COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the matter of:

THE APPLICATION OF EAST KENTUCKY NETWORK, LLC FOR THE ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A TOWER IN CLAY COUNTY, KENTUCKY	) CASE NO. 2024-00001

East Kentucky Network, LLC d/b/a Appalachian Wireless, was granted authorization to provide cellular service in the BTA098 Market Area by the Federal Communications Commission (FCC). The FCC license is included as Exhibit 1. East Kentucky Network, LLC merger documents were filed with the Commission on February 2, 2001 in Case No. 2001-022. East Kentucky Network, LLC is a Kentucky Limited Liability Company that was organized on June 16, 1998. East Kentucky Network, LLC is in good standing with the state of Kentucky.

In an effort to improve service in Clay 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 self-supporting tower on a tract of land located near 245 Barkley Moore Road, Oneida, Clay County, Kentucky (37°15'34.5" N 83°38'46.3" 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 Clay County by providing an interconnection between East Kentucky Network, LLC's other sites thereby forming a cohesive network.

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 who own

property contiguous to the property upon which construction is proposed in accordance with the Property Valuation Administrator's record.

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

Clay County has no formal local planning unit. In absence of this unit, the Clay 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 Clay 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 Manchester Enterprise, January 17, 2024 edition. Enclosed is a copy of that notice in Exhibit 3. The Manchester Enterprise is the newspaper with the largest circulation in Clay 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 ROHN Products, LLC and will be constructed under their supervision. Their qualifications are evidenced in Exhibit 5 by the seal and signature of the registered professional engineer responsible for this project.

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

The FAA application and Kentucky Airport Zoning Commission determinations 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 January 9, 2024 and will remain posted for at least two weeks after filing of this application as specified.

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

The proposed construction site is on a vacant piece of farm land some distance from the nearest structure.

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

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

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

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

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

[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

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

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

SUBMITTED BY: Raina Helton DATE: 1-18-2024
Raina Helton, Regulatory Compliance Director

APPROVED BY: Michael L Johnson DATE: 1-18-2024
Michael L. Johnson, CEO

ATTORNEY: Krystal Branham DATE: 1-18-2024
Hon. Krystal Branham, Attorney

CONTACT INFORMATION:

Michael L. Johnson, CEO
Phone: (606) 477-2355, Ext. 1212
Email: mjohnson@ekn.com

Raina Helton, Regulatory Compliance Director
Phone: (606) 477-2355, Ext. 1005
Email: rhelton@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 Notices to Land Owners
3	Notification of County Judge Executive and Newspaper Advertisement
4	Universal Soil Bearing Analysis
5	Tower Design
6	FAA and KAZC Determinations
7	Driving Directions from County Court House and Map to Suitable Scale
8	Memorandum of Lease 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	
14	
15	

Exhibit 1

ULS License

PCS Broadband License - WQHG464 - East Kentucky Network, LLC d/b/a Appalachian Wireless

Call Sign	WQHG464	Radio Service	CW - PCS Broadband
Status	Active	Auth Type	Regular

Rural Service Provider Bidding Credit

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

Reserved Spectrum

Reserved Spectrum

Market

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

Dates

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

Buildout Deadlines

1st	07/23/2012	2nd	

Notification Dates

1st	05/24/2012	2nd	

Licensee

FRN	0001786607	Type	Limited Liability Company

Licensee

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

P:(606)477-2355
E:compliance@ekn.com

Contact

Lukas, LaFuria, Gutierrez & Sachs, LLP
Pamela L Gist Esq
8300 Greensboro Drive
Tysons, VA 22102

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

Ownership and Qualifications

Radio Service Type	Fixed, Mobile		
Regulatory Status	Common Carrier, Non-Common Carrier	Interconnected	Yes

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

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

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

Demographics

Race

Ethnicity Gender

Exhibit 2

EXHIBIT 2 – LIST OF PROPERTY OWNERS

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

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

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

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

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

LIST OF PROPERTY OWNERS

Oneida Baptist Institute
P.O. Box 67
Oneida, KY 40962

U.S. Forestry Service (R576)
Star Route Box 1
Big Creek , KY 40914

Ray and Bernice Hensley
P.O. Box 363
Oneida, KY 40972

Anna Laura Brown, Carol Gay Brown
and John Russell Brown
14828 North Highway 66
Oneida, KY 40972

CSL Kentucky Systems, LLC
c/o Duff and Phelps
PO Box 2629
Addison , TX 75001

Oneida Fire Department
First Street
Oneida, KY 40972

Ethan J.W. Allen
P.O. Box 1380
Manchester, KY 40962

Cemetary-Oneida
General Delvery
Oneida, KY 40972

Oneida Baptist Institute
11 Mulberry Street
Oneida, KY 40962

Appalachian WIRELESS
www.appalachianwireless.com

EAST KENTUCKY NETWORK, LLC
www.ekn.com

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

January 18, 2024

Oneida Baptist Institute
P.O. Box 67
Oneida, KY 40962

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2024-00001)

East Kentucky Network, LLC d/b/a Appalachian Wireless has applied to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular telecommunications service in Clay County. The facility will include a 400-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 245 Barkley Moore Rd.. 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. 2024-00001 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. 1005.

Sincerely,

Raina Helton

Raina Helton, CKP
Regulatory Compliance Director
Enclosure 1

Appalachian WIRELESS
www.appalachianwireless.com

EAST KENTUCKY NETWORK, LLC
www.ekn.com

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

January 18, 2024

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Star Route Box 1
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VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

January 18, 2024

Ray and Bernice Hensley
P.O. Box 363
Oneida, KY 40972

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VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

January 18, 2024

Anna Laura Brown, Carol Gay Brown
and John Russell Brown
14828 North Highway 66
Oneida, KY 40972

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www.appalachianwireless.com

EAST KENTUCKY NETWORK, LLC
www.ekn.com

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

January 18, 2024

Oneida Fire Department
First Street
Oneida, KY 40972

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2024-00001)

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VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

January 18, 2024

Ethan J.W. Allen
P.O. Box 1380
Manchester, KY 40962

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EAST KENTUCKY NETWORK, LLC
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VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

January 18, 2024

Cemetary-Oneida
General Delvery
Oneida, KY 40972

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January 18, 2024

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11 Mulberry Street
Oneida, KY 40962

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Oneida
Location:
245 Barkley Moore Road
Coordinates:
Lat: 37°15' 34.5"N
Lon: 83°38' 46.3"W
Barkley Moore Rd
Barkley Moore Rd
Oneida Bottom Rd
Oneida Bottom Rd
Oneida Bottom Rd
66
Oneida Tower
Google Earth

Exhibit 3

Appalachian WIRELESS
www.appalachianwireless.com

EAST KENTUCKY NETWORK, LLC
www.ekn.com

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

January 18, 2024

Tommy Harmon, Judge Executive
Clay County Court House
102 Richmond Road, #201
Manchester, KY 40962

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Sincerely,

Raina Helton

Raina Helton, CKP
Regulatory Compliance Director
Enclosure 1

Oneida

Location:
245 Barkley Moore Road

Coordinates:
Lat: 37°15' 34.5"N
Lon: 83°38' 46.3"W

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

EAST KENTUCKY NETWORK

To:	The Manchester Enterprise Attn: Classifieds	**From:**	Libby Ratliff Regulatory Compliance Coordinator
Email:	jbowling@themanchesterenterprise.com	**Date:**	January 11, 2024
Re:	PUBLIC NOTICE ADVERTISEMENT	**Pages:**	1

Please place the following Public Notice Advertisement in The Manchester Enterprise to be ran on January 17, 2024.

PUBLIC NOTICE:

RE: Public Service Commission of Kentucky (CASE NO. 2024-00001)

Public Notice is hereby given that East Kentucky Network, LLC, dba Appalachian Wireless has applied to the Kentucky Public Service Commission to construct a cellular telecommunications tower on a tract of land located near 245 Barkley Moore Road, Oneida, Clay County, Kentucky. The proposed tower will be a 400-foot self-supporting tower with attached antennas. If you would like to respond to this notice, please contact the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to Case No. 2024-00001.

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

Thank you,

Raina Helton, CKP
Regulatory Compliance Director

Exhibit 4

GEOTECHNICAL ENGINEERING REPORT
APPALACHIAN WIRELESS ONEIDA
CLAY COUNTY, KENTUCKY
ONEIDA TOWER SITE OFF HIGHWAY 11

Prepared for:

EAST KENTUCKY NETWORK, LLC
IVEL, KENTUCKY

Prepared by:

ANDERSON PROFESSIONAL SERVICES, LLC
NICHOLASVILLE, KENTUCKY

Date:

DECEMBER 8, 2023

APS GEO Project No.:

APS230050

Corporate Office Address:
1060 Elizabeth St., Unit 7, Nicholasville, KY 40356

December 8, 2023

Mr. Stanton Neece
Outside Plant Supervisor – Network Operations
East Kentucky Network, LLC
101 Technology Trail
Ivel, KY 41642

Re: Geotechnical Engineering Report
Appalachian Wireless Oneida
Oneida Tower Site off Highway 11
Clay County, Kentucky
APS GEO Project No. APS230050

This report presents the results, findings, and recommendations of a preliminary geotechnical exploration conducted by Anderson Professional Services, LLC (APS GEO) in response to a request by Appalachian Wireless for geotechnical drilling, laboratory testing, and engineering services at the proposed Appalachian Wireless Tower Site in Oneida off Highway 11, in Clay County, Kentucky. The results of these tasks are presented in this report. Our work was completed in general accordance with our Master Service Agreement dated May 25, 2023.

This report was prepared by engineering staff working under the direct supervision and review of a licensed professional civil engineer specializing in geotechnical engineering and registered in the state of Kentucky. The findings, conclusions, and recommendations presented herein are based on the applicable standards of the profession at the time this report was prepared and within this geographic area. This report has been prepared for the exclusive use of the Owner for specific application to the proposed project, in accordance with generally accepted geotechnical and foundation engineering practices.

If you have any questions regarding this report or need any additional information, please do not hesitate to contact us.

Best Regards,

Matthew Birchmier, PE

Justin Anderson, PE

STATE OF KENTUCKY
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APPALACHIAN WIRELESS ONEIDA
CLAY COUNTY, KENTUCKY
ONEIDA TOWER SITE OFF HIGHWAY 11
December 8, 2023 | APS GEO Project No. APS230050

1.0 INTRODUCTION

This geotechnical engineering report provides the results, findings, and recommendations of the geotechnical engineering design conducted by Anderson Professional Services, LLC (APS GEO) in support of East Kentucky Network, LLC (Appalachian Wireless) and the proposed new cellular antenna tower in Clay County, Kentucky.

This geotechnical engineering report was prepared by a licensed professional civil engineer specializing in geotechnical engineering registered in the state of Kentucky. The findings and recommendations presented herein are based on the applicable standards and the profession at the time of this report within this geographic area. The technical memorandum was prepared for Appalachian Wireless for exclusive use of the and the Owner for specific application to the proposed project, in accordance with generally accepted geotechnical and foundation engineering practices.

2.0 PROJECT DESCRIPTION AND UNDERSTANDING

APS GEO understands that Appalachian Wireless is planning to construct a new cellular antenna tower off Kentucky Highway 11 in Clay County, Kentucky, near GPS point: 37.259609, -83.646203. The intent of this study is to perform a geotechnical exploration in the vicinity of the proposed tower location and to provide a geotechnical engineering report with foundation design recommendations that Appalachian Wireless may use in the tower structure design. The location of the proposed tower foundation is in Clay County, Kentucky as shown in Figures 1 and 2.

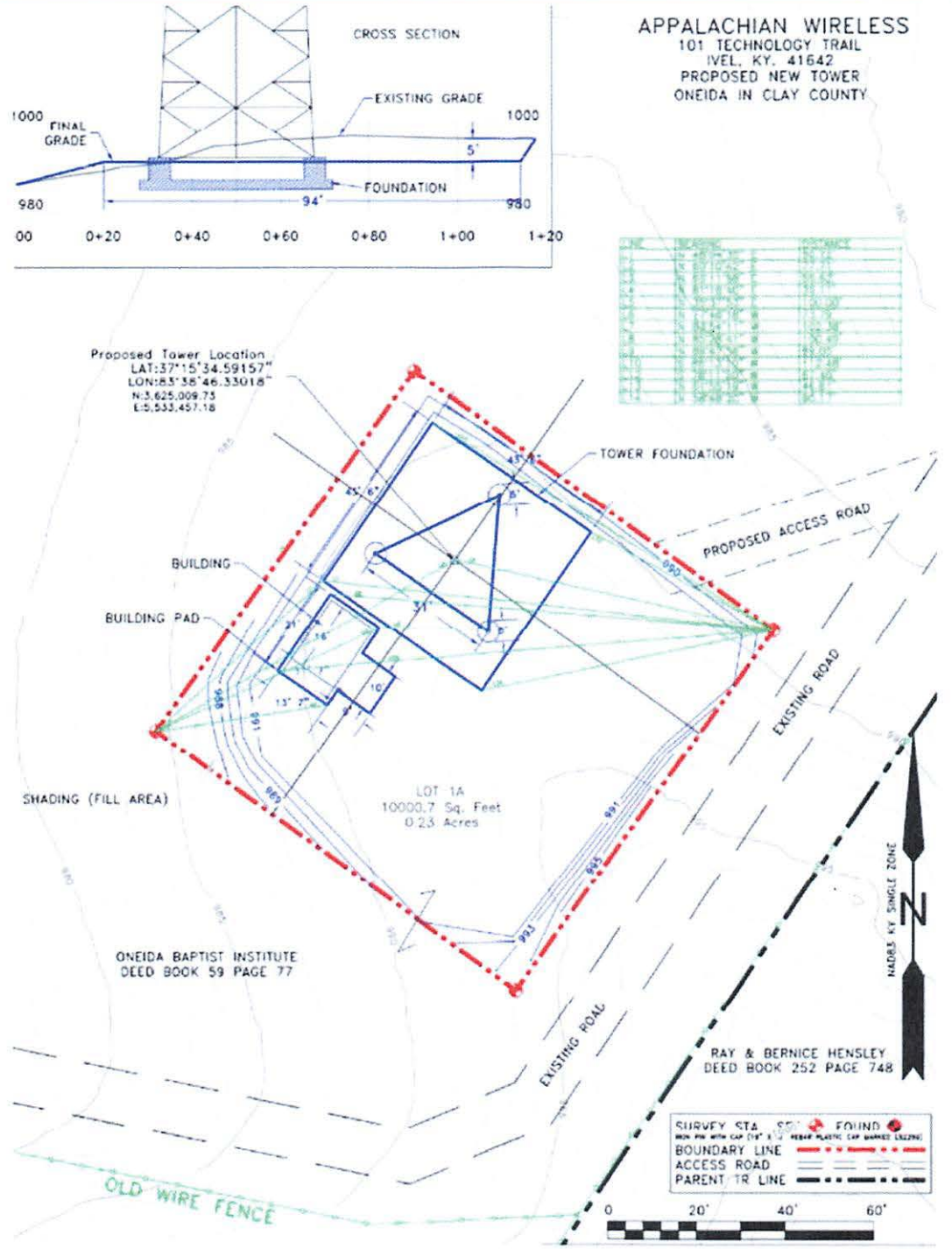


Figure 1: Proposed Antenna

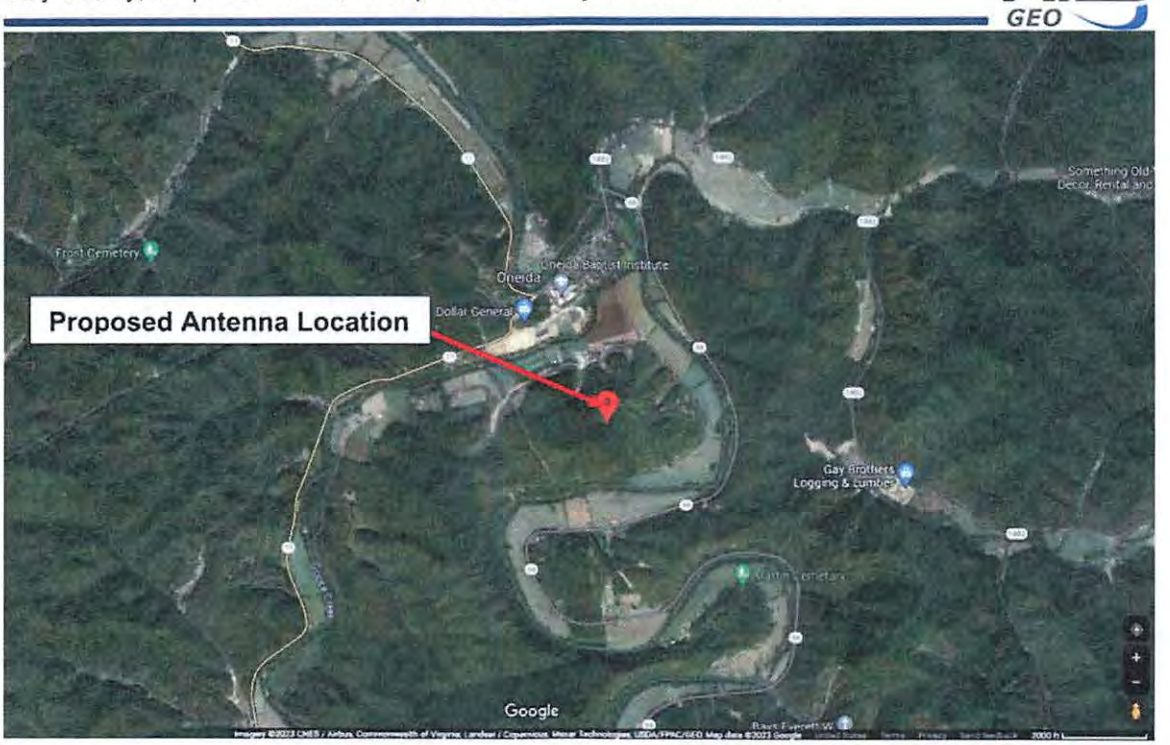


Figure 2: Site Location Map

3.0 SITE GEOLOGY AND GEOLOGIC HAZARDS

3.1 USGS Geologic Survey Map

A review of the United States Geological Survey (USGS) Geologic Map of the Oneida Quadrangle – Clay and Owsley Counties, Kentucky (Rice and Lee, 1978) indicates that the terrain near the site is underlain by Breathitt Formation deposited during the Middle to Lower Pennsylvanian period. The primary bedrock lithology consists of sandstone, siltstone, and coal with generalized descriptions as follows:

Sandstone, medium-light to light-gray, weathers to shades of red and yellowish brown; fine to medium grained that are moderately well-sorted and are angular to sub-rounded. It is well indurated, locally cemented by calcite, siderite, and silica, commonly interbedded with and grades into siltstone; sandstone bodies below Fire Clay coal bed are commonly crossbedded with sandy siltstone or interbedded siltstone and sandstone. Coal beds are generally thin and discontinuous. Fire Clay coal bed contains characteristic flint-clay parting, brownish to black, has conchoidal fracture, produces a resistant blocky of chip float with light gray to light-bluish-gray patina.

3.2 Karst Potential

The Kentucky Geological Survey (KGS) maps the karst potential at the site as Non-Karst. KGS defines Non-Karst as areas underlain by bedrock with limited or no potential for karst development. Karst features are rare or absent.

3.3 Regional Seismicity

No potentially active Quarternary faults or seismic zones have been identified within approximately 50 miles of the project site (USGS, 2023). Seismic hazards for Clay County, KY are identified as relatively low by USGS.

Earthquakes have periodically occurred in and around Kentucky throughout recorded history. The most widely felt and damaging earthquakes in the state occurred in the winter of 1811-1812 and were centered in northeastern Arkansas, northwestern Tennessee, southwestern Kentucky, and southeastern Missouri- the New Madrid Seismic Zone. The 1811-1812 earthquakes are reported to have caused damage (i.e. modified Mercalli intensity VII-IX) throughout much of the commonwealth. The 1980 Sharpsburg earthquake caused significant damage (MMI VII) in Maysville, KY. Since earthquakes are not well understood in the central United States it is very difficult to predict them. Still, they occur in and around Kentucky and can impact infrastructure around the region (Kentucky Transportation Center).

4.0 SUBSURFACE INVESTIGATION

The subsurface investigation for the project consisted of two (2) exploratory test boring, referred to herein as Boring B-1 and Boring B-2. The approximate locations of the borings are shown on the Boring Plan included as Figure 3 below.

The boring was advanced with a truck-mounted, rotary Mobile D-48 drill rig equipped with 6-inch OD hollow-stem augers or casing advancer, as appropriate. Each of the boring were advanced to bedrock, with Standard Penetration Test (SPT) samples and Shelby Tube (ST) samples being obtained in the overburden at Boring B-1 and Boring B-2 at 5-foot intervals. The bedrock was then cored in Boring B-1. Overall depths of the borings, including the core, ranged from 21 to 36 feet below the existing ground surface. A summary of the boring results is included in Table 1.

Table 1: Summary of Boring Results

Boring	Latitude	Longitude	Surface Elevation[1] (ft.)	Top of Bedrock Depth (ft.) / Elevation (ft.)	Bottom of Bedrock Depth (ft.) / Elevation (ft.)
B-1	37.259646	-83.646221	990	25.8 / 964.2	35.8 / 954.2
B-2	37.259585	-83.646331	988	20.9 / 967.1	20.9 / 967.1

NOTE: 1 – Elevations from topography mapping estimated based on Google Earth

Figure 3: Boring Location Map

5.0 LABORATORY TESTING

The soil and bedrock samples were returned to our mechanics laboratory where they were reviewed for consistency and visual classification by APS GEO engineering personnel and selected for laboratory testing. The testing included moisture content, Atterberg limits (3 pt.), sieve/gradation analyses, unconfined compressive strength for both undistributed soil sample and rock cores. The testing was complete in accordance with AASHTO and ASTM test standards. The laboratory test results are summarized in the following section of this report and on the boring logs in Appendix A. Laboratory test forms are included in Appendix B.

6.0 SUBSURFACE CONDITIONS

This section provides a summary of the soil and bedrock types encountered in the borings. The primary subsurface strata encountered in this investigation included the following:

- Topsoil
- Residual Soil
- Bedrock

6.1 Topsoil

Topsoil thickness averaged 6 inches.

6.2 Residual Soils

Residual soils were encountered below the topsoil in each boring to depths ranging from 20.9 to 25.8 feet beneath the ground surface.

The soil encountered in the borings consisted primarily of sandy silty clays (CL-ML). The residual soil was red brown to yellow brown and transitioned to a gray-brown color. Shallow soils are generally moist and firm to stiff in consistency while the deeper soils were moist and very stiff to hard in consistency.

6.3 Bedrock

The bedrock at the site consists of sandstone of the Breathitt Formation. The sandstone was red brown to light gray in color, judged to be strong in strength, and are moderately to thickly bedded. Recovery of the cored bedrock in Boring B-1 was 100 percent, rock quality designation (RQD) was 100 percent. Photographs of the rock core are included in Appendix C.

6.4 Groundwater

Groundwater was not encountered during drilling. However, it should be noted that fluctuations in groundwater levels may occur due to seasonal variations in the local and regional precipitation, in the level of the adjacent rivers and streams, and other factors not evident at the time of measurement.

7.0 ENGINEERING ANALYSES AND PRELIMINARY DESIGN RECOMMENDATIONS

Geotechnical engineering design recommendations are provided in the following sections, which include proposed design parameters, allowable bearing capacity, and discussion of potential settlement.

7.1 Foundation Selection

Based on discussions with Appalachian Wireless, we understand that either a spread footing or direct burial foundation types are generally preferred for this application. However, given the presence of sandy silty clay above the bedrock that would make compaction challenging during the construction process, the use of drilled shafts socketed into bedrock has also been considered and are recommended at this site.

7.2 Design Soil Strength Parameters

The design shear strength parameters listed in Table 2 were developed for the project based on general published ranges of similar material and our general experience.

Table 2: Summary of Design Shear Parameters

Material	Unit Weight	Short-Term Strengths		Long-Term Strengths	
	γ_{total} (pcf)	c (psf)	Φ (degrees)	c' (psf)	Φ' (degrees)
Silty Clay	120	1300	0	50	32
Weathered Sandstone	145	234,000	-	234,000	-
Unweathered Sandstone	145	386,000	-	386,000	-

7.3 Lateral Earth Pressures of Existing Residual Soil

Existing residual soil is assumed to consist of silty clays based upon Boring B-1 and B-2. Equivalent fluid pressures are provided based on the active, passive, and at-rest earth pressure coefficients for silty clay with a total unit weight of 120 pcf. APS GEO assumed a flat backslope for these recommendations. Recommended active, passive, and at-rest equivalent fluid pressures for the existing residual soil are presented in Table 3.

Table 3: Soil Equivalent Fluid Pressures

Material	Unit Weight	Angle of Internal Friction	At-Rest Earth Pressure		Active Earth Pressure		Passive Earth Pressure	
	γ_{total}	Φ	Drained	Undrained	Drained	Undrained	Drained	Undrained
	(pcf)	(degrees)	(psf/ft)	(psf/ft)	(psf/ft)	(psf/ft)	(psf/ft)	(psf/ft)
Silty-Clay	120	28	60	90	35	80	1250	675

The lateral earth pressures do not include any factor of safety. It should be noted that the equivalent fluid pressures indicated above assume that the fill material is compacted and tested in accordance with the recommendations indicated in Appendix D.

7.4 Drilled Shafts

7.4.1 Axial Compressive Resistance

The bedrock at the site consists of sandstone. The Load and Resistance Factor Design (LFRD) method was utilized to analyze the axial capacity of the drilled shafts. APS GEO assumed the drilled shafts would consist of permanent casing seated into bedrock to a depth of 2 feet with a rock socket 0.5-foot diameter less than the casing diameter.

APS GEO derived unit tip and side resistances in bedrock based on the results of the drilling, the results of the sampling and laboratory testing programs, the methods discussed in AASHTO LRFD Bridge Design Specification (2019), and our general experience. The recommended top and side resistance parameters for drilled shafts socketed into bedrock are presented in Table 4.

Table 4: Summary of Nominal Unit End and Side Resistance for Drilled Shafts

Rock Type	Nominal Unit Tip Resistance (ksf)	Nominal Unit Side Resistance (ksf)	Nominal Unit Side Resistance for Uplift (ksf)
Unweathered Sandstone	123	12.5	10.2

[a] The top of rock socket shall start at a minimum of 2 feet below bedrock surface and in unweathered bedrock.
[b] Minimum depth below top of rock socket of 1.5 times the socket diameter (or any additional depth required to meet lateral or vertical capacity requirements) is required to provide tip resistance.
[c] The top of rock socket shall start below scour depth, which is to be determined by others.
[d] Total Nominal Unit Axial Resistance combines Nominal Unit Tip and Unit Side resistances provided in this table.
[e] Resistance Factors at the Strength Limit States: Tip = 0.50, Side = 0.55, and Uplift =0.45.

7.4.2 Lateral Load Design

Lateral resistance along the drilled shafts should be analyzed using the non-linear P-Y curve method provided in the computer program LPILE (developed by Ensoft) and the idealized soil profiles included in Table 5 below developed for the subsurface conditions encountered at Boring B-1 and B-2.

Table 5: LPILE Design Parameters

Soil Type	Total Unit Weight (pcf)	Strength Parameters				
		c_u, psf	ε_{50}	L, pci	Φ, degrees	Q_u, psi
Residual	120	1,300	0.005	-	-	-
Weathered Bedrock	145	-	-	-	-	3,000
Unweathered Bedrock	145	-	-	-	-	5,000

7.4.3 Preliminary Drilled Shaft Recommendations

Bearing elements (including pile caps) should be placed below the frost line, which can be taken as 33 inches below proposed final grade in the project area.

Based upon this exploration, it is unlikely that ground water will be encountered at some of the foundation locations. However, provisions for installing shafts under such conditions should be implemented during construction.

Immediately prior to the placement of any concrete or reinforcing steel in a drilled shaft foundation excavation, the excavation bottom should be cleaned and all soft, wet, or loose materials should be removed. In no case should concrete be placed upon compressible or water-softened materials. Consideration should be given to giving a thin concrete mudsill in the shaft bottom immediately after cleaning to help protect the bearing surface during the placement of reinforcing steel. If a mudsill is used, the shaft should be overexcavated to account for the thickness of the mudsill. Slurry is not recommended for use on this project.

It is recommended that concrete with good workability be used in construction of drilled shafts. Once an excavation is complete, accepted for bearing, and the reinforcing cage has been placed, concrete should be placed by tremie to the bottom of the shaft. The Drilling Contractor should either wait until concrete has been placed for the total length of an individual shaft before pulling temporary casing, or the level of concrete being placed should be maintained at a distance above the bottom of the casing as the casing is being retrieved so as to prevent soils from collapsing into the excavation and detrimentally affecting the structural integrity of the drilled shaft. The level of concrete should be maintained above the ground water table at all times as casing is retrieved.

Geotechnical observation and testing are considered a continuation of this evaluation that should be conducted by a professional geotechnical engineer to evaluate geotechnical aspects of construction. A representative of APS GEO should review the project plans and specifications, including any revisions or modifications. Additionally, APS GEO recommends the geotechnical engineer of record should be present to observe site excavations, examine the bottom of each excavation, and determine if conditions within the excavations are consistent with those identified in the site explorations.

In addition, APS GEO can prepare the specification for drilled shaft construction as an additional service, if needed. The specification should mention the presence of the heaving sands above the bedrock and should refer to the boring logs

7.5 Seismic Design Considerations

The seismic design procedures outlined in the AASHTO LRFD Bridge Design Specifications indicate that structural design loads are to be based on site class definitions determined by the shear wave velocity, average SPT-N values, and/or average undrained shear strength for the upper 100 feet of the subsurface profile. Based on the results of the exploration and the geology of the area, we recommend that Site Class C be used for design purposes at the site.

The ASCE 7-22 provides guidelines for assessing seismic hazards. The seismic hazard is characterized by the acceleration response spectrum and the site factors associated with the relevant site coefficient. A summary of the seismic data parameters determined from the ASCE 7 Hazard Tool is provided in Table 6 below.

Table 6: Summary of Seismic Data

Description	Data
Site Soil Class	C
Risk Level	III
Seismic Design Category	B
S_S	0.3
S_1	0.097
S_{MS}	0.3
S_{M1}	0.13
S_{DS}	0.2
S_{D1}	0.084
T_L	12
PGA_M	0.16
V_{S30}	530

Source: USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

8.0 LIMITATIONS

This report presents the geotechnical results, findings, and recommendations in response to a request by Appalachian Wireless for Oneida Tower Site off Highway 11, Clay County, Kentucky. It has been prepared in accordance with generally accepted engineering practice and in a manner consistent with the level of care and skill for this type of project within this geographic area. No warranty, expressed or implied, is made.

The preliminary conclusions and recommendations presented herein are based on field reconnaissance, research, and available literature. Geotechnical engineering and the geologic sciences are characterized by uncertainty. Professional judgements presented herein are based partly on our understanding of the proposed construction, partly on our general experience, and on the state-of-the-practice at the time of this writing.

The subsurface conditions described in this report are based on limited exploration data collected at widely spaced boring locations, site reconnaissance, information from the client, and our own professional judgement based on experience with similar sites and soil conditions. The boring logs attached to this report depict only the conditions at the actual boring locations at the time of drilling. Subsurface conditions are variable between boring locations and the actual conditions between exploration locations may only become evident during construction. Groundwater levels will vary with time, precipitation, and changes to water levels in the adjacent creek. APS GEO is not responsible for others' interpretation of the data presented in this report or the use of the report by others for the project. Please refer to Appendix E.

REFERENCES

AASHTO LRFD Bridge Design Specifications (2019).

AASHTO Standard Specifications for Transportation Materials and Methods of Sampling and Testing (2022).

American Society of Civil Engineers, 11/29/2023, ASCE 7 Hazard Tool, referenced online at: https://asce7hazardtool.online/

Charles L. Rice and K. Y. Lee (1978), "Geologic Map of the Oneida Quadrangle, Clay and Owsley Counties, Kentucky"

Kentucky Geological Survey, 11/29/2023, Kentucky Geologic Map Service, referenced online at: https://kgs.uky.edu/kygeode/geomap/

Kentucky Geological Survey, 11/29/2023, 24K Karst Potential, referenced online at: https://opengisdata.ky.gov/datasets/kygeonet::24k-karst-potential/explore?location=37.257594%2C-83.670163%2C13.

APPENDIX A: BORING LOGS

1060 Elizabeth Street
Suite 7
Nicholasville, KY 40356

Borehole ID: B-01

Latitude:	37.259646	**Longitude:**	-83.646221	**Elevation:**	990.0 ft		
Horizontal Datum	NAD 1983 StatePlane Kentucky South FIPS 1602 Feet						
Client	Appalachian Wireless	**Project Name**	Appalachian Wireless Oneida				
Project Number	APS230050	**Project Location**	Oneida, KY	**County**	Clay		
Date Started	Nov 20 2023	**Completed**	Nov 20 2023	**Weather**	Light rain	**Temperature**	64 °F
Drilling Contractor	APS GEO	**Drilled By**	J Allen	**Logged By**	M Spraggs	**Checked By**	M Birchmier
Drilling Method	4.25" HSA	**Ground Water Levels**					
Equipment	Mobile B-48	**Casing Dia.**	N/A				
Hammer Type	Automatic	**Core Size**	2 inch				
Notes:	Elevation estimated using Google Earth.						

Graphic	Elevation (ft)	Material Description	Depth (ft)	Sample No.	% Recovery [% RQD]	SPT per 6" [N-Value]	Pocket Pen (tsf)	Unconf. Comp. (tsf)	Dry Density (pcf)	% Moisture	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	% Fines	Remarks
	989.5	TOPSOIL - 6 inches	0.5												
		Reddish-yellow, moist, firm, SANDY SILTY CLAY (CL-ML), trace sand		SPT-01	73	3-4-4 [8]									
				SPT-02	100	3-4-5 [9]									
				SPT-03	100	2-2-4 [6]				37	NP	NP	NP	68	
				SPT-04	100	1-6-4 [10]									
	973.5	Yellow-brown, moist, stiff, SANDY SILTY CLAY (CL-ML), trace sand	16.5												
				SPT-05	100	0-6-8 [14]				53	NP	NP	NP	66	
	967.0	Gray-brown, moist, stiff, SANDY SILTY CLAY (CL-ML)	23.0												
		SANDSTONE, red-brown, strong, moderately weathered, very thinly to moderately bedded		SPT-06	62	2-50/4" [100]									
	964.2		25.8												

1060 Elizabeth Street
Suite 7
Nicholasville, KY 40356

Borehole ID: B-01

Latitude: 37.259646 **Longitude:** -83.646221 **Elevation:** 990.0 ft
Horizontal Datum NAD 1983 StatePlane Kentucky South FIPS 1602 Feet
Client Appalachian Wireless **Project Name** Appalachian Wireless Oneida
Project Number APS230050 **Project Location** Oneida, KY **County** Clay

Graphic	Elevation (ft)	Material Description	Depth (ft)	Sample No.	% Recovery [% RQD]	SPT per 6" [N-Value]	Pocket Pen (tsf)	Unconf. Comp. (tsf)	Dry Density (pcf)	% Moisture	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	% Fines	Remarks
		SANDSTONE, red-brown, strong, moderately weathered, very thinly to moderately bedded		RC-01	100 [100]			206							
								262							
	959.7	SANDSTONE, light gray, strong, fresh, moderately to thickly bedded	30.3					414							
				RC-02	100 [100]			385							
	954.2	**End of Borehole at 35.8 ft**	35.8												

1060 Elizabeth Street
Suite 7
Nicholasville, KY 40356

Borehole ID: B-02

Latitude:	37.259585	**Longitude:**	-83.646331	**Elevation:**	988.0 ft		
Horizontal Datum	NAD 1983 StatePlane Kentucky South FIPS 1602 Feet						
Client	Appalachian Wireless	**Project Name**	Appalachian Wireless Oneida				
Project Number	APS230050	**Project Location**	Oneida, KY	**County**	Clay		
Date Started	Nov 20 2023	**Completed**	Nov 20 2023	**Weather**	Light Rain	**Temperature**	64 °F
Drilling Contractor	APS GEO	**Drilled By**	J Allen	**Logged By**	M Spraggs	**Checked By**	M Birchmier
Drilling Method	4.25" HSA	**Ground Water Levels**					
Equipment	Mobile B-48	**Casing Dia.**	N/A				
Hammer Type	Automatic	**Core Size**	2 inch				
Notes:	Elevation estimated using Google Earth.						

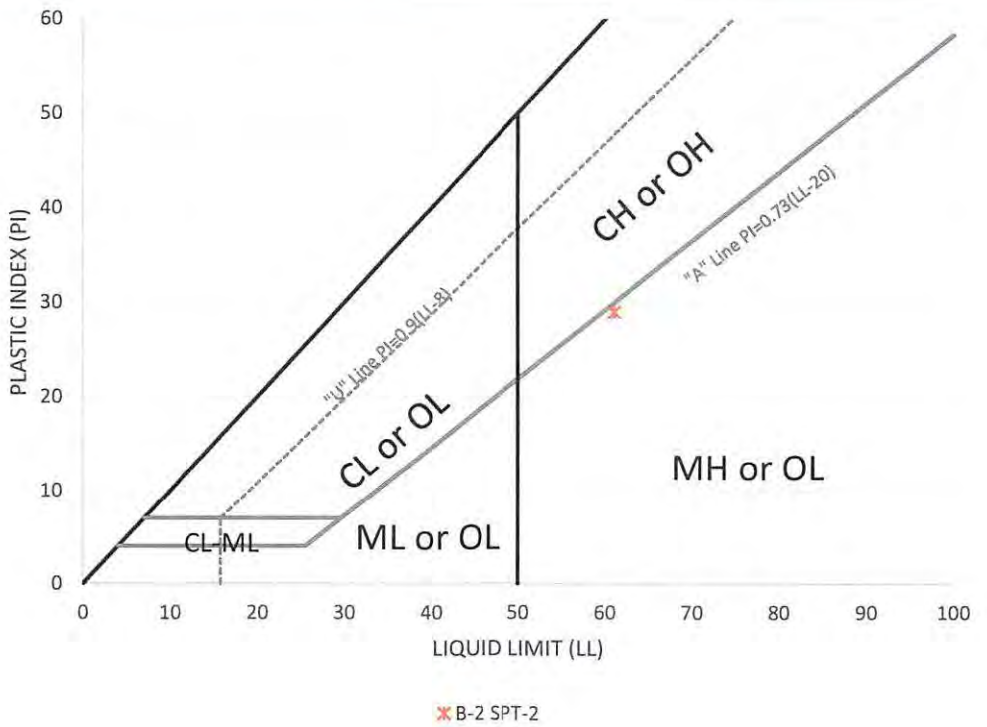
Graphic	Elevation (ft)	Material Description	Depth (ft)	Sample No.	% Recovery [% RQD]	SPT per 6" [N-Value]	Pocket Pen (tsf)	Unconf. Comp. (tsf)	Dry Density (pcf)	% Moisture	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	% Fines	Remarks
	987.5	TOPSOIL - 6 inches	0.5												
		Red-brown, moist, firm, SANDY SILTY CLAY (CL-ML), trace sand		SPT-01	100	2-3-3 [6]									
				ST-01	100			2.27		20	NP	NP	NP	64	
				ST-02	100										
	975.0	Yellow-brown, moist, very stiff, ELASTIC SILT (MH), trace sand	13.0												
				SPT-02	100	2-7-12 [19]				29	61	32	29		
	970.0	Red-brown, moist, hard, SANDY SILTY CLAY (CL-ML) with weathered sandstone fragments	18.0												
				SPT-03	89	13-50/5" [100]				22	NP	NP	NP	62	
	967.1	**End of Borehole at 20.9 ft**	20.9												

APPENDIX B: LABORATORY TESTING SUMMARY

Client Name: Appalachian Wireless **Date:** 12/1/2023
Project Location: App Wireless - Oneida
Project Number: APS230050

Weight measurements in grams

BORING NUMBER	B-1	B-1	B-2	B-2	B-2	
SAMPLE NUMBER	SPT-3	SPT-5	ST-1	SPT-2	SPT-3	
DEPTH, (FT.)	10.0-11.5	20.0-21.5	5.0-7.0	15.0-16.5	20.0-20.9	
WATER CONTENT, %	36.6	53.4	20.0	29.2	22.2	
ORGANIC CONTENT, %						
LIQUID LIMIT, %	NP	NP	NP	61	NP	
PLASTIC LIMIT, %	NP	NP	NP	32	NP	
PLASTIC INDEX, %	NP	NP	NP	29	NP	
MATERIAL FINER THAN No. 200 SIEVE, %	68.2	66.1	64.0		62.2	
BORING NUMBER						
SAMPLE NUMBER						
DEPTH, (FT.)						
WATER CONTENT, %						
ORGANIC CONTENT, %						
LIQUID LIMIT, %						
PLASTIC LIMIT, %						
PLASTIC INDEX, %						
MATERIAL FINER THAN No. 200 SIEVE, %						



Checked by:

Client Name: Appalachian Wireless **Date:** 12/7/2023
Project Location: App Wireless - Oneida
Project Number: APS230050

BORING NUMBER	B-1		B-1		B-2	
SAMPLE NUMBER	SPT-3		SPT-5		ST-1	
DEPTH, (FT.)	10.0-11.5		20.0-21.5		5.0-7.0	
US (in)	*mm*	PERCENT PASSING, %	*mm*	PERCENT PASSING, %	*mm*	PERCENT PASSING, %
2.5	63		63		63	
2	50		50		50	
1.5	37.5		37.5		37.5	
1	25		25		25	
0.75	19		19		19	
0.5	12.5		12.5		12.5	
0.375	9.5		9.5		9.5	
0.25	6.3		6.3	100.0	6.3	
No. 4	4.75	100.0	4.75	99.4	4.75	100.0
No. 8	2.36		2.36		2.36	
No. 10	2	99.8	2	97.6	2	99.8
No. 16	1.18	99.6	1.18	96.7	1.18	99.6
No. 20	0.85		0.85		0.85	
No. 40	0.425	98.3	0.425	93.8	0.425	97.9
No. 60	0.25	95.9	0.25	90.5	0.25	94.9
No. 80	0.18	92.9	0.18	86.7	0.18	91.7
No. 100	0.15	89.1	0.15	83.5	0.15	87.8
No. 140	0.106	77.5	0.106	75.4	0.106	74.1
No. 200	0.075	68.2	0.075	66.1	0.075	64.0
Hyd. #1	0.0309663	45.6	0.02997	46.6	0.03070415	36.3
Hyd. #2	0.02245946	42.3	0.02176	42.3	0.02222689	33.4
Hyd. #3	0.01626959	37.8	0.01578	39.2	0.01607322	29.2
Hyd. #4	0.0117275	33.8	0.01135	36.1	0.01161205	25.6
Hyd. #5	0.00864619	31.9	0.00849	31.1	0.00858647	23.8
Hyd. #6	0.00622275	27.3	0.00609	27.4	0.00614575	20.8
Hyd. #7	0.00442805	24.7	0.00437	23.6	0.00441468	19.1
Hyd. #8	0.00310384	22.1	0.00308	21.1	0.00313373	17.3
Hyd. #9	0.00219834	20.8	0.00222	18.6	0.00222484	16.1
Hyd. #10	0.00128412	18.2	0.00130	14.9	0.00129903	14.3

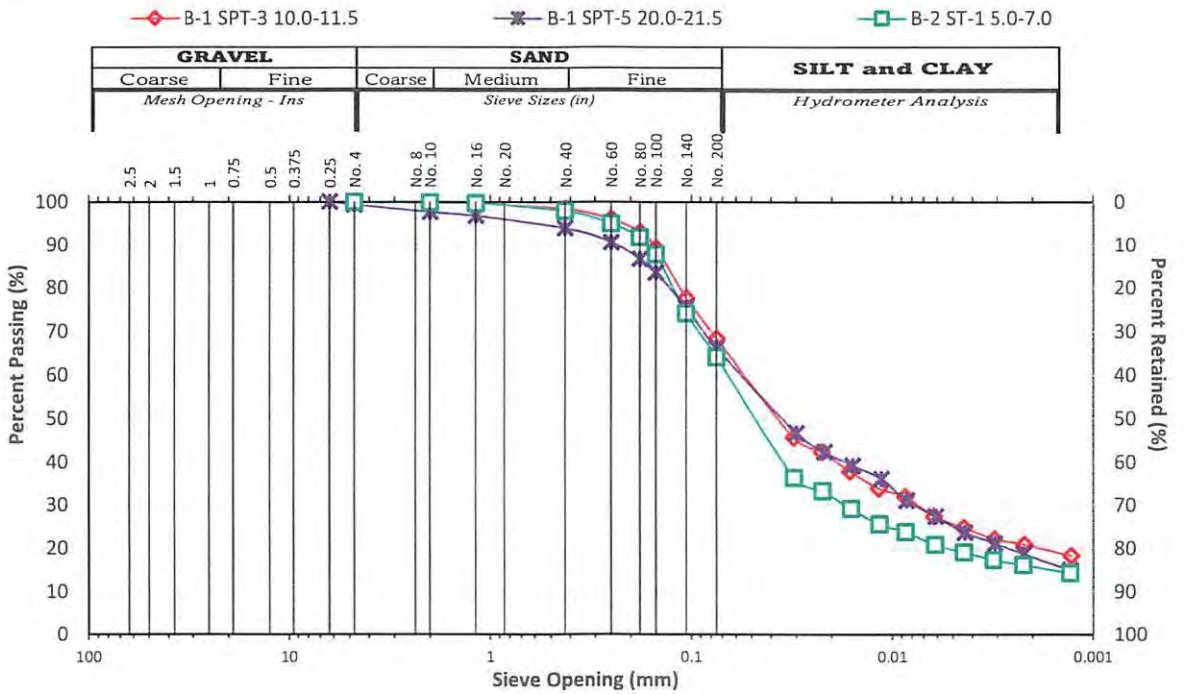
Checked by:

Client Name: Appalachian Wireless
Project Location: App Wireless - Oneida
Project Number: APS230050

Date: 12/7/2023

BORING NUMBER	B-1	B-1	B-2
SAMPLE NUMBER	SPT-3	SPT-5	ST-1
DEPTH, (FT.)	10.0-11.5	20.0-21.5	5.0-7.0
% Gravel	0.0	0.6	0.0
% Sand	31.8	33.3	36.0
% Silt	50.8	52.4	50.3
% Clay	17.4	13.7	13.7
D60	0.07	0.11	0.18
D30	0.02	0.01	0.12
D10			
Liquid Limit	NP	NP	NP
Plastic Limit	NP	NP	NP
Plasticity Index	NP	NP	NP
USCS Classification	ML	ML	ML
AASHTO Classification	A-4	A-4	A-4

**Based on visual classification*



Checked by:

Client Name: Appalachian Wireless **Date:** 12/7/2023
Project Location: App Wireless - Oneida
Project Number: APS230050

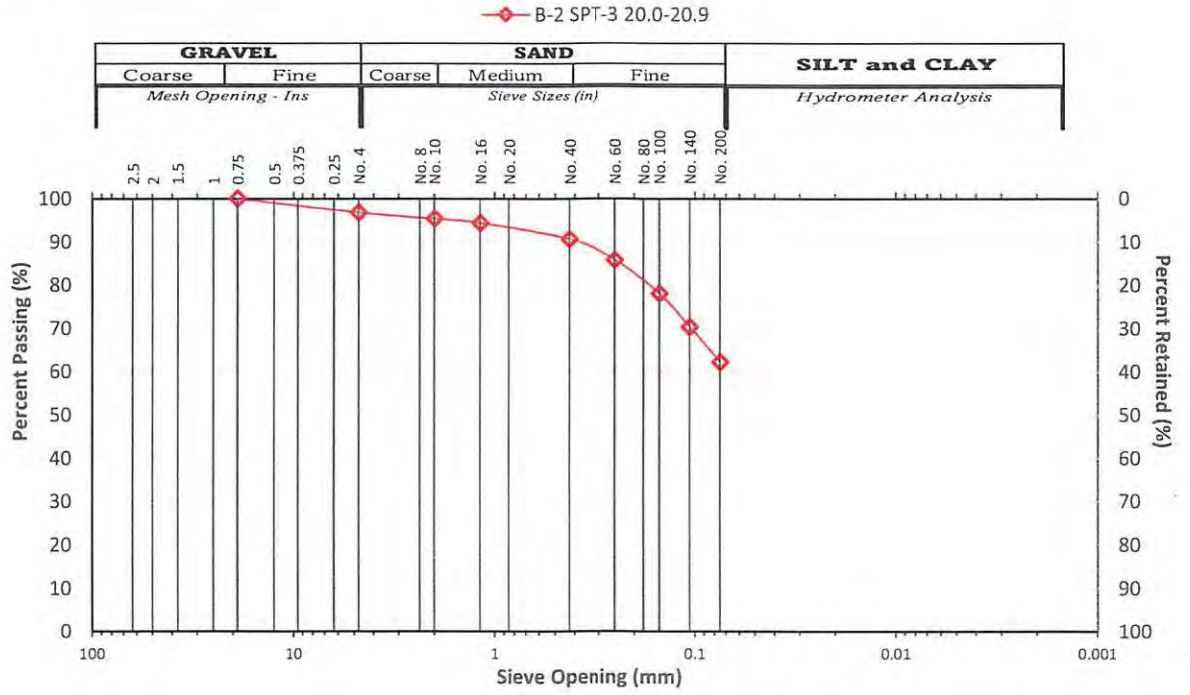
BORING NUMBER	B-2					
SAMPLE NUMBER	SPT-3					
DEPTH, (FT.)	20.0-20.9					
US (in)	*mm*	**PERCENT PASSING, %**	*mm*	**PERCENT PASSING, %**	*mm*	**PERCENT PASSING, %**
2.5	63		63		63	
2	50		50		50	
1.5	37.5		37.5		37.5	
1	25		25		25	
0.75	19	100.0	19		19	
0.5	12.5		12.5		12.5	
0.375	9.5		9.5		9.5	
0.25	6.3		6.3		6.3	
No. 4	4.75	96.8	4.75		4.75	
No. 8	2.36		2.36		2.36	
No. 10	2	95.4	2		2	
No. 16	1.18	94.4	1.18		1.18	
No. 20	0.85		0.85		0.85	
No. 40	0.425	90.6	0.425		0.425	
No. 60	0.25	85.8	0.25		0.25	
No. 80	0.18		0.18		0.18	
No. 100	0.15	78.0	0.15		0.15	
No. 140	0.106	70.3	0.106		0.106	
No. 200	0.075	62.2	0.075		0.075	
Hyd. #1						
Hyd. #2						
Hyd. #3						
Hyd. #4						
Hyd. #5						
Hyd. #6						
Hyd. #7						
Hyd. #8						
Hyd. #9						
Hyd. #10						

Checked by:

Client Name: Appalachian Wireless **Date:** 12/7/2023
Project Location: App Wireless - Oneida
Project Number: APS230050

BORING NUMBER	B-2		
SAMPLE NUMBER	SPT-3		
DEPTH, (FT.)	20.0-20.9		
% Gravel	0.0		
% Sand	37.8		
% Silt and Clay	62.2		
D60			
D30			
D10			
Liquid Limit	61		
Plastic Limit	32		
Plasticity Index	29		
USCS Classification	MH		
AASHTO Classification	A-7-5(17)		

**Based on visual classification*



Checked by:

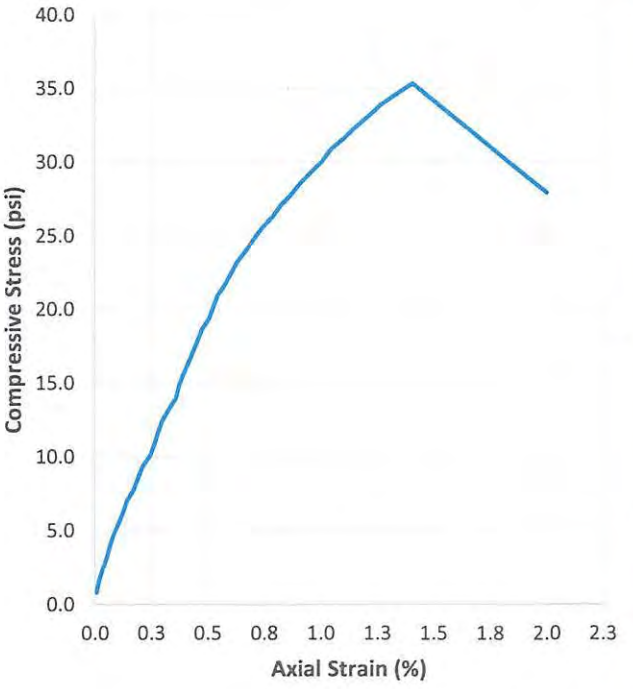
Unconfined Compression Strength Summary

Client Name: Appalachian Wireless
Project Location: App Wireless - Oneida
Project Number: APS230050

Date: 12/1/2023

BORING NUMBER	B-2
SAMPLE NUMBER	ST-1
DEPTH, (FT.)	5.0-7.0
SAMPLE DESCRIPTION	Firm, brittle sandy silt

SAMPLE DATA		**FAILURE DATA**	
DIAMETER (IN)	2.86	AVERAGE RATE OF AXIAL STRAIN TO FAILURE (%/MIN)	0.6
HEIGHT (IN)	6.26	TIME TO FAILURE (MIN)	2.38
HEIGHT TO DIAMETER RATIO	2.19	AXIAL STRAIN AT FAILURE (%)	1.4
WET UNIT WEIGHT (PCF)	124.2	UNCONFINED COMPRESSIVE STRENGTH, q_u (KSF)	5.09
DRY UNIT WEIGHT (PCF)	101.2	UNCONFINED COMPRESSIVE STRENGTH, q_u (PSI)	35.3
MOISTURE CONTENT (%)	22.2	FAILURE ANGLE (DEGREE)	83.0



FAILURE SHAPES

Checked by:

Unconfined Compressive Strength Rock Core
ASTM D7012 Method C
Summary

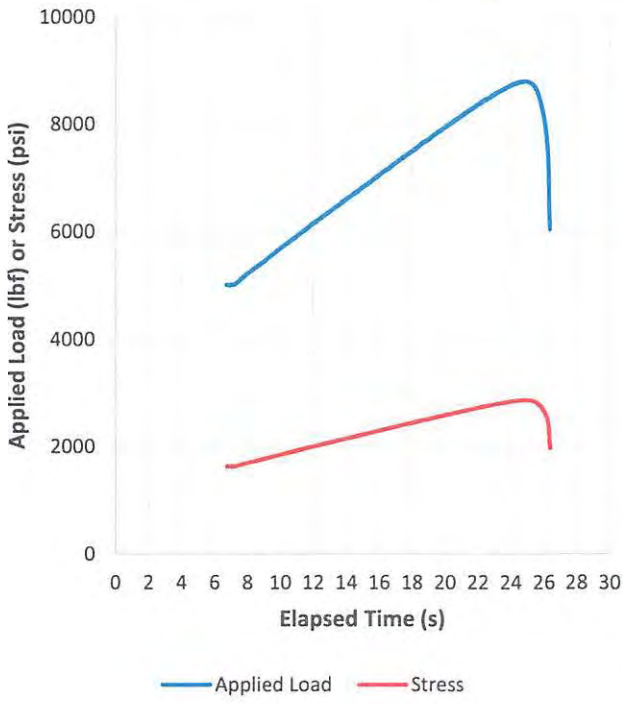
Client Name: Appalachian Wireless
Project Location: App Wireless - Oneida
Project Number: APS230050

Date: 12/4/2023

BORING NUMBER	B-1
SAMPLE NUMBER	RC-1
DEPTH, (FT.)	26.6
SAMPLE DESCRIPTION	Very weathered sandstone, yellow

SAMPLE DATA	
DIAMETER (IN)	1.98
HEIGHT (IN)	4.49
HEIGHT TO DIAMETER RATIO	2.27

FAILURE DATA	
TIME TO FAILURE (S)	24.90
APPLIED LOAD AT FAILURE (LBF)	8808
STRESS AT FAILURE (PSI)	2863.4



FAILURE SHAPES

Checked by:

Unconfined Compressive Strength Rock Core
ASTM D7012 Method C
Summary

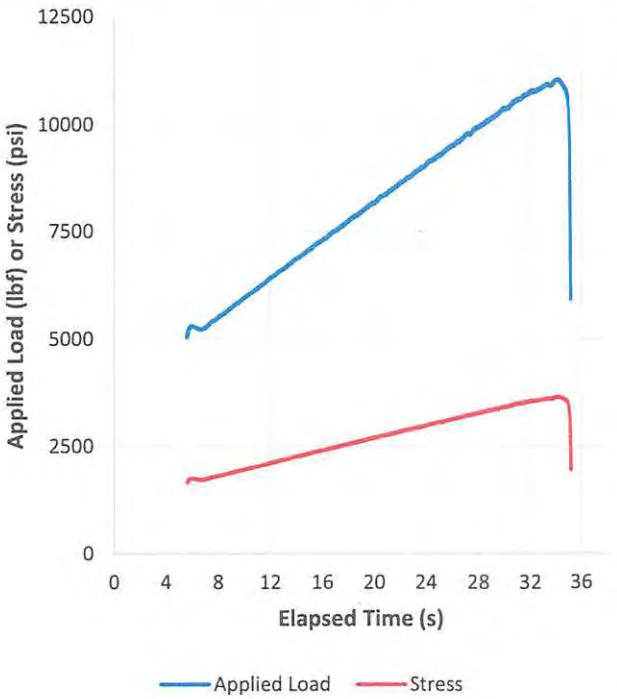
Client Name: Appalachian Wireless
Project Location: App Wireless - Oneida
Project Number: APS230050

Date: 12/4/2023

BORING NUMBER	B-1
SAMPLE NUMBER	RC-1
DEPTH, (FT.)	28.5
SAMPLE DESCRIPTION	Weathered sandstone, yellow

SAMPLE DATA	
DIAMETER (IN)	1.96
HEIGHT (IN)	4.47
HEIGHT TO DIAMETER RATIO	2.28

FAILURE DATA	
TIME TO FAILURE (S)	34.12
APPLIED LOAD AT FAILURE (LBF)	11042
STRESS AT FAILURE (PSI)	3644.7



FAILURE SHAPES

Checked by:

Unconfined Compressive Strength Rock Core
ASTM D7012 Method C
Summary

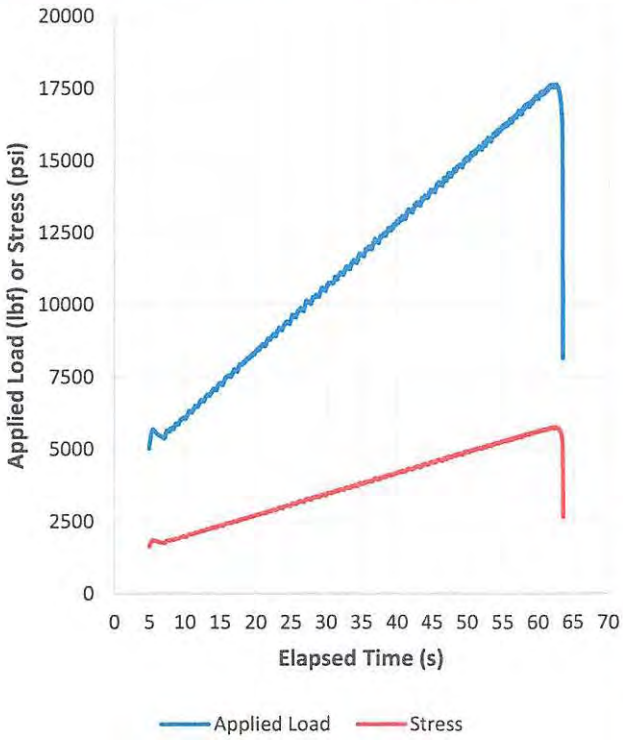
Client Name: Appalachian Wireless
Project Location: App Wireless - Oneida
Project Number: APS230050

Date: 12/4/2023

BORING NUMBER	B-1
SAMPLE NUMBER	RC-2
DEPTH, (FT.)	30.8
SAMPLE DESCRIPTION	Fresh sandstone, light gray

SAMPLE DATA	
DIAMETER (IN)	1.98
HEIGHT (IN)	4.59
HEIGHT TO DIAMETER RATIO	2.32

FAILURE DATA	
TIME TO FAILURE (S)	62.08
APPLIED LOAD AT FAILURE (LBF)	17649
STRESS AT FAILURE (PSI)	5749.4



FAILURE SHAPES

Checked by:

Unconfined Compressive Strength Rock Core
ASTM D7012 Method C
Summary

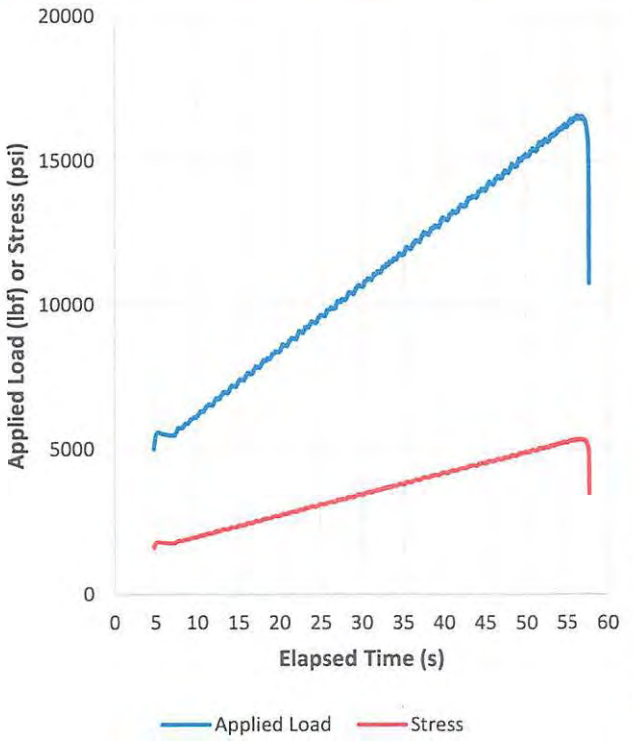
Client Name: Appalachian Wireless
Project Location: App Wireless - Oneida
Project Number: APS230050

Date: 12/4/2023

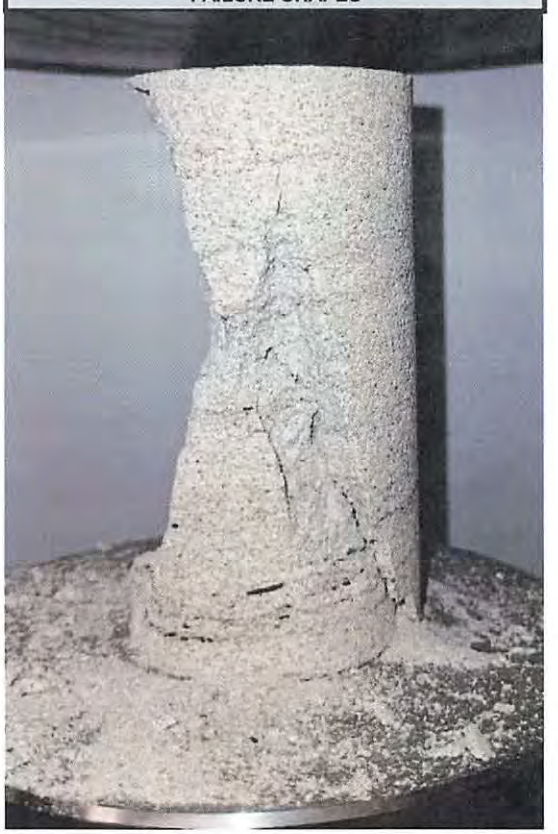
BORING NUMBER	B-1
SAMPLE NUMBER	RC-2
DEPTH, (FT.)	33.5
SAMPLE DESCRIPTION	Fresh sandstone, light gray

SAMPLE DATA	
DIAMETER (IN)	1.99
HEIGHT (IN)	4.46
HEIGHT TO DIAMETER RATIO	2.25

FAILURE DATA	
TIME TO FAILURE (S)	56.32
APPLIED LOAD AT FAILURE (LBF)	16559
STRESS AT FAILURE (PSI)	5345.6



FAILURE SHAPES



Checked by:

APPENDIX C: PICTURE OF ROCK CORES

Run	Depth (ft.)	Recovery (%)	RQD (%)
1	25.8-30.8	100	70
2	30.8-35.8	100	100

APPENDIX D: PRELIMINARY CONSTRUCTION RECOMMENDATIONS

Site Preparation and Excavations

The following recommendations are based on our experience and general knowledge of the project. However, APS GEO is not conducting the design of the structures and as such any requirements made by the designer shall take precedence.

In preparing the site for construction, all topsoil and any other deleterious materials should be completely removed from the construction and any other areas which are to be cut or receive fill. After clearing and stripping is complete, the area should be checked by a representative of the project geotechnical engineer to determine that the clearing and stripping has been sufficient to remove the topsoil and vegetation. Excavations resulting from clearing should be backfilled in accordance with the grading recommendations for the site. Provisions should be made both during and after grading, to protect all exposed earthwork construction areas and earth slopes from erosion as required by the project civil engineer and by applicable Federal, State, and local regulations.

Fill and Backfill Material

The following recommendations are based on our experience and general knowledge of the project. However, APS GEO is not conducting the design of the structures and as such any requirements made by the designer shall take precedence.

Fill materials should be approved by the engineer of record before placement. Satisfactory soil materials for structural fill are generally defined as those complying with ASTM D 2487 classification groups GW, GP, and GM for crushed stone and gravel; SM, SW, and SP for sand; and CL and ML for lean clay and silt. Unsatisfactory soils generally include those complying with ASTM D 2487 soil classification groups MH, CH, OL, OH, and peat. Samples of the proposed fill material should be provided to the engineer of record for laboratory determination of Proctor Density and moisture values, and Atterberg Limit or other index tests required for classification.

Contractors should allow about one week for the time required to complete the laboratory tests in accordance with ASTM requirements. In general, fill should not include any rocks or rubble larger than 3 inches in diameter. Larger sizes may be approved by the geotechnical engineer. Fill should not contain any significant amounts of organics or debris. Material other than soil, sand, and gravel should be considered deleterious material unless the engineer of record states otherwise after visual inspection of the material. Deleterious material should not be used in site fills, regardless of whether it is from an on-site source or delivered to the site. Deleterious material will include organic matter, wood, metal, plastic, and trash.

Earthwork

The following recommendations are based on our experience and general knowledge of the project. However, APS GEO is not conducting the design of the structures and as such any requirements made by the designer shall take precedence.

Fill placement and proof rolling of the exposed subgrade should be monitored by the project geotechnical engineer to verify that unstable materials are not present, and that proper placement and compaction of materials has been accomplished. Before fill and backfill operations begin, representative samples of the proposed fill and backfill material should be tested for determination of laboratory compaction characteristics in accordance with ASTM D 1557 or ASTM D 698 as recommended above. Gradation and liquid and plastic limit determination should also be accomplished in accordance with ASTM D 6913, D 7928, and D 4318 to check material classification.

Compaction of subgrade surfaces, fill, and backfill, should be checked with a sufficient number of density tests to ensure that adequate compaction is being achieved. Construction specifications should require at least one-in-place density test of the compacted fill for every 5,000 square feet of fill placed. For backfill of utility trenches or around structures, construction specifications should require at least one in-place density test per lift for every 50 feet of wall, or fraction thereof. At least one test should be completed per lift regardless of the size or location of the fill area.

APPENDIX E: LIMITATIONS AND INFORMATION ABOUT THIS REPORT

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are <u>not</u> final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are <u>Not</u> Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase one" or "phase two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will <u>not</u> of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are <u>not</u> building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

Exhibit 5

1 Fairholm Avenue
Peoria, IL 61603 USA
Phone: (309)-566-3000
Fax: (309)-566-3079

DATE: FEBRUARY 07, 2023

PURCHASER: EAST KENTUCKY NETWORK, LLC

PROJECT: 400FT RTL SELF SUPPORT TOWER
ONEIDA, KY

FILE NUMBER: 242335

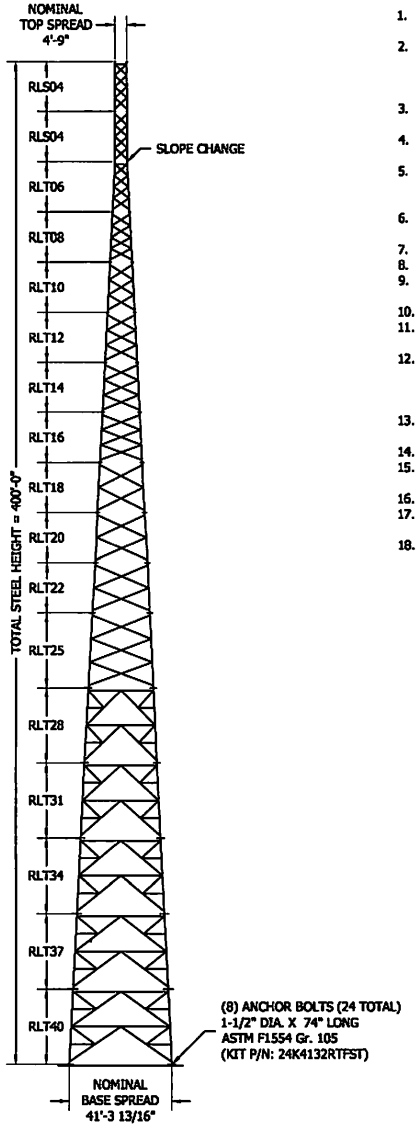
I CERTIFY THAT THE ATTACHED DRAWING WAS PREPARED UNDER MY SUPERVISION IN ACCORDANCE WITH THE DESIGN AND LOADING CRITERIA SPECIFIED BY THE PURCHASER AND THAT I AM A REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF KENTUCKY.

A FOUNDATION DESIGN FOR THIS STRUCTURE HAS NOT BEEN DESIGNED AT THIS TIME AND IS NOT INCLUDED IN THIS PACKAGE.

Allen Schneider

02/07/2023

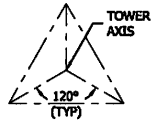
STATE OF KENTUCKY
ALLEN
SCHNEIDER
37506
LICENSED
PROFESSIONAL ENGINEER



GENERAL NOTES

1. ROHN PRODUCTS, LLC TOWER DESIGNS CONFORM TO ANSI/TIA-222-G UNLESS OTHERWISE SPECIFIED UNDER TOWER DESIGN LOADING.
2. THE DESIGN LOADING CRITERIA INDICATED HAS BEEN PROVIDED TO ROHN. THE DESIGN LOADING CRITERIA HAS BEEN ASSUMED TO BE BASED ON SITE-SPECIFIC DATA IN ACCORDANCE WITH ANSI/TIA-222-G AND MUST BE VERIFIED BY OTHERS PRIOR TO INSTALLATION.
3. ANTENNAS AND LINES LISTED IN TOWER DESIGN LOADING TABLE ARE PROVIDED BY OTHERS UNLESS OTHERWISE SPECIFIED.
4. STEP BOLTS WITH SAFETY CLIMB SYSTEM ARE PROVIDED AS A CLIMBING FACILITY FOR THE INSTALLATION OF THE STRUCTURE.
5. TOWER MEMBER DESIGN DOES NOT INCLUDE STRESSES DUE TO ERECTION SINCE ERECTION EQUIPMENT AND CONDITIONS ARE UNKNOWN. DESIGN ASSUMES COMPETENT AND QUALIFIED PERSONNEL WILL ERECT THE TOWER.
6. WORK SHALL BE IN ACCORDANCE WITH ANSI/TIA-222-G, "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES".
7. THE MINIMUM YIELD STRENGTH OF STRUCTURAL STEEL MEMBERS SHALL BE 50 KSI.
8. FIELD CONNECTIONS SHALL BE BOLTED. NO FIELD WELDS SHALL BE ALLOWED.
9. STRUCTURAL BOLTS SHALL CONFORM TO GRADE A325 PER ASTM F3125, EXCEPT WHERE NOTED.
10. A NUT LOCKING DEVICE IS PROVIDED FOR ALL TOWER BOLTS.
11. STRUCTURAL STEEL AND CONNECTION BOLTS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION, IN ACCORDANCE WITH ANSI/TIA-222-G.
12. ALL HIGH STRENGTH BOLTS, UNLESS OTHERWISE NOTED FOR DOUBLE ANGLE MEMBERS, ARE TO BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED IN THE RCSC "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS". NO OTHER MINIMUM BOLT TENSION OR TORQUE VALUES ARE REQUIRED.
13. PURCHASER SHALL VERIFY THE INSTALLATION IS IN CONFORMANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS FOR OBSTRUCTION MARKING AND LIGHTING.
14. TOLERANCE ON TOWER STEEL HEIGHT IS EQUAL TO PLUS 1% OR MINUS 1/2%.
15. DESIGN ASSUMES THAT, AS A MINIMUM, MAINTENANCE AND INSPECTION WILL BE PERFORMED OVER THE LIFE OF THE STRUCTURE IN ACCORDANCE WITH ANSI/TIA-222-G.
16. DESIGN ASSUMES LEVEL GRADE AT TOWER SITE.
17. DESIGN ASSUMES ALL ANTENNAS ARE MOUNTED SYMMETRICALLY TO MINIMIZE TORQUE, IF APPLICABLE.
18. FOUNDATIONS SHALL BE DESIGNED TO SUPPORT THE REACTIONS SHOWN FOR THE CONDITIONS EXISTING AT THE SITE.

MAXIMUM FACTORED REACTIONS			
COMPRESSION PER LEG	=	557.2	KIPS
TENSION PER LEG	=	448.3	KIPS
SHEAR PER LEG	=	52.5	KIPS
TOTAL SHEAR	=	86.7	KIPS
TOTAL O.T.M	=	18,336.8	FT-KIPS



TOWER CONFIGURATION
N.T.S.

TOWER DESIGN LOADING		
DESIGN WIND LOAD PER ANSI/TIA-222-G USING THE FOLLOWING DESIGN CRITERIA: ASCE 7-16 ULTIMATE WIND SPEED (NO ICE): 105 MPH BASIC WIND SPEED (W/ICE): 30 MPH PER ASCE 7-16 DESIGN ICE THICKNESS: 1.50" PER ASCE 7-16 EXPOSURE CATEGORY: B STRUCTURE CLASS: II TOPOGRAPHIC CATEGORY: 1 EARTHQUAKE SPECTRAL RESPONSE ACCELERATION: Ss: 0.244, S1: 0.090, SITE CLASS: D THIS STRUCTURE HAS BEEN DESIGNED TO SUPPORT THE FOLLOWING LOADS:		
ELEVATION (FT)	**ANTENNA LOADING**	**LINE SIZE (NOM)**
TOP	BEACON & LIGHTNING ROD	(1) 0-3/4" CONDUIT
395	(12) FF-65B-R1 & (12) RRU 4449 ON (3) SECTOR FRAMES	(4) 1-1/4"
385	(12) FF-65B-R1 & (12) RRU 4449 ON (3) SECTOR FRAMES	(4) 1-1/4"
370	(12) FF-65B-R1 & (12) RRU 4449 ON (3) SECTOR FRAMES	(4) 1-1/4"
350	(12) FF-65B-R1 & (12) RRU 4449 ON (3) SECTOR FRAMES	(4) 1-1/4"
300	(12) FF-65B-R1 & (12) RRU 4449 ON (3) SECTOR FRAMES	(4) 1-1/4"
240	(2) 6FT HP DISHES [AZ. 0 & 180 DEG][6 GHZ]	(2) EW63
200	SIDE LIGHTS	(1) 0-3/4" CONDUIT
200	(12) FF-65B-R1 & (12) RRU 4449 ON (3) SECTOR FRAMES	(4) 1-1/4"
160	(2) 6FT HP DISHES [AZ. 0 & 180 DEG][6 GHZ]	(2) EW63

SECTION MAIN MEMBER SCHEDULE			
SECTION	**LEGS**	**DIAGONALS**	**HORIZONTALS**
RLS04	PIPE 2.875x0.203	L1 3/4x1 3/4x1/8 (4)	L1 3/4x1 3/4x3/16 (1)
RLS04	PIPE 3.500x0.216	L1 3/4x1 3/4x1/8 (4)	N/A
RLT06	PIPE 4x0.226	L1 3/4x1 3/4x1/8 (4)	L1 3/4x1 3/4x3/16 (1)
RLT08	PIPE 4x0.318	L1 3/4x1 3/4x1/8 (4)	N/A
RLT10	PIPE 4.500x0.337	L2x2x3/16 (3)	N/A
RLT12	PIPE 5.563x0.375	L2 1/2x2 1/2x3/16 (3)	N/A
RLT14	PIPE 5.563x0.375	L2 1/2x2 1/2x3/16 (3)	N/A
RLT16	PIPE 5.563x0.375	L3x3x3/16 (3)	N/A
RLT18	PIPE 6.625x0.432	L3x3x3/16 (2)	N/A
RLT20	PIPE 6.625x0.432	L3x3x1/4 (2)	N/A
RLT22	PIPE 6.625x0.432	L3 1/2x3 1/2x1/4 (2)	N/A
RLT25	PIPE 8.625x0.375	L4x4x1/4 (3)	N/A
RLT28	PIPE 8.625x0.375	L4x4x5/16 (2)	L3 1/2x3 1/2x1/4 (2)
RLT31	PIPE 8.625x0.500	2L3x3x1/4 (2)	L4x4x1/4 (2)
RLT34	PIPE 8.625x0.500	2L3 1/2x3 1/2x1/4 (2)	L4x4x5/16 (2)
RLT37	PIPE 8.625x0.500	2L3 1/2x3 1/2x1/4 (2)	2L3x3x3/16 (2)
RLT40	PIPE 10.750x0.500	2L3 1/2x3 1/2x1/4 (2)	2L3 1/2x3 1/2x1/4 (2)

NOTE:
SECTION NUMBERS ARE FOR REFERENCE ONLY.
FOR NOMINAL FACE WIDTH DIMENSIONS, REFER TO THE STRESS ANALYSIS.
THE NUMBERS SHOWN IN PARENTHESES INDICATE THE NUMBER OF BAYS FROM TOP TO BOTTOM.

FILE NO.
242335

REVISIONS

REV.	DESCRIPTION	DWN	CHK	APP

ROHN PRODUCTS LLC
PO BOX 5999
PEORIA, IL 61601-5999
TOLL FREE 800-727-ROHN

EAST KENTUCKY NETWORK, LLC
DESIGN PROFILE
400 FT RTL TOWER
ONEIDA, KY

DWN:	CHK'D:	DATE:
AS	SY	02/07/2023

ENGR:	SHEET #:
AS	1 OF 1

PRJ. ENG'R:	PRJ. MANG'R:
AS	

DRAWING NO:	REV:
242335-01-D1	0

Section A: PROJECT DATA

Project Title:	400 FT RTL TOWER
Customer Name:	EAST KENTUCKY NETWORK- LLC
Site:	ONEIDA- KY
Contract No.:	242335
Revision:	0
Engineer:	AS
Date:	Feb 7 2023
Time:	07:48:13 AM

Design Standard: ANSI/TIA-222-G-2005 Addendum 2

GENERAL DESIGN CONDITIONS

Start wind direction:	0.00 (Deg)
End wind direction:	330.00 (Deg)
Increment wind direction:	30.00 (Deg)
Elevation above ground:	0.00 (ft)
Gust Response Factor Gh:	0.85
Structure class:	II
Exposure category:	B
Topographic category:	1
Material Density:	490.1(lbs/ft^3)
Young's Modulus:	29000.0(ksi)
Poisson Ratio:	0.30
Weight Multiplier:	1.00

Minimum Bracing Resistance as per 4.4.1

WIND ONLY CONDITIONS:

Ultimate Design Wind Speed (No Ice):	105.00(mph)
Nominal Design Wind Speed (No Ice):	81.33(mph)
Directionality Factor Kd:	0.85
Importance Factor I:	1.00
Wind Load Factor:	1.60
Dead Load Factor:	1.20
Dead Load Factor for Uplift:	0.90

WIND AND ICE CONDITIONS:

Basic Wind Speed (With Ice):	30.00(mph)
Directionality Factor Kd:	0.85
Wind Load Importance Factor Iw:	1.00
Ice Thickness Importance Factor Ii:	1.00
Ice Thickness:	0.75 (in)
Ice Density:	56.19(lbs/ft^3)
Wind Load Factor:	1.00
Dead Load Factor:	1.20
Ice Load Factor:	1.00

WIND ONLY SERVICEABILITY CONDITIONS:

Serviceability Wind Speed:	60.00(mph)
Directionality Factor Kd:	0.85
Importance Factor I:	1.00
Wind Load Factor:	1.00
Dead Load Factor:	1.00

PATTERN LOADING (IF APPLICABLE) CONDITIONS:

Ultimate Design Wind Speed (No Ice):	105.00(mph)
Nominal Design Wind Speed (No Ice):	81.33(mph)
Directionality Factor Kd:	0.85
Importance Factor I:	1.00
Wind Load Factor:	1.60
Dead Load Factor:	1.20

Dead Load Factor for Uplift:	0.90

EARTHQUAKE CONDITIONS:

Site class definition:	D
Spectral response acceleration Ss:	0.244
Spectral response acceleration S1:	0.090
Accelaration-based site coefficient Fa:	1.600
Velocity-based site coefficient Fv:	2.400
Design spectral response acceleration Sds:	0.260
Design spectral response acceleration Sd1:	0.144
Seismic analysis method:	1
Fundamental frequency of structure f1:	0.439
Total seismic shear Vs (Kips) :	2.36

Analysis performed using: TowerSoft Finite Element Analysis Program

File: \\rohnfs2\PeoEng\Jobs\2023\242335\ENGINEERING\242335.out
Contract: 242335
Project: 400 FT RTL TOWER
Date and Time: 2/7/2023 7:48:41 AM

Revision: 0
Site: ONEIDA- KY
Engineer: AS

Section B: STRUCTURE GEOMETRY

TOWER GEOMETRY

Cross-Section	Height (ft)	Tot Height (ft)	# of Section	Bot Width (in)	Top Width (in)
Triangular	400.00	400.00	17	495.81	56.99

SECTION GEOMETRY

Sec #	Sec. Name	Elevation Bottom (ft)	Elevation Top (ft)	Widths Bottom (in)	Widths Top (in)	Legs (lbs)	Brcg. (lbs)	Masses Sec.Brc (lbs)	Masses Int.Brc (lbs)	Masses Sect. (lbs)	Masses Database (lbs)	Brcg. Clear. (in)
17	RLS04	380.00	400.00	58	57	351	267	0	0	618	0	0.787
16	RLS04	360.00	380.00	58	58	459	238	0	0	697	0	0.787
15	RLT06	340.00	360.00	82	58	552	295	0	0	846	0	0.787
14	RLT08	320.00	340.00	106	82	756	320	0	0	1076	0	0.787
13	RLT10	300.00	320.00	131	106	905	520	0	0	1425	0	0.787
12	RLT12	280.00	300.00	155	131	1252	755	0	0	2007	0	0.787
11	RLT14	260.00	280.00	179	155	1252	853	0	0	2105	0	0.787
10	RLT16	240.00	260.00	204	179	1252	1156	0	0	2409	0	0.787
9	RLT18*	220.00	240.00	228	204	1722	917	0	0	2639	0	0.787
8	RLT20*	200.00	220.00	252	228	1722	1316	0	0	3037	0	0.787
7	RLT22*	180.00	200.00	278	252	1722	1674	0	0	3396	0	0.787
6	RLT25*	150.00	180.00	314	278	2981	3165	0	0	6145	0	0.787
5	RLT28*	120.00	150.00	350	314	2980	2954	1129	464	7527	0	0.787
4	RLT31*	90.00	120.00	386	350	3916	3740	1223	593	9472	0	0.787
3	RLT34*	60.00	90.00	422	386	3916	4764	1319	652	10651	0	0.787
2	RLT37*	30.00	60.00	460	422	3917	4917	1416	800	11051	0	0.787
1	RLT40*	0.00	30.00	496	460	4941	6180	1783	1348	14253	0	0.787
Total Mass:						34596	34031	6870	3858	79355	0	

PANEL GEOMETRY

Sec#	Pnl#	Type	SecBrcg	Mid. Horiz Continuous	Horiz	Height (ft)	Bottom Width (in)	Top Width (in)	Plan Bracing	Hip Bracing	Gusset Plate Area (ft^2)	Gusset Plate Weight (lbs)
17	4	X	(None)		Yes	5.0	57.1	57.0	(None)	(None)	0.300	0.30
17	3	X	(None)		None	5.0	57.3	57.1	(None)	(None)	0.300	0.30
17	2	X	(None)		None	5.0	57.4	57.3	(None)	(None)	0.300	0.30
17	1	X	(None)		None	5.0	57.5	57.4	(None)	(None)	0.300	0.30
16	4	X	(None)		None	5.0	57.6	57.5	(None)	(None)	0.300	0.30
16	3	X	(None)		None	5.0	57.7	57.6	(None)	(None)	0.300	0.30
16	2	X	(None)		None	5.0	57.9	57.7	(None)	(None)	0.300	0.30
16	1	X	(None)		None	5.0	58.0	57.9	(None)	(None)	0.300	0.30
15	4	X	(None)		Yes	5.0	64.0	58.0	(None)	(None)	0.300	0.30
15	3	X	(None)		None	5.0	70.0	64.0	(None)	(None)	0.300	0.30
15	2	X	(None)		None	5.0	76.0	70.0	(None)	(None)	0.300	0.30
15	1	X	(None)		None	5.0	82.0	76.0	(None)	(None)	0.300	0.30
14	4	X	(None)		None	5.0	88.1	82.0	(None)	(None)	0.300	0.30
14	3	X	(None)		None	5.0	94.2	88.1	(None)	(None)	0.300	0.30
14	2	X	(None)		None	5.0	100.3	94.2	(None)	(None)	0.300	0.30
14	1	X	(None)		None	5.0	106.4	100.3	(None)	(None)	0.300	0.30
13	3	X	(None)		None	6.7	114.7	106.4	(None)	(None)	0.300	0.30
13	2	X	(None)		None	6.7	123.0	114.7	(None)	(None)	0.300	0.30
13	1	X	(None)		None	6.7	131.3	123.0	(None)	(None)	0.300	0.30
12	3	X	(None)		None	6.7	139.3	131.3	(None)	(None)	0.300	0.30
12	2	X	(None)		None	6.7	147.3	139.3	(None)	(None)	0.300	0.30
12	1	X	(None)		None	6.7	155.3	147.3	(None)	(None)	0.300	0.30
11	3	X	(None)		None	6.7	163.3	155.3	(None)	(None)	0.300	0.30
11	2	X	(None)		None	6.7	171.3	163.3	(None)	(None)	0.300	0.30
11	1	X	(None)		None	6.7	179.3	171.3	(None)	(None)	0.300	0.30
10	3	X	(None)		None	6.7	187.6	179.3	(None)	(None)	0.300	0.30

10	2	X	(None)	None	6.7	195.9	187.6	(None)	(None)	0.300	0.30
10	1	X	(None)	None	6.7	204.2	195.9	(None)	(None)	0.300	0.30
9	2	X	(None)	None	10.0	216.2	204.2	(None)	(None)	0.300	0.30
9	1	X	(None)	None	10.0	228.2	216.2	(None)	(None)	0.300	0.30
8	2	X	(None)	None	10.0	240.2	228.2	(None)	(None)	0.300	0.30
8	1	X	(None)	None	10.0	252.2	240.2	(None)	(None)	0.300	0.30
7	2	X	(None)	None	10.0	265.1	252.2	(None)	(None)	0.300	0.30
7	1	X	(None)	None	10.0	278.0	265.1	(None)	(None)	0.300	0.30
6	3	X	(None)	None	10.0	290.0	278.0	(None)	(None)	0.300	0.30
6	2	X	(None)	None	10.0	302.0	290.0	(None)	(None)	0.300	0.30
6	1	X	(None)	None	10.0	314.0	302.0	(None)	(None)	0.300	0.30
5	2	K	2-Subdiv.	Yes	15.0	332.0	314.0	2-Subdiv.	(None)	0.300	0.30
5	1	K	2-Subdiv.	Yes	15.0	350.0	332.0	2-Subdiv.	(None)	0.300	0.30
4	2	K	2-Subdiv.	Yes	15.0	368.0	350.0	2-Subdiv.	(None)	0.300	0.30
4	1	K	2-Subdiv.	Yes	15.0	386.0	368.0	2-Subdiv.	(None)	0.300	0.30
3	2	K	2-Subdiv.	Yes	15.0	404.0	386.0	2-Subdiv.	(None)	0.300	0.30
3	1	K	2-Subdiv.	Yes	15.0	422.0	404.0	2-Subdiv.	(None)	0.300	0.30
2	2	K	2-Subdiv.	Yes	15.0	440.9	422.0	2-Subdiv.	(None)	0.300	0.30
2	1	K	2-Subdiv.	Yes	15.0	459.8	440.9	2-Subdiv.	(None)	0.300	0.30
1	2	K	2-Subdiv.	Yes	15.0	477.8	459.8	2-Subdiv.	(None)	0.300	0.30
1	1	K	2-Subdiv.	Yes	15.0	495.8	477.8	2-Subdiv.	(None)	0.300	0.30

MEMBER PROPERTIES

Sec/ Member Pnl	Type	Description	Steel Grade	Conn. Type	Bolt #-Size	Bolt Grade	End Dist.	Edge Dist.	Gusset Thick.	Gusset Grade	Bolt Space	Dble Mem. Spacing	Stitch Bolt
					(in)		(in)	(in)	(in)		(in)	(in)	(ft)
17/4	Leg	PIPE 2.875x0.203	A500 gr.CSTension		4-0.750	A325X							
17/4	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted		1-0.625	A325X	1.500	0.875	0.250	A572 gr.50		2.000	
17/4	Horiz	L1 3/4x1 3/4x3/16	A529 gr.50Bolted		1-0.625	A325X	1.500	0.875	0.250	A572 gr.50		2.000	
17/3	Leg	PIPE 2.875x0.203	A500 gr.CSTension		4-0.750	A325X							
17/3	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted		1-0.625	A325X	1.500	0.875	0.250	A572 gr.50		2.000	
17/2	Leg	PIPE 2.875x0.203	A500 gr.CSTension		4-0.750	A325X							
17/2	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted		1-0.625	A325X	1.500	0.875	0.250	A572 gr.50		2.000	
17/1	Leg	PIPE 2.875x0.203	A500 gr.CSTension		4-0.750	A325X							
17/1	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted		1-0.625	A325X	1.500	0.875	0.250	A572 gr.50		2.000	
16/4	Leg	PIPE 3.500x0.216	A500 gr.CSTension		4-0.875	A325X							
16/4	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted		1-0.625	A325X	1.500	0.875	0.250	A572 gr.50		2.000	
16/3	Leg	PIPE 3.500x0.216	A500 gr.CSTension		4-0.875	A325X							
16/3	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted		1-0.625	A325X	1.500	0.875	0.250	A572 gr.50		2.000	
16/2	Leg	PIPE 3.500x0.216	A500 gr.CSTension		4-0.875	A325X							
16/2	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted		1-0.625	A325X	1.500	0.875	0.250	A572 gr.50		2.000	
16/1	Leg	PIPE 3.500x0.216	A500 gr.CSTension		4-0.875	A325X							
16/1	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted		1-0.625	A325X	1.500	0.875	0.250	A572 gr.50		2.000	

15/4	Leg	PIPE 4x0.226	A500 gr.CSTension	4-0.875	A325X					
15/4	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted	1-0.625	A325X	1.500	0.875	0.250	A572 gr.50	2.000
15/4	Horiz	L1 3/4x1 3/4x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	0.875	0.250	A572 gr.50	2.000
15/3	Leg	PIPE 4x0.226	A500 gr.CSTension	4-0.875	A325X					
15/3	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted	1-0.625	A325X	1.500	0.875	0.250	A572 gr.50	2.000
15/2	Leg	PIPE 4x0.226	A500 gr.CSTension	4-0.875	A325X					
15/2	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted	1-0.625	A325X	1.500	0.875	0.250	A572 gr.50	2.000
15/1	Leg	PIPE 4x0.226	A500 gr.CSTension	4-0.875	A325X					
15/1	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted	1-0.625	A325X	1.500	0.875	0.250	A572 gr.50	2.000
14/4	Leg	PIPE 4x0.318	A500 gr.CSTension	5-0.875	A325X					
14/4	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted	1-0.625	A325X	1.500	0.875	0.250	A572 gr.50	2.000
14/3	Leg	PIPE 4x0.318	A500 gr.CSTension	5-0.875	A325X					
14/3	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted	1-0.625	A325X	1.500	0.875	0.250	A572 gr.50	2.000
14/2	Leg	PIPE 4x0.318	A500 gr.CSTension	5-0.875	A325X					
14/2	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted	1-0.625	A325X	1.500	0.875	0.250	A572 gr.50	2.000
14/1	Leg	PIPE 4x0.318	A500 gr.CSTension	5-0.875	A325X					
14/1	Diag	L1 3/4x1 3/4x1/8	A529 gr.50Bolted	1-0.625	A325X	1.500	0.875	0.250	A572 gr.50	2.000
13/3	Leg	PIPE 4.500x0.337	A500 gr.CSTension	5-1.000	A325X					
13/3	Diag	L2x2x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	1.000	0.250	A572 gr.50	2.000
13/2	Leg	PIPE 4.500x0.337	A500 gr.CSTension	5-1.000	A325X					
13/2	Diag	L2x2x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	1.000	0.250	A572 gr.50	2.000
13/1	Leg	PIPE 4.500x0.337	A500 gr.CSTension	5-1.000	A325X					
13/1	Diag	L2x2x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	1.000	0.250	A572 gr.50	2.000
12/3	Leg	PIPE 5.563x0.375	A500 gr.CSTension	5-1.000	A325X					
12/3	Diag	L2 1/2x2 1/2x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	1.250	0.250	A572 gr.50	2.000
12/2	Leg	PIPE 5.563x0.375	A500 gr.CSTension	5-1.000	A325X					
12/2	Diag	L2 1/2x2 1/2x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	1.250	0.250	A572 gr.50	2.000
12/1	Leg	PIPE 5.563x0.375	A500 gr.CSTension	5-1.000	A325X					
12/1	Diag	L2 1/2x2 1/2x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	1.250	0.250	A572 gr.50	2.000
11/3	Leg	PIPE 5.563x0.375	A500 gr.CSTension	5-1.000	A325X					
11/3	Diag	L2 1/2x2 1/2x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	0.875	0.250	A572 gr.50	2.000
11/2	Leg	PIPE 5.563x0.375	A500 gr.CSTension	5-1.000	A325X					
11/2	Diag	L2 1/2x2 1/2x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	0.875	0.250	A572 gr.50	2.000
11/1	Leg	PIPE 5.563x0.375	A500 gr.CSTension	5-1.000	A325X					
11/1	Diag	L2 1/2x2 1/2x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	0.875	0.250	A572 gr.50	2.000
10/3	Leg	PIPE 5.563x0.375	A500 gr.CSTension	6-1.000	A325X					
10/3	Diag	L3x3x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000
10/2	Leg	PIPE 5.563x0.375	A500 gr.CSTension	6-1.000	A325X					
10/2	Diag	L3x3x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000

10/1	Leg	PIPE 5.563x0.375	A500 gr.CSTension	6-1.000	A325X				
10/1	Diag	L3x3x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50 2.000
9/2	Leg	PIPE 6.625x0.432	A500 gr.CSTension	6-1.000	A325X				
9/2	Diag	L3x3x3/16	A529 gr.50Bolted	2-0.625	A325X	1.125	1.500	0.375	A572 gr.50 2.000
9/1	Leg	PIPE 6.625x0.432	A500 gr.CSTension	6-1.000	A325X				
9/1	Diag	L3x3x3/16	A529 gr.50Bolted	2-0.625	A325X	1.125	1.500	0.375	A572 gr.50 2.000
8/2	Leg	PIPE 6.625x0.432	A500 gr.CSTension	6-1.000	A325X				
8/2	Diag	L3x3x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.500	0.250	A572 gr.50 2.000
8/1	Leg	PIPE 6.625x0.432	A500 gr.CSTension	6-1.000	A325X				
8/1	Diag	L3x3x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.500	0.250	A572 gr.50 2.000
7/2	Leg	PIPE 6.625x0.432	A500 gr.CSTension	6-1.500	A325X				
7/2	Diag	L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.750	0.250	A572 gr.50 2.000
7/1	Leg	PIPE 6.625x0.432	A500 gr.CSTension	6-1.500	A325X				
7/1	Diag	L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.750	0.250	A572 gr.50 2.000
6/3	Leg	PIPE 8.625x0.375	A500 gr.CSTension	6-1.500	A325X				
6/3	Diag	L4x4x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	2.000	0.375	A572 gr.50 2.000
6/2	Leg	PIPE 8.625x0.375	A500 gr.CSTension	6-1.500	A325X				
6/2	Diag	L4x4x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	2.000	0.375	A572 gr.50 2.000
6/1	Leg	PIPE 8.625x0.375	A500 gr.CSTension	6-1.500	A325X				
6/1	Diag	L4x4x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	2.000	0.375	A572 gr.50 2.000
5/2	Leg	PIPE 8.625x0.375	A500 gr.CSTension	6-1.500	A325X				
5/2	Diag	L4x4x5/16	A529 gr.50Bolted	2-0.625	A325X	1.125	2.000	0.375	A572 gr.50 2.000
5/2	Horiz	L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.750	0.375	A572 gr.50 2.000
5/2	SecD1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50 2.000
5/2	SecH1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50 2.000
5/2	PlanH1	L3 1/2x3 1/2x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.750	0.250	A572 gr.50 2.000
5/1	Leg	PIPE 8.625x0.375	A500 gr.CSTension	6-1.500	A325X				
5/1	Diag	L4x4x5/16	A529 gr.50Bolted	2-0.625	A325X	1.125	2.000	0.375	A572 gr.50 2.000
5/1	Horiz	L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.750	0.375	A572 gr.50 2.000
5/1	SecD1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50 2.000
5/1	SecH1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50 2.000
5/1	PlanH1	L3 1/2x3 1/2x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.750	0.250	A572 gr.50 2.000
4/2	Leg	PIPE 8.625x0.500	A500 gr.CSTension	6-1.500	A325X				
4/2	Diag	2L3x3x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.500	0.375	A572 gr.50 2.000
0.3753.60									
4/2	Horiz	L4x4x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	2.000	0.375	A572 gr.50 2.000
4/2	SecD1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50 2.000

4/2	SecH1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000
4/2	PlanH1	L4x4x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	2.000	0.250	A572 gr.50	2.000
4/1	Leg	PIPE 8.625x0.500	A500 gr.CSTension	6-1.500	A325X					
4/1	Diag	2L3x3x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.500	0.375	A572 gr.50	2.000
0.375	3.60									
4/1	Horiz	L4x4x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	2.000	0.375	A572 gr.50	2.000
4/1	SecD1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000
4/1	SecH1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000
4/1	PlanH1	L4x4x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	2.000	0.250	A572 gr.50	2.000
3/2	Leg	PIPE 8.625x0.500	A500 gr.CSTension	6-1.500	A325X					
3/2	Diag	2L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.750	0.375	A572 gr.50	2.000
0.375	3.80									
3/2	Horiz	L4x4x5/16	A529 gr.50Bolted	2-0.625	A325X	1.125	2.000	0.375	A572 gr.50	2.000
3/2	SecD1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000
3/2	SecH1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000
3/2	PlanH1	L4x4x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	2.000	0.250	A572 gr.50	2.000
3/1	Leg	PIPE 8.625x0.500	A500 gr.CSTension	6-1.500	A325X					
3/1	Diag	2L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.750	0.375	A572 gr.50	2.000
0.375	3.80									
3/1	Horiz	L4x4x5/16	A529 gr.50Bolted	2-0.625	A325X	1.125	2.000	0.375	A572 gr.50	2.000
3/1	SecD1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000
3/1	SecH1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000
3/1	PlanH1	L4x4x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	2.000	0.250	A572 gr.50	2.000
2/2	Leg	PIPE 8.625x0.500	A500 gr.CSTension	7-1.500	A325X					
2/2	Diag	2L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.750	0.375	A572 gr.50	2.000
0.375	4.00									
2/2	Horiz	2L3x3x3/16	A529 gr.50Bolted	2-0.625	A325X	1.125	1.500	0.375	A572 gr.50	2.000
0.375	4.42									
2/2	SecD1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000
2/2	SecH1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000
2/2	PlanH1	2L3x3x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000
0.375	4.41									
2/1	Leg	PIPE 8.625x0.500	A500 gr.CSTension	7-1.500	A325X					
2/1	Diag	2L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.750	0.375	A572 gr.50	2.000
0.375	4.00									
2/1	Horiz	2L3x3x3/16	A529 gr.50Bolted	2-0.625	A325X	1.125	1.500	0.375	A572 gr.50	2.000
0.375	4.42									
2/1	SecD1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000

2/1	SecH1	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000
2/1	PlanH1	2L3x3x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	1.500	0.250	A572 gr.50	2.000
0.3754.41										
1/2	Leg	PIPE 10.750x0.500	A500 gr.CSTension	8-1.500	A325X					
1/2	Diag	2L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.750	0.375	A572 gr.50	2.000
0.3754.24										
1/2	Horiz	2L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.750	0.375	A572 gr.50	2.000
0.3754.79										
1/2	SecD1	L3 1/2x3 1/2x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.750	0.250	A572 gr.50	2.000
1/2	SecH1	L3 1/2x3 1/2x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.750	0.250	A572 gr.50	2.000
1/2	PlanH1	2L3 1/2x3 1/2x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.750	0.250	A572 gr.50	2.000
0.3754.78										
1/1	Leg	PIPE 10.750x0.500	A500 gr.CSTension	8-1.500	A325X					
1/1	Diag	2L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.750	0.375	A572 gr.50	2.000
0.3754.24										
1/1	Horiz	2L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2-0.625	A325X	1.125	1.750	0.375	A572 gr.50	2.000
0.3754.79										
1/1	SecD1	L3 1/2x3 1/2x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.750	0.250	A572 gr.50	2.000
1/1	SecH1	L3 1/2x3 1/2x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.750	0.250	A572 gr.50	2.000
1/1	PlanH1	2L3 1/2x3 1/2x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.750	0.250	A572 gr.50	2.000
0.3754.78										

Section C: ANTENNA DATA

Structure Azimuth from North: 0

ANTENNAS

Ant No.	Elev. (ft)	Antenna (#) Type	Ant. Azim.	Mount. Radius (ft)	Mount Type	Mount Azim.	Tx Line (#) Type	Mounting Pipe Size (in)	Mounting Pipe Length (ft) Full	Mounting Pipe Length (ft) Shielded	Ka
1	240.00	(1) HP6	0	10.50		0					1.00
		Vert. Offset 0.00 (ft)									
2	240.00	(1) HP6	180	10.50		120					1.00
		Vert. Offset 0.00 (ft)									
3	180.00	(1) HP6	0	14.00		0					1.00
		Vert. Offset 0.00 (ft)									
4	180.00	(1) HP6	180	14.00		120					1.00
		Vert. Offset 0.00 (ft)									

ANTENNA AND MOUNT WIND AREAS AND WEIGHTS

Ant No.	Antenna/Mount	Frontal Bare Area (ft)^2	Lateral Bare Area (ft)^2	Frontal Iced Area (ft)^2	Lateral Iced Area (ft)^2	Weight Bare (lbs)	Weight Iced (lbs)	Frequency GHz	Allowable Gh Signal Loss dB	Mount Ka
1	HP6	40.35	2.81	40.35	2.81	279.98	1121.86	6.00	10	0.85
2	HP6	40.35	2.81	40.35	2.81	279.98	1121.86	6.00	10	0.85
3	HP6	40.35	2.81	40.35	2.81	279.98	1099.41	6.00	10	0.85
4	HP6	40.35	2.81	40.35	2.81	279.98	1099.41	6.00	10	0.85

Section D: TRANSMISSION LINE DATA

Transmission Lines Position

No.	Bot El (ft)	Top El (ft)	Desc.	Radius (ft)	Az.	Orient.	No.	No. of Rows	Vert.	Antenna	User Ka
1	0.00	400.00	3/8 CABLE	25.00	0.00	0.00	1	1	Yes		
2	200.00	400.00	RC0.75-Cnd	10.58	60.00	5.00	1	1	No		
3	0.00	395.00	TX Ladder	13.72	60.00	30.00	1	1	No		
4	385.00	395.00	LDF6P-50A	1.69	60.00	25.00	4	1	No		
5	370.00	385.00	LDF6P-50A	1.70	60.00	25.00	8	2	No		
6	350.00	370.00	LDF6P-50A	2.05	60.00	25.00	12	2	No		
7	300.00	350.00	LDF6P-50A	3.86	60.00	25.00	16	2	No		
8	200.00	300.00	LDF6P-50A	7.41	60.00	25.00	20	2	No		
9	180.00	240.00	EW63	7.38	60.00	35.00	2	1	No		
10	0.00	200.00	RC0.75-Cnd	20.72	60.00	5.00	2	1	No		
11	0.00	200.00	LDF6P-50A	14.51	60.00	25.00	24	2	No		
12	0.00	180.00	EW63	13.11	60.00	35.00	4	1	No		

Transmission Lines Details

No.	Desc.	Width (in)	Depth (in)	Unit Mass (lb/ft)	Line Spacing (in)	Row Spacing (in)
1	3/8 CABLE	0.38	0.38	1.00	2.750	2.750
2	RC0.75-Cnd	1.05	1.05	1.09	2.750	2.750
3	TX Ladder	4.70	1.50	4.00	2.750	2.750
4	LDF6P-50A	1.55	1.55	0.66	2.250	2.750
5	LDF6P-50A	1.55	1.55	0.66	2.250	2.750
6	LDF6P-50A	1.55	1.55	0.66	2.250	2.750
7	LDF6P-50A	1.55	1.55	0.66	2.250	2.750
8	LDF6P-50A	1.55	1.55	0.66	2.250	2.750
9	EW63	1.16	2.01	0.51	2.250	2.750
10	RC0.75-Cnd	1.05	1.05	1.09	2.250	2.750
11	LDF6P-50A	1.55	1.55	0.66	2.250	2.750
12	EW63	1.16	2.01	0.51	2.250	2.750

Section F: POINT LOAD DATA

Structure Azimuth from North:0.00

POINT LOADS

No.	Description	Elev. (ft)	Radius (ft)	Azim. (Deg)	Orient. (Deg)	Vertical Offset (ft)	Tx Line	Comments
1	BEACON & LR	400.00	1.00	0.0	0.0	0.00		
2	CARRIER	395.00	0.00	0.0	0.0	0.00		
3	CARRIER	385.00	0.00	0.0	0.0	0.00		
4	CARRIER	370.00	0.00	0.0	0.0	0.00		
5	CARRIER	350.00	0.00	0.0	0.0	0.00		
6	CARRIER	300.00	0.00	0.0	0.0	0.00		
7	SIDE LIGHTS	200.00	12.50	0.0	0.0	0.00		
8	SIDE LIGHTS	200.00	12.50	120.0	120.0	0.00		
9	SIDE LIGHTS	200.00	12.50	240.0	240.0	0.00		
10	CARRIER	200.00	0.00	0.0	0.0	0.00		

POINT LOADS WIND AREAS AND WEIGHTS

No.	Description	Frontal Bare Area (ft^2)	Lateral Bare Area (ft^2)	Frontal Iced Area (ft^2)	Lateral Iced Area (ft^2)	Weight Bare (Kips)	Weight Iced (Kips)	Gh
1	BEACON & LR	5.00	5.00	10.00	10.00	0.25	0.50	0.85
2	CARRIER	108.00	108.00	234.00	234.00	3.80	10.35	0.85
3	CARRIER	108.00	108.00	234.00	234.00	3.80	10.35	0.85
4	CARRIER	108.00	108.00	234.00	234.00	3.80	10.35	0.85
5	CARRIER	108.00	108.00	234.00	234.00	3.80	10.35	0.85
6	CARRIER	108.00	108.00	234.00	234.00	3.80	10.35	0.85
7	SIDE LIGHTS	1.00	1.00	2.00	2.00	0.10	0.20	0.85
8	SIDE LIGHTS	1.00	1.00	2.00	2.00	0.10	0.20	0.85
9	SIDE LIGHTS	1.00	1.00	2.00	2.00	0.10	0.20	0.85
10	CARRIER	108.00	108.00	234.00	234.00	3.80	10.35	0.85

Section H: STRUCTURE DISPLACEMENT DATA

Load Combination Wind Only - Serviceability

Wind Direction Maximum displacements

Node	Elev. (ft)	N-S Disp (in)	W-E Disp (in)	Vert.Disp (in)	N-S Rot (Deg)	W-E Rot (Deg)	Twist (Deg)
174	400.0	25.3	25.7	-0.3	0.81	0.82	-0.03
171	395.0	24.4	24.9	-0.3	0.82	0.83	-0.04
168	390.0	23.5	24.0	-0.3	0.81	0.82	0.03
165	385.0	22.7	23.1	-0.3	0.81	0.83	-0.04
162	380.0	21.8	22.3	-0.3	0.80	0.81	-0.03
159	375.0	21.0	21.4	-0.3	0.78	0.79	0.02
156	370.0	20.2	20.6	-0.3	0.78	0.79	-0.04
153	365.0	19.4	19.8	-0.3	0.74	0.75	0.02
150	360.0	18.6	19.0	-0.3	0.71	0.72	-0.03
147	355.0	17.9	18.2	-0.3	0.66	0.68	0.02
144	350.0	17.2	17.5	-0.3	0.65	0.67	-0.03
141	345.0	16.5	16.8	-0.3	0.61	0.62	0.01
138	340.0	15.8	16.2	-0.3	0.59	0.60	-0.03
135	335.0	15.2	15.5	-0.3	0.57	0.58	-0.02
132	330.0	14.6	14.9	-0.3	0.55	0.56	-0.02
129	325.0	14.1	14.3	-0.2	0.53	0.54	-0.02
126	320.0	13.5	13.8	-0.2	0.50	0.51	-0.02
123	313.3	12.8	13.1	-0.2	0.48	0.49	-0.02
120	306.7	12.1	12.4	-0.2	0.45	0.46	-0.02
117	300.0	11.5	11.7	-0.2	0.43	0.45	-0.02
114	293.3	10.9	11.1	-0.2	0.42	0.42	-0.02
111	286.7	10.3	10.5	-0.2	0.40	0.41	-0.02
108	280.0	9.8	10.0	-0.2	0.39	0.39	-0.02
105	273.3	9.2	9.4	-0.2	0.37	0.38	-0.02
102	266.7	8.7	8.9	-0.2	0.36	0.36	-0.02
99	260.0	8.2	8.4	-0.2	0.34	0.35	-0.02
96	253.3	7.7	7.9	-0.2	0.32	0.33	-0.02
93	246.7	7.3	7.4	-0.2	0.31	0.32	-0.02
90	240.0	6.9	7.0	-0.2	0.30	0.30	-0.02
87	230.0	6.2	6.3	-0.2	0.28	0.28	-0.01
84	220.0	5.7	5.8	-0.2	0.26	0.27	-0.02
81	210.0	5.1	5.2	-0.2	0.24	0.25	-0.01
78	200.0	4.6	4.7	-0.2	0.23	0.23	-0.02
75	190.0	4.1	4.2	-0.2	0.21	0.22	-0.01
72	180.0	3.7	3.7	-0.2	0.20	0.20	-0.01
69	170.0	3.3	3.3	-0.1	0.19	0.19	-0.01
66	160.0	2.9	2.9	-0.1	0.17	0.17	-0.01
62	150.0	2.5	2.6	-0.1	0.15	0.15	-0.01
56	135.0	2.1	2.1	-0.1	0.13	0.13	-0.01
50	120.0	1.7	1.7	-0.1	0.12	0.12	-0.01
44	105.0	1.3	1.3	-0.1	0.10	0.10	-0.01
38	90.0	1.0	1.0	-0.1	0.08	0.09	-0.01
32	75.0	0.7	0.7	-0.1	0.07	0.07	-0.01
26	60.0	0.5	-0.5	-0.1	0.06	0.06	0.00
20	45.0	0.3	-0.3	0.0	0.04	0.05	0.00
14	30.0	0.2	-0.2	0.0	0.03	-0.03	0.00
8	15.0	0.1	-0.1	0.0	0.02	-0.02	0.00
3	0.0	0.0	0.0	0.0	0.00	0.00	0.00

Section J: ANTENNA DISPLACEMENT DATA

Load Combination Wind Only - Serviceability

Wind Direction Maximum displacements

Ant.	Elev. (ft)	N-S Disp (in)	W-E Disp (in)	Vert.Disp (in)	N-S Rot (Deg)	W-E Rot (Deg)	Twist Tot (Deg)	Allow. (Deg)
1	240.00	6.9	7.0	-0.2	0.30	0.30	-0.02	1.48
2	240.00	6.9	7.0	-0.2	0.30	0.30	-0.02	1.48
3	180.00	3.7	3.7	-0.2	0.20	0.20	-0.01	1.48
4	180.00	3.7	3.7	-0.2	0.20	0.20	-0.01	1.48

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Project: 400 FT RTL TOWER
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Revision: 0
Site: ONEIDA- KY
Engineer: AS

Section L: STRENGTH ASSESSMENT SORTED DATA

Load Combination: Max Envelope
Wind Direction: Maximum

Sec	Pnl	Elev. (ft)	MType	Desc.	Len (ft)	kl/r	Gov. comp. cap. (Kips)	Gov. tens. cap. (Kips)	Max Compr. (Kips)	Max Tens. (Kips)	Asses. Ratio
17	4	395.00	Leg	PIPE 2.875x0.203	5.00	63.4	57.1	76.5	0.8	0.4	0.01
17	3	390.00	Leg	PIPE 2.875x0.203	5.00	63.4	57.1	76.5	4.8	1.3	0.08
17	2	385.00	Leg	PIPE 2.875x0.203	5.00	63.4	57.1	76.5	9.3	5.9	0.16
17	1	380.00	Leg	PIPE 2.875x0.203	5.00	63.4	57.1	76.5	17.1	11.1	0.30
16	4	375.00	Leg	PIPE 3.500x0.216	5.00	51.7	82.5	100.4	28.1	21.5	0.34
16	3	370.00	Leg	PIPE 3.500x0.216	5.00	51.7	82.5	100.4	36.7	30.0	0.44
16	2	365.00	Leg	PIPE 3.500x0.216	5.00	51.7	82.5	100.4	51.4	41.4	0.62
16	1	360.00	Leg	PIPE 3.500x0.216	5.00	51.7	82.5	100.4	65.9	55.7	0.80
15	4	355.00	Leg	PIPE 4x0.226	5.01	44.9	104.9	120.6	77.7	67.0	0.74
15	3	350.00	Leg	PIPE 4x0.226	5.01	44.9	104.9	120.6	84.9	73.8	0.81
15	2	345.00	Leg	PIPE 4x0.226	5.01	44.9	104.9	120.6	94.3	80.2	0.90
15	1	340.00	Leg	PIPE 4x0.226	5.01	44.9	104.9	120.6	103.9	89.1	0.99
14	4	335.00	Leg	PIPE 4x0.318	5.01	45.9	142.0	165.6	111.1	96.2	0.78
14	3	330.00	Leg	PIPE 4x0.318	5.01	45.9	142.0	165.6	119.1	103.5	0.84
14	2	325.00	Leg	PIPE 4x0.318	5.01	45.9	142.0	165.6	125.3	109.5	0.88
14	1	320.00	Leg	PIPE 4x0.318	5.01	45.9	142.0	165.6	132.3	115.8	0.93
13	3	313.33	Leg	PIPE 4.500x0.337	6.68	54.2	160.1	198.4	138.8	121.9	0.87
13	2	306.67	Leg	PIPE 4.500x0.337	6.68	54.2	160.1	198.4	147.0	129.2	0.92
13	1	300.00	Leg	PIPE 4.500x0.337	6.68	54.2	160.1	198.4	153.7	135.4	0.96
12	3	293.33	Leg	PIPE 5.563x0.375	6.68	43.6	239.4	275.0	163.5	141.7	0.68
12	2	286.67	Leg	PIPE 5.563x0.375	6.68	43.6	239.4	275.0	172.8	150.0	0.72
12	1	280.00	Leg	PIPE 5.563x0.375	6.68	43.6	239.4	275.0	181.4	157.7	0.76
11	3	273.33	Leg	PIPE 5.563x0.375	6.68	43.6	239.4	275.0	190.0	165.4	0.79
11	2	266.67	Leg	PIPE 5.563x0.375	6.68	43.6	239.4	275.0	198.2	172.6	0.83
11	1	260.00	Leg	PIPE 5.563x0.375	6.68	43.6	239.4	275.0	206.4	179.9	0.86
10	3	253.33	Leg	PIPE 5.563x0.375	6.68	43.6	239.3	275.0	214.2	186.6	0.89
10	2	246.67	Leg	PIPE 5.563x0.375	6.68	43.6	239.3	275.0	222.0	193.3	0.93
10	1	240.00	Leg	PIPE 5.563x0.375	6.68	43.6	239.3	275.0	229.4	199.6	0.96
9	2	230.00	Leg	PIPE 6.625x0.432	10.02	54.6	304.3	330.3	239.5	208.3	0.79
9	1	220.00	Leg	PIPE 6.625x0.432	10.02	54.6	304.3	330.3	251.8	218.8	0.83
8	2	210.00	Leg	PIPE 6.625x0.432	10.02	54.6	304.3	330.3	264.2	229.2	0.87
8	1	200.00	Leg	PIPE 6.625x0.432	10.02	54.6	304.3	330.3	276.1	239.2	0.91
7	2	190.00	Leg	PIPE 6.625x0.432	10.02	54.6	304.2	378.5	289.6	247.9	0.95
7	1	180.00	Leg	PIPE 6.625x0.432	10.02	54.6	304.2	378.5	302.8	258.6	1.00
6	3	170.00	Leg	PIPE 8.625x0.375	10.02	41.2	386.4	437.4	315.1	268.9	0.82
6	2	160.00	Leg	PIPE 8.625x0.375	10.02	41.2	386.4	437.4	329.4	280.6	0.85
6	1	150.00	Leg	PIPE 8.625x0.375	10.02	41.2	386.4	437.4	342.8	291.4	0.89
5	2	135.00	Leg	PIPE 8.625x0.375	15.02	30.9	407.9	437.4	350.8	296.7	0.86
5	1	120.00	Leg	PIPE 8.625x0.375	15.02	30.9	407.9	437.4	371.7	313.2	0.91
4	2	105.00	Leg	PIPE 8.625x0.500	15.02	31.3	538.6	574.2	392.7	329.4	0.73
4	1	90.00	Leg	PIPE 8.625x0.500	15.02	31.3	538.6	574.2	413.9	345.5	0.77
3	2	75.00	Leg	PIPE 8.625x0.500	15.02	31.3	538.6	574.2	435.1	361.2	0.81
3	1	60.00	Leg	PIPE 8.625x0.500	15.02	31.3	538.6	574.2	456.3	376.8	0.85
2	2	45.00	Leg	PIPE 8.625x0.500	15.03	31.3	538.6	574.2	477.5	392.2	0.89
2	1	30.00	Leg	PIPE 8.625x0.500	15.03	31.3	538.6	574.2	497.6	406.4	0.92
1	2	15.00	Leg	PIPE 10.750x0.500	15.02	24.8	692.6	724.5	517.6	420.0	0.75
1	1	0.00	Leg	PIPE 10.750x0.500	15.02	24.8	692.6	724.5	538.7	434.1	0.78
17	4	395.00	Diag	L1 3/4x1 3/4x1/8	6.90	106.7	8.2	7.1	0.9	0.9	0.13
17	3	390.00	Diag	L1 3/4x1 3/4x1/8	6.91	106.8	8.1	7.1	1.9	1.8	0.25
17	2	385.00	Diag	L1 3/4x1 3/4x1/8	6.92	106.9	8.1	7.1	1.9	2.0	0.29
17	1	380.00	Diag	L1 3/4x1 3/4x1/8	6.92	107.0	8.1	7.1	3.8	3.6	0.51
16	4	375.00	Diag	L1 3/4x1 3/4x1/8	6.93	106.2	8.2	7.1	3.8	3.9	0.55
16	3	370.00	Diag	L1 3/4x1 3/4x1/8	6.94	106.2	8.2	7.1	4.1	4.0	0.56
16	2	365.00	Diag	L1 3/4x1 3/4x1/8	6.94	106.3	8.2	7.1	5.6	5.7	0.80

16	1	360.00	Diag	L1 3/4x1 3/4x1/8	6.95	106.4	8.2	7.1	5.9	5.8	0.82
15	4	355.00	Diag	L1 3/4x1 3/4x1/8	7.13	112.1	7.5	7.1	3.1	3.1	0.44
15	3	350.00	Diag	L1 3/4x1 3/4x1/8	7.49	117.2	6.9	7.1	2.9	2.9	0.42
15	2	345.00	Diag	L1 3/4x1 3/4x1/8	7.87	123.2	6.3	7.1	4.1	4.0	0.66
15	1	340.00	Diag	L1 3/4x1 3/4x1/8	8.27	130.3	5.6	7.1	3.8	3.9	0.67
14	4	335.00	Diag	L1 3/4x1 3/4x1/8	8.67	137.6	5.0	7.1	3.7	3.5	0.73
14	3	330.00	Diag	L1 3/4x1 3/4x1/8	9.09	145.1	4.5	7.1	3.4	3.5	0.76
14	2	325.00	Diag	L1 3/4x1 3/4x1/8	9.52	152.7	4.1	7.1	3.5	3.4	0.86
14	1	320.00	Diag	L1 3/4x1 3/4x1/8	9.96	160.4	3.7	7.1	3.3	3.4	0.90
13	3	313.33	Diag	L2x2x3/16	11.37	165.6	5.8	11.8	3.7	3.5	0.63
13	2	306.67	Diag	L2x2x3/16	11.94	174.6	5.3	11.8	3.4	3.5	0.65
13	1	300.00	Diag	L2x2x3/16	12.52	183.8	4.7	11.8	3.6	3.4	0.76
12	3	293.33	Diag	L2 1/2x2 1/2x3/16	13.10	151.7	8.8	14.1	4.8	4.8	0.54
12	2	286.67	Diag	L2 1/2x2 1/2x3/16	13.68	158.9	8.1	14.1	4.8	4.7	0.59
12	1	280.00	Diag	L2 1/2x2 1/2x3/16	14.27	166.2	7.4	14.1	4.8	4.8	0.65
11	3	273.33	Diag	L2 1/2x2 1/2x3/16	14.86	173.6	6.7	10.7	4.8	4.8	0.72
11	2	266.67	Diag	L2 1/2x2 1/2x3/16	15.46	181.1	6.2	10.7	4.9	4.9	0.79
11	1	260.00	Diag	L2 1/2x2 1/2x3/16	16.06	188.6	5.7	10.7	5.0	4.9	0.87
10	3	253.33	Diag	L3x3x3/16	16.68	162.9	9.3	14.7	4.9	4.8	0.52
10	2	246.67	Diag	L3x3x3/16	17.32	169.5	8.6	14.7	4.9	4.9	0.58
10	1	240.00	Diag	L3x3x3/16	17.96	176.0	7.9	14.7	5.1	5.1	0.65
9	2	230.00	Diag	L3x3x3/16	20.18	179.1	7.7	21.1	6.3	6.4	0.82
9	1	220.00	Diag	L3x3x3/16	21.05	186.0	7.1	21.1	6.6	6.4	0.92
8	2	210.00	Diag	L3x3x1/4	21.93	192.9	8.7	28.0	6.5	6.6	0.75
8	1	200.00	Diag	L3x3x1/4	22.83	200.0	8.1	28.0	6.8	6.6	0.84
7	2	190.00	Diag	L3 1/2x3 1/2x1/4	23.76	181.5	11.6	30.4	7.5	7.2	0.65
7	1	180.00	Diag	L3 1/2x3 1/2x1/4	24.74	188.0	10.8	30.4	7.4	7.5	0.69
6	3	170.00	Diag	L4x4x1/4	25.69	170.2	15.1	30.4	8.8	8.7	0.58
6	2	160.00	Diag	L4x4x1/4	26.62	175.5	14.2	30.4	9.0	8.9	0.63
6	1	150.00	Diag	L4x4x1/4	27.55	180.9	13.4	30.4	9.3	9.3	0.69
5	2	135.00	Diag	L4x4x5/16	20.41	181.7	16.4	30.4	13.5	13.5	0.82
5	1	120.00	Diag	L4x4x5/16	20.92	186.8	15.5	30.4	13.8	13.8	0.89
4	2	105.00	Diag	2L3x3x1/4	21.45	187.7	18.5	42.1	14.1	14.1	0.76
4	1	90.00	Diag	2L3x3x1/4	22.00	192.0	17.6	42.1	14.3	14.3	0.81
3	2	75.00	Diag	2L3 1/2x3 1/2x1/4	22.55	171.9	25.8	46.6	14.6	14.6	0.56
3	1	60.00	Diag	2L3 1/2x3 1/2x1/4	23.12	175.9	24.7	46.6	14.8	14.8	0.60
2	2	45.00	Diag	2L3 1/2x3 1/2x1/4	23.72	181.4	23.2	46.6	14.2	14.2	0.61
2	1	30.00	Diag	2L3 1/2x3 1/2x1/4	24.34	185.7	22.1	46.6	14.4	14.4	0.65
1	2	15.00	Diag	2L3 1/2x3 1/2x1/4	24.93	190.6	21.0	46.6	15.3	15.3	0.73
1	1	0.00	Diag	2L3 1/2x3 1/2x1/4	25.53	194.8	20.1	46.6	15.5	15.5	0.77
17	4	395.00	Horiz	L1 3/4x1 3/4x3/16	4.75	145.7	6.6	10.7	0.6	0.5	0.09
15	4	355.00	Horiz	L1 3/4x1 3/4x3/16	4.83	145.3	6.6	10.7	1.4	1.1	0.20
5	2	135.00	Horiz	L3 1/2x3 1/2x1/4	13.08	179.7	11.8	30.4	9.3	9.2	0.79
5	1	120.00	Horiz	L3 1/2x3 1/2x1/4	13.83	187.7	10.8	30.4	9.8	9.6	0.91
4	2	105.00	Horiz	L4x4x1/4	14.58	175.2	14.3	30.4	10.3	10.0	0.72
4	1	90.00	Horiz	L4x4x1/4	15.33	182.1	13.2	30.4	10.7	10.4	0.81
3	2	75.00	Horiz	L4x4x5/16	16.08	190.8	14.9	30.4	11.1	10.8	0.75
3	1	60.00	Horiz	L4x4x5/16	16.83	197.8	13.9	30.4	11.5	11.2	0.83
2	2	45.00	Horiz	2L3x3x3/16	17.58	179.5	15.3	42.1	11.5	10.9	0.75
2	1	30.00	Horiz	2L3x3x3/16	18.37	185.7	14.3	42.1	11.6	11.2	0.81
1	2	15.00	Horiz	2L3 1/2x3 1/2x1/4	19.16	171.2	26.0	46.6	12.3	12.2	0.47
1	1	0.00	Horiz	2L3 1/2x3 1/2x1/4	19.91	176.3	24.6	46.6	12.8	12.5	0.52
5	2	135.00	SecH1	L3x3x1/4	6.54	133.0	15.2	15.2	6.1	6.1	0.40
5	2	135.00	SecD1	L3x3x1/4	9.71	197.5	8.3	15.2	4.8	4.8	0.57
5	2	135.00	PlanH1	L3 1/2x3 1/2x1/4	13.08	227.5	7.4	15.2	0.1	0.1	0.01
5	1	120.00	SecH1	L3x3x1/4	6.92	140.7	15.2	15.2	6.4	6.4	0.42
5	1	120.00	SecD1	L3x3x1/4	9.95	202.5	7.9	15.2	4.9	4.9	0.61
5	1	120.00	PlanH1	L3 1/2x3 1/2x1/4	13.83	240.6	6.6	15.2	0.1	0.1	0.01
4	2	105.00	SecH1	L3x3x1/4	7.29	148.3	14.8	15.2	6.8	6.8	0.46
4	2	105.00	SecD1	L3x3x1/4	10.20	207.5	7.6	15.2	5.0	5.0	0.66
4	2	105.00	PlanH1	L4x4x1/4	14.58	218.7	9.2	15.2	0.1	0.1	0.01
4	1	90.00	SecH1	L3x3x1/4	7.67	155.9	13.4	15.2	7.1	7.1	0.53

4	1	90.00	SecD1	L3x3x1/4	10.46	212.8	7.2	15.2	5.1	5.1	0.71
4	1	90.00	PlanH1	L4x4x1/4	15.33	230.0	8.3	15.2	0.1	0.1	0.01
3	2	75.00	SecH1	L3x3x1/4	8.04	163.5	12.2	15.2	7.5	7.5	0.62
3	2	75.00	SecD1	L3x3x1/4	10.73	218.2	6.8	15.2	5.3	5.3	0.77
3	2	75.00	PlanH1	L4x4x1/4	16.08	241.2	7.5	15.2	0.1	0.1	0.01
3	1	60.00	SecH1	L3x3x1/4	8.42	171.2	11.1	15.2	7.9	7.9	0.71
3	1	60.00	SecD1	L3x3x1/4	11.00	223.7	6.5	15.2	5.4	5.4	0.83
3	1	60.00	PlanH1	L4x4x1/4	16.83	252.5	6.9	15.2	0.1	0.1	0.01
2	2	45.00	SecH1	L3x3x1/4	8.79	178.8	10.2	15.2	8.2	8.2	0.81
2	2	45.00	SecD1	L3x3x1/4	11.26	229.0	6.2	15.2	5.5	5.5	0.89
2	2	45.00	PlanH1	2L3x3x3/16	17.58	224.5	9.8	19.5	0.1	0.1	0.01
2	1	30.00	SecH1	L3x3x1/4	9.19	186.8	9.3	15.2	8.6	8.6	0.92
2	1	30.00	SecD1	L3x3x1/4	11.56	235.1	5.9	15.2	5.6	5.6	0.96
2	1	30.00	PlanH1	2L3x3x3/16	18.37	234.5	9.0	19.5	0.1	0.1	0.01
1	2	15.00	SecH1	L3 1/2x3 1/2x1/4	9.58	166.6	13.8	15.2	8.9	8.9	0.65
1	2	15.00	SecD1	L3 1/2x3 1/2x1/4	11.88	206.5	8.9	15.2	5.8	5.8	0.64
1	2	15.00	PlanH1	2L3 1/2x3 1/2x1/4	19.16	210.9	17.2	19.5	0.1	0.1	0.00
1	1	0.00	SecH1	L3 1/2x3 1/2x1/4	9.95	173.1	12.7	15.2	9.3	9.3	0.73
1	1	0.00	SecD1	L3 1/2x3 1/2x1/4	12.17	211.6	8.5	15.2	5.9	5.9	0.69
1	1	0.00	PlanH1	2L3 1/2x3 1/2x1/4	19.91	219.2	15.9	19.5	0.1	0.1	0.01

Section M: SECTION PROPERTIES DATA

Sec	Pan	Memb. Type	Steel Grade	Conn. Type	Bolts Bolts	Bolt Size (in)	Bolt Grade	End Dist. (in)	Gusset Thick. (in)	kl/r	Comp Cap. (Kips)	Tens Cap. (Kips)	Bolt Cap. (Kips)	Bear. Cap. (Kips)	Block Shear (Kips)
17	4	Leg	A500 gr.CS	Tension 4		0.750	A325X	1.800	N/A	63.4	57.1	76.5	121.7T	N/A	N/A
17	4	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	106.7	8.2	11.9	15.2S	9.8	7.1
17	4	Horiz	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	145.7	6.6	17.4	15.2S	14.7	10.7
17	3	Leg	A500 gr.CS	Tension 4		0.750	A325X	1.800	N/A	63.4	57.1	76.5	121.7T	N/A	N/A
17	3	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	106.8	8.1	11.9	15.2S	9.8	7.1
17	2	Leg	A500 gr.CS	Tension 4		0.750	A325X	1.800	N/A	63.4	57.1	76.5	121.7T	N/A	N/A
17	2	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	106.9	8.1	11.9	15.2S	9.8	7.1
17	1	Leg	A500 gr.CS	Tension 4		0.750	A325X	1.800	N/A	63.4	57.1	76.5	121.7T	N/A	N/A
17	1	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	107.0	8.1	11.9	15.2S	9.8	7.1
16	4	Leg	A500 gr.CS	Tension 4		0.875	A325X	2.100	N/A	51.7	82.5	100.4	167.9T	N/A	N/A
16	4	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	106.2	8.2	11.9	15.2S	9.8	7.1
16	3	Leg	A500 gr.CS	Tension 4		0.875	A325X	2.100	N/A	51.7	82.5	100.4	167.9T	N/A	N/A
16	3	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	106.2	8.2	11.9	15.2S	9.8	7.1
16	2	Leg	A500 gr.CS	Tension 4		0.875	A325X	2.100	N/A	51.7	82.5	100.4	167.9T	N/A	N/A
16	2	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	106.3	8.2	11.9	15.2S	9.8	7.1
16	1	Leg	A500 gr.CS	Tension 4		0.875	A325X	2.100	N/A	51.7	82.5	100.4	167.9T	N/A	N/A
16	1	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	106.4	8.2	11.9	15.2S	9.8	7.1
15	4	Leg	A500 gr.CS	Tension 4		0.875	A325X	2.100	N/A	44.9	104.1	120.6	167.9T	N/A	N/A
15	4	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	112.1	7.5	11.9	15.2S	9.8	7.1
15	4	Horiz	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	145.3	6.6	17.4	15.2S	14.7	10.7
15	3	Leg	A500 gr.CS	Tension 4		0.875	A325X	2.100	N/A	44.9	104.1	120.6	167.9T	N/A	N/A
15	3	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	117.2	6.9	11.9	15.2S	9.8	7.1
15	2	Leg	A500 gr.CS	Tension 4		0.875	A325X	2.100	N/A	44.9	104.1	120.6	167.9T	N/A	N/A
15	2	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	123.2	6.3	11.9	15.2S	9.8	7.1
15	1	Leg	A500 gr.CS	Tension 4		0.875	A325X	2.100	N/A	44.9	104.1	120.6	167.9T	N/A	N/A
15	1	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	130.3	5.6	11.9	15.2S	9.8	7.1
14	4	Leg	A500 gr.CS	Tension 5		0.875	A325X	2.100	N/A	45.9	142.0	165.6	209.9T	N/A	N/A
14	4	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	137.6	5.0	11.9	15.2S	9.8	7.1
14	3	Leg	A500 gr.CS	Tension 5		0.875	A325X	2.100	N/A	45.9	142.0	165.6	209.9T	N/A	N/A
14	3	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	145.1	4.5	11.9	15.2S	9.8	7.1
14	2	Leg	A500 gr.CS	Tension 5		0.875	A325X	2.100	N/A	45.9	142.0	165.6	209.9T	N/A	N/A
14	2	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	152.7	4.1	11.9	15.2S	9.8	7.1
14	1	Leg	A500 gr.CS	Tension 5		0.875	A325X	2.100	N/A	45.9	142.0	165.6	209.9T	N/A	N/A
14	1	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	160.4	3.7	11.9	15.2S	9.8	7.1
13	3	Leg	A500 gr.CS	Tension 5		1.000	A325X	2.400	N/A	54.2	160.1	198.4	275.3T	N/A	N/A
13	3	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	165.6	5.8	20.7	15.2S	14.7	11.8
13	2	Leg	A500 gr.CS	Tension 5		1.000	A325X	2.400	N/A	54.2	160.1	198.4	275.3T	N/A	N/A
13	2	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	174.6	5.3	20.7	15.2S	14.7	11.8
13	1	Leg	A500 gr.CS	Tension 5		1.000	A325X	2.400	N/A	54.2	160.1	198.4	275.3T	N/A	N/A
13	1	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	183.8	4.7	20.7	15.2S	14.7	11.8
12	3	Leg	A500 gr.CS	Tension 5		1.000	A325X	2.400	N/A	43.6	239.4	275.0	275.3T	N/A	N/A
12	3	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	151.7	8.8	27.7	15.2S	14.7	14.1
12	2	Leg	A500 gr.CS	Tension 5		1.000	A325X	2.400	N/A	43.6	239.4	275.0	275.3T	N/A	N/A
12	2	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	158.9	8.1	27.7	15.2S	14.7	14.1
12	1	Leg	A500 gr.CS	Tension 5		1.000	A325X	2.400	N/A	43.6	239.4	275.0	275.3T	N/A	N/A
12	1	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	166.2	7.4	27.7	15.2S	14.7	14.1
11	3	Leg	A500 gr.CS	Tension 5		1.000	A325X	2.400	N/A	43.6	239.4	275.0	275.3T	N/A	N/A
11	3	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	173.6	6.7	27.7	15.2S	14.7	10.7
11	2	Leg	A500 gr.CS	Tension 5		1.000	A325X	2.400	N/A	43.6	239.4	275.0	275.3T	N/A	N/A
11	2	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	181.1	6.2	27.7	15.2S	14.7	10.7
11	1	Leg	A500 gr.CS	Tension 5		1.000	A325X	2.400	N/A	43.6	239.4	275.0	275.3T	N/A	N/A
11	1	Diag	A529 gr.50	Bolted 1		0.625	A325X	1.500	0.250	188.6	5.7	27.7	15.2S	14.7	10.7

10	3	Leg	A500 gr.CS	Tension	6	1.000	A325X	2.400	N/A	43.6	239.3	275.0	330.3T	N/A	N/A
10	3	Diag	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	162.9	9.3	34.6	15.2S	14.7	16.4
10	2	Leg	A500 gr.CS	Tension	6	1.000	A325X	2.400	N/A	43.6	239.3	275.0	330.3T	N/A	N/A
10	2	Diag	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	169.5	8.6	34.6	15.2S	14.7	16.4
10	1	Leg	A500 gr.CS	Tension	6	1.000	A325X	2.400	N/A	43.6	239.3	275.0	330.3T	N/A	N/A
10	1	Diag	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	176.0	7.9	34.6	15.2S	14.7	16.4
9	2	Leg	A500 gr.CS	Tension	6	1.000	A325X	2.400	N/A	54.6	304.3	378.5	330.3T	N/A	N/A
9	2	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	179.1	7.7	34.6	30.4S	25.7	21.1
9	1	Leg	A500 gr.CS	Tension	6	1.000	A325X	2.400	N/A	54.6	304.3	378.5	330.3T	N/A	N/A
9	1	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	186.0	7.1	34.6	30.4S	25.7	21.1
8	2	Leg	A500 gr.CS	Tension	6	1.000	A325X	2.400	N/A	54.6	304.3	378.5	330.3T	N/A	N/A
8	2	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.250	192.9	8.7	45.6	30.4S	34.1	28.0
8	1	Leg	A500 gr.CS	Tension	6	1.000	A325X	2.400	N/A	54.6	304.3	378.5	330.3T	N/A	N/A
8	1	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.250	200.0	8.1	45.6	30.4S	34.1	28.0
7	2	Leg	A500 gr.CS	Tension	6	1.500	A325X	3.600	N/A	54.6	304.2	378.5	765.3T	N/A	N/A
7	2	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.250	181.5	11.6	54.8	30.4S	34.1	31.1
7	1	Leg	A500 gr.CS	Tension	6	1.500	A325X	3.600	N/A	54.6	304.2	378.5	765.3T	N/A	N/A
7	1	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.250	188.0	10.8	54.8	30.4S	34.1	31.1
6	3	Leg	A500 gr.CS	Tension	6	1.500	A325X	3.600	N/A	41.2	386.4	437.4	765.3T	N/A	N/A
6	3	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	170.2	15.1	63.9	30.4S	34.1	34.2
6	2	Leg	A500 gr.CS	Tension	6	1.500	A325X	3.600	N/A	41.2	386.4	437.4	765.3T	N/A	N/A
6	2	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	175.5	14.2	63.9	30.4S	34.1	34.2
6	1	Leg	A500 gr.CS	Tension	6	1.500	A325X	3.600	N/A	41.2	386.4	437.4	765.3T	N/A	N/A
6	1	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	180.9	13.4	63.9	30.4S	34.1	34.2
5	2	Leg	A500 gr.CS	Tension	6	1.500	A325X	3.600	N/A	30.9	407.9	437.4	765.3T	N/A	N/A
5	2	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	181.7	16.4	79.0	30.4S	42.7	42.8
5	2	Horiz	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	179.7	11.8	54.8	30.4S	34.1	31.1
5	2	SecH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	133.0	18.4	45.6	15.2S	19.5	21.8
5	2	SecD1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	197.5	8.3	45.6	15.2S	19.5	21.8
5	2	PlanH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	227.5	7.4	54.8	15.2S	19.5	24.8
5	1	Leg	A500 gr.CS	Tension	6	1.500	A325X	3.600	N/A	30.9	407.9	437.4	765.3T	N/A	N/A
5	1	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	186.8	15.5	79.0	30.4S	42.7	42.8
5	1	Horiz	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	187.7	10.8	54.8	30.4S	34.1	31.1
5	1	SecH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	140.7	16.4	45.6	15.2S	19.5	21.8
5	1	SecD1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	202.5	7.9	45.6	15.2S	19.5	21.8
5	1	PlanH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	240.6	6.6	54.8	15.2S	19.5	24.8
4	2	Leg	A500 gr.CS	Tension	6	1.500	A325X	3.600	N/A	31.3	534.5	574.2	765.3T	N/A	N/A
4	2	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	187.7	18.5	91.3	60.7S	51.2	42.1
4	2	Horiz	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	175.2	14.3	63.9	30.4S	34.1	34.2
4	2	SecH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	148.3	14.8	45.6	15.2S	19.5	21.8
4	2	SecD1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	207.5	7.6	45.6	15.2S	19.5	21.8
4	2	PlanH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	218.7	9.2	63.9	15.2S	19.5	27.9
4	1	Leg	A500 gr.CS	Tension	6	1.500	A325X	3.600	N/A	31.3	534.5	574.2	765.3T	N/A	N/A
4	1	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	192.0	17.6	91.3	60.7S	51.2	42.1
4	1	Horiz	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	182.1	13.2	63.9	30.4S	34.1	34.2
4	1	SecH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	155.9	13.4	45.6	15.2S	19.5	21.8
4	1	SecD1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	212.8	7.2	45.6	15.2S	19.5	21.8
4	1	PlanH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	230.0	8.3	63.9	15.2S	19.5	27.9
3	2	Leg	A500 gr.CS	Tension	6	1.500	A325X	3.600	N/A	31.3	534.5	574.2	765.3T	N/A	N/A
3	2	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	171.9	25.8	109.5	60.7S	51.2	46.6
3	2	Horiz	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	190.8	14.9	79.0	30.4S	42.7	42.8
3	2	SecH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	163.5	12.2	45.6	15.2S	19.5	21.8
3	2	SecD1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	218.2	6.8	45.6	15.2S	19.5	21.8
3	2	PlanH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	241.2	7.5	63.9	15.2S	19.5	27.9
3	1	Leg	A500 gr.CS	Tension	6	1.500	A325X	3.600	N/A	31.3	534.5	574.2	765.3T	N/A	N/A
3	1	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	175.9	24.7	109.5	60.7S	51.2	46.6

3	1	Horiz	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	197.8	13.9	79.0	30.4S	42.7	42.8
3	1	SecH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	171.2	11.1	45.6	15.2S	19.5	21.8
3	1	SecD1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	223.7	6.5	45.6	15.2S	19.5	21.8
3	1	PlanH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	252.5	6.9	63.9	15.2S	19.5	27.9
2	2	Leg	A500 gr.CS	Tension	7	1.500	A325X	3.600	N/A	31.3	534.5	574.2	892.9T	N/A	N/A
2	2	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	181.4	23.2	109.5	60.7S	51.2	46.6
2	2	Horiz	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	179.5	15.3	69.1	60.7S	51.2	42.1
2	2	SecH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	178.8	10.2	45.6	15.2S	19.5	21.8
2	2	SecD1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	229.0	6.2	45.6	15.2S	19.5	21.8
2	2	PlanH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	224.5	9.8	69.1	30.4S	19.5	21.8
2	1	Leg	A500 gr.CS	Tension	7	1.500	A325X	3.600	N/A	31.3	534.5	574.2	892.9T	N/A	N/A
2	1	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	185.7	22.1	109.5	60.7S	51.2	46.6
2	1	Horiz	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	185.7	14.3	69.1	60.7S	51.2	42.1
2	1	SecH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	186.8	9.3	45.6	15.2S	19.5	21.8
2	1	SecD1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	235.1	5.9	45.6	15.2S	19.5	21.8
2	1	PlanH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	234.5	9.0	69.1	30.4S	19.5	21.8
1	2	Leg	A500 gr.CS	Tension	8	1.500	A325X	3.600	N/A	24.8	692.6	724.5	1020.4TN/A		N/A
1	2	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	190.6	21.0	109.5	60.7S	51.2	46.6
1	2	Horiz	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	171.2	26.0	109.5	60.7S	51.2	46.6
1	2	SecH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	166.6	13.8	54.8	15.2S	19.5	24.8
1	2	SecD1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	206.5	8.9	54.8	15.2S	19.5	24.8
1	2	PlanH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	210.9	17.2	109.5	30.4S	19.5	24.8
1	1	Leg	A500 gr.CS	Tension	8	1.500	A325X	3.600	N/A	24.8	692.6	724.5	1020.4TN/A		N/A
1	1	Diag	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	194.8	20.1	109.5	60.7S	51.2	46.6
1	1	Horiz	A529 gr.50	Bolted	2	0.625	A325X	1.125	0.375	176.3	24.6	109.5	60.7S	51.2	46.6
1	1	SecH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	173.1	12.7	54.8	15.2S	19.5	24.8
1	1	SecD1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	211.6	8.5	54.8	15.2S	19.5	24.8
1	1	PlanH1	A529 gr.50	Bolted	1	0.625	A325X	1.500	0.250	219.2	15.9	109.5	30.4S	19.5	24.8

File: \\rohnfs2\PeoEng\Jobs\2023\242335\ENGINEERING\242335.out
Contract: 242335
Project: 400 FT RTL TOWER
Date and Time: 2/7/2023 7:48:41 AM

Revision: 0
Site: ONEIDA- KY
Engineer: AS

Section N: LEG REACTION DATA

Load Combination — Max Envelope
Wind Direction — Maximum

Force-Y Download (Kips)	Force-Y Uplift (Kips)	Shear-X (Kips)	Shear-Z (Kips)	Max Shear (Kips)
557.16	448.28			52.47

File: \\rohnfs2\PeoEng\Jobs\2023\242335\ENGINEERING\242335.out
Contract: 242335
Project: 400 FT RTL TOWER
Date and Time: 2/7/2023 7:48:41 AM

Revision: 0
Site: ONEIDA- KY
Engineer: AS

Section O: TOWER FOUNDATION DATA

Load Combination: Max Envelope
Wind Direction: Maximum

Axial Load (Kips)	Shear Load-X (Kips)	Shear Load-Z (Kips)	Total Shear (Kips)	Moment-X (Kipsft)	Moment-Y (Kipsft)	Moment-Z (Kipsft)	Total Moment (Kipsft)
101.03	44.70	74.28	86.69	15713.71	0.09	-9450.77	18336.79
101.03	44.70	74.28	86.69	15713.71	0.09	-9450.77	18336.79

TowerSoft
ENGINEERING SOFTWARE

TSTower - v 6.0.4 Tower Analysis Program
(c) 1997-2022 TowerSoft www.TSTower.com

ROHN

Licensed to: ROHN Products LLC
Peoria, IL

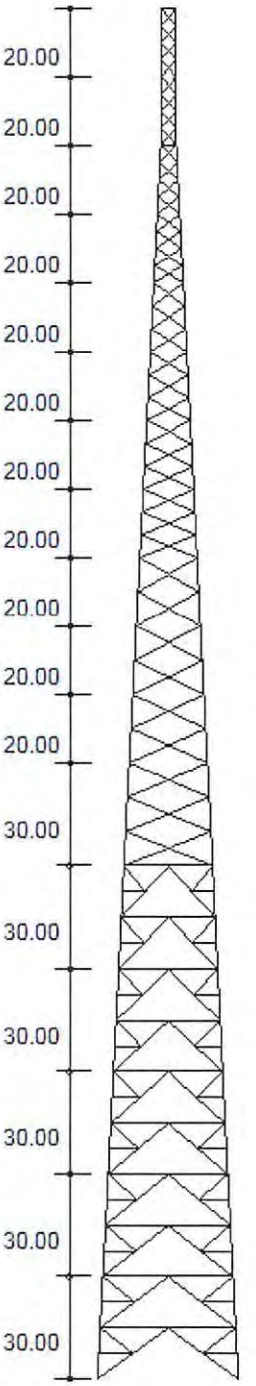
File: \\rohnfs2\PeoEng\Jobs\2023\242335\ENGINEERING\242335.out
Contract: 242335
Project: 400 FT RTL TOWER
Date and Time: 2/7/2023 7:48:41 AM

Revision: 0
Site: ONEIDA- KY
Engineer: AS

DESIGN SPECIFICATION

Design Standard: ANSI/TIA-222-G-2005 Add.2
Ultimate Design Wind Speed (No Ice) = 105.0 (mph)
Nominal Design Wind Speed (No Ice) = 81.3 (mph)
Basic Wind Speed (With Ice) = 30.0 (mph)
Design Ice Thickness = 0.75 (in)
Structure Class = II
Exposure Category = B
Topographic Category = 1

Sct.	Length (ft)	Top W. (in)	Bot Width (in)
1	30.00	459.81	495.81
2	30.00	421.97	459.81
3	30.00	385.97	421.97
4	30.00	349.97	385.97
5	30.00	313.97	349.97
6	30.00	277.97	313.97
7	20.00	252.24	277.97
8	20.00	228.24	252.24
9	20.00	204.24	228.24
10	20.00	179.32	204.24
11	20.00	155.32	179.32
12	20.00	131.32	155.32
13	20.00	106.40	131.32
14	20.00	81.96	106.40
15	20.00	57.96	81.96
16	20.00	57.53	57.96
17	20.00	56.99	57.53



MAXIMUM BASE REACTIONS

Download (Kips)	557.2
Uplift (Kips)	448.3
Shear (Kips)	52.5

Exhibit 6

Federal Aviation Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Add a New Case (Off Airport) - Desk Reference Guide V_2018.2.1

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

Project Name: EAST -000831464-23 **Sponsor:** East Kentucky Network, LLC

Details for Case : Oneida

Show Project Summary

Case Status

ASN: 2023-ASO-32012-OE
Status: Accepted
Public Comments: None

Date Accepted: 11/29/2023
Date Determined:
Letters: None
Documents: 11/29/2023 2C MAP .pdf
11/29/2023 2C MAP .pdf

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
if Temporary : Months: Days:
Work Schedule - Start: 02/01/2024
Work Schedule - End: 02/29/2024

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

State Filing:

Structure Summary

Structure Type: TOWER | Antenna Tower
Structure Name: Oneida
FDC NOTAM:
NOTAM Number:
FCC Number:
Prior ASN: 2020-ASO-28595-OE

Structure Details

Latitude: 37° 15' 34.59" N
Longitude: 83° 38' 46.33" W
Horizontal Datum: NAD83
Site Elevation (SE): 992 (nearest foot) PASSED
Structure Height (AGL): 410 (nearest foot)
Current Height (AGL): (nearest foot)
**** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal***

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

Requested Marking/Lighting: Dual-red and medium intensity
Other :
Recommended Marking/Lighting:
Current Marking/Lighting: N/A Proposed Structure
Other :
Nearest City: Oneida
Nearest State: Kentucky
Description of Location: Located of off Highway 11 near Oneida (Clay County), KY
On the Project Summary page upload any certified survey.
Description of Proposal: A new 400' structure with top mounted antennas or other appurtenances (overall height of 410' AGL). The proponent has requested all allowable extension allowed for study number 2020-ASO-28595-OE.

Proposed Frequency Bands

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

Previous Back to Search Result Next

KENTUCKY AIRPORT ZONING COMMISSION

ANDY BESHEAR
Governor

Department of Aviation, 90 Airport Road
Frankfort, KY 40601
www.transportation.ky.gov
502-564-0151

JIM GRAY
Secretary

APPROVAL OF APPLICATION

Friday, August 26, 2022

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

SUBJECT STUDY #	AS–CLAY-CPF–2022-081
TYPE OF STRUCTURE:	Antenna Tower
NEAREST CITY:	Oneida, KY
COORDINATES:	37°15'34.60" N / 83°38'46.30" W
HEIGHT:	410' AGL / 1402' AMSL

This letter is to notify you that the Kentucky Airport Zoning Commission has approved your permit application for the construction of a Structure at the Location, Coordinates, and Height as indicated above. Also reference FAA OE/AAA Study 2020-ASO-28595-OE.

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.

Note; Medium Intensity Dual Obstruction Lighting is required in accordance with 602 KAR 50:100 and FAA Advisory Circular 70/74601-1 L.

A copy has also been emailed to Raina Helton at RHelton@ekn.com . Contact us with any questions you may have.

Respectfully,
Brad Schwandt

Airport Zoning Administration
Department of Aviation
Office: 502-564-0151
AirportZoning@ky.gov

Exhibit 7

Driving Directions

1. Beginning in Clay County, in Manchester KY on Main Street South
2. Drive .2 miles to the intersection of Main Street and 421
3. Turn right onto 421
4. Drive 5.5 miles to the intersection of 421 and Hwy 11
5. Turn right onto Hwy 11
6. Continue driving for 10.5 miles to the intersection of Hwy 11 and Hwy 66
7. Continue straight onto Hwy 66
8. Drive approximately .3 miles
9. Turn right onto Second Street
10. Drive .1 miles
11. Stay to the left onto Oneida Bottom Road for .3 miles
12. Turn right and continue to drive for .2 miles onto the Oneida Baptist Institute Farm
13. On the left is the beginning of the access road. This road is gated (sign posted)
14. Access is by appointment only from the gate
15. Continue on the gravel road for .4 miles to the top of the hill
16. You will arrive at property (sign will be posted)

Prepared By:

Daryl Bartley
Cell Site Compliance Agent
Appalachian Wireless
(606) 791-0310 (cell)

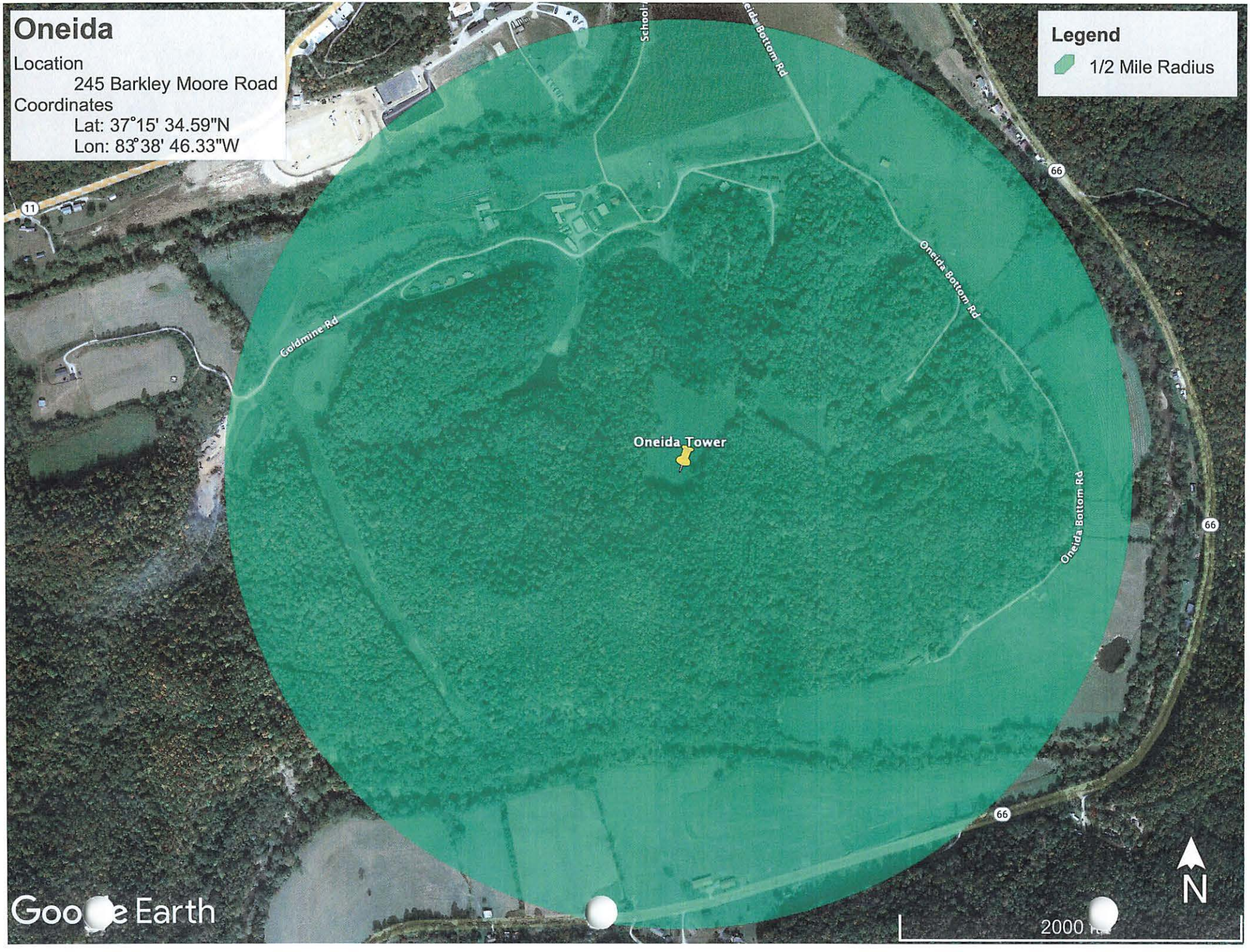

Oneida
Location
245 Barkley Moore Road
Coordinates
Lat: 37°15' 34.59"N
Lon: 83°38' 46.33"W
Legend
1/2 Mile Radius
Oneida Tower
Goldmine Rd
Oneida Bottom Rd
Oneida Bottom Rd
Oneida Bottom Rd
66
66
66
11
N
Google Earth
2000

Exhibit 8

MEMORANDUM OF LEASE

THIS MEMORANDUM OF LEASE is made and entered into on this 9th day of September, 2020, with a commencement date of September 1, 2020 (the "**Commencement Date**"), by and between **ONEIDA BAPTIST INSTITUTE**, a Kentucky corporation, with a mailing address of P.O. Box 67, Oneida, Kentucky 40972, hereinafter referred to as "**Lessor**", and **EAST KENTUCKY NETWORK, LLC D/B/A APPALACHIAN WIRELESS**, a Kentucky limited liability company, with a mailing address of 101 Technology Trail, Ivel, Kentucky, 41642, hereinafter referred to as "**Lessee**."

WITNESSETH

1. **Demised Premises**. For good and valuable consideration, Lessor leased to Lessee, and Lessee has leased from Lessor that certain tract of real estate located in Clay County, Kentucky, and being a portion of the same land conveyed to Lessor, by Deed dated April 16, 1929, and recorded on June 10, 1929, in Deed Book 59, Page 77, in the Clay County Clerk's Office. Said property is more particularly described in the description **attached** hereto and made a part hereof as **Exhibit A** and the plat **attached** hereto and made a part hereof as **Exhibit B**, prepared by James W. Caudill, Licensed Professional Land Surveyor (hereinafter referred to as the "**Premises**").

The Lessor has also granted unto Lessee full and complete rights of ingress, egress and regress to and from the Premises over any property owned by Lessor and other associated rights for installation of utilities, maintenance, and other purposes. Lessee has the absolute right to assign, sublease, sublicense or otherwise transfer, in whole or in part, the Leased Premises and the easements and rights-of-way.

2. **Term.** The initial term of the Lease is for a period of thirty-five (35) years from the Commencement Date set forth above.

3. **Renewals.** The Lease may be renewed upon mutual agreement of the parties at the expiration of the initial term.

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

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

[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

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

LESSOR:

ONEIDA BAPTIST INSTITUTE

COMMONWEALTH OF KENTUCKY,
COUNTY OF Clay, TO WIT:

The foregoing instrument was acknowledged before me on this 9 day of September, 2020, by Larry Gritton Jr, the President of Oneida Baptist Institute, Lessor.

Jennifer Monday
Notary Public
Commission No.: 632980

My Commission Expires 9/30/23

Jennifer Monday
Notary Public, ID No 632980
State at Large, Kentucky
My Commission Expires on 9/30/23

[SIGNATURES CONTINUE ON NEXT PAGE.]

LESSEE:

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

W A Gillum

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

COMMONWEALTH OF KENTUCKY
COUNTY OF Floyd

The foregoing instrument was acknowledged before me on this 9th day of September, 2020. by W.A. Gillum, CEO/General Manager of East Kentucky Network, LLC d/b/a Appalachian Wireless, Lessee.

Raena L. Helton

Notary Public
Commission No.: KYNP375

My Commission Expires 2-16-2024

Raina La'Nell Helton NOTARY PUBLIC ID NO. KYNP375 MY COMMISSION EXPIRES 2-16-2024 STATE AT LARGE, KY.

This instrument was prepared by:

Cindy D McCarty

Cindy D. McCarty, Attorney
101 Technology Trail
Ivel, Kentucky 41642
(606) 477-2355

LOT DESCRIPTION
Property of
Oneida Baptist Institute
PO Box 67
Oneida, KY 40962
Off State Highway 11
Near Oneida in Clay County, KY
August 21, 2020

A certain tract or parcel of land lying in Clay County, Kentucky, and being a portion of the same tract of land conveyed to Oneida Baptist Institute, by deed from W.H. Hyden & Company, which is duly recorded in Deed Book 59, Page 77, Clay County Court Clerk's Office. And being more particularly described and bounded as follows:

Lot 1A

Beginning on a set iron pin with cap marked LS#2259 on hillside; Thence around the hillside North 35 deg 37 min 53 sec East, a distance of 100.00 feet to a set iron pin with cap marked LS#2259 on hillside; Thence up the hill South 54 deg 22 min 07 sec East, a distance of 100.01 feet to a set iron pin with cap marked LS#2259; Thence with hillside South 35 deg 37 min 53 sec West, a distance of 100.00 feet to a set iron pin with cap marked LS#2259 on hillside; Thence down the hill North 54 deg 22 min 07 sec West, a distance of 100.01 feet to the point of the beginning. Containing a calculated area of 10000.69 sq. feet, or 0.23 acres.

Also to be included is an access road from the public road to Lot 1A.

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.

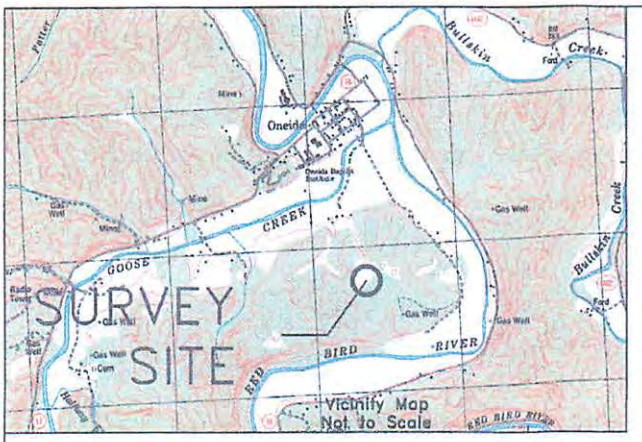
Unless stated otherwise, any monument referred to herein as "set iron pin with cap" is a set ½" diameter rebar, at least eighteen (18") in length, with a plastic cap stamped "LS-2259". All bearings stated herein are referred to NAD83, KY single zone of the Kentucky state plane system.

This survey was performed on August 21, 2020 by James W. Caudill, a Kentucky Licensed Professional Land Surveyor No. 2259.

James W. Caudill

James W. Caudill, PLS #2259

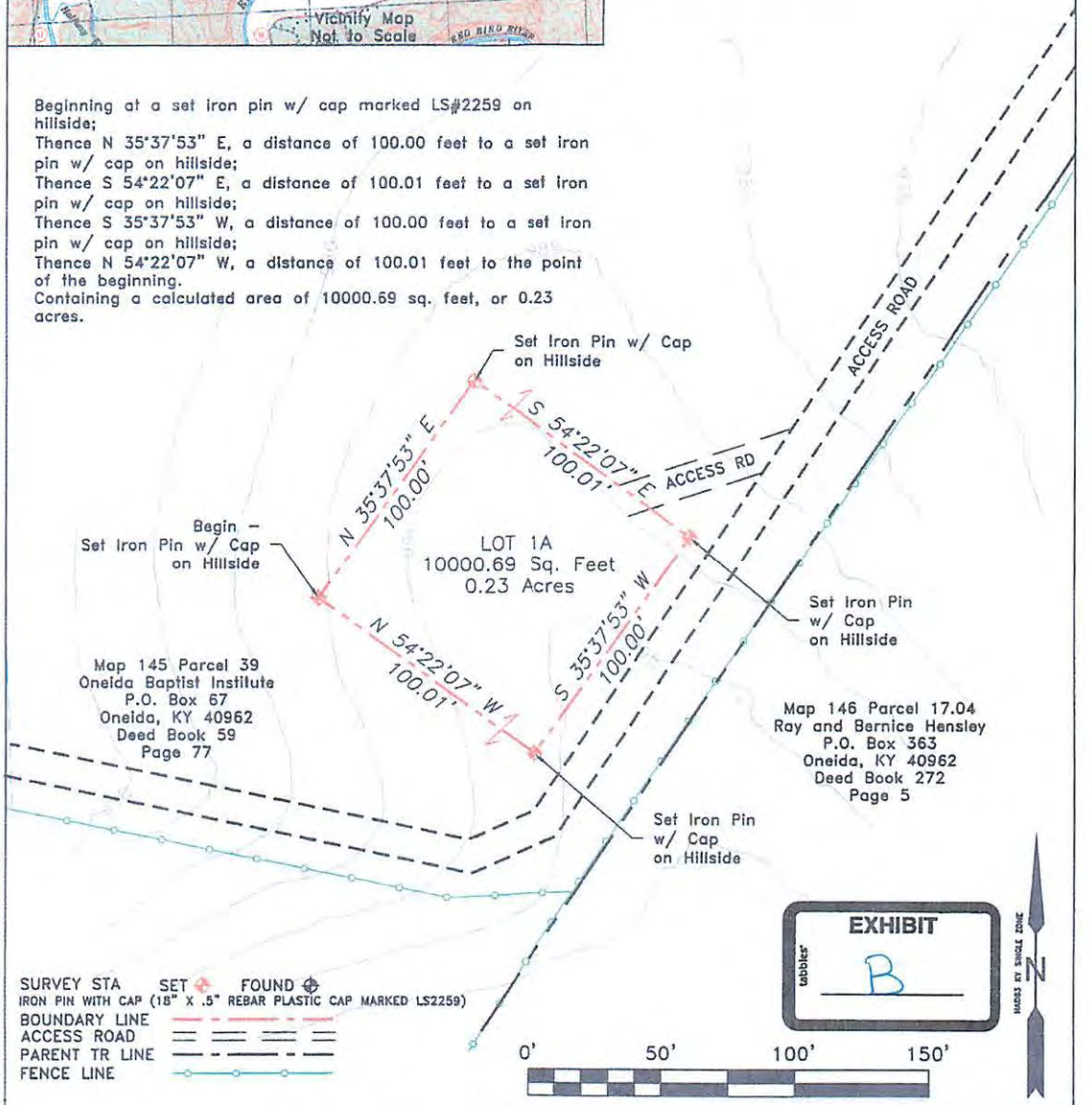
EXHIBIT
A



APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL, KY 41642
PROPOSED TOWER SITE
OFF HWY 11 NEAR ONEIDA
IN CLAY COUNTY, KY.

Book: 95 Pages: 264-269 (6)
Name: LEASE
MICHAEL BAKER
CLAY COUNTY
9/22/2020 1:21 PM
D.C: terae
Deed Tax: $0.00
311508

Beginning at a set iron pin w/ cap marked LS#2259 on hillside;
Thence N 35°37'53" E, a distance of 100.00 feet to a set iron pin w/ cap on hillside;
Thence S 54°22'07" E, a distance of 100.01 feet to a set iron pin w/ cap on hillside;
Thence S 35°37'53" W, a distance of 100.00 feet to a set iron pin w/ cap on hillside;
Thence N 54°22'07" W, a distance of 100.01 feet to the point of the beginning.
Containing a calculated area of 10000.69 sq. feet, or 0.23 acres.



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

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

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

James W. Caudill 2259 8/21/20
NAME PLS# DATE

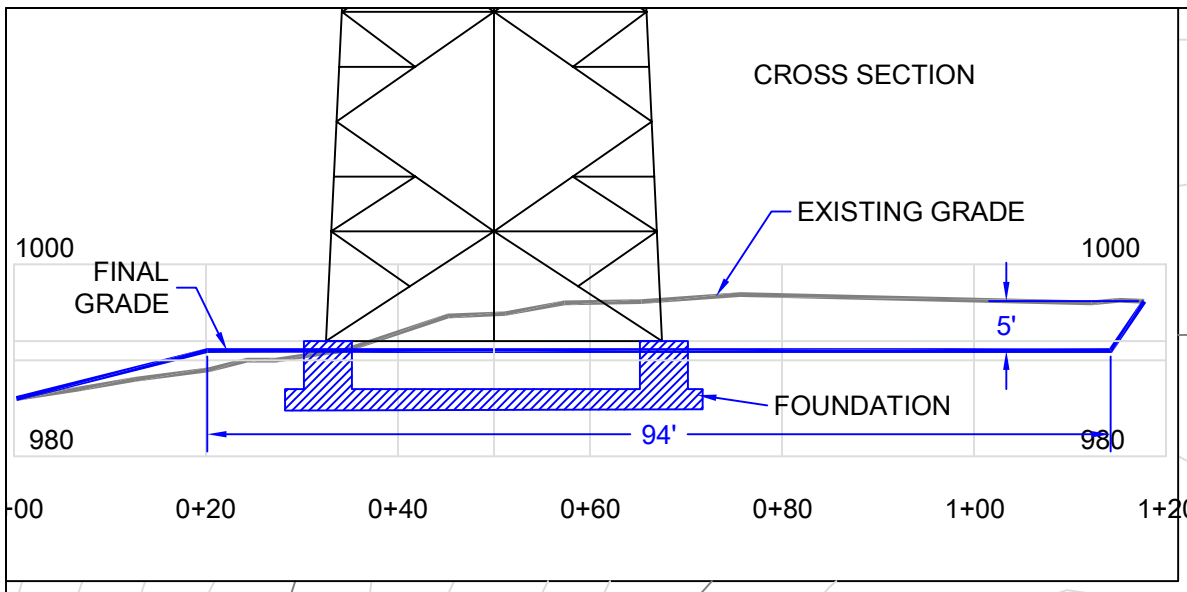
PLAT OF SURVEY

DRAWN JWC	DATE 08/21/20	SUBDIVISION OF THE PROPERTY OF ONEIDA BAPTIST INSTITUTE DEED BOOK 59 PAGE 77
APPROVED	DATE 08/21/20	
SCALE 1" = 50'	SHEET 1 OF 1	SURVEYED BY JAMES W. CAUDILL LS2259 2999 PERKINS/MADDEN ROAD AMBURGEY, KY 41773 PHONE 606-642-3217

Exhibit 9

APPALACHIAN WIRELESS

101 TECHNOLOGY TRAIL
IVEL, KY. 41642
PROPOSED NEW TOWER
ONEIDA IN CLAY COUNTY



LINE	BEARING	DISTANCE
L1	N 48°04'35" E	50.72'
L2	N 60°10'42" E	77.71'
L3	N 65°11'58" E	55.62'
L4	N 81°16'40" E	39.11'
L5	N 35°37'53" E	100.00'
L6	N 77°46'18" W	73.79'
L7	N 83°54'11" W	102.38'
L8	N 85°28'41" W	100.49'
L9	N 89°47'56" W	89.05'
L10	S 85°13'10" W	112.48'
L12	S 78°11'20" W	67.40'
L13	N 61°55'19" W	46.81'
L14	N 58°48'20" W	90.17'

Proposed Tower Location
LAT:37°15'34.59157"
LON:83°38'46.33018"
N:3,625,009.73
E:5,533,457.18

TOWER FOUNDATION
PROPOSED ACCESS ROAD
BUILDING
BUILDING PAD
SHADING (FILL AREA)
EXISTING ROAD
LOT 1A
10000.7 Sq. Feet
0.23 Acres
ONEIDA BAPTIST INSTITUTE
DEED BOOK 59 PAGE 77
EXISTING ROAD
RAY & BERNICE HENSLEY
DEED BOOK 252 PAGE 748
OLD WIRE FENCE
NAD83 KY SINGLE ZONE
N
43' 6"
5'
31'
21'
16'
11' 7"
13' 7"
10'
9'
980
985
990
991
993
995
1000

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

0 20' 40' 60'

"I certify that the latitude 37°15'34.59157"N & longitude 83°38'46.33018"W are withing +/- 50 feet horizontally; and the site elevation 992.0 ft. MSL, is withing +/- 20 feet vertically. With a structure height of 400 ft AGL, the overall height is 1392.0 ft., AMSL. The horizontal datum (coordinates) is in terms of the North American Datum of 1983 (NAD 83). The vertical datum heights are in terms of the North American Datum of 1988, and are determined to the nearest foot."

James W. Caudill 12305/2259 11/08/23
PRINTED: JAMES W. CAUDILL PE #12305 & LS #2259 DATE

STATE OF KENTUCKY
James W. Caudill
12305
LICENSED PROFESSIONAL ENGINEER

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

-THE PROPOSED TOWER HAS BEEN LOCATED USING DUAL FREQUENCY GPS UNIT PROCESSED BY "OPUS"
-STATE PLANE COORDINATES NAD 83 KY SINGLE ZONE N:3625009.73, E:5533457.18, EL 992' TOP OF FOUNDATION TOP OF PROPOSED TOWER ELEV. 1392'
-THIS SURVEY MEETS OBSTACLE ACCURACY CODE 2C.
-PROPERTY LINE INFORMATION TAKEN FROM DEEDS

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

DRAWN JWC	DATE 11/08/23	Proposed Site Plan and Structure Location Oneida Tower Site Off Highway 11 in Clay Co., KY.
APPROVED JWC	DATE 11/08/23	
SCALE 1" = 20'	SHEET 2 of 3	PROJECT NO. Oneida/On_2C-20

Exhibit 10

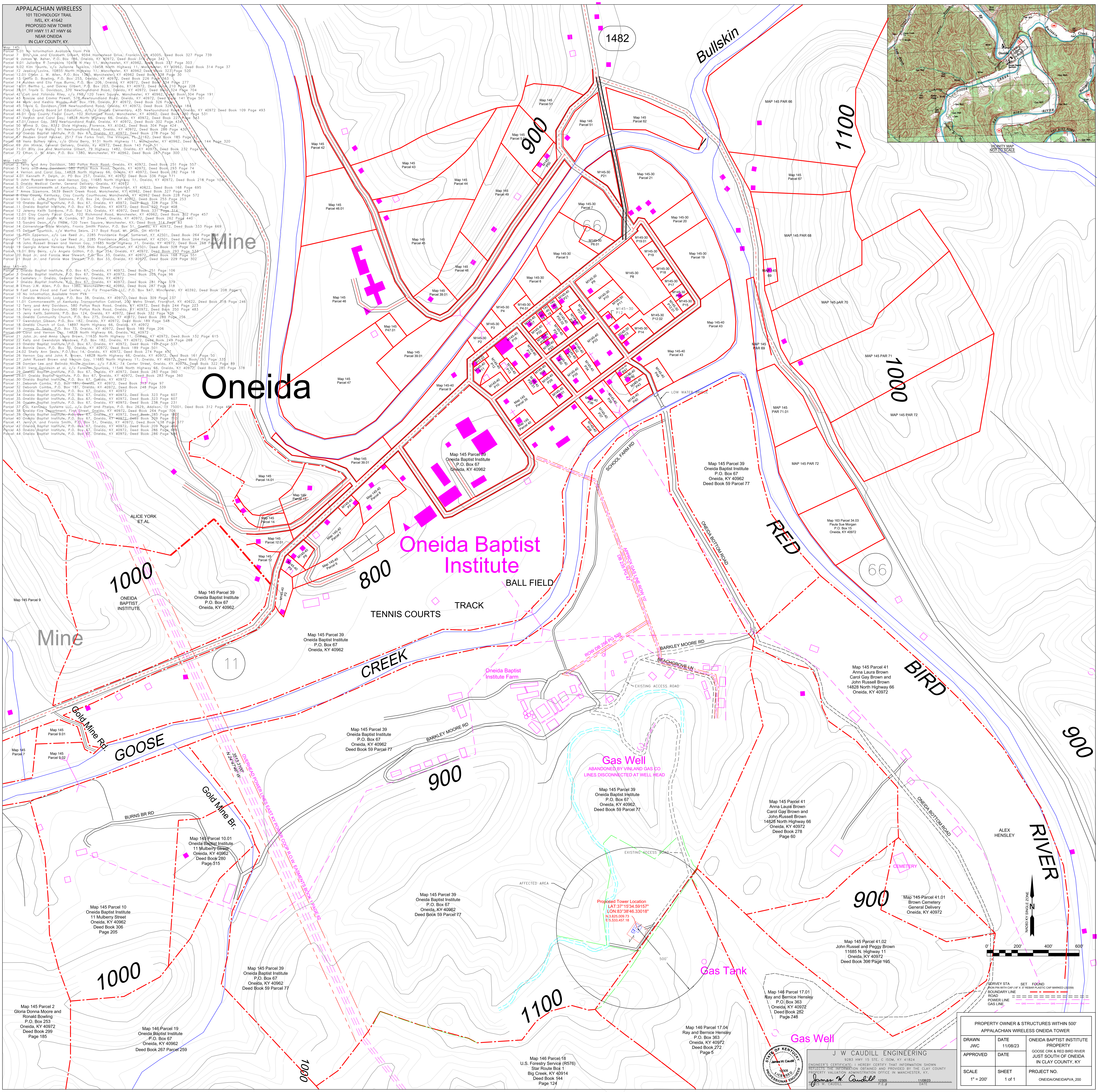
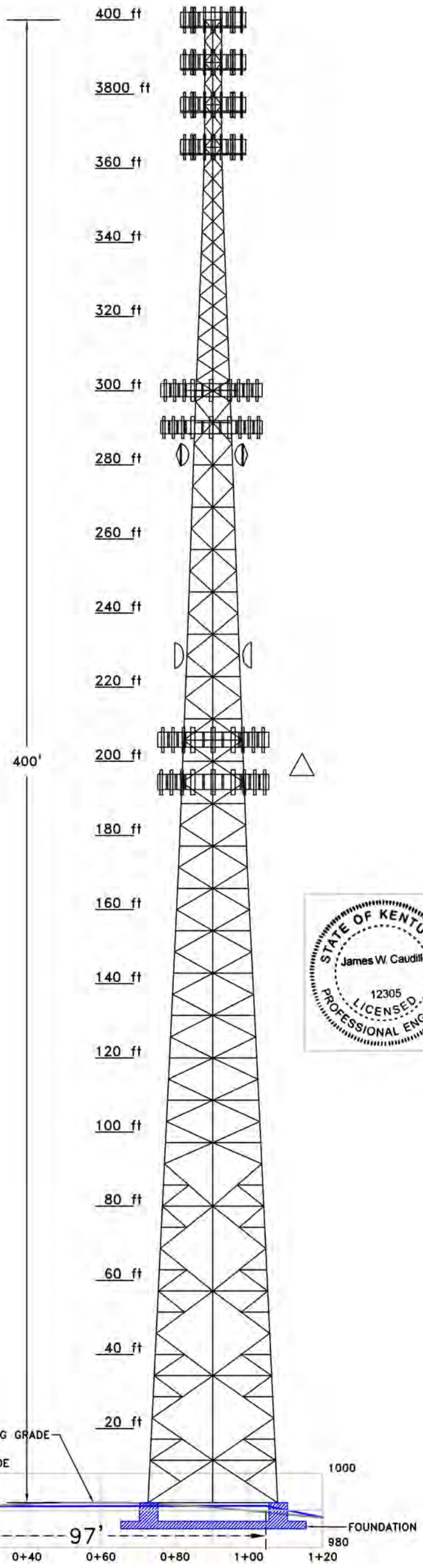

APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL, KY. 41642
PROPOSED NEW TOWER
OFF HWY 11 AT HWY 66
NEAR ONEIDA
IN CLAY COUNTY, KY.
Map 145:
Parcel 5.01 No Information Available from PVA
Parcel 7 Billy Joe and Elizabeth Gilbert, 9594 Homestead Drive, Franklin, OH 45005, Deed Book 327 Page 739
Parcel 9 James M. Asher, P.O. Box 186, Oneida, KY 40972, Deed Book 313 Page 342
Parcel 9.01 Julianne R Tompkins 10458 N Hwy 11, Manchester, KY 40962, Deed Book 337 Page 303
Parcel 9.02 Kim Younts, c/o Julianne Topkins, 10458 North Highway 11, Manchester, KY 40962, Deed Book 314 Page 37
Parcel 12 Jessica Lovins, 10855 North Highway 11, Manchester, KY 40962 Deed Book 323 Page 520
Parcel 12.01 Ethan J. W. Allen, P.O. Box 1380, Manchester, KY 40962 Deed Book 238 Page 30
Parcel 13 Gloria D. Bowling, P.O. Box 253, Oneida, KY 40972, Deed Book 226 Page 563
Parcel 14 Aulden and Ella Faye Burns, P.O. Box 206, Oneida, KY 40972, Deed Book 234 Page 277
Parcel 14.01 Bertha L. and Oakley Gilbert, P.O. Box 203, Oneida, KY 40972, Deed Book 210 Page 228
Parcel 39.01 Travis G. Davidson, 370 Newfoundland Road, Oneida, KY 40972, Deed Book 324 Page 704
Parcel 42 Carl and Yolanda Riley, c/o FNB, 120 Town Square, Manchester, KY 40962, Deed Book 304 Page 191
Parcel 43 Roscoe and Emma Powell, 578 Newfoundland Road, Oneida, KY 40972, Deed Book 141 Page 501
Parcel 44 Mark and Keshia Woods, P.O. Box 199, Oneida, KY 40972, Deed Book 326 Page 1
Parcel 45 Travis G. Davidson, 398 Newfoundland Road, Oneida, KY 40972, Deed Book 326 Page 184
Parcel 46 Clay County Board of Education, d/b/a Oneida Elementary, 435 Newfoundland Road, Oneida, KY 40972 Deed Book 109 Page 493
Parcel 46.01 Clay County Fiscal Court, 102 Richmond Road, Manchester, KY 40962, Deed Book 290 Page 531
Parcel 47 Vernon and Carol Gay, 14828 North Highway 66, Oneida, KY 40972, Deed Book 227 Page 543
Parcel 47.01 Jason Gay, 385 Newfoundland Road, Oneida, KY 40972, Deed Book 302 Page 434
Parcel 50 Wilma D. Gay, 8312 Dixie Highway, Florence, KY 41042, Deed Book 304 Page 424
Parcel 51 Loretta Fay Waits, 91 Newfoundland Road, Oneida, KY 40972, Deed Book 286 Page 430
Parcel 62 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 278 Page 50
Parcel 67 Reuben Grant Hacker, 2517 Five Forks Trail, The Villages, FL 32162, Deed Book 185 Page 67
Parcel 68 Vena Buttery Heirs, c/o Olivia Berry, 9131 North Highway 11, Manchester, KY 40962, Deed Book 144 Page 320
Parcel 69 Jim Hinkle, General Delivery, Oneida, Ky 40972, Deed Book 143 Page 51
Parcel 71.01 Billy Joe and Marrianne Gilbert, 79 Highway 1482, Oneida, KY 40972, Deed Book 232 Page 615
Parcel 72 Ethan J. W. Allen, P.O. Box 1380, Manchester, KY 40962, Deed Book 287 Page 300
Map 145-30:
Parcel 2 Terry and Amy Davidson, 580 Pattys Rock Road, Oneida, KY 40972, Deed Book 251 Page 557
Parcel 3 Terry and Amy Davidson, 580 Pattys Rock Road, Oneida, KY 40972, Deed Book 293 Page 74
Parcel 4 Vernon and Carol Gay, 14828 North Highway 66, Oneida, KY 40972, Deed Book 282 Page 18
Parcel 4.01 Kenneth P. Delph, Jr. PO Box 257, Oneida, KY 40972 Deed Book 336 Page 171
Parcel 5 John Russell Brown and Vernon Gay, 11685 North Highway 11, Oneida, KY 40972, Deed Book 218 Page 104
Parcel 5 Oneida Medical Center, General Delivery, Oneida, KY 40972
Parcel 6.01 Commonwealth of Kentucky, 200 Metro Street, Frankfort, KY 40622, Deed Book 168 Page 695
Parcel 7 Amos Sizemore, 5639 Beech Creek Road, Manchester, KY 40962, Deed Book 327 Page 437
Parcel 8 Clay County Kentucky, Clay County Courthouse, Manchester, KY 40962 Deed Book 228 Page 572
Parcel 9 Glenn E. and Kathy Salmons, P.O. Box 24, Oneida, KY 40972, Deed Book 253 Page 253
Parcel 10 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 328 Page 376
Parcel 11 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 220 Page 408
Parcel 12 Jeremy Keith Salmons, P.O. Box 124, Oneida, KY 40972, Deed Book 331 Page 314
Parcel 12.01 Clay County Fiscal Court, 102 Richmond Road, Manchester, KY 40962, Deed Book 302 Page 457
Parcel 12.02 Billy and Judith M. Combs, 97 2nd Street, Oneida, KY 40972, Deed Book 262 Page 440
Parcel 13 Sandra Dean, c/o FNBM, 120 Town Square, Manchester, KY, Deed Book 314 Page 83
Parcel 14 Cornerstone Bible Ministry, Fronia Smith Pastor, P.O. Box 51, Oneida, KY 40972, Deed Book 333 Page 669
Parcel 15 Delbert Spurlock, c/o Martha Sears, 217 Boyd Road, Mt. Orab, OH 45154
Parcel 16 Tom Epperson, c/o Lee Reed Jr., 2285 Providence Road, Somerset, KY 42501, Deed Book 264 Page 698
Parcel 17 Tom Epperson, c/o Lee Reed Jr., 2285 Providence Road, Somerset, KY 42501, Deed Book 264 Page 701
Parcel 18 John Russell Brown and Vernon Gay, 11685 North Highway 11, Oneida, KY 40972, Deed Book 268 Page 465
Parcel 19 Georgia Arlene Hensley Reed, 558 Stab Road, Somerset, KY 42501, Deed Book 328 Page 58
Parcel 19.01 Billy Berry, c/o Angela Gritton, P.O. Box 354, Oneida, KY 40972, Deed Book 293 Page 533
Parcel 20 Boyd Jr. and Fannie Mae Stewart, P.O. Box 33, Oneida, KY 40972, Deed Book 168 Page 551
Parcel 21 Boyd Jr. and Fannie Mae Stewart, P.O. Box 33, Oneida, KY 40972, Deed Book 229 Page 302
Map 145-40:
Parcel 2 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 251 Page 106
Parcel 3 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 203 Page 96
Parcel 6 Cemetery – Oneida, General Delivery, Oneida, KY 40972
Parcel 7 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 281 Page 379
Parcel 8 Ethan J.W. Allen, P.O. Box 1380, Manchester, KY 40962, Deed Book 287 Page 318
Parcel 9 Fast Lane Food and Fuel Center, c/o Fiz Properties LLC, P.O. Box 947, Winchester, KY 40392, Deed Book 208 Page 1
Parcel 10 No Information Available from PVA
Parcel 11 Oneida Masonic Lodge, P.O. Box 38, Oneida, KY 40972, Deed Book 309 Page 237
Parcel 11.01 Commonwealth of Kentucky Transportation Cabinet, 200 Metro Street, Frankfort, KY 40622, Deed Book 318 Page 246
Parcel 12 Terry and Amy Davidson, 580 Pattys Rock Road, Oneida, KY 40972, Deed Book 244 Page 223
Parcel 13 Terry and Amy Davidson, 580 Pattys Rock Road, Oneida, KY 40972, Deed Book 250 Page 483
Parcel 15 Jerry Keith Salmons, P.O. Box 124, Oneida, KY 40972, Deed Book 332 Page 736
Parcel 16 Oneida Community Church, P.O. Box 275, Oneida, KY 40972, Deed Book 289 Page 256
Parcel 17 Gwendolyn Gibson, P.O. Box 182, Oneida, KY 40972, Deed Book 189 Page 548
Parcel 18 Oneida Church of God, 14897 North Highway 66, Oneida, KY 40972
Parcel 19 James D. Seals, P.O. Box 73, Oneida, KY 40972, Deed Book 189 Page 206
Parcel 20 Carol and Vernon Gay, 14828 North Highway 66, Oneida, KY 40972
Parcel 21 John Jr. and Anna Laura Brown, 11635 North Highway 11, Oneida, KY 40972, Deed Book 132 Page 615
Parcel 22 Kelly and Gwendolyn Meadows, P.O. Box 182, Oneida, KY 40972, Deed Book 249 Page 268
Parcel 23 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 199 Page 537
Parcel 24 Bonnie Dean, P.O. Box 73, Oneida, KY 40972, Deed Book 189 Page 501
Parcel 24.02 Shelly Ann Seals, P.O. Box 14, Oneida, KY 40972, Deed Book 274 Page 457
Parcel 26 Vernon Gay and John R. Brown, 14828 North Highway 66, Oneida, KY 40972, Deed Book 161 Page 50
Parcel 27 John Russell Brown and Vernon Gay, 11685 North Highway 11, Oneida, KY 40972, Deed Book 293 Page 335
Parcel 28 Damien Lee and Belinda Nicole Hacker, c/o F.B.N., 74 Center Street, Oneida, KY 40972, Deed Book 322 Page 89
Parcel 28.01 Irene Davidson et al, c/o Forester Spurlock, 11546 North Highway 66, Oneida, KY 40972, Deed Book 285 Page 378
Parcel 29 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 283 Page 360
Parcel 29.01 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 283 Page 360
Parcel 30 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972
Parcel 31 Deborah Combs, P.O. Box 181, Oneida, KY 40972, Deed Book 313 Page 97
Parcel 32 Deborah Combs, P.O. Box 181, Oneida, KY 40972, Deed Book 248 Page 339
Parcel 33 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972
Parcel 34 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 323 Page 607
Parcel 35 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 323 Page 607
Parcel 36 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 238 Page 231
Parcel 37 CSL Kentucky Systems LLC, c/o Duff and Phelps, P.O. Box 2629, Addison, TX 75001, Deed Book 312 Page 483
Parcel 38 Oneida Fire Department, First Street, Oneida, KY 40972, Deed Book 264 Page 706
Parcel 39 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 285 Page 180
Parcel 40 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 209 Page 710
Parcel 41 Jerry H. and Fronia Smith, P.O. Box 51, Oneida, KY 40972, Deed Book 138 Page 577
Parcel 42 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 209 Page 464
Parcel 43 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 286 Page 686
Parcel 44 Oneida Baptist Institute, P.O. Box 67, Oneida, KY 40972, Deed Book 286 Page 686
Oneida
Mine
1482
Bullskin
Oneida Baptist Institute
BALL FIELD
TRACK
TENNIS COURTS
CREEK
GOOSE
RED
BIRD
RIVER
Gold Mine Rd.
Gold Mine Br.
BURNS BR RD
BARKLEY MOORE RD
BEACHGROVE LN
SCHOOL FARM RD
ONEIDA BOTTOM ROAD
Map 145 Parcel 39
Oneida Baptist Institute
P.O. Box 67
Oneida, KY 40962
Deed Book 59 Parcel 77
Map 145 Parcel 41
Anna Laura Brown
Carol Gay Brown and
John Russell Brown
14828 North Highway 66
Oneida, KY 40972
Deed Book 278
Page 60
Map 145 Parcel 10.01
Oneida Baptist Institute
11 Mulberry Street
Oneida, KY 40962
Deed Book 280
Page 315
Map 145 Parcel 10
Oneida Baptist Institute
11 Mulberry Street
Oneida, KY 40962
Deed Book 306
Page 205
Map 145 Parcel 2
Gloria Donna Moore and
Ronald Bowling
P.O. Box 253
Oneida, KY 40972
Deed Book 299
Page 185
Map 146 Parcel 19
Oneida Baptist Institute
P.O. Box 67
Oneida, KY 40962
Deed Book 267 Parcel 259
Map 146 Parcel 18
U.S. Forestry Service (R576)
Star Route Box 1
Big Creek, KY 40914
Deed Book 144
Page 124
Map 146 Parcel 17.04
Ray and Bernice Hensley
P.O. Box 363
Oneida, KY 40972
Deed Book 272
Page 5
Map 146 Parcel 17.01
Ray and Bernice Hensley
P.O. Box 363
Oneida, KY 40972
Deed Book 252
Page 748
Map 145 Parcel 41.02
John Russel and Peggy Brown
11685 N. Highway 11
Oneida, KY 40972
Deed Book 306 Page 195
Map 145 Parcel 41.01
Brown Cemetery
General Delivery
Oneida, KY 40972
Map 163 Parcel 34.03
Paula Sue Morgan
P.O. Box 15
Oneida, KY 40972
ALEX HENSLEY
CEMETERY
Gas Well
ABANDONED BY VINLAND GAS CO
LINES DISCONNECTED AT WELL HEAD
Gas Tank
Oneida Baptist Institute Farm
EXISTING ACCESS ROAD
AFFECTED AREA
Proposed Tower Location
OVERHEAD POWER LINE EAST KY POWER COOP R.O.W. EASEMENTS
VICINITY MAP NOT TO SCALE
SURVEY STA SET FOUND
IRON PIN WITH CAP (18" X .5" REBAR PLASTIC CAP MARKED LS2259)
BOUNDARY LINE
ROAD
POWER LINE
GAS LINE
J W CAUDILL ENGINEERING
9283 HWY 15 STE. C ISOM, KY 41824
ENGINEER'S CERTIFICATE: I HEREBY CERTIFY THAT INFORMATION SHOWN REFLECTS THE INFORMATION OBTAINED AND PROVIDED BY THE CLAY COUNTY PROPERTY VALUATION ADMINISTRATION OFFICE IN MANCHESTER, KY.
JAMES W. CAUDILL 12305 P.E.# 11/08/23 DATE
STATE OF KENTUCKY James W. Caudill 12305 LICENSED PROFESSIONAL ENGINEER
PROPERTY OWNER & STRUCTURES WITHIN 500'
APPALACHIAN WIRELESS ONEIDA TOWER
DRAWN JWC
DATE 11/08/23
APPROVED
DATE
ONEIDA BAPTIST INSTITUTE PROPERTY
GOOSE CRK & RED BIRD RIVER
JUST SOUTH OF ONEIDA
IN CLAY COUNTY, KY
SCALE 1" = 200'
SHEET 1 of 1
PROJECT NO. ONEIDA/ONEIDAPVA_200

Exhibit 11

APPALACHIAN WIRELESS

101 TECHNOLOGY TRAIL
IVEL, KY. 41642
PROPOSED NEW TOWER
ONEIDA IN CLAY COUNTY



PROFILE WITH TOWER

STATE OF KENTUCKY
James W. Caudill
12305
LICENSED
PROFESSIONAL ENGINEER

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

James W. Caudill 12305 09/01/20
JAMES W. CAUDILL PE #. DATE

NOTE: SEE FOUNDATION DRAWINGS FOR DETAILS

09/01/20

SCALE 1" = 30'

0' 30' 60' 90'

East Kentucky Network d/b/a Appalachian Wireless 101 Technology Trail, Ivel, KY 41642		
DRAWN JWC	DATE 09/01/20	Proposed Site Plan and Structure Location Oneida Tower Site Off Highway 11 in Clay Co., KY.
APPROVED JWC	DATE 09/01/20	
SCALE 1" = 30'	SHEET 3 of 3	PROJECT NO. Oneida/onpro_30

Exhibit 12

Utility ID	Utility Name	Utility Type	Class	City	State
4107900	365 Wireless, LLC	Cellular	D	Atlanta	GA
4109300	Access Point, Inc.	Cellular	D	Cary	NC
4108300	Air Voice Wireless, LLC	Cellular	A	Bloomfield Hill	MI
4110650	Alliant Technologies of KY, L.L.C.	Cellular	C	Morristown	NJ
44451184	Alltel Communications, LLC	Cellular	A	Basking Ridge	NJ
4110850	AltaWorx, LLC	Cellular	C	Fairhope	AL
4107800	American Broadband and Telecommunications Company	Cellular	C	Toledo	OH
4108650	AmeriMex Communications Corp.	Cellular	D	Dunedin	FL
4105100	AmeriVision Communications, Inc. d/b/a Affinity 4	Cellular	D	Virginia Beach	VA
4110700	Andrew David Balholm dba Norcell	Cellular	C	Clayton	WA
4108600	BCN Telecom, Inc.	Cellular	D	Morristown	NJ
4110550	Blue Casa Mobile, LLC	Cellular	D	Santa Barbara	CA
4108750	Blue Jay Wireless, LLC	Cellular	C	Carrollton	TX
4111050	BlueBird Communications, LLC	Cellular	C	New York	NY
4202300	Bluegrass Wireless, LLC	Cellular	A	Elizabethtown	KY
4107600	Boomerang Wireless, LLC	Cellular	B	Hiawatha	IA
4105500	BullsEye Telecom, Inc.	Cellular	D	Southfield	MI
4110050	CampusSims, Inc.	Cellular	D	Boston	MA
4100700	Cellco Partnership dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
4106600	Cintex Wireless, LLC	Cellular	D	Rockville	MD
4111000	ComApp Technologies LLC	Cellular	C	Melrose	MA
4101900	Consumer Cellular, Incorporated	Cellular	A	Portland	OR
4106400	Credo Mobile, Inc.	Cellular	A	San Francisco	CA
4108850	Cricket Wireless, LLC	Cellular	A	San Antonio	TX
4001900	CTC Communications Corp. d/b/a EarthLink Business I	Cellular	D	Grand Rapids	MI
10640	Cumberland Cellular Partnership	Cellular	A	Elizabethtown	KY
4101000	East Kentucky Network, LLC dba Appalachian Wireless	Cellular	A	Ivel	KY
4002300	Easy Telephone Service Company dba Easy Wireless	Cellular	D	Ocala	FL
4109500	Enhanced Communications Group, LLC	Cellular	D	Bartlesville	OK
4110450	Excellus Communications, LLC	Cellular	D	Chattanooga	TN
4105900	Flash Wireless, LLC	Cellular	C	Concord	NC
4104800	France Telecom Corporate Solutions L.L.C.	Cellular	D	Oak Hill	VA
4109350	Global Connection Inc. of America	Cellular	D	Norcross	GA
4102200	Globalstar USA, LLC	Cellular	B	Covington	LA
4109600	Google North America Inc.	Cellular	A	Mountain View	CA
33350363	Granite Telecommunications, LLC	Cellular	D	Quincy	MA
4106000	GreatCall, Inc. d/b/a Jitterbug	Cellular	A	San Diego	CA
10630	GTE Wireless of the Midwest dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
4110600	Horizon River Technologies, LLC	Cellular	C	Atlanta	GA
4103100	i-Wireless, LLC	Cellular	A	Newport	KY
4109800	IM Telecom, LLC d/b/a Infiniti Mobile	Cellular	D	Tulsa	OK
22215360	KDDI America, Inc.	Cellular	D	New York	NY
10872	Kentucky RSA #1 Partnership	Cellular	A	Basking Ridge	NJ
10680	Kentucky RSA #3 Cellular General	Cellular	A	Elizabethtown	KY
10681	Kentucky RSA #4 Cellular General	Cellular	A	Elizabethtown	KY
4109750	Konatel, Inc. dba telecom.mobi	Cellular	D	Johnstown	PA
4110900	Lunar Labs, Inc.	Cellular	C	Detroit	MI
4107300	Lycamobile USA, Inc.	Cellular	D	Newark	NJ
4108800	MetroPCS Michigan, LLC	Cellular	A	Bellevue	WA
4109650	Mitel Cloud Services, Inc.	Cellular	D	Mesa	AZ
4202400	New Cingular Wireless PCS, LLC dba AT&T Mobility, PCS	Cellular	A	San Antonio	TX
10900	New Par dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
4000800	Nextel West Corporation	Cellular	D	Overland Park	KS
4001300	NPCR, Inc. dba Nextel Partners	Cellular	D	Overland Park	KS

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

Exhibit 13

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 dstrausbaugh010@gmail.com.

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,

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

AMERICAN INSTITUTE OF STEEL CONSTRUCTION CERTIFICATION PROGRAMS

PROUDLY RECOGNIZE THAT

Rohn Products, L.L.C.

MAINTAINS OPERATIONS LOCATED AT

#1 Fairholm Ave
Peoria, IL 61603 USA

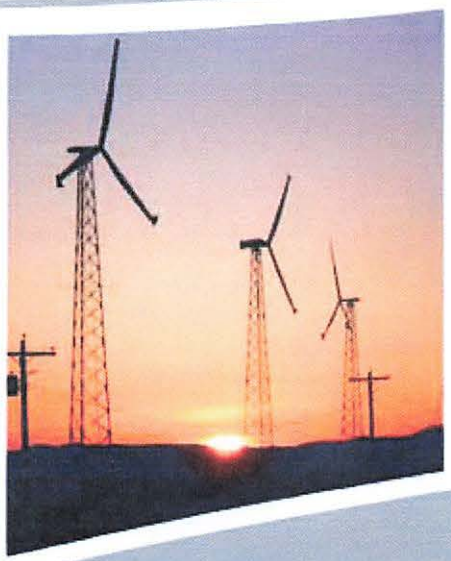
THAT SUCCESSFULLY MEET THE QUALITY CERTIFICATION REQUIREMENTS FOR

Building Fabricator

PRESIDENT

CERTIFICATION NUMBER	ISSUED	VALID THROUGH
C-00023815	December 13, 2023	January 31, 2025

COMPANY HISTORY & THE INDUSTRIES WE SERVE



HISTORY

Founded in 1948, in Peoria, Illinois by Dwight Rohn, the ROHN product quickly became the industry standard for towers. The need for ROHN structures grew out of the television industry and a need for homeowners to have small towers adjacent to their homes to enable signal reception. The demand grew quickly and the company's knowledge and capacity were forced to grow with it. Soon television reception towers grew into radio towers, microwave towers, lighting structures and more. When the cellular technology exploded in the U.S., ROHN was there to provide the towers to support the rapid growth. This growth was not just in markets but in geographies.

By 1980, ROHN had structures standing on every continent and in nearly every country on the globe. We continue to supply towers and poles to all of the communication giants and regional carriers. We support utilities and transportation in all of North America. We have wind turbine towers and meteorological towers across the globe. For over 60 years, our products have endured and our name continues to be recognized around the world as the industry standard.

BROADCAST SOLUTIONS

When Americans turned on their first television sets, ROHN was there to improve fuzzy reception with our home antenna tower. During the 40's and 50's, a ROHN TV tower installed on a rooftop or in a backyard meant that family's TV reception was the best on the block, even if the picture was only black and white and the screen just 12 inches wide.

ROHN's business serves the broadcast side of TV as well. With the advent of digital TV and compliance with FCC standards, broadcasters are choosing to remain competitive by expanding their services into more areas. To do so, they look to ROHN to deliver "Tall Towers", super structures rising as high as 2,000 feet, to broadcast TV signals to millions of viewers in a much wider geographic area.

ROHN towers are some of the tallest structures in the world, and we build each tower in accordance with our exacting standards for quality, performance and structural integrity. Our tall towers are helping change the way the world receives and views television signals. This innovation is nothing new for ROHN. Back in 1948 when we started our business, we were on the forefront of the television age. Today, we stand ready to serve the next wave of television broadcasting.

WIRELESS SOLUTIONS

ROHN has been supplying towers to the wireless industry since the industry was born. Whether the application is microwave, cellular, PCS or broadbanc we have the towers in service supporting wireless communications.

When the first microwave towers were constructed in the United States ROHN was the quality supplier of choice. We designed and fabricated to the most stringent standards for wind, ice and dish twist and sway requirements

As the communication system progressed to cellular, then PCS, ROHN wa again leading the market with our ROHN SSV towers serving as the industry preference for wireless sites.

ROHN continues to support wireless communication from microwave to broadband communications. Our structures are still the leaders in the industry

ROHN also offers a variety of steel poles to meet your specific communicatior needs. Our tapered and flanged steel poles feature designs that are aesthetically pleasing and blend well into the environment while requiring minimum space for installation. All of our steel poles are hot-dip galvanized after fabrication to ensure years of corrosion free use. As one of the larges manufacturers of communication structures, with unmatched attention to detail and design, our steel poles provide an extremely efficient design ROHN's steel poles meet the stringent demands of today's communicatior environment.

SPORTS LIGHTING SOLUTIONS

Whatever your application - from little league baseball to a major league sports stadium, ROHN has a steel pole to do the job. Poles are available with the traditional anchor base or for direct embedment. ROHN's engineering staff will select the proper pole based on your specific requirements, considering wind speed, luminaire size, weight and quantity

For decades, ROHN has supplied sports lighting structures. ROHN towers support lights for the Anaheim Angels professional baseball team, the University of Illinois football team and the Peoria Chiefs, the local minor league baseball team near our plant location in Peoria, IL.

All poles and towers are hot-dip galvanized and our direct embed poles can be purchased with an extra subsurface corrosion resistant coating.

TRANSPORTATION SOLUTIONS

ROHN has been a trusted name in quality-engineered structures since 1948. We have the people, equipment and experience to provide the materials you need for your transportation structure projects. ROHN Mast Arms, Monotube Assemblies, Steel Strain Poles and Sign Structures are designed and manufactured to AASHTO standards. Our products can be supplied galvanized, painted over galvanizing or factory finished powder coated. We are dedicated to delivering quality products, on time at a competitive price; whether it is a single pole or multiple pole project.

ROHN has over 300,000 square feet of manufacturing located in Peoria Illinois. ROHN's manufacturing is certified by both the American Institute of Steel Construction (Dual AISC Certified Steel Fabricator - Buildings and Simple Steel Bridges) and the Canadian Welding Bureau.

ROHN uses specialized engineering software coupled with ROHN developed software for the design of tubular structures and foundations. This allows ROHN to optimize pole designs based on customer requirements, manufacturing efficiencies and material availability. Preliminary calculation packages are sent to our customers for review with bid packages.

UTILITY SOLUTIONS

ROHN can optimize pole designs based on customer requirements, manufacturing efficiencies and material availability. Preliminary calculation packages are sent to our customers for review and approval prior to manufacturing. Fabrication and erection drawings are produced in AutoCAD and accompany the structures we produce. Our commitment to the utility industry is to provide the highest quality products with the shortest lead time.

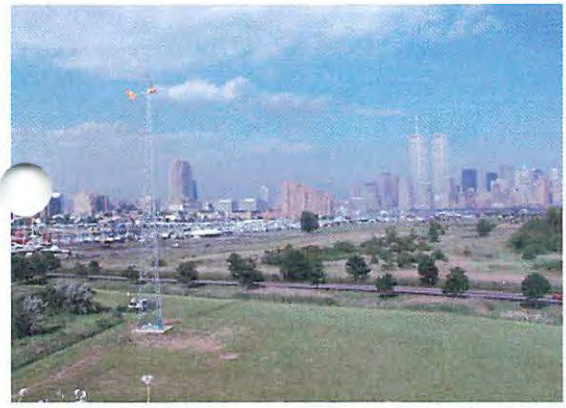
ROHN uses Power Line Systems software coupled with ROHN developed software for the design of tubular structures and foundations. This allows us to optimize the pole designs based on customer requirements.

ROHN's state of the art equipment and facility allows us to fabricate the most difficult projects with the accuracy and reliability that you deserve. After the pole shafts have been formed on our press brake, they pass through ROHN's custom built seam welder. The shafts are then completed in one of our numerous fit-up and weld-out stations. Automation also plays a key role in the manufacturing process for latticed towers with our CNC plate processors, machining center, anglematics and beam lines that can process angle up to 8" x 8" x 1 1/4".

ROHN's Quality Assurance/Quality Control program begins when the material is received at our plant, ensuring that all material meets the designated specifications. Components are inspected and verified throughout the manufacturing process to ensure that they are within the engineering and manufacturing tolerances. All full penetration base plate and seam welds are verified with Ultrasonic Testing performed in-house by our own certified inspectors.

Because of ROHN's commitment to customer service, the Inside Sales Manager assigned to your project will work closely with you to assure your order is designed and built to the highest standards and delivered just as you ordered it. We understand the importance of on-time delivery and constantly strive to exceed your expectations. Our plant is centrally located in Peoria, Illinois, which allows for competitive freight costs.

WIND ENERGY SOLUTIONS



ROHN has extensive experience in manufacturing meteorological and turbine support structures for wind energy applications. Whatever the requirement, poles, towers or guyed masts, we have used our products to support this industry.

Our structures are used to support wind turbines ranging up to 50 kW. ROHN structures are hot-dip galvanized where the components are totally immersed in molten zinc, inside and out, to ensure years of corrosion protection. Our steel pole designs are aesthetically pleasing, while requiring minimum space for installation.

To ensure that ROHN meets the demand of today's wind energy customer, our steel poles offer extremely efficient designs and unmatched attention to detail. For over 60 years, ROHN has manufactured support structures with great care and design excellence.