Poorly Cemented	16.0 21.0	22	R3	NX	60%
		21.0 26.0	80	R4	NX	100%
12.3-16.4	Gray, Sandstone, with Shale Layers					
16.4-26.0	Gray, Sandstone, with Coal Streaks					
	Boring Terminated @ 26.0'					

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



Client Name <u>Appalachian Wireless/EKE</u>	Hole Number <u>B-3</u> Total Depth <u>25.0</u>
Project Name <u>Totz Tower</u>	Location <u>as staked</u>
Site Location <u>Totz, KY</u>	Surface Elevation <u>N/A</u>
Drilling/Sampling Method <u>HAS/NX</u>	Date Started <u>1/16/2018</u> Date Completed <u>1/16/2018</u>
Boring Diameter <u>8'</u>	Driller <u>T Jenkins</u> Weather <u></u>

From To	Soil and Rock Description	Sample/Run Interval	Blow Counts/RQD	Sample/Run No.	Sample Type	% Recovery
0.0 - 8.0	<i>Brown, Weathered Sandstone/ Clayey Sand, Poorly Cemented</i>	1.0 2.5	5-15-17	1	spt	
		3.5 5.0	7-17-18	2	spt	
8.0-12.5	<i>Coal</i>	6.0 7.5	5-10-11	3	spt	
		8.5 9.7	5-35-50/2	4	spt	
12.5-19.7	<i>Gray, Shale, Brittle, Soft</i>	11.0 12.5	23-40-26	5	spt	
		12.5 15.5	0	R1	NX	60%
19.7-25.0	<i>Gray, Sandstone, Hard w/ H2o stains</i>	15.5 20.0	0	R2	NX	88%
		20.0 25.0	80	R3	NX	100%
	<i>Boring Terminated @ 25 0'</i>					

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

Client Name <u>Appalachian Wireless/EKE</u>		Hole Number <u>B-4</u>		Total Depth <u>30.5</u>	
Project Name <u>Totz Tower</u>		Location <u>as staked</u>			
Site Location <u>Totz, KY</u>		Surface Elevation <u>N/A</u>			
Drilling/Sampling Method <u>HAS/NX</u>		Date Started <u>1/15/2018</u>		Date Completed <u>1/15/2018</u>	
Boring Diameter <u>8'</u>		Driller <u>T Jenkins</u>		Weather <u></u>	

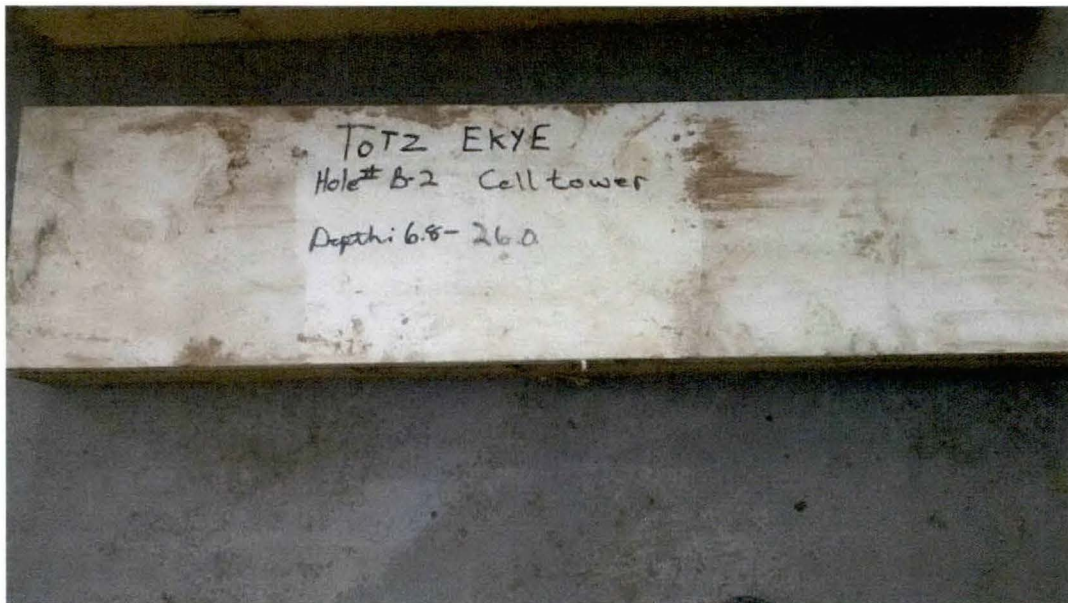
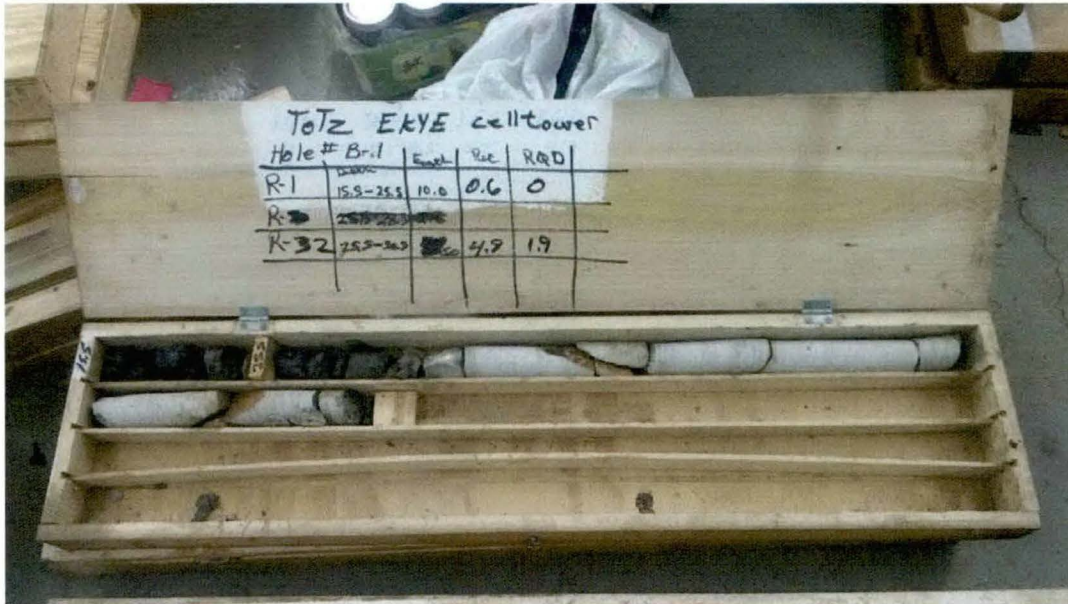
From To	Soil and Rock Description	Sample/Run Interval	Blow Counts/RQD	Sample/Run No.	Sample Type	% Recovery
0.0 - 8.5	Brown, Weathered Sandstone, Poorly Cemented Auger Refusal @ 8.5'	0.0 1.5	2-1-1	1	spt	
		1.5 3.0	5-7-7	2	spt	
8.5 - 11.0	Lt Brown, Weathered Shale	4.0 5.5	4-12-18	3	spt	
		6.5 8.0	6-11-15	4	spt	
11.0-25.5	Gray, Shale, Brittle, Soft	8.5 15.5	0	R1	NX	53%
		15.5 20.5	0	R2	NX	50%
25.5-26.7	Coal	20.5 25.5	0	R3	NX	58%
		25.5 30.5	0	R4	NX	48%
26.7-30.0	Gray, Shale, Soft					
	Boring Terminated @ 30.5'					

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



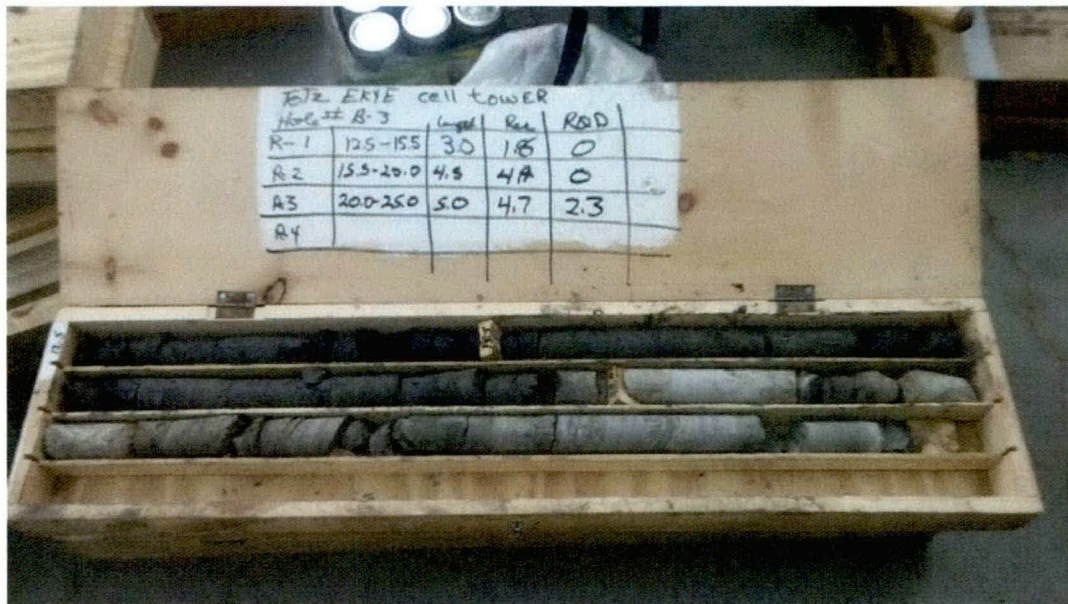
# EAST KENTUCKY ENGINEERING, LLC.

## APPENDIX B CORE PHOTOGRAPHS





# EAST KENTUCKY ENGINEERING, LLC.





# EAST KENTUCKY ENGINEERING, LLC.





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**APPENDIX C SEISMIC DATA**

# USGS Design Maps Summary Report

## User-Specified Input

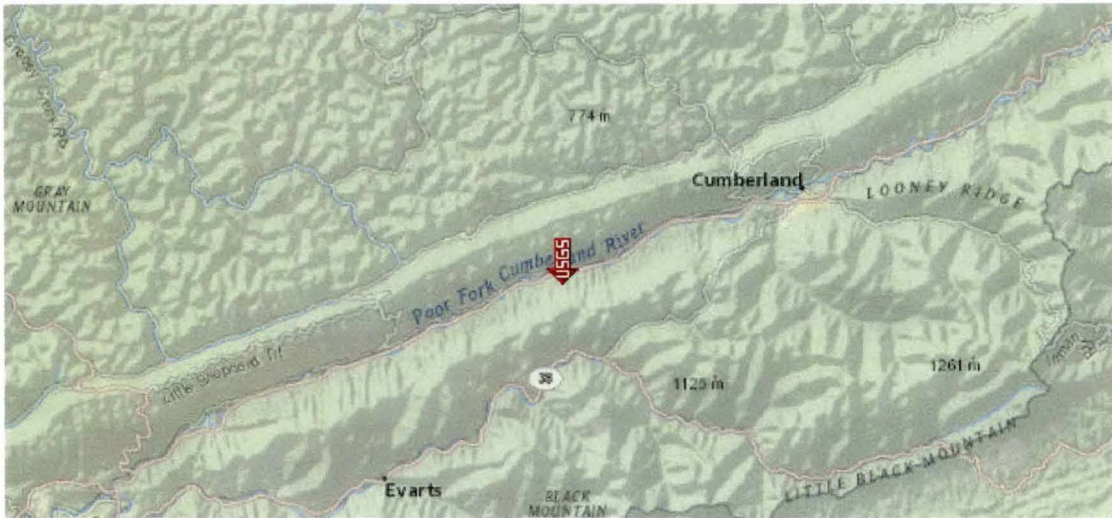
**Report Title** Totz Tower Site  
 Tue February 13, 2018 18:56:57 UTC

**Building Code Reference Document** 2012/2015 International Building Code  
 (which utilizes USGS hazard data available in 2008)

**Site Coordinates** 36.94975°N, 83.10664°W

**Site Soil Classification** Site Class B – “Rock”

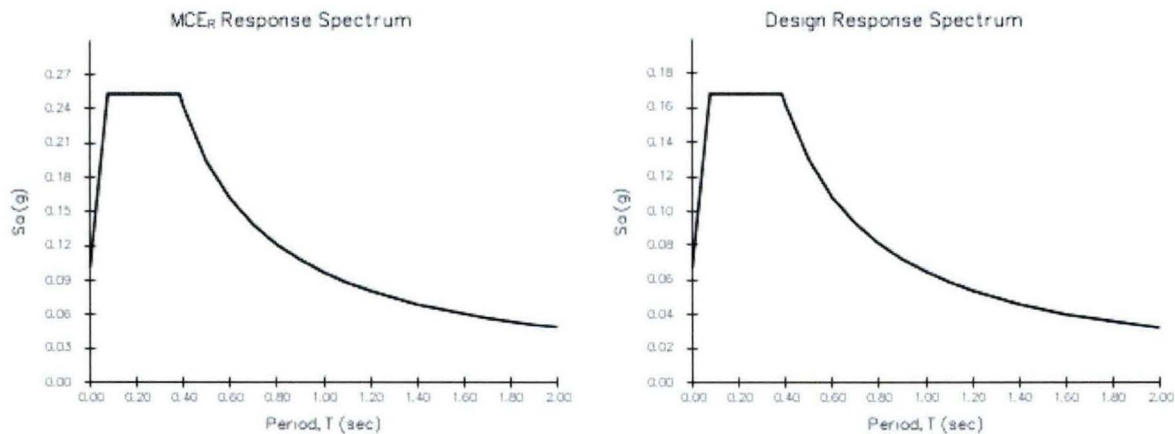
**Risk Category** IV (e.g. essential facilities)



## USGS-Provided Output

$S_S = 0.253 \text{ g}$	$S_{MS} = 0.253 \text{ g}$	$S_{DS} = 0.168 \text{ g}$
$S_1 = 0.097 \text{ g}$	$S_{M1} = 0.097 \text{ g}$	$S_{D1} = 0.065 \text{ g}$

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

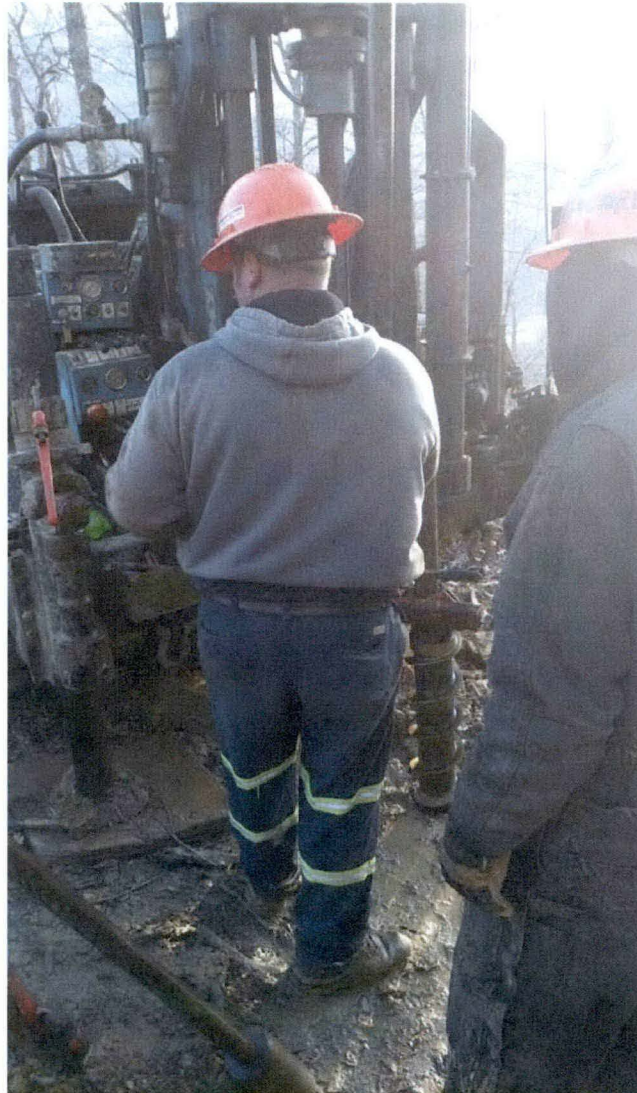


Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the accuracy of the data contained therein. This tool is not a substitute for technical subject-matter knowledge.



# EAST KENTUCKY ENGINEERING, LLC.

## APPENDIX D PHOTOGRAPHS







# EAST KENTUCKY ENGINEERING, LLC.

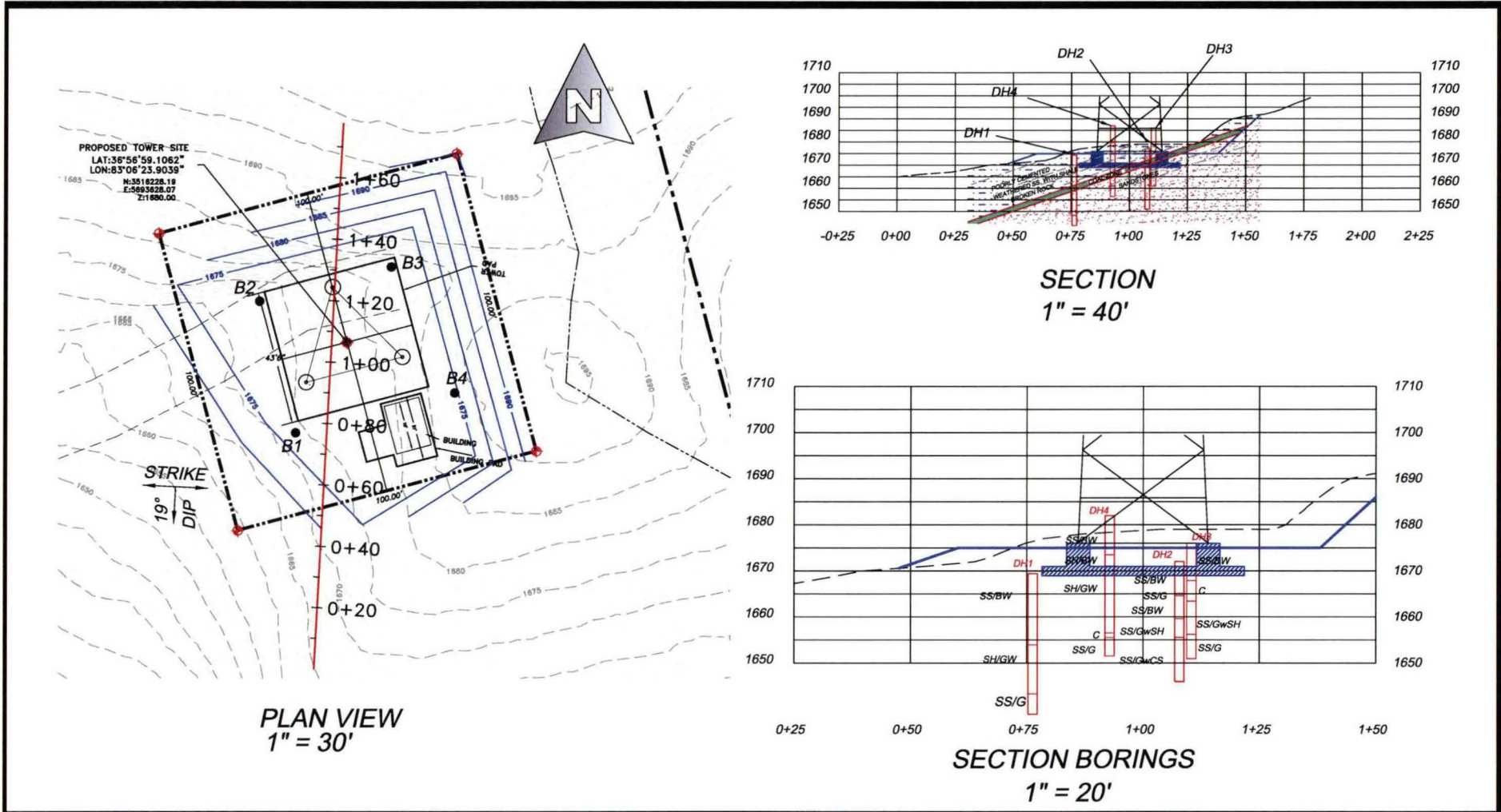




**EAST KENTUCKY ENGINEERING, LLC.**

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**APPENDIX E    MAPS**

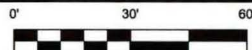


**East Kentucky Engineering, LLC**

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



1/30/2018  
 230 SWARTZ DRIVE  
 HAZARD, KENTUCKY  
 41701



Drawn by: RDS  
 Date: 1/22/2018  
 Job #: 165-0053  
 File Location:  
 Scale: NOTED



APPALACHIAN  
 WIRELESS  
 TOTZ TOWER SITE  
 HARLAN COUNTY KENTUCKY



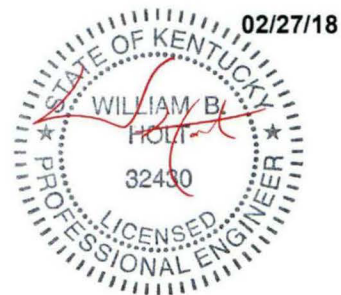
World Tower  
COMPANY, INC.

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1213 Compressor Drive  
P.O. Box 508  
Mayfield, KY 42066  
270-247-3642  
FAX: 270-247-0909  
E-mail: [worldtower@worldtower.com](mailto:worldtower@worldtower.com)  
Web: [www.worldtower.com](http://www.worldtower.com)

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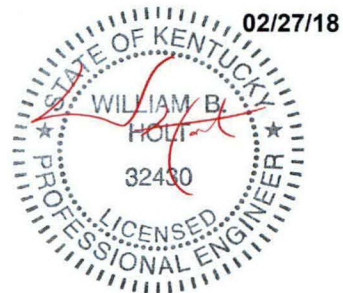
180' MODEL WSST TOWER  
FOR: APPALACHIAN WIRELESS  
SITE: TOTZ  
HARLAN COUNTY, KY  
DESIGN PACKAGE



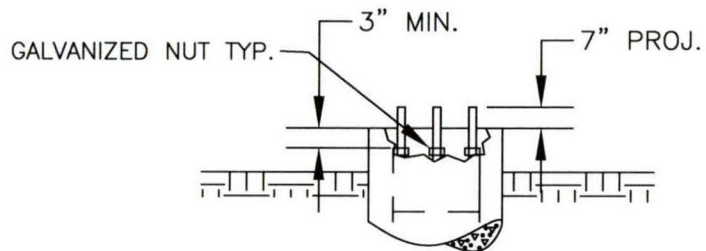
*Fabrication, Installation, and Maintenance of TV, AM, FM, & Wireless Communications Towers*

## GENERAL NOTES

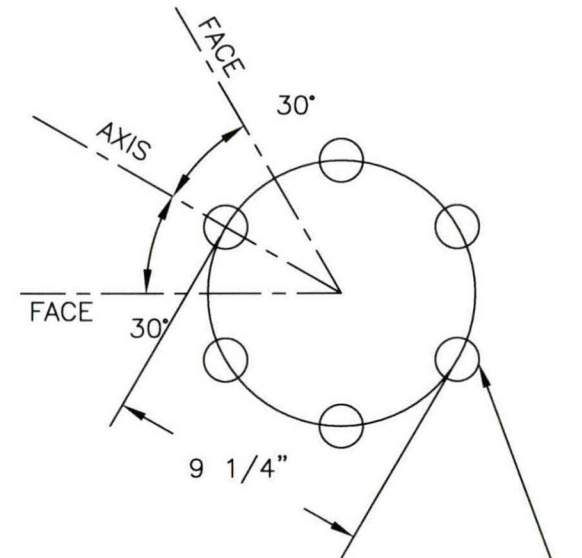
1. WELDED CONNECTIONS SHALL CONFORM TO THE LATEST REVISION OF THE AMERICAN WELDING SOCIETY AWS. D 1.1.
2. TOWER AND ALL FABRICATED ACCESSORIES ARE HOT-DIP GALVANIZED.
3. ALL BOLTS SHALL BE GALVANIZED ACCORDING TO THE STANDARD SPECIFICATION FOR ZINC COATING OF IRON AND STEEL HARDWARE ASTM A153.
4. LEG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



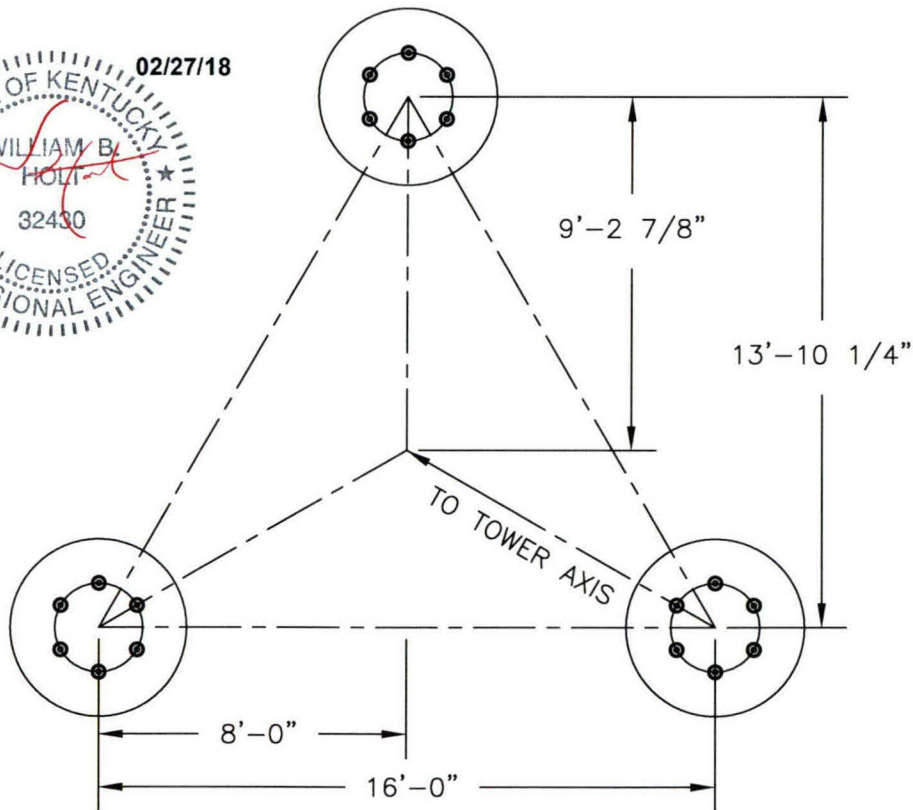
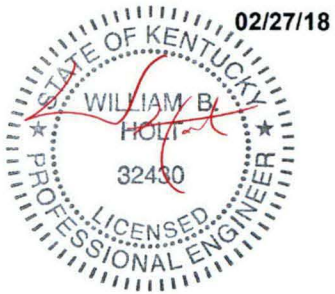
<b>WORLD TOWER</b>			
TITLE: 180' MODEL WSST TOWER FOR: APPALACHIAN WIRELESS SITE: TOTZ HARLAN COUNTY, KY			
SCALE	DWN. LKG	CKD.	DATE 2-23-18
FILE	DWG. NO. Q18098N		



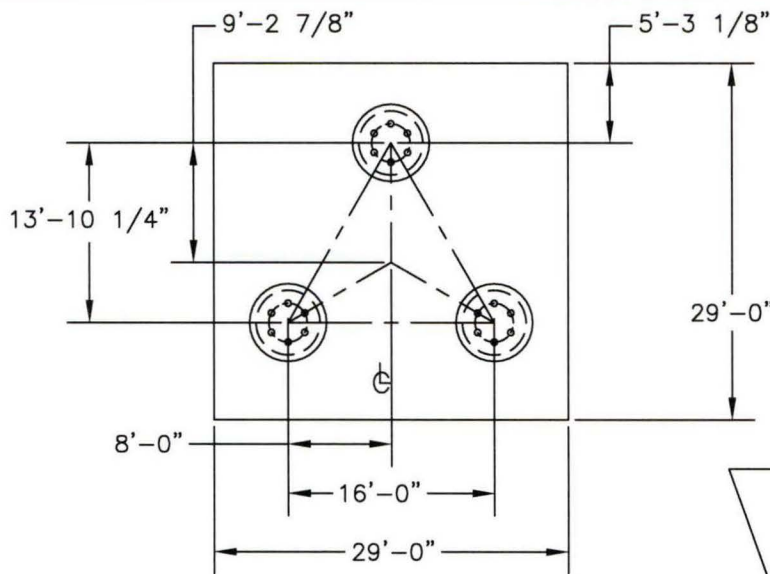
PIER ELEVATION



ANCHOR BOLTS 6 (18 TOTAL)  
 1 1/4"  $\phi$  X 78"  
 ASTM F1554-105  
 EQUALLY SPACED WITH TOP TEMPLATE  
 AND EMBEDDED PLATE

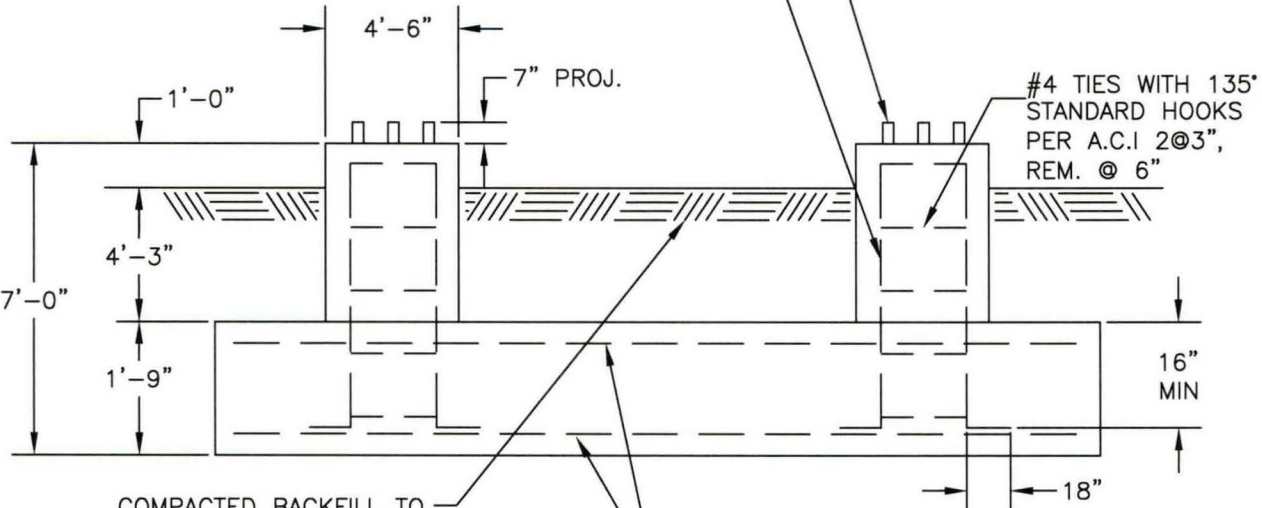


<b>WORLD TOWER</b>				
TITLE: ANCHOR BOLT LAYOUT 180' MODEL WSST TOWER FOR: APPALACHIAN WIRELESS SITE: TOTZ HARLAN COUNTY, KY				
SCALE NONE	DWN. LKG	CKD.	DATE 2-23-18	
FILE	DWG. NO.			Q18098AB



64.0 CU. YDS.  
CONCRETE REQ'D.

BASE REACTIONS	
OTM:	5848.0 FT. KIPS
COMP.	442.0 KIPS
UPLIFT	398.0 KIPS
SHEAR (3 LEGS)	51.0 KIPS
WT. NO ICE	59.0 KIPS
WT. 1/2" ICE	158.0 KIPS

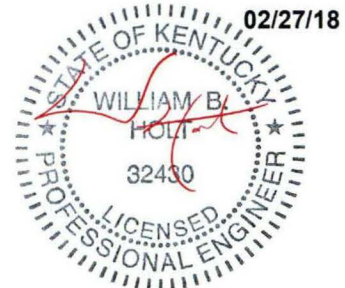


COMPACTED BACKFILL TO  
ACHIEVE MIN. DENSITY OF  
100 PCF

38-#10 REBARS  
EACH WAY TOP AND BOTTOM  
(TOTAL = 152)

**GENERAL NOTES**

1. CONCRETE TO HAVE 4000 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 BY EAST KENTUCKY ENGINEERING, LLC. PROJECT NUMBER 165-000-0053 DATED JANUARY 22, 2018.



TITLE: FOUNDATION DETAILS  
180' MODEL WSST TOWER  
FOR: APPALACHIAN WIRELESS  
SITE: TOTZ  
HARLAN COUNTY, KY

**WORLD TOWER**

SCALE	DWN. LKG	CKD.	DATE 2-23-18
FILE	DWG. NO. Q18098F		

***Compliance Statement:  
Nationwide Collocation Programmatic Agreement***

DATE: \_\_\_\_\_

SITE NAME & ASR #: \_\_\_\_\_

SITE ADDRESS: \_\_\_\_\_

CUSTOMER NAME: \_\_\_\_\_

Dear Customer:

To facilitate Customer's collocation or modification of its telecommunications equipment on the above referenced Tower in compliance with both the Nationwide Programmatic Agreement for the Collocation of Wireless Antennas (the "Collocation Programmatic Agreement") and the nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the Federal Communication Commission ("the Nationwide Programmatic Agreement") executed by the Federal communication Commission ("FCC"), the National Conference of State Historic Preservation Officers and the Advisory Council on Historic Preservation ("ACHP"), East Kentucky Network, LLC, dba Appalachian Wireless makes the following certifications:

Tower was built on or before 3/16/01?                      Yes                       No

**Criteria for Programmatic Agreement Eligibility for Towers Built on or before March 16, 2001**

- |                              |                             |  |
|------------------------------|-----------------------------|--|
| <input type="checkbox"/> YES | <input type="checkbox"/> NO | The mounting of the antenna will result in a substantial increase in the size of the tower.  |
| <input type="checkbox"/> YES | <input type="checkbox"/> NO | The tower has been found by the FCC to have an adverse or potentially adverse effect that has not been resolved through an MOA or other mechanism.   |
| <input type="checkbox"/> YES | <input type="checkbox"/> NO | The tower is the subject of a pending environmental review or proceeding before the FCC involving compliance with Section 106 of NHPA.   |
| <input type="checkbox"/> YES | <input type="checkbox"/> NO | The tower owner has received written or electronic notice from the FCC that the FCC is in receipt of a complaint from a member of the public, a SHPO or the Council that the co-location has an adverse effect on one or more historic properties. |



**Criteria for Programmatic Agreement Eligibility for Towers Built after March 16, 2001**

- YES       NO      No Section 106 review (SHPO review) or any associated environmental (NEPA) review required by the FCC has been completed for this tower.
- YES       NO      The mounting of the antenna will result in a substantial increase in the size of the tower.
- YES       NO      The tower is the subject of a pending environmental review or proceeding before the FCC involving compliance with Section 106 of NHPA.
- YES       NO      The tower owner has received written or electronic notice from the FCC that the FCC is in receipt of a complaint from a member of the public, a SHPO or the Council that the co-location has an adverse effect on one or more historic properties.

Approval is based upon a centerline of \_\_\_\_\_.

Based on the above certifications and on the terms and conditions of the Programmatic Agreement, East Kentucky Network, LLC, dba Appalachian Wireless believes that the installation of the equipment on the Tower would not require review under the consultation process set forth under Subpart B of 36 CFR Part 800.

East Kentucky Network, LLC  
Db a Appalachian Wireless  
101 Technology Trail  
Ivel, KY 41642

By: \_\_\_\_\_

Title: \_\_\_\_\_



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

02/28/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Kentucky Farm Bureau - Louisville PO Box 20700  Louisville KY 40250		CONTACT NAME: PHONE (A/C, No, Ext): E-MAIL ADDRESS: FAX (A/C, No):	
INSURED Blair Contracting, Inc. 1089 Hales Branch Rd  Redfox KY 41847		INSURER(S) AFFORDING COVERAGE INSURER A : Scottsdale Insurance Company INSURER B : Scottsdale Insurance Company INSURER C : INSURER D : INSURER E : INSURER F :	NAIC # 41297 41297

**COVERAGES**      **CERTIFICATE NUMBER:**      **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.


INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:	X	X	CPS3042973	02/23/2018	02/23/2019	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS						
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$			CXS0005141	02/23/2018	02/23/2019	EACH OCCURRENCE \$ 3,000,000 AGGREGATE \$ 3,000,000
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

East Kentucky Network, LLC is listed as Additional Insured with a Waiver of Subrogation.

CERTIFICATE HOLDER

CANCELLATION

East Kentucky Network, LLC Attn: Compliance Department 101 Technology Trail Ivel KY 41642	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE 

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ACORD 25 (2014/01)

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

Aeronautical Study No.  
2017-ASO-23685-OE

Issued Date: 12/19/2017

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

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

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

Structure:	Tower Totz
Location:	Totz, KY
Latitude:	36-56-59.10N NAD 83
Longitude:	83-06-23.90W
Heights:	1680 feet site elevation (SE) 190 feet above ground level (AGL) 1870 feet above mean sea level (AMSL)

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

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

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

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

This determination expires on 06/19/2019 unless:

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

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

This determination does not constitute authority to transmit on the frequency(ies) identified in this study. The proponent is required to obtain a formal frequency transmit license from the Federal Communications Commission (FCC) or National Telecommunications and Information Administration (NTIA), prior to on-air operations of these frequency(ies).

This determination of No Hazard is granted provided the following conditional statement is included in the proponent's construction permit or license to radiate:

Upon receipt of notification from the Federal Communications Commission that harmful interference is being caused by the licensee's (permittee's) transmitter, the licensee (permittee) shall either immediately reduce the power to the point of no interference, cease operation, or take such immediate corrective action as is necessary to eliminate the harmful interference. This condition expires after 1 year of interference-free operation.

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

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

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

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

If we can be of further assistance, please contact our office at (202) 267-0105, or [j.garver@faa.gov](mailto:j.garver@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-ASO-23685-OE.

**Signature Control No: 349646760-351554424**

( DNE )

Jay Garver  
Specialist

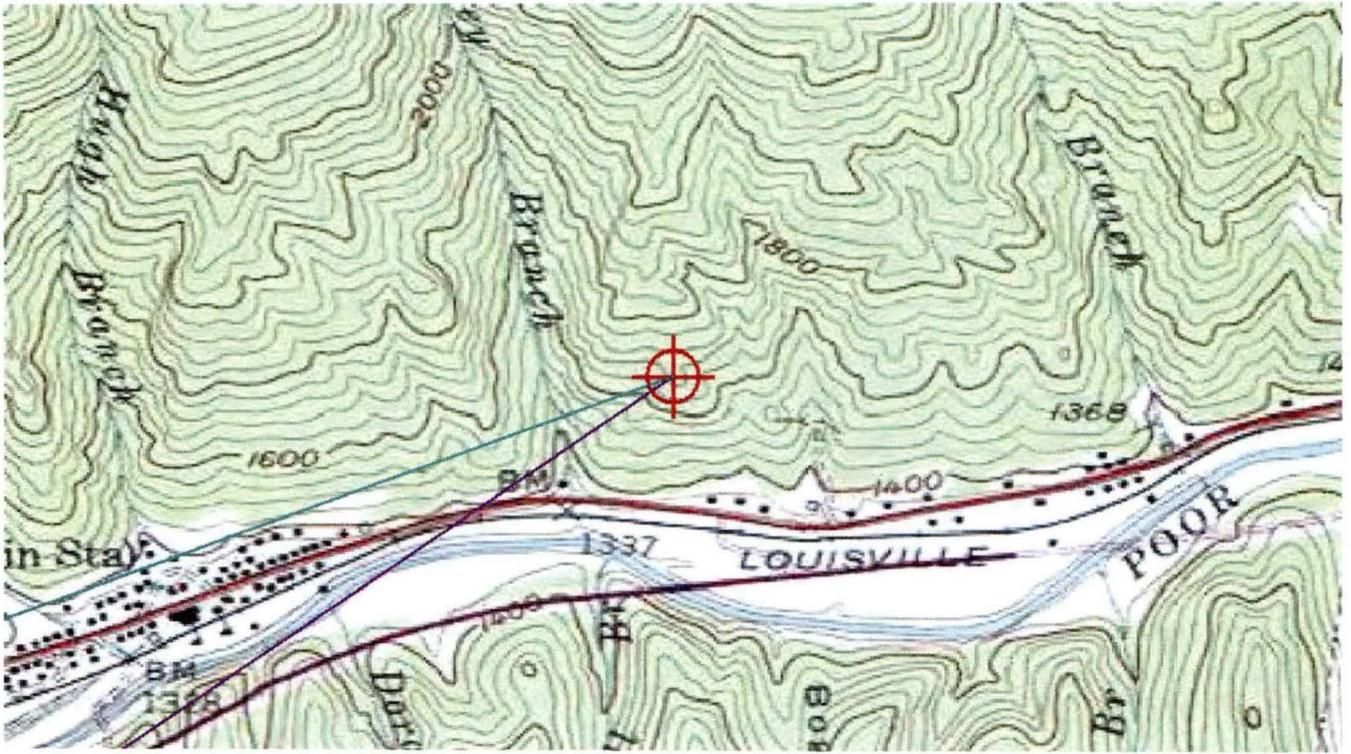
Attachment(s)

Frequency Data  
Map(s)

cc: FCC

**Frequency Data for ASN 2017-ASO-23685-OE**

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



## Ali Kuzehkanani

---

**From:** Houlihan, John F (KYTC) <John.Houlihan@ky.gov>  
**Sent:** Monday, November 27, 2017 8:25 AM  
**To:** Ali Kuzehkanani  
**Subject:** RE: 638 - KAZC study request for a new tower at Totz

No permit is required from the KAZC. Thank you.

Kentucky Airport Zoning Commission (KAZC)  
John Houlihan, Administrator  
Department of Highways, District Six  
421 Buttermilk Pike  
Covington, KY 41017  
Office 859-341-2700, Desk 859-341-2707 Ext. 292, Cell 502-330-3955

KAZC webpage: <http://transportation.ky.gov/Aviation/Pages/Zoning-Commission.aspx>

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**From:** Ali Kuzehkanani [mailto:AKuzehkanani@fcclaw.com]  
**Sent:** Tuesday, November 21, 2017 2:58 PM  
**To:** Houlihan, John F (KYTC) <John.Houlihan@ky.gov>  
**Cc:** Raina Helton <rhelton@ekn.com>; Lynn Haney (lhaney@ekn.com) <lhaney@ekn.com>; m.thacker@tgtel.com; Pamela Gist <PGist@fcclaw.com>  
**Subject:** 638 - KAZC study request for a new tower at Totz

Dear John:

Forwarded herewith in accordance with KRS 183.990 and Chapter 50 of Title 602 of the Kentucky Administrative Regulations, is an "Application for Permit to Construct or Alter a Structure" (Form TC 56-50) for a new 190-foot communications support structure (Totz) proposed near Totz (Harlan), KY. The site is located approximately 0.7 miles ENE of Totz (Harlan), KY at geographic coordinates (**NAD83**) N 36-56-59.10; W 83-06-23.90.

Attached is a copy of the electronic FAA 7460-1 filing. A copy of the final FAA determination will be provided to you as soon as it is issued.

Please let me know if you have any questions or require any additional information.

Thank you in advance for your help in this matter.

Regards,

**Ali Kuzehkanani**

---

Director of Engineering



**Lukas, LaFuria, Gutierrez & Sachs, LLP**

8300 Greensboro Drive, Suite 1200

Tysons, VA 22102

Direct (703) 584-8667

Mobile (703) 927-1961

Fax (703) 584-8696

Email [ali@fcclaw.com](mailto:ali@fcclaw.com)

Email [akuzehkanani@fcclaw.com](mailto:akuzehkanani@fcclaw.com)

## Driving Directions for Totz

Beginning at East Central Street beside the Harlan County Courthouse drive approximately 750ft to the intersection of 421 & West Central Street. Turn right onto 421 drive 14.1 miles to the intersection of 421 & the connecting road for KY 522. Turn left onto the connecting road and drive to the stop sign. Turn left onto KY 522. Drive approximately 500ft (signs will be posted). Take a left, go through the gate and drive approximately .6 tenths of a mile (signs posted here).

Prepared by:

Daryl Bartley

CELL SITE COMPLIANCE AGENT

East Kentucky Network, LLC

D/b/a Appalachian Wireless

(606) 791-0310 (cell)

[dbartley@ekn.com](mailto:dbartley@ekn.com)

# Totz

## Location:

11615 Hwy 522  
Totz, KY 40870

## Coordinates:

N 36°56'59.10"  
W 83°06'23.90"

Proposed Totz Tower

Google Earth

© 2018 Google

1000 ft





MEMORANDUM OF LEASE

THIS MEMORANDUM OF LEASE is made and entered into on this 9<sup>th</sup> day of November, 2017, with a commencement date of November 1, 2017 (the "**Commencement Date**"), by and between **GLEN A. CURRY**, with an address of 83 Sukey Ridge Road, Baxter, Kentucky 40870, hereinafter referred to as "**Lessor**", and **EAST KENTUCKY NETWORK, LLC D/B/A APPALACHIAN WIRELESS**, a Kentucky limited liability company, with a mailing address of 101 Technology Trail, Ivel, Kentucky, 41642, hereinafter referred to as "**Lessee**."

WITNESSETH

**1. Demised Premises.** For good and valuable consideration, Lessor leased to Lessee, and Lessee has leased from Lessor that certain tract of real estate located in Harlan County, Kentucky, and being a portion of the same land conveyed to Lessor by Deed dated August 3, 2004, and recorded on August 24, 2004, in Deed Book 387, Page 247, in the Harlan County Clerk's Office. Said property is more particularly described in the description **attached** hereto and made a part hereof as **Exhibit A** and the plat **attached** hereto and made a part hereof as **Exhibit B**, prepared by James W. Caudill, Licensed Professional Land Surveyor (hereinafter referred to as the "**Premises**"). The Lessor has also granted unto Lessee full and complete rights of ingress, egress and regress to and from the Premises over any property owned by Lessor and other associated rights for installation of utilities, maintenance, and other purposes.

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

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

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

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

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

**LESSOR:**

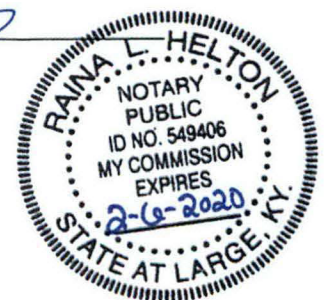
  
GLEN A. CURRY

COMMONWEALTH OF KENTUCKY,  
COUNTY OF Harlan, TO WIT;

The foregoing instrument was acknowledged before me on this 8<sup>th</sup> day of November, 2017, by Glen A. Curry, Lessor.

  
Notary Public

My Commission Expires Feb 6, 2020



**LESSEE:**

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

W A Gillum

By: W.A. Gillum

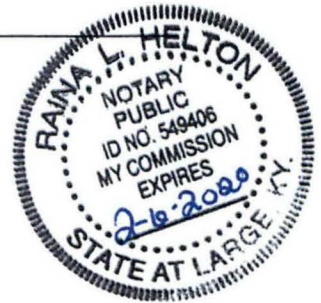
Its: CEO/ General Manager

COMMONWEALTH OF KENTUCKY  
COUNTY OF Floyd

The foregoing instrument was acknowledged before me on this 9<sup>th</sup> day of November, 2017, by W.A. Gillum, CEO/General Manager of East Kentucky Network, LLC d/b/a Appalachian Wireless, Lessee.

Raina L. Helton  
Notary Public

My Commission Expires Feb 16, 2020



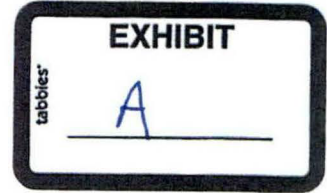
This instrument was prepared by:

Cindy D. McCarty

Cindy D. McCarty, Attorney  
101 Technology Trail  
Ivel, Kentucky 41642  
(606) 339-1006

**LOT DESCRIPTION**

Property of  
Glen A. Curry  
11607 Highway 522  
Totz, KY 40870  
November 2, 2017



A certain tract of land on the north side of Kentucky State Highway 522 near Totz, in Harlan County, KY. Being a part of the same property conveyed to Glen A. Curry from Mike Shackleford and his wife, Dorthy Shackleford by deed dated August 3, 2004 and of record in Deed Book 387 Page 247 of the Harlan County Clerk's Office. And being more particularly described as follows:

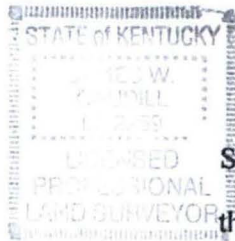
Lot EKN3

Beginning at a set iron pin with cap marked LS#2259 on a hillside and having NAD83 KY SINGLE ZONE Coordinates N:3516289.43 E:5693663.43; thence severing the property of Glen A. Curry (Deed Book 387, page 247) and running down the hillside, South 15 deg 00 min 00 sec East a distance of 100.00 feet, to a set iron pin with cap marked LS#2259 on the southern side of a small knob; thence running down and with the hillside, South 75 deg 00 min 00 sec West a distance of 100.00 feet, to a set iron pin with cap marked LS#2259 on the hillside; thence running up the hillside, North 15 deg 00 min 41 sec West a distance of 100.00 feet, crossing the centerline of a now existing access road at 57 feet to a set iron pin with cap marked LS#2259; thence running up and with the hillside, North 75 deg 00 min 00 sec East a distance of 100.02 feet to the point of beginning. Containing a calculated area of 10001.0 square feet, or .23 acres.

Also to be included is a 40' wide right of way running along an existing access road from KY 522 to Lot EKN3.

Unless stated otherwise, any monument referred to herein as "set iron pin with cap" is a set 1/2" diameter rebar, at least eighteen (18") in length, with a plastic cap stamped "LS-2259". All bearings stated herein are referred to NAD83, KY single zone of the Kentucky state plane system.

This survey was performed on November 2, 2017 by James W. Caudill, a Kentucky Licensed Professional Land Surveyor No. 2259.



*James W. Caudill*  
James W. Caudill, PLS #2259  
11-2-17

STATE OF KENTUCKY, COUNTY OF HARLAN  
I DONNA G. HOSKINS, Clerk of the County in and I  
the County and State aforesaid, certify that the foregoing  
Memorandum of Lease  
was on the 16<sup>th</sup> day of Nov. 2017, at 10:32am  
lodged for record, whereupon the samewith the foregoing  
and this Certificate, have been duly recorded in my office  
in lease BOOK NO. 53 PAGE 247

Filed: 11/16/2017 10:32:22 AM  
Donna Hoskins, County Clerk  
Harlan County, KY

APRIL LEWIS

Witness my hand this 16<sup>th</sup> day

of November, 2017  
DONNA G. HOSKINS, Clerk

By: April Lewis D.C.

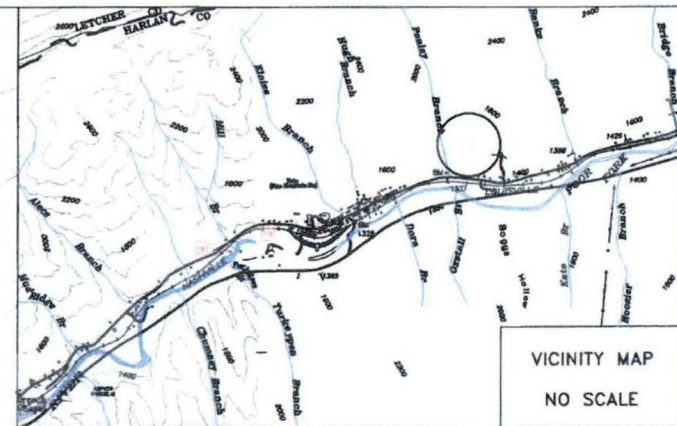
APPALACHIAN WIRELESS  
 101 TECHNOLOGY TRAIL  
 IVEL, KY. 41642  
 PROPOSED TOWER SITE  
 OFF HWY 119 NEAR TOTZ  
 IN HARLAN COUNTY, KY.

MAP:169 PARCEL:8  
 GLEN A. CURRY  
 11607 HIGHWAY 522  
 TOTZ, KY 40870  
 DB:387 PG:247

BEGIN -  
 AT A SET IRON PIN WITH CAP ON HILLSIDE;  
 THENCE DOWN THE HILLSIDE S15°00'00"E, A DISTANCE OF 100.00' TO A  
 SET IRON PIN WITH CAP ON HILLSIDE;  
 THENCE DOWN THE HILLSIDE S75°00'00"W, A DISTANCE OF 100.00' TO A  
 SET IRON PIN WITH CAP ON HILLSIDE;  
 THENCE UP THE HILLSIDE AND ACROSS ACCESS ROAD N15°00'41"W, A  
 DISTANCE OF 100.00' TO A SET IRON PIN WITH CAP ON HILLSIDE;  
 THENCE UP THE HILL N75°00'00"E, A DISTANCE OF 100.02' TO THE POINT  
 OF BEGINNING.  
 CONTAINING A CALCULATED AREA OF 10001.00 SQUARE FEET, OR .23  
 ACRES.

BEGIN -  
 SET IRON PIN WITH CAP  
 MARKED LS#2259

N:3516289.43  
 E:5693663.43



VICINITY MAP  
 NO SCALE

MAP:169 PARCEL:7  
 JAMES COEBURN AND  
 AUDREY HARRIS COEBURN  
 11869 HIGHWAY 522  
 TOTZ, KY 40870  
 DB:290 PG:451



MAP:169 PARCEL:8  
 GLEN A. CURRY  
 11607 HIGHWAY 522  
 TOTZ, KY 40870  
 DB:387 PG:247

LEGEND

- SURVEY STA SET FOUND
- IRON PIN WITH CAP (1" X 3" REBAR PLASTIC CAP MARKED LS2259)
- BOUNDARY LINE
- ACCESS ROAD
- OLD WIRE FENCE

PLAT OF SURVEY		
DRAWN JWC	DATE 11/02/17	SUBDIVISION OF THE PROPERTY OF GLEN A. CURRY 11607 HIGHWAY 522 TOTZ, KY 40870 OFF OF HIGHWAY 522 DEED BOOK:387 PAGE:247
APPROVED	DATE	
SCALE 1" = 20'	SHEET 1 OF 1	SURVEYED BY JAMES W. CAUDILL LS2259 2398 PERKINS WADDEN ROAD AMBURG, KY 41773 PHONE 806-642-3217

RURAL CLASS SURVEY  
 I HEREBY CERTIFY THAT THIS PLAT DEPICTS A SURVEY, MADE  
 BY ME, BY THE METHOD OF RANDOM TRAVERSE. THE  
 BEARINGS SHOWN HEREON HAVE NOT BEEN ADJUSTED FOR  
 CLOSURE. THIS SURVEY AND PLAT MEETS OR EXCEEDS  
 THE MINIMUM STANDARDS OF GOVERNING AUTHORITIES.  
 THE UNADJUSTED ERROR OF CLOSURE IS > 1 IN 10000

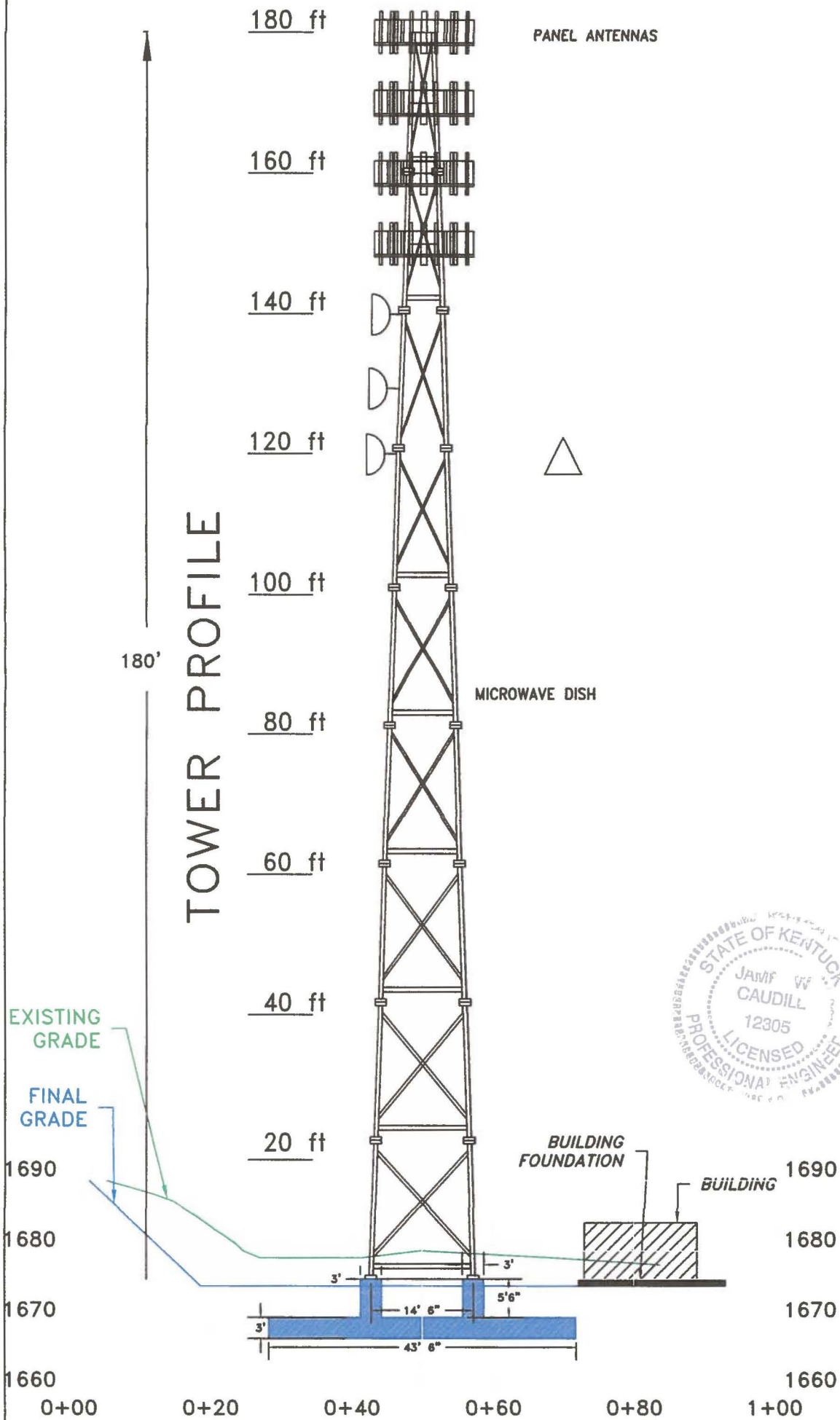
*James W. Caudill* 2259 11-2-17  
 NAME PLS# DATE





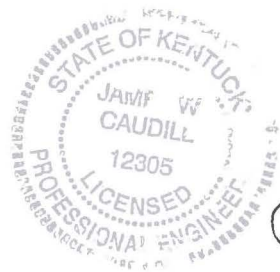
APPALACHIAN WIRELESS  
 101 TECHNOLOGY TRAIL  
 IVEL, KY. 41642  
 PROPOSED TOWER SITE  
 TOTZ IN HARLAN COUNTY

TOWER PROFILE



PROFILE WITH TOWER

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



*James W. Caudill* 12305 11-7-17  
 JAMES W. CAUDILL PE #. DATE

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

11/07/17  
 SCALE 1" = 20'



PROPOSED SITE PLAN AND STRUCTURE LOCATION TOTZ TOWER APPALACHIAN WIRELESS		
DRAWN JWC	DATE 11/07/17	DETAIL SITE PLAN GLEN A. CURRY TRACT OFF STATE HWY 522/119 NEAR TOTZ IN HARLAN CO.
APPROVED	DATE	
SCALE 1" = 20'	SHEET 3 OF 3	PROJECT NO. TOTZ/TOTZPR020

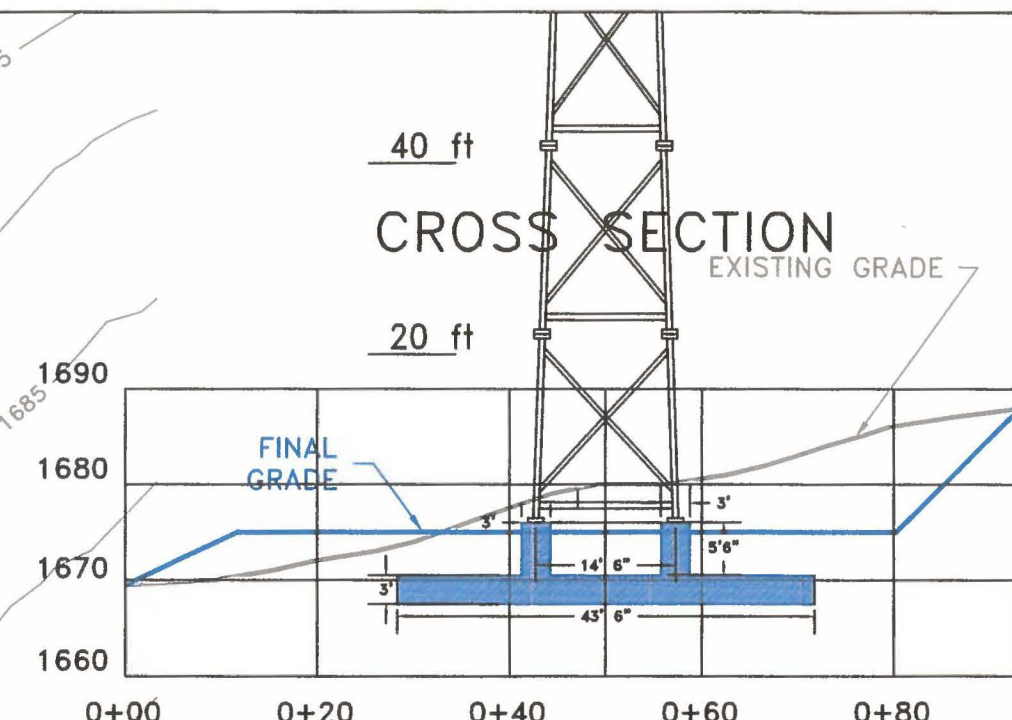
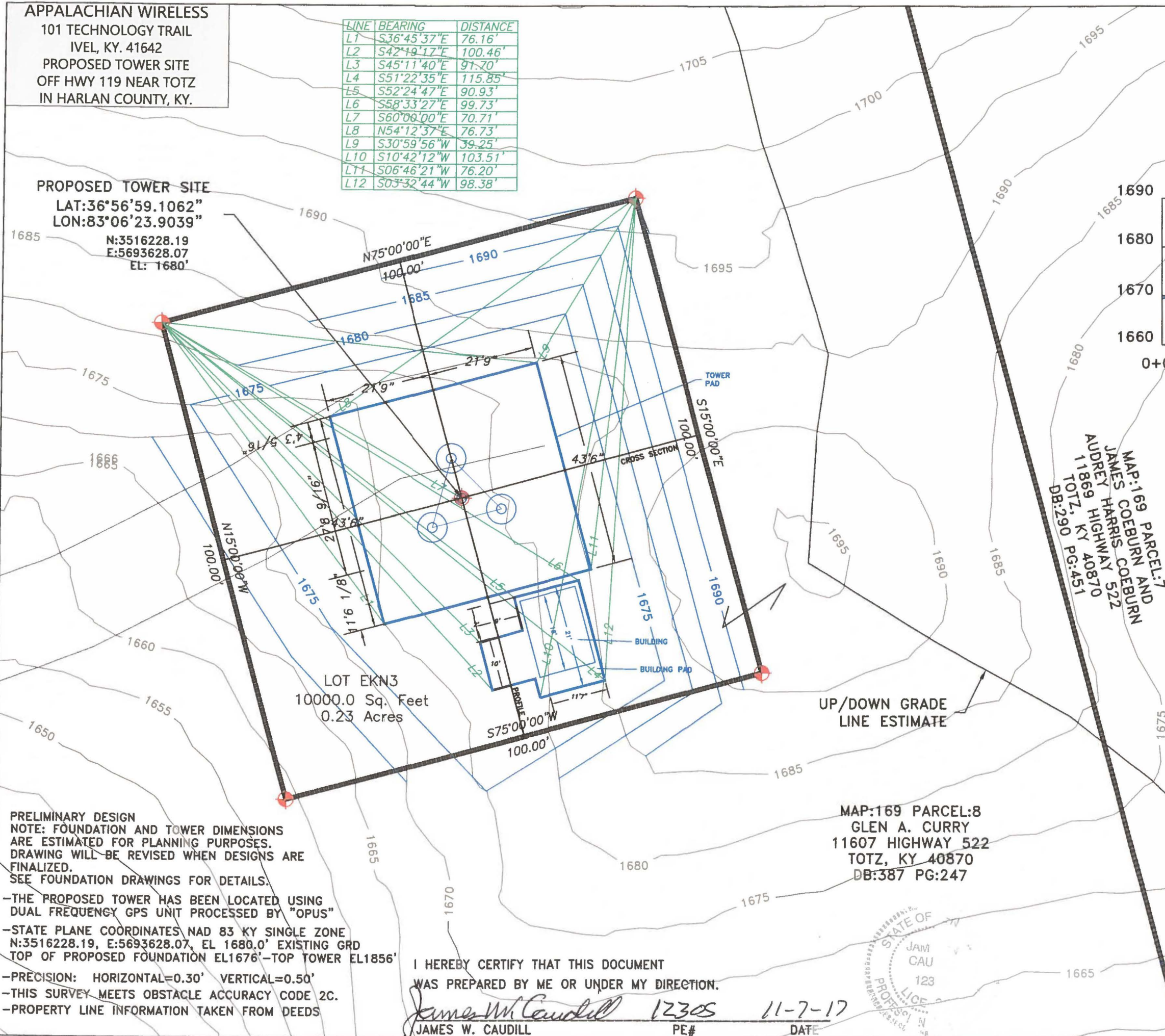
Filing  
CONTAINS  
LARGE OR OVERSIZED  
MAP(S)

RECEIVED ON:  
(03/09/2018)

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

LINE	BEARING	DISTANCE
L1	S36°45'37"E	76.16'
L2	S42°19'17"E	100.46'
L3	S45°11'40"E	97.70'
L4	S51°22'35"E	115.85'
L5	S52°24'47"E	90.93'
L6	S58°33'27"E	99.73'
L7	S60°00'00"E	70.71'
L8	N54°12'37"E	76.73'
L9	S30°59'56"W	39.25'
L10	S10°42'12"W	103.51'
L11	S06°46'21"W	76.20'
L12	S03°32'44"W	98.38'

PROPOSED TOWER SITE  
 LAT:36°56'59.1062"  
 LON:83°06'23.9039"  
 N:3516228.19  
 E:5693628.07  
 EL: 1680'



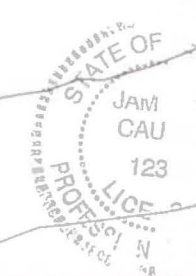
LEGEND  
 SURVEY STA SET FOUND   
 IRON PIN WITH CAP (18" X .5" REBAR PLASTIC CAP MARKED LS2259)  
 BOUNDARY LINE   
 ACCESS ROAD   
 OLD WIRE FENCE

MAP:169 PARCEL:7  
 JAMES COEBURN AND  
 AUDREY HARRIS COEBURN  
 11869 HIGHWAY 522  
 TOTZ, KY 40870  
 DB:290 PG:451

PRELIMINARY DESIGN  
 NOTE: FOUNDATION AND TOWER DIMENSIONS  
 ARE ESTIMATED FOR PLANNING PURPOSES.  
 DRAWING WILL BE REVISED WHEN DESIGNS ARE  
 FINALIZED.  
 SEE FOUNDATION DRAWINGS FOR DETAILS.  
 -THE PROPOSED TOWER HAS BEEN LOCATED USING  
 DUAL FREQUENCY GPS UNIT PROCESSED BY "OPUS"  
 -STATE PLANE COORDINATES NAD 83 KY SINGLE ZONE  
 N:3516228.19, E:5693628.07, EL 1680.0' EXISTING GRD  
 TOP OF PROPOSED FOUNDATION EL1676'-TOP TOWER EL1856'  
 -PRECISION: HORIZONTAL=0.30' VERTICAL=0.50'  
 -THIS SURVEY MEETS OBSTACLE ACCURACY CODE 2C.  
 -PROPERTY LINE INFORMATION TAKEN FROM DEEDS

MAP:169 PARCEL:8  
 GLEN A. CURRY  
 11607 HIGHWAY 522  
 TOTZ, KY 40870  
 DB:387 PG:247

I HEREBY CERTIFY THAT THIS DOCUMENT  
 WAS PREPARED BY ME OR UNDER MY DIRECTION.  
  
 JAMES W. CAUDILL PE# 12308 DATE 11-7-17



PROPOSED SITE PLAN AND STRUCTURE LOCATION TOTZ TOWER APPALACHIAN WIRELESS		
DRAWN JWC	DATE 11/01/17	DETAIL SITE PLAN GLEN A CURRY OFF STATE HWY 522/119 NR TOTZ, HARLAN CO
APPROVED	DATE	
SCALE 1" = 20'	SHEET 2 of 3	PROJECT NO. TOTZ/TOTZ2C_20