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 Determination
7. Notification Signs Placed At or Near Site
8. Driving Directions from County Court House and Map to Suitable Scale
9. Deed
10. Survey of site Signed / Sealed by Professional Engineer Registered in State of Kentucky
11. Site Survey Map with Property Owners Identified in Accordance with PVA of County
12. Vertical Profile Sketch of Proposed Tower
13. Qualifications
14. List of Competitors
15.

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the matter of:

THE APPLICATION OF EAST KENTUCKY NETWORK, LLC FOR THE ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A REPLACEMENT TOWER IN LAWRENCE COUNTY, KENTUCKY	) CASE NO. 2025-00262

East Kentucky Network, LLC d/b/a Appalachian Wireless, was granted authorization to provide cellular service in the KY-9 Cellular Market Area (CMA451) in the 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 Lawrence 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 replacement 190-foot self-supporting tower on a tract of land located near 25191 US Hwy 23, Catlettsburg, Lawrence County, Kentucky (38°12'08.27" N 82°36'41.17" W). A map and detailed directions to the site can be found in Exhibit 7.

Construction of the proposed replacement 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 Lawrence 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 who own property within 500 feet of the proposed replacement 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 records.

Pursuant to 807 KAR 5:063 Section 1(1)(l), Section 1(m) and Section 2, all affected property owners according to the Property Valuation Administrator's records who own property within 500 feet of the proposed replacement 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, as well as a copy of the signed United States Postal Service Forms 3811 ("signed green cards") or a copy of the communication that the notice was returned as undelivered.

Lawrence County has no formal local planning unit. In absence of this unit, the Lawrence 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 Lawrence 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 as well as a copy of the signed United States Postal Service Forms 3811 or a copy of the communication that the notice was returned as undelivered.

Notice of the location of the proposed construction of the replacement tower was published in The Big Sandy News August 20, 2025 edition. Enclosed is a copy of that notice in Exhibit 3. The Big Sandy News is the newspaper with the largest circulation in Lawrence 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 replacement tower design information is enclosed as Exhibit 5. The proposed replacement tower has been designed by engineers at World Tower Company 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.

Groundwork will be done by TH Excavating, LLC. The replacement tower will be erected by S & S Tower Services of St. Albans, West Virginia. TH Excavating, LLC and S & S Tower Services have vast experience in their fields. Their qualifications are described in Exhibit 13.

The FAA determination and KAZC application are enclosed as Exhibit 6. The determination from Kentucky Airport Zoning Commission will be provided upon receipt.

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 August 7, 2025, and will remain posted for at least two weeks after filing of this application as specified. Enclosed in Exhibit 7 is photographic evidence of the two signs which legibly sets out the language used.

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 8. 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.

The proposed construction site is on a rugged mountaintop in close proximity to an existing tower owned by Applicant. The existing tower is a 180' guyed tower which can no longer meet the needs of Applicant and will be removed upon construction of the proposed tower.

Enclosed in Exhibit 9 is a copy of East Kentucky Network, LLC's Deed for the site location along with a lot description.

Enclosed as Exhibit 10 is a survey of the proposed replacement tower site signed by a Kentucky registered professional engineer.

Exhibit 11 is a map in one (1) inch equals 200 feet scale identifying every structure, easement, and every owner of real estate within 500 feet of the proposed replacement tower and within 200 feet of the access drive and all property owners who own contiguous property to the property upon which construction is proposed.

Exhibit 12 contains a vertical sketch of the replacement tower supplied by Dewey L. Bocook Jr, a Kentucky registered professional engineer with Bocook Engineering, Inc.

Enclosed as Exhibit 14 is a list of utilities, corporations, or persons with whom the tower is likely to compete.

[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: _____ DATE: 8-28-25
Raina Helton, Regulatory Compliance Director

APPROVED BY: _____ DATE: 8-28-25
Michael L. Johnson, CEO

ATTORNEY: _____ DATE: 8-28-25
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

Exhibit 1

ULS License

Cellular License - KNKN880 - East Kentucky Network, LLC d/b/a Appalachian Wireless

Call Sign	KNKN880	Radio Service	CL - Cellular
Status	Active	Auth Type	Regular

Market

Market	CMA451 - Kentucky 9 - Elliott	Channel Block	B
Submarket	0	Phase	2

Dates

Grant	10/26/2021	Expiration	10/01/2031
Effective	10/26/2021	Cancellation	

Five Year Buildout Date

10/23/1996

Control Points

1 U.S. 23, HAROLD, KY

Licensee

FRN	0001786607	Type	Limited Liability Company

Licensee

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

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

Contact

East Kentucky Network, LLC
Cindy D McCarty Esq
P.O. Box 41642-9057
101 Technology Trl
Ivel, KY 41642
ATTN Regulatory Compliance Dept.

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

Ownership and Qualifications

Radio Service Type	Mobile		
Regulatory Status	Common Carrier	Interconnected	Yes

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

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

Demographics

Race

Ethnicity

Gender

Exhibit 2

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

Carl E. Jr. & Toni M. Butler
25433 Hwy 23
Catlettsburg, KY 41129

Deborah Adkins
203 Cub Lane
Louisa, KY 41230

Kenneth Mills
201 Cub Lane
Catlettsburg, KY 41129

Appalachian WIRELESS

EAST KENTUCKY NETWORK
www.ekn.com

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

August 13, 2025

Kenneth Mills
201 Cub Lane
Catlettsburg, KY 41129

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2025-00262)

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 Lawrence County. The facility will include a 190-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 25191 US Hwy 23, Catlettsburg, KY. 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. 2025-00262 in your correspondence.

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

Sincerely,

Raina Helton

Raina Helton, CKP
Regulatory Compliance Director
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

August 13, 2025

Deborah Adkins
203 Cub Lane
Louisa, KY 41230

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2025-00262)

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

Sincerely,

Raina Helton

Raina Helton, CKP
Regulatory Compliance Director
Enclosure 1

VIA: U.S. CERTIFIED MAIL

PUBLIC NOTICE

August 13, 2025

Carl E. Jr. & Toni M. Butler
25433 Hwy 23
Catlettsburg, KY 41129

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2025-00262)

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

Sincerely,

Raina Helton

Raina Helton, CKP
Regulatory Compliance Director
Enclosure 1


Zelda
Location:
25191 US Hwy 23
Catlettsburg, KY
Coordinates:
Lat: 38° 12' 08.27"N
Lon: 82°36' 41.17"W
Proposed Zelda Tower
Mill Branch Rd
Mill Branch Rd
Mill Branch Rd
Mill Branch Rd
Mill Branch Rd
Google Earth
Image © 2025 Airbus

Map 103-00-00-022.01

PROPERTY CARD

Printed 7/23/2025

Location U S HWY 23 00000

Building

Yr Const | EffAge | BuildingVal | MH Vin

Descr 1 91 ACRES

District 00-County | Class Telecommunication

Accoun 28319

Owner EAST KENTUCKY NETWORK LLC
DBA APPALACHIAN WIRELESS
101 TECHNOLOGY TRAIL
IVEL KY 41642-

ResType
MobType
FarmTyp
ComType
ComTyp2

Subdiv | Block | Lot

Date Checke 1/10/2005 | Checked By CAR | Date Assessed 1/11/2001

Lot Size | LotSizeSqFt 0.00 | LotEstActual

Frontage 0.00 | Depth 0 00 | Platt Book

Acreage 2.00 | AcresEstAc | Source

Neighborhoo Fair | Site Condition | Zoning

Road Unimproved | Driveway | Sidewalks

Topography | Shape | Drainage

Flood Hazard | ☐ Elect ☐ Gas ☐ Water ☐ Sewer | Land Value 78,000

TenantHouses 0 | Barns 0 | Silos 0 | GrainBins 0 | Fencing 0

No Stories | Avg Heigth | Patio/Deck

MH/Manufact | MH/Model | MH/Skirting

Width | Length | Area

Garage/Carport | GarType | GarSize

GarExterior | Pool | PoolSize

Neighborhood | Site Cond | Bldg Cond

Structure | Exterior | Foundation

Const.Type | Constr. Quality | Tennis Court

Roof Type | Roof Cover | Roof Pitch

Basement Type | BasementSize | BasementFinish

☐ Heat/Type | Heat Source | SupplHeat

☐ Air/Type | Driveway | Sidewalks

☐ Electricity ☐ Gas ☐ Water ☐ Sewer ☐ Solarr ☐ Sprinklers ☐ FireAlarm ☐ SpecialImprvmt

Living | Dining | Family | Kitchn | BedRm | Bents | Living

FulBth | HlfBth | OthRm | Total | Firplc | Stalls | Basemt

Garage

Porch

Deck

Office

Manuf

Asphalt

Concrete

Name	Deed	SaleDate	Sale Price
EAST KENTUCKY NETWORK LLC	327-633	09/15/2016	78,000
GILLUM CAROLYN & WILLIAM A	288-204	08/30/2007	10,000

Year	Net Taxable	Exemption	Total Taxable	Land	Improvements	Ag Improvements	Land FCV	Imprvmts FCV	Ag Imprvmts FCV	Total FCV
2025	78,000	0	78,000	78,000	0	0	0	0	0	0
2024	78,000	0	78,000	78,000	0	0	0	0	0	0
2023	78,000	0	78,000	78,000	0	0	0	0	0	0

Map **103-00-00-015.00**

PROPERTY CARD

Printed 5/15/2025

Location CUB LN 00201

Building 1

Description 26.68 ACRES & 84 24X56

District 00-County Class Farm

Owner MILLS KENNETH

201 CUB LN

CATLETTSBURG KY 41129

Account 6117

Yr Const 1984 EffAge 0 BuildingVa 21,000

Subdivision

Block Lot

Date Checke 1/10/2005	Checked By CAR	Date Assessed 1/10/2005
Lot Size	LotSizeSqFt 0.00	LotEstActual
Frontage 1,155.00	Depth 0.00	Platt Book
Acreage 26.68	AcresEstAc	Source
Neighborhoo Typical	Site Condition Average	Zoning
Road Multi-Lane	Driveway Gravel	Sidewalks No
Topography Level	Shape	Drainage
Flood Hazard None	Fire Acres 19	Land Value 13,900

TenantHouses 0 Barns 0 Silos 0 GrainBins 0 Fencing 0

☑ Electricity ☑ Gas ☑ Water ☐ Sewer Stalls 0 Bents 0

No Stories 0.00	Avg Heigth 0.00	Date Assessed 1/5/1993
Date Checked 1/11/2001	Checked By JEH	Farm
ResidenceType	Commercial	Com2
MobHomeType MH - Residential	Manufacturer	Model
Garage/Carport Garage	Type Detached	Size 2 Car
Width 24.00	Length 56.00	Area 0.00
Neighborhood Typical	Site Cond Average	Bldg Cond Very Good/Excelle
Structure	Exterior MH Standard	Foundation MH Permanent
Const.Type	Constr. Quality MHII: Standard	
Roof Type	Roof Cover Comp.Shingles	Roof Pitch
Basement Type None	BasementSize	BasementFinish Unfinished
Heat Type	Heat Source Natural Gas	Supplemental

MH Vin		Living 0		SqFeet	
Skirting Concrete Block		Dining 0		Living 1,344.00	
Exterior		Family 0		Basemt 0.00	
Driveway Gravel		Kitchen 0		Garage 768.00	
Sidewalks No		BedRm 0		Porch 0.00	
Patio/Deck Open		FullBaths 0		Deck 160.00	
Tennis Court		HalfBaths 0		Office 0.00	
Pool Above Ground		OtherRm 0		Manufacturing 0.00	
PoolSize 384.00		Total 0		Asphalt 0.00	
AirCondType Central		Fireplaces 0		Concrete 0.00	

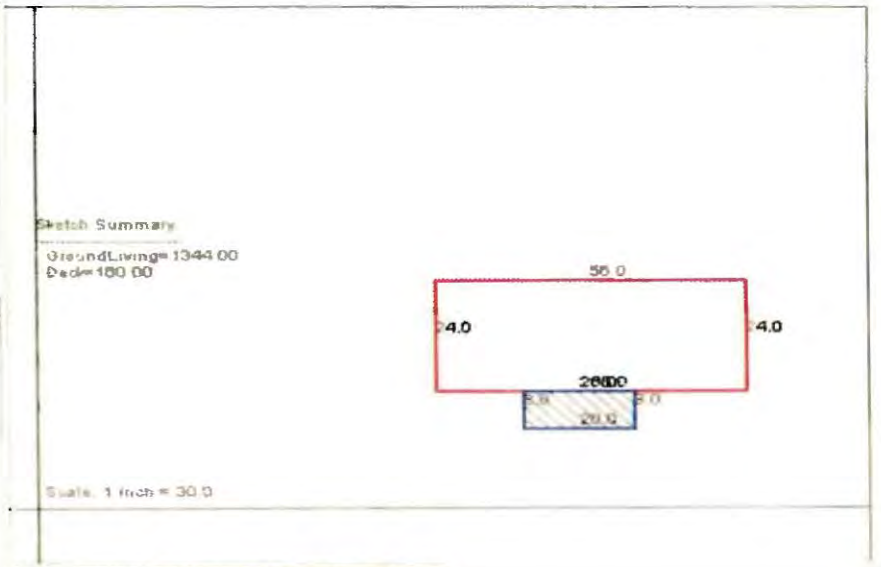
☑ Heat ☑ Cooling ☑ Electricity ☑ Gas ☑ Water ☐ Sewer ☐ Solar ☐ Sprinklers ☐ FireAlarm ☐ SpecialImprvmt

Year	Net Taxable	Exemption	Total Taxable	Land	Improvements	Ag Improvements	Land FCV	Imprvmts FCV	Ag Imprvmts FCV	Total FCV
2025	0	HX 39,900	39,900	13,900	21,000	5,000	62,000	21,000	5,000	88,000
2024	0	HX 39,900	39,900	13,900	21,000	5,000	62,000	21,000	5,000	88,000
2023	0	HX 39,900	39,900	13,900	21,000	5,000	62,000	21,000	5,000	88,000
2022	0	HX 39,900	39,900	13,900	21,000	5,000	62,000	21,000	5,000	88,000
2021	0	HX 39,900	39,900	13,900	21,000	5,000	62,000	21,000	5,000	88,000
2020	600	HX 39,300	39,900	13,900	21,000	5,000	62,000	21,000	5,000	88,000
2019	600	HX 39,300	39,900	13,900	21,000	5,000	62,000	21,000	5,000	88,000
2018		37,600	39,900	13,900	21,000	5,000	62,000	21,000	5,000	88,000

103-00-00-015.00

Soil Capability Classification And Valuation

Class	Acreage	PerAcre	Value/Class	Adjustment	AdjValue
Class III	7.00	225.00	1,575.00	0	1,575.00
Class IV	19.00	125.00	2,375.00	0	2,375.00



CHAIN OF OWNERSHIP

Buyer Name	Deed	SaleDate	Sale Price
MILLS RUTH E	023-159	01/08/2009	0
MILLS KENNETH & RUTH	187-450	07/01/1984	0
MILLS KENNETH			

Permits List

Notes

Map **103-00-00-015.04**

PROPERTY CARD

Printed 5/15/2025

Location CUB LN 00203

Building

Description 21 ACRES

District 00-County Class Farm

Owner ADKINS DEBORAH
203 CUB LANE
LOUISA KY 41230-

Account 102

Yr Const EffAge BuildingVa

Subdivision

Block Lot

Date Checke 1/10/2005 Checked By CAR Date Assessed 1/10/2005

Lot Size LotSizeSqFt 0.00 LotEstActual

Frontage 0.00 Depth 0.00 Platt Book

Acreage 21.00 AcresEstAc Source

Neighborhoo Typical Site Condition Average Zoning

Road Multi-Lane Driveway Gravel Sidewalks No

Topography Steep Shape Drainage

Flood Hazard None Fire Acres 19 Land Value 2,800

TenantHouses 0 Barns 0 Silos 0 GrainBins 0 Fencing 0

☑ Electricity ☐ Gas ☑ Water ☐ Sewer Stalls Bents

No Stories	Avg Heigth	Date Assessed	
Date Checked	Checked By	Farm	
ResidenceType	Commercial	Com2	
MobHomeType	Manufacturer	Model	
Garage/Carport	Type	Size	
Width	Length	Area	
Neighborhood	Site Cond	Bldg Cond	
Structure	Exterior	Foundation	
Const.Type	Constr. Quality		
Roof Type	Roof Cover	Roof Pitch	
Basement Type	BasementSize	BasementFinish	
Heat Type	Heat Source	Supplemental	

MH Vin		Living	
Skirting		Dining	
Exterior		Family	
Driveway		Kitchen	
Sidewalks		BedRm	
Patio/Deck		FullBaths	
Tennis Court		HalfBaths	
Pool		OtherRm	
PoolSize		Total	
AirCondType		Fireplaces	

SqFeet	
Living	
Basemt	
Garage	
Porch	
Deck	
Office	
Manufacturing	
Asphalt	
Concrete	

☐ Heat ☐ Cooling ☐ Electricity ☐ Gas ☐ Water ☐ Sewer ☐ Solar ☐ Sprinklers ☐ FireAlarm ☐ SpecialImprvmt

Year	Net Taxable	Exemption	Total Taxable	Land	Improvements	Ag Improvements	Land FCV	Imprvmts FCV	Ag Imprvmts FCV	Total FCV
2025	2,800	0	2,800	2,800	0	0	36,500	0	0	36,500
2024	2,800	0	2,800	2,800	0	0	36,500	0	0	36,500
2023	2,800	0	2,800	2,800	0	0	36,500	0	0	36,500
2022	2,800	0	2,800	2,800	0	0	36,500	0	0	36,500
2021	2,800	0	2,800	2,800	0	0	36,500	0	0	36,500
2020	2,800	0	2,800	2,800	0	0	36,500	0	0	36,500
2019	2,800	0	2,800	2,800	0	0	36,500	0	0	36,500
2018		0	2,800	2,800	0	0	36,500	0	0	36,500

Soil Capability Classification And Valuation

Class	Acreage	PerAcre	Value/Class	Adjustment	AdjValue
Class III	2.00	225.00	450.00	0	450.00
Class IV	19.00	125.00	2,375.00	0	2,375.00

CHAIN OF OWNERSHIP

Buyer Name	Deed	SaleDate	Sale Price
ADKINS DEBORAH	243-705	06/01/1999	3,000

Permits List

Notes

Map 103-00-00-022.00

PROPERTY CARD

Printed 5/13/2025

Location U S HWY 23 00000

Building 1 BARN

Yr Const 0 EffAge 0 BuildingVal 5,000 MH Vin

Descr 240 ACRES & BARN

District 00-County Class Farm

Accoun 1242

Owner BUTLER CARL E JR & TONI M
25433 HWY 23
CATLETTSBURG KY 41129

ResType
MobType
FarmTyp General Barn
ComType
ComTyp2

Subdiv Block Lot

Date Checke 1/10/2005 Checked By CAR Date Assessed 1/11/2001

Lot Size LotSizeSqFt 0.00 LotEstActual

Frontage 0.00 Depth 0.00 Platt Book

Acreage 240.00 AcresEstAc Source

Neighborhoo Fair Site Condition Zoning

Road Unimproved Driveway Sidewalks

Topography Shape Drainage

Flood Hazard ☐ Elect ☐ Gas ☐ Water ☐ Sewer Land Value 31,000

TenantHouses 0 Barns 0 Silos 0 GrainBins 0 Fencing 0

No Stories 0.00 Avg Heigth 0.00 Patio/Deck

MH/Manufact MH/Model MH/Skirting

Width 0.00 Length 0.00 Area 0.00

Garage/Carport GarType GarSize

GarExterior Pool PoolSize 0.00

Neighborhood Site Cond Bldg Cond

Structure Exterior Foundation

Const.Type Constr. Quality Tennis Court

Roof Type Roof Cover Roof Pitch

Basement Type BasementSize BasementFinish

☐ Heat/Type Heat Source SupplHeat

☐ Air/Type Driveway Sidewalks

☐ Electricity ☐ Gas ☐ Water ☐ Sewer ☐ Solarr ☐ Sprinklers ☐ FireAlarm ☐ SpecialImprvmt

Living 0 Dining 0 Family 0 Kitchn 0 BedRm 0 Bents 0 Living 0.00

FulBth 0 HlfBth 0 OthRm 0 Total 0 Firplc 0 Stalls 0 Basemt 0.00

Garage 0.00

Porch 0.00

Deck 0.00

Office 0.00

Manuf 0.00

Asphalt 0.00

Concrete 0.00

Name	Deed	SaleDate	Sale Price
BUTLER CARL E JR & TONI M	025-123	01/19/2012	
BUTLER DORA	024-138	05/06/2010	
BUTLER CARL EDWIN & DORA	149-027		0

Year	Net Taxable	Exemption	Total Taxable	Land	Improvements	Ag Improvements	Land FCV	Imprvmts FCV	Ag Imprvmts FCV	Total FCV
2025	36,000	0	36,000	31,000	5,000	0	192,000	5,000	0	197,000
2024	36,000	0	36,000	31,000	5,000	0	119,000	5,000	0	124,000
2023	36,000	0	36,000	31,000	5,000	0	119,000	5,000	0	124,000

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Carl E. Jr. & Toni M. Butler COMP
[illegible]433 Hwy 23
Catlettsburg, KY 41129 RE: ZELDA

9590 9402 9491 5069 2593 68

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COMP

Deborah Adkins
203 Cub Lane
Louisa, KY 41230

RE: ZELDA

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Delivered

Delivered, Individual Picked Up at Post Office
LOUISA, KY 41230
August 18, 2025, 9:25 am

Out for Delivery
LOUISA, KY 41230
August 18, 2025, 8:01 am

Arrived at Post Office
LOUISA, KY 41230
August 18, 2025, 7:50 am

In Transit to Next Facility
August 17, 2025

Arrived at USPS Regional Facility
CHARLESTON WV PROCESSING CENTER
August 15, 2025, 1:36 pm

Departed Post Office
ALLEN, KY 41601

August 14, 2025, 3:01 pm

USPS in possession of item
ALLEN, KY 41601
August 14, 2025, 1:39 pm

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Text & Email Updates

USPS Tracking Plus®

Your item is eligible for USPS Tracking Plus. This feature allows you to buy extended access to your tracking history and receive a statement via email upon request. Without this feature, your regular tracking history is only available on this site until August 15, 2027. To extend your access to this tracking history, select the length of time you would like and confirm your selection. You can only purchase extended history once, so all orders are final and are not eligible for a refund.

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COMP

Kenneth Mills
201 Cub Lane
Catlettsburg, KY 41129

RE: ZELDA

9590 9402 9491 5069 2593 44

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X Ruth Mills ☐ Agent ☐ Addressee

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Exhibit 3

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

EAST KENTUCKY NETWORK

To: The Big Sandy News **From:** Libby Ratliff

Regulatory Compliance Coordinator

Email: vanessa@thebigsandynews.com **Date:** August 18, 2025

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

Please place the following Public Notice Advertisement in the Big Sandy News to be ran on August 20, 2025.

PUBLIC NOTICE:

RE: Public Service Commission of Kentucky (CASE NO. 2025-00262)

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 25191 US Hwy 23, Catlettsburg, Lawrence County, Kentucky. The proposed tower will be a 190-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. 2025-00262.

If you have any questions about the placement of the above-mentioned notice, please call me at 606-477-2375, ext. 1010.

Thank you,

Libby Ratliff
Regulatory Compliance Coordinator

Appalachian WIRELESS
www.appalachianwireless.com

EAST KENTUCKY NETWORK
www.ekn.com

VIA: U.S. CERTIFIED MAIL

August 13, 2025

John A. Osborne, Lawrence County Judge Executive
122 S. Main Cross Street
Louisa, KY 41230

RE: Public Notice-Public Service Commission of Kentucky (Case No. 2025-00262)

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 Lawrence County. The facility will include a 190-foot self-supporting tower with attached antennas extending upwards, and an equipment shelter located on a tract of land near 25191 US Hwy 29, Catlettsburg, Louisa County, Kentucky. A map showing the location of the proposed new facility is enclosed. This notice is being sent to you because you are the County Judge Executive of Lawrence County.

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

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission of Kentucky, P.O. Box 615, Frankfort, KY 40602. Please refer to Case No. 2025-00124 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


Zelda
Location:
25191 US Hwy 23
Catlettsburg, KY
Coordinates:
Lat: 38°12' 08.27"N
Lon: 82°36' 41.17"W
Proposed Zelda Tower
Mill Branch Rd
Google Earth
Image © 2025 Airbus

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1. Article Addressed to:

John ... Osborne, COMP
... County Judge Executive
122 S. Main Cross Street
Louisa, KY 41230 RE: ZELDA

9590 9402 9491 5069 2593 75

2. Article Number *(Transfer from service label)*
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X Tammy Napier ☐ Agent ☐ Addressee

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Exhibit 4

GEOTECHNICAL ENGINEERING REPORT
GEO-STRUCTURAL ENGINEERING SERVICES
ZELDA, KY TOWER SITE

Prepared for:

EAST KENTUCKY NETWORK, LLC
IVEL, KY

Prepared by:

ANDERSON PROFESSIONAL SERVICES, LLC
NICHOLASVILLE, KENTUCKY

Date:

JULY 25, 2025

APS GEO Project No.:

APS250060

STATE OF KENTUCKY
PAUL J. COOPER 27034 LICENSED
PROFESSIONAL ENGINEER

Paul J. Cooper PE

Digitally signed by Paul J. Cooper PE
DN: C=US, E=pcooper@apsgeo.com, O=APS GEO, OU=Principal Geotechnical Engineer, CN=Paul J. Cooper PE
Reason: I am approving this document
Date: 2025.07.25 16:52:01-04'00'

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

July 25, 2025

Mr. Stanton Neece
East Kentucky Network, LLC
101 Technology Trail
Ivel, KY 41642

Re: Geotechnical Engineering Report
Geo-Structural Engineering Services
Zelda, KY Tower Site
APS GEO Project No. APS250060

This report presents the results, findings, and recommendations of a geotechnical investigation and engineering analyses conducted by Anderson Professional Services, LLC (APS GEO) in response to a request by East Kentucky Network, LLC (Appalachian Wireless) for geotechnical drilling, laboratory testing, and engineering services for a proposed tower site near Zelda, KY. The results of these tasks are presented in this report. Our work was completed in general accordance with our proposal dated May 29, 2025.

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.

Respectfully submitted,
ANDERSON PROFESSIONAL SERIVES, LLC

Paul Cooper

Paul Cooper, PE
Principal Geotechnical Engineer
paul.cooper@apsgeo.com

Lyndsie Janbakhsh

Lyndsie Janbakhsh, PE
Principal Geotechnical Engineer
lyndsie.j @apsgeo.com

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GEOTECHNICAL ENGINEERING REPORT
GEO-STRUCTURAL ENGINEERING SERVICES
ZELDA, KY TOWER SITE
July 25, 2025 | APS GEO Project No. APS250060

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 Lawrence 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 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 East Kentucky Network, LLC (Appalachian Wireless) is seeking professional geotechnical engineering services to complete a structural assessment of the proposed new cellular antenna tower. For this scope of work, we understand that Appalachian Wireless wishes to construct a new cellular tower that will be situated near GPS point 38.202285, -82.611465.

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 Lawrence County, Kentucky as shown in Figure 1.

Figure 1. Site Location Map

3.0 SITE GEOLOGY AND GEOLOGIC HAZARDS

The project area is located in Eastern Kentucky within the Eastern Kentucky Coal Field Region, which is typically characterized by forested hills and highly dissected by V-shaped valleys (KGS 2018). In general, the elevations of the hills are highest in southeastern Kentucky. This escarpment (in large part) is formed from resistant Pennsylvanian-age sandstones and conglomerates.

3.1 Kentucky Geologic Survey

The project site lies in the northeastern part of the United States Geological Survey (USGS) Geologic Map of Part of the Fallsburg and Prichard Quadrangle (GQ-584) (Sharps, 1967). A Project Geologic Map is included as Figure 2.

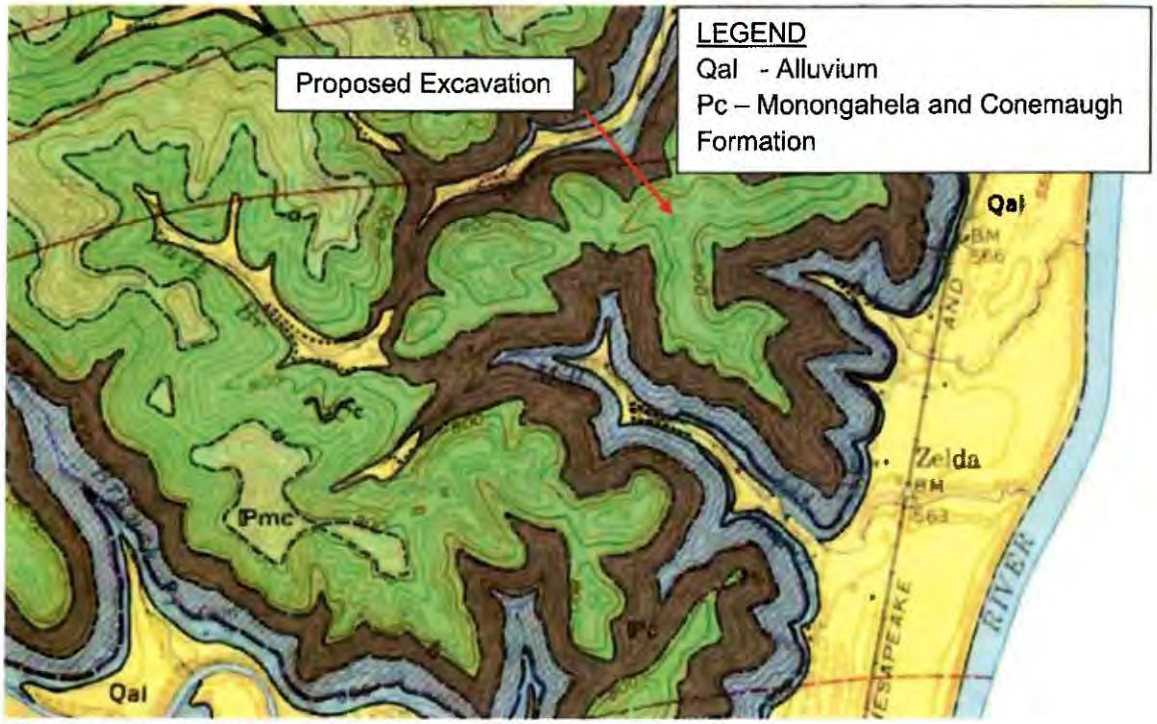


Figure 2. Kentucky Geological Survey Map

The referenced USGS map indicates that the site is underlain Alluvium, with bedrock of the Monongahela Formation, which are described as follows (USGS Geologic Map GQ-584):

- Alluvium consists of silt, sand, and gravel, unconsolidated deposits of present drainage.
- Monongahela Formation consists of shale, siltstone, sandstone and coal. Shales and siltstones are medium- to dark-gray, partly carbonaceous, and often interbedded with fine-grained sandstone. Sandstones range from light- to dark-gray, are fine to medium-grained, and vary in bedding and sorting. Some sandstones are quartzose with quartz pebbles and form benches or hogbacks, especially near Pine Mountain. Several coal beds are noted, including the Imboden coal bed, possibly equivalent to Pathfork coal, and unnamed coal beds that may correlate with the Hance, Mason, or Naese coal beds. Much of the data comes from diamond-drill holes, and exposures are limited.

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

Potential active faults Quaternary faults or seismic zones have not been identified within approximately 200 miles of the project site (USGS, 2023). Seismic Hazards for Lawrence 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

A summary of field exploration results is provided in Table 1 and final boring logs and rock core photos are presented in Appendix A. Figure 3 shows the as-drilled location of the borings. Additional information on subsurface conditions is summarized in Section 6.0.

The boring was advanced with a truck-mounted, rotary drill rig equipped with 3.25-inch ID hollow-stem augers or casing advancer, as appropriate. Standard Penetration Test (SPT) samples were obtained in the overburden at Boring B-1 and Boring B-2. The bedrock was then cored in Boring B-1 using NQ-sized rock coring equipment. A summary of the boring results is included in Table 1.

Table 1. Summary of Boring Results

Boring	Latitude[a]	Longitude[a]	Surface Elevation[a] (ft.)	Top of Competent Bedrock[b]		Boring Termination	
				Depth (ft.)	*Elevation (ft.)*	*Depth (ft.)*	*Elevation (ft.)*
B-1	38.202285	-82.611453	841	8.9	832.1	21.3	819.7
B-2	38.202425	-82.611459	839	8.7	830.3	18.7	820.3

[a] Locations and Elevations collected from handheld GPS device and GoogleEarth.
[b] Top of competent bedrock was determined by auger refusal and confirmed by core sampling. Weathered bedrock is expected to be between 4 to 8 feet below the existing ground surface.

Figure 3. Boring Layout

5.0 LABORATORY TESTING

APS GEO engineering personnel reviewed the recovered samples in our soil mechanics laboratory and visually classified each sample. After reviewing the recovered samples, test specimens were selected from select SPT, and the specimens were subjected to one or more of the laboratory tests listed in Table 2 to assist with classification of the soils according to the Unified Soil Classification System (USCS) methodology. Rock compressive strength tests were also completed on selected rock samples. The testing was completed in accordance with applicable AASHTO and ASTM test standards.

Table 2. Laboratory Test Names & Methods

Test Name	Test Method
Moisture Content	ASTM D2216
Atterberg Limits	ASTM D4318
Particle-Size Analysis (Sieve and Hydrometer)	ASTM D7928 (D422)
Unconfined Compression (Rock)	ASTM D7012

Final boring logs were prepared based on the field boring logs, the results of the visual review of the samples by engineering personnel in the laboratory, and the laboratory testing results. The final boring logs are included in Appendix A, and the test results are summarized in Appendix B.

6.0 SUBSURFACE CONDITIONS

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

- Residual Soils
- Weathered Bedrock
- Bedrock

6.1 Residual Materials

Residual soils were encountered in each boring. Both boring B-1 and B-2 consisted of eight (8) inches of organic-rich surficial soils. Boring B-1 encountered clayey sand (SC) material from eight (8) inches to 4.2 feet below ground surface. The clayey sand was described as light brown in color, dry and dense in relative density. Boring B-2 encountered lean clay (CL) material below surficial soils at eight (8) inches to approximately 8.2 feet below ground surface. The clay was described as light brown with gray and tan mottling in color, dry and very stiff to hard. Table 3 summarizes the classification testing performed.

Table 3. Summary of Classification Tests

Boring No.	Sample Depth (ft.)	Water Content (%)	Atterberg Limits		Fines (%)	USCS Classification
			LL	PI		
B-1	1.0 – 3.2	5.7	28	8	38.3	SC
B-2	3.3 – 4.8	15.5	28	9	74.3	CL

6.2 Weathered Bedrock

Weathered bedrock were encountered in each boring underlying the residual soils. Weathered bedrock material ranged from 4.2 feet to 8.9 feet and 8.2 feet to 8.7 feet below ground surface for Boring B-1 and B-2, respectively. The weathered bedrock was described as light brown, dry, weathered sandstone with clay and silt in each boring.

6.3 Bedrock

The bedrock at the site consists of sandstone of the Monongahela Formation. Sandstone and sandy shale were found, with top of competent bedrock (determined by auger regusal) approximately 9 feet in depth from the surface. The sandy shale was olive brown in color, very weak to weak, and highly fractured. The sandstone was light gray to brown in color, weak to moderately strong, intensely fractured to moderately fractured. Recovery (REC) and Rock Quality Designation (RQD) of the cored bedrock can be seen in Table 4. Unconfined compression testing was conducted on select rock samples to determine strength parameters of competent bedrock. These laboratory testing results are summarized in Table 4. Photographs of the rock core are included in Appendix A.

Table 4. Summary of Rock Core and Strength Testing

Boring No.	Run No.	Depth of Run (ft)	Elevation of Run (ft)	REC[a] (%)	RQD[b] (%)	Tested Sample Depth (ft)	Sample Rock Type	Uniaxial Compressive Strength	
								ksf	*psi*
B-1	RC-1	8.9-11.3	832.1-829.7	100	95	9.4-9.8	Sandstone	564.3	3919
B-1	RC-2	11.3-21.3	829.7-819.7	100	100	-	-	-	-
B-2	RC-1	8.7-18.7	830.3-820.3	99	75	8.9-9.3	Sandstone	689.3	4787
						11.1-11.5	Sandstone	1157.3	8037

[a] Rock core recovery (REC) is the length of core recovered divided by the length of the drill run, expressed as a percentage.
[b] Rock Quality Designation (RQD) is the percentage of recovered core pieces that are 4 inches (10 cm) or longer, measured over the total length of the core run.

6.4 Groundwater

Groundwater was not encountered prior to auger refusal during drilling operations. Due to the use of water during rock coring, post-drilling groundwater measurements are not considered reliable or applicable. 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 FOUNDATION DESIGN RECOMMENDATIONS

The results of the subsurface investigation indicated zones of weathered and fractured sandstone and shale, with variable cementation and grain sizes, and iron oxide staining noted throughout certain depths. Based on the results and loads provided, a spread footing bearing on weathered rock at 4 to 8 feet below existing ground surface is recommended for the proposed cell phone tower. The following recommendations should be considered for foundation design and construction.

7.1 Design Soil Strength Parameters

The design shear strength parameters listed in Table 5 were developed for the project based on general published ranges of similar material and our general experience. The cohesion and friction angle values for bedrock were derived from NAVFAC 7.02 guidance, in conjunction with consideration of several rock bearing capacity models.

Table 5. Summary of Design Strength Parameters

Material	Unit Weight	Strength Parameters	
	γ_{total} (pcf)	c' (psf)	Φ' (degrees)
Residual Clayey Sand to Sandy Clay	110	0	31
Weathered Sandstone	135	0	36
Competent Sandstone	149	20,000	45

7.2 Spread Footing on Bedrock

7.2.1 Bearing Capacity and Condition

Based on the subsurface exploration, it is anticipated that competent sandstone bedrock is present at approximately nine (9) feet below the existing ground surface. Spread footing foundations should extend at least below the local frost depth, which is approximately 33 inches for the project site in Lawrence County, Kentucky. Foundations should also be embedded to a depth sufficient to satisfy requirements for bearing capacity, sliding, and overturning resistance under applicable loading conditions.

Where competent sandstone is encountered at or near the anticipated foundation depth, spread footings may be designed using an allowable bearing pressure of 16,000 psf. If a footing is instead founded on weathered rock or residual soil, the designer should select an allowable bearing pressure corresponding to the material at the actual bearing elevation, as shown in Table 6 below, which utilize a Factor of Safety of 3. Design should ensure the removal of weak or fractured material and verification of bearing surface competence.

Table 6. Bearing Capacity Recommendations

Material	Recommended Allowable Bearing Pressure (psf)
Residual Clayey Sand to Sandy Clay	4,000
Weathered Sandstone	10,000
Competent Sandstone	16,000

Footing should be sized to adequately distribute loads while limiting bearing pressures and preventing excessive differential settlement. Lateral demands are expected to control the overall footing dimensions, particularly for resisting overturning and sliding forces due to wind, seismic activity, or other lateral loads. Design should follow AASHTO or IBC guidelines for checking load combinations, including dead, live, wind, and seismic loads. If lateral loads are significant, shear keys or embedded anchors may be required to enhance footing stability.

The allowable bearing capacity/factored bearing resistance recommendations indicated above are based on proper subgrade preparation and footing installation during construction. The contractor should compact leveling material directly below the footings in place prior to placement of steel and concrete. More detailed construction recommendations are discussed in Section 8.0.

We recommend that APS GEO personnel inspect the footing prior to pouring to check with consistency with our recommendations.

7.2.2 Sliding and Overturning Stability

Footings should be checked for stability against sliding and overturning, particularly under wind and seismic loads. A friction coefficient of 0.60 may be assumed for contact between the footing and sandstone bedrock when analyzing sliding resistance or a friction coefficient of 0.35 may be

assumed for contact between the footing and residual soils. If additional sliding resistance is required, footings may be keyed into the bedrock, or dowels may be embedded to provide additional anchorage. Uplift resistance should be provided by the footing mass, soil surcharge, or rock anchors where required. If rock anchors are used, they should be designed with a minimum allowable bond strength of 100 psi in sandstone, subject to field verification. The spacing and embedment depth of anchors should be determined based on site-specific loading conditions and confirmed through proof testing.

7.2.3 Settlement Potential

Given the bearing conditions on weathered or competent sandstone bedrock, both total and differential settlement are expected to be negligible. However, any soft, material encountered at the planned bearing surface should be removed and replaced with either lean concrete or a structural leveling pad to ensure uniform support. Differential settlement should be limited to no more than ½ inch across a footing.

7.3 Drilled Shafts

7.3.1 Axial Capacity / Axial Compressive Resistance

The bedrock at the site consists of sandstone and weathered shale. Load and Resistance Factor Design (LFRD) method was utilized to analyze the axial capacity of the drilled shafts. Due to the highly weathered and fractured bedrock above the competent sandstone (around 9 feet), the likelihood of having a clean tip excavation is low. Therefore, APS GEO recommends only accounting for side friction within the bedrock to develop the axial capacity required.

APS GEO derived 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 (2020), and our general experience. The recommended top and side resistance parameters for drilled shafts socketed into bedrock are presented in Table 7.

Table 7. Summary of Unit Resistances for Drilled Shafts

Rock Type	Unit Tip Resistance (ksf)		Unit Side Resistance[a,b] (ksf)	
	Ultimate	*Nominal*	*Ultimate*	*Nominal*
Sandstone (below 9 feet, 830-832 ft elevation)	N/A	N/A	22.3	8.9

[a] Minimum embedment of the shafts shall be three (3) times the diameter and any additional embedment to resist axial and lateral loading.
[b] Resistance Factors at the Strength Limit States (LRFD): Tip = 0.50, Side = 0.55, and Uplift =0.40.

Table 8. Drilled Shaft Capacity Table

Depth Interval (ft)	Unfactored Axial Capacity (kips)			Factored Axial Capacity Resistance Factor = 0.55 (kips)			Factored Uplift Capacity Resistance Factor = 0.40 (kips)		
Pile Diameter	*24 inch*	*30 inch*	*36 inch*	*24 inch*	*30 inch*	*36 inch*	*24 inch*	*30 inch*	*36 inch*
0 – 9 ft	Ignore Capacity			Ignore Capacity			Ignore Capacity		
10	70	109	158	39	60	87	28	44	63
12	210	328	473	116	180	260	84	131	189
14	350	547	788	193	301	433	140	219	315
16	490	766	1103	270	421	607	196	306	441
18	631	985	1419	347	542	780	252	394	568
20	771	1204	1734	424	662	954	308	482	694
22	911	1423	2049	501	783	1127	364	569	820
24	1051	1642	2364	578	903	1300	420	657	946
26	1191	1861	2680	655	1024	1474	476	744	1072
28	1331	2080	2995	732	1144	1647	532	832	1198
30	1471	2299	3310	809	1264	1821	588	920	1324

7.3.2 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 9 below developed for the subsurface conditions encountered.

Table 9. LPILE Design Parameters

Soil Type	Total Unit Weight (pcf)	Recommended p-y Curve model	Strength Parameters				
			c_u, *psf*	ε_{50} *(in/in)*	*k pci*	Φ, *deg*	Q_u *psi*
Residual Clayey Sand to Sandy Clay	110	Sand (Reese)	0	-	25	31	-
Weathered Sandstone	135	Sand (Reese)	0	-	160	36	-
Competent Sandstone	149	Strong Rock	-	-	-	-	3919

7.3.3 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, as defined in the Kentucky Building Code.

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 (if used), 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.

7.4 Seismic Considerations

The seismic design procedures outlined in the AASHTO LRFD Bridge Design Specifications (AASHTO, 2020) 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.

7.5 Lateral Earth Pressures

Existing residual soil is assumed to consist of clayey sand. Equivalent fluid pressures are provided based on the active, passive, and at-rest earth pressure coefficients for clayey sand with a total unit weight of 110 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 10.

Table 10. 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)	*(deg)*	*(psf/ft)*	*(psf/ft)*	*(psf/ft)*	*(psf/ft)*	*(psf/ft)*	*(psf/ft)*
Residual Clayey Sand to Sandy Clay	110	31	55	90	35	80	650	355

The lateral earth pressures do not include factors 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 Section 8.0. Also note that the movement of the wall should be considered when using the value of passive pressure, and a reduced value is typically used to limit deflections.

8.0 CONSTRUCTION RECOMMENDATIONS

APS GEO provides the following construction recommendations for the proposed foundation installation. These recommendations are based on standard geotechnical engineering practices and should be supplemented with project-specific design requirements as determined by the structural engineer.

8.1 Excavation and Rock Preparation

Footing excavations should extend into competent material capable of supporting the design bearing pressure, which may include unweathered bedrock or other suitable bearing strata. Any loose, fractured, or otherwise unsuitable material encountered at the planned bearing elevation should be removed prior to concrete placement. A geotechnical engineer should be present during excavation to evaluate bearing conditions and confirm that the exposed material meets the project's design criteria. If the initially encountered material is determined to be inadequate, excavation should continue until a competent bearing layer is exposed or an alternative solution is approved.

8.2 Concrete Placement

Concrete footings should be cast as soon as possible after bedrock excavation to prevent degradation of the bearing surface. If delays occur, the rock surface should be cleaned and

prepared before concrete placement. In cases where the excavation surface is irregular, a bonding agent or lean concrete may be applied to improve contact between the footing and the bedrock.

8.3 Water Control Measures

If groundwater seepage is encountered, appropriate drainage measures, such as sump pumps, should be used to keep the excavation dry. Standing water should not be present at the time of concrete placement to ensure proper bonding and prevent water-related defects in the concrete.

8.4 Site Preparation and Excavation

Before construction begins, all organic-rich surficial soils and deleterious materials should be completely removed from the construction area, including both cut and fill zones. Once clearing and stripping are complete, a geotechnical engineer should verify that all unsuitable materials have been removed. Any excavations resulting from clearing should be backfilled following the project's grading recommendations. To prevent erosion, all exposed earthwork areas and slopes should be protected in accordance with the project's civil engineering specifications and applicable federal, state, and local regulations.

8.5 Fill and Backfill Requirements

Backfill around foundations should be placed in 6- to 8-inch lifts and compacted to at least 95% of the maximum dry density per ASTM D1557. Crushed stone or well-graded granular material is recommended for backfill to ensure adequate drainage and stability. All fill materials must be approved by the engineer of record before placement. Acceptable structural fill materials generally include crushed stone and gravel classified as GW, GP, or GM under ASTM D2487, sands classified as SM, SW, or SP, and lean clay or silt classified as CL or ML. Materials classified as MH, CH, OL, OH, or peat are unsuitable for structural fill. Samples of proposed fill materials should be submitted for laboratory testing before placement to determine Proctor density, moisture content, and classification.

8.6 Earthwork Monitoring and Quality Control

All fill placement and proof rolling of the exposed subgrade should be monitored by the project geotechnical engineer to confirm subgrade stability and verify proper placement and compaction procedures. Representative samples of fill and backfill materials should be tested for compaction characteristics following ASTM D1557 or ASTM D698.

Compaction of the subgrade, fill, and backfill should be checked with a sufficient number of density tests to confirm compliance with project requirements. For general fill areas, at least one in-place density test should be conducted for every 5,000 square feet of fill placed. For utility trench backfill or backfill around structures, at least one in-place density test should be performed per lift for every 50 feet of wall length, with a minimum of one test per lift regardless of fill area size. These recommendations provide general construction guidance and should be supplemented with project-specific structural requirements.

9.0 LIMITATIONS

This report presents the geotechnical results and findings in response to a request by East Kentucky Network, LLC for Geo-Structural Services for a new Tower near Zelda, Lawrence 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 conclusions and recommendations presented herein are based on field reconnaissance, research, available literature our field and laboratory testing data, the results of engineering analysis, and our experience and judgement. 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 C.

This report has been prepared on behalf of, and for the exclusive use of, the client for specific application to the named project as described herein. If this report is provided to other parties, it should be provided in its entirety with all supplementary information. In addition, the client should make it clear that the information is provided for factual data only, and not as a warranty of subsurface conditions presented in this report.

10.0 REFERENCES

AASHTO LRFD Bridge Design Specifications (2020).

USGS (2023). United States Geologic Survey (USGS). 6/1/2023. U.S. Quaternary Faults, referenced online at: https://usgs.maps.arcgis.com/apps/webappviewer/index.htm

Sharps, Joseph A. (1967). Geologic Map of the Fallsburg Quadrangle, Kentucky-West Virginia, and the Prichard Quadrangle in Kentucky. U.S. Geological Survey.

FHWA (2014). LRFD Seismic Analysis and Design of Bridges Reference Manual, NHI Course No. 130093 and 130093A, Publication No. FHWA-NHI-15-004, Federal Highway Administration, October 2014.

Kentucky Geological Survey. (2018 last update). Eastern Kentucky. University of Kentucky. https://www.uky.edu/KGS/geoky/regioneastern.htm

APPENDIX A – BORING INFORMATION

Boring Logs

Rock Core Photos

1060 Elizabeth Street
Suite 7
Nicholasville, KY 40356

Borehole ID: B-1

Sheet 1 of 1

Project Name	Zelda, KY Tower Site	**Project Location**	Lawrence County, KY
Project Number	APS250060	**Client**	Appalachian Wireless
Date Start	06-09-2025	**Completed**	06-09-2025
Contractor	APS GEO	**Equipment**	B-53
Drilling Method	3.25" HSA/Rotary Cored	**Casing Dia.**	N/A
Hammer Type	Automatic	**Core Size**	N/A
Drilled By	R. Johnson	**Logged By**	R. Johnson
Checked By	P. Cooper		

Coordinates Lat.: 38.202285° Long.: -82.611453°
Horizontal Datum (NAD83 / Kentucky Single Zone)
Final Depth 21.3 ft
Elevation 841.0 ft
Weather Sunny
Temperature 82°F
Groundwater Levels:
▽ at time of drilling Dry
▼ at end of drilling N/A
▼ after drilling N/A

Graphic Log	Elevation (ft)	Material Description	Depth (ft)	Sample No.	Recovery % (RQD)	SPT per 6" [N-Value]	Pocket Pen (tsf)	% Moisture	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	% Fines	Uniaxial Comp. (ksi)
	840.3	TOPSOIL (8 inches)	0.7										
	839	Light brown, dry, dense, Clayey SAND (SC), some silt, weathered [RESIDIUM].	2	AU-1				6	28	20	8	38	
	837	836.8	4.2	SPT-1	100	18-19-42 [61]							
		Light brown, dry, WEATHERED SANDSTONE with clay and silt [BEDROCK]	4										
	835		6										
	833		8										
	832.1	Auger refusal at 8.9 ft.	8.9	SPT-2	100	32-50/2" [R]							
		Brown, medium to coarse grained, poorly cemented, weak to moderately fractured, SANDSTONE with iron oxide staining throughout (heavier staining @4-4.5 ft) [MONONGAHELA AND CONEMAUGH FORMATION]	10	RC-1	100 (95)								3.919
	831		12										
	829		14										
	827		16	RC-2	100 (100)								
	825		18										
	823		20										
	821												
	819.7		21.3										
		Terminated at 21.3 ft.	22										
	819												
	817		24										
	815		26										
	813		28										
	811		30										

Remarks:

1060 Elizabeth Street
Suite 7
Nicholasville, KY 40356

CORE BOX PHOTO REPORT

Borehole ID: B-1

Project Name	Zelda, KY Tower Site		**Project Location**	Lawrence County, KY	**Final Depth** 21.3 ft
Project Number	APS250060	**Client** Appalachian Wireless	**Coordinates Horizontal Datum**	Lat.: 38.202285° Long.: -82.611453° (NAD83 / Kentucky Single Zone)	**Elevation** 841.0 ft

Box # 1 - Run 1 to 2 - Depth 8.9 to 16.4 ft

Box # 2 - Run 2 - Depth 16.4 to 21.3 ft

1060 Elizabeth Street
Suite 7
Nicholasville, KY 40356

Borehole ID: B-2

Sheet 1 of 1

Project Name	Zelda, KY Tower Site	**Project Location**	Lawrence County, KY
Project Number	APS250060	**Client**	Appalachian Wireless
Date Start	06-09-2025	**Completed**	06-09-2025
Contractor	APS GEO	**Equipment**	B-53
Drilling Method	3.25" HSA/Rotary Cored	**Casing Dia.**	N/A
Hammer Type	Automatic	**Core Size**	N/A
Drilled By	R. Johnson	**Logged By**	R. Johnson
Checked By	P. Cooper		

Coordinates Lat.: 38.202425° Long.: -82.611459°
Horizontal Datum (NAD83 / Kentucky Single Zone)
Final Depth 18.7 ft
Elevation 839.0 ft
Weather Sunny
Temperature 82°F
Groundwater Levels:
▽ at time of drilling Dry
▼ at end of drilling N/A
▼ after drilling N/A

Graphic Log	Elevation (ft)	Material Description	Depth (ft)	Sample No.	Recovery % (RQD)	SPT per 6" [N-Value]	Pocket Pen. (tsf)	% Moisture	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	% Fines	Uniaxial Comp. (ksi)
	838.3	TOPSOIL (8 inches)	0.7										
		Light brown with gray and tan mottling, dry, very stiff to hard, Gravelly Lean CLAY with sand (CL), some silt [RESIDIUM].	2										
	837												
	835		4	SPT-1	100	4-6-11 [17]	>4.5	16	28	19	9	74	
	833		6										
	831		8										
	830.8		8.2										
	830.3	Light brown, dry, WEATHERED SANDSTONE with clay and silt [BEDROCK]	8.7	SPT-2	100	50/6" [R]		4					4.784
		Auger refusal at 8.7 ft.	10										
	828.8	Olive Brown, very thinly bedded, very weak to extremely weak, highly fractured, weathered, SANDY SHALE [MONONGAHELA AND CONEMAUGH FORMATION]	10.2										8.037
	827.3	Light Gray, medium to fine grained, well cemented, weak to medium strong, very thinly bedded, unfractured, weathered SANDSTONE [MONONGAHELA AND CONEMAUGH FROMATIONS]	11.7										
	827	Weathered seam likely present near 11.7 ft.	12										
		Brown, medium to coarse grained, poorly cemented, becoming more friable with depth, weak to very weak, very thinly bedded, intensely fractured, SANDSTONE with iron oxide staining throughout (heavier staining @4.5-5') [MONONGAHELA AND CONEMAUGH FROMATIONS]	14	RC-1	99 (75)								
	825		16										
	823		18										
	821												
	820.3		18.7										
		Terminated at 18.7 ft.	20										
	819												
	817		22										
	815		24										
	813		26										
	811		28										
	809		30										

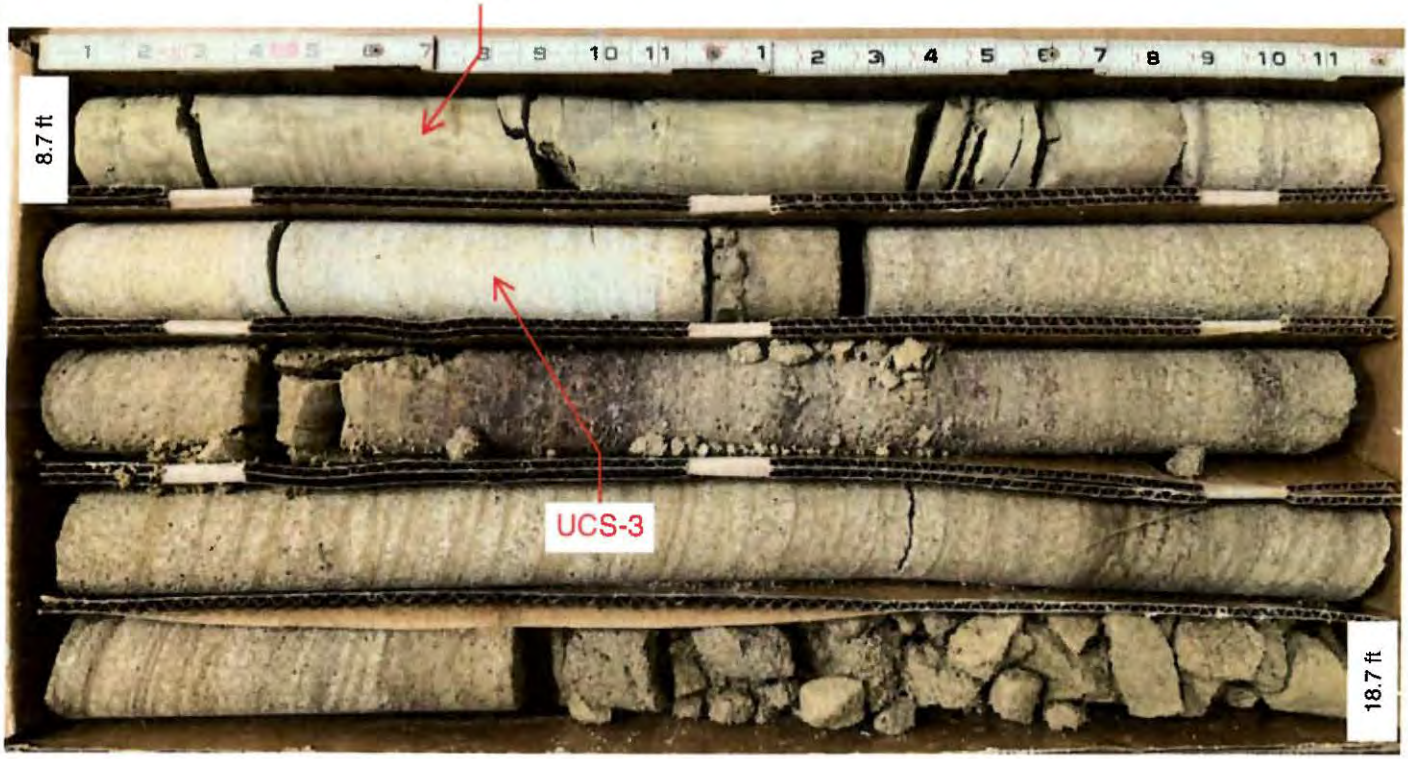
Remarks:

1060 Elizabeth Street
Suite 7
Nicholasville, KY 40356

CORE BOX PHOTO REPORT

Borehole ID: B-2

Project Name	Zelda, KY Tower Site	**Project Location**	Lawrence County, KY	**Final Depth**	18.7 ft
Project Number	APS250060	**Client**	Appalachian Wireless	**Coordinates Horizontal Datum**	Lat.: 38.202425° Long.: -82.611459° (NAD83 / Kentucky Single Zone)	**Elevation**	839.0 ft



Box # 1 - Run 1 - Depth 8.7 to 18.7 ft

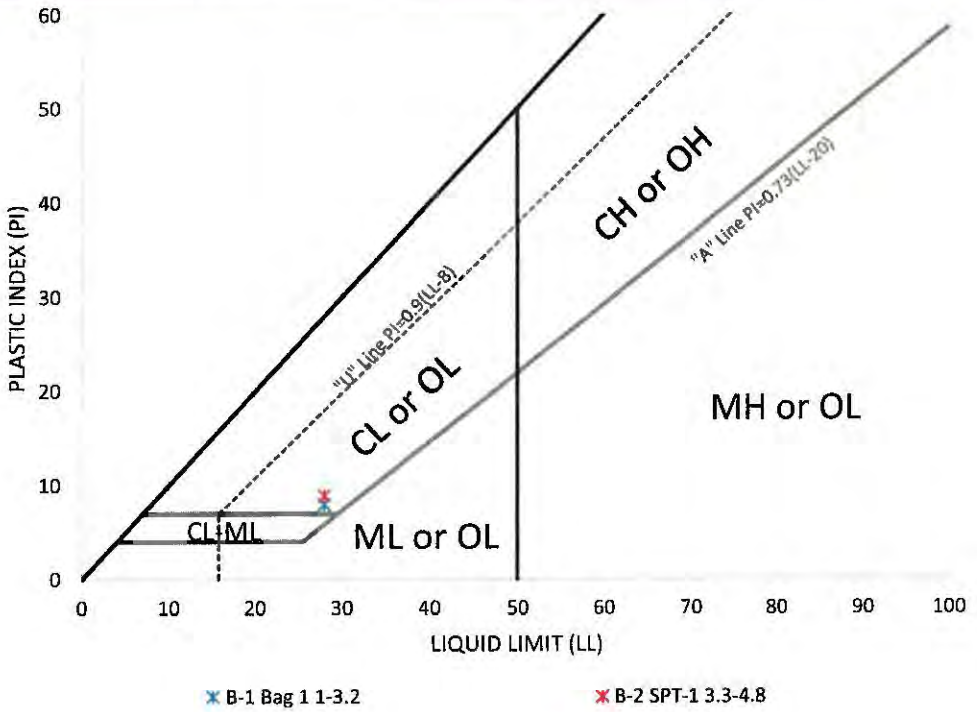
APPENDIX B – LABORATORY TESTING RESULTS

Laboratory Testing Summary

Client Name: East Kentucky Networkm LLC (Applachian Wireless) **Date:** 6/23/2025
Project Location: Zelda, KY Tower Site
Project Number: APS250060

Weight measurements in grams

BORING NUMBER	B-1	B-2	B-2			
SAMPLE NUMBER	Bag 1	SPT-1	SPT-2			
DEPTH, (FT.)	1-3.2	3.3-4.8	8.2-8.7			
WATER CONTENT, %	5.7	15.5	4.3			
LIQUID LIMIT, %	28	28				
PLASTIC LIMIT, %	20	19				
PLASTIC INDEX, %	8	9				
MATERIAL FINER THAN No. 200 SIEVE, %	38.3	74.3				
BORING NUMBER						
SAMPLE NUMBER						
DEPTH, (FT.)						
WATER CONTENT, %						
LIQUID LIMIT, %						
PLASTIC LIMIT, %						
PLASTIC INDEX, %						
MATERIAL FINER THAN No. 200 SIEVE, %						



Checked by:

Client Name: East Kentucky Networkm LLC (Applachian Wireless) **Date:** 6/23/2025
Project Location: Zelda, KY Tower Site
Project Number: APS250060

BORING NUMBER	B-1		B-2			
SAMPLE NUMBER	Bag 1		SPT-1			
DEPTH, (FT.)	1.0-3.2		3.3-4.8			
US (in)	*mm*	PERCENT PASSING, %	*mm*	PERCENT PASSING, %	*mm*	PERCENT PASSING, %
2.5	63		63		63	
2	50		50		50	
1.5	37.5	100.0	37.5		37.5	
1	25	95.7	25		25	
0.75	19	92.1	19		19	
0.5	12.5	87.9	12.5	100.0	12.5	
0.375	9.5	84.9	9.5	99.9	9.5	
0.25	6.3	81.7	6.3		6.3	
No. 4	4.75	75.0	4.75	99.7	4.75	
No. 8	2.36		2.36		2.36	
No. 10	2	65.7	2	99.5	2	
No. 16	1.18	60.0	1.18	99.1	1.18	
No. 20	0.85		0.85		0.85	
No. 40	0.425	53.9	0.425	95.3	0.425	
No. 60	0.25	51.4	0.25	88.0	0.25	
No. 80	0.18		0.18		0.18	
No. 100	0.15	48.5	0.15	81.4	0.15	
No. 140	0.106		0.106		0.106	
No. 200	0.075	38.3	0.075	74.3	0.075	
Hyd. #1	0.033	27.8	0.030	66.6		
Hyd. #2	0.024	24.5	0.021	62.6		
Hyd. #3	0.017	23.2	0.015	59.6		
Hyd. #4	0.012	19.9	0.011	54.5		
Hyd. #5	0.009	17.9	0.008	49.5		
Hyd. #6	0.006	16.5	0.006	42.4		
Hyd. #7	0.004	15.9	0.004	40.4		
Hyd. #8	0.003	13.9	0.003	36.4		
Hyd. #9	0.002	10.6	0.002	28.3		
Hyd. #10	0.001	9.3	0.001	26.3		

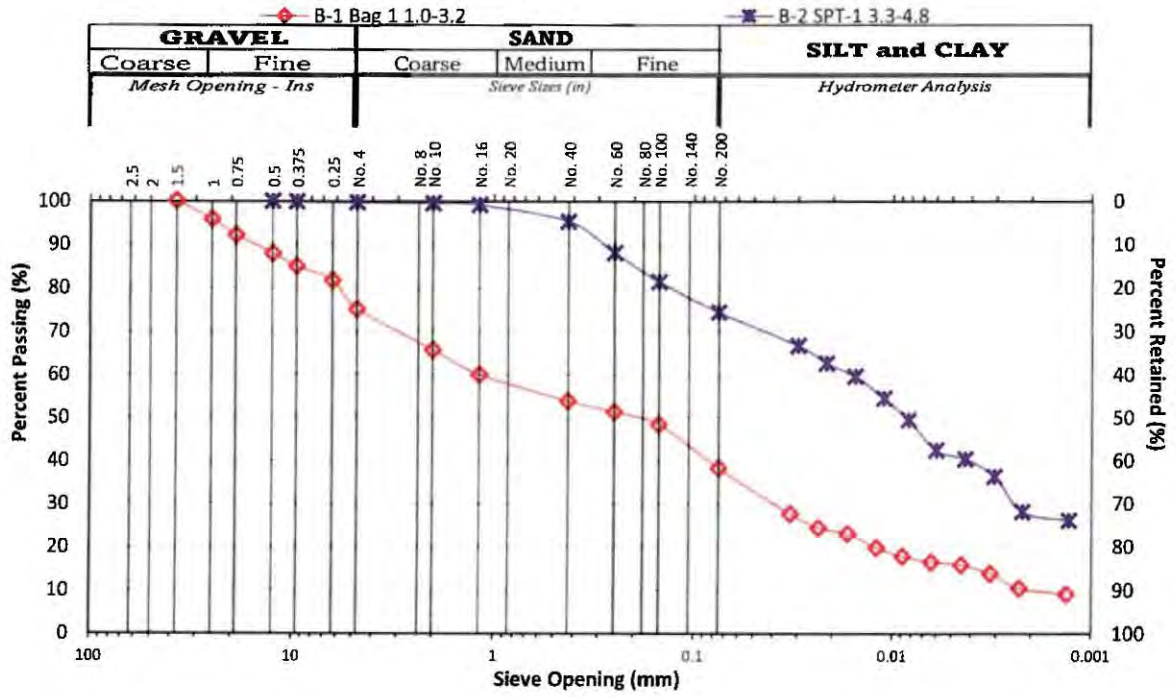
Checked by:

Gradation Summary

Client Name: East Kentucky Networkm LLC (Applachian Wireless) **Date:** 6/23/2025
Project Location: Zelda, KY Tower Site
Project Number: APS250060

BORING NUMBER	B-1	B-2	
SAMPLE NUMBER	Bag 1	SPT-1	
DEPTH, (FT.)	1.0-3.2	3.3-4.8	
% Gravel	25.0	0.3	
% Sand	36.7	25.4	
% Silt	28.1	46.5	
% Clay	10.2	27.8	
D60	1.18	0.02	
D30	0.04	0.002	
D10	0.002		
Liquid Limit	28	28	
Plastic Limit	20	19	
Plasticity Index	8	9	
USCS Classification	SC	CL	
AASHTO Classification	A-4(0)	A-4(5)	

**Based on visual classification*



Checked by:

Unconfined Compressive Strength Rock Core
ASTM D7012 Method C Summary

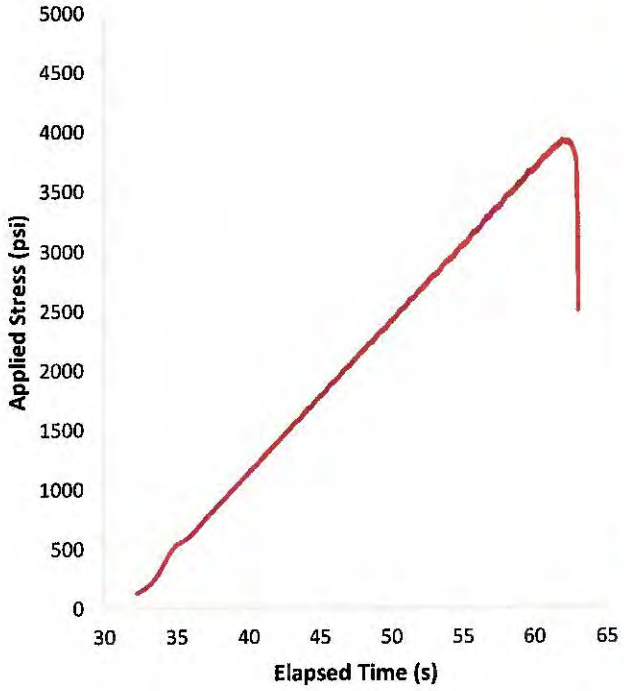
Project Location: Zelda, KY Tower Site
Project Number: APS250060

Date: 6/20/2025

BORING NUMBER	B-1
SAMPLE NUMBER	RC-1
DEPTH, (FT.)	8.9-11.3
SAMPLE DESCRIPTION	Brown sandstone

SAMPLE DATA	
DIAMETER (IN)	1.99
HEIGHT (IN)	4.20
HEIGHT TO DIAMETER RATIO	2.11
WET UNIT WEIGHT (PCF)	148.6
DRY UNIT WEIGHT (PCF)	147.5
MOISTURE CONTENT (%)	0.7

FAILURE DATA	
TIME TO FAILURE (S)	62.01
APPLIED LOAD AT FAILURE (LBF)	12189.9
STRESS AT FAILURE (PSI)	3919.2



FAILURE SHAPES

Checked by:

Unconfined Compressive Strength Rock Core
ASTM D7012 Method C Summary

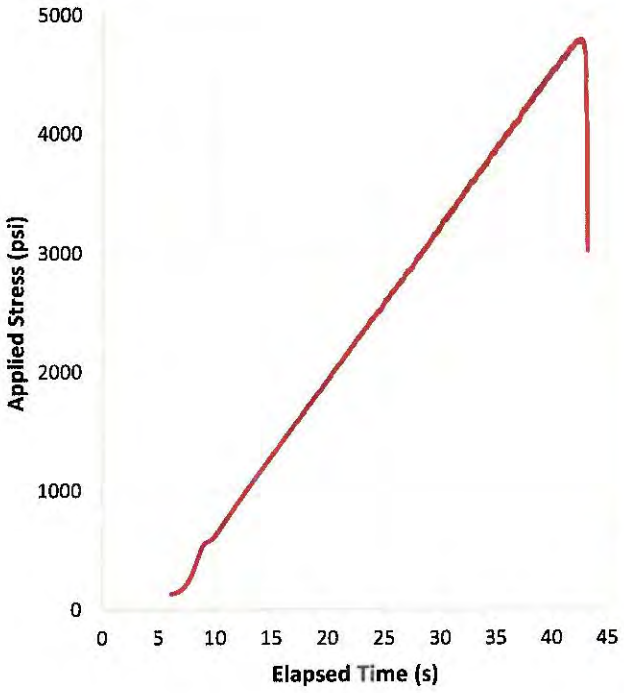
Project Location: Zelda, KY Tower Site
Project Number: APS250060

Date: 6/20/2025

BORING NUMBER	B-2
SAMPLE NUMBER	RC-1
DEPTH, (FT.)	8.7-18.7
SAMPLE DESCRIPTION	Brown sandstone

SAMPLE DATA	
DIAMETER (IN)	1.98
HEIGHT (IN)	4.52
HEIGHT TO DIAMETER RATIO	2.28
WET UNIT WEIGHT (PCF)	154.8
DRY UNIT WEIGHT (PCF)	153.8
MOISTURE CONTENT (%)	0.7 (Assumed)

FAILURE DATA	
TIME TO FAILURE (S)	42.60
APPLIED LOAD AT FAILURE (LBF)	14790.2
STRESS AT FAILURE (PSI)	4784.1



FAILURE SHAPES

Checked by:

Unconfined Compressive Strength Rock Core
ASTM D7012 Method C Summary

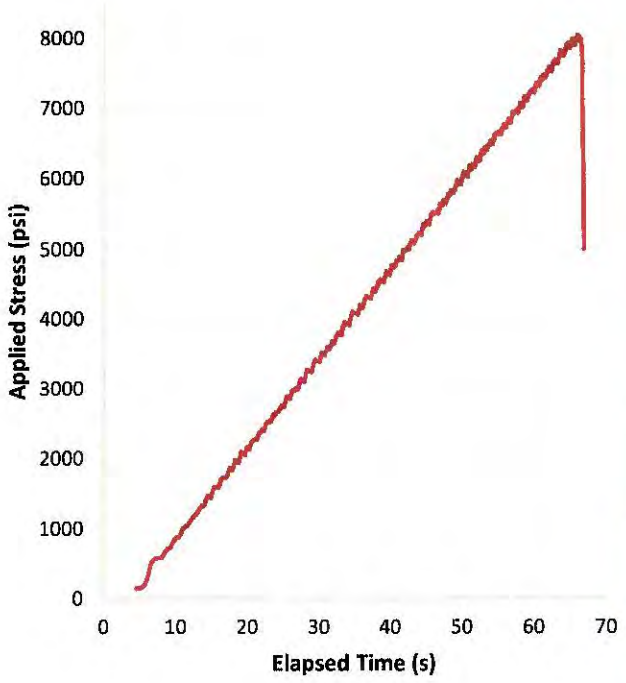
Project Location: Zelda, KY Tower Site
Project Number: APS250060

Date: 6/20/2025

BORING NUMBER	B-2
SAMPLE NUMBER	RC-1
DEPTH, (FT.)	8.7-18.7
SAMPLE DESCRIPTION	Gray sandstone

SAMPLE DATA	
DIAMETER (IN)	1.99
HEIGHT (IN)	4.13
HEIGHT TO DIAMETER RATIO	2.08
WET UNIT WEIGHT (PCF)	159.4
DRY UNIT WEIGHT (PCF)	158.3
MOISTURE CONTENT (%)	0.7 (Assumed)

FAILURE DATA	
TIME TO FAILURE (S)	65.91
APPLIED LOAD AT FAILURE (LBF)	24971.7
STRESS AT FAILURE (PSI)	8036.9



FAILURE SHAPES

Checked by:

APPENDIX C – IMPORTANT INFORMATION ABOUT THIS GEOTECHNICAL ENGINEERING 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

World Tower
COMPANY, INC.

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

190' MODEL WSST TOWER
FOR: APPALACHIAN WIRELESS
SITE: ZELDA
LAWRENCE COUNTY, KY

7-28-2025

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

GENERAL TOWER NOTES:

1. WELDED CONNECTIONS SHALL CONFORM TO THE LATEST REVISION OF THE AMERICAN WELDING SOCIETY AWS. D 1.1.
2. TOWER AND ALL FABRICATED ACCESSORIES ARE HOT-DIP GALVANIZED.
3. ALL BOLTS SHALL BE GALVANIZED ACCORDING TO THE STANDARD SPECIFICATION FOR ZINC COATING OF IRON AND STEEL HARDWARE ASTM A153.
4. LEG STEEL IS 50 KSI MIN YIELD SOLID ROUND OR PIPE AND BRACING STEEL IS 36 KSI MIN YIELD SOLID ROUND OR A529-50 STRUCTURAL ANGLE.
5. ALL STRUCTURAL BOLTS ARE ASTM A325.
6. TOWER SHOULD BE INSPECTED IN ACCORDANCE WITH TIA-222-H EVERY 5 YEARS.
7. TOWER INSPECTION SHOULD ONLY BE PERFORMED BY EXPERIENCED QUALIFIED PERSONNEL. FOR ASSISTANCE IN PROPER MAINTENANCE OF YOUR TOWER, CALL WORLD TOWER AT 270-247-3642.

WORLD TOWER
1213 COMPRESSOR DRIVE
MAYFIELD, KY 42066
P: 270-246-3642 F: 270-247-0909
WWW.WORLDTOWER.COM

SEAL

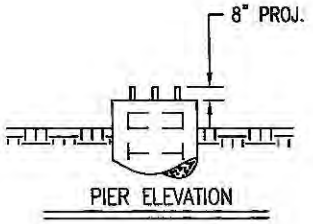
STATE OF KENTUCKY
KIRK R. HALL
25154
LICENSED PROFESSIONAL ENGINEER

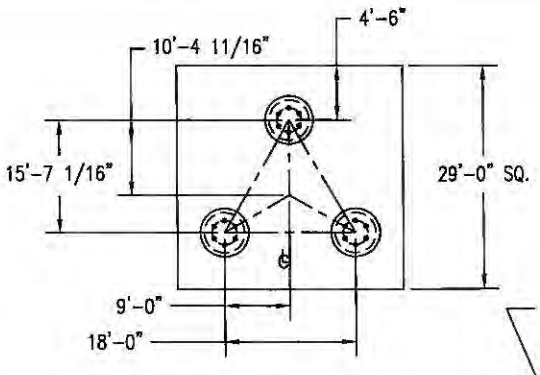
7-28-2026

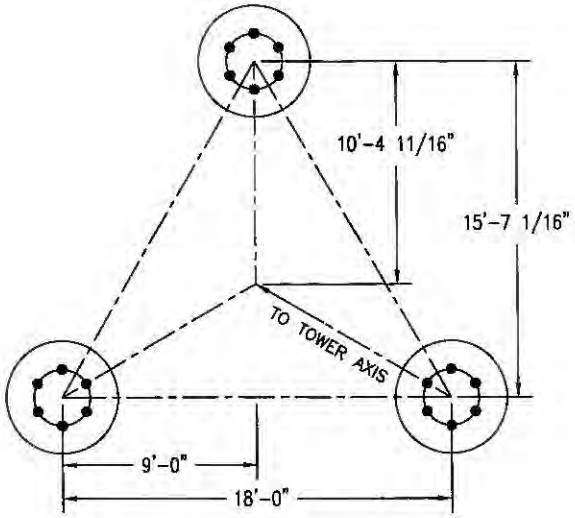
REV.	DESCRIPTION	BY	DATE

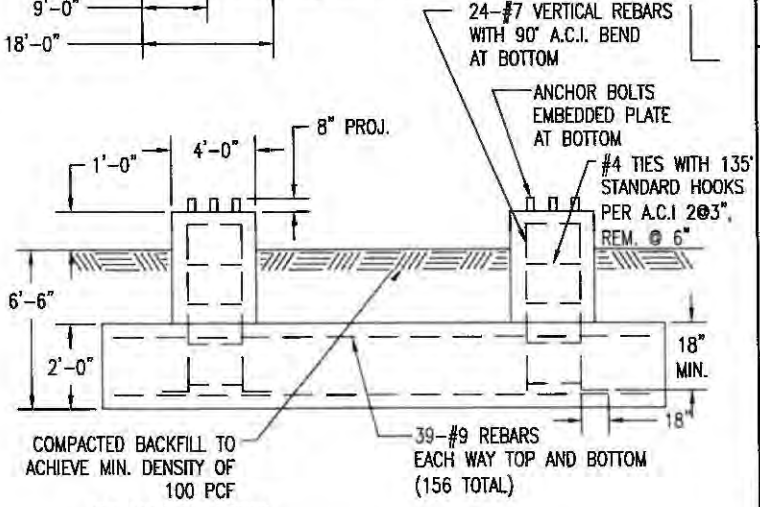
190' MODEL WSST TOWER
FOR: APPALACHIAN WIRELESS
SITE: ZELDA
LAWRENCE COUNTY, KY

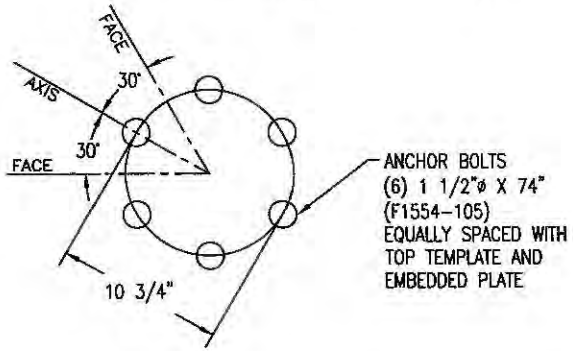
SCALE	NONE	DWN.	LKC	CKD.	DATE	7-28-25
FILE				DWG. NO.		Q250540N











FOUNDATION NOTES

1. CONCRETE TO HAVE 4000 PSI MINIMUM COMPRESSIVE STRENGTH AFTER 28 DAYS.
2. ALL REINFORCEMENT STEEL IS DEFORMED AND MEETS THE STRENGTH REQUIREMENTS OF ASTM A615 GRADE 60.
3. EMBEDDED STEEL TO HAVE 3" MINIMUM CONCRETE COVER.
4. FOUNDATION DESIGN IS BASED UPON CUSTOMER SUPPLIED SOILS DATA BY APS. PROJECT NUMBER APS250060 DATED JULY 25, 2025.

70.0 CU. YDS.
CONCRETE REQ'D.

BASE REACTIONS		
OTM:	7916.0	FT. KIPS
COMP.	532.0	KIPS
UPLIFT	479.0	KIPS
SHEAR (3 LEGS)	63.0	KIPS
WT. NO ICE	74.0	KIPS
WT. 1 1/2" ICE	246.0	KIPS

WORLD TOWER
1213 COMPRESSOR DRIVE
MAYFIELD, KY 42066
P: 270-246-3642 F: 270-247-0909
WWW.WORLDTOWER.COM

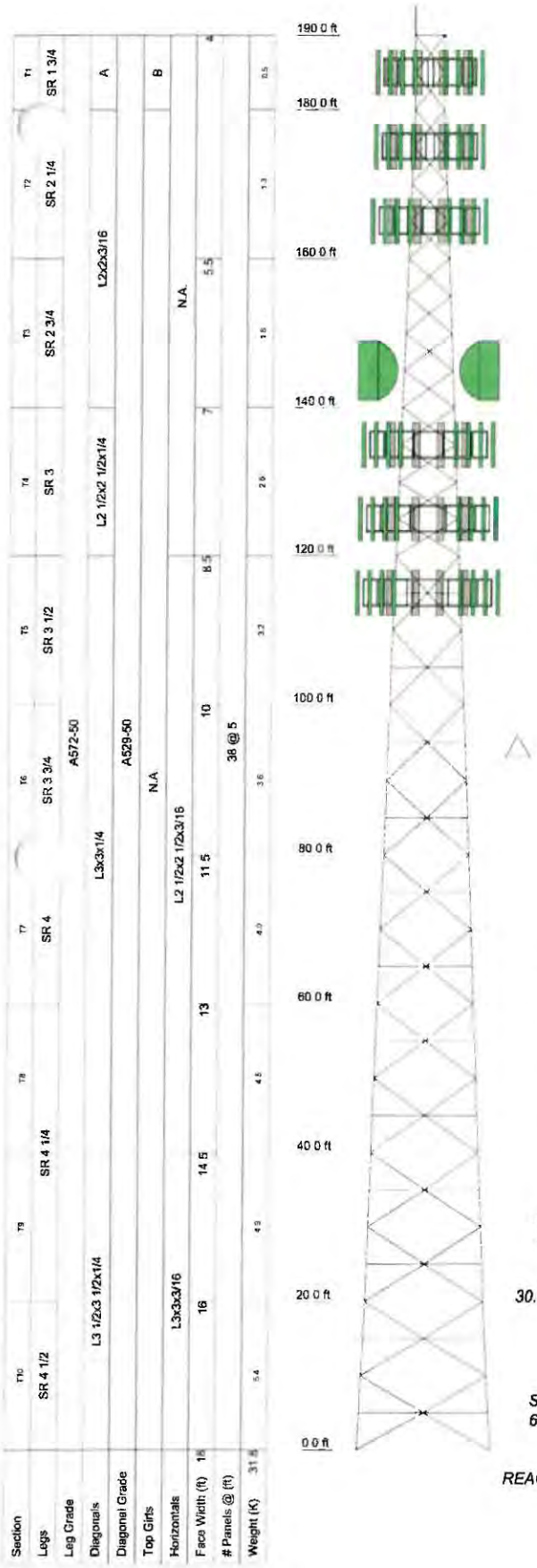
SEAL

7-28-2026

REV.	DESCRIPTION	BY	DATE

190' MODEL WSST TOWER
FOR: APPALACHIAN WIRELESS
SITE: ZELDA
LAWRENCE COUNTY, KY

SCALE	NONE	DWN.	LKC	CKD.	DATE	7-28-25
FILE				DWG. NO.		Q250540F



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L1 3/4x1 3/4x3/16	B	L1 3/4x1 3/4x1/8

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A529-50	50 ksi	65 ksi

TOWER DESIGN NOTES

1. Tower is located in Lawrence County, Kentucky.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 106.00 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 30.00 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.00 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0 ft
8. TOWER RATING: 97.6%

STATE OF KENTUCKY
KIRK R. HALL
25154
LICENSED PROFESSIONAL ENGINEER

7-28-2025

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 532 K
SHEAR: 40 K

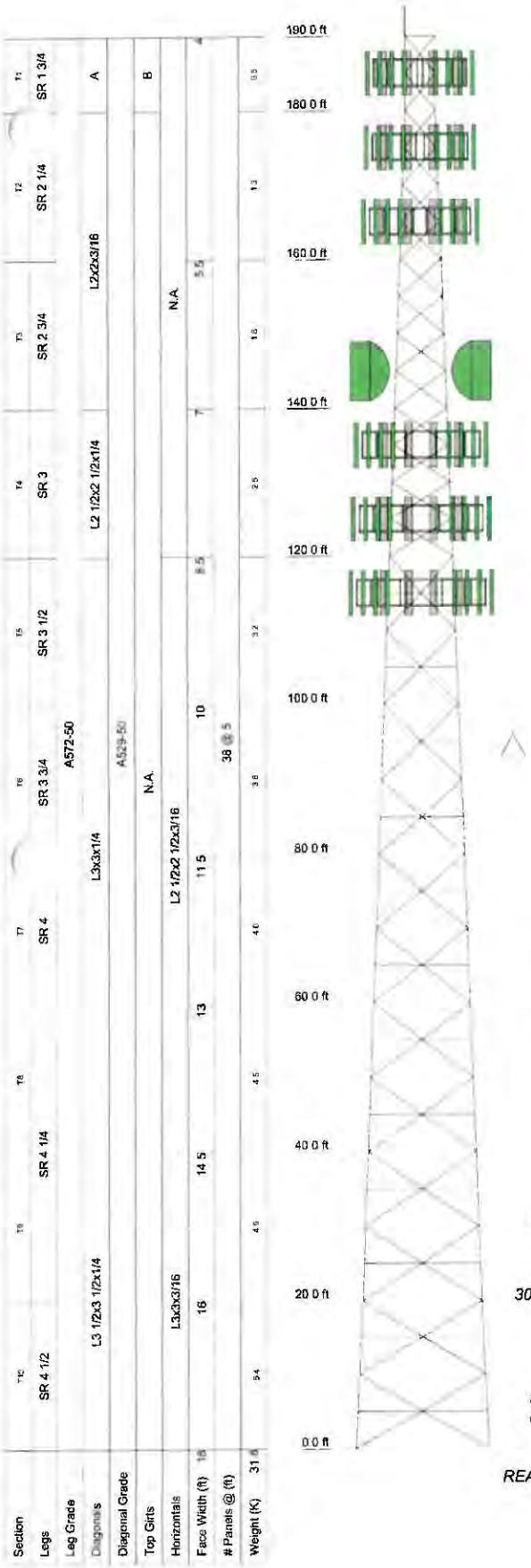
UPLIFT: -479 K
SHEAR: 37 K

AXIAL 246 K
SHEAR 7 K *MOMENT 936 kip-ft*
TORQUE 4 kip-ft
30.00 mph WIND - 1.50 in ICE

AXIAL 74 K
SHEAR 63 K *MOMENT 7916 kip-ft*
TORQUE 43 kip-ft
REACTIONS - 106.00 mph WIND

World Tower Company
1213 Compressor Drive
Mayfield, KY 42066
Phone: (270) 247-3642
FAX: www.worldtower.com

Job: *190' WSST Tower / WTC Q25-540*
Project: *Zelda*
Client: Appalachian Wireless Drawn by: kirk App'd.
Code: TIA-222-H Date: 07/07/25 Scale: NTS
Path: D:\2025 PE\Q25-540 zelda\Q25-540 en Dwg No E-1



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L1 3/4x1 3/4x3/16	B	L1 3/4x1 3/4x1/8

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A529-50	50 ksi	65 ksi

TOWER DESIGN NOTES

1. Tower is located in Lawrence County, Kentucky.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 106.00 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 30.00 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.00 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0 ft
8. TOWER RATING: 97.6%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 532 K
SHEAR: 40 K

UPLIFT: -479 K
SHEAR: 37 K

AXIAL
246 K

SHEAR
7 K

MOMENT
936 kip-ft

TORQUE 4 kip-ft
30.00 mph WIND - 1.50 in ICE

AXIAL
74 K

SHEAR
63 K

MOMENT
7916 kip-ft

TORQUE 43 kip-ft
REACTIONS - 106.00 mph WIND

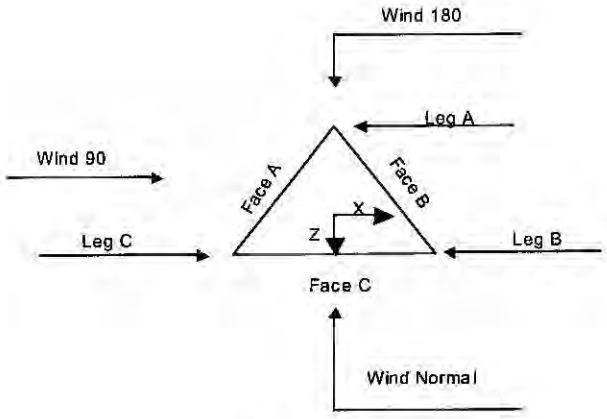
World Tower Company
1213 Compressor Drive
Mayfield, KY 42066
Phone: (270) 247-3642
FAX: www.worldtower.com

Job	*190' WSST Tower / WTC Q25-540*
Project:	*Zelda*
Client:	Appalachian Wireless
Drawn by:	kirk
App'd	
Code	TIA-222-H
Date	07/07/25
Scale	NTS
Path:	D:\2025 PE\Q25-540 zelda\Q25-540.eri
Dwg No	E-1

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 190.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 4.00 ft at the top and 18.00 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in Lawrence County, Kentucky.
Tower base elevation above sea level: 840 ft.
Basic wind speed of 106.00 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0 ft.
Nominal ice thickness of 1.50 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 30.00 mph is used in combination with ice.
Temperature drop of 30 °F.
Deflections calculated using a wind speed of 60.00 mph.
Non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	190.00-180.00			4.00	1	10.00
T2	180.00-160.00			4.00	1	20.00
T3	160.00-140.00			5.50	1	20.00
T4	140.00-120.00			7.00	1	20.00
T5	120.00-100.00			8.50	1	20.00
T6	100.00-80.00			10.00	1	20.00
T7	80.00-60.00			11.50	1	20.00
T8	60.00-40.00			13.00	1	20.00
T9	40.00-20.00			14.50	1	20.00
T10	20.00-0.00			16.00	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	190.00-180.00	5.00	X Brace	No	No	0.00	0.00
T2	180.00-160.00	5.00	X Brace	No	No	0.00	0.00
T3	160.00-140.00	5.00	X Brace	No	No	0.00	0.00
T4	140.00-120.00	5.00	X Brace	No	No	0.00	0.00
T5	120.00-100.00	5.00	Double K	No	Yes	0.00	0.00
T6	100.00-80.00	5.00	Double K	No	Yes	0.00	0.00
T7	80.00-60.00	5.00	Double K	No	Yes	0.00	0.00
T8	60.00-40.00	5.00	Double K	No	Yes	0.00	0.00
T9	40.00-20.00	5.00	Double K	No	Yes	0.00	0.00
T10	20.00-0.00	5.00	Double K	No	Yes	0.00	0.00

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 190.00-180.00	Solid Round	1 3/4	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A529-50 (50 ksi)
T2 180.00-160.00	Solid Round	2 1/4	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A529-50 (50 ksi)
T3 160.00-140.00	Solid Round	2 3/4	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A529-50 (50 ksi)
T4 140.00-120.00	Solid Round	3	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A529-50 (50 ksi)
T5 120.00-100.00	Solid Round	3 1/2	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A529-50 (50 ksi)
T6 100.00-80.00	Solid Round	3 3/4	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A529-50 (50 ksi)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T7 80.00-60.00	Solid Round	4	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A529-50 (50 ksi)
T8 60.00-40.00	Solid Round	4 1/4	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A529-50 (50 ksi)
T9 40.00-20.00	Solid Round	4 1/4	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A529-50 (50 ksi)
T10 20.00-0.00	Solid Round	4 1/2	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A529-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 190.00-180.00	Equal Angle	L1 3/4x1 3/4x1/8	A36 (36 ksi)	Equal Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T5 120.00-100.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A529-50 (50 ksi)
T6 100.00-80.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A529-50 (50 ksi)
T7 80.00-60.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A529-50 (50 ksi)
T8 60.00-40.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A529-50 (50 ksi)
T9 40.00-20.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L3x3x3/16	A529-50 (50 ksi)
T10 20.00-0.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L3x3x3/16	A529-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 190.00-180.00	0.25	0.38	A36 (36 ksi)	1	1	1.08	0.00	0.00	36.00
T2 180.00-160.00	0.25	0.38	A36 (36 ksi)	1	1	1.08	0.00	0.00	36.00

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T3 160.00-140.00	0.25	0.38	A36 (36 ksi)	1	1	1.08	0.00	0.00	36.00
T4 140.00-120.00	0.25	0.38	A36 (36 ksi)	1	1	1.08	0.00	0.00	36.00
T5 120.00-100.00	0.38	0.38	A36 (36 ksi)	1	1	1.08	0.00	0.00	36.00
T6 100.00-80.00	0.38	0.38	A36 (36 ksi)	1	1	1.08	0.00	0.00	36.00
T7 80.00-60.00	0.50	0.38	A36 (36 ksi)	1	1	1.08	0.00	0.00	36.00
T8 60.00-40.00	0.50	0.38	A36 (36 ksi)	1	1	1.08	0.00	0.00	36.00
T9 40.00-20.00	0.50	0.38	A36 (36 ksi)	1	1	1.08	0.00	0.00	36.00
T10 20.00-0.00	0.50	0.38	A36 (36 ksi)	1	1	1.08	0.00	0.00	36.00

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Single Diags X	K Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T1 190.00-180.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T2 180.00-160.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T3 160.00-140.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T4 140.00-120.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T5 120.00-100.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T6 100.00-80.00	Yes	Yes	1	1	1	1	1	1	1	1	0.66666	1	1	1	1
T7 80.00-60.00	Yes	Yes	1	1	1	1	1	1	1	1	0.66666	1	1	1	1
T8 60.00-40.00	Yes	Yes	1	1	1	1	1	1	1	1	0.66666	1	1	1	1
T9 40.00-20.00	Yes	Yes	1	1	1	1	1	1	1	1	0.66666	1	1	1	1
T10 20.00-0.00	Yes	Yes	1	1	1	1	1	1	1	1	0.66666	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 190.00-180.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T2 180.00-160.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T3 160.00-140.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T4 140.00-120.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T5 120.00-100.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T6 100.00-80.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T7 80.00-60.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T8 60.00-40.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T9 40.00-20.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T10 20.00-0.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 190.00-180.00	0.00	0.75 (1)	0.00	0.75 (1)	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75 (1)	0.00	0.75 (1)
	0.00	0.75 (2)	0.00	0.75 (2)							0.00	0.75 (2)	0.00	0.75 (2)
	0.00	0.75 (3)	0.00	0.75 (3)							0.00	0.75 (3)	0.00	0.75 (3)
	0.00	0.75 (4)	0.00	0.75 (4)							0.00	0.75 (4)	0.00	0.75 (4)
T2 180.00-160.00	0.00	0.75 (1)	0.00	0.75 (1)	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75 (1)	0.00	0.75 (1)
	0.00	0.75 (2)	0.00	0.75 (2)							0.00	0.75 (2)	0.00	0.75 (2)
	0.00	0.75 (3)	0.00	0.75 (3)							0.00	0.75 (3)	0.00	0.75 (3)
	0.00	0.75 (4)	0.00	0.75 (4)							0.00	0.75 (4)	0.00	0.75 (4)
T3 160.00-140.00	0.00	0.75 (1)	0.00	0.75 (1)	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75 (1)	0.00	0.75 (1)
	0.00	0.75 (2)	0.00	0.75 (2)							0.00	0.75 (2)	0.00	0.75 (2)
	0.00	0.75 (3)	0.00	0.75 (3)							0.00	0.75 (3)	0.00	0.75 (3)
	0.00	0.75 (4)	0.00	0.75 (4)							0.00	0.75 (4)	0.00	0.75 (4)
T4 140.00-120.00	0.00	0.75 (1)	0.00	0.75 (1)	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75 (1)	0.00	0.75 (1)
	0.00	0.75 (2)	0.00	0.75 (2)							0.00	0.75 (2)	0.00	0.75 (2)
	0.00	0.75 (3)	0.00	0.75 (3)							0.00	0.75 (3)	0.00	0.75 (3)

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
	0.00	0.75 (4)	0.00	0.75 (4)							0.00	0.75 (4)	0.00	0.75 (4)
T5 120.00-100.00	0.00	0.75 (1)	0.00	0.75 (1)	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75 (1)	0.00	0.75 (1)
	0.00	0.75 (2)	0.00	0.75 (2)							0.00	0.75 (2)	0.00	0.75 (2)
	0.00	0.75 (3)	0.00	0.75 (3)							0.00	0.75 (3)	0.00	0.75 (3)
	0.00	0.75 (4)	0.00	0.75 (4)							0.00	0.75 (4)	0.00	0.75 (4)
T6 100.00-80.00	0.00	0.75 (1)	0.00	0.75 (1)	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75 (1)	0.00	0.75 (1)
	0.00	0.75 (2)	0.00	0.75 (2)							0.00	0.75 (2)	0.00	0.75 (2)
	0.00	0.75 (3)	0.00	0.75 (3)							0.00	0.75 (3)	0.00	0.75 (3)
	0.00	0.75 (4)	0.00	0.75 (4)							0.00	0.75 (4)	0.00	0.75 (4)
T7 80.00-60.00	0.00	0.75 (1)	0.00	0.75 (1)	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75 (1)	0.00	0.75 (1)
	0.00	0.75 (2)	0.00	0.75 (2)							0.00	0.75 (2)	0.00	0.75 (2)
	0.00	0.75 (3)	0.00	0.75 (3)							0.00	0.75 (3)	0.00	0.75 (3)
	0.00	0.75 (4)	0.00	0.75 (4)							0.00	0.75 (4)	0.00	0.75 (4)
T8 60.00-40.00	0.00	0.75 (1)	0.00	0.75 (1)	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75 (1)	0.00	0.75 (1)
	0.00	0.75 (2)	0.00	0.75 (2)							0.00	0.75 (2)	0.00	0.75 (2)
	0.00	0.75 (3)	0.00	0.75 (3)							0.00	0.75 (3)	0.00	0.75 (3)
	0.00	0.75 (4)	0.00	0.75 (4)							0.00	0.75 (4)	0.00	0.75 (4)
T9 40.00-20.00	0.00	0.75 (1)	0.00	0.75 (1)	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75 (1)	0.00	0.75 (1)
	0.00	0.75 (2)	0.00	0.75 (2)							0.00	0.75 (2)	0.00	0.75 (2)
	0.00	0.75 (3)	0.00	0.75 (3)							0.00	0.75 (3)	0.00	0.75 (3)
	0.00	0.75 (4)	0.00	0.75 (4)							0.00	0.75 (4)	0.00	0.75 (4)
T10 20.00-0.00	0.00	0.75 (1)	0.00	0.75 (1)	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75 (1)	0.00	0.75 (1)
	0.00	0.75 (2)	0.00	0.75 (2)							0.00	0.75 (2)	0.00	0.75 (2)
	0.00	0.75 (3)	0.00	0.75 (3)							0.00	0.75 (3)	0.00	0.75 (3)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg Bolt Size in	Leg No.	Diagonal Bolt Size in	Diagonal No.	Top Girt Bolt Size in	Top Girt No.	Bottom Girt Bolt Size in	Bottom Girt No.	Mid Girt Bolt Size in	Mid Girt No.	Long Horizontal Bolt Size in	Long Horizontal No.	Short Horizontal Bolt Size in	Short Horizontal No.
T1 190.00-180.00	Flange	0.75 A325X	4	0.50 A325X	1	0.62 A325X	1	0.00 A325X	0	0.62 A325N	0	0.00 A325X	0	0.00 A325X	0
T2 180.00-160.00	Flange	1.00 A325X	4	0.62 A325X	1	0.00 A325X	0	0.00 A325X	0	0.62 A325N	0	0.00 A325X	0	0.00 A325X	0
T3 160.00-140.00	Flange	1.00 A325X	4	0.62 A325X	1	0.00 A325X	0	0.00 A325X	0	0.62 A325N	0	0.00 A325X	0	0.00 A325X	0
T4 140.00-120.00	Flange	1.00 A325X	4	0.62 A325X	1	0.00 A325X	0	0.00 A325X	0	0.62 A325N	0	0.00 A325X	0	0.00 A325X	0
T5 120.00-100.00	Flange	1.00 A325X	6	0.75 A325X	1	0.00 A325X	0	0.00 A325X	0	0.62 A325N	0	0.75 A325X	1	0.00 A325X	0
T6 100.00-80.00	Flange	1.25 A325X >1"	6	0.75 A325X	1	0.00 A325X	0	0.00 A325X	0	0.62 A325N	0	0.75 A325X	1	0.00 A325X	0
T7 80.00-60.00	Flange	1.25 A325X >1"	6	0.75 A325X	1	0.00 A325X	0	0.00 A325X	0	0.62 A325N	0	0.75 A325X	1	0.00 A325X	0
T8 60.00-40.00	Flange	1.25 A325X >1"	6	0.75 A325X	1	0.00 A325X	0	0.00 A325X	0	0.62 A325N	0	0.75 A325X	1	0.00 A325X	0
T9 40.00-20.00	Flange	1.25 A325X >1"	6	0.75 A325X	1	0.00 A325X	0	0.00 A325X	0	0.62 A325N	0	0.75 A325X	1	0.00 A325X	0
T10 20.00-0.00	Flange	1.50 F1554-105	6	0.75 A325X	1	0.00 A325X	0	0.00 A325X	0	0.62 A325N	0	0.75 A325X	1	0.00 A325X	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8	A	No	No	Ar (CaAa)	5.00 - 190.00	0.00	0.1	1	1	0.38	0.38		0.22
W/G LADDER RAIL*	B	No	No	Af (CaAa)	5.00 - 190.00	0.00	0	2	2	36.00	2.50		2.50
W/G LADDER RAIL* *****	C	No	No	Af (CaAa)	5.00 - 135.00	0.00	0	2	2	36.00	2.50		2.50
1 1/4	B	No	No	Ar (CaAa)	175.00 - 185.00	0.00	0	4	2	0.50	1.55		0.66
1 1/4	B	No	No	Ar (CaAa)	165.00 - 175.00	0.00	0	8	4	0.50	1.55		0.66
1 1/4	B	No	No	Ar (CaAa)	5.00 - 165.00	0.00	0	12	6	0.50	1.55		0.66

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 1/4	C	No	No	Ar (CaAa)	125.00 - 135.00	0.00	0	4	2	0.50	1.55		0.66
1 1/4	C	No	No	Ar (CaAa)	115.00 - 125.00	0.00	0	8	4	0.50	1.55		0.66
1 1/4	C	No	No	Ar (CaAa)	5.00 - 115.00	0.00	0	12	6	0.50	1.55		0.66
EW63	C	No	No	Ar (CaAa)	5.00 - 145.00	0.00	0	2	1	0.50	1.57		0.51

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	190.00-180.00	A	0.000	0.000	0.375	0.000	0.00
		B	0.000	0.000	11.433	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.00
T2	180.00-160.00	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	41.467	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T3	160.00-140.00	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	53.867	0.000	0.26
		C	0.000	0.000	1.574	0.000	0.01
T4	140.00-120.00	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	53.867	0.000	0.26
		C	0.000	0.000	31.197	0.000	0.15
T5	120.00-100.00	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	53.867	0.000	0.26
		C	0.000	0.000	57.064	0.000	0.27
T6	100.00-80.00	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	53.867	0.000	0.26
		C	0.000	0.000	60.164	0.000	0.28
T7	80.00-60.00	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	53.867	0.000	0.26
		C	0.000	0.000	60.164	0.000	0.28
T8	60.00-40.00	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	53.867	0.000	0.26
		C	0.000	0.000	60.164	0.000	0.28
T9	40.00-20.00	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	53.867	0.000	0.26
		C	0.000	0.000	60.164	0.000	0.28
T10	20.00-0.00	A	0.000	0.000	0.562	0.000	0.00
		B	0.000	0.000	40.400	0.000	0.19
		C	0.000	0.000	45.123	0.000	0.21

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	190.00-180.00	A	1.782	0.000	0.000	3.939	0.000	0.05
		B		0.000	0.000	21.795	0.000	0.34
		C		0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
T2	180.00-160.00	A	1.767	0.000	0.000	7.819	0.000	0.10
		B		0.000	0.000	64.316	0.000	1.07
		C		0.000	0.000	0.000	0.000	0.00
T3	160.00-140.00	A	1.745	0.000	0.000	7.731	0.000	0.09
		B		0.000	0.000	72.764	0.000	1.28
		C		0.000	0.000	5.471	0.000	0.08
T4	140.00-120.00	A	1.720	0.000	0.000	7.632	0.000	0.09
		B		0.000	0.000	72.401	0.000	1.26
		C		0.000	0.000	65.216	0.000	0.97
T5	120.00-100.00	A	1.692	0.000	0.000	7.518	0.000	0.09
		B		0.000	0.000	71.984	0.000	1.25
		C		0.000	0.000	91.238	0.000	1.48
T6	100.00-80.00	A	1.658	0.000	0.000	7.383	0.000	0.09
		B		0.000	0.000	71.493	0.000	1.22
		C		0.000	0.000	92.769	0.000	1.51
T7	80.00-60.00	A	1.617	0.000	0.000	7.219	0.000	0.08
		B		0.000	0.000	70.891	0.000	1.20
		C		0.000	0.000	91.881	0.000	1.47
T8	60.00-40.00	A	1.564	0.000	0.000	7.005	0.000	0.08
		B		0.000	0.000	70.109	0.000	1.17
		C		0.000	0.000	90.726	0.000	1.43
T9	40.00-20.00	A	1.486	0.000	0.000	6.693	0.000	0.07
		B		0.000	0.000	68.971	0.000	1.12
		C		0.000	0.000	89.047	0.000	1.36
T10	20.00-0.00	A	1.331	0.000	0.000	4.556	0.000	0.04
		B		0.000	0.000	50.037	0.000	0.77
		C		0.000	0.000	64.289	0.000	0.93

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	190.00-180.00	3.48	-2.36	2.55	-2.32
T2	180.00-160.00	4.76	-3.51	4.08	-3.55
T3	160.00-140.00	5.70	-4.10	5.01	-3.89
T4	140.00-120.00	4.82	0.89	4.40	1.82
T5	120.00-100.00	4.60	2.09	4.48	3.22
T6	100.00-80.00	4.95	2.28	4.87	3.53
T7	80.00-60.00	5.30	2.45	5.26	3.79
T8	60.00-40.00	5.63	2.60	5.60	4.03
T9	40.00-20.00	5.56	2.59	5.70	4.10
T10	20.00-0.00	4.66	2.17	4.84	3.44

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	Safety Line 3/8	180.00 - 190.00	0.6000	0.5039
T1	2	W/G LADDER RAIL*	180.00 -	0.6000	0.5039

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	5	1 1/4	190.00 - 180.00	0.6000	0.5039
T2	1	Safety Line 3/8	185.00 - 160.00	0.6000	0.5766
T2	2	W/G LADDER RAIL*	180.00 - 160.00	0.6000	0.5766
T2	5	1 1/4	180.00 - 175.00	0.6000	0.5766
T2	6	1 1/4	180.00 - 165.00	0.6000	0.5766
T2	7	1 1/4	175.00 - 160.00	0.6000	0.5766
T3	1	Safety Line 3/8	165.00 - 140.00	0.6000	0.6000
T3	2	W/G LADDER RAIL*	160.00 - 140.00	0.6000	0.6000
T3	7	1 1/4	160.00 - 140.00	0.6000	0.6000
T3	11	EW63	160.00 - 140.00	0.6000	0.6000
T4	1	Safety Line 3/8	145.00 - 120.00	0.6000	0.6000
T4	2	W/G LADDER RAIL*	140.00 - 120.00	0.6000	0.6000
T4	3	W/G LADDER RAIL*	140.00 - 120.00	0.6000	0.6000
T4	7	1 1/4	135.00 - 120.00	0.6000	0.6000
T4	8	1 1/4	140.00 - 125.00	0.6000	0.6000
T4	9	1 1/4	135.00 - 120.00	0.6000	0.6000
T4	11	EW63	125.00 - 120.00	0.6000	0.6000
T5	1	Safety Line 3/8	140.00 - 100.00	0.6000	0.6000
T5	2	W/G LADDER RAIL*	120.00 - 100.00	0.6000	0.6000
T5	3	W/G LADDER RAIL*	120.00 - 100.00	0.6000	0.6000
T5	7	1 1/4	120.00 - 100.00	0.6000	0.6000
T5	9	1 1/4	120.00 - 115.00	0.6000	0.6000
T5	10	1 1/4	120.00 - 100.00	0.6000	0.6000
T5	11	EW63	115.00 - 100.00	0.6000	0.6000
T6	1	Safety Line 3/8	120.00 - 80.00	0.6000	0.6000
T6	2	W/G LADDER RAIL*	100.00 - 80.00	0.6000	0.6000
T6	3	W/G LADDER RAIL*	100.00 - 80.00	0.6000	0.6000
T6	7	1 1/4	100.00 - 80.00	0.6000	0.6000
T6	10	1 1/4	100.00 - 80.00	0.6000	0.6000
T6	11	EW63	100.00 - 80.00	0.6000	0.6000
T7	1	Safety Line 3/8	80.00 - 60.00	0.6000	0.6000
T7	2	W/G LADDER RAIL*	80.00 - 60.00	0.6000	0.6000
T7	3	W/G LADDER RAIL*	80.00 - 60.00	0.6000	0.6000
T7	7	1 1/4	80.00 - 60.00	0.6000	0.6000
T7	10	1 1/4	80.00 - 60.00	0.6000	0.6000
T7	11	EW63	80.00 - 60.00	0.6000	0.6000
T8	1	Safety Line 3/8	60.00 - 40.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T8	2	W/G LADDER RAIL*	40.00 - 60.00	0.6000	0.6000
T8	3	W/G LADDER RAIL*	40.00 - 60.00	0.6000	0.6000
T8	7	1 1/4	40.00 - 60.00	0.6000	0.6000
T8	10	1 1/4	40.00 - 60.00	0.6000	0.6000
T8	11	EW63	40.00 - 60.00	0.6000	0.6000
T9	1	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T9	2	W/G LADDER RAIL*	20.00 - 40.00	0.6000	0.6000
T9	3	W/G LADDER RAIL*	20.00 - 40.00	0.6000	0.6000
T9	7	1 1/4	20.00 - 40.00	0.6000	0.6000
T9	10	1 1/4	20.00 - 40.00	0.6000	0.6000
T9	11	EW63	20.00 - 40.00	0.6000	0.6000
T10	1	Safety Line 3/8	5.00 - 20.00	0.6000	0.6000
T10	2	W/G LADDER RAIL*	5.00 - 20.00	0.6000	0.6000
T10	3	W/G LADDER RAIL*	5.00 - 20.00	0.6000	0.6000
T10	7	1 1/4	5.00 - 20.00	0.6000	0.6000
T10	10	1 1/4	5.00 - 20.00	0.6000	0.6000
T10	11	EW63	5.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Lightning Rod 5/8x4'	C	From Leg	0.00 0 2	0.000	190.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.25 0.66 0.97 1.49	0.25 0.66 0.97 1.49	0.03 0.03 0.04 0.06
****									
WD13X53 Antenna Mounting Frame	A	From Leg	1.50 0 0	0.000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.71 13.89 18.07 26.43	5.18 7.60 10.02 14.86	0.40 1.60 2.80 5.20
WD13X53 Antenna Mounting Frame	B	From Leg	1.50 0 0	0.000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.71 13.89 18.07 26.43	5.18 7.60 10.02 14.86	0.40 1.60 2.80 5.20
WD13X53 Antenna Mounting Frame	C	From Leg	1.50 0 0	0.000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.71 13.89 18.07 26.43	5.18 7.60 10.02 14.86	0.40 1.60 2.80 5.20
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	A	From Leg	3.00 0 0	0.000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.51 24.30 25.10 26.72	11.23 12.66 13.94 16.18	0.16 0.30 0.45 0.79
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	B	From Leg	3.00 0 0	0.000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.51 24.30 25.10 26.72	11.23 12.66 13.94 16.18	0.16 0.30 0.45 0.79
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	C	From Leg	3.00 0 0	0.000	185.00	No Ice 1/2" Ice 1" Ice	23.51 24.30 25.10	11.23 12.66 13.94	0.16 0.30 0.45

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	26.72	16.18	0.79
(4) Radio 4449	A	From Leg	3.00 0 0	0.000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.50 3.74 3.99 4.51	2.36 2.57 2.78 3.24	0.09 0.11 0.15 0.22
(4) Radio 4449	B	From Leg	3.00 0 0	0.000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.50 3.74 3.99 4.51	2.36 2.57 2.78 3.24	0.09 0.11 0.15 0.22
(4) Radio 4449	C	From Leg	3.00 0 0	0.000	185.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.50 3.74 3.99 4.51	2.36 2.57 2.78 3.24	0.09 0.11 0.15 0.22
***									
WD13X53 Antenna Mounting Frame	A	From Leg	1.50 0 0	0.000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.71 13.89 18.07 26.43	5.18 7.60 10.02 14.86	0.40 1.60 2.80 5.20
WD13X53 Antenna Mounting Frame	B	From Leg	1.50 0 0	0.000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.71 13.89 18.07 26.43	5.18 7.60 10.02 14.86	0.40 1.60 2.80 5.20
WD13X53 Antenna Mounting Frame	C	From Leg	1.50 0 0	0.000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.71 13.89 18.07 26.43	5.18 7.60 10.02 14.86	0.40 1.60 2.80 5.20
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	A	From Leg	3.00 0 0	0.000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.51 24.30 25.10 26.72	11.23 12.66 13.94 16.18	0.16 0.30 0.45 0.79
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	B	From Leg	3.00 0 0	0.000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.51 24.30 25.10 26.72	11.23 12.66 13.94 16.18	0.16 0.30 0.45 0.79
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	C	From Leg	3.00 0 0	0.000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.51 24.30 25.10 26.72	11.23 12.66 13.94 16.18	0.16 0.30 0.45 0.79
(4) Radio 4449	A	From Leg	3.00 0 0	0.000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.50 3.74 3.99 4.51	2.36 2.57 2.78 3.24	0.09 0.11 0.15 0.22
(4) Radio 4449	B	From Leg	3.00 0 0	0.000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.50 3.74 3.99 4.51	2.36 2.57 2.78 3.24	0.09 0.11 0.15 0.22
(4) Radio 4449	C	From Leg	3.00 0 0	0.000	175.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.50 3.74 3.99 4.51	2.36 2.57 2.78 3.24	0.09 0.11 0.15 0.22
***									
WD13X53 Antenna Mounting Frame	A	From Leg	1.50 0 0	0.000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.71 13.89 18.07 26.43	5.18 7.60 10.02 14.86	0.40 1.60 2.80 5.20
WD13X53 Antenna Mounting Frame	B	From Leg	1.50 0	0.000	165.00	No Ice 1/2" Ice	9.71 13.89	5.18 7.60	0.40 1.60

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_S Side ft²	Weight K
			0			1" Ice	18.07	10.02	2.80
						2" Ice	26.43	14.86	5.20
WD13X53 Antenna Mounting Frame	C	From Leg	1.50 0 0	0.000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.71 13.89 18.07 26.43	5.18 7.60 10.02 14.86	0.40 1.60 2.80 5.20
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	A	From Leg	3.00 0 0	0.000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.51 24.30 25.10 26.72	11.23 12.66 13.94 16.18	0.16 0.30 0.45 0.79
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	B	From Leg	3.00 0 0	0.000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.51 24.30 25.10 26.72	11.23 12.66 13.94 16.18	0.16 0.30 0.45 0.79
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	C	From Leg	3.00 0 0	0.000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.51 24.30 25.10 26.72	11.23 12.66 13.94 16.18	0.16 0.30 0.45 0.79
(4) Radio 4449	A	From Leg	3.00 0 0	0.000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.50 3.74 3.99 4.51	2.36 2.57 2.78 3.24	0.09 0.11 0.15 0.22
(4) Radio 4449	B	From Leg	3.00 0 0	0.000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.50 3.74 3.99 4.51	2.36 2.57 2.78 3.24	0.09 0.11 0.15 0.22
(4) Radio 4449	C	From Leg	3.00 0 0	0.000	165.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.50 3.74 3.99 4.51	2.36 2.57 2.78 3.24	0.09 0.11 0.15 0.22
***									
WD13X53 Antenna Mounting Frame	A	From Leg	1.50 0 0	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.71 13.89 18.07 26.43	5.18 7.60 10.02 14.86	0.40 1.60 2.80 5.20
WD13X53 Antenna Mounting Frame	B	From Leg	1.50 0 0	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.71 13.89 18.07 26.43	5.18 7.60 10.02 14.86	0.40 1.60 2.80 5.20
WD13X53 Antenna Mounting Frame	C	From Leg	1.50 0 0	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.71 13.89 18.07 26.43	5.18 7.60 10.02 14.86	0.40 1.60 2.80 5.20
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	A	From Leg	3.00 0 0	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.51 24.30 25.10 26.72	11.23 12.66 13.94 16.18	0.16 0.30 0.45 0.79
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	B	From Leg	3.00 0 0	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.51 24.30 25.10 26.72	11.23 12.66 13.94 16.18	0.16 0.30 0.45 0.79
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	C	From Leg	3.00 0 0	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.51 24.30 25.10 26.72	11.23 12.66 13.94 16.18	0.16 0.30 0.45 0.79
(4) Radio 4449	A	From Leg	3.00 0	0.000	135.00	No Ice 1/2" Ice	3.50 3.74	2.36 2.57	0.09 0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0			1" Ice	3.99	2.78	0.15
						2" Ice	4.51	3.24	0.22
(4) Radio 4449	B	From Leg	3.00	0.000	135.00	No Ice	3.50	2.36	0.09
			0			1/2" Ice	3.74	2.57	0.11
			0			1" Ice	3.99	2.78	0.15
						2" Ice	4.51	3.24	0.22
(4) Radio 4449	C	From Leg	3.00	0.000	135.00	No Ice	3.50	2.36	0.09
			0			1/2" Ice	3.74	2.57	0.11
			0			1" Ice	3.99	2.78	0.15
						2" Ice	4.51	3.24	0.22
***									
WD13X53 Antenna Mounting Frame	A	From Leg	1.50	0.000	125.00	No Ice	9.71	5.18	0.40
			0			1/2" Ice	13.89	7.60	1.60
			0			1" Ice	18.07	10.02	2.80
						2" Ice	26.43	14.86	5.20
WD13X53 Antenna Mounting Frame	B	From Leg	1.50	0.000	125.00	No Ice	9.71	5.18	0.40
			0			1/2" Ice	13.89	7.60	1.60
			0			1" Ice	18.07	10.02	2.80
						2" Ice	26.43	14.86	5.20
WD13X53 Antenna Mounting Frame	C	From Leg	1.50	0.000	125.00	No Ice	9.71	5.18	0.40
			0			1/2" Ice	13.89	7.60	1.60
			0			1" Ice	18.07	10.02	2.80
						2" Ice	26.43	14.86	5.20
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	A	From Leg	3.00	0.000	125.00	No Ice	23.51	11.23	0.16
			0			1/2" Ice	24.30	12.66	0.30
			0			1" Ice	25.10	13.94	0.45
						2" Ice	26.72	16.18	0.79
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	B	From Leg	3.00	0.000	125.00	No Ice	23.51	11.23	0.16
			0			1/2" Ice	24.30	12.66	0.30
			0			1" Ice	25.10	13.94	0.45
						2" Ice	26.72	16.18	0.79
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	C	From Leg	3.00	0.000	125.00	No Ice	23.51	11.23	0.16
			0			1/2" Ice	24.30	12.66	0.30
			0			1" Ice	25.10	13.94	0.45
						2" Ice	26.72	16.18	0.79
(4) Radio 4449	A	From Leg	3.00	0.000	125.00	No Ice	3.50	2.36	0.09
			0			1/2" Ice	3.74	2.57	0.11
			0			1" Ice	3.99	2.78	0.15
						2" Ice	4.51	3.24	0.22
(4) Radio 4449	B	From Leg	3.00	0.000	125.00	No Ice	3.50	2.36	0.09
			0			1/2" Ice	3.74	2.57	0.11
			0			1" Ice	3.99	2.78	0.15
						2" Ice	4.51	3.24	0.22
(4) Radio 4449	C	From Leg	3.00	0.000	125.00	No Ice	3.50	2.36	0.09
			0			1/2" Ice	3.74	2.57	0.11
			0			1" Ice	3.99	2.78	0.15
						2" Ice	4.51	3.24	0.22
***									
WD13X53 Antenna Mounting Frame	A	From Leg	1.50	0.000	115.00	No Ice	9.71	5.18	0.40
			0			1/2" Ice	13.89	7.60	1.60
			0			1" Ice	18.07	10.02	2.80
						2" Ice	26.43	14.86	5.20
WD13X53 Antenna Mounting Frame	B	From Leg	1.50	0.000	115.00	No Ice	9.71	5.18	0.40
			0			1/2" Ice	13.89	7.60	1.60
			0			1" Ice	18.07	10.02	2.80
						2" Ice	26.43	14.86	5.20
WD13X53 Antenna	C	From Leg	1.50	0.000	115.00	No Ice	9.71	5.18	0.40

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Mounting Frame			0 0			1/2" Ice 1" Ice 2" Ice	13.89 18.07 26.43	7.60 10.02 14.86	1.60 2.80 5.20
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	A	From Leg	3.00 0 0	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.51 24.30 25.10 26.72	11.23 12.66 13.94 16.18	0.16 0.30 0.45 0.79
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	B	From Leg	3.00 0 0	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.51 24.30 25.10 26.72	11.23 12.66 13.94 16.18	0.16 0.30 0.45 0.79
(4) Commscope FFVV-65C-R2-HG w/ mt. pipe*	C	From Leg	3.00 0 0	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.51 24.30 25.10 26.72	11.23 12.66 13.94 16.18	0.16 0.30 0.45 0.79
(4) Radio 4449	A	From Leg	3.00 0 0	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.50 3.74 3.99 4.51	2.36 2.57 2.78 3.24	0.09 0.11 0.15 0.22
(4) Radio 4449	B	From Leg	3.00 0 0	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.50 3.74 3.99 4.51	2.36 2.57 2.78 3.24	0.09 0.11 0.15 0.22
(4) Radio 4449	C	From Leg	3.00 0 0	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.50 3.74 3.99 4.51	2.36 2.57 2.78 3.24	0.09 0.11 0.15 0.22
*****									
Dish Mount	B	From Leg	0.50 0 0	0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.62 2.34 2.69 3.42	1.62 2.34 2.69 3.42	0.02 0.04 0.06 0.11
Dish Mount	C	From Leg	0.50 0 0	0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.62 2.34 2.69 3.42	1.62 2.34 2.69 3.42	0.02 0.04 0.06 0.11

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
8 FT DISH	B	Paraboloid w/Shroud (HP)	From Leg	1.00 0 0	0.000		145.00	8.00	No Ice 1/2" Ice 1" Ice 2" Ice	50.30 51.29 52.28 54.27	0.25 0.51 0.78 1.30
8 FT DISH	C	Paraboloid w/Shroud (HP)	From Leg	1.00 0 0	0.000		145.00	8.00	No Ice 1/2" Ice 1" Ice	50.30 51.29 52.28	0.25 0.51 0.78

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight K
									2" Ice	54.27	1.30

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	190	Leg	A325X	0.75	4	0.97	30.10	0.032 ✔	1	Bolt Tension
		Diagonal	A325X	0.50	1	4.71	8.34	0.565 ✔	1	Member Block Shear
		Top Girt	A325X	0.62	1	1.19	4.57	0.260 ✔	1	Member Block Shear
T2	180	Leg	A325X	1.00	4	12.70	54.52	0.233 ✔	1	Bolt Tension
		Diagonal	A325X	0.62	1	10.12	10.51	0.963 ✔	1	Member Block Shear
T3	160	Leg	A325X	1.00	4	28.05	54.52	0.514 ✔	1	Bolt Tension
		Diagonal	A325X	0.62	1	9.57	10.51	0.911 ✔	1	Member Block Shear
T4	140	Leg	A325X	1.00	4	43.21	54.52	0.793 ✔	1	Bolt Tension
		Diagonal	A325X	0.62	1	13.23	16.57	0.798 ✔	1	Member Bearing
T5	120	Leg	A325X	1.00	6	39.51	54.52	0.725 ✔	1	Bolt Tension
		Diagonal	A325X	0.75	1	19.45	19.99	0.973 ✔	1	Member Bearing
		Horizontal	A325X	0.75	1	5.03	12.11	0.415 ✔	1	Member Block Shear
T6	100	Leg	A325X >1"	1.25	6	50.49	76.32	0.662 ✔	1	Bolt Tension
		Diagonal	A325X	0.75	1	17.09	19.99	0.855 ✔	1	Member Bearing
		Horizontal	A325X	0.75	1	6.06	12.11	0.500 ✔	1	Member Block Shear
T7	80	Leg	A325X >1"	1.25	6	59.64	76.32	0.781 ✔	1	Bolt Tension
		Diagonal	A325X	0.75	1	15.09	19.99	0.755 ✔	1	Member Bearing
		Horizontal	A325X	0.75	1	6.83	12.11	0.564 ✔	1	Member Block Shear
T8	60	Leg	A325X >1"	1.25	6	67.50	76.32	0.884 ✔	1	Bolt Tension
		Diagonal	A325X	0.75	1	13.81	19.99	0.691 ✔	1	Member Bearing
		Horizontal	A325X	0.75	1	7.73	12.11	0.638 ✔	1	Member Block Shear
T9	40	Leg	A325X >1"	1.25	6	74.42	76.32	0.975 ✔	1	Bolt Tension
		Diagonal	A325X	0.75	1	12.98	19.99	0.650 ✔	1	Member Bearing
		Horizontal	A325X	0.75	1	8.55	14.99	0.570 ✔	1	Member Bearing
T10	20	Leg	F1554-105	1.50	6	79.02	131.74	0.600 ✔	1	Bolt Tension
		Diagonal	A325X	0.75	1	8.40	19.99	0.420 ✔	1	Member Bearing
		Horizontal	A325X	0.75	1	9.13	14.99	0.609 ✔	1	Member Bearing

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	1 3/4	10.00	5.00	137.1 K=1.00	2.41	-9.51	28.89	0.329 [1] ✔
T2	180 - 160	2 1/4	20.02	5.00	106.8 K=1.00	3.98	-61.20	77.75	0.787 [1] ✔
T3	160 - 140	2 3/4	20.02	5.00	87.4 K=1.00	5.94	-125.47	152.99	0.820 [1] ✔
T4	140 - 120	3	20.02	5.00	80.1 K=1.00	7.07	-194.33	199.04	0.976 [1] ✔
T5	120 - 100	3 1/2	20.02	5.00	68.6 K=1.00	9.62	-264.61	306.80	0.863 [1] ✔
T6	100 - 80	3 3/4	20.02	5.00	64.1 K=1.00	11.04	-334.56	368.18	0.909 [1] ✔
T7	80 - 60	4	20.02	5.00	60.1 K=1.00	12.57	-393.96	434.40	0.907 [1] ✔
T8	60 - 40	4 1/4	20.02	5.00	56.5 K=1.00	14.19	-446.14	505.39	0.883 [1] ✔
T9	40 - 20	4 1/4	20.02	5.00	56.5 K=1.00	14.19	-493.01	505.39	0.976 [1] ✔
T10	20 - 0	4 1/2	20.03	5.01	53.4 K=1.00	15.90	-526.53	580.90	0.906 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	L1 3/4x1 3/4x3/16	6.40	2.96	107.6 K=1.04	0.62	-4.90	15.37	0.319 [1] ✔
T2	180 - 160	L2x2x3/16	7.30	3.50	110.0 K=1.03	0.71	-10.29	16.91	0.608 [1] ✔
T3	160 - 140	L2x2x3/16	8.45	4.05	123.5 K=1.00	0.71	-9.22	13.42	0.687 [1] ✔
T4	140 - 120	L2 1/2x2 1/2x1/4	9.70	4.67	115.6	1.19	-13.27	25.50	0.520 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	120 - 100	L3x3x1/4	6.81	6.27	127.1 K=1.01	1.44	-19.94	25.50	0.782 [1] ✓
T6	100 - 80	L3x3x1/4	7.62	7.08	143.5 K=1.00	1.44	-16.14	20.01	0.807 [1] ✓
T7	80 - 60	L3x3x1/4	8.20	7.66	155.2 K=1.00	1.44	-14.75	17.11	0.862 [1] ✓
T8	60 - 40	L3x3x1/4	8.81	8.26	167.4 K=1.00	1.44	-13.84	14.71	0.941 [1] ✓
T9	40 - 20	L3 1/2x3 1/2x1/4	9.43	8.89	153.8 K=1.00	1.69	-13.33	20.46	0.652 [1] ✓
T10	20 - 0	L3 1/2x3 1/2x1/4	10.30	9.75	168.6 K=1.00	1.69	-8.79	17.02	0.516 [1] ✓

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	120 - 100	L2 1/2x2 1/2x3/16	9.63	4.50	114.5 K=1.05	0.90	-5.03	19.68	0.255 [1] ✓
T6	100 - 80	L2 1/2x2 1/2x3/16	11.13	5.24	127.0 K=1.00	0.90	-6.06	16.00	0.379 [1] ✓
T7	80 - 60	L2 1/2x2 1/2x3/16	12.63	5.98	144.9 K=1.00	0.90	-6.83	12.29	0.556 [1] ✓
T8	60 - 40	L2 1/2x2 1/2x3/16	14.13	6.72	162.9 K=1.00	0.90	-7.73	9.73	0.795 [1] ✓
T9	40 - 20	L3x3x3/16	15.63	7.47	150.4 K=1.00	1.09	-8.55	13.80	0.619 [1] ✓
T10	20 - 0	L3x3x3/16	17.50	8.40	169.0 K=1.00	1.09	-9.13	10.92	0.836 [1] ✓

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	L1 3/4x1 3/4x1/8	4.00	3.56	123.3 K=1.00	0.42	-1.18	7.93	0.149 [1] ✓

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	1 3/4	10.00	5.00	137.1	2.41	3.87	108.24	0.036 [1]
T2	180 - 160	2 1/4	20.02	5.00	106.8	3.98	50.82	178.92	0.284 [1]
T3	160 - 140	2 3/4	20.02	5.00	87.4	5.94	112.19	267.28	0.420 [1]
T4	140 - 120	3	20.02	5.00	80.1	7.07	172.85	318.09	0.543 [1]
T5	120 - 100	3 1/2	20.02	5.00	68.6	9.62	237.27	432.95	0.548 [1]
T6	100 - 80	3 3/4	20.02	5.00	64.1	11.04	303.21	497.01	0.610 [1]
T7	80 - 60	4	20.02	5.00	60.1	12.57	358.10	565.49	0.633 [1]
T8	60 - 40	4 1/4	20.02	5.00	56.5	14.19	405.32	638.38	0.635 [1]
T9	40 - 20	4 1/4	20.02	5.00	56.5	14.19	446.86	638.38	0.700 [1]
T10	20 - 0	4 1/2	20.03	5.01	53.4	15.90	474.48	715.69	0.663 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	L1 3/4x1 3/4x3/16	6.40	2.96	68.9	0.38	4.71	18.42	0.256 [1]
T2	180 - 160	L2x2x3/16	7.30	3.50	71.0	0.43	10.12	21.00	0.482 [1]
T3	160 - 140	L2x2x3/16	7.57	3.62	73.3	0.43	9.57	21.00	0.456 [1]
T4	140 - 120	L2 1/2x2 1/2x1/4	9.70	4.67	75.1	0.75	13.23	36.65	0.361 [1]
T5	120 - 100	L3x3x1/4	6.81	6.27	85.2	0.92	19.45	44.65	0.436 [1]
T6	100 - 80	L3x3x1/4	7.07	6.53	88.6	0.92	17.09	44.65	0.383 [1]
T7	80 - 60	L3x3x1/4	7.62	7.08	95.6	0.92	15.09	44.65	0.338 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T8	60 - 40	L3x3x1/4	8.50	7.95	106.9	0.92	13.81	44.65	0.309 [1]
T9	40 - 20	L3 1/2x3 1/2x1/4	8.81	8.27	94.7	1.10	12.98	53.79	0.241 [1]
T10	20 - 0	L3 1/2x3 1/2x1/4	9.86	9.31	106.2	1.10	8.40	53.79	0.156 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	120 - 100	L2 1/2x2 1/2x3/16	9.63	4.50	72.0	0.55	5.03	26.98	0.186 [1]
T6	100 - 80	L2 1/2x2 1/2x3/16	11.13	5.24	83.4	0.55	6.06	26.98	0.225 [1]
T7	80 - 60	L2 1/2x2 1/2x3/16	12.63	5.98	94.8	0.55	6.83	26.98	0.253 [1]
T8	60 - 40	L2 1/2x2 1/2x3/16	14.13	6.72	106.2	0.55	7.73	26.98	0.287 [1]
T9	40 - 20	L3x3x3/16	15.63	7.47	97.6	0.69	8.55	33.85	0.252 [1]
T10	20 - 0	L3x3x3/16	17.50	8.40	109.4	0.69	9.13	33.85	0.270 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	L1 3/4x1 3/4x1/8	4.00	3.56	84.8	0.25	1.19	10.71	0.111 [1]

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	190 - 180	Leg	1 3/4	3	-9.51	28.89	32.9	Pass
T2	180 - 160	Leg	2 1/4	19	-61.20	77.75	78.7	Pass
T3	160 - 140	Leg	2 3/4	46	-125.47	152.99	82.0	Pass
T4	140 - 120	Leg	3	73	-194.33	199.04	97.6	Pass
T5	120 - 100	Leg	3 1/2	100	-264.61	306.80	86.3	Pass
T6	100 - 80	Leg	3 3/4	133	-334.56	368.18	90.9	Pass
T7	80 - 60	Leg	4	166	-393.96	434.40	90.7	Pass
T8	60 - 40	Leg	4 1/4	199	-446.14	505.39	88.3	Pass
							88.4 (b)	
T9	40 - 20	Leg	4 1/4	232	-493.01	505.39	97.6	Pass
T10	20 - 0	Leg	4 1/2	265	-526.53	580.90	90.6	Pass
T1	190 - 180	Diagonal	L1 3/4x1 3/4x3/16	10	-4.90	15.37	31.9	Pass
							56.5 (b)	
T2	180 - 160	Diagonal	L2x2x3/16	25	-10.29	16.91	60.8	Pass
							96.3 (b)	
T3	160 - 140	Diagonal	L2x2x3/16	49	-9.22	13.42	68.7	Pass
							91.1 (b)	
T4	140 - 120	Diagonal	L2 1/2x2 1/2x1/4	76	-13.27	25.50	52.0	Pass
							79.8 (b)	
T5	120 - 100	Diagonal	L3x3x1/4	119	-19.94	25.50	78.2	Pass
							97.3 (b)	
T6	100 - 80	Diagonal	L3x3x1/4	137	-16.14	20.01	80.7	Pass
							85.5 (b)	
T7	80 - 60	Diagonal	L3x3x1/4	170	-14.75	17.11	86.2	Pass
T8	60 - 40	Diagonal	L3x3x1/4	203	-13.84	14.71	94.1	Pass
T9	40 - 20	Diagonal	L3 1/2x3 1/2x1/4	236	-13.33	20.46	65.2	Pass
T10	20 - 0	Diagonal	L3 1/2x3 1/2x1/4	269	-8.79	17.02	51.6	Pass
T5	120 - 100	Horizontal	L2 1/2x2 1/2x3/16	103	-5.03	19.68	25.5	Pass
							41.5 (b)	
T6	100 - 80	Horizontal	L2 1/2x2 1/2x3/16	136	-6.06	16.00	37.9	Pass
							50.0 (b)	
T7	80 - 60	Horizontal	L2 1/2x2 1/2x3/16	169	-6.83	12.29	55.6	Pass
							56.4 (b)	
T8	60 - 40	Horizontal	L2 1/2x2 1/2x3/16	202	-7.73	9.73	79.5	Pass
T9	40 - 20	Horizontal	L3x3x3/16	235	-8.55	13.80	61.9	Pass
T10	20 - 0	Horizontal	L3x3x3/16	268	-9.13	10.92	83.6	Pass
T1	190 - 180	Top Girt	L1 3/4x1 3/4x1/8	5	-1.18	7.93	14.9	Pass
							26.0 (b)	
							Summary	
						Leg (T4)	97.6	Pass
						Diagonal (T5)	97.3	Pass
						Horizontal (T10)	83.6	Pass
						Top Girt (T1)	26.0	Pass
						Bolt Checks	97.5	Pass
						RATING =	**97.6**	**Pass**

Exhibit 6

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

Aeronautical Study No.
2025-ASO-9338-OE

Issued Date: 07/17/2025

EAST KENTUCKY NETWORK, LLC
CINDY D. MCCARTY
101 Technology Trail
Ivel, KY 41642

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

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

Structure: Antenna Tower Zelda
County, State: Lawrence, Kentucky

Collected Point(s):

Label	Latitude	Longitude	SE	DET AGL	AMSL
Zelda	38-12-08.27N	82-36-41.17W	840 Ft	200 Ft	1040 Ft

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

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

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

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

While the structure does not constitute a hazard to air navigation, it would be located within or near a military training area and/or route.

This determination expires on 01/17/2027 unless:

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

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

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

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

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

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

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

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

If we can be of further assistance, please contact our office at 1-817-222-4832, or Michael.J-CTR.Costanzi@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2025-ASO-9338-OE.

Signature Control No: 655438584-670494951 (DNE)
michael.j-ctr.costanzi@faa.gov
Technician

Attachment(s)
Frequency Data
Map(s)

cc: FCC

Frequency Data for ASN 2025-ASO-9338-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
6	7	GHz	42	dBW
6	7	GHz	55	dBW
10	11.7	GHz	42	dBW
10	11.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
21.2	23.6	GHz	42	dBW
21.2	23.6	GHz	55	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
806	824	MHz	500	W
806	901	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	2310	MHz	2000	W
2305	2360	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W

Verified Map for ASN 2025-ASO-9338-OE

KENTUCKY TRANSPORTATION CABINET

KENTUCKY AIRPORT ZONING COMMISSION

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

JURISDICTION

602 KAR 50:030

Section 1. The commission has zoning jurisdiction over that airspace over and around the public use and military airports within the Commonwealth which lies above the imaginary surface that extends outward and upward at one (1) of the following slopes:

(1) 100 to one (1) for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each public use airport and military airport with at least one (1) runway 3,200 feet or more in length; or

(2) fifty (50) to one (1) for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each public use and military airport with its longest runway less than 3,200 feet in length.

Section 2. The commission has zoning jurisdiction over the use of land and structures within public use airports within the state.

Section 3. The commission has jurisdiction from the ground upward within the limits of the primary and approach surfaces of each public use airport and military airport as depicted on airport zoning maps approved by the Kentucky Airport Zoning Commission.

Section 4. The Commission has jurisdiction over the airspace of the Commonwealth that exceeds 200 feet in height above the ground.

Section 5. The owner or person who has control over a structure which penetrates or will penetrate the airspace over which the Commission has Jurisdiction shall apply for a permit from the Commission in accordance with 602 KAR 50:090.

INSTRUCTIONS

1. "Alteration" means to increase or decrease the height of a structure or change the obstruction marking and lighting.
2. "Applicant" means the person who will own or have control over the completed structure.
3. "Certification by Applicant" shall be made by the individual who will own or control the completed structure; or a partner in a partnership; or the president or authorized officer of a corporation company, or association; or the authorized official of a body politic; or the legally designated representative of a trustee, receiver, or assignee.
4. Prepare the application and forward to the Kentucky Dept. of Aviation, ATTN: Airport Zoning Commission, 90 Airport Drive, Frankfort KY 40601. For questions, telephone 502-564-0151.
5. The statutes applicable to the Kentucky Airport Commission are KRS 183.861 to 183.990 and the administrative regulations are 602 KAR Chapter 50.
6. When applicable, attach the following appendices to the application:

Appendix A. For structures on or very near to property of a public use airport, a copy of the airport layout drawing (ALP) with the exact location of the structure which is the subject of this application indicated thereon. (*The ALP may be obtained from the Chairperson of the local airport board or the Kentucky Airport Zoning Commission.*)

Appendix B. Copies of Federal Aviation Administration Applications (*FFA Form 7460-1*) or any orders issued by the manager, Air Traffic Division, FAA regional office.

Appendix C. If the applicant has indicated in item number 7 of the application that the structure will not be marked or lighted in accordance with the regulations of the Commission, the applicant shall attach a written request for a determination by the commission that the marking and lighting are not necessary. The applicant shall specifically state the reasons that the absence of marking and lighting will not impair the safety of air navigation.

Appendix D. The overall height in feet of the overhead transmission line or static wire above ground level or mean water level with span length 1,000 feet and over shall be depicted on a blueprint profile map.

PENALTIES

1. Persons failing to comply with the Airport Zoning Commission statutes and regulations are liable for a fine or imprisonment as set forth in KRS 183.990(3).
2. Applicants are cautioned: Noncompliance with Federal Aviation Administration Regulations may provide for further penalties.

TEAM KENTUCKY TRANSPORTATION CABINET

KENTUCKY TRANSPORTATION CABINET

KENTUCKY AIRPORT ZONING COMMISSION

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

APPLICANT (*name*) East Kentucky Network, LLC	**PHONE** 606-339-1005		**FAX**
ADDRESS (*street*) 101 Technology Trail	**CITY** Ivel	**STATE** KY	**ZIP** 41462
APPLICANT'S REPRESENTATIVE (*name*) Cindy McCarty	**PHONE** 606-339-1006	**FAX**	
ADDRESS (*street*) 101 Technology Trail	**CITY** Ivel	**STATE** KY	**ZIP** 41642
APPLICATION FOR ☑ New Construction ☐ Alteration ☐ Existing **DURATION** ☐ Permanent ☐ Temporary (*months* *days*)		**WORK SCHEDULE** Start 12/1/25 End 1/31/26	
TYPE ☑ Crane ☐ Building ☑ Antenna Tower ☐ Power Line ☐ Water Tank ☐ Landfill ☐ Other	**MARKING/PAINTING/LIGHTING PREFERRED** ☐ Red Lights & Paint ☑ White- medium intensity ☐ Dual- red & medium intensity white ☐ Dual- red & high intensity white ☐ Other		
LATITUDE 38 ° 12 ' 8 .27 "	**LONGITUDE** 82 ° 36 ' 41. 17 "	**DATUM** ☑ NAD83 ☐ NAD27 ☐ Other	
NEAREST KENTUCKY City Catlettsburg	**NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT** Ashland Regional Airport		
SITE ELEVATION (AMSL, *feet*) 840	**TOTAL STRUCTURE HEIGHT** (AGL, *feet*) 200	**CURRENT** (*FAA aeronautical study #*) 2025-ASO-9338-OE	
OVERALL HEIGHT (*site elevation plus total structure height, feet*) 1040		**PREVIOUS** (*FAA aeronautical study #*)	
DISTANCE (*from nearest Kentucky public use or Military airport to structure*) 21.9			
DIRECTION (*from nearest Kentucky public use or Military airport to structure*) SSE			
DESCRIPTION OF LOCATION (*Marked drawing, Google map, or any certified survey.*) Near 25433 Highway 23, Lawrence County, Kentucky			
DESCRIPTION OF PROPOSAL A new 190' self supporting with top mounted antennas (overall height of 200').			
FAA Form 7460-1 (*Has the "Notice of Construction or Alteration" been filed with the Federal Aviation Administration?*) ☐ No ☑ Yes, when? 4/29/25			

CERTIFICATION (*I hereby certify that all the above entries, made by me, are true, complete, and correct to the best of my knowledge and belief.*)

PENALITIES (*Persons failing to comply with KRS 183.861 to 183.990 and 602 KAR 050 are liable for fines and/or imprisonment as set forth in KRS 183.990(3). Noncompliance with FAA regulations may result in further penalties.*)

NAME	TITLE	SIGNATURE	DATE
Cindy McCarty	In House Counsel	/s/ Cindy McCarty	7/29/25

Exhibit 7

Item 7 A Written Notice

Daryl Bartley of Appalachian Wireless posted a 2' x 4' sign of durable material on the proposed site August 7, 2025.

Item 16 B Written Notice

Daryl Bartley of Appalachian Wireless posted a 2' x 4' sign of durable material on the last point of the county road August 7, 2025.

Exhibit 8

Driving Directions for Zelda

1. Beginning on Maine Cross Street in front of the Lawrence County Courthouse
2. Drive approximately 200 feet southwest to the intersection of Maine Cross Street and East Madison Street
3. Turn right onto East Madison Street
4. Drive 4/10 of a mile to the intersection of East Madison Street and KY-2565
5. Turn right onto KY-2565
6. Drive 1.5 miles to the intersection of KY-2565 and US 23
7. Turn right
8. Drive 7.1 miles
9. Drive straight across both lanes of traffic, you will come to a gravel road (a sign will be posted)
10. Stay to the right, as the road veers into someone's driveway on the left
11. Turn to the left and drive up the hill, about 8/10 of a mile
12. You have arrived (signs will also be posted)

Created by:

Daryl Bartley
Cell Site Compliance Agent

Contact Information:

(606) 791-0310 (cell)
dbartley@ekn.com


Zelda
Location:
25191 US Hwy 23
Catlettsburg, KY
Coordinates:
Lat: 38° 12' 08.27"N
Lon: 82°36' 41.17"W
Legend
1/2 Mile Radius
Mill Branch Rd
Proposed Zelda Tower
Existing Zelda Tower
Cubbin
Louisa Rd
Google Earth
Image © 2025 Airbus
2000 ft
N

Exhibit 9

DEED

THIS DEED is entered into and effective as of the 15 day of September, 2016, by and between **WILLIAM ALLEN GILLUM** and **CAROLYN BUTLER GILLUM**, husband and wife ("Grantors"), with a mailing address of 217 Rocky Branch Road, Sandy Hook, Kentucky 41171, and **EAST KENTUCKY NETWORK, LLC D/B/A APPALACHIAN WIRELESS**, a Kentucky limited liability company ("Grantee"), with a mailing address of 101 Technology Trail, Ivel, Kentucky 41642, which is the "in care of" address to which the property tax bill for 2016 may be sent.

W I T N E S S E T H

For and in consideration of the sum of Seventy-Eight Thousand Dollars ($78,000.00), cash in hand paid, the receipt and sufficiency of which are hereby acknowledged, Grantors do hereby grant, sell, and convey to the Grantee, its successors and assigns, the real property, including surface, mineral and all improvements, situated on the Big Sandy River at or near Zelda Station, Lawrence County, Kentucky, and more particularly described in the Survey Description **attached** hereto and made a part herein as **Exhibit A** and depicted on the plat **attached** hereto and made a part herein as **Exhibit B**, prepared by Steven E. Haywood, Licensed Professional Land Surveyor. This conveyance includes a nonexclusive easement of forty (40) feet in width following the course of the road that exists across the former property of the prior grantors, Carl E. Butler and Dora Emily Butler, said easement being for access to the property herein conveyed and for providing lines for utility service, including but not necessarily limited to, electricity, telephone, water, sewer, and gas.

Being all of the same property conveyed to Grantors by Carl E. Butler and Dora Emily Butler, husband and wife, by virtue of the Deed dated August 30, 2007, recorded on August 31, 2007, in the Lawrence County Clerk's Office in Deed Book 288, Page 204.

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

We the undersigned, do hereby certify, pursuant to KRS Chapter 382, that the above-stated consideration in the amount of $78,000.00, is the true, correct and full consideration paid for the property herein conveyed. We further certify our understanding that falsification of the stated consideration or sale price of the property as a Class D felony, subject to 1 - 5 years imprisonment, and fines up to $10,000.00.

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

GRANTORS:

W A Gillum
WILLIAM ALLEN GILLUM

Carolyn B Gillum
CAROLYN BUTLER GILLUM

COMMONWEALTH OF KENTUCKY
COUNTY OF Floyd:

I, Lynn Haney, a Notary Public in and for the County and State aforesaid, do hereby certify that the foregoing Deed and Consideration Certificate was this day produced, acknowledged, subscribed, and sworn to before me in the County and State aforesaid and signed by William Allen Gillum and Carolyn Butler Gillum, Grantors, this 13 day of September 2016.

Lynn Haney
Notary Public

LYNN HANEY
Notary ID # 540329
NOTARY PUBLIC
Exp. 08/19/2019
STATE AT LARGE, KENTUCKY

My Commission Expires: August 19, 2019

GRANTEE:

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

Shayne Ison
By: Shayne Ison
Its: President

COMMONWEALTH OF KENTUCKY
COUNTY OF Floyd:

I, Lynn Haney, a Notary Public in and for the County and State aforesaid, do hereby certify that the foregoing Consideration Certificate was this day produced, acknowledged, subscribed, and sworn to before me in the County and State aforesaid and signed by Shayne Ison, in his capacity as the President of East Kentucky Network, LLC d/b/a Appalachian Wireless, Grantee, this 15 day of September 2016.

Lynn Haney
Notary Public

My Commission Expires: August 19, 2019

LYNN HANEY Notary ID # 540329 NOTARY PUBLIC EXP. 08/19/2019 STATE AT LARGE, KENTUCKY

This is to certify that this instrument was prepared by:

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

Zelda Tower
Survey Description

A certain tract of land lying and being in Lawrence County, Kentucky and on the Big Sandy River at or near Zelda Station and more particularly described as follows:

Unless state otherwise any monument referred to herein as a set re-bar is a set ½ inch re-bar 18" in length with a yellow cap stamped Summit, L.S. #2661. All bearings stated herein are referred to the Kentucky Single Zone State Plane Coordinate System NAD 1983.

Beginning at a found metal fence post and re-bar on a high knob between Shop Branch and Burk Branch of the Big Sandy River and being on the boundary line between Carolyn and William Allen Gillum (D.B. 288 P. 204) and Ruth Evelyn Mills (W.B. 23 P. 159 and D.B. 187 P. 450 and having Kentucky Single Zone Coordinates of N: 3,976,502.48 E: 5,822,936.28;
Thence, with the line of Ruth Evelyn Mills and Carolyn and William Allen Gillum along an existing fence line S 77°04'26" E a distance of 7.14' to a point in the fence line; Thence, S 70°33'27" E a distance of 52.00' to a set re-bar; Thence, S 67°15'59" E a distance of 56.13' to a set re-bar; Thence, S 68°48'33" E a distance of 75.99' to a 32" white oak with fence; Thence, N 82°31'34" E a distance of 66.10' to a found metal fence post with re-bar and being a corner to Carl E. Butler, JR. (W.B. 24 P. 138 & W.B. 25 P. 122 and reference deed book 149 page 27); Thence, leaving the line of Ruth Evelyn Mills and running down the hill with the line of Carl E. Butler, JR. N 35°55'43" E a distance of 97.72' to a found metal fence post and re-bar; Thence, around the hill N 75°28'19" W a distance of 252.48' to a found metal fence post and re-bar; Thence, down the hill N 04°32'46" W a distance of 243.68' to a found metal fence post and re-bar; Thence, around the hill N 89°43'50" W a distance of 115.58' to a found metal fence post and re-bar; Thence, up the hill S 04°37'56" E a distance of 245.28' to a found metal fence post and re-bar; Thence, around the hill S 55°08'55" W a distance of 250.59' to a found metal fence post; Thence, up the hill S 35°49'22" E a distance of 98.82' to a found metal fence post and re-bar in the fence line on the line of Ruth Evelyn Mills; Thence, with the fence line and Ruth Evelyn Mills N 49°55'04" E a distance of 36.93' to a set re-bar; Thence, N 48°03'11" E a distance of 34.66' to a 30" oak with fence; Thence, N 59°10'17" E a distance of 59.68' to a set re-bar; Thence, N 59°05'06" E a distance of 52.56' to a set re-bar; Thence, N 58°04'17" E a distance of 39.17' to a set re-bar; Thence, N 54°01'30" E a distance of 27.41' to the point of beginning and containing 1.91 acres more or less according to a survey conducted by persons under the direct supervision of Steven E. Haywood, PLS #2661 with Summit Engineering which was completed on August 13th, 2015 and being the tract of land conveyed to Carolyn Butler Gillum and William Allen Gillum (aka) W. A. Gillum, wife and husband, by Carl E. Butler and Dora Emily Butler, husband and wife, by deed dated August 30th, 2007 which is recorded in Deed Book 288 Page 204 in the records of the Lawrence County Kentucky County Court Clerk's office.

Steven E. Haywood, PLS 2661

STATE of KENTUCKY
STEVE HAYWOOD
2661
LICENSED PROFESSIONAL LAND SURVEYOR

Date: 8/14/2015

EXHIBIT
tabbies
A

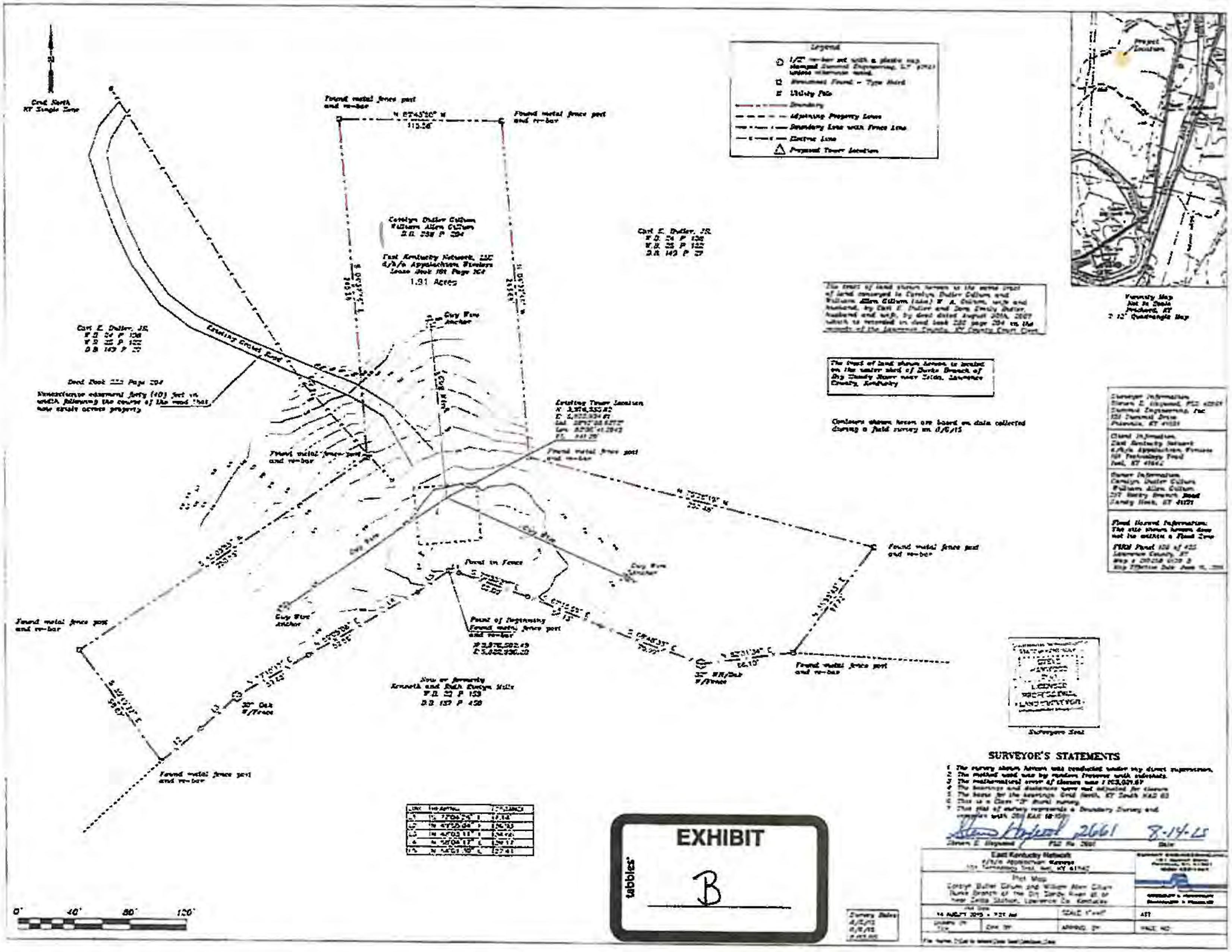
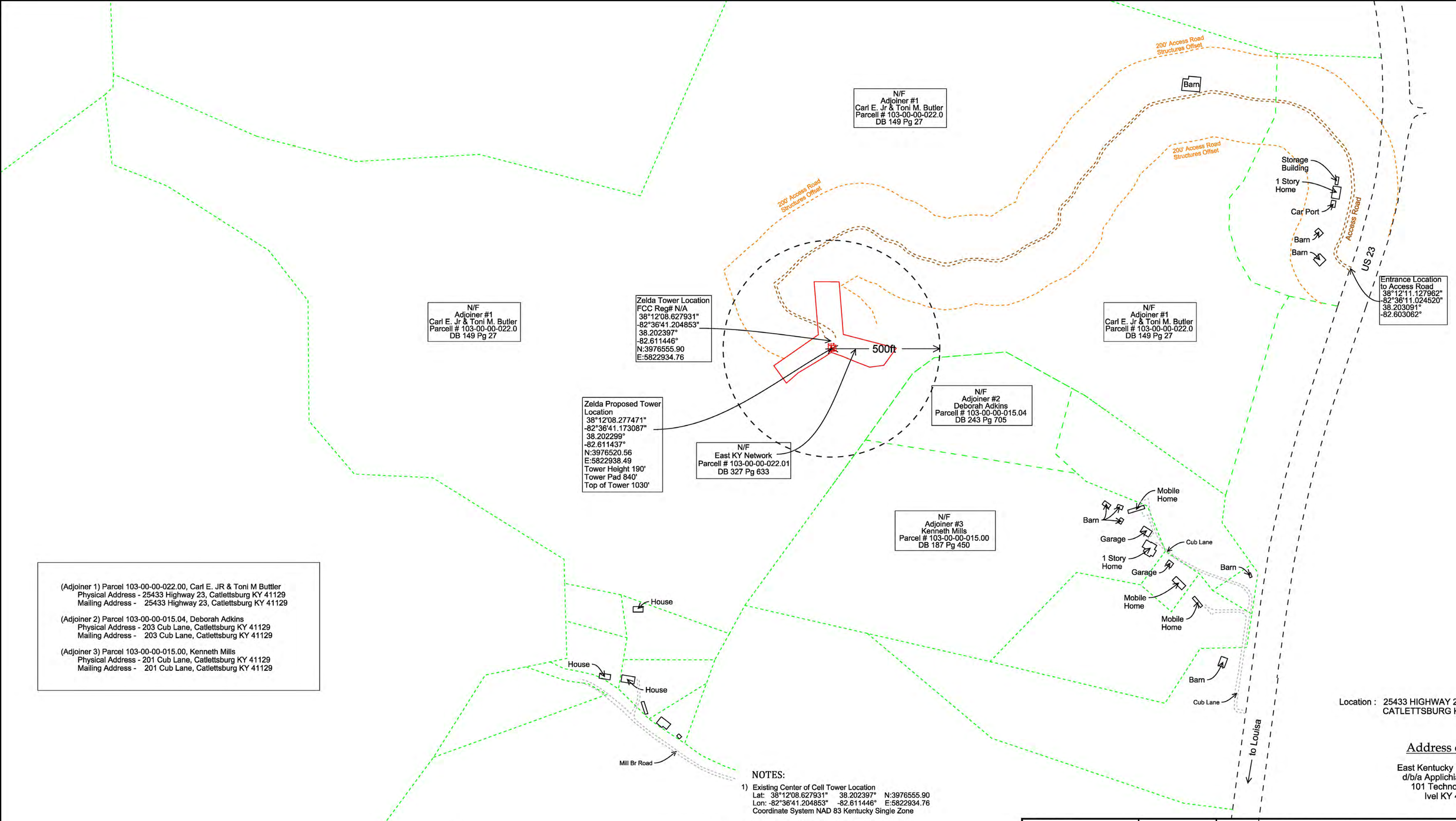


EXHIBIT
B

STATE OF KENTUCKY, COUNTY OF LAWRENCE, SCT.
I, CHRIS JOBE DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT OF WRITING WAS LODGED FOR RECORD ON THE 13th DAY OF Oct 20 16 AT 2PM. AND RECORDED IN Deed BOOK # 327 PAGE # 633 TAX $ 78.00 FEES 23.00 TOTAL 101.00. CHRIS JOBE, CLERK
BY: _____ D.C

Exhibit 10



(Adjoiner 1) Parcel 103-00-00-022.00, Carl E. JR & Toni M Buttler
Physical Address - 25433 Highway 23, Catlettsburg KY 41129
Mailing Address - 25433 Highway 23, Catlettsburg KY 41129

(Adjoiner 2) Parcel 103-00-00-015.04, Deborah Adkins
Physical Address - 203 Cub Lane, Catlettsburg KY 41129
Mailing Address - 203 Cub Lane, Catlettsburg KY 41129

(Adjoiner 3) Parcel 103-00-00-015.00, Kenneth Mills
Physical Address - 201 Cub Lane, Catlettsburg KY 41129
Mailing Address - 201 Cub Lane, Catlettsburg KY 41129

LEGEND

- INGRESS & EGRESS ACCESS ROAD
- Lease Area Per Deed
- AdJoiner Property Lines Per PVA Office
- 200' Access Road Structures Offset

Location : 25433 HIGHWAY 23
CATLETTSBURG KY 41129

Address of Client

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

NOTES:

1) Existing Center of Cell Tower Location
Lat: 38°12'08.627931" 38.202397° N:3976555.90
Lon: -82°36'41.204853" -82.611446° E:5822934.76
Coordinate System NAD 83 Kentucky Single Zone

Proposed Center of Cell Tower Location 190' Tall
Lat: 38°12'08.277471" 38.202299° N:3976520.56
Lon: -82°36'41.173087" -82.611437° E:5822938.49
Tower Pad 840'
Tower Heigth 190'
Top of Tower 1030'

2) Flood Hazard Information
Lawerence County 210258
FEMA Map # 21127C0130DDated 06-16-2011
Property is Located in Zone X being out of the 100 Year Flood Area

3) Contours Generated from survey flight data 2-26-25

4) GPS Equipment - Topcon HiPer VR GNSS Receiver

5) Horizontal Coordinate System, US NAD 83 Kentucky Single Zone
Vertical NAVD 88

6) Property subject to any and all easement, restrictions, reservations, and conveyance of record.

SURVEYOR'S CERTIFICATION

STATE OF KENTUCKY
DEWEY L. BOCOOK, JR.
8959
REGISTERED PROFESSIONAL ENGINEER

I hear by certify that the Information Shown Reflects the Information Obtained and Provided from the Lawerence County Property Valuation Administration Office in Louisa KY

Engineer Seal

DEWEY L. BOCOOK, JR. L.S. 2217 8-01-25 DATE

Disclaimer
As instruments of service, all Drawings, Specifications and copies thereof furnished by the Engineer, are his property. They are to be used only for this Project. Any use without consent of the Engineer may be construed as derogation of the Engineer copyright or other reserved rights. This document discloses subject matter considered confidential by Bocook and for which Bocook has property rights. Neither receipt nor possession hereof confers or transfers any rights to reproduce the document or any part thereof, or to disclose any information contained therein to others, or to use it for any purpose without the written permission of Bocook Engineering, Inc. The surveyor's certification listed on this sheet is applicable only to the client specified in the title block shown below.

Project Number	11508
Field Book Number	Electronic
Page Number	n/a
Reference Project	n/a
Technician	B.Bocook
Cadd	B.Bocook
Checked By	Dewey L. Bocook, JR.

BOCOOK ENGINEERING, INC.
CONSULTING ENGINEERS
PAINTSVILLE (606) 789-5961 KENTUCKY

Description
Property Owners and Structures within 500'
Zelda, Lawerence County KY
for
East Kentucky Network
located at
25433 HIGHWAY 23
CATLETTSBURG KY 41129

Zelda Tower Site
FCC Reg #N/A

Scale	Sheet	Revision	Sheet Number
1"=200'	1 of 1	C	11508 Access Road

Exhibit 11

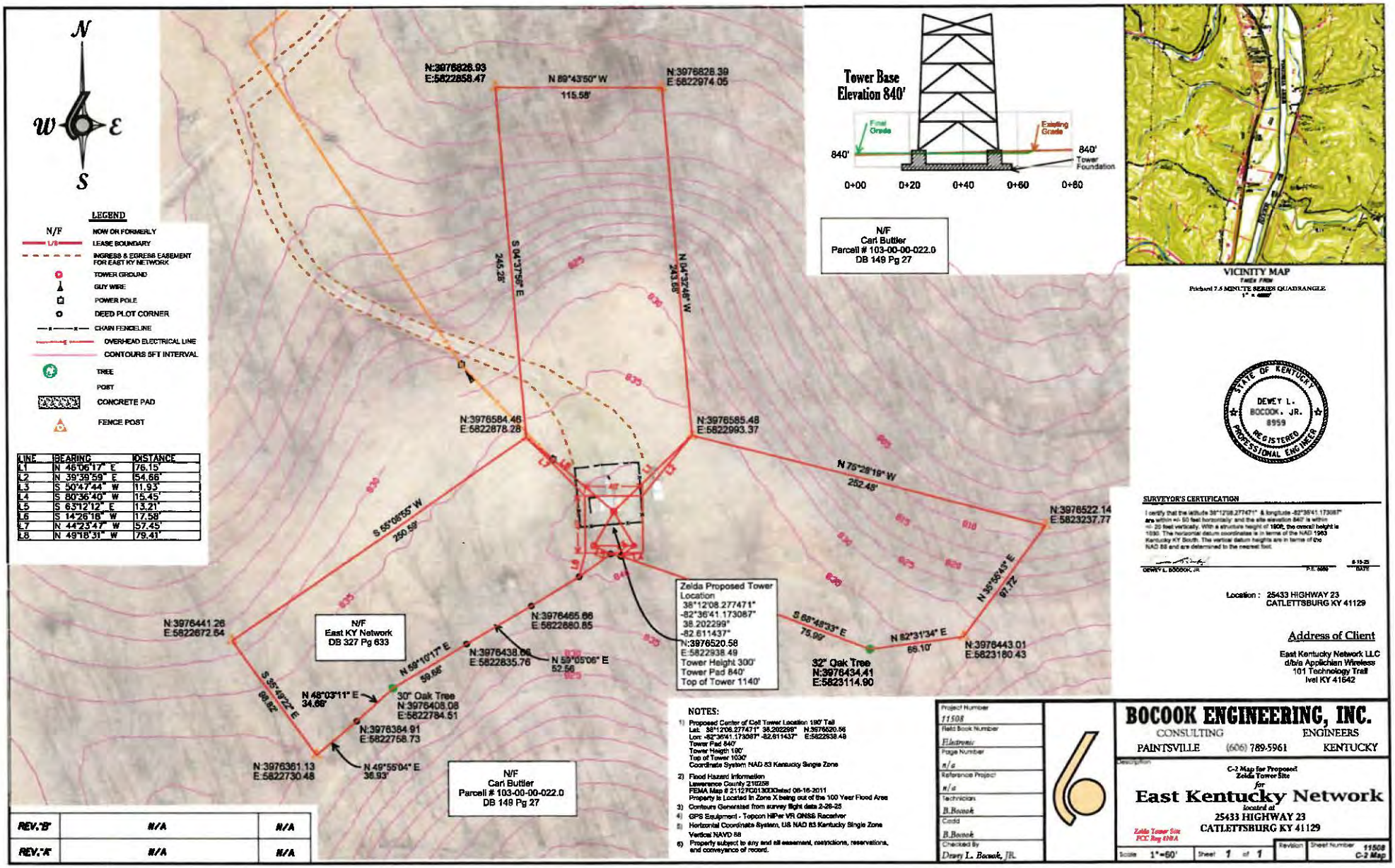
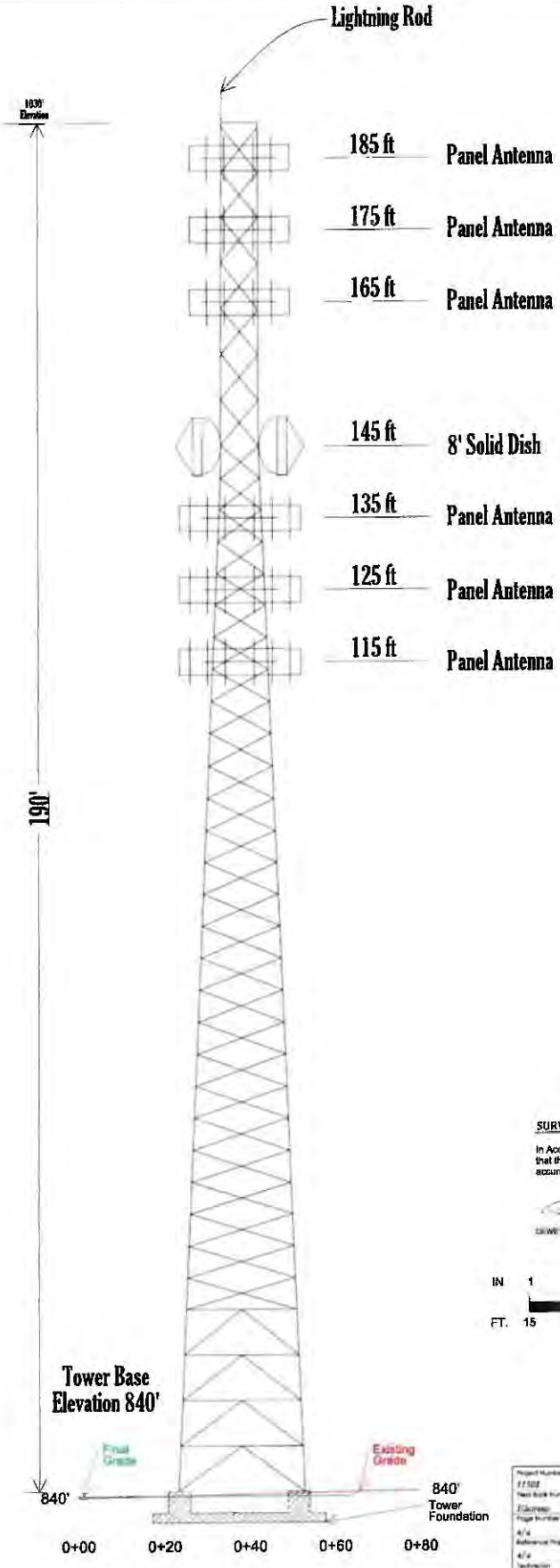

N
W
E
S
N:3976828.93
E:5822858.47
N 89°43'50" W
115.58'
N:3976828.39
E:5822974.05
S 04°37'58" E
245.28'
N 04°37'46" W
243.88'
N:3976584.46
E:5822878.28
N:3976585.48
E:5822993.37
N 75°28'18" W
252.48'
N:3976522.14
E:5823237.77
S 55°08'55" W
250.59'
N 35°56'43" E
67.72'
S 68°48'33" E
75.99'
N 82°31'34" E
66.10'
N:3976443.01
E:5823180.43
N:3976441.26
E:5822672.64
N:3976465.66
E:5822680.85
N 59°10'17" E
59.66'
N:3976438.66
E:5822835.76
N 55°05'06" E
52.56'
S 35°49'22" E
60.82'
N 48°03'11" E
34.66'
30" Oak Tree
N:3976408.08
E:5822784.51
N:3976384.91
E:5822758.73
N:3976361.13
E:5822730.48
N 49°55'04" E
36.93'
Zelda Proposed Tower
Location
38°12'08.277471"
-82°36'41.173087"
38.202299°
-82.611437°
N:3976520.58
E:5822938.49
Tower Height 300'
Tower Pad 840'
Top of Tower 1140'
32" Oak Tree
N:3976434.41
E:5823114.90
N/F
East KY Network
DB 327 Pg 633
N/F
Carl Buttler
Parcell # 103-00-00-022.0
DB 149 Pg 27
N/F
Carl Buttler
Parcell # 103-00-00-022.0
DB 149 Pg 27
Tower Base
Elevation 840'
Final Grade
Existing Grade
840'
840'
Tower Foundation
0+00
0+20
0+40
0+60
0+80
LEGEND
N/F NOW OR FORMERLY
L/B LEASE BOUNDARY
INGRESS & EGRESS EASEMENT FOR EAST KY NETWORK
TOWER GROUND
GUY WIRE
POWER POLE
DEED PLOT CORNER
CHAIN FENCELINE
OVERHEAD ELECTRICAL LINE
CONTOURS 5FT INTERVAL
TREE
POST
CONCRETE PAD
FENCE POST
LINE BEARING DISTANCE
L1 N 46°06'17" E 76.15'
L2 N 39°39'59" E 54.66'
L3 S 50°47'44" W 11.93'
L4 S 80°36'40" W 15.45'
L5 S 63°12'12" E 13.21'
L6 S 14°26'16" W 17.58'
L7 N 44°23'47" W 57.45'
L8 N 49°18'31" W 79.41'
VICINITY MAP
TAKEN FROM
Prichard 7.5 MINUTE SERIES QUADRANGLE
1" = 4000'
STATE OF KENTUCKY
DEWEY L. BOCOOK, JR.
8959
REGISTERED PROFESSIONAL ENGINEER
SURVEYOR'S CERTIFICATION
I certify that the latitude 38°12'08.277471" & longitude -82°36'41.173087" are within +/- 50 feet horizontally and the site elevation 840' is within +/- 20 feet vertically. With a structure height of 1020, the overall height is 1030. The horizontal datum coordinates is in terms of the NAD 1983 Kentucky KY South. The vertical datum heights are in terms of the NAD 88 and are determined to the nearest foot.
DEWEY L. BOCOOK, JR. P.E. 8959 8-15-25 DATE
Location : 25433 HIGHWAY 23
CATLETTSBURG KY 41129
Address of Client
East Kentucky Network LLC
d/b/a Applichian Wireless
101 Technology Trail
Ivel KY 41642
NOTES:
1) Proposed Center of Cell Tower Location 190' Tall
Lat: 38°12'08.277471" 38.202299° N:3976520.56
Lon: -82°36'41.173087° -82.611437° E:5822938.48
Tower Pad 840'
Tower Height 190'
Top of Tower 1030'
Coordinate System: NAD 83 Kentucky Single Zone
2) Flood Hazard Information
Lawrence County 210258
FEMA Map # 21127C0130D dated 06-16-2011
Property is Located in Zone X being out of the 100 Year Flood Area
3) Contours Generated from survey flight data 2-26-25
4) GPS Equipment - Topcon HiPer VR GNSS Receiver
5) Horizontal Coordinate System, US NAD 83 Kentucky Single Zone
Vertical NAVD 88
6) Property subject to any and all easement, restrictions, reservations, and conveyance of record.
Project Number 11508
Field Book Number Electronic
Page Number n/a
Reference Project n/a
Technician B.Bocook
Cadd B.Bocook
Checked By Dewey L. Bocook, JR.
REV."B" N/A N/A
REV."A" N/A N/A
BOCOOK ENGINEERING, INC.
CONSULTING ENGINEERS
PAINTSVILLE (606) 789-5961 KENTUCKY
Description
C-2 Map for Proposed
Zelda Tower Site
for
East Kentucky Network
located at
25433 HIGHWAY 23
CATLETTSBURG KY 41129
Zelda Tower Site
FCC Reg #N/A
Scale 1"=60' Sheet 1 of 1 Revision Sheet Number 11508 C-2 Map

Exhibit 12



Zelda Tower

Vertical Profile Sketch

N
W
E
S

Zelda Site Tower Reconstruction
Catlettsburg, KY
Profile of Tower

Note:
1) This drawing is a sketch showing the vertical placement of the antenna and dish elements on the proposed tower. This drawing does not certify any portion of the structure design of the tower or foundation portions of the structure. The dimensions of the tower base and foundation may very depending upon the tower manufacturer.
2) See Foundation Drawings for Details.

STATE OF KENTUCKY
DEWEY L. BOCOOK, JR.
8959
REGISTERED PROFESSIONAL ENGINEER

SURVEYOR'S CERTIFICATION

In Accordance with FAA Order 8260.19 D, Appendix C, I Hereby Certify that the Obstacle Accuracy Codes for the cell tower meets or exceeds accuracy (+/- 50ft for horizontal and +/- 20ft for vertical)

DEWEY L. BOCOOK, JR. P.E. 8959 5-15-25 DATE

IN 1 ½ 0 1 2 3
FT. 15 7.5 0 15 30 45
SCALE: 1" = 15'

Address of Client

East KY Network
d/b/a Applichian Wireless
101 Technology Trail
Ivel KY 41642

BOCOOK ENGINEERING, INC.
CONSULTING ENGINEERS
PAINTSVILLE (606) 789-5961 KENTUCKY

Proposed New Tower Zelda Site
190' Self Supporting Tower
for
East Kentucky Network
located at
25433 Highway 23
Catlettsburg KY 41129

Zelda Site
Proposed Tower

Scale 1"=15' Sheet 1 of 1 11608 Tower Profile

Exhibit 13

General Company Information

World Tower Company, Inc. is located at 1213 Compressor Drive in Mayfield, Kentucky. Our mailing address is PO Box 508, Mayfield KY 42066.You may be reach our offices at V - 270-247-3642, F – 270-247-0909, or E-Mail us at worldtow@ifdd.net. Our website may be visited at www.worldtower.com

The company was established in 1959 as eastern division manufacturing of Utility Tower. The company became World Tower Company, Inc. in 1979. At which time designs were changed from pipe to total solid rod towers. Due to increase in volume and a need for more capacity, World Tower Company moved manufacturing and offices to a new facility in 1997. World Tower Company manufactures all solid rod guyed and self-supporting towers. We are able to fabricate guyed towers to 1200' and self-supporting towers to 500'.

Guyed towers make up about 40% percent of the company's total production. Sixty percent of our production output is in self-supporting towers.

World Tower Company, Inc. is wholly owned and not a member of a partnership of consortium

Account Management

Doug Walker is President of World Tower Company. Doug takes a hands-on approach to the business. He is involved in sales, design and customer relations. The Secretary/Treasurer of the company is Danette Rowe. Danette serves the company as office manager. She oversees the office operations and is responsible for accounting for the business. Kirk Hall P.E. oversees World Tower's Engineering Department. Kirk has much experience in the tower industry.

A weekly production meeting with all responsible supervisory personnel is held each Tuesday to update production schedules. Following that meeting a detailed report can be generated to our customers as to the exact status of their order. Reports are provided only at customers request.

Quality/Customer Service

World Tower Company requires that all welded material be inspected prior to loading. One (1) face of all self-supporting towers is assembled to ensure proper fit prior to being galvanized. An on-site inspection is performed at the galvanizing plant prior to

galvanizing. All material is once again inspected following the galvanizing process. Our truck driver must inspect each load before loading at galvanizing plant. All loads are again inspected by driver and notated on delivery sheet following off loading. A customer representative must be on site to inspect and accept material when off loaded (unless waived by customer).

World Tower
Self-Supporting System

For restricted space requirements, World Tower offers a versatile and self-supporting tower system. No guy wires are necessary and each tower is fabricated using a solid leg with angled cross members for a sound, secure tower. Each system can vary in face width, which depends on site space. In addition, World Tower offers a maximum height of their self-supporter at approximately 500 feet depending on tower loading.

Choose World Tower's Self Supporting system for the security of life-long usage for your communications systems.

Self-Supporting Systems:

- Stable, rigid construction
- Pre-assembled before Delivery
- Minimal space requirements
- Multiple application usage
- Solid rod legs with angled cross members

Retrofitting for future loading

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

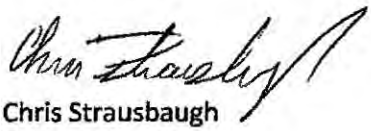
Kentucky Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, KY 40602-0615

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

TH EXCAVATING LLC

P.O Box 3

Stanville, Ky 41659

(606)794-8804

TH Excavating LLC has been in business for 12 years. We started contracting with Appalachian Wireless In 2013. Since then TH Excavating LLC does a wide range of jobs: road maintenance, retaining walls, slip repair, new road construction, new site builds, concrete pads, tower foundations and vegetation control.

TH Excavating LLC takes great pride in hiring the most qualified and well trained workers. Since being in business TH Excavating LLC has had zero work related injuries. Safety is our top priority. All employees go through a background check and drug screen. All employees attend our bi monthly safety meeting presentations.

Jamie Kirk / New Construction Forman. Jamie has been with the company for 8 years, he has a total of 19 years experience.

Jimmy Campbell / Foundation and Concrete Forman. Jimmy has been with the company for 6 years. Jimmy has completed over 60 cell tower foundations. He has a total of 25 years of experience.

Reece Spurlock / Road Maintenance and vegetation Control Forman. Reece has been with the company for 10 years. Reece has a total of 10 years experience.

Exhibit 14

Utility ID	Utility Name	Utility Type	Class	City	State
4002000	1GLOBAL Operations (US) Inc.	Cellular	D	Durham	NC
4111300	2600Hz, Inc. dba ZSWITCH	Cellular	D	Henderson	NV
4115150	ACN Communication Services, LLC dba Flash Wireless dba Flash Mobile	Cellular	D	Charlotte	NC
4115750	Affiniti Ventures, Inc.	Cellular	C	New York	NY
4113600	AFNET, LLC	Cellular	D	Alpharetta	GA
4108300	Air Voice Wireless, LLC d/b/a AirTalk Wireless	Cellular	A	Houston	TX
4115200	Airespring, Inc.	Cellular	D	Clearwater	FL
4111900	ALLNETAIR, INC.	Cellular	D	West Palm Beach	FL
44451184	Alltel Corporation d/b/a Verizon Wireless	Cellular	A	Lisle	IL
4110850	AltaWorx, LLC	Cellular	D	Fairhope	AL
4107800	American Broadband and Telecommunications Company	Cellular	D	Toledo	OH
4108650	AmeriMex Communications Corp.	Cellular	D	Safety Harbor	FL
4105100	AmeriVision Communications, Inc. d/b/a Affinity 4	Cellular	D	Virginia Beach	VA
4114250	Approved Contact LLC	Cellular	D	Reno	NV
4115050	Aquarius Silver LLC	Cellular	D	Sheridan	WY
4105700	Assurance Wireless USA, L.P.	Cellular	D	Atlanta	GA
4113100	BARK TECHNOLOGIES, INC.	Cellular	D	Charlotte	NC
4108600	BCN Telecom, Inc.	Cellular	D	Morristown	NJ
4106000	Best Buy Health, Inc. d/b/a GreatCall d/b/a Jitterbug	Cellular	A	San Diego	CA
4111050	BlueBird Communications, LLC	Cellular	D	New York	NY
4107600	Boomerang Wireless, LLC	Cellular	A	Dallas	TX
4115500	CALL CENTERS INDIA INCORPORATED d/b/a Blueconnects	Cellular	D	Seattle	WA
4100700	Cellco Partnership dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
4106600	Cintex Wireless, LLC	Cellular	D	Houston	TX
4114550	Cliq Communications LLC d/b/a Cliq Mobile	Cellular	D	Coral Gables	FL
4111150	Comcast OTR1, LLC	Cellular	A	Phoeniexville	PA
4101900	Consumer Cellular, Incorporated	Cellular	A	Portland	OR
4112700	Cox Wireless, LLC	Cellular	D	Atlanta	GA
4108850	Cricket Wireless, LLC	Cellular	A	San Antonio	TX
4111500	CSC Wireless, LLC d/b/a Altice Wireless	Cellular	A	Long Island City	NY
4114000	Daywalker Mobile Inc.	Cellular	D	Bartlesville	OK
4112000	DISH Wireless L.L.C.	Cellular	A	Englewood	CO
4111200	Dynalink Communications, Inc.	Cellular	C	Brooklyn	NY
4111800	Earthlink, LLC	Cellular	C	Atlanta	GA
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
4113800	EVOLVE WIRELESS LLC	Cellular	D	Maumee	OH
4110450	Excellus Communications, LLC	Cellular	D	Harrisburg	SD
4112400	Excess Telecom Inc.	Cellular	D	Beverly Hills	CA
4104800	France Telecom Corporate Solutions L.L.C.	Cellular	D	Herndon	VA
4111750	Gabb Wireless, Inc.	Cellular	A	Lehi	UT
4109350	Global Connection Inc. of America	Cellular	D	Miami	FL
4102200	Globalstar USA, LLC	Cellular	C	Covington	LA
4112850	GO TECHNOLOGY MANAGEMENT, LLC	Cellular	D	Atlanta	GA

4109600	Google North America Inc.	Cellular	A	Mountain View	CA
33350363	Granite Telecommunications, LLC	Cellular	D	Quincy	MA
4114300	Group F Consulting, LLC	Cellular	D		
4114050	Helix Wireless Inc.	Cellular	D	Monmouth Junction	NJ
4111350	HELLO MOBILE TELECOM LLC	Cellular	D	Dania Beach	FL
4112950	Hoop Wireless, LLC	Cellular	D	Lakewood	NJ
4103100	i-Wireless, LLC	Cellular	D	Newport	KY
4112550	IDT Domestic Telecom, Inc.	Cellular	D	Newark	NJ
4109800	IM Telecom, LLC d/b/a Infiniti Mobile	Cellular	D	Plano	TX
4112650	Insight Mobile, Inc.	Cellular	D	Los Angeles	CA
4111950	J Rhodes Enterprises LLC	Cellular	D	Gulf Breeze	FL
22215360	KDDI America, Inc.	Cellular	D	Staten Island	NY
10872	Kentucky RSA #1 Partnership	Cellular	A	Basking Ridge	NJ
4112200	Lexvor Inc.	Cellular	D	Irvine	CA
4111250	Liberty Mobile Wireless, LLC	Cellular	B	Sunny Isles Beach	FL
4114750	Link Mobile, Inc.	Cellular	D	New York	NY
4111400	Locus Telecommunications, LLC	Cellular	B	Fort Lee	NJ
4114500	Lux Mobile USA, Inc	Cellular	D	Baton Rouge	LA
4107300	Lycamobile USA, Inc.	Cellular	D	Newark	NJ
4112500	Marconi Wireless Holdings, LLC	Cellular	B	Westlake Village	CA
4113850	MAXSIP TEL KENTUCKY LLC d/b/a Maxsip Telecom	Cellular	D	Woodmere	NY
4114800	Mediacom Wireless LLC	Cellular	D	Mediacom Park	NY
4108800	MetroPCS Michigan, LLC	Cellular	A	Bellevue	WA
4111700	Mint Mobile, LLC	Cellular	A	Costa Mesa	CA
4115100	Mobile 13, Inc	Cellular	D	South Jordan	UT
4114950	Moxee Technologies LLC dba COLLEGIATE MOBILE	Cellular	D	Sparks	NV
4114100	MVNO Connect LLC	Cellular	D	St. Petersburg	FL
4113350	NatWireless, LLC	Cellular	D	Houston	TX
4202400	New Cingular Wireless PCS, LLC	Cellular	A	San Antonio	TX
4110700	Norcell, LLC	Cellular	D	Clayton	WA
4113700	Nova Labs, Inc. dba Helium Mobile	Cellular	D	Las Vegas	NV
4110750	Onvoy Spectrum, LLC	Cellular	D	Chicago	IL
4109050	Patriot Mobile LLC	Cellular	A	Grapevine	TX
4115600	PHREELI COMPANY	Cellular	D	Lewes	DE
4110250	Plintron Technologies USA LLC	Cellular	D	Bellevue	WA
4115650	PLUG MOBILE LLC	Cellular	D	St. Louis	MO
33351182	PNG Telecommunications, Inc. dba PowerNet Global Communications	Cellular	D	Cincinnati	OH
4114850	POWER MOBILE LLC	Cellular	D	Rockville Centre	NY
4112800	Prepaid Wireless Group, LLC dba Prepaid Wireless Wholesale	Cellular	D	Rockville	MD
4115550	Prepaid Wireless Wholesale of Maryland, LLC	Cellular	D	Rockville	MD
4114350	PRESTO WIRELESS Corp.	Cellular	D	Fair Lawn	NJ
4115000	Prosper Wireless LLC	Cellular	C	Sherman Oaks	CA
4107700	Puretalk Holdings, Inc.	Cellular	B	Covington	GA
4106700	Q Link Wireless, LLC	Cellular	A	Dania	FL
4115900	RABONA CORPORATION	Cellular	C	New York	NY
4113200	Red Pocket Inc.	Cellular	D	Thousand Oaks	CA
4116000	Ringer Mobile, LLC	Cellular	C	Peachtree Corners	GA

4114200	Roccstar Wireless LLC	Cellular	D	Bedford	TX
4114700	Rocket Mobile LLC	Cellular	D	West Palm Beach	FL
4115400	RSCU Mobile, LLC	Cellular	D	Alpine	UT
4106200	Rural Cellular Corporation	Cellular	A	Basking Ridge	NJ
4108550	Sage Telecom Communications, LLC dba TruConnect	Cellular	A	Los Angeles	CA
4113050	Sarver Corporation	Cellular	D	Rancho Cucamonga	CA
4109150	SelecTel, Inc. d/b/a SelecTel Wireless	Cellular	A	Fremont	NE
4110150	Spectrotel of the South LLC dba Touch Base Communications	Cellular	D	Neptune	NJ
4111450	Spectrum Mobile, LLC	Cellular	A	St. Louis	MO
4114400	Splash Cellular Inc.	Cellular	D	Bountiful	UT
4111600	STX Group LLC dba Twigby	Cellular	D	Murfreesboro	TN
4115450	Surf Telecom, LLC	Cellular	D	Key Bixcayne	FL
4115950	Switch Mobile, LLC	Cellular	C	Layton	UT
4113450	Syntegra North America, LLC	Cellular	D	Denton	TX
4202200	T-Mobile Central, LLC dba T-Mobile	Cellular	A	Bellevue	WA
4002500	TAG Mobility, LLC d/b/a TAG Mobile	Cellular	D	Plano	TX
4115850	TELCO Communications LLC dba TELCO CELLULAR	Cellular	C	Oceanside	NY
4107200	Telefonica Global Solutions USA, Inc.	Cellular	D	Miami	FL
4112100	Tello LLC	Cellular	A	Atlanta	GA
4108900	Telrite Corporation	Cellular	D	Covington	GA
4108450	Tempo Telecom, LLC	Cellular	D	Dallas	TX
4113900	TERRACOM Inc. d/b/a Maxsip Tel	Cellular	D	Chattanooga	TN
4113950	THE LIGHT PHONE INC.	Cellular	D	Brooklyn	NY
4113250	Thrive Health Tech, Inc.	Cellular	D	Nashville	TN
4110400	Torch Wireless Corp.	Cellular	C	Bartlett	TN
4103300	Touchtone Communications, Inc.	Cellular	D	Cedar Knolls	NJ
4104200	TracFone Wireless, Inc.	Cellular	D	Miami	FL
4115350	TREK CELLULAR, LLC	Cellular	D	Stevensville	MD
4112250	TROOMI WIRELESS, Inc.	Cellular	B	Orem	UT
4114600	TruConnect Communications, Inc.	Cellular	D	Los Angeles	CA
4112600	Tube Incorporated dba Reach Mobile	Cellular	D	Atlanta	GA
4112750	Unity Wireless, Inc.	Cellular	D	Pembroke Pines	FL
4115800	USA Mobile LLC	Cellular	C	Laguna Beach	CA
4110300	UVNV, Inc. d/b/a Mint Mobile	Cellular	C	Costa Mesa	CA
10630	Verizon Americas LLC dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
4113300	Via Wireless, LLC	Cellular	D	Houston	TX
4110800	Visible Service LLC	Cellular	D	Basking Ridge	NJ
4115700	Viva-US Communications, Inc.	Cellular	C	San Diego	CA
4113750	VOLT MOBILE Inc	Cellular	D	Delray Beach	FL
4114450	WeIncentivize LLC d/b/a ChosenWireless	Cellular	D	San Diego	CA
4113000	Whoop Connect Inc.	Cellular	D	Melbourne	FL
4115250	WHOOP MOBILE INC.	Cellular	D	Melbourne	FL
4106500	WiMacTel, Inc.	Cellular	D	Calgary, AB	CA
4110950	Wing Tel Inc.	Cellular	C	New York	NY
4113650	XCHANGE TELECOM LLC	Cellular	D	Brooklyn	NY
4112150	Zefcom, LLC	Cellular	C	Wichita Falls	TX