COMMONWEALTH OF KENTUCKY BEFORE THE PUBLIC SERVICE COMMISSION

In the matter of:

THE APPLICATION OF EAST KENTUCKY NETWORK,
LLC FOR THE ISSUANCE OF A CERTIFICATE OF
PUBLIC CONVENIENCE AND NECESSITY TO
CONSTRUCT A REPLACEMENT TOWER IN POWELL
COUNTY, KENTUCKY)

East Kentucky Network, LLC d/b/a Appalachian Wireless was granted authorization to provide cellular service in the KY-10 Cellular Market Area (CMA452) by the Federal Communications Commission (FCC). The FCC license is included as Exhibit 1. East Kentucky Network, LLC merger documents were filed with the Commission on February 2, 2001 in Case No. 2001-022. East Kentucky Network, LLC is a Kentucky limited liability company that was organized on June 16, 1998. East Kentucky Network, LLC is in good standing with the Commonwealth of Kentucky.

In an effort to improve service in Powell County, pursuant to KRS 278.020 Subsection 1 and 807 KAR 5:001, East Kentucky Network, LLC is seeking the Commission's approval to construct a 400 foot guyed tower on a tract of land located at 2383 Furnace Road, Stanton, Powell County, Kentucky (37°49'22.09"N 83°50'44.29"W). A map and detailed directions to the site can be found in Exhibit 7.

Construction of the proposed tower is required by public convenience and necessity. Due to increasing demand for telecommunications service, the proposed tower is necessary to provide adequate coverage. The proposed tower will improve service in Powell County by providing an interconnection between East Kentucky Network, LLC's other sites thereby forming a cohesive network.

1

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

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

Powell County has no formal local planning unit. In absence of this unit, the Powell County Judge Executive's office was notified by certified mail, return receipt requested, of East Kentucky Network, LLC's proposal and informed of their right to intervene. The Powell County Judge Executive's office was also given the docket number under which this application is filed. Enclosed in Exhibit 3 is a copy of that notification.

Notice of the location of the proposed construction was published in The Clay City Times, October 29, 2020 edition. Enclosed is a copy of that notice in Exhibit 3. The Clay City Times is the newspaper with the largest circulation in Powell County.

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

A copy of the tower design information is enclosed as Exhibit 5. The proposed tower has been designed by engineers at World Tower and will be constructed under their supervision. Their qualifications are evidenced in Exhibit 5 by the seal and signature of the registered professional engineer responsible for this project.

2

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

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

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

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 October 20, 2020, and will remain posted for at least two weeks after filing of this application as specified.

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

The proposed construction site is on a very rugged mountain top in close proximity to the existing tower. There is an existing 400' guyed tower owned by East Kentucky Network, LLC and will be removed upon construction of the proposed tower.

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

3

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

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

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

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

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

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

SUBMITTED BY: Lynn Haney, Regulatory Compliance Director

APPROVED BY:

WA Sillum W.A. Gillum, General Manager

DATE: 10/22/20

ATTORNEY:

Hon. Krystal Branham, Attorney DATE: 10/21/2020

CONTACT INFORMATION:

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

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

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

Mailing Address:

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

1	FCC License	
2	Copies of Cell Site Notice to Land Owners	
З	Notifications of County Judge Executive and Newspaper	
4	Universal Soil Bearing Analysis	
5	Tower Design	
6	FAA and KAZC Determination	
7	Driving Directions from County Court House and Map to SUitable Scale	
8	Deed for Proposed Site with Legal Description	
9	Survey of Site Signed/Sealed by Professional Engineer Registered in State of Kentucky	
10	Site Survey Map with Property Owners Identified in Accordance with PVA of County	
11	Vertical Profile Sketch of Proposed Tower	
12	List of Competitors	
13	Qualifications	
14		
15		

Exhibit 1

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ULS License

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

Status Acti Market	N809 ve N452 - Kentucky 10 - Powell 30/2011	Radio Service Auth Type Channel Block Phase	CL - Cellular Regular B 2
Market Market CMA Submarket 0	452 - Kentucky 10 - Powell	Channel Block	в
Market CMA Submarket 0			
Submarket 0			
	30/2011	Phase	2
Dates	30/2011		
	30/2011		
Grant 08/		Expiration	10/01/2021
Effective 10/	10/2014	Cancellation	
Five Year Buildout	Date		
10/17/1996			
Control Points			
	Route 23, FLOYD, Harold, KY 606)478-2355		
Licensee			
FRN 000	1786607	Туре	Limited Liability Company
Licensee			
East Kentucky Netwo Wireless 101 Technology Trail Ivel, KY 41642	rk, LLC d/b/a Appalachian	P:(606)477-235	55
Contact			
Lukas, Nace, Gutierrez & Sachs, LLP Pamela L Gist Esq 8300 Greensboro Drive McLean, VA 22102		P:(703)584-8665 F:(703)584-8695 E:pgist@fcclaw.com	
Ownership and Qu	alifications		
Radio Service Type	Mobile		
Regulatory Status	Common Carrier Intercon	nected Yes	
Alien Ownership The Applicant answe	red "No" to each of the Alien	Ownership quest	ions.
Basic Qualification The Applicant answe	s red "No" to each of the Basic	Qualification que	stions.

Demographics	
Race	
Ethnicity	Gender

Exhibit 2

EXHIBIT 2 – LIST OF PROPERTY OWNERS

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

Section 1 (1)(1) 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)(1) 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.

<u>Section 2.</u> 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

Anthony Wayne Banks P.O. Box 138 Stanton, KY 40380

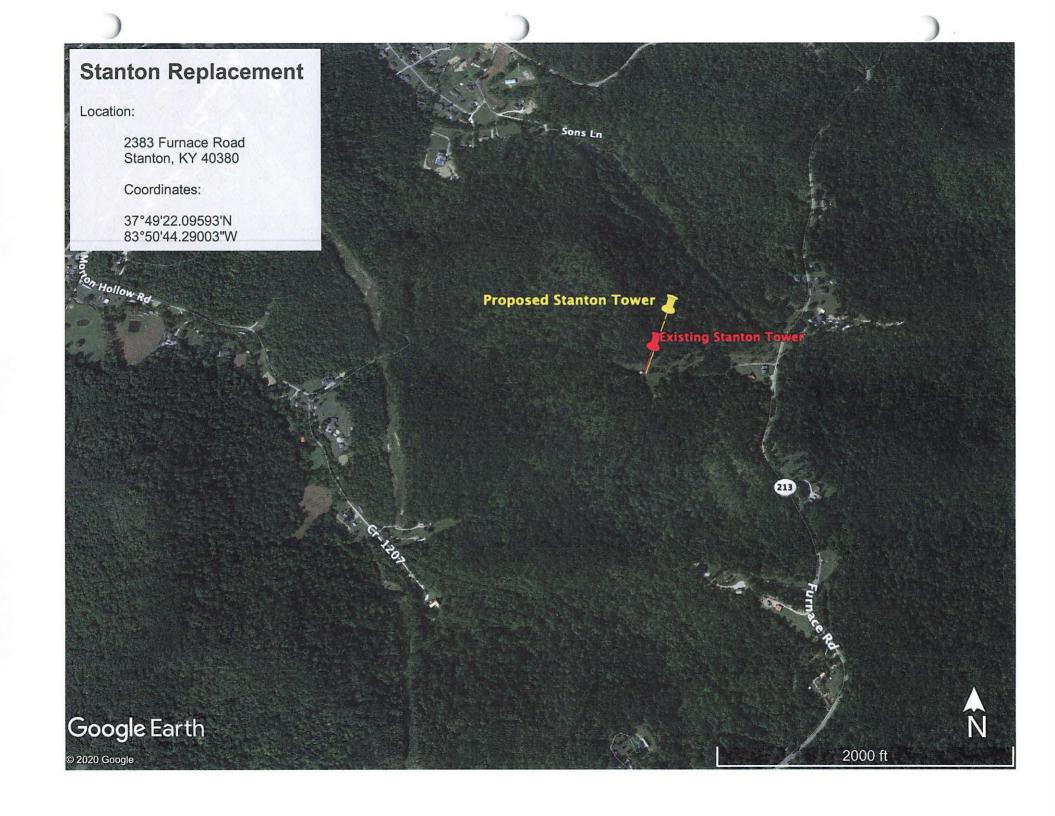
Larry L. and Annette Tipton 66 Caudill Road Stanton, KY 40380

Thomas F. Dunn, Jr. 650 Morton Hollow Road Stanton, KY 40380

Glenn and Faith Oberg P.O. Box 111 Stanton, KY 40380 John and Brenda Gail Brewer P.O. Box 826 Stanton, KY 40380

Garrie and Annette Noble

Steve and Nancy Man







PUBLIC NOTICE

October 21, 2020

Anthony Wayne Banks P.O. Box 138 Stanton, KY 40380

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00337)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a replacement facility to provide cellular telecommunications service in Powell County. The facility will include a 400-foot guyed tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 2383 Furnace Road, Stanton, Powell County. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you may own property within a 500' radius of the proposed tower or own property contiguous to the property upon which construction is proposed.

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

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2020-00337 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.

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Lynn Haney, CPA Regulatory Compliance Director Enclosure 1





PUBLIC NOTICE

October 21, 2020

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Lynn Haney, CPA Regulatory Compliance Director Enclosure 1





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Lynn Haney

Lynn Haney, CPA Regulatory Compliance Director Enclosure 1





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Lynn Haney, CPA Regulatory Compliance Director Enclosure 1





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Garrie and Annette Noble

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Lynn Haney, CPA Regulatory Compliance Director Enclosure 1





PUBLIC NOTICE

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Lynn Haney, CPA Regulatory Compliance Director Enclosure 1

Exhibit 3

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



To:	The Clay City Times	From:	Raina Helton	
-	Attn: Classifieds		Regulatory Compliance Assistant	
Email:	cctads@hatfieldnewspapers.com	Date:	October	
Re:	PUBLIC NOTICE ADVERTISEMENT	Pages:	.1	

Please place the following Public Notice Advertisement in the The Clay City Times to be ran on October 29, 2020

PUBLIC NOTICE:

RE: Public Service Commission of Kentucky (CASE NO. 2020-00337)

Public Notice is hereby given that East Kentucky Network, LLC, dba Appalachian Wireless has applied to the Kentucky Public Service Commission to construct a replacement cellular telecommunications tower on a tract of land located at 2383 Furnace Road, Stanton, Kentucky. The proposed tower will be a 400 foot guyed tower with attached antennas. If you would like to respond to this notice, please contact the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to Case No. 2020-00337.

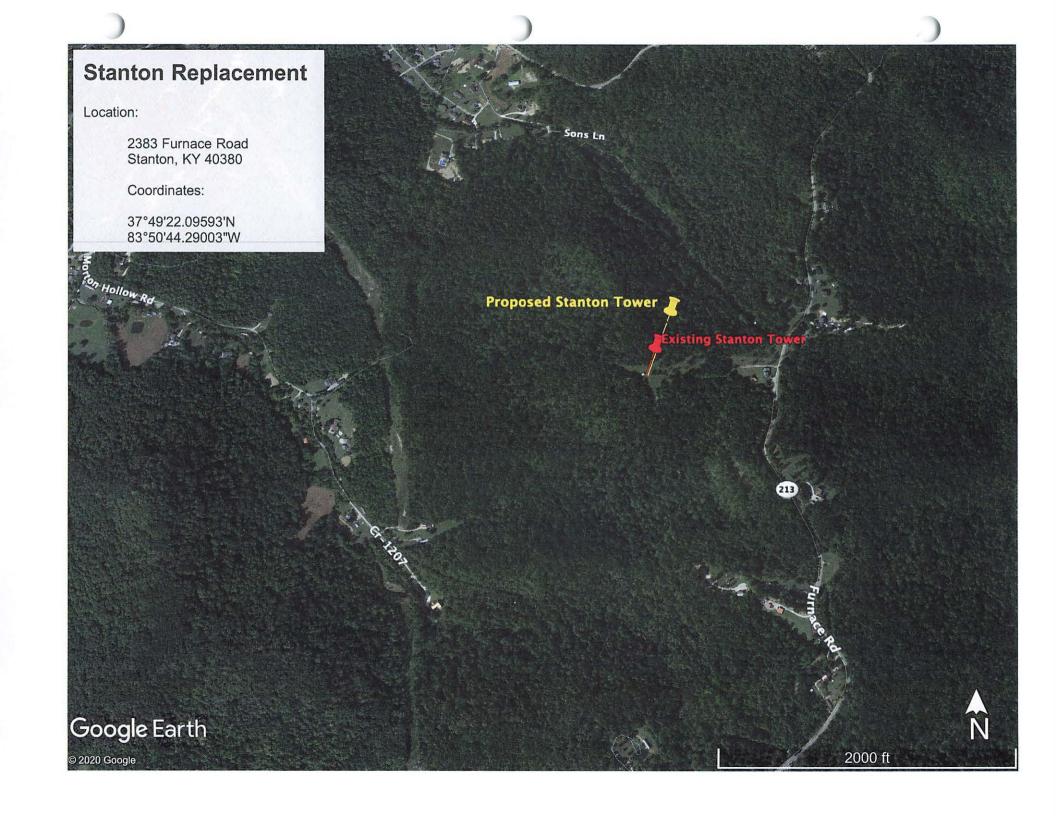
If you have any questions about the placement of the above mentioned notice, please call me at 606-477-2355, ext. 1005.

Thank you,

Raina Helton Regulatory Compliance Paralegal

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.

Next Generation Communications







October 21, 2020

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

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2020-00337)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a replacement facility to provide cellular telecommunications service in Powell County. The facility will include a 400 foot guyed tower with attached antennas extending upwards, and an equipment shelter located on a tract of land located at 2383 Furnace Road, Stanton, Powell County, Kentucky. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you are the County Judge Executive of Powell County.

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

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Lynn Haney, CPA Regulatory Compliance Director Enclosure 1

Exhibit 4

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



EAST KENTUCKY ENGINEERING, LLC.

APPALACHIAN WIRELESS Geotechnical Investigation on the Furnace Road Tower Site Powell County, Kentucky EKYENG Project No. 165-000-0113

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

ABBIIUER AND DE DANABRE DE DANA 20215, August 3rd, 2020





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5.0

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
 - 3.4 FLOOD HAZARD
 - FIELD EXPLORATION 4.1 SITE INFORMATION

 - 4.2 BORING DATA
 - 4.3 GROUNDWATER
 - 4.4 SEISMIC SITE CLASSIFICATION
 - DISCUSSION AND RECOMMENDATIONS
 - 5.1 GENERAL
 - 5.2 SHALLOW MAT FOUNDATIONS RECOMMENDATIONS
 - 5.3 ANCHORS
 - 5.4 BURIED UTILITIES

6.0 WARRANTY

- 6.1 SUBSURFACE EXPLORATION
- 6.2 LABORATORY AND FIELD TEST
- 6.3 ANALYSIS AND RECOMMENDATIONS
- 6.4 CONSTRUCTION MONITORING
- 6.5 GENERAL
- SPECIFICATIONS
 - I GENERAL
 - II ENGINEERED FILL BENEATH STRUCTURES CLEARING AND GRADING
 - SPECIFICATIONS
 - **III GUIDELINES FOR EXCAVATIONS AND TRENCHING**
 - **IV GENERAL CONCRETE SPECIFICATIONS**
 - V DRILLED PIER INSTALLATION
- APPENDIX A BORING LOGS
- **APPENDIX B CORE PHOTOGRAPHS**
- APPENDIX C- SEISMIC DATA
- APPENDIX D PHOTOGRAPHS
- APPENDIX E- MAPS



EAST KENTUCKY ENGINEERING, LLC.

EXECUTIVE SUMMARY

A geotechnical investigation has been performed on the Furnace Road Tower Site, located in Powell 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 25.0 ft. The following geotechnical considerations were identified:

- Borings utilized for this study encountered gray sandstone with clay seams to a depth of 25.0 ft.
- The estimated maximum base elevation of tower mat foundation is 1249 ft.
- This site is on a forested ridgeline, adjacent to an existing tower.
- The allowable bearing capacities is estimated at 6 tsf on this sandstone unit from 1249.8' to 1223'.
- Additional recommendations for the guy anchor locations are included in section 5 of this report.
- The 2015 International Building Code seismic site classification for this site is "A".
- If during the foundation design it becomes necessary to lower or raise the footer, alternate design recommendations can be provided by EKYENG.
- Close monitoring of the construction operations discussed herein will be critical in achieving the design subgrade support. We, therefore, recommend that EKYENG is retained to monitor this portion of the work.

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



1. INTRODUCTION

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

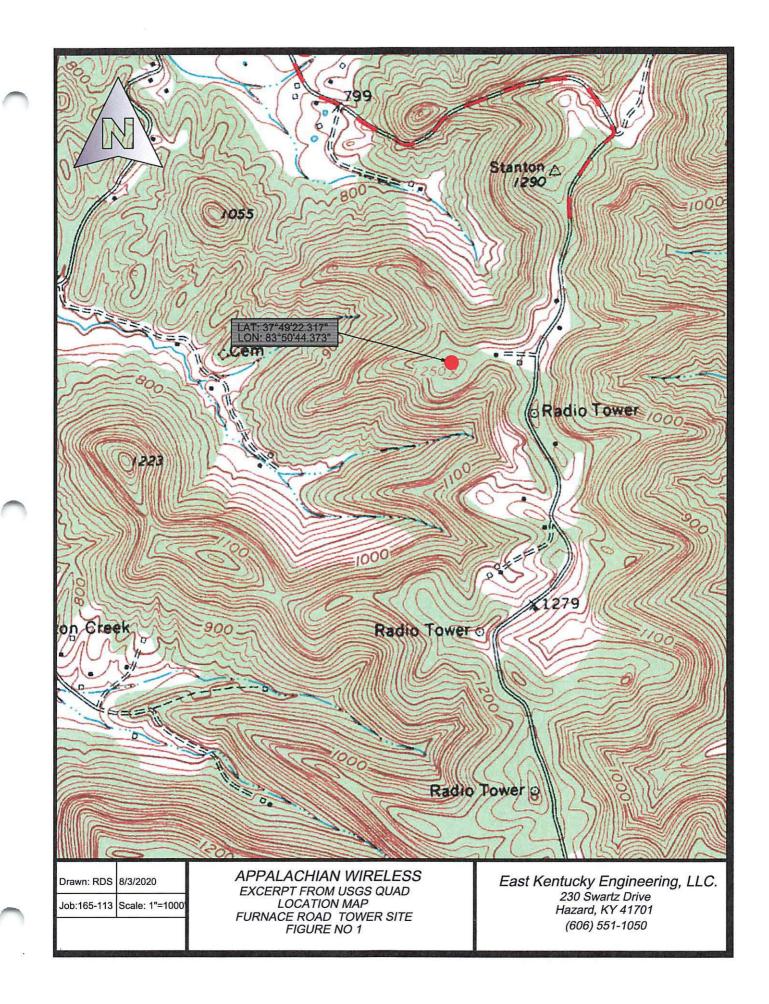
Four (4) borings were advanced to a maximum depth of 25.0 ft. Horn and Associates, Inc. provided drilling services to obtain these borings. Logs of the borings along with a boring location plan are included in Appendix A and Appendix E. The purpose of these services is to provide information and geotechnical 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 guy tower tower of undetermined height and ancillary support areas. The footing area is estimated to be 8 ft. X 8 ft. with an estimated base of the tower footer elevation at 1249.0 ft. Based on information provided, we estimate the structural loads will be like the following conditions.

CONDITION	LOAD	
Total Shear	40 Kips	
Axial Load	50 Kips	

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





3.0 SITE DESCRIPTION & HISTORICAL MINING

3.1 GENERAL INFORMATION

The site location is on a forested ridgeline, next to an existing tower in Powell County, Kentucky. The current surface elevation is approximately 1258.0ft. Research on the historical mining was conducted by obtaining previous mine license maps from the "Kentucky Mine Mapping Information System" (KMMIS).

3.2 SURFACE MINING

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

3.3 UNDERGROUND MINING

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

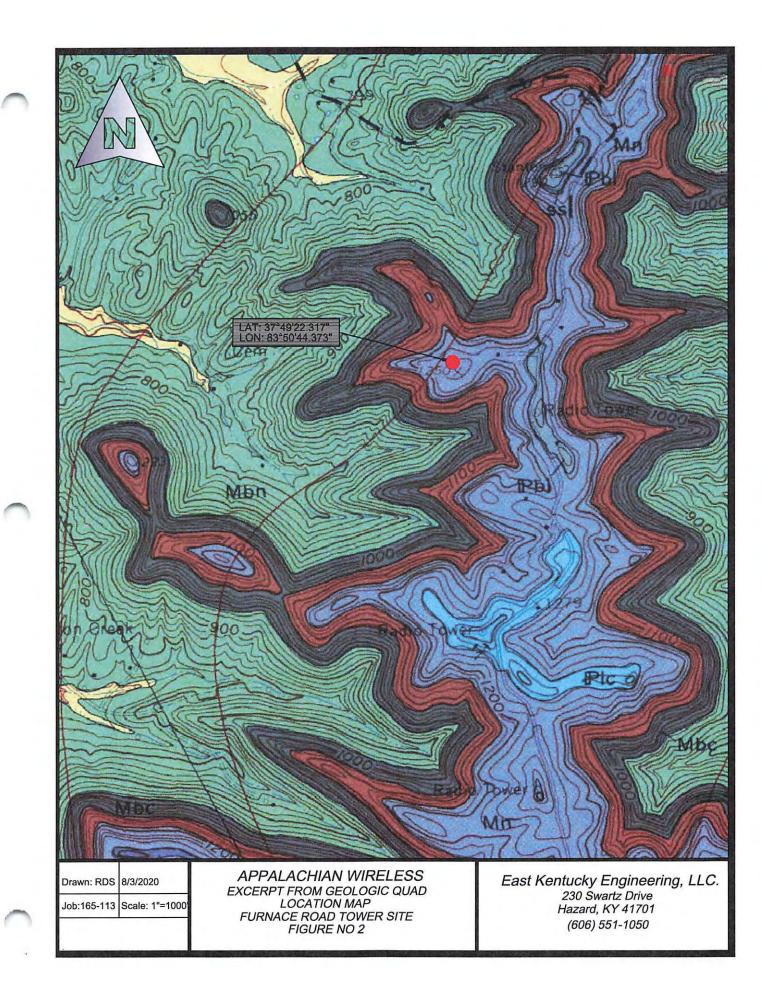
3.4 FLOOD HAZARD

A potential flood determination was conducted by EKYENG. For this determination, the FEMA Flood Map Service was reviewed for this location. The flood map for the selected area is number **21197C0153D-210194.** The flood zone for this area is Zone X and is an area of minimal flood hazard. A FIRMette map is included in Appendix E of this report.

4.0 FIELD EXPLORATION

4.1 SITE INFORMATION

The proposed site is located on a forested ridgeline, next to an existing tower in Powell County, Kentucky. The site lies within the Stanton 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 an 8 ft. X 8 ft. footer for 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, which includes 140-pound hammer, 30-inch drop, and two-inch-O.D. split-spoon sampler) at maximum depth intervals of five feet or at major changes in stratum, whichever occurred first. The disturbed split-spoon samples were visually classified, logged, sealed in moisture-proof jars, and taken to the EKYENG laboratory for study. The depths where these "A"-type split-spoon samples were collected are noted on the boring logs. The results of the natural moisture contents by boring and interval are shown in Table 2.

TABLE 2

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

Sample No.	DEPTH INCREMENT, (FT.)	NATURAL MOISTURE CONTENT, %	
B1 S-1	0.0 – 1.5	18.8%	
B1 S-2	4.0 - 5.5	19.5%	
B2 S-1	0.0 – 1.5	22.3%	
B3 S-1	0.0 – 1.5	21.9%	
B4 S-1	0.0 – 1.5	13.4%	
B4 S-2 1.5 – 3.0		16.9%	
B4 S-3	4.0 - 4.1	8.1%	



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

TABLE NO. 3

SAMPLE NO.	DEPTH	BLOW COUNT /	DESCRIPTION
	INCREMENT	RQD *	
B-1	0.0-0.2	6-5-2	Topsoil
B-1	0.2-6.5	5-7-11	Brown Clay, Rock Fragments
B-1	1.5-3.0	1-2-2	Drove spoon through gravel
B-1	6.5-25.0	4.0*	Very Hard Gray sandstone with Clay Seams
B-2	0.0-0.2	3-3-5	Topsoil
B-2	0.2-5.0	3-3-5	Brown clay with boulders
B-2	5.0-25.0	6.7*	Very Hard Gray Sandstone
B-3	0.0-0.2	4-15-11	Topsoil
B-3	4.4-10.6	9.8*	Very Hard Gray Sandstone
B-3	10.6-25.0	3.5*	Very Hard Gray Sandstone with Clay Seams
B-4	0.0-0.4	4-6-4	Topsoil
B-4	0.4-4.1	6-22-10	Brown Clay with Boulders
B-4	4.1-24.1	5.9*	Very Hard Gray Sandstone with Clay Seams
*B-4	10.4-13.4	Void	Void

STANDARD PENETRATIONS

Note: In boring B4 a void was present between 10.4 and 13.4 feet in depth.

The four borings were extended by "NX" size rock core that were taken to confirm the presence of rock at the site and to determine its physical characteristics. The core was made with "NX" size diamond coring equipment. These borings are between 4.1 ft and 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.



4.3 GROUNDWATER

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

4.4 SEISMIC SITE CLASSIFICATION

Based on the encountered soil conditions at the project site, the site classification was determined to be "Site Class A" per the 2015 Kentucky Building Code. In addition, an S_{DS} coefficient of 0.102 g was calculated, and an S_{D1} coefficient of 0.045 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 guyed tower. Due to wind loading, lattice tower foundations can experience both vertical loads and horizontal loads. The vertical loads act in both an upward and downward direction as the tower attempts to overturn and can act in any directions.

5.2 SHALLOW MAT FOUNDATIONS RECOMMENDATIONS

It is expected that shallow foundations will be used at the base of the proposed tower. It should be noted that the material type and bearing capacity can vary significantly due to the inconsistency of the underlying material. Based on the laboratory and field testing, visual inspection of the materials and practical experience we have estimated that the **allowable bearing capacities is estimated at 6 tsf on this sandstone unit from 1249.8' to 1240'.**



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

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



5.3 ANCHORS

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

The horizontal component can be resisted by the passive pressure of soil acting on the vertical side of the block facing the tower and friction between the block and the underlying soil. Allowable coefficient of friction values of 0.2 and 0.4 times the effective normal force (in excess of uplift force) transferred by the block to the subgrade can be used to determine allowable frictional sliding resistance for the underlying natural soils and highly weathered sandstone, respectively.

The following table presents the allowable design criteria for the tower's anchor blocks. In the table, the allowable side friction and lateral pressure values have safety factors of approximately 2. Design parameters shown in the table are applicable to the natural, undisturbed soils and engineered backfill, but should not be applied to disturbed materials or newly placed fill materials. Engineered backfill is considered on-site soils that are placed in standard Proctor dry density (ASTM D-698). The backfill should be placed at a workable percent compaction. Because soil strength varies due to frost action and moisture variation, and the proximity to rock, we recommend neglecting passive and frictional resistances for the soils within five (5) feet of the ground surface.

1



Guy No. (Depth)	Eff Unit Weight	Allowable Side Friction		Allowable Press	Estimated Shear Strength	
FT.	(PSF)	Initial Value	Increase Per Foot of Depth	Initial Value	Increase Per Foot of Depth	Angle of Friction (Degrees)
B2						
0.0-5.0	120	30				
5.0-25.0	140	1000		2500	140	27
B3						
0.0-5.0	120	30	-			
5.0 -25.0	140	1000	50	2500	140	27
B4		1				
0.0 - 4.4	120	30				
4.4-10.4	140	1000	50	2500	140	27
Void 10.4-13.4	0	0	0	0	0	0
13.4-24.1	140	1500	100	18,000	140	27

TABLE NO. 4

*Note: Reference geologic log drawing attached in the Maps section of report for elevation of the void and rock formations during installation of anchors.

5.4 BURIED UTILITIES

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



6.0 WARRANTY

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

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

6.1 SUBSURFACE EXPLORATION

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

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



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

6.2 LABORATORY AND FIELD TESTS

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

6.3 ANALYSIS AND RECOMMENDATIONS

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

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

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



6.4 CONSTRUCTION MONITORING

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

6.5 GENERAL

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

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

This report has been prepared for the exclusive use of Appalachian Wireless, for specific application to the proposed cellular tower located on the Furnace Road Property located in Powell County, Kentucky. Specific design and construction recommendations have been provided in the various sections of the report. The report shall, therefore, be used in its entirety. This report is not a bidding



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



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 (305mm) Drop".
 - **1.1.2** ASTM D-2922 "Standard Test Method for Density of Soil and Soil Aggregate in Place by Nuclear methods (Shallow Depth)".
 - **1.1.3** ASTM D-1556 "Standard Test Method for Density of Soil in place by the Sand-Cone Method".
- 1.2 DEFINITIONS
 - **1.2.1** Owner In these specifications the word "Owner" shall mean Appalachian Wireless.
 - **1.2.2** Engineer In these specifications the word "Engineer" shall mean the Owner designated engineer.
 - **1.2.3** Design Engineer In these specifications the words "Design Engineer" shall mean the Owner designated design engineer.
 - **1.2.4** Contractor In these specifications the word "Contractor" shall mean the firm or corporation undertaking the execution of any work under the terms of these specifications.
 - **1.2.5** Approved In these specifications the word "approved" shall refer to the approval of the Engineer or his designated representative.
 - **1.2.6** As Directed In these specifications the words "as directed" shall refer to the directions to the Contractor from the Owner or his designated representative.



2.0 GENERAL CONDITIONS

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

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

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

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

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





II - ENGINEERED FILL BENEATH STRUCTURES CLEARING AND GRADING SPECIFICATIONS

1.0 GENERAL CONDITIONS

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

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

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

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

2.0 SUBSURFACE CONDITIONS

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

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

3.0 SITE PREPARATION

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

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



provided. In no case shall such objectionable material be allowed in or under the fill unless specifically authorized in writing.

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

4.0 FORMATION OF FILL AREAS

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

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

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

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

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



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

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

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

5.0 SLOPE RATIO AND STORM WATER RUN-OFF

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

6.0 GRADING

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

7.0 COMPACTING

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

8.0 TESTING AND INSPECTION SERVICES

Testing and inspection services will be provided by the Owner.



GUIDELINES FOR EXCAVATIONS AND TRENCHES

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

1. Check with the following utilities prior to breaking ground:

- Sewer
- Telephone
- Fuel
- Electric
- Water
- Gas
- Cable

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

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

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



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



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

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



IV - 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. <u>Fine and Coarse Aggregates:</u> 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. <u>Fine Aggregate:</u> Sand shall be composed essentially of clean, hard, strong, durable grains free of structurally weak grains, organic matter, loam, clay, silt, salt, mica or other fine materials that may affect bonding of the cement paste.



- 2. <u>Coarse Aggregate:</u> 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. <u>Portland Cement:</u> 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 <u>not</u> be used unless indicated on the plans.
- C. <u>Water:</u> Water for mixing and curing shall be clean, fresh, and free from deleterious materials.
- D. <u>Metal Reinforcement:</u> Rebar shall be Grade 60 and with deformations conforming to ASTH Specification A305. Welded wire mesh shall conform to W4 x W4 size and be of Grade 60 steel.
- E. Admixtures: Except as herein noted, admixtures shall not be used.
 - 1. Under adverse weather conditions only retarding or accelerating agents containing no chloride may be used.
 - 2. Air-Entraining Agent shall be used for all concrete will give an entrained air range of not less than 4 percent but no greater than 8 percent in the finished product. Under no circumstances shall the air-entraining be interground with cement.
 - 3. Approval in writing shall be required from Owner prior to the use of any admixture.

4.0 FORM

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

5.0 INSERTS, ETC.

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



6.0 REINFORCEMENT

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

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

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

7.0 CONCRETE

1.

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



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

- C. <u>Transporting of Concrete from Mixer to Place of Final Deposit</u>: 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. <u>Depositing of Concrete:</u> 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. <u>Vibration Equipment:</u> Vibration equipment shall be of the appropriate type and shall, always, be adequate in number of units and power of each unit to properly consolidate all concrete.



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

9.0 CURING

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

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

10.0 CONCRETE FINISHES

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

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

All exposed surfaces shall have deflects corrects, protrusions removed, and holes filled.



APPENDIX A BORING LOGS

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

Main Street	-	Winches	ster,	KY	40391
0-729-2802		Fax:	859	-74	4-5892

Project	Name STANTON Cell Tower	Hole Nu	imber i	Total [Depth 1	5.0
Federal	Project No. (FURNACE RD)	Location	 1	****		
	roject No.	Surface	Elevation			
		•	arted 7-24-	Date C	Completed Z	2420
	Sampling Method <u>HSASPTANY</u> Diameter <u>3</u> 1/W					-27-20
From	Diameter <u>3¹14</u>	Sample/Run	n Jenkin Blow	Sample/Run	Sample	
То	Soil and Rock Description	Interval	Counts/RQD	No.	Туре	Recovery
0,2	topsail ARE 6.5	0	6-5-2	5-1	SAT	6.4
0.2	Copson	1.5			1	
6.5	Br. Si Clong Ygrovel	3.0	/-2-2	Sr2	· ·	0.0
1.5 3.0	drove sportly bravel 0.0 Re.	5.5	3-17-28	5-3		1.2
		15,0	-			
6.5.	C anter a sta	6.5		וס	m1 57	
25.0	Cong SSt clayson Vory Hard	9,2	1.7	<u>R-1</u>	NX	2.6
	2- Cons boxes	15.5	1.8	R-2		4.7
		15,5 25,0	8.4	R-3		9,5
	· · · · · · · · · · · · · · · · · · ·					
						<u> </u>
						
				<u></u>		1
 						
L						
		. Water Level		-	ater Level	
Moving/D	elay Time Hamm	er Weight	140 lbs.	Hammer Dr	op	30 in.

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

N. Main Street -	Winchester,	KY	4039
800-729-2802	Fax: 859	-74	4-589

Project	Name Starton Cell torus		Hole Nu	mber 2	Total I	Depth _25	.0
	Project No.		Location	1			
State P	roject No.		Surface	Elevation			
Drilling/	Sampling Method HSA SPT NY		Date Sta	arted 7-24	-20 Date (-24-20
Boring I	Diameter 31/4		Driller	on fentino	Weath		
From To	Soil and Rock Description		mple/Run Interval	Blow Counts/RQD	Sample/Run No.	Sample Type	% Recovery
0	Topsoil Br. Siclay "/boulders. couldn't tok sporset 45-3 bry. SS Very hard 2-core boxes W-Frailupes 600h S. Horth?	(<u>،</u>	3-3-5	5-1	SPJ	1.0
012	br. Si day "Thoulders.	13 	,0 .0	6.5	R-1	NX	9.6
	couldn't tok spoons at 45-3	5 2	5	6.9	R-2	NX	8.5
5.0	bry SS Veryhard						
	2-core bordes						
	V-Fractures 5.0-6.5, 110-11.2				ĺ		
	15 11 12,5-12,7,13,8-14,0 23,5-25.0						_
	23,5-25.0						
					1		
Water Le	vel @ Drilling 2	24 Hr. Wa	ater Level		7 Day Wa	ater Level	
Moving/D	elay Time H	ammer V	Veight	140 ibs.	Hammer Dr	rop 3	30 in.

FIELD BORING LOG

HORN AND ASSOCIATES, INC 216 N. Main Street - Winchester, KY 40391 Ph: 800-729-2802 Fex: 859-744-8892

Project	Name Straton Cell tower	Hole Nu	Imber 3	Total I	Depth 25	
	Project No.	Locatio				
State P	roject No.	Surface	Elevation			
Drilling/	Sampling Method HSA, Spt. NK	Date St	arted 7-24	20 Date C	Completed 2-	24-20
Boring	Diameter 3/4	Driller	m Junkin	ه Weath		
From To	Soil and Rock Description	Sample/Run Interval	Blow Counts/RQD	Sample/Run No.	Sample Type	% Recovery
0	Faril	0 1.5	415-11	5-1	SAT	0.5
0.2	topsoil	14.14			561	0,5
ļ	Couldnt auger For bourdous	10.6	9.8	R-1	NX_	6.2
	Couldn't auger 700 bouldous Cosed from Surface to Rock	10.6	3.3	R-2		5,0
4/H 10.60 10.6	Gry SS very Hard	15.6	3,7	R-3		7,2
10.6	Cry SS Yelay Seems VeryHord					
	2-Cone boxes					
		<u> </u>				
				·		
		1		·		
		†				
		l				
Water Le	vel @ Drilling 24 H	r. Water Level		7 Day Wa	ater Level	
Moving/D	elay Time Hamn	ner Weight	140 lbs.	Hammer Dr	ор 3	0 in.

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

N.	Main	Street	-	Winches	ster,	KY	40
80	0-726	-2802		Fax:	866	.74	4-55

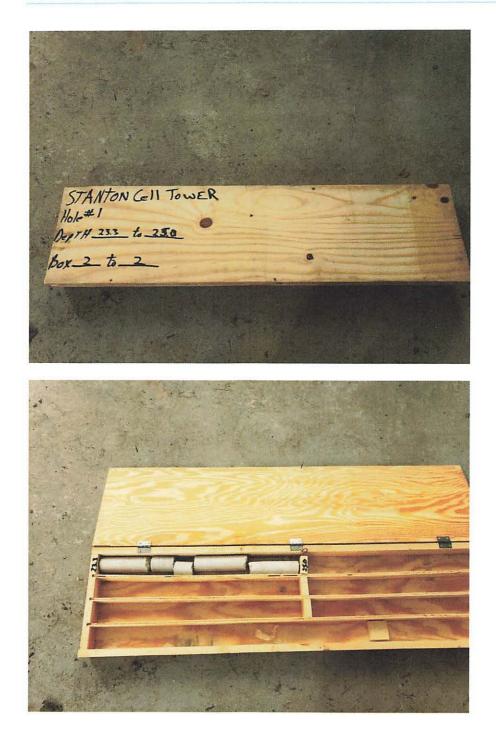
Project	Name Structon Collitourer	Т	Hole Nu	ımber 4	Total (Depth _24	.1
Federal	Project No.	_	Location				
State P	roject No.		Surface	Elevation			
Drilling/	Sampling Method HSASPTIUN		Date St	arted 7-24-	Date C	Completed 2	24-20
Boring I	Diameter 314			in Jankas		-	
From To	Soil and Rock Description	Sam	ple/Run terval	Blow Counts/RQD	Sample/Run No.	Sample Type	% Recovery
0.4	toppoil AR@ 4.1 Br. Si clay "Ibouldus Cry SS Very Hard "Clay sooms	1.	S	4-6-4	5-1	SØF	1.5
0.4 4,1 4,1	Br. Si day Wouldes	1. 3.0	i	622-10	5-2	<i>g</i> P	2.1
4.1	Cry SS Very Hard V/clay some	14. 14. 14.		2.7	RI	NY	5.8
1014 13.4	Void	14.1	, L	9.1	R-2	NY	10
	2- Core boxles						-
	· · · · · · · · · · · · · · · · · · ·						
			i				
		ļ					
						_	
Water Lev	vel @ Drilling 24 H	. Wate	er Level		7 Day Wa	ater Level	
Moving/D	elay Time Hamn	ner We	ight	140 lbs.	Hammer Dr	ор	30 in.



APPENDIX B CORE PHOTOGRAPHS







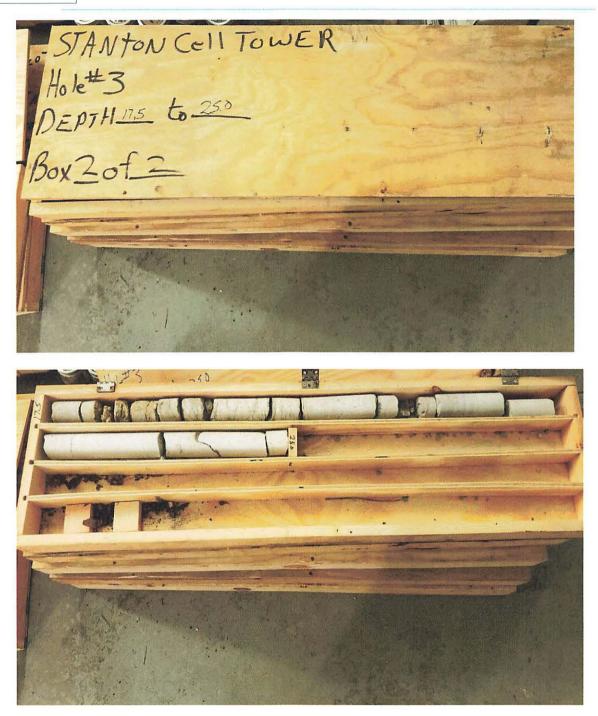


STANTON Cell TOWER Hole#2 Dopth 50 to 204 Box 1 of 2 STANTON Cell TONEL Hole#2 Depth s.e.to -Box 1 of 2 A.

















APPENDIX C SEISMIC DATA



Latitude, Longitude: 37.822866, -83.845659

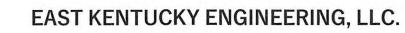
Ben T Combs Mountain PKN (213) Map data ©2020

Google

				and a second second second
Date			8/3/2020, 5:20:36 PM	
Design Cod	le Reference Do	cument	ASCE7-16	
Risk Catego	ory		IV	
Site Class			A - Hard Rock	
Туре	Value	Description		
SS	0.191	MCE _R ground motion. (for 0.2 second period)		
S ₁	0.084	MCE _R ground motion. (for 1.0s period)		
S _{MS}	0.153	Site-modified spectral acceleration value		
S _{M1}	0.067	Site-modified spectral acceleration value		
S _{DS}	0.102	Numeric seismic design value at 0.2 second SA		
S _{D1}	0.045	Numeric seismic design value at 1.0 second SA		
Туре	Value	Description		
SDC	A	Seismic design category		
Fa	0.8	Site amplification factor at 0.2 second		
Fv	0.8	Site amplification factor at 1.0 second		
PGA	0.1	MCE _G peak ground acceleration		
F _{PGA}	0.8	Site amplification factor at PGA		
PGAM	0.08	Site modified peak ground acceleration		
TL	12	Long-period transition period in seconds		
SsRT	0.191	Probabilistic risk-targeted ground motion. (0.2 second)		
SsUH	0.2	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration		
SsD	1.5	Factored deterministic acceleration value. (0.2 second)		
S1RT	0.084	Probabilistic risk-targeted ground motion. (1.0 second)		
S1UH	0.093	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.		
S1D	0.6	Factored deterministic acceleration value. (1.0 second)		
PGAd	0.5	Factored deterministic acceleration value. (Peak Ground Acceleration)		
C _{RS}	0.953	Mapped value of the risk coefficient at short periods		

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APPENDIX D PHOTOGRAPHS









EAST KENTUCKY ENGINEERING, LLC.





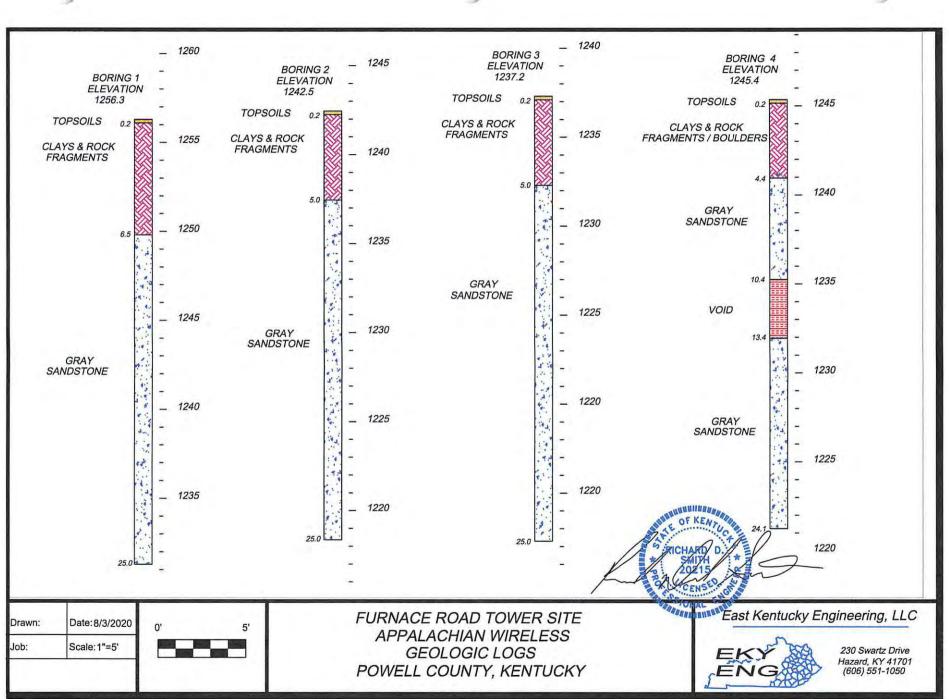
EAST KENTUCKY ENGINEERING, LLC.





EAST KENTUCKY ENGINEERING, LLC.

APPENDIX E MAPS

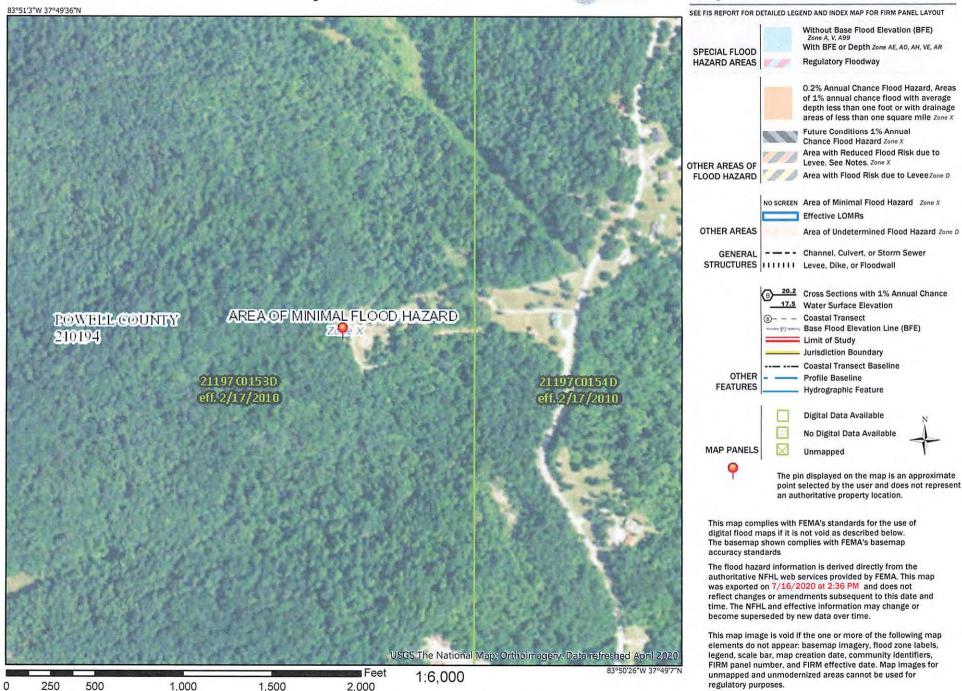


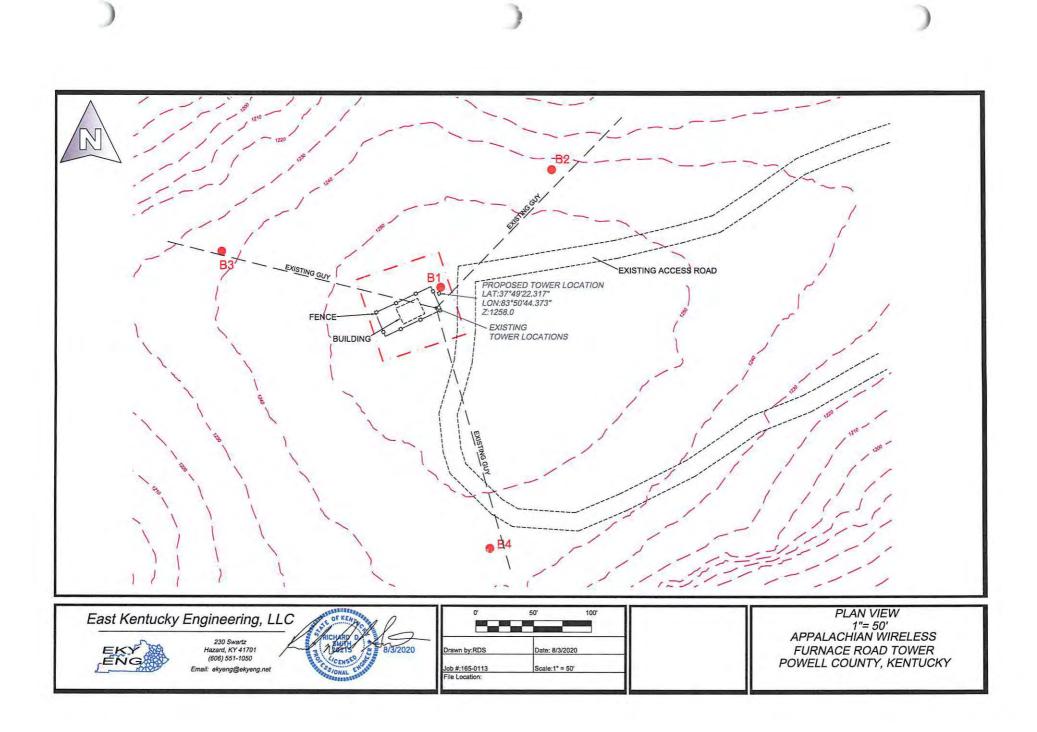
.

National Flood Hazard Layer FIRMette



Legend





.



World Tower COMPANY, INC.

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

400' TYPE 48SR TOWER FOR: APPALACHIAN WIRELESS SITE: STANTON POWELL COUNTY, KY DESIGN PACKAGE



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

ELEV.

OUTER

2@376

340'

280'

INNER 2@210

140'

70'

SIZE

3/4 EHS

3/4 EHS

3/4 EHS

3/4 EHS

3/4 EHS

9/16 EHS

GENERAL NOTES

GUY WIRE DATA

480'

430'

250'

210'

CUT LENGTH

256'(-29.3') 229'(-29') 234'(-18')

2@510' 2@495' 2@495'

460'

410'

162'(-13.8') 155'(-12.9') 144'(-6.9')

2@305' 2@305' 2@290'

250'

210'

460'

410'

235'

190'

INITIAL

5830

5830

5830

5830

5830

3500

- 1. WELDED CONNECTIONS SHALL CONFORM TO THE LATEST REVISION OF THE AMERICAN WELDING SOCIETY AWS.D 1.1.
- 2. TOWER AND ALL FABRICATED ACCESSORIES ARE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.
- 3. ALL BOLTS SHALL BE GALVANIZED ACCORDING TO THE STANDARD SPECIFICATION FOR ZINC COATING OF IRON AND STEEL HARDWARE ASTM A153.
- 4. LEG STEEL IS 50 KSI MIN. YIELD SOLID ROUND AND BRACING STEEL IS 36 KSI MIN. YIELD SOLID ROUND.
- 5. ALL STRUCTURAL BOLTS ARE ASTM A325.
- 6. GUY LENGTHS SHOWN ARE CHORD LENGTHS PLUS 30'.

BREAK

58300

58300

58300

58300

58300

35000

STRENGTH TENSION

- 7. TOWER SECTIONS ARE NUMBERED CONSECUTIVELY FROM BASE TO TOP.
- 8. TOWER SHOULD BE INSPECTED IN ACCORDANCE WITH TIA-222-G EVERY 3 YEARS.
- 9. TOWER INSPECTION SHOULD ONLY BE PERFORMED BY EXPERIENCED QUALIFIED PERSONNEL. FOR ASSISTANCE IN PROPER MAINTENANCE OF YOUR TOWER, CALL WORLD TOWER @ 270-247-3642.



FILE

TITLE: 400' TYPE 48SR TOWER FOR: APPALACHIAN WIRELESS SITE: STANTON POWELL COUNTY, KY

WORLD				T	OWER
SCALE	NONE	DWN.	LKG	CKD.	DATE 8-18-20

LE	NONE	DWN.	LKG	CKD.	DATE 8-18-20
				DWG. NO.	Q200683T

TURN

BUCKLE

1

1

1

1/4 X 24

1/4 X 24

1/4 X 24

1 1/4 X 24

1 1/4 X 24

1 X 18

SHACKLEITHIMBLE

1

1

1

1

1

3/4

7/8

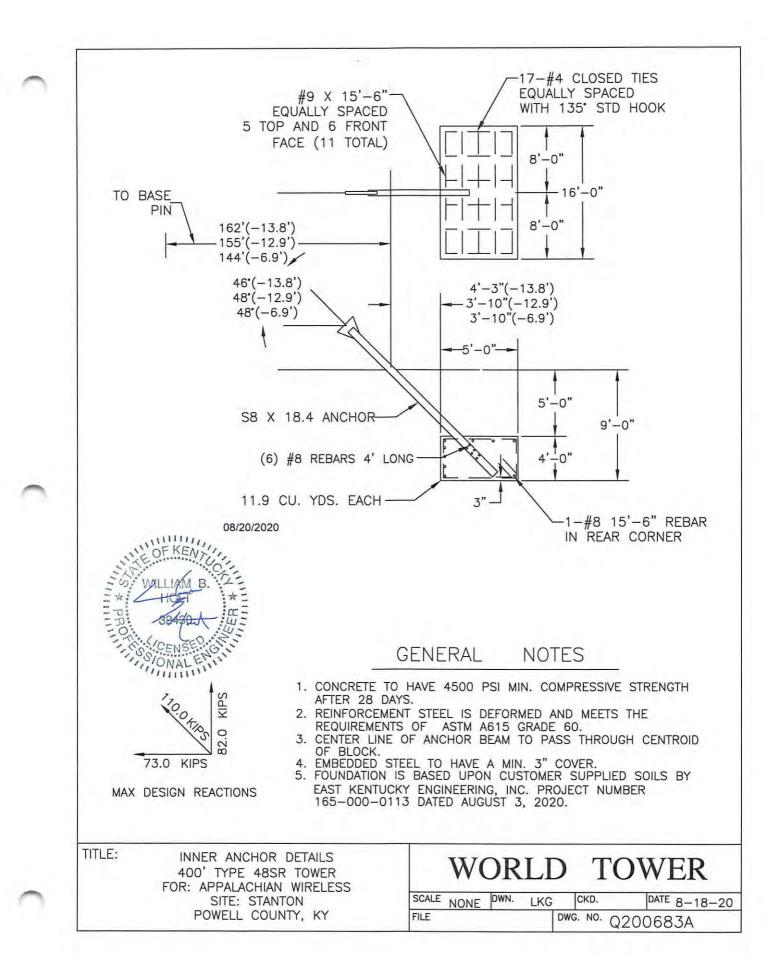
7/8

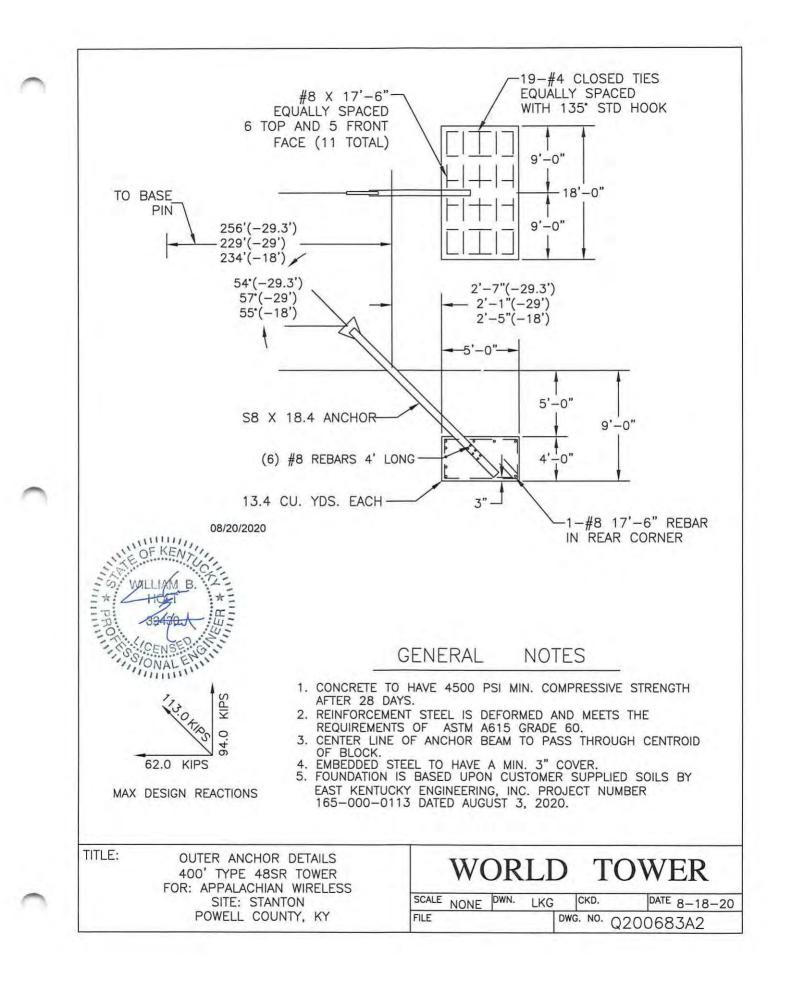
7/8

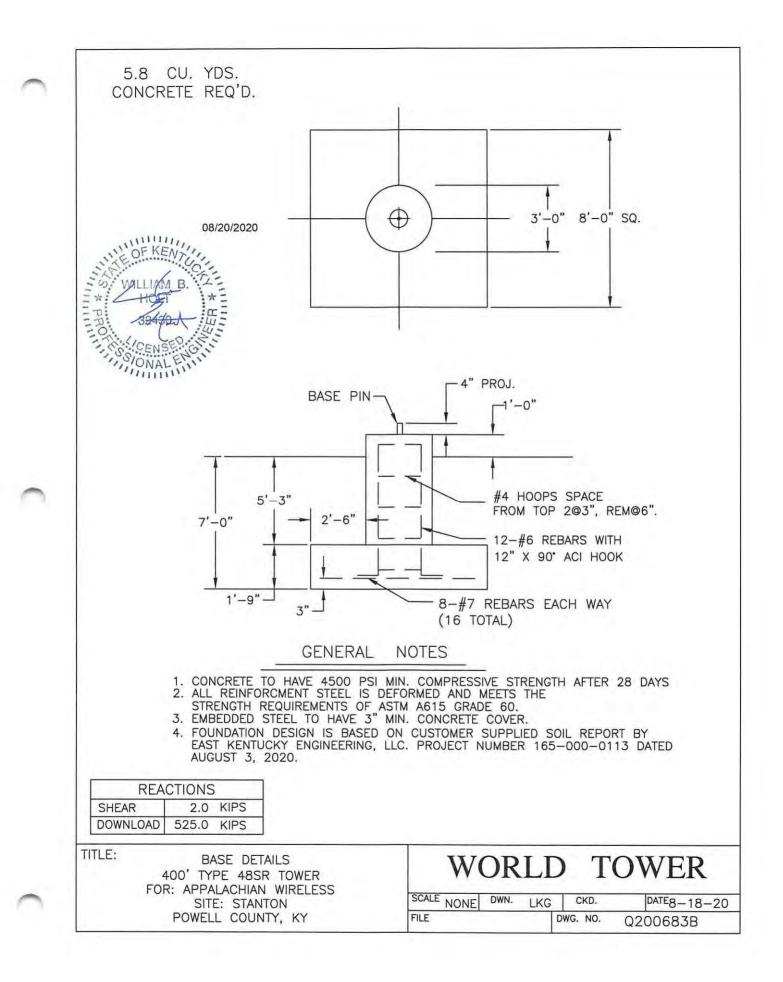
7/8

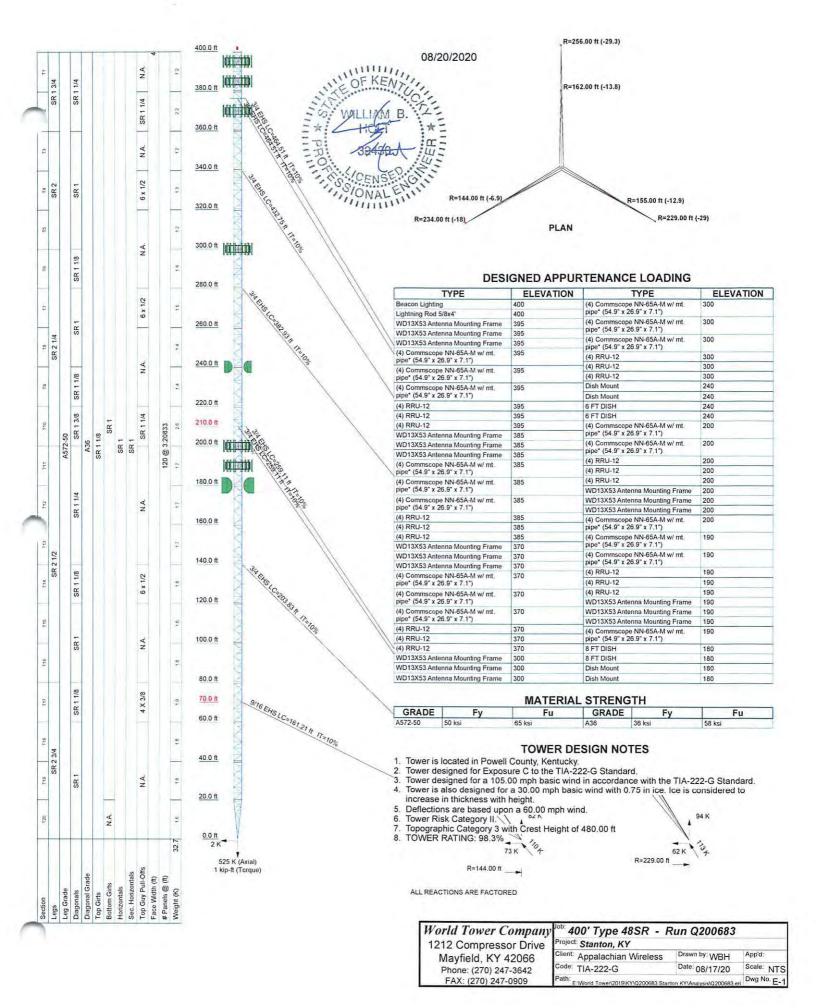
7/8

3/4











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Mail Processing Center Federal Aviation Administration Southwest Regional Office Obstruction Evaluation Group 10101 Hillwood Parkway Fort Worth, TX 76177 Aeronautical Study No. 2020-ASO-24458-OE Prior Study No. 2009-ASO-6410-OE

Issued Date: 09/22/2020

Cindy D. McCarty East Kentucky Network, LLC 101 Technology Trail Ivel, KY 41642

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

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

Structure:	Antenna Tower Stanton
Location:	Stanton, KY
Latitude:	37-49-22.10N NAD 83
Longitude:	83-50-44.30W
Heights:	1258 feet site elevation (SE)
	410 feet above ground level (AGL)
	1668 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, a med-dual system - Chapters 4,8(M-Dual),&12.

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

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

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

See attachment for additional condition(s) or information.

The use of a 24-hour medium intensity flashing white light system is not recommended on structures within 3 nautical miles of an airport. Stanton Airport (150) is located 1.62 nautical miles from your structure.

This determination expires on 03/22/2022 unless:

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

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

This determination is subject to review if an interested party files a petition that is received by the FAA on or before October 22, 2020. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted to the Manager of the Rules and Regulations Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on November 01, 2020 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. For any questions regarding your petition, please contact Rules and Regulations Group via telephone -202-267-8783.

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

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

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

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

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

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

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact Chris Smith, at (817) 222-5928, or chris.smith@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2020-ASO-24458-OE.

(DNH)

Signature Control No: 448422239-451704796 Mike Helvey Manager, Obstruction Evaluation Group

Attachment(s) Additional Information Frequency Data Map(s)

cc: FCC

Page 3 of 8

Additional information for ASN 2020-ASO-24458-OE

Abbreviations: AGL, Above Ground Level AMSL, Above Mean Sea Level ASO - Southern Region CAT - Category CFR, Code of Federal Regulations NM, Nautical Mile OE - Obstruction Evaluation RWY, Runway TPA, Traffic Pattern Airspace

The proposed replacement structure is located approximately 1.62 NM south of the Airport Reference Point for the STANTON Airport (I50), KY. It is identified as exceeding the obstruction standards of 14 CFR Part 77 as follows as applied to I50:

>The structure will lie within the TPA climb and descent area for RWY 24, for CAT B/C/D aircraft, exceeds by 210'.

The proposal was not circularized for public comment because current FAA obstruction evaluation policy exempts from circularization of proposals that are replacing existing structures with same height or shorter structures at the same site. Existing structure studied under 1991-ASO-1009-OE at 413 feet AGL / 1663 feet AMSL. Even though this penetrates the CAT B/C/D airspace, Stanton Airport is a single 2996'x70' runway with only 8 single engine and 1 multi-engine aircraft based there and 5,185 flight operations for the year ending 06/21/2019. Of those 5,185 flight operations, none were CAT B/C/D aircraft. 2C survey provided for the replacement study. Airport confirmed CAT A aircraft only.

**Note: Aircraft categories are based on approach speed, CAT A = less than 91 knots, CAT B = 91- 120 knots, CAT C = 121-140 knots, CAT D = 141-165 knots, CAT E 165 + knots.

AERONAUTICAL STUDY FOR POSSIBLE INSTRUMENT FLIGHT RULES (IFR) EFFECT DISCLOSED THE FOLLOWING:

> The structure would have no effect on any existing or proposed IFR arrival/departure routes, operations, or procedures.

> The structure would have no effect on any existing or proposed IFR en route routes, operations, or procedures.

> The structure would have no effect on any existing or proposed IFR minimum flight altitudes.

AERONAUTICAL STUDY FOR POSSIBLE VISUAL FLIGHT RULES (VFR) EFFECT DISCLOSED THE FOLLOWING:

> The proposed structure would have no effect on any existing or proposed VFR arrival or departure routes, operations or procedures.

> The proposed structure would not conflict with airspace required to conduct normal VFR traffic pattern operations at 150 or any known public use or military airports.

> The proposed structure would not have a substantial adverse effect on VFR en route flight operations.

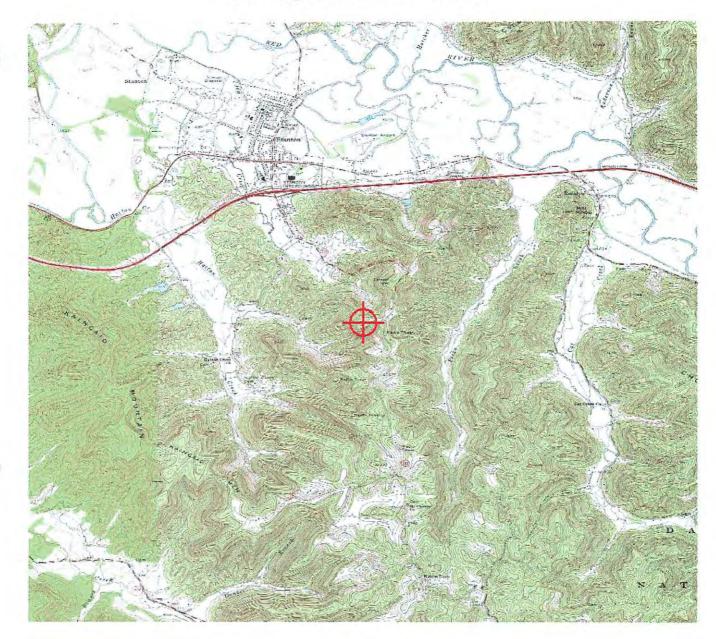
ABSOLUTELY MANDATORY: The structure will be appropriately obstruction marked and lighted to make it more conspicuous to airmen should circumnavigation be necessary.

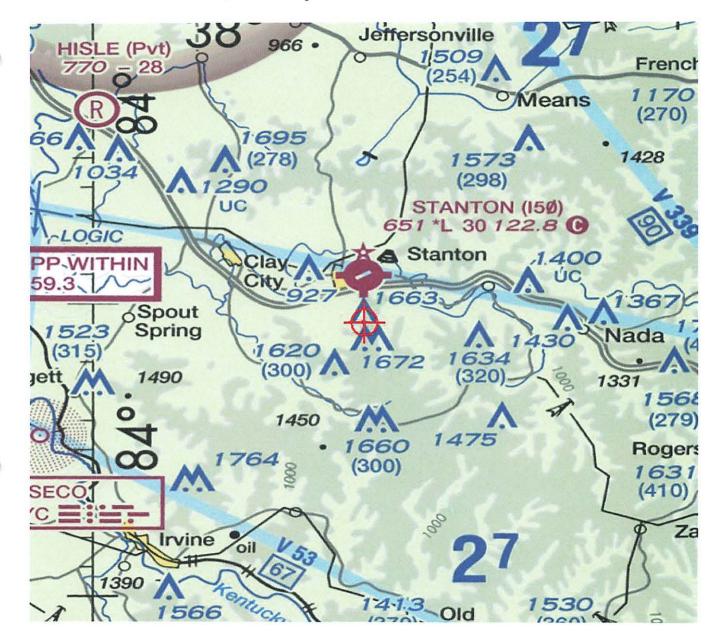
The cumulative impact of the structure, when combined with other proposed and existing structures is not considered significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities. Nor would the proposal affect the capacity of any known existing or planned public-use or military airport.

Therefore, it is determined that the proposed increase would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

Frequency Data for ASN 2020-ASO-24458-OE

\frown	LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
	<i>.</i>	-	011		10117
	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







ANDY BESHEAR Governor KENTUCKY AIRPORT ZONING COMMISSION Office of Audits, 200 Mero Street, 4th floor Frankfort, KY 40622 www.transportation.ky.gov 502-782-4043

JIM GRAY Secretary

APPROVAL OF APPLICATION

October 15, 2020

APPLICANT East Kentucky Network, LLC Cindy McCarty 101 Technology Trail Ivel, KY 41642

SUBJECT: AS-POWELL-I50-2020-115

STRUCTURE:Antenna Tower (Replacement)LOCATION:Stanton, KYCOORDINATES:37° 49' 22.1" N / 83° 50' 44.3" WHEIGHT:410' AGL/1668' AMSL

The Kentucky Airport Zoning Commission has approved your application for a permit to construct 410' AGL/1668' AMSL Antenna Tower near Stanton, KY 37° 49' 22.1" N / 83° 50' 44.3" W.

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

Medium Dual Obstruction Lighting Required.

Randall S. Royer Randall S. Royer, Executive Director Office of Audits Acting Administrator <u>Randall.Royer@ky.gov</u> Jason.Salazar-Munoz@ky.gov



An Equal Opportunity Employer M/F/D

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Driving Directions for Stanton Site

- 1. Begin at the Powell County Courthouse located at Court Street, Stanton, Kentucky. Head east on Court Street toward Washington Street.
- 2. Drive approximately 0.2 miles.
- 3. Turn right onto N Main Street. Drive approximately 0.9 miles.
- 4. Continue onto KY-213 S/Furnace Road approximately 1.4 miles (sign posted).
- 5. Turn right onto a gravel road and continue straight 0.2 miles (sign posted).

Prepared By: Daryl Bartley Cell Site Compliance Agent East Kentucky Network, LLC d/b/a Appalachian Wireless (606) 791-0310 (cell) dbartley@ekn.com



DEED

THIS DEED OF CONVEYANCE is made and entered into this day of <u>August</u> ______, 2020 by and between ANTHONY WAYNE BANKS, single, whose address is 2155 Yates Chapel Road, Cecilia, Kentucky 42724 (hereinafter referred to as "Grantor"), and EAST KENTUCKY NETWORK, LLC D/B/A APPALACHIAN WIRELESS, a Kentucky limited liability company (hereinafter referred to as "Grantee"), whose address is 101 Technology Trail, Ivel, Kentucky 41642, which is also the "in care of" address to which the property tax bill for 2020 should be sent.

WITNESSETH

That for and in consideration of the sum of Sixty-Eight Thousand and 00/100 Dollars (\$68,000.00), cash in hand paid, the receipt and sufficiency of which are hereby acknowledged, Grantor does hereby GRANT, SELL, and CONVEY to the Grantee, its successors and assigns, that certain real property in Stanton, Powell County, Kentucky, which is more particularly described in the Lot Description **attached** hereto and made a part herein as **Exhibit A** and depicted on the plat **attached** hereto and made a part herein as **Exhibit B**, prepared by James W. Caudill, Licensed Professional Land Surveyor (hereinafter referred to as the "Property").

Being a part of the same property conveyed to Grantor by Eastern Kentucky Mechanical, Inc., by Deed dated January 24, 2020, and recorded in the Powell County Clerk's Office in Deed Book 201, Page 385.

Grantor also conveys to Grantee a permanent right of way and easement (the "Guy Wire R.O.W."), which is also depicted on **Exhibit B**, for placement, replacement, removal, and maintenance of anchors and guy wires to support a telecommunications tower which will be constructed on the Property. Grantor further conveys to Grantee an easement for ingress, egress,

and regress from the public road to the Property over and across the existing roads located on Grantor's property, which are generally described in the map **attached** hereto and made a part hereof as **Exhibit C**, prepared by James W. Caudill, Licensed Professional Land Surveyor (hereinafter referred to as the "Access Road"). Grantor also conveys to Grantee an easement and right of way to construct, maintain and operate telephone, fiber and/or power transmission lines and poles along or near the existing roads, if possible, and if not, then in a location to be mutually agreed between the parties, with Grantor's agreement not to be unreasonably withheld.

D

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

CONSIDERATION CERTIFICATE

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

[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

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

GRANTOR:

WAYNE BANKS

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COMMONWEALTH OF KENTUCKY COUNTY OF HALD =:

I, <u>KODNEY</u> D.<u>KLETTE</u>, a Notary Public in and for the County and State aforesaid, do hereby certify that the foregoing Deed and Consideration Certificate was this day produced, acknowledged, subscribed, and sworn to before me in the County and State aforesaid and signed by Anthony Wayne Banks, Grantor, this <u>5</u>th day of <u>AVGUST</u>, 2020.

Notary Public Commission NORODNEY D KLETTE Notary Public-State at Large KENTUCKY - Notary ID # KYNP4802 My Commission Expires 04-10-2024

My Commission Expires: _____

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

Hillum WA

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

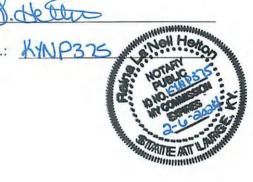
COMMONWEALTH OF KENTUCKY

COUNTY OF Flayd

1. Maina Helton, a Notary Public in and for the County and State aforesaid, do hereby certify that the foregoing Consideration Certificate was this day produced, acknowledged, subscribed, and sworn to before me in the County and State aforesaid and signed by W.A. Gillum, in his capacity as the CEO/General Manager of East Kentucky Network, LLC d/b/a Appalachian Wireless, Grantee, this <u>74h</u> day of <u>August</u> , 2020.

> Notary Public Commission No.: KINP325

My Commission Expires: 2-6-2024



This is to certify that this instrument was prepared by:

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

LOT DESCRIPTION Property of Anthony Wayne Banks P.O. Box 138 Stanton, Kentucky 40380 Off of Highway 213 in Powell County, Kentucky June 23, 2020

A certain tract or parcel of land lying and being in Powell County, Kentucky, and being a portion of the property conveyed to Anthony Wayne Banks, from Eastern Kentucky Mechanical, Inc., by deed of conveyance dated January 24, 2020, and of record in Deed Book 201 Page 385, of the records of the Powell County Court Clerk's Office. Said property being more particularly described as follows:

Lot IA

Beginning on a set iron pin with cap marked "LS#2259" (having NAD83 Ky Single Zone Coordinates of N:3828817.73 E:5471167.61); thence North 71 deg 30 min 00 sec East, a distance of 75.00 feet to a set iron pin with cap marked "LS#2259" (having NAD83 Ky Single Zone Coordinates of N:3828841.53 E:5471238.74); thence South 18 deg 30 min 00 sec East, a distance of 75.00 feet to a set iron pin with cap marked "LS#2259" (having NAD83 Ky Single Zone Coordinates of N:3828770.40 E:5471262.53); thence South 71 deg 30 min 00 sec West, a distance of 75.00 feet to a set iron pin with cap marked "LS#2259" (having NAD83 Ky Single Zone Coordinates of N:3828746.60 E:5471191.41); thence North 18 deg 30 min 00 sec West, a distance of 75.00 feet to the point of the beginning. Containing a calculated area of 5,625.00 square feet, or .13 acres.

Also to be included is a right of way from the public road so as to complete an access route from the public road to Lot 1A and back to the public road. That is an existing road along the south side and also an existing route along the ridge and existing Banks drive-way to the Highway. Also to be included is a right to install fiber and utility lines in or along said access road and/or such other location to be agreed upon by the parties.

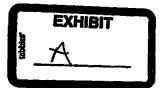
Unless stated otherwise, any monument referred to herein as "set iron pin with cap" is a set ¹/₂" diameter rebar, at least eighteen (18") in length, with a plastic cap stamped "LS-2259". All bearings stated herein are referred to NAD83, KY single zone of the Kentucky state plane system.

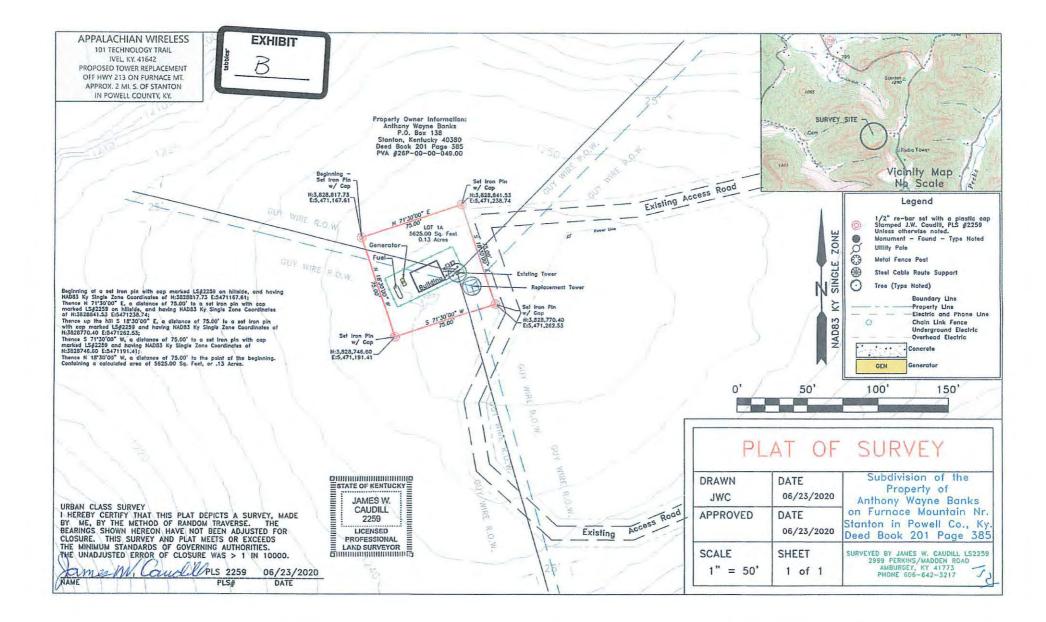
This survey was performed on June 23, 2020 by James W. Caudill, a Kentucky Licensed Professional Land Surveyor No. 2259.

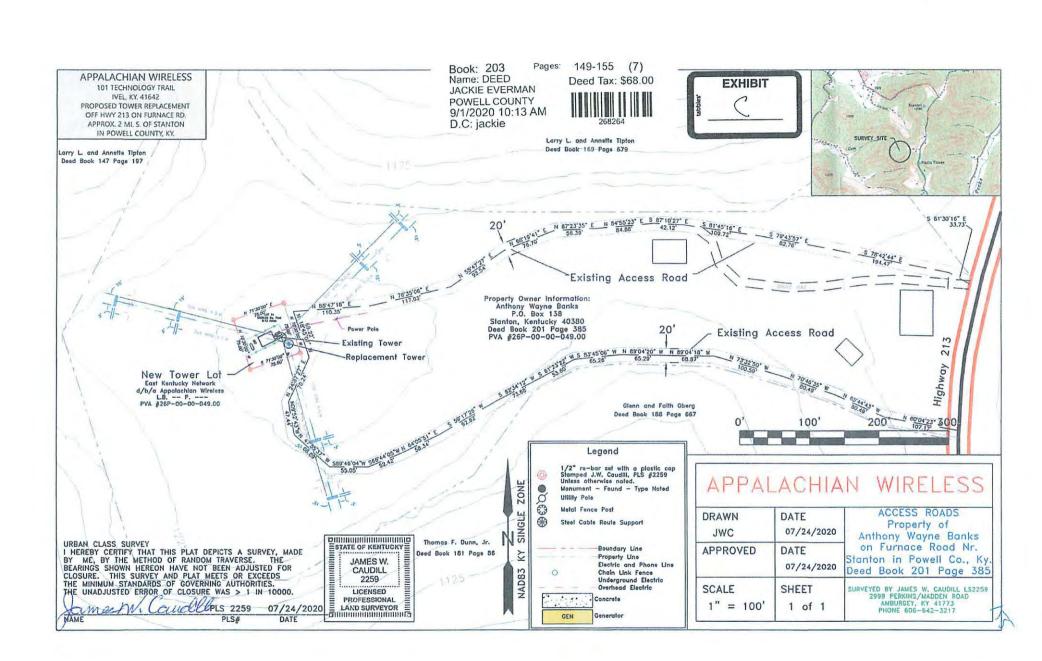
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James W. Caudill, PLS #2259

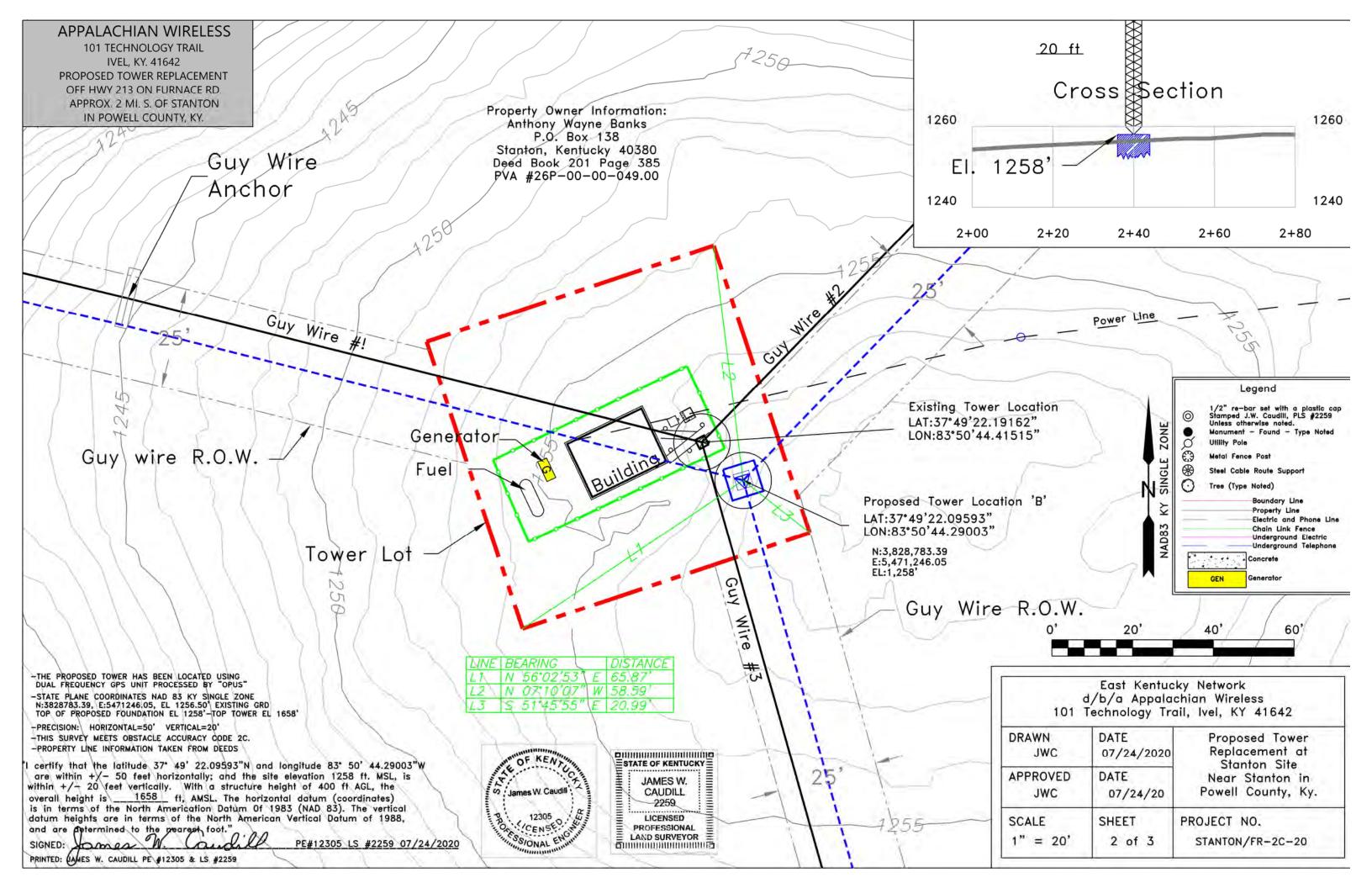




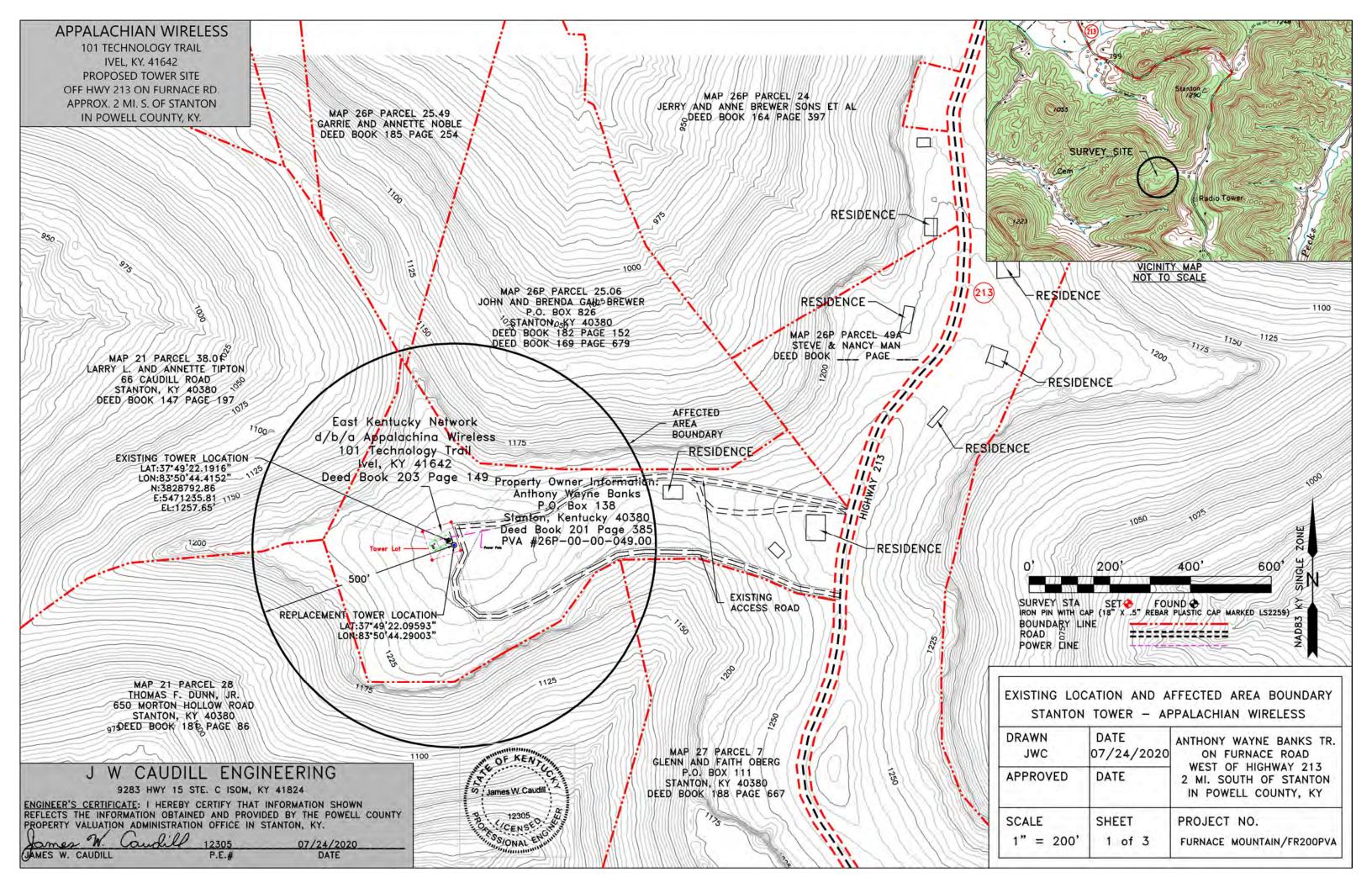


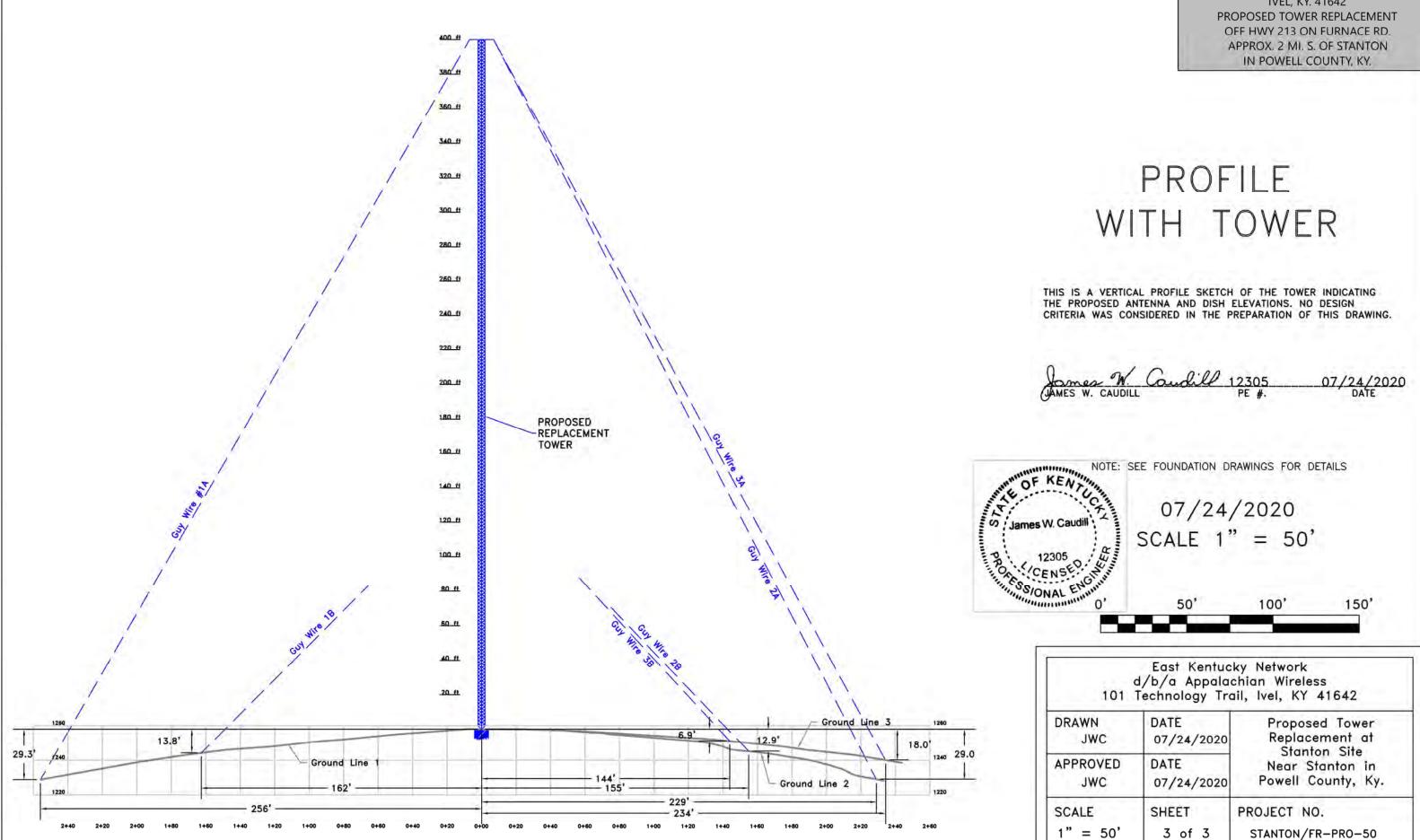


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APPALACHIAN WIRELESS 101 TECHNOLOGY TRAIL IVEL, KY. 41642

DRAWN JWC	DATE 07/24/2020	Stanton Site Near Stanton in			
APPROVED JWC	DATE 07/24/2020				
SCALE 1" = 50'	SHEET 3 of 3	PROJECT NO. STANTON/FR-PRO-50			

Utility ID	Utility Name	Utility Type			S
	365 Wireless, LLC	Celiular	D	Atlanta	G
	Access Point, Inc.	Cellular	D	Cary	N
	Air Voice Wireless, LLC	Cellular	A	Bloomfield Hill	_
	Alliant Technologies of KY, L.L.C.	Cellular	С	Morristown	N
	Alltel Communications, LLC	Cellular	A	Basking Ridge	N
	AltaWorx, LLC	Cellular	С	Fairhope	A
4107800	American Broadband and Telecommunications Company	Cellular	С	Toledo	C
4108650	AmeriMex Communications Corp.	Cellular	D	Dunedin	F
4105100	AmeriVision Communications, Inc. d/b/a Affinity 4	Cellular	D	Virginia Beach	V
4110700	Andrew David Balholm dba Norcell	Cellular	С	Clayton	۷
4108600	BCN Telecom, Inc.	Cellular	D	Morristown	N
4110550	Blue Casa Mobile, LLC	Cellular	D	Santa Barbara	C
4108750	Blue Jay Wireless, LLC	Cellular	C	Carrollton	Т
4111050	BlueBird Communications, LLC	Cellular	С	New York	N
4202300	Bluegrass Wireless, LLC	Cellular	Α	Elizabethtown	K
4107600	Boomerang Wireless, LLC	Cellular	B	Hiawatha	I/
	BulisEye Telecom, Inc.	Cellular	D	Southfield	N
	CampusSims, Inc.	Cellular	D	Boston	N
	Cellco Partnership dba Verizon Wireless	Cellular	A	Basking Ridge	N
4106600	Cintex Wireless, LLC	Cellular	D	Rockville	N
4111000	ComApp Technologies LLC	Cellular	c	Melrose	N
	Consumer Cellular, Incorporated	Cellular	A	Portland	To
	Credo Mobile, Inc.	Cellular	A	San Francisco	C
	Cricket Wireless, LLC	Cellular	A	San Antonio	ĪΤ
	CTC Communications Corp. d/b/a EarthLink Business I	Cellular	D	Grand Rapids	ĪN
	Cumberland Cellular Partnership	Cellular	A	Elizabethtown	K
	East Kentucky Network, LLC dba Appalachian Wireless	Cellular	A	Ivel	K
	Easy Telephone Service Company dba Easy Wireless	Cellular	D	Ocala	F
	Enhanced Communications Group, LLC	Cellular	D	Bartlesville	Ċ
	Excellus Communications, LLC	Cellular	D	Chattanooga	†₹
	Flash Wireless, LLC	Cellular	c	Concord	TN
	France Telecom Corporate Solutions L.L.C.	Cellular	D	Oak Hill	Īv
	Global Connection Inc. of America	Cellular	D	Norcross	Ġ
	Globalstar USA, LLC	Cellular	B	Covington	t
	Google North America Inc.	Cellular	A	Mountain View	_
	Granite Telecommunications, LLC	Cellular	D	Quincy	Ň
	GreatCall, Inc. d/b/a Jitterbug	Cellular	A	San Diego	C
	GTE Wireless of the Midwest dba Verizon Wireless	Cellular	A		N
	Horizon River Technologies, LLC	Cellular	c	Atlanta	G
	i-Wireless, LLC	Cellular	A	Newport	K
	IM Telecom, LLC d/b/a Infiniti Mobile	Cellular	D	Tulsa	ĥ
	KDDI America, Inc.	Cellular	D	New York	ĪN
	Kentucky RSA #1 Partnership	Cellular	A	Basking Ridge	N
	Kentucky RSA #3 Cellular General	Cellular	A	Elizabethtown	K
	Kentucky RSA #4 Cellular General	Cellular	÷	Elizabethtown	K
	Konatel, Inc. dba telecom.mobi	Cellular	A D	Johnstown	P
	Lunar Labs, Inc.	Cellular	IC	Detroit	
	Lycamobile USA, Inc.	Cellular	D	Newark	N
	MetroPCS Michigan, LLC	Cellular			V
	Mitel Cloud Services, Inc.	Cellular	A D	Bellevue	A
	New Cingular Wireless PCS, LLC dba AT&T Mobility, PCS	Cellular		Mesa San Antonio	
			A	San Antonio	_
	New Par dba Verizon Wireless Nextel West Corporation	Cellular Cellular	A D	Basking Ridge Overland Park	N
		iceutiar	שו	ILIVERARD PARK	K

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

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S & S Tower Services 120 Branden Dr. Mousie, KY 41839

Kentucky Public Service Commission 211 Sower Blvd. P.O. Box 615 Frankfort, KY 40602-0615

Dear Commissioners:

The Construction Manager for the proposed communications facility will be Dave Strausbaugh. His contact information is (606) 497-6730 or <u>dstrausbaugh010@gmail.com</u>.

Dave has been in the industry completing civil construction and constructing towers since 1991. He has worked for S&S Tower Services since 2015 as Construction Manager overseeing the construction of telecommunications towers and sites.

Thank you,

thin theyles !!

Chris Strausbaugh Owner S&S Tower Services (606) 497-5798