

RECEIVED

MAR 14 2018

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

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. 2018-00095
CONSTRUCT A TOWER IN WHITLEY COUNTY,)
KENTUCKY)

East Kentucky Network, LLC d/b/a Appalachian Wireless, was granted authorization to provide Personal Communications Service (“PCS”) in the Corbin, KY Basic Trading Area (BTA098) 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 Whitley County, pursuant to KRS 278.020 Subsection 1 and 807 KAR 5:001, East Kentucky Network, LLC is seeking the Commission’s approval to construct a 300 foot self-supporting tower on a tract of land located near 658 Harold Leforce Road, Williamsburg, Whitley County, Kentucky (36°48’44.5299”N 84°10’02.5765”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.

Whitley County has no formal local planning unit. In absence of this unit, the Whitley 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 Whitley 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 News Journal, March 14, 2018 edition. Enclosed is a copy of that notice in Exhibit 3. News Journal is the newspaper with the largest circulation in Whitley 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 9, 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 in a rural community on previously developed property.

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: *3/12/18*
Lynn Haney, Regulatory Compliance Director

APPROVED BY: *W.A. Gillum* DATE: *3/12/18*
W.A. Gillum, General Manager

ATTORNEY: *Krystal Branham* DATE: *3/12/18*
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 - WQHG464 - East Kentucky Network, LLC d/b/a Appalachian Wireless

Call Sign	WQHG464	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	BTA098 - Corbin, KY	Channel Block	F
Submarket	0	Associated Frequencies (MHz)	001890.00000000-001895.00000000 001970.00000000-001975.00000000

Dates

Grant	06/29/2017	Expiration	07/23/2027
Effective	06/29/2017	Cancellation	

Buildout Deadlines

1st	07/23/2012	2nd	
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Notification Dates

1st	05/24/2012	2nd	
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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 E:compliance@ekn.com
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Contact

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

Radio Service Type Fixed, Mobile

Regulatory Status Common Carrier, Interconnected Yes
Non-Common
Carrier

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

James and Rose Marie Stephens
658 Harold Leforce Road
Williamsburg, KY 40769

Carlos Mayne
429 Harold Leforce Road
Williamsburg, KY 40769

Arnold and Imogene Steely
1135 Cripple Creek Road
Williamsburg, KY 40769

Onni, Jr. and Sonya Meadors
645 Harold Leforce Road
Williamsburg, KY 40769

Linda Lawson Reynolds
P.O. Box 1356
Williamsburg, KY 40769

Patricia Phillips
170 Lincoln Drive
Williamsburg, KY 40769

Roscoe Burnett
0 New Zion RD
Williamsburg, KY 40769



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 13, 2018

Roscoe Burnett
0 New Zion RD
Williamsburg, KY 40769

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00095)

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 Whitley County. The facility will include a 300'-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 658 Harold Leforce Road, Williamsburg. 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. 2018-00095 in your correspondence.

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

Sincerely,

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

Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

Walden


Location:

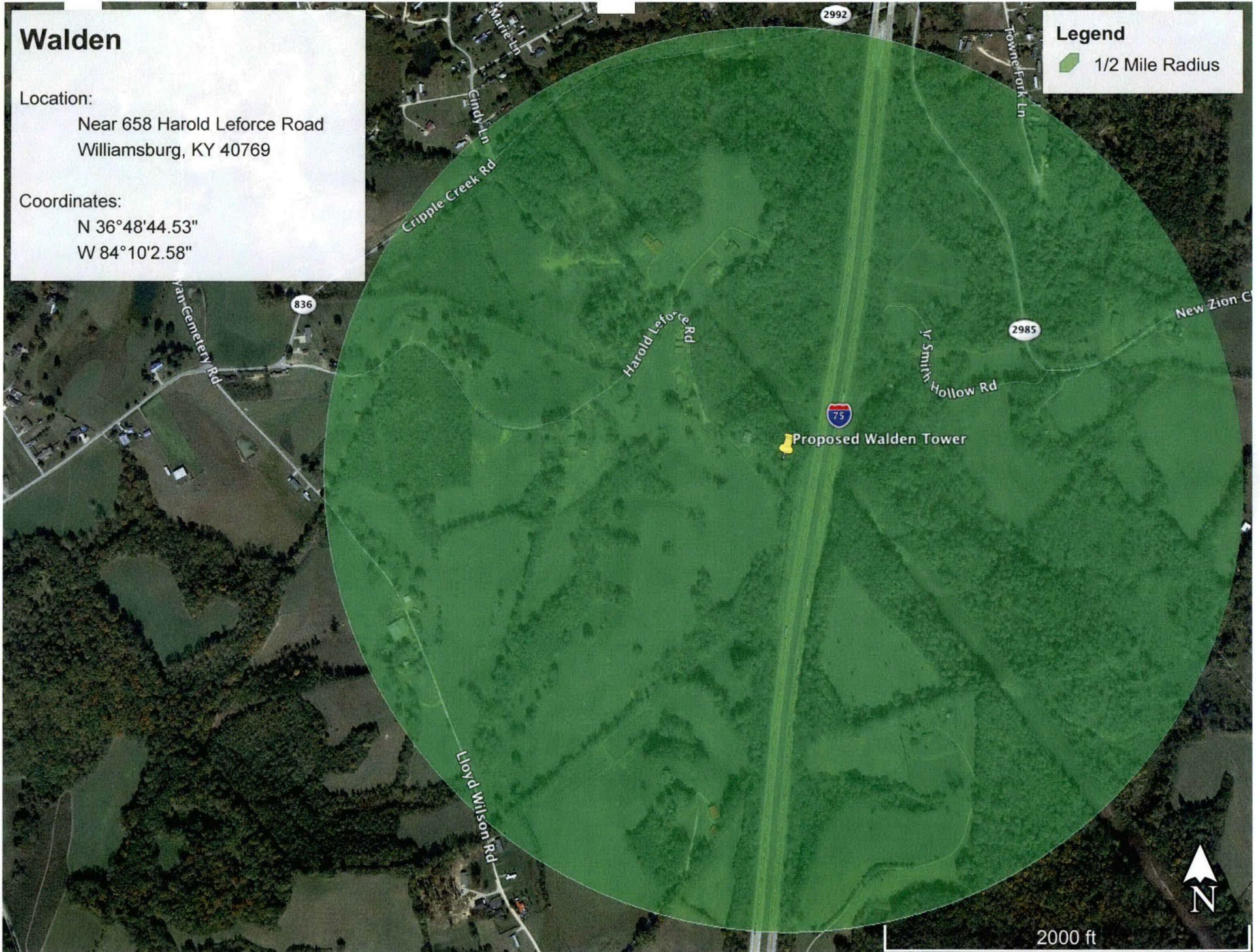
Near 658 Harold Leforce Road
Williamsburg, KY 40769

Coordinates:

N 36°48'44.53"
W 84°10'2.58"

Legend

 1/2 Mile Radius



VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 13, 2018

James and Rose Marie Stephens
658 Harold Leforce Road
Williamsburg, KY 40769

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Sincerely,



Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 13, 2018

Carlos Mayne
429 Harold Leforce Road
Williamsburg, KY 40769

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00095)

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Sincerely,



Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 13, 2018

Arnold and Imogene Steely
1135 Cripple Creek Road
Williamsburg, KY 40769

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Sincerely,



Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 13, 2018

Onni, Jr. and Sonya Meadors
645 Harold Leforce Road
Williamsburg, KY 40769

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Sincerely,



Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

March 13, 2018

Linda Lawson Reynolds
P.O. Box 1356
Williamsburg, KY 40769

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00095)

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

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. 2018-00095 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 13, 2018

Patricia Phillips
170 Lincoln Drive
Williamsburg, KY 40769

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Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

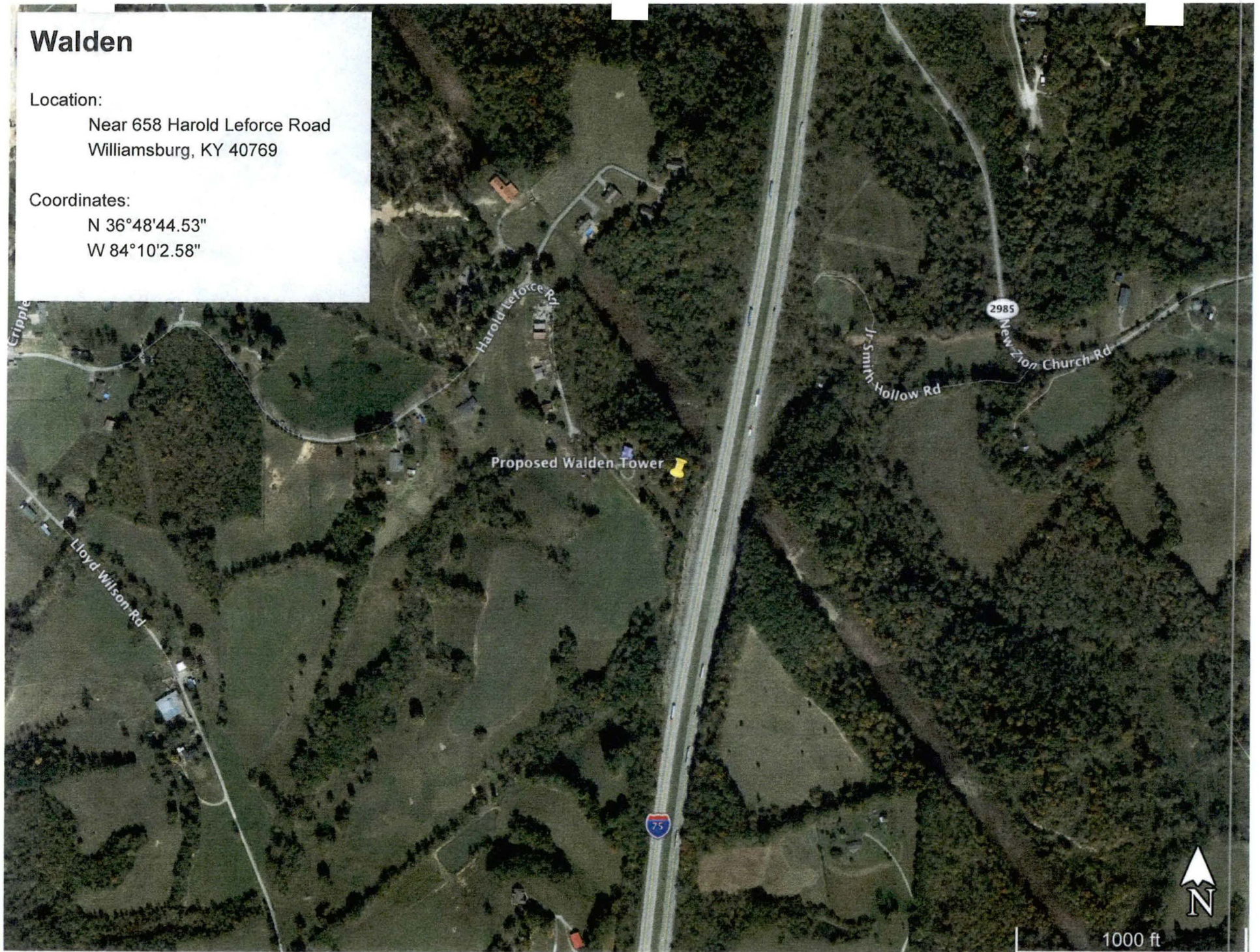
Walden

Location:

Near 658 Harold Leforce Road
Williamsburg, KY 40769

Coordinates:

N 36°48'44.53"
W 84°10'2.58"



Proposed Walden Tower

2985

1000 ft



VIA: U.S. CERTIFIED MAIL

March 13, 2018

Pat White, Jr., Judge Executive
P.O. Box 237
Williamsburg, KY 40769

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2018-00095)

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 Whitley County. The facility will include a 300-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land located near 658 Harold Leforce Road, Williamsburg, Whitley 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 Whitley County.

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

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2018-00095 in your correspondence.

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Sincerely,



Lynn Haney, CPA
Regulatory Compliance Director
Enclosure 1

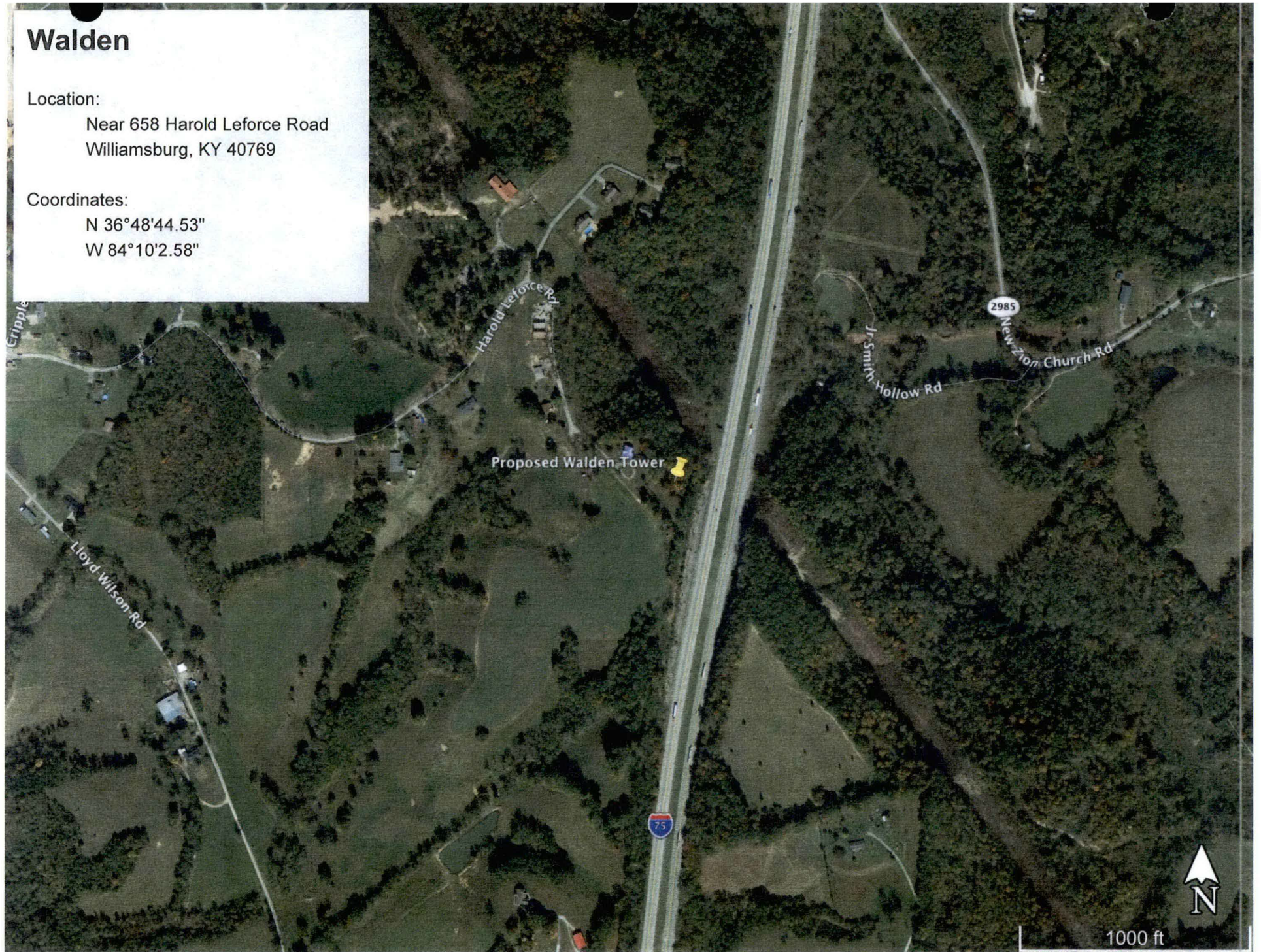
Walden

Location:

Near 658 Harold Leforce Road
Williamsburg, KY 40769

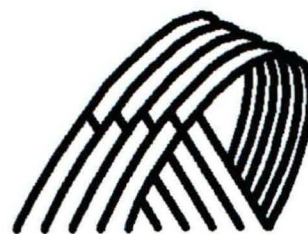
Coordinates:

N 36°48'44.53"
W 84°10'2.58"



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

EAST KENTUCKY
NETWORK



To: News Journal
Attn: Classifieds

From: Raina Helton
Regulatory Compliance Assistant

Email: jbenfield@corbinnewsjournal.com **Date:** March 8, 2018

Re: PUBLIC NOTICE ADVERTISEMENT **Pages:** 1

Please place the following Public Notice Advertisement in the News Journal to be ran on March 14, 2018

PUBLIC NOTICE:

RE: Public Service Commission of Kentucky (CASE NO. 2018-00095)

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 near 658 Harold Leforce Road, Williamsburg, Kentucky. The proposed tower will be a 300 foot self-supporting tower with attached antennas. If you would like to respond to this notice, please contact the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to Case No. 2018-00095.

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

Thank you,

Raina Helton
Regulatory Compliance Assistant

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



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

EAST KENTUCKY ENGINEERING, LLC.

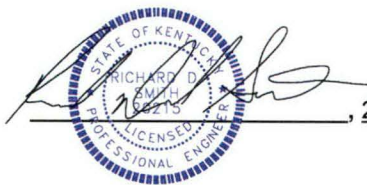
**APPALACHIAN WIRELESS
Geotechnical Investigation on the
Walden Tower Site
Whitley County, Kentucky
EKYENG Project No. 165-000-0058**

PREPARED FOR:

Appalachian Wireless.
101 Technology Trail
Ivel, Kentucky 41642

PREPARED BY:

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



_____, 20215, February 20th, 2018



EAST KENTUCKY ENGINEERING, LLC.

EXECUTIVE SUMMARY

1.0 INTRODUCTION

2.0 PROJECT DESCRIPTION

3.0 SITE DESCRIPTION & HISTORICAL MINING

3.1 GENERAL INFORMATION

3.2 SURFACE MINING

3.3 UNDERGROUND MINING

4.0 FIELD EXPLORATION

4.1 SITE INFORMATION

4.2 BORING DATA

4.3 GROUNDWATER

4.4 SEISMIC SITE CLASSIFICATION

5.0 DISCUSSION AND RECOMMENDATIONS

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5.2 SHALLOW MAT FOUNDATIONS RECOMMENDATIONS

5.3 BURIED UTILITIES

6.0 WARRANTY

6.1 SUBSURFACE EXPLORATION

6.2 LABORATORY AND FIELD TEST

6.3 ANALYSIS AND RECOMMENDATIONS

6.4 CONSTRUCTION MONITORING

6.5 GENERAL

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I – GENERAL

II – ENGINEERED FILL BENEATH STRUCTURES CLEARING AND GRADING

SPECIFICATIONS

III – GUIDELINES FOR EXCAVATIONS AND TRENCHING

IV – GENERAL CONCRETE SPECIFICATIONS

V – DRILLED PIER INSTALLATION

APPENDIX A – BORING LOGS

APPENDIX B – CORE PHOTOGRAPHS

APPENDIX C – SEISMIC DATA

APPENDIX D – MAPS



EAST KENTUCKY ENGINEERING, LLC.

EXECUTIVE SUMMARY

A geotechnical investigation has been performed on the Walden Tower Site, located in Whitley County, Kentucky. This site is readily accessible. A location map is shown in Figure 1 of this report. Four (4) borings were advanced to a maximum depth of 25 ft. The following geotechnical considerations were identified:

- Borings utilized for this study encountered sandy soils to a depth of 4.0 ft. weathered shales and sandstone were found to a depth of 25.0 ft.
- The maximum estimated base elevation of tower mat foundation is 1145.0 ft.
- This site is on accessible rolling terrain.
- **The allowable bearing capacities of the underlying weathered sandstone is estimated at 4 TSF.**
- 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 Walden Property, in Whitley County, Kentucky. A site location map is shown in Figure No. 1.

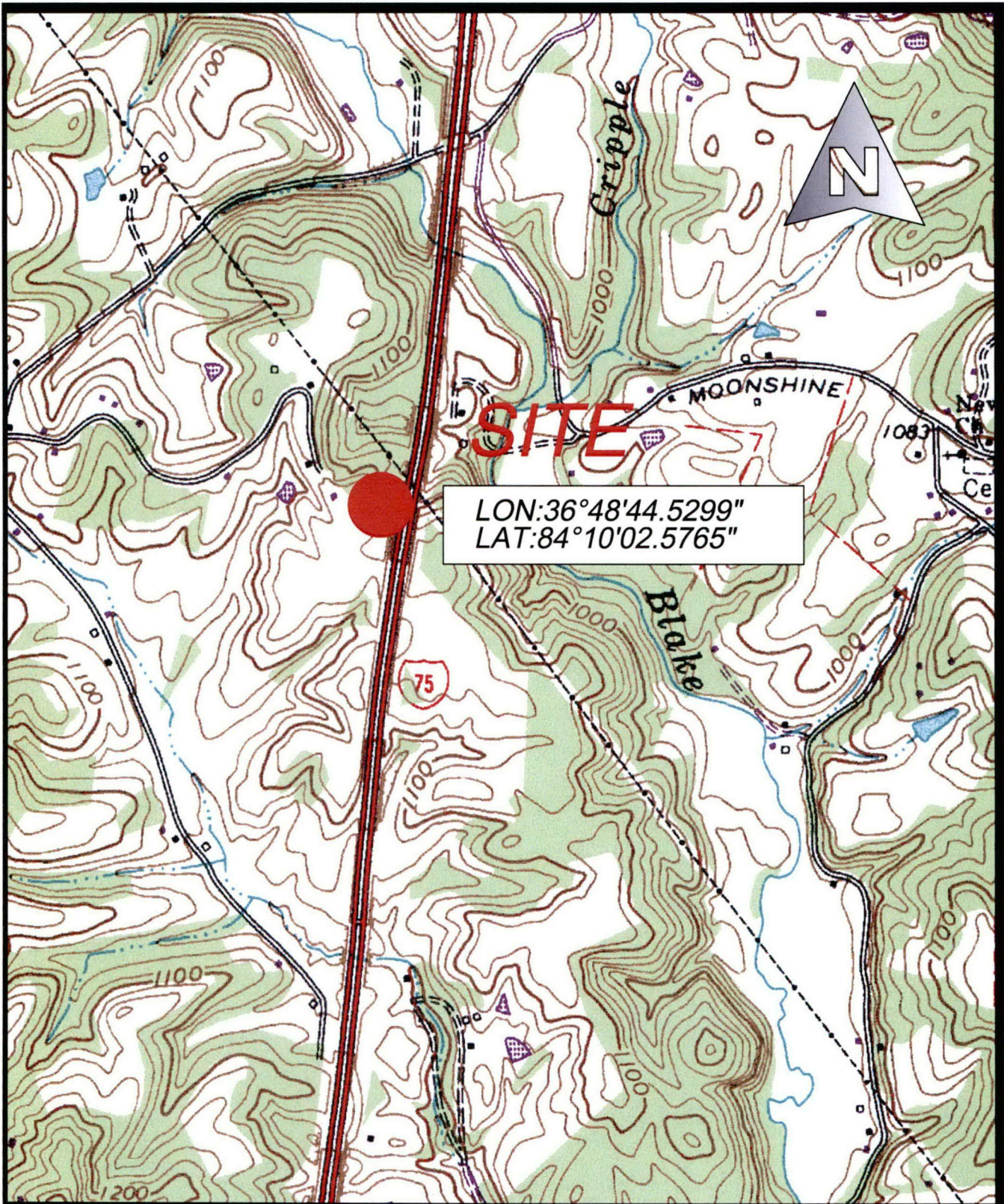
Four (4) borings were advanced to depths of 25.0 ft. Horn and Associates, Inc. provided drilling services to obtain these borings. Logs of the borings along with a boring location plan are included in Appendix A. The purpose of these services is to provide information and geotechnical engineering recommendations 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 40.5 ft. X 40.5 ft. with an estimated base of the tower footer elevation at 1145 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: 2/25/18
Job: 165-058	Scale: 1"=1000'

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

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



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3.0 SITE DESCRIPTION & HISTORICAL MINING

3.1 GENERAL INFORMATION

The site location is on rolling terrain in Whitley County, Kentucky. The current surface elevation is approximately 1151 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 seen that would impact the proposed site.

3.3 UNDERGROUND MINING

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

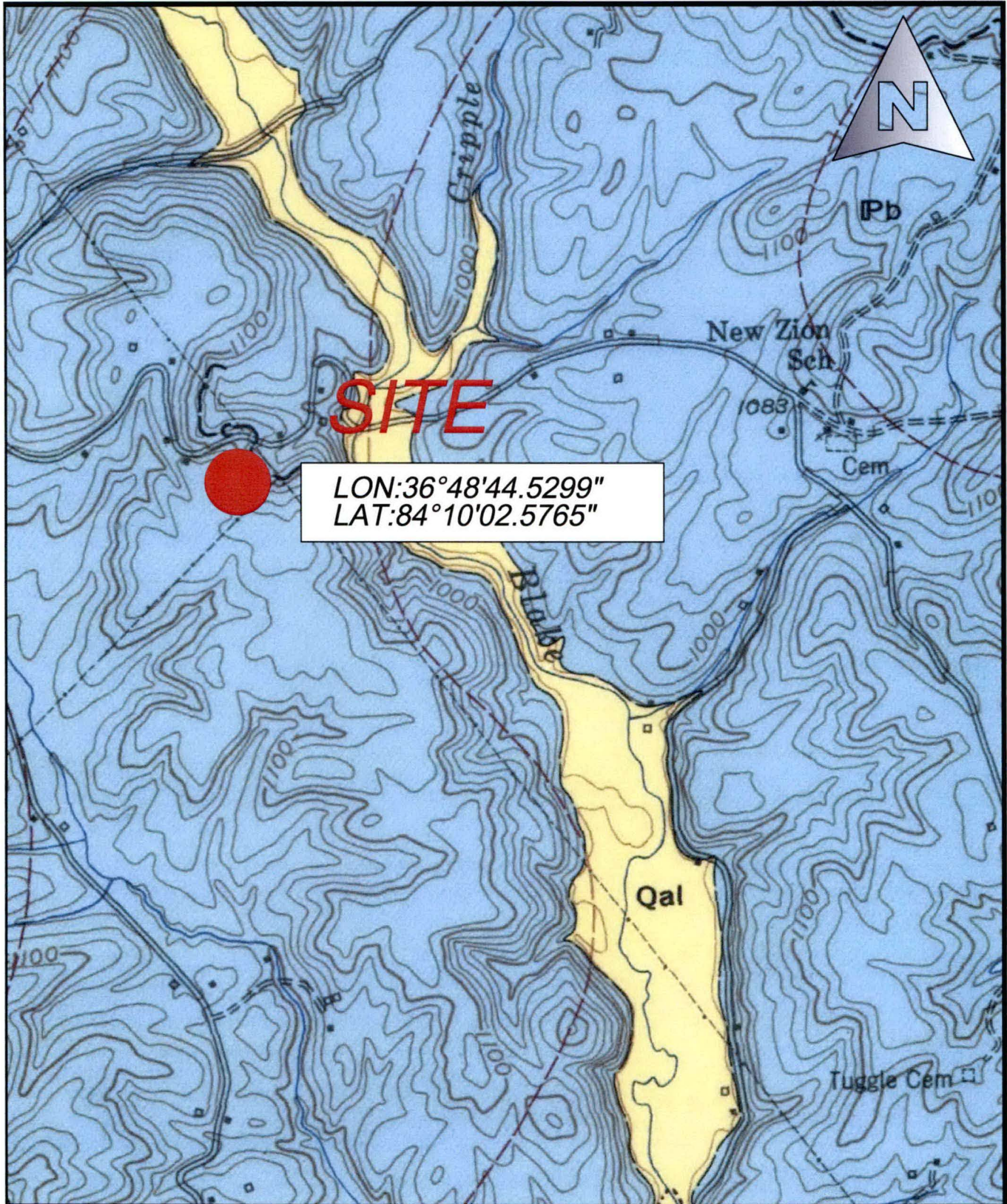
4.0 FIELD EXPLORATION

4.1 SITE INFORMATION

The proposed site is located on rolling terrain in Whitley County, Kentucky. The site lies within the Wofford 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 40.5 ft. X 40.5 ft. footer for the purpose of this report.

4.2 BORING DATA

Four (4) borings were made in the relative positions shown on the Site Map in Appendix D. The boring logs and resulting data are included in Appendix A. These borings were made with a track mounted boring rig using hollow-stem augers and employing standard penetration resistance methods (ASTM D-1586,



LON:36°48'44.5299"
 LAT:84°10'02.5765"

Drawn: RDS	Date: 2/25/18
Job: 165-058	Scale: 1"=1000'

Appalachian Wireless
 GQ Quadrangle
 Location Map
 Walden Tower Site
 Figure No. 2

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which includes 140-pound hammer, 30-inch drop, and two-inch-O.D. split-spoon sampler) at maximum depth intervals of five feet or at major changes in stratum, whichever occurred first. The disturbed split-spoon samples were visually classified, logged, sealed in moisture-proof jars, and taken to the EKYENG laboratory for study. The depths where these "A"-type split-spoon samples were collected are noted on the boring logs. The results of the natural moisture contents by boring and interval are shown in Table 2.

TABLE 2

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

SAMPLE NO.	DEPTH INCREMENT, (FT.)	NATURAL MOISTURE CONTENT, %
B1	2.0 – 3.3	7.9
B2	1.5 – 3.0	10.9
B2	4.0 – 4.7	6.5
B3	1.5 – 2.9	9.7
B4	2.0 – 3.9	8.6

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



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TABLE NO. 3
STANDARD PENETRATIONS

SAMPLE NO.	DEPTH INCREMENT	BLOW COUNT / RQD *	DESCRIPTION
B-1	2.0 – 3.9	5 – 19 – 35	Clays w/ SHs
B-1	3.9 – 8.9	50 *	Sandstone Weathered
B-1	8.9 -15.0	0*	SS/Shale Interbedded
B-1	15.0 – 25.0	40*	SS/Shale Interbedded
B-2	1.5 – 4.0	1 - 3 - 5	Clays w/ SHs
B-2	4.0 – 4.7	35 – 50/2	SS. Weathered
B-2	4.7 – 10.0	16*	SS. Weathered
B-2	10.0 – 15.0	25*	SS./Sh interbedded
B-2	15.0 – 25.0	15*	SS./Sh interbedded
B-3	1.5 – 2.9	4 – 27 – 50/4	Clays w/SHs
B-3	2.9 – 10.0	50*	Weathered
B-3	10.0 – 15.0	39*	SS/Shale Interbedded
B-3	15.0 – 25.0	44*	SS/Shale interbedded
B-4	2.0 – 3.6	9/24/50/3	Clays W/SHs
B-4	3.6 -10.0	47*	Sandstone Weathered
B-4	10.0 – 15.0	47*	SS/Shale interbedded
B4	15.0 – 25.0	100%	SS/Shale inter



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The borings encountered topsoils to a maximum depth of 4 ft. The four borings were extended by "NX" size rock core that was taken to confirm the presence of rock at the site and to determine its physical characteristics. The core was made with "NX" size diamond coring equipment. These borings are each approximately 25.0 ft. in depth. The position at which the core was taken is indicated on the boring logs and shown on the boring location map in Appendix D. 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 RQD of more than 75%, low quality of less than 50%. Rock quality designation (RQD) has several definitions.

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, an S_{Ds} coefficient of 0.164 g was calculated, and an S_{D1} coefficient of 0.068 g was also calculated for design based on the aforementioned building code.



5.0 DISCUSSION AND RECOMMENDATIONS

5.1 GENERAL

The structure will be a self-supporting free standing 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 sandy soils. The proposed foundation is recommended to be placed in the sandstone formation as shown on the attached drawing in Appendix D. **The allowable bearing capacity for this weathered sandstone is 4 TSF.**

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

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



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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



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

6.2 LABORATORY AND FIELD TESTS

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

6.3 ANALYSIS AND RECOMMENDATIONS

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

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

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

6.4 CONSTRUCTION MONITORING



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

6.5 GENERAL

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

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

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



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



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SPECIFICATIONS

I – GENERAL

1.0 STANDARDS AND DEFINITIONS

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

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

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

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

1.2 DEFINITIONS

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

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

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

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

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

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



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2.0 GENERAL CONDITIONS

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

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

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

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

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

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



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II - ENGINEERED FILL BENEATH STRUCTURES CLEARING AND GRADING SPECIFICATIONS

1.0 GENERAL CONDITIONS

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

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

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

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

2.0 SUBSURFACE CONDITIONS

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

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

3.0 SITE PREPARATION

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

All cut and fill areas shall be properly stripped. Topsoil will be removed to its full depth and stockpiled for use in finish grading. Any rubbish, organic and other objectionable soils, and other deleterious material shall be disposed of off the site, 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 ASTH Specification A305. Welded wire mesh shall conform to W4 x W4 size and be of Grade 60 steel.
- E. Admixtures: Except as herein noted, admixtures shall not be used.
 1. Under adverse weather conditions only retarding or accelerating agents containing no chloride may be used.
 2. Air-Entraining Agent shall be used for all concrete will give an entrained air range of not less than 4 percent but no greater than 8 percent in the finished product. Under no circumstances shall the air-entraining be interground with cement.
 3. Approval in writing shall be required from Owner prior to the use of any admixture.

4.0 FORM

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

5.0 INSERTS, ETC.

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



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6.0 REINFORCEMENT

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

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

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

7.0 CONCRETE

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

8.0 DEPOSITING CONCRETE

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

1. Remove from space to be occupied by concrete all debris, including snow, ice, and water unless otherwise permitted by Owner.
 2. Provide diversion, satisfactory to Owner, of any flow of water to an excavation to avoid washing the freshly deposited concrete.
 3. Coat the forms prior to placing of reinforcing steel as required in form work.
 4. Secure firmly in correct position, all reinforcement and other items to be encased and remove therefrom all coating including ice and frost.
- B. Transportation of Concrete from Batch Plant: The concrete shall be delivered to the site of the work and discharge shall be completed within 90 minutes after addition of the cement and water to the aggregates. Each batch of concrete delivered at the job site shall be



EAST KENTUCKY ENGINEERING, LLC.

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

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



EAST KENTUCKY ENGINEERING, LLC.

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

9.0 CURING

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

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

10.0 CONCRETE FINISHES

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

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

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



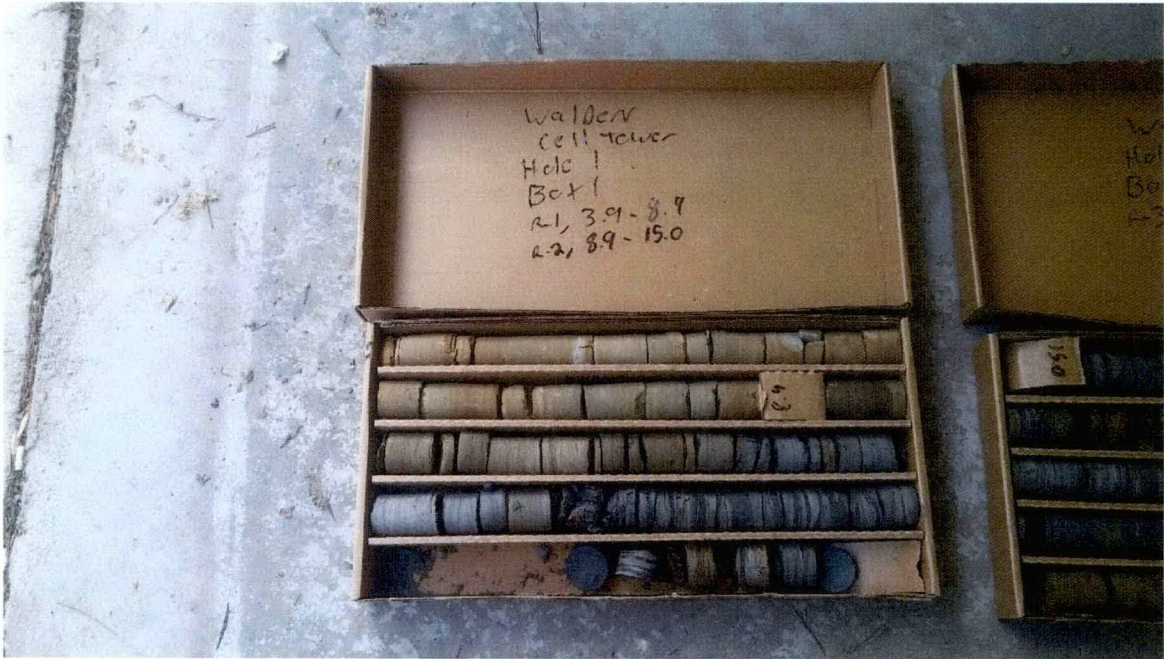
EAST KENTUCKY ENGINEERING, LLC.

APPENDIX A BORING LOGS



EAST KENTUCKY ENGINEERING, LLC.

APPENDIX B CORE PHOTOGRAPHS



Boring 1 – 3.9 ft. to 15.0 ft.



B1 – 15.0 ft. to 25.0 ft.



B2 - 4.7 ft to 15 ft.



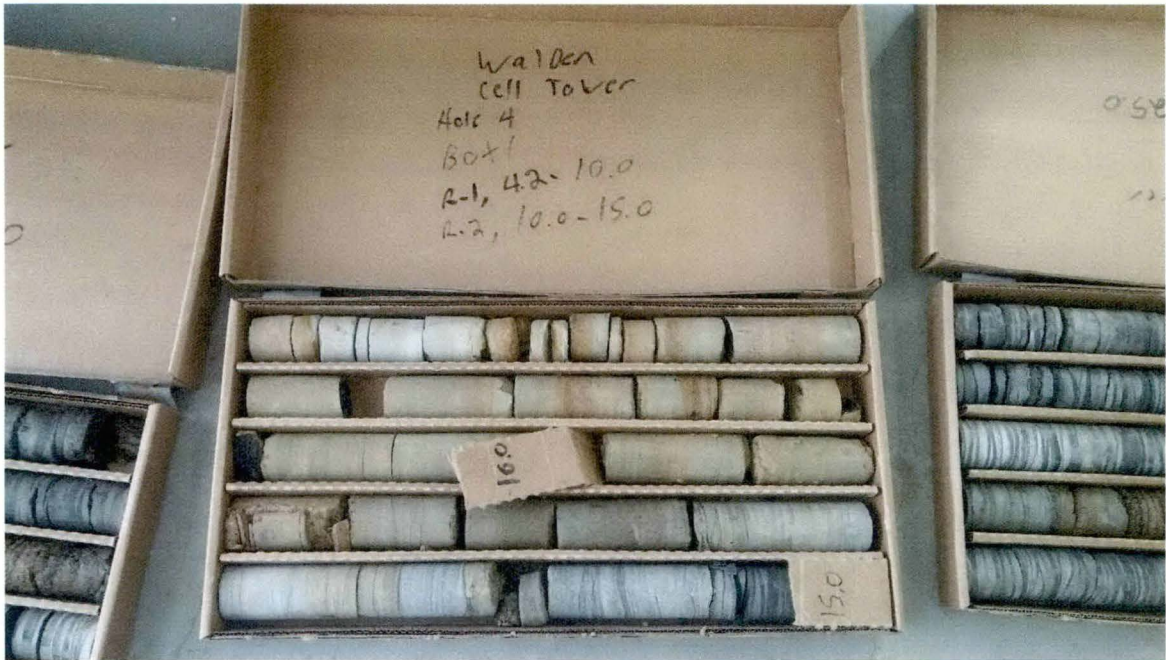
B2- 15.0 ft. to 24.2 ft.



B3 - 3.7 ft. to 15.0 ft.



B3 - 15.0 ft. to 25.0 ft.



B4 - 4.2 ft. to 15.0 ft.



B4 - 15.0 ft. to 25.0 ft.



EAST KENTUCKY ENGINEERING, LLC.

APPENDIX C SEISMIC DATA

USGS Design Maps Summary Report

User-Specified Input

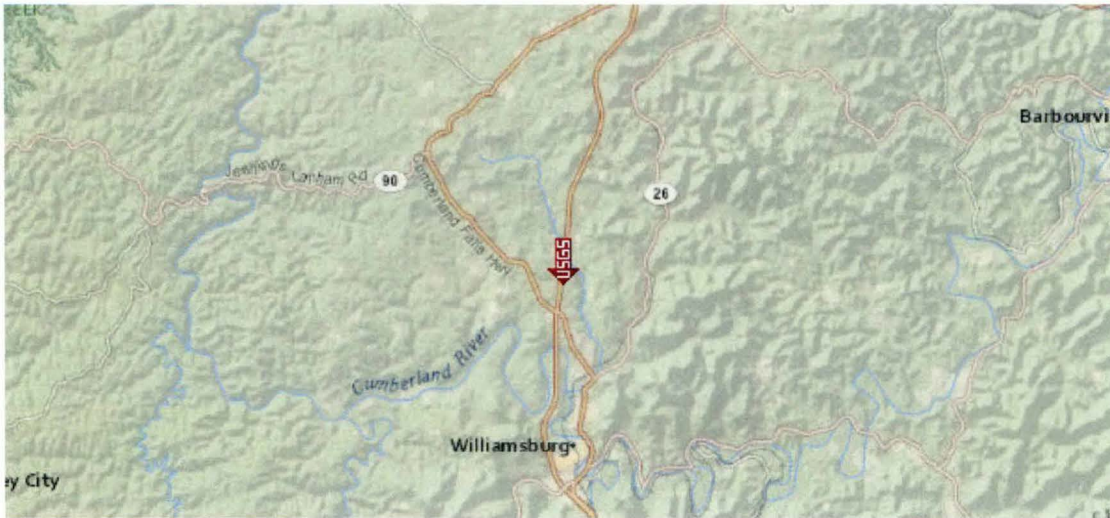
Report Title Walden Tower Site
Fri February 23, 2018 19:42:29 UTC

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

Site Coordinates 36.81237°N, 84.16738°W

Site Soil Classification Site Class B – "Rock"

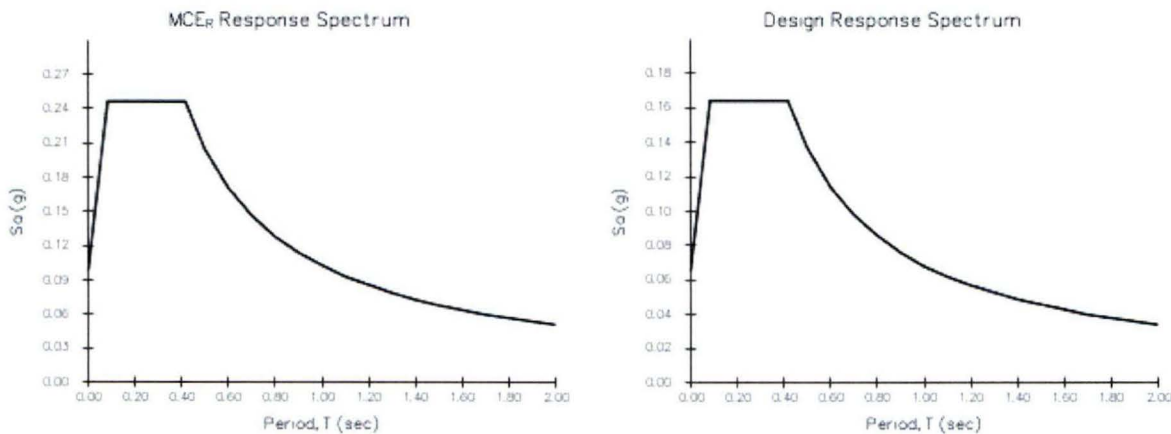
Risk Category IV (e.g. essential facilities)



USGS-Provided Output

$S_s = 0.246 \text{ g}$	$S_{MS} = 0.246 \text{ g}$	$S_{DS} = 0.164 \text{ g}$
$S_1 = 0.103 \text{ g}$	$S_{M1} = 0.103 \text{ g}$	$S_{D1} = 0.068 \text{ g}$

For information on how the S_s and S_1 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.

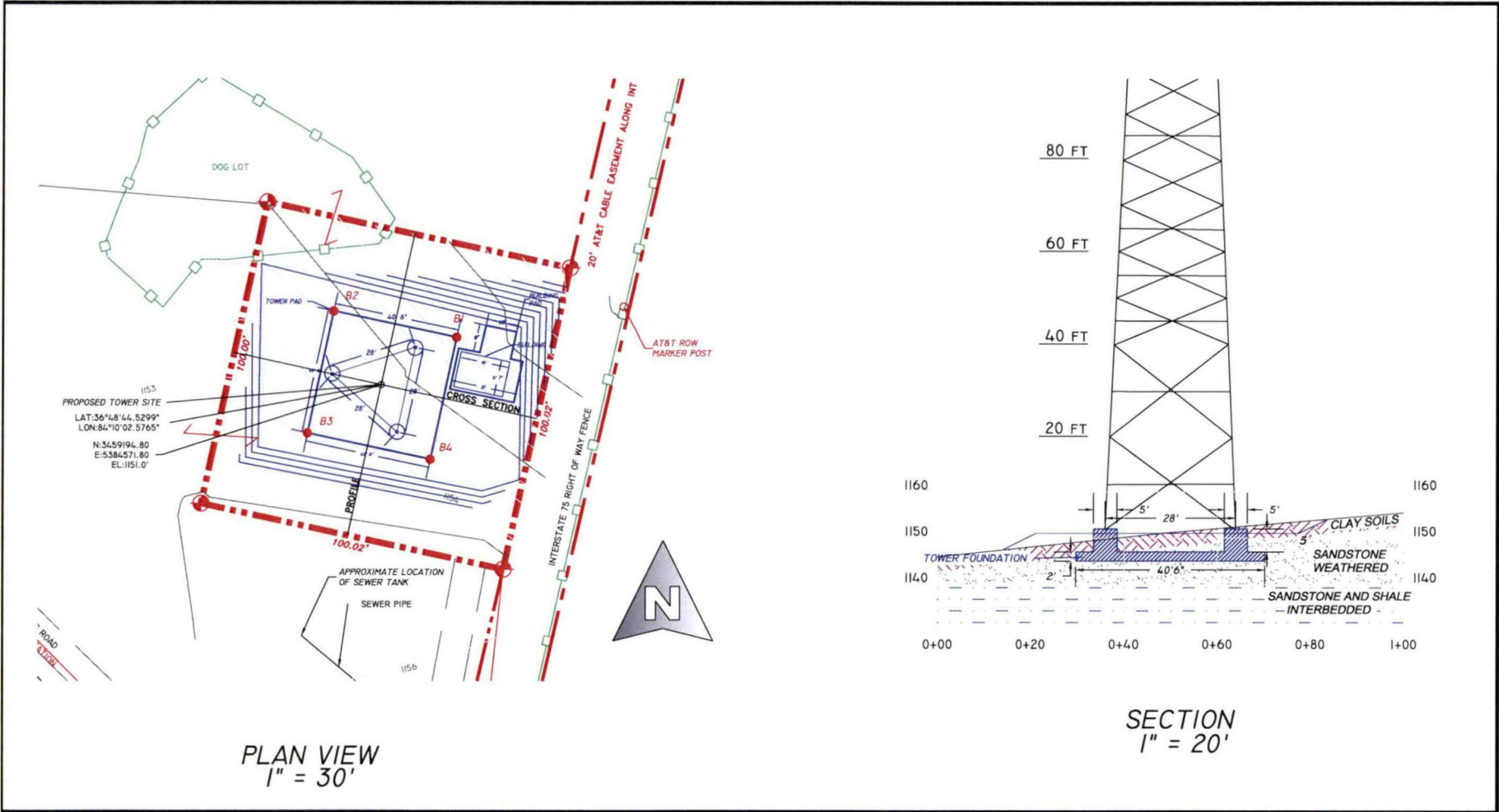


Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the accuracy of the data contained therein. This tool is not a substitute for technical subject-matter knowledge.



EAST KENTUCKY ENGINEERING, LLC.

APPENDIX D	MAPS
------------	------



PLAN VIEW
1" = 30'

SECTION
1" = 20'

East Kentucky Engineering, LLC

Hazard Location
230 Swartz
Hazard, KY 41701
(806) 551-1050
Email: rdsekyeng@outlook.com



0' 30' 60'	
Drawn by: RDS	Date: 2-25-2018
Job #: 165-0058	Scale: NOTED
File Location:	



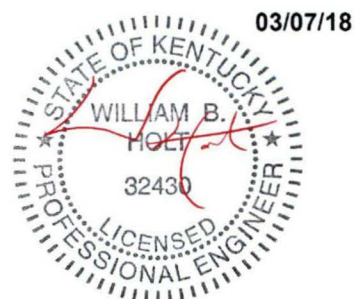
APPALACHIAN
WIRELESS
WALDEN TOWER
WHITLEY COUNTY KENTUCKY



World Tower
COMPANY, INC.

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

**300' MODEL WSST TOWER
FOR: APPALACHIAN WIRELESS
SITE: WALDEN
WHITLEY COUNTY, KY
DESIGN PACKAGE**

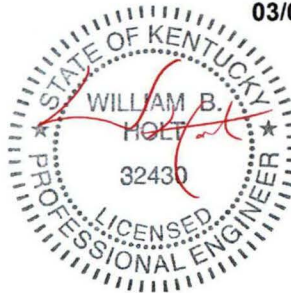


Fabrication, Installation, and Maintenance of TV, AM, FM, & Wireless Communications Towers

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.

03/07/18

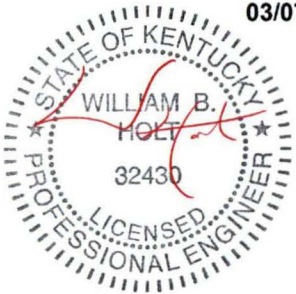


WORLD TOWER

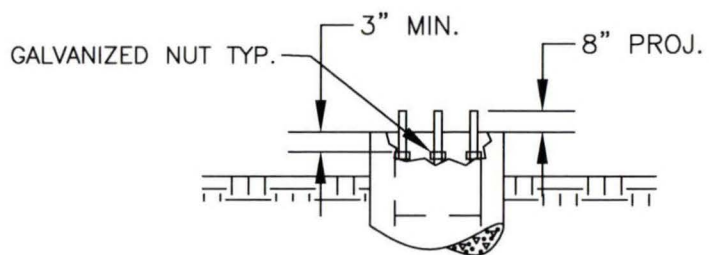
TITLE:

300' MODEL WSST TOWER
FOR: APPALACHIAN WIRELESS
SITE: WALDEN
WHITLEY COUNTY, KY

SCALE	DWN.	LKG	CKD.	DATE 3-6-18
FILE	DWG. NO.			Q18119N

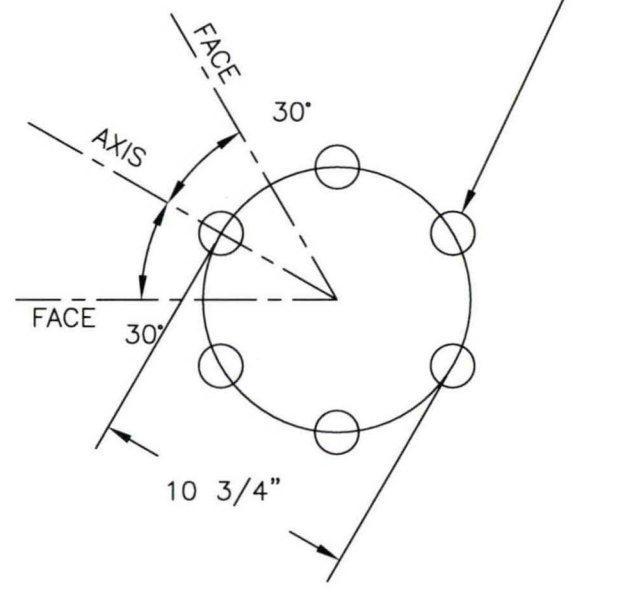
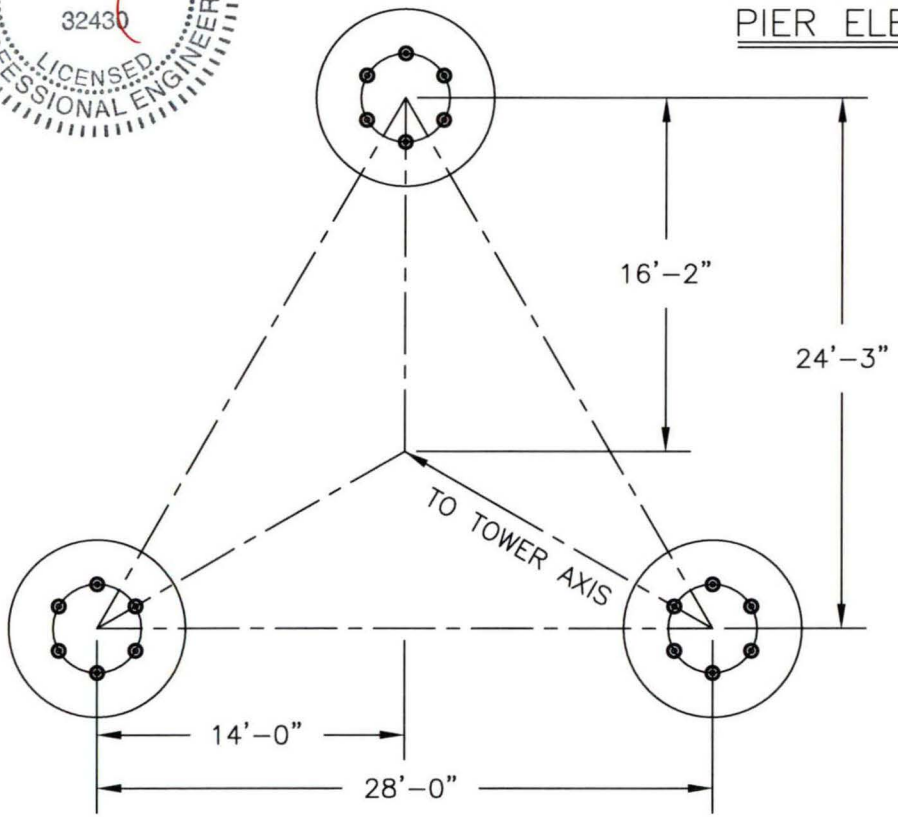


03/07/18



PIER ELEVATION

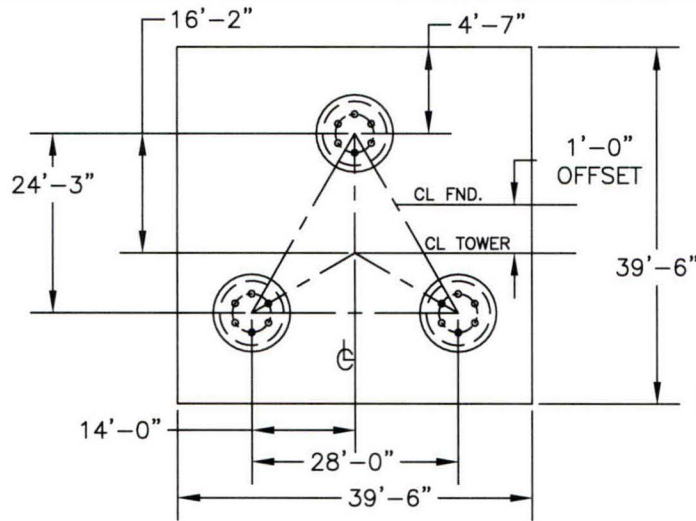
ANCHOR BOLTS
 (6) 1 1/2" ϕ X 72"
 ASTM F1554-105
 EQUALLY SPACED WITH
 TOP TEMPLATE AND
 EMBEDDED PLATE



TITLE:
 300' MODEL WSST TOWER
 FOR: APPALACHIAN WIRELESS
 SITE: WALDEN
 WHITLEY COUNTY, KY

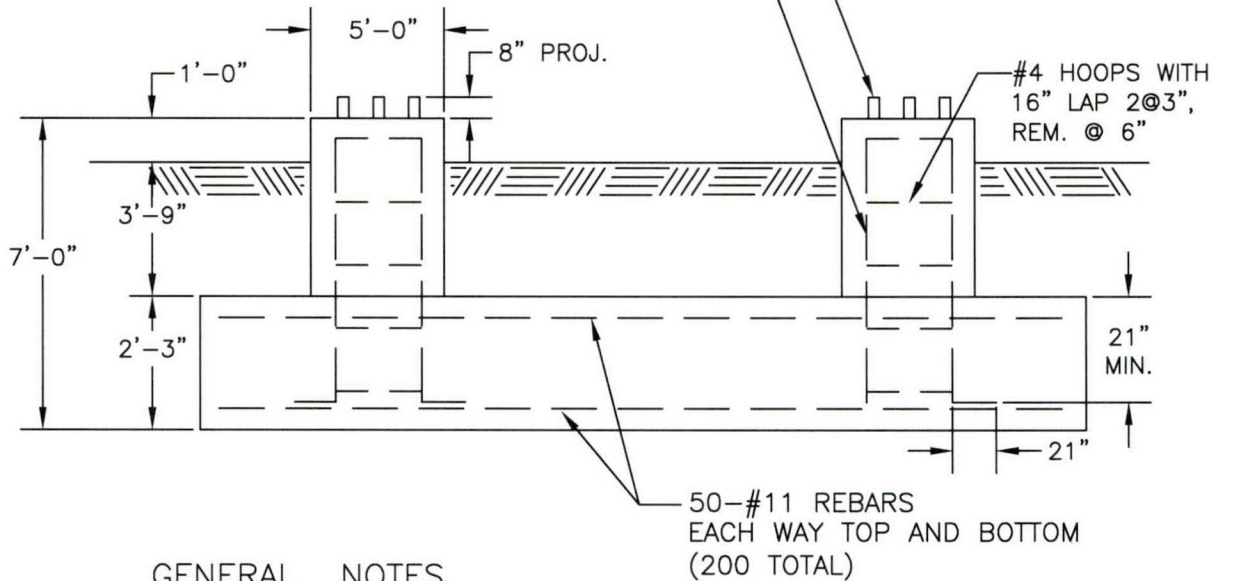
WORLD TOWER

SCALE	NONE	DWN.	LKG	CKD.	DATE	3-6-18
FILE				DWG. NO.	Q18119AB	



140.4 CU. YDS.
CONCRETE REQ'D.

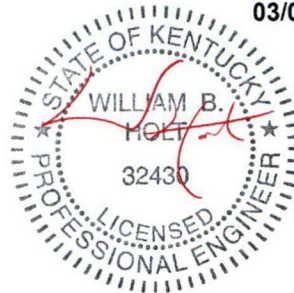
BASE REACTIONS	
OTM:	16314.0 FT. KIPS
COMP.	711.0 KIPS
UPLIFT	610.0 KIPS
SHEAR (3 LEGS)	96.0 KIPS
WT. NO ICE	116.0 KIPS
WT. 3/4" ICE	338.0 KIPS



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 DESIGN IS BASED ON CUSTOMER SUPPLIED SOIL DATA FROM EAST KENTUCKY ENGINEERING, LLC. PROJECT NUMBER 165-000-0058 DATED FEBRUARY 20, 2018.
5. FOUNDATION TO BEAR ON SANDSTONE LAYER AT AN APPROXIMATE DEPTH OF 4'-0"

03/07/18



TITLE: FOUNDATION DETAIL
300' WSST TOWER
FOR: APPALACHIAN WIRELESS
SITE: WALDEN
WHITLEY COUNTY, KY

WORLD TOWER

SCALE NONE DWN. LKG CKD. DATE 3-6-18
FILE DWG. NO. Q18119F



Notice of Proposed Construction or Alteration - Off Airport

Add a new Case Off Airport - Desk Reference Guide V_2017.4.0

Add a New Case Off Airport for Wind Turbines - Met Towers - Desk Reference Guide V_2017.4.0

Project Name: EAST -000447751-18 **Sponsor:** East Kentucky Network, LLC

Details for Case : Walden (Wofford)

[Show Project Summary](#)

Case Status

ASN: 2018-ASO-86-OE
Status: Accepted

Date Accepted: 01/03/2018
Date Determined:
Letters: None
Documents: 01/03/2018 Walden (Wofford)...

Public Comments: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
if Temporary : Months: Days:
Work Schedule - Start: 02/10/2018
Work Schedule - End: 02/15/2018

Structure Summary

Structure Type: Tower
Structure Name: Walden (Wofford)
FDC NOTAM:
NOTAM Number:
FCC Number:
Prior ASN:

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

State Filing: Filed with State

Structure Details

Latitude: 36° 48' 44.52" N
Longitude: 84° 10' 2.57" W
Horizontal Datum: NAD83
Site Elevation (SE): 1151 (nearest foot) PASSED
Structure Height (AGL): 310 (nearest foot)
Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*

Proposed Frequency Bands

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

[Add Specific Frequency](#)

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

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

Requested Marking/Lighting: White-medium intensity

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other :

Nearest City: Wofford
Nearest State: Kentucky

Description of Location: Walden site, approx. 2.8 miles NW of Wofford (Whitley), KY
On the Project Summary page upload any certified survey.

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

[Previous](#) [Back to Search Result](#) [Next](#)



KENTUCKY AIRPORT ZONING COMMISSION

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

APPLICANT (name) East Kentucky Network, LLC c/o LLGS		PHONE 703-584-8667	FAX 703-584-8692	KY AERONAUTICAL STUDY #	
ADDRESS (street) 8300 Greensboro Dr, #1200		CITY Tysons		STATE VA	ZIP 22102
APPLICANT'S REPRESENTATIVE (name) Ali Kuzehkanani		PHONE 703-584-8667	FAX 703-584-8692		
ADDRESS (street) 8300 Greensboro Dr, #1200		CITY Tysons		STATE VA	ZIP 22102
APPLICATION FOR <input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing				WORK SCHEDULE	
DURATION <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary (months days)				Start 02/15/18 End 02/20/18	
TYPE <input type="checkbox"/> Crane <input type="checkbox"/> Building <input checked="" type="checkbox"/> Antenna Tower <input type="checkbox"/> Power Line <input type="checkbox"/> Water Tank <input type="checkbox"/> Landfill <input type="checkbox"/> Other		MARKING/PAINTING/LIGHTING PREFERRED <input type="checkbox"/> Red Lights & Paint <input checked="" type="checkbox"/> White- medium intensity <input type="checkbox"/> White- high intensity <input type="checkbox"/> Dual- red & medium intensity white <input type="checkbox"/> Dual- red & high intensity white <input type="checkbox"/> Other			
LATITUDE 36°48'44.52"		LONGITUDE 84°10'02.57"		DATUM <input checked="" type="checkbox"/> NAD83 <input type="checkbox"/> NAD27 <input type="checkbox"/> Other	
NEAREST KENTUCKY City Wofford County Whitley			NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT Williamsburg-Whitley County Airport		
SITE ELEVATION (AMSL, feet) 1151		TOTAL STRUCTURE HEIGHT (AGL, feet) 310		CURRENT (FAA aeronautical study #)	
OVERALL HEIGHT (site elevation plus total structure height, feet) 1461				PREVIOUS (FAA aeronautical study #)	
DISTANCE (from nearest Kentucky public use or Military airport to structure) 2.1 mi				PREVIOUS (KY aeronautical study #)	
DIRECTION (from nearest Kentucky public use or Military airport to structure) SW					
DESCRIPTION OF LOCATION (Attach USGS 7.5 minute quadrangle map or an airport layout drawing with the precise site marked and any certified survey.) Walden sites, approx. 2.8 miles NW of Wofford (Whitley), KY					
DESCRIPTION OF PROPOSAL A new 300' tower with top-mounted antennas (overall height of 310' AGL)					
FAA Form 7460-1 (Has the "Notice of Construction or Alteration" been filed with the Federal Aviation Administration?) <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes, when? 01/03/18					
CERTIFICATION (I hereby certify that all the above entries, made by me, are true, complete, and correct to the best of my knowledge and belief.)					
PENALTIES (Persons failing to comply with KRS 183.861 to 183.990 and 602 KAR 050 are liable for fines and/or imprisonment as set forth in KRS 183.990(3). Noncompliance with FAA regulations may result in further penalties.)					
NAME Ali Kuzehkanani	TITLE Dir of Engineering	SIGNATURE 		DATE 01/03/18	
COMMISSION ACTION <input type="checkbox"/> Chairperson, KAZC <input type="checkbox"/> Administrator, KAZC					
<input type="checkbox"/> Approved	SIGNATURE		DATE		
<input type="checkbox"/> Disapproved					

Driving Directions for Walden

Beginning in Williamsburg, Kentucky beside the Whitley County Courthouse at the intersection of North 2nd St. and Main St. drive through the traffic light to the intersection of KY 296 East and 25W. Staying on 25W drive 5.3 miles until you see 836 North on your right. Take 836 North and drive .5 miles to Harold Leforce Road. Turn right and drive .6 tenths of a mile to the end of Harold Leforce Road (signs will be posted). Drive approximately 500' (signs will be 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

812

RECEIVED IN THE OFFICE OF
KAY SCHWARTZ
WHITLEY COUNTY CLERK
BY KS
228617
2018 JAN -3 PM 3:36

MEMORANDUM OF LEASE

THIS MEMORANDUM OF LEASE is made and entered into on this 20th day of December, 2017, with a commencement date of January 1, 2018, 2018 (the "Commencement Date"), by and between **JAMES C. STEPHENS** and **ROSE MARIE STEPHENS**, husband and wife, with an address of 658 Harold Leforce Road, Williamsburg, Kentucky 40769, hereinafter referred to as "**Lessors**", 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, Lessors leased to Lessee, and Lessee has leased from Lessors that certain tract of real estate located in Whitley County, Kentucky, and being a portion of the same land conveyed to Lessors by Deed dated July 18, 1990, and recorded on July 18, 1990, in Deed Book 341, Page 426, in the Whitley 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 Lessors have also granted unto Lessee full and complete rights of ingress, egress and regress to and from the Premises over any property owned by Lessors 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 Lessors 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, Lessors and Lessee have caused their names to be signed hereto, as of the date(s) indicated below.

LESSORS:


JAMES C. STEPHENS


ROSE MARIE STEPHENS

814

COMMONWEALTH OF KENTUCKY
COUNTY OF Whitley

The foregoing instrument was acknowledged before me on this 20th day of December, 2017, by James C. Stephens and Rose Marie Stephens, Lessors.

Raina D. Helton
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 21st day of December, 2017, by W.A. Gillum, CEO/General Manager of East Kentucky Network, LLC d/b/a Appalachian Wireless, Lessee.

Raina D. Helton
Notary Public

My Commission Expires Feb 6, 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
James C. & Rose Marie Stephens
658 Harold Leforce Road
Williamsburg, KY 40769
December 12, 2017

815

A portion of the property lying in Whitley County, KY and on the waters of the Blake Fork Creek, on New Zion Road near Goldbug. Being a part of the same property conveyed to James C. & Rose Marie Stephens, from from William C. & Alma Meadows by deed dated July 18, 1990 and of record in Deed Book 341, page 426, in the Office of the Whitley County Clerk and further described as follows:

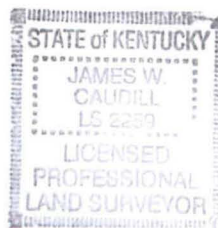
Lot 1A

Beginning at a set iron pin with cap marked LS#2259 at the southeast corner of proposed lot, said point being North 06 deg 02 min 33 sec East, 172.64 feet from a found iron pin with cap at fence corner, corner to Carlos Mayne Property; thence leaving the AT&T ROW and severing the property of James C. & Marie Stephens (Book 341 Page 426), North 77 deg 42 min 13 sec West, 100.02 feet to a set iron pin with cap marked ls2259; North 12 deg 18 min 40 sec East, 100.00 feet to a set iron pin with cap marked LS#2259; South 77 deg 42 min 56 sec East, 99.98 feet to a set iron pin with cap marked ls2259 on the AT&T ROW; thence with the AT&T ROW South 12 deg 16 min 59 sec West, 100.02 feet to a set iron pin with cap marked ls2259 which is also the point of beginning. Containing a calculated area of 10001.5 square feet, or .23 acres.

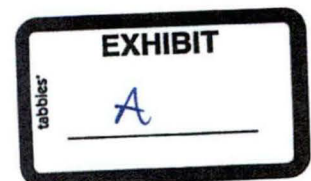
Also access to the above lot is provided along the southwest property line between James C. & Rose Marie Stephens and Carlos Mayne and on the east along the property line between James C. & Rose Marie Stephens and the 20' wide AT&T Cable Right of Way. Should this access become blocked or impassable for any reason, alternative access right of way will be provided to lot 1A.

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 preformed by James W. Caudill, LS2259, on December 12, 2017.

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

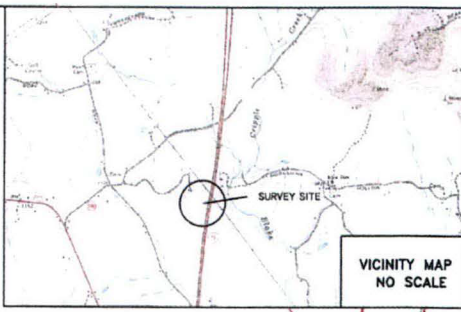


James W. Caudill
James W. Caudill, PLS #2259

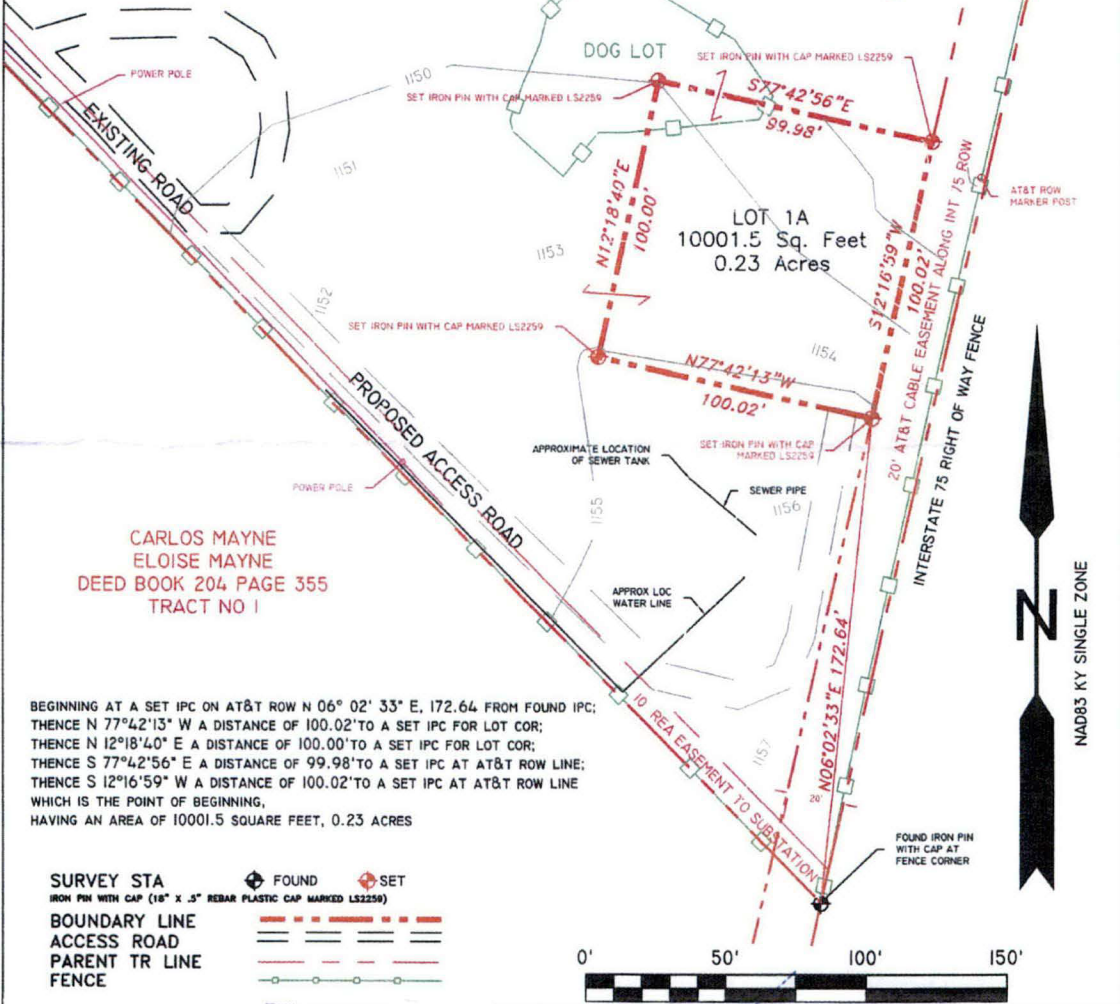
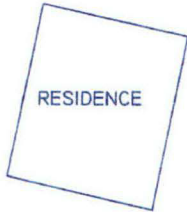


816

JAMES C STEPHENS
ROSE MARIE STEPHENS
DEED BOOK 341 PAGE 426
TRACT NO 1



STATE OF KENTUCKY, COUNTY OF WHITLEY, SCT.
I, Kay Schwartz, Clerk of Whitley County do certify that the foregoing instrument along with this recording certificate have been lodged in my office for record on this 3rd day of January 2018 at 3:30 P.M. in lease Book 92 at Page 812-816 Given under my hand this 3rd day of January 2018
KAY SCHWARTZ, CLERK BY Kay Schwartz D.C.



CARLOS MAYNE
ELOISE MAYNE
DEED BOOK 204 PAGE 355
TRACT NO 1

BEGINNING AT A SET IPC ON AT&T ROW N 06° 02' 33" E, 172.64 FROM FOUND IPC;
THENCE N 77°42'13" W A DISTANCE OF 100.02' TO A SET IPC FOR LOT COR;
THENCE N 12°18'40" E A DISTANCE OF 100.00' TO A SET IPC FOR LOT COR;
THENCE S 77°42'56" E A DISTANCE OF 99.98' TO A SET IPC AT AT&T ROW LINE;
THENCE S 12°16'59" W A DISTANCE OF 100.02' TO A SET IPC AT AT&T ROW LINE WHICH IS THE POINT OF BEGINNING,
HAVING AN AREA OF 10001.5 SQUARE FEET, 0.23 ACRES



EXHIBIT
B

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

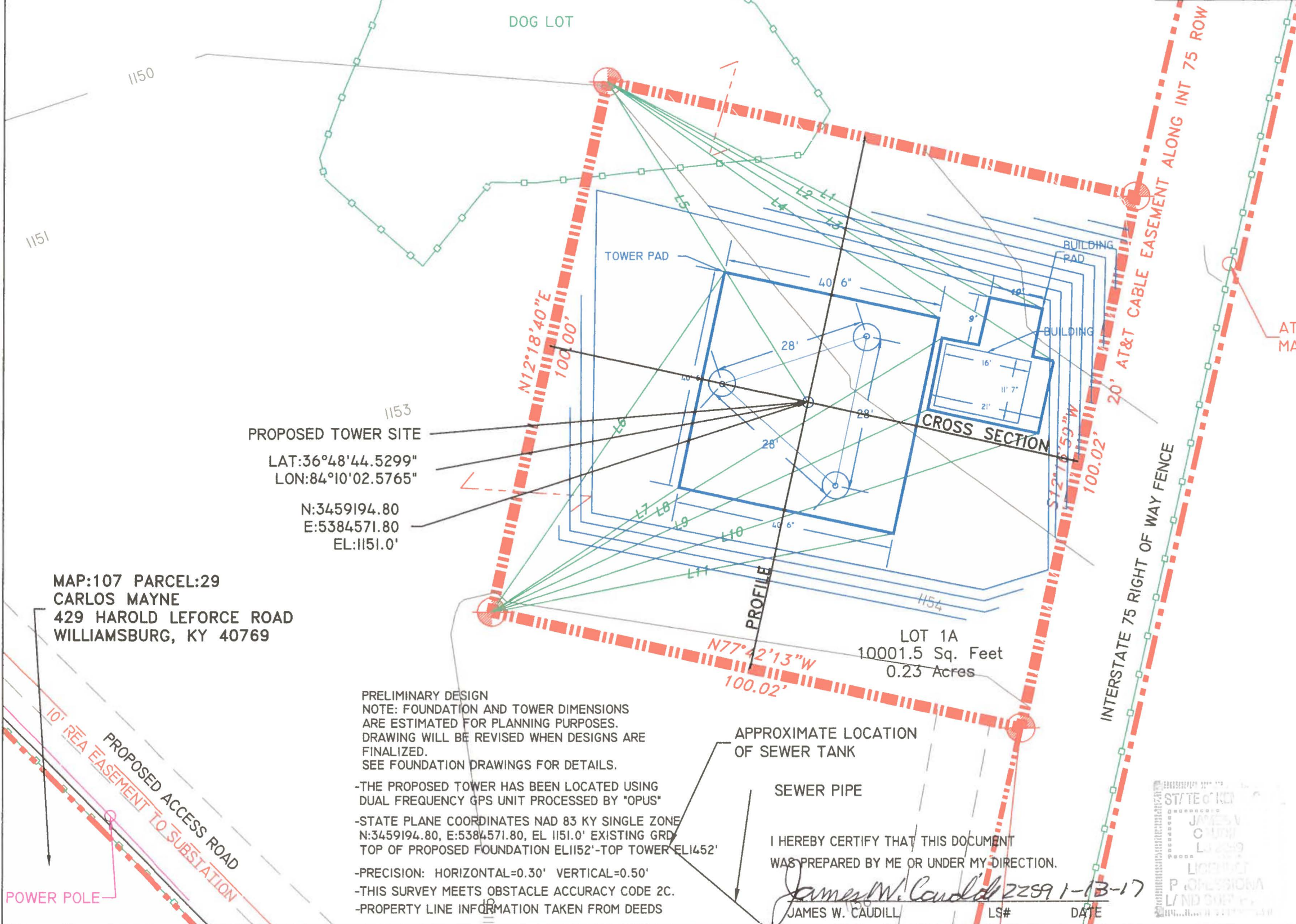
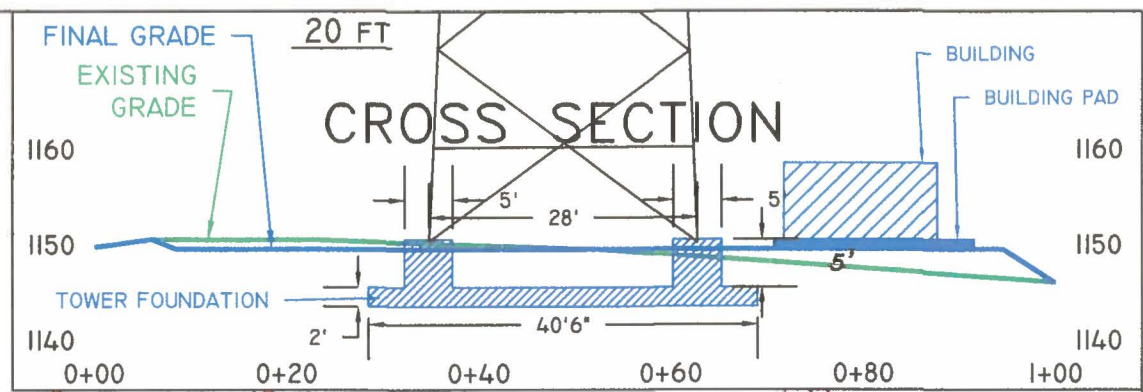
URBAN CLASS SURVEY
I HEREBY CERTIFY THAT THIS PLAT DEPICTS A SURVEY MADE BY ME, BY THE METHOD OF RANDOM TRAVERSE. THE BEARINGS SHOWN HEREON HAVE NOT BEEN ADJUSTED FOR CLOSURE. THIS SURVEY AND PLAT MEETS OR EXCEEDS THE MINIMUM STANDARDS OF GOVERNING AUTHORITIES. THE UNADJUSTED ERROR OF CLOSURE WAS > 1 IN 10000.
James W. Caudill 2259 12-12-17
NAME PLS# DATE

PLAT OF SURVEY		
DRAWN JWC	DATE 12/12/17	SUBDIVISION PROPERTY OF JAMES C. & ROSE MARIE STEPHENS 658 HAROLD LEFORCE ROAD WILLIAMSBURG, KY 40769 DEED BOOK:341 PAGE:426
APPROVED	DATE	
SCALE 1" = 50'	SHEET 1 OF 1	SURVEYED BY JAMES W. CAUDILL LS2259 2999 PERKINS/MADDEN ROAD AMBURGEEY, KY 41773 PHONE 606-642-3217

LINE	BEARING	DISTANCE
L1	S 62°25'34" E	90.79'
L2	S 60°32'30" E	81.20'
L3	S 57°56'42" E	97.34'
L4	S 54°28'33" E	75.26'
L5	S 31°57'53" E	69.79'
L6	N 34°32'02" E	75.81'
L7	N 56°28'47" E	41.38'
L8	N 58°50'16" E	97.26'
L9	N 65°13'07" E	88.60'
L10	N 72°02'08" E	106.15'
L11	N 79°01'35" E	75.48'

APPALACHIAN WIRELESS
 101 TECHNOLOGY TRAIL
 IVEL, KY. 41642
 PROPOSED TOWER SITE
 WALDEN IN WHITLEY COUNTY

MAP:107 PARCEL:36
 JAMES C. AND
 ROSE MARIE STEPHENS
 658 HAROLD LEFORCE ROAD
 WILLIAMSBURG, KY 40769
 DB:341 PG:426



- SURVEY STA**
 IRON PIN WITH CAP (18" X .5" REBAR PLASTIC CAP MARKED LS2259)
- BOUNDARY LINE**
 ACCESS ROAD
 PARENT TR LINE
 FENCE
- FOUND** (circle with crosshair)
SET (circle with dot)

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:3459194.80, E:5384571.80, EL 1151.0' EXISTING GRD
 TOP OF PROPOSED FOUNDATION EL1152'-TOP TOWER EL1452'

-PRECISION: HORIZONTAL=0.30' VERTICAL=0.50'

-THIS SURVEY MEETS OBSTACLE ACCURACY CODE 2C.

-PROPERTY LINE INFORMATION TAKEN FROM DEEDS

APPROXIMATE LOCATION
 OF SEWER TANK

SEWER PIPE

I HEREBY CERTIFY THAT THIS DOCUMENT
 WAS PREPARED BY ME OR UNDER MY DIRECTION.

James W. Caudill 22591-13-17
 JAMES W. CAUDILL LS# DATE

PROPOSED SITE PLAN AND STRUCTURE LOCATION OFF INTERSTATE 75 NEAR WALDEN		
DRAWN JWC	DATE 12/13/17	WALDEN TOWER JAMES AND ROSE MARIE STEPHENS OFF INTERSTATE 75 NEAR WALDEN IN WHITLEY COUNTY, KY.
APPROVED	DATE	
SCALE 1" = 20'	SHEET 2 OF 3	PROJECT NO. WALDEN/WALDEN202C



NAD83 KY SINGLE ZONE

APPALACHIAN WIRELESS
 101 TECHNOLOGY TRAIL
 IVEL, KY. 41642
 PROPOSED TOWER SITE
 OFF I-75 NEAR WALDEN
 IN WHITLEY COUNTY, KY.

MAP:107 PARCEL:35
 NO INFORMATION AVAILABLE
 FROM PVA OFFICE

MAP:107 PARCEL:32.01
 WILL AND DARLENE JONES
 171 LINCOLN DRIVE
 WILLIAMSBURG, KY 40769
 DB:487 PG:670

MAP:107 PARCEL:32
 LINDA LAWSON REYNOLDS
 PO BOX 1356
 WILLIAMSBURG, KY 40769
 DB:534 PG:145

MAP:107 PARCEL:32.03
 JIMMYE S. PERKINS AND
 WILLIAM J. GRAY
 106 LINCOLN DRIVE
 WILLIAMSBURG, KY 40769
 DB:486 PG:357

MAP:107 PARCEL:32.04
 JON AND RACHELE RICE
 PO BOX 384
 WILLIAMSBURG, KY 40769
 DB:492 PG:569

MAP:107 PARCEL:32.05
 JON AND RACHELE RICE
 PO BOX 384
 WILLIAMSBURG, KY 40769
 DB:501 PG:206

MAP:107 PARCEL:32.02
 PATRICIA PHILLIPS
 170 LINCOLN DRIVE
 WILLIAMSBURG, KY 40769
 DB:477 PG:5

MAP:107 PARCEL:32
 LINDA LAWSON REYNOLDS
 PO BOX 1356
 WILLIAMSBURG, KY 40769
 DB:534 PG:145

MAP:107 PARCEL:31
 ONNIE, JR. AND SONDY MEADORS
 645 HAROLD LEFORCE ROAD
 WILLIAMSBURG, KY 40769
 DB:359 PG:42

MAP:107 PARCEL:27
 BRYAN H. BARTON, LLC
 2815 NEW ZION RD
 WILLIAMSBURG, KY 40769

MAP:89 PARCEL:35
 AUTUMN RENEE SMITH
 194 HAROLD LEFORCE ROAD
 WILLIAMSBURG, KY 40769

MAP:107 PARCEL:36
 JAMES AND ROSE MARIE STEPHENS
 658 HAROLD LEFORCE ROAD
 WILLIAMSBURG, KY 40769
 DB:341 PG:426

MAP:107 PARCEL:30
 ARNOLD AND IMOGENE STEELY
 1135 CRIPPLE CREEK ROAD
 WILLIAMSBURG, KY 40769
 DB:327 PG:207

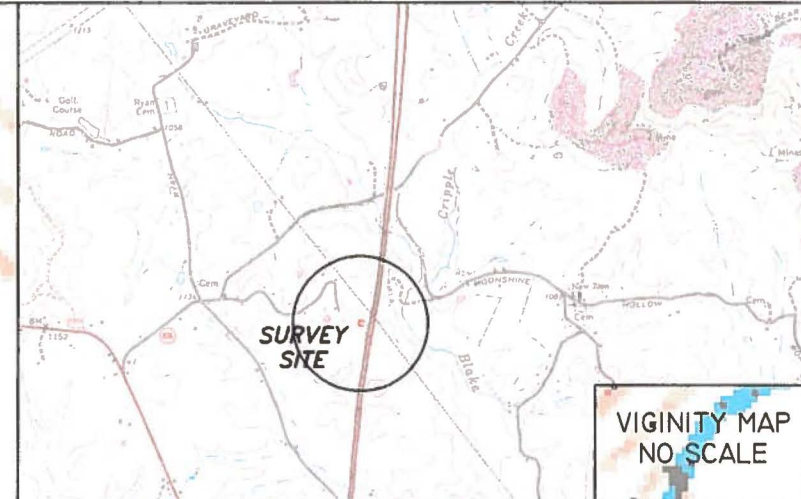
MAP:89 PARCEL:41
 MARGARET KING, MAXINE MASTERS
 AND BILLY POWERS
 PO BOX 5863
 OAK RIDGE, TN 37831

MAP:89 PARCEL:36
 RUSSEL AND CORRINE SMITH
 194 HAROLD LEFORCE ROAD
 WILLIAMSBURG, KY 40769

MAP:107 PARCEL:29
 CARLOS MAYNE
 429 HAROLD LEFORCE ROAD
 WILLIAMSBURG, KY 40769

PROPOSED TOWER LOT
 LAT:36°48'44.5299"
 LON:84°10'02.5765"

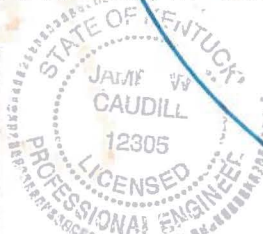
MAP:107 PARCEL:37
 ROSCOE BURNETT
 0 NEW ZION RD
 WILLIAMSBURG, KY 40769



APPALACHIAN WIRELESS PROPERTY OWNERS FROM PVA MAPS		
DRAWN JWC	DATE 12/13/2017	WALDEN TOWER SITE CRIPPLE CREEK NR INTERSTATE 75 NEAR WILLIAMSBURG IN WHITLEY COUNTY, KY
APPROVED	DATE	
SCALE 1" = 200'	SHEET 1 OF 3	PROJECT NO. WALDEN/WA200PVA

LEGEND

- BOUNDARY LINE
- ACCESS ROAD
- HIGHWAY
- POWERLINE

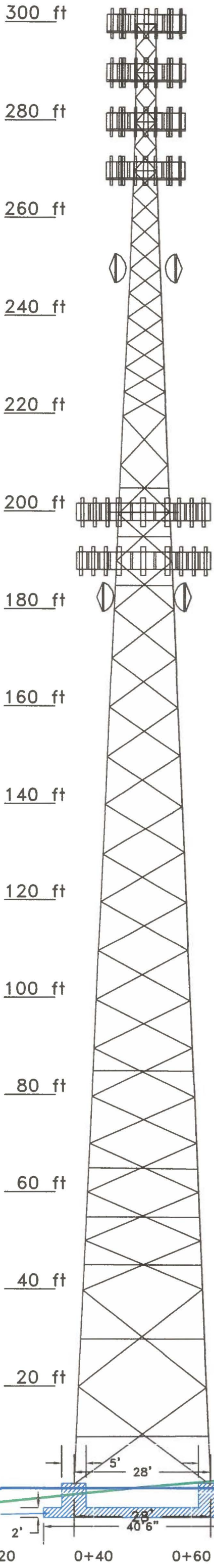


J W CAUDILL ENGINEERING
 9283 HWY 15 STE. C ISOM, KY 41824

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

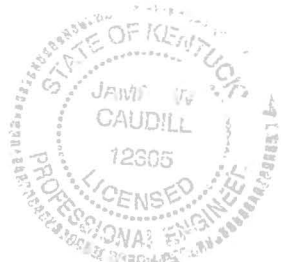
James W. Caudill 12305
 JAMES W. CAUDILL P.E.# 12305 DATE 12-13-17

APPALACHIAN WIRELESS
 101 TECHNOLOGY TRAIL
 IVEL, KY. 41642
 PROPOSED TOWER SITE
 WALDEN IN WHITLEY COUNTY



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.



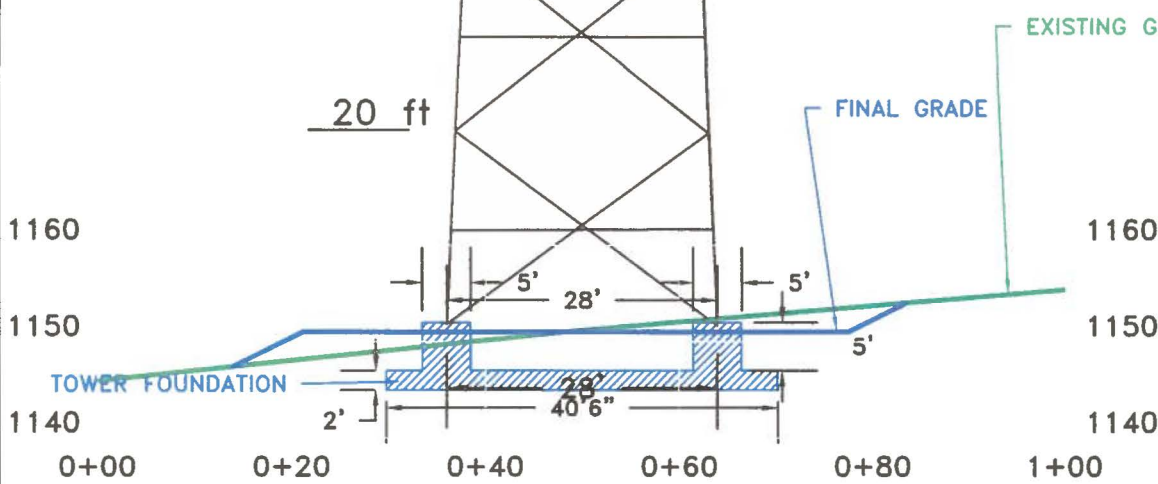
James W. Caudill 12305 12-13-17
 JAMES W. CAUDILL PE #. DATE

NOTE: SEE FOUNDATION DRAWINGS FOR DETAILS

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

12/13/2017

SCALE 1" = 20'



PROPOSED SITE PLAN AND STRUCTURE LOCATION OFF INTERSTATE 75 NEAR WALDEN		
DRAWN JWC	DATE 12/13/17	WALDEN TOWER JAMES AND ROSE MARIE STEPHENS OFF INTERSTATE 75 NEAR WALDEN IN WHITLEY COUNTY, KY.
APPROVED	DATE	
SCALE 1" = 20'	SHEET 3 OF 3	PROJECT NO. WALDEN/WAPRO2C20