

**COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

THE APPLICATION OF )  
CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS )  
AND TOWERCO 2013, LLC FOR ISSUANCE ) CASE NO. 2024-00059  
OF A CERTIFICATE OF PUBLIC CONVENIENCE AND )  
NECESSITY TO CONSTRUCT A WIRELESS )  
COMMUNICATIONS FACILITY IN THE )  
COMMONWEALTH OF KENTUCKY IN THE COUNTY )  
OF GRAYSON )

SITE NAME: ROUGH RIVER DAM

\* \* \* \* \*

**APPLICATION FOR  
CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY  
FOR CONSTRUCTION OF A WIRELESS COMMUNICATIONS FACILITY**

Cellco Partnership, d/b/a Verizon Wireless and TowerCo 2013, LLC (“Co-Applicants”), by counsel, pursuant to (i) KRS §§278.020, 278.040, 278.650, 278.665, and other statutory authority, and the rules and regulations applicable thereto, and (ii) the Telecommunications Act of 1996, respectfully submit this Application requesting issuance of a Certificate of Public Convenience and Necessity (“CPCN”) from the Kentucky Public Service Commission (“PSC”) to construct, maintain, and operate a Wireless Communications Facility (“WCF”) to serve the customers of the Co-Applicant with wireless communications services.

In support of this Application, Co-Applicants respectfully provide and state the following information:

1. The complete name and address of the Co-Applicants:
  - a. Cellco Partnership, d/b/a Verizon Wireless, having a local address of 2902 Ring Road, Elizabethtown, KY, 42701.

b. TowerCo 2013, LLC, having a local address of 5000 Valleystone Drive, Cary, NC 27519

2. Co-Applicants:

a. Cellco Partnership, d/b/a Verizon Wireless is a Delaware general partnership and a copy of the Statement of Good Standing from Delaware, and the Certificate of Assumed Name is on file with the Secretary of State of Commonwealth of Kentucky and included as part of **Exhibit A**.

b. TowerCo 2013, LLC is a Delaware limited liability company and a copies of the formulation document and the Statement of Good Standing from Delaware, and the Certificate of Authorization is on file with the Secretary of State of Commonwealth of Kentucky, are included as part of **Exhibit A**.

3. Co-Applicants propose construction of an antenna tower for communications services, which is to be located in an area outside the jurisdiction of a planning commission, and Co-Applicants submit this application to the PSC for a certificate of public convenience and necessity pursuant to KRS §§ 278.020(1), 278.040, 278.650, 278.665, and other statutory authority.

4. The Co-Applicant operates on frequencies licensed by the Federal Communications Commission ("FCC") pursuant to applicable FCC requirements. A copy of the Co-Applicants' FCC Registration and Licenses with Authorization to provide wireless services are attached to this Application or described as part of **Exhibit B**, and the facility will be constructed and operated in accordance with applicable FCC regulations.

5. The public convenience and necessity require the construction of the proposed WCF. The construction of the WCF will bring or improve the Co-Applicant's services to an area

currently not served or not adequately served by the Co-Applicants by increasing coverage or capacity and thereby enhancing the public's access to innovative and competitive wireless communications services. A statement from Co-Applicant's RF Design Engineer outlining said need is attached as **Exhibit Q** along with Propagation Maps attached as **Exhibit R**. The WCF is an integral link in the Applicant's network design that must be in place to provide adequate coverage to the service area.

6. To address the above-described service needs, Co-Applicants propose to construct a WCF on the west side of Falls of Rough Road at its intersection with Rough River Lodge Rd., Falls of Rough, KY 40119. (North Latitude: (37° 36' 16.71", West Longitude 86° 30' 43.37"), on a parcel of land located entirely within the county referenced in the caption of this application. The property on which the WCF will be located is owned by David Wayne Mercer pursuant to a Deed recorded in Deed Book 513, Page 237 in the office of the County Clerk. The proposed WCF will consist of a 105-foot tall tower, with an approximately 5-foot tall lightning arrestor attached at the top, for a total height of 110-feet. The WCF will also include concrete foundations and a shelter or cabinets to accommodate the placement of the Co-Applicant's radio electronics equipment and appurtenant equipment. The Co-Applicant's equipment cabinet or shelter will be approved for use in the Commonwealth of Kentucky by the relevant building inspector. The WCF compound will be fenced and all access gate(s) will be secured. A description of the manner in which the proposed WCF will be constructed is attached as **Exhibit C** and **Exhibit D**.

7. A list of utilities, corporations, or persons with whom the proposed WCF is likely to compete along with a map showing the proposed location as well as the identified like facilities is attached as **Exhibit E**.

8. The site development plan and a vertical profile sketch of the WCF signed and sealed by a professional engineer registered in Kentucky depicting the tower height, as well as a proposed configuration for the antennas of the Co-Applicant has also been included as part of **Exhibit C**.

9. Foundation design plans signed and sealed by a professional engineer registered in Kentucky and a description of the standards according to which the tower was designed are included as part of **Exhibit D**.

10. Co-Applicants have considered the likely effects of the installation of the proposed WCF on nearby land uses and values and has concluded that there is no more suitable location reasonably available from which adequate services can be provided, and that there are no reasonably available opportunities to co-locate Co-Applicant's antennas on an existing structure. When suitable towers or structures exist, Co-Applicant attempts to co-locate on existing structures such as communications towers or other structures capable of supporting Co-Applicant's facilities; however, no other suitable or available co-location site was found to be located in the vicinity of the site. A statement from Co-Applicant, Cellco Partnership, d/b/a Verizon Wireless's RF Design Engineer outlining exploration of co-location opportunities is attached as **Exhibit Q**.

11. A copy of the Application for Federal Aviation Administration's ("FAA") and the FAA Determination of No Hazard are attached as **Exhibit F**.

12. A copy of the Kentucky Airport Zoning Commission ("KAZC") Application and the Approval are attached as **Exhibit G**.

13. A geotechnical engineering report was performed at the WCF site by Delta Oaks Group, 4904 Professional Court, Second Floor, Raleigh, NC 27609, dated September 19, 2023 and is attached as **Exhibit H**. The name and address of the geotechnical engineering firm and the



professional engineer registered in Kentucky who prepared the report are included as part of **Exhibit H and Exhibit S**.

14. Clear directions to the proposed WCF site from the County seat are attached as **Exhibit I**. The name and telephone number of the preparer of **Exhibit I** are included as part of this exhibit.

15. Applicant, pursuant to a written agreement, has acquired the right to use the WCF site and associated property rights. A copy of the agreement or an abbreviated agreement recorded with the County Clerk is attached as **Exhibit J**.

16. Personnel directly responsible for the design and construction of the proposed WCF are well qualified and experienced. The tower and foundation drawings for the proposed tower submitted as part of **Exhibit D** bear the signature and stamp of a professional engineer registered in the Commonwealth of Kentucky. All tower designs meet or exceed the minimum requirements of applicable laws and regulations. The identity and qualifications of each person directly responsible for design and construction of the proposed tower are contained in **Exhibit S**.

17. The Construction Manager for the proposed facility is Larry Rhoads and the identity and qualifications of each person directly responsible for design and construction of the proposed tower are contained in **Exhibit S**.

18. As noted on the Survey attached as part of **Exhibit C**, the surveyor has determined that the tower site and access easement are not within any flood hazard area per Flood Hazard Boundary Map, Community Panel Number 21085C0035C, Dated September 19, 2012.

19. **Exhibit C** includes a map drawn to an appropriate scale that shows the location of the proposed tower and identifies every owner of real estate within 500 feet of the proposed tower, every owner of real estate within 200 feet of the access road including intersection with the public

street system and all abutting property owners (according to the records maintained by the County Property Valuation Administrator). Attached as **Exhibit K** is the Notification List with screen shots of the PVA records verified and updated using the Grayson County PVA on March 7, 2024. **Exhibit C** also identifies every structure and every easement within 500 feet of the proposed tower or within 200 feet of the access road including intersection with the public street system.

20. Co-Applicants have sent certified notices every person who, according to the records of the County Property Valuation Administrator, owns property which is within 500 feet of the proposed tower or contiguous to the site property, by certified mail, return receipt requested, of the proposed construction. Each notified property owner has been provided with a map of the location of the proposed construction, the PSC docket number for this application, the address of the PSC, and informed of his or her right to request intervention. A list of the notified property owners, verified on March 7, 2024, using the Grayson County Kentucky Property Valuation Administration records and a copy of the form of the notice sent by certified mail to each landowner on March 8, 2024, are attached as **Exhibit K** and **Exhibit L**, respectively. Seven (7) notices were sent to surrounding property owners; to date five (5) notice green cards have been returned and one letter was returned. USPS tracking indicates that one (1) notice was picked up at the postal facility on March 12, 2024. Copies of the mailed envelopes, returned green cards and USPS tracking are included in **Exhibit L**. There are no unaccountable notices.

21. Co-Applicants have notified the applicable County Judge/Executive by certified mail, return receipt requested, of the proposed construction. This notice included the PSC docket number under which the application will be processed and informed the County Judge/Executive of his/her right to request intervention. A copy of this notice along with a copy of the mailed envelope and returned green card is attached as **Exhibit M**.

22. Notice signs meeting the requirements prescribed by 807 KAR 5:063, Section 1(2) that measure at least 2 feet in height and 4 feet in width and that contain all required language in letters of required height, have been posted, one in a visible location on the proposed site and one on the nearest public road. Such signs shall remain posted for at least two weeks after filing of the Application, and a copy of the posted text is attached as **Exhibit N**.

23. A legal notice advertisement regarding the location of the proposed facility has been published in a newspaper of general circulation in the county in which the WCF is proposed to be located. A copy of the newspaper legal notice advertisement is attached as **Exhibit O**.

24. The area of the proposed facility is in the unincorporated area of Grayson County, Kentucky. The site located on the west side of Falls of Rough Road at its intersection with Rough River Lodge Rd., Falls of Rough, KY 40119. The area is vacant portion of a lot. The area is predominately commercial with agricultural uses and scattered residential homes. The terrain is rolling. There is no zoning or Plan Commission in this area of Grayson County. The proposed facility is removed a significant distance from any residential structures. The nearest residential structure is 259 feet from the proposed tower site.

25. The process that was used by the Co-Applicant's radio frequency engineers in selecting the site for the proposed WCF was consistent with the general process used for selecting all other existing and proposed WCF facilities within the proposed network design area. Co-Applicant's radio frequency engineers have conducted studies and tests in order to develop a highly efficient network that is designed to handle voice and data traffic in the service area. The engineers determined an optimum area for the placement of the proposed facility in terms of elevation and location to provide the best quality service to customers in the service area. A radio frequency design search area prepared in reference to these radio frequency studies was considered by the

Co-Applicant when searching for sites for its antennas that would provide the coverage deemed necessary by the Co-Applicant. A map of the area in which the tower is proposed to be located which is drawn to scale and clearly depicts the necessary search area within which the site should be located pursuant to radio frequency requirements is attached as **Exhibit P**.

26. The tower must be located at the proposed location and proposed height to provide necessary service to wireless communications users in the subject area, as set out and documented in the RF Design Engineer's Statement of Need and Propagation Maps attached as **Exhibit Q** and **Exhibit R**, respectively. The proposed tower will expand and improve voice and data service for Verizon Wireless customers.

27. Attached hereto as **Exhibit T** please find an Affidavit of Certification for all information contained in this application.

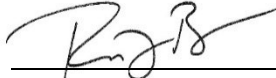
28. All Exhibits to this Application are hereby incorporated by reference as if fully set out as part of the Application.

29. All responses and requests associated with this Application may be directed to:

Russell L. Brown  
Clark, Quinn, Moses, Scott & Grahn, LLP  
320 North Meridian Street, Suite 1100  
Indianapolis, IN 46204  
Phone: (317) 637-1321  
FAX: (317) 687-2344  
Email: rbrown@clarkquinnlaw.com

WHEREFORE, Co-Applicants respectfully request that the PSC accept the foregoing Application for filing and, having met the requirements of KRS §§278.020(1), 278.650, and 278.665 and all applicable rules and regulations of the PSC, grant a Certificate of Public Convenience and Necessity to construct and operate the WCF at the location set forth herein.

Respectfully submitted,



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Russell L. Brown

Clark, Quinn, Moses, Scott & Grahn, LLP

320 North Meridian Street, Suite 1100

Indianapolis, IN 46204

Phone: (317) 637-1321 / FAX: (317) 687-2344

Email: [rbrown@clarkquinnlaw.com](mailto:rbrown@clarkquinnlaw.com)

Attorney for Cellco Partnership d/b/a Verizon Wireless

## LIST OF EXHIBITS

- A Applicant Entities
- B FCC Registration and License Documentation
- C Site Development Plan:
  - 500' Vicinity Map Legal Descriptions
  - Flood Plain Certification Site Plan
  - Vertical Tower Profile
- D Tower and Foundation Design
- E Competing Utilities, Corporations, or Persons List  
And Map of Like Facilities in Vicinity
- F FAA Application and Determination of No Hazard
- G KAZC Application and Approval
- H Geotechnical Report
- I Directions to WCF Site
- J Real Estate Agreement
- K Notification Listing with PVA Verification
- L Property Owner Notification
- M County Judge/Executive notice
- N Posted Notices
- O Newspaper Legal Notice Advertisement
- P Radio Frequency Design Search Area
- Q RF Design Engineer Statement of Need
- R Propagation Maps
- S List of Qualified Professionals
- T Affidavit of Certification

# Delaware

## The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CELLCO PARTNERSHIP" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF APRIL, A.D. 2023.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN PAID TO DATE.



Jeffrey W. Bullock, Secretary of State

3341134 8300

SR# 20231665976

You may verify this certificate online at [corp.delaware.gov/authver.shtml](http://corp.delaware.gov/authver.shtml)

Authentication: 203227418

Date: 04-27-23



**Michael G. Adams**  
**Secretary of State**

**Certificate**

I, Michael G. Adams, Secretary of State for the Commonwealth of Kentucky, do hereby certify that the foregoing writing has been carefully compared by me with the original thereof, now in my official custody as Secretary of State and remaining on file in my office, and found to be a true and correct copy of

CERTIFICATE OF ASSUMED NAME OF VERIZON WIRELESS ADOPTED BY  
GENERAL PARTNERS OF CELLCO PARTNERSHIP FILED JUNE 21, 2006.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my  
Official Seal at Frankfort, Kentucky, this 10th day of May, 2023.



*Michael G. Adams*

Michael G. Adams  
Secretary of State  
Commonwealth of Kentucky  
kdcoleman/0641227 - Certificate ID: 290787



COMMONWEALTH OF KENTUCKY  
TREY GRAYSON  
SECRETARY OF STATE



0641227.07

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C226

Trey Grayson  
Secretary of State  
Received and Filed  
06/21/2006 12:06:09 PM  
Fee Receipt: \$20.00

CERTIFICATE OF ASSUMED NAME

This certifies that the assumed name of  
Verizon Wireless

(Name under which the business will be conducted)

has been adopted by See Addendum

(Real name - KRS 365.015(1))

which is the "real name" of (YOU MUST CHECK ONE)

- |  |   |
|--|---|
| <input type="checkbox"/> a Domestic General Partnership                      | <input checked="" type="checkbox"/> a Foreign General Partnership           |
| <input type="checkbox"/> a Domestic Registered Limited Liability Partnership | <input type="checkbox"/> a Foreign Registered Limited Liability Partnership |
| <input type="checkbox"/> a Domestic Limited Partnership                      | <input type="checkbox"/> a Foreign Limited Partnership                      |
| <input type="checkbox"/> a Domestic Business Trust                           | <input type="checkbox"/> a Foreign Business Trust                           |
| <input type="checkbox"/> a Domestic Corporation                              | <input type="checkbox"/> a Foreign Corporation                              |
| <input type="checkbox"/> a Domestic Limited Liability Company                | <input type="checkbox"/> a Foreign Limited Liability Company                |
| <input type="checkbox"/> a Joint Venture                                     |   |

organized and existing in the state or country of Delaware, and whose address is

One Verizon Way Basking Ridge NJ 07920

Street address, if any

City

State

Zip Code

The certificate of assumed name is executed by

NYNEX PCS Inc.

Jane A. Schepker-Assistant Secretary

Print or type name and title

June 15, 2006

Date

Signature

Print or type name and title

Date

**Addendum**

The full name of the Partnership is Cellco Partnership; a Delaware general partnership with its headquarters located One Verizon Way, Basking Ridge NJ 07920-1097.

<b>General Partners of Cellco Partnership</b>	<b>Address</b>
Bell Atlantic Cellular Holdings, L.P.	One Verizon Way Basking Ridge, NJ 07920
NYNEX PCS Inc.	One Verizon Way Basking Ridge, NJ 07920
PCSCO Partnership	One Verizon Way Basking Ridge, NJ 07920
GTE Wireless Incorporated	One Verizon Way Basking Ridge, NJ 07920
GTE Wireless of Ohio Incorporated	One Verizon Way Basking Ridge, NJ 07920
PCS Nucleus, L.P.	2999 Oak Road, 7 <sup>th</sup> Floor Walnut Creek, CA 94597
JV PartnerCo, LLC	2999 Oak Road, 7 <sup>th</sup> Floor Walnut Creek, CA 94597

**Commonwealth of Kentucky**  
**Michael G. Adams, Secretary of State**

Michael G. Adams  
Secretary of State  
P. O. Box 718  
Frankfort, KY 40602-0718  
(502) 564-3490  
<http://www.sos.ky.gov>

**Certificate of Authorization**

Authentication number: 297432

Visit <https://web.sos.ky.gov/ftshow/certvalidate.aspx> to authenticate this certificate.

I, Michael G. Adams, Secretary of State of the Commonwealth of Kentucky, do hereby certify that according to the records in the Office of the Secretary of State,

**TOWERCO 2013 LLC**

, a limited liability company authorized under the laws of the state of Delaware, is authorized to transact business in the Commonwealth of Kentucky, and received the authority to transact business in Kentucky on June 12, 2013.

I further certify that all fees and penalties owed to the Secretary of State have been paid; that an application for certificate of withdrawal has not been filed; and that the most recent annual report required by KRS 14A.6-010 has been delivered to the Secretary of State.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at Frankfort, Kentucky, this 15<sup>th</sup> day of September, 2023, in the 232<sup>nd</sup> year of the Commonwealth.



*Michael G. Adams*

Michael G. Adams  
Secretary of State  
Commonwealth of Kentucky  
297432/0859822

# Delaware

## The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "TOWERCO 2013 LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF SEPTEMBER, A.D. 2023.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "TOWERCO 2013 LLC" WAS FORMED ON THE THIRD DAY OF OCTOBER, A.D. 2012.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN PAID TO DATE.



  
Jeffrey W. Bullock, Secretary of State

5222115 8300

SR# 20233593958

You may verify this certificate online at [corp.delaware.gov/authver.shtml](http://corp.delaware.gov/authver.shtml)

Authentication: 204256340

Date: 09-27-23



**UNITED STATES OF AMERICA  
FEDERAL COMMUNICATIONS COMMISSION  
ANTENNA STRUCTURE REGISTRATION**



OWNER: TowerCo 2013 LLC

FCC Registration Number (FRN): 0024950685

<b>ATTN: TowerCo ID: KY0099</b> <b>TowerCo 2013 LLC</b> <b>5000 Valleystone Drive, Suite 200</b> <b>Cary, NC 27519</b>	<b>Antenna Structure Registration Number</b> <p align="center">1327131</p>						
	<b>Issue Date</b> <p align="center">01/29/2024</p>						
<b>Location of Antenna Structure</b> <b>Bend Cemetery Rd</b> <b>Glen Dam, KY 40119</b> <b>County: GRAYSON</b>	<b>Ground Elevation (AMSL)</b> <p align="right">171.0 meters</p>						
	<b>Overall Height Above Ground (AGL)</b> <p align="right">33.5 meters</p>						
<table border="0"> <tr> <td align="center"><b>Latitude</b></td> <td align="center"><b>Longitude</b></td> <td align="center"><b>NAD83</b></td> </tr> <tr> <td align="center">37- 36- 16.7 N</td> <td align="center">086- 30- 43.4 W</td> <td></td> </tr> </table>	<b>Latitude</b>	<b>Longitude</b>	<b>NAD83</b>	37- 36- 16.7 N	086- 30- 43.4 W		<b>Overall Height Above Mean Sea Level (AMSL)</b> <p align="right">204.5 meters</p>
<b>Latitude</b>	<b>Longitude</b>	<b>NAD83</b>					
37- 36- 16.7 N	086- 30- 43.4 W						
<b>Center of Array Coordinates</b> N/A	<b>Type of Structure</b> <b>MTOWER</b> <p align="center">Monopole</p>						
<b>Painting and Lighting Requirements:</b> <b>FAA Chapters NONE</b>							
<b>Conditions:</b>							

This registration is effective upon completion of the described antenna structure and notification to the Commission. **YOU MUST NOTIFY THE COMMISSION WITHIN 5 DAYS OF COMPLETION OF CONSTRUCTION OR CANCELLATION OF YOUR PROJECT, please file FCC Form 854.** To file electronically, connect to the antenna structure registration system by pointing your web browser to <https://www.fcc.gov/antenna-structure-registration>. Electronic filing is required. Use purpose code "NT" for notification of completion of construction; use purpose code "CA" to cancel your registration.

The Antenna Structure Registration is not an authorization to construct radio facilities or transmit radio signals. It is necessary that all radio equipment on this structure be covered by a valid FCC license or construction permit.

**You must immediately provide a copy of this Registration to all tenant licensees and permittees sited on the structure described on this Registration (although not required, you may want to use Certified Mail to obtain proof of receipt), and display your Registration Number at the site. See reverse for important information about the Commission's Antenna Structure Registration rules.**



You must comply with all applicable FCC obstruction marking and lighting requirements, as set forth in Part 17 of the Commission's Rules (47 C.F.R. Part 17). These rules include, but are not limited to:

- **Posting the Registration Number:** The Antenna Structure Registration Number must be displayed in a conspicuous place so that it is readily visible near the base of the antenna structure. Materials used to display the Registration Number must be weather-resistant and of sufficient size to be easily seen at the base of the antenna structure. Exceptions exist for certain historic structures. See 47 C.F.R. 17.4(g)-(h).
- **Inspecting lights and equipment:** The obstruction lighting must be observed at least every 24 hours in order to detect any outages or malfunctions. Lighting equipment, indicators, and associated devices must be inspected at least once every three months.
- **Reporting outages and malfunctions:** When any top steady-burning light or a flashing light (in any position) burns out or malfunctions, the outage must be reported to the nearest FAA Flight Service Station, unless corrected within 30 minutes. The FAA must again be notified when the light is restored. The owner must also maintain a log of these outages and malfunctions.
- **Maintaining assigned painting:** The antenna structure must be repainted as often as necessary to maintain good visibility.
- **Complying with environmental rules:** If you certified that grant of this registration would not have a significant environmental impact, you must nevertheless maintain all pertinent records and be ready to provide documentation supporting this certification and compliance with the rules, in the event that such information is requested by the Commission pursuant to 47 C.F.R. 1.1307(d).
- **Updating information:** The owner must notify the FCC of proposed modifications to this structure; of any change in ownership; or, within 30 days of dismantlement of the structure.

Copies of the Code of Federal Regulations (which contain the FCC's antenna structure registration rules, 47 C.F.R Part 17) are available from the Government Printing Office (GPO). To purchase CFR volumes, call (202) 512-1800. For GPO Customer Service, call (202) 512-1803. For additional FCC information, consult the Antenna Homepage on the internet at <https://www.fcc.gov/antenna-structure-registration> or call (877) 480-3201 (TTY 717-338-2824).

**REFERENCE COPY**

This is not an official FCC license. It is a record of public information contained in the FCC's licensing database on the date that this reference copy was generated. In cases where FCC rules require the presentation, posting, or display of an FCC license, this document may not be used in place of an official FCC license.



**Federal Communications Commission  
Wireless Telecommunications Bureau**

**RADIO STATION AUTHORIZATION**

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY  
CELLCO PARTNERSHIP  
5055 NORTH POINT PKWY, NP2NE ENGINEERING  
ALPHARETTA, GA 30022

<b>Call Sign</b> KNKN867	<b>File Number</b> 0009262184
<b>Radio Service</b> CL - Cellular	
<b>Market Numer</b> CMA445	<b>Channel Block</b> B
<b>Sub-Market Designator</b> 0	

FCC Registration Number (FRN): 0003290673

<b>Market Name</b> Kentucky 3 - Meade
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<b>Grant Date</b> 09-01-2020	<b>Effective Date</b> 01-13-2021	<b>Expiration Date</b> 10-01-2030	<b>Five Yr Build-Out Date</b>	<b>Print Date</b>
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**Site Information:**

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
1	36-50-41.0 N	086-51-27.0 W	243.8	82.3	1043225

**Address:** 1.3 KM EAST OF SR-100 & JEFF DAVIS HIGHWAY

**City:** RUSSELLVILLE **County:** LOGAN **State:** KY **Construction Deadline:**

**Antenna: 1**

<b>Maximum Transmitting ERP in Watts:</b>	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
<b>Antenna Height AAT (meters)</b>	133.200	104.800	100.900	107.400	123.200	117.300	105.900	123.700
<b>Transmitting ERP (watts)</b>	153.310	72.160	9.790	0.510	0.420	0.540	11.230	75.590

**Antenna: 2**

<b>Maximum Transmitting ERP in Watts:</b>	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
<b>Antenna Height AAT (meters)</b>	133.200	104.800	100.900	107.400	123.200	117.300	105.900	123.700
<b>Transmitting ERP (watts)</b>	0.870	21.280	113.650	147.250	38.070	3.570	0.330	0.410

**Antenna: 3**

<b>Maximum Transmitting ERP in Watts:</b>	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
<b>Antenna Height AAT (meters)</b>	133.200	104.800	100.900	107.400	123.200	117.300	105.900	123.700
<b>Transmitting ERP (watts)</b>	1.480	0.400	0.430	2.930	40.950	143.640	111.910	19.230

**Conditions:**

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
2	36-58-11.0 N	086-31-15.0 W	205.4	117.3	1043045

Address: Bowling Green Main, 3.4 KM southwest of

City: BOWLING GREEN County: WARREN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	108.200	135.100	135.400	118.600	102.700	103.000	111.100	110.800
Transmitting ERP (watts)	186.450	83.280	10.010	0.510	0.420	0.490	10.730	87.210

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	47.300	74.100	74.500	57.600	41.800	42.100	50.200	49.900
Transmitting ERP (watts)	0.270	2.540	54.390	78.620	9.450	0.350	0.270	0.270

Antenna: 4

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	108.200	135.100	135.400	118.600	102.700	103.000	111.100	110.800
Transmitting ERP (watts)	1.020	0.240	0.310	2.130	24.000	70.020	56.310	11.460

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
3	37-08-47.0 N	086-39-02.0 W	189.0	128.0	1043044

Address: 9.7 KM SOUTH SOUTHEAST OF

City: MORGANTOWN County: BUTLER State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	126.200	118.800	110.000	116.600	100.700	122.200	119.800	131.300
Transmitting ERP (watts)	0.330	0.690	16.910	90.270	116.960	30.240	2.840	0.260

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	126.200	118.800	110.000	116.600	100.700	122.200	119.800	131.300
Transmitting ERP (watts)	2.100	0.260	0.330	1.050	21.320	101.470	108.950	23.430

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	126.200	118.800	110.000	116.600	100.700	122.200	119.800	131.300
Transmitting ERP (watts)	90.270	14.390	1.070	0.260	0.340	2.530	33.930	116.960



Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
4	37-47-53.0 N	086-19-51.0 W	257.3	125.0	1043043

Address: WITHIN THE CITY LIMITS OF

City: GARFIELD County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	164.300	145.800	148.800	118.100	136.500	132.100	154.800	164.500
Transmitting ERP (watts)	104.850	46.830	5.630	0.290	0.240	0.280	6.030	49.040

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	164.300	145.800	148.800	118.100	136.500	132.100	154.800	164.500
Transmitting ERP (watts)	0.560	13.820	74.230	95.620	25.740	2.460	0.240	0.270

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	164.300	145.800	148.800	118.100	136.500	132.100	154.800	164.500
Transmitting ERP (watts)	0.930	0.240	0.280	2.040	27.580	95.620	74.230	12.320

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
6	36-46-32.1 N	086-33-56.0 W	206.3	91.1	1043041

Address: 2.4 KM NORTH OF

City: FRANKLIN County: SIMPSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	78.700	81.100	68.500	56.000	56.400	56.600	64.300	64.200
Transmitting ERP (watts)	144.730	63.540	7.340	0.360	0.300	0.380	8.420	66.540

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	78.700	81.100	68.500	56.000	56.400	56.600	64.300	64.200
Transmitting ERP (watts)	0.710	17.400	93.440	120.380	32.400	3.090	0.300	0.340

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	78.700	81.100	68.500	56.000	56.400	56.600	64.300	64.200
Transmitting ERP (watts)	1.280	0.300	0.390	2.690	30.220	88.150	70.900	14.430

Licensee Name: CELLCO PARTNERSHIP

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File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
7	37-03-33.7 N	087-01-50.4 W	200.0	77.7	1266950

Address: Lake Malone, 1038 Heltsley Road

City: Lewisburg County: LOGAN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	120.200	116.000	119.100	120.900	103.100	89.400	78.300	104.000
Transmitting ERP (watts)	102.840	191.490	71.150	7.980	0.430	0.450	0.570	14.860

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	120.200	116.000	119.100	120.900	103.100	89.400	78.300	104.000
Transmitting ERP (watts)	0.570	14.860	102.840	191.490	71.150	7.980	0.430	0.450

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	120.200	116.000	119.100	120.900	103.100	89.400	78.300	104.000
Transmitting ERP (watts)	3.330	0.430	0.500	1.560	31.780	148.650	162.990	36.490

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
8	36-47-11.0 N	086-08-35.3 W	253.3	91.1	1043039

Address: 4.8 KM NORTHEAST OF

City: SCOTTSVILLE County: ALLEN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	151.400	124.900	113.700	118.200	77.200	108.300	128.800	139.000
Transmitting ERP (watts)	117.640	52.550	6.320	0.320	0.260	0.310	6.770	55.020

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	151.400	124.900	113.700	118.200	77.200	108.300	128.800	139.000
Transmitting ERP (watts)	0.630	15.510	83.280	107.290	28.880	2.760	0.260	0.300

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	151.400	124.900	113.700	118.200	77.200	108.300	128.800	139.000
Transmitting ERP (watts)	1.050	0.260	0.310	2.290	30.940	107.290	83.280	13.820

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
9	37-53-45.0 N	086-49-51.0 W	164.5	65.6	1043711

Address: OLD LEWISPORT OWENSBORO RD, 7.6 KM WEST OF

City: HAWESVILLE County: HANCOCK State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	81.600	79.800	95.100	59.500	72.200	82.700	89.400	93.100
Transmitting ERP (watts)	7.600	61.740	131.990	58.960	7.090	0.360	0.300	0.350

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	81.600	79.800	95.100	59.500	72.200	82.700	89.400	93.100
Transmitting ERP (watts)	0.300	0.340	0.710	17.400	93.440	120.380	32.400	3.090

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	81.600	79.800	95.100	59.500	72.200	82.700	89.400	93.100
Transmitting ERP (watts)	93.440	15.510	1.180	0.300	0.350	2.570	34.720	120.380

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
10	37-16-52.0 N	087-06-06.0 W	150.0	128.0	1043038

Address: 0.4 MI. EAST OF INTERCHANGE OF 58 & W. KY PKWY; IMMED. ESE OF

City: CENTRAL CITY County: MUHLENBERG State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	126.500	101.500	105.400	104.300	100.200	87.900	94.300	112.900
Transmitting ERP (watts)	50.380	128.750	66.660	8.640	0.500	0.260	0.330	5.430

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	126.500	101.500	105.400	104.300	100.200	87.900	94.300	112.900
Transmitting ERP (watts)	0.300	0.480	13.100	80.300	122.700	38.140	3.840	0.260

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	126.500	101.500	105.400	104.300	100.200	87.900	94.300	112.900
Transmitting ERP (watts)	18.570	1.520	0.260	0.340	1.630	26.900	108.950	99.160

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
11	37-27-33.0 N	086-17-41.0 W	220.7	128.0	1043037

Address: 0.8 KM SSE OF INT OF W KY PKWY & SR-259

City: LEITCHFIELD County: GRAYSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	136.500	139.400	136.800	139.500	172.500	127.300	136.600	156.800
Transmitting ERP (watts)	92.370	12.750	0.300	0.450	0.200	0.420	3.510	48.480

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	136.500	139.400	136.800	139.500	172.500	127.300	136.600	156.800
Transmitting ERP (watts)	3.700	26.630	74.790	73.070	22.660	3.610	0.490	0.490

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	136.500	139.400	136.800	139.500	172.500	127.300	136.600	156.800
Transmitting ERP (watts)	2.080	0.820	0.770	7.520	42.060	84.790	55.750	12.610

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
12	37-59-17.0 N	086-08-53.0 W	202.4	61.0	1043036

Address: 1.6 km ESE of

City: BRANDENBURG County: MEADE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.800	58.900	109.700	63.200	40.600	55.600	61.600	100.400
Transmitting ERP (watts)	0.480	12.480	87.870	162.090	56.190	6.380	0.330	0.360

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.800	58.900	109.700	63.200	40.600	55.600	61.600	100.400
Transmitting ERP (watts)	5.570	0.500	0.330	0.330	4.740	24.940	42.710	26.730

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
13	37-24-41.0 N	086-32-12.0 W	233.5	128.0	1043035

Address: 3.2 KM WEST SOUTHWEST OF

City: CANEYVILLE County: GRAYSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	136.900	135.600	147.900	125.100	152.900	161.200	146.000	164.600
Transmitting ERP (watts)	202.510	94.240	14.690	1.160	1.000	8.520	44.320	169.340

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
13	37-24-41.0 N	086-32-12.0 W	233.5	128.0	1043035

Address: 3.2 KM WEST SOUTHWEST OF

City: CANEYVILLE County: GRAYSON State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	136.900	135.600	147.900	125.100	152.900	161.200	146.000	164.600
Transmitting ERP (watts)	20.040	101.220	204.390	162.460	34.720	3.620	0.410	2.990

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	136.900	135.600	147.900	125.100	152.900	161.200	146.000	164.600
Transmitting ERP (watts)	4.910	0.410	2.960	14.520	88.120	204.810	176.590	43.820

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
14	36-55-48.0 N	086-56-27.0 W	207.9	60.7	

Address: 6.4 KM SOUTH OF

City: LEWISBURG County: LOGAN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	116.400	93.400	82.400	74.500	68.800	70.800	79.200	98.300
Transmitting ERP (watts)	113.650	147.250	38.070	3.570	0.330	0.410	0.870	21.280

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	116.400	93.400	82.400	74.500	68.800	70.800	79.200	98.300
Transmitting ERP (watts)	0.430	3.180	42.710	147.250	113.650	18.120	1.350	0.330

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	116.400	93.400	82.400	74.500	68.800	70.800	79.200	98.300
Transmitting ERP (watts)	8.230	0.410	0.330	0.420	9.450	74.650	162.390	71.290

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
15	36-59-27.0 N	086-26-29.0 W	160.9	79.3	1201033

Address: 537 10th Street at Chestnut Street

City: BOWLING GREEN County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	60.100	54.500	67.300	54.300	51.400	51.700	45.400	61.600
Transmitting ERP (watts)	162.390	71.290	8.230	0.410	0.330	0.420	9.450	74.650

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
15	36-59-27.0 N	086-26-29.0 W	160.9	79.3	1201033

Address: 537 10th Street at Chestnut Street

City: BOWLING GREEN County: WARREN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	60.100	54.500	67.300	54.300	51.400	51.700	45.400	61.600
Transmitting ERP (watts)	0.310	2.780	58.870	89.730	12.030	0.400	0.310	0.310

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	60.100	54.500	67.300	54.300	51.400	51.700	45.400	61.600
Transmitting ERP (watts)	0.310	0.310	0.310	0.460	21.160	106.060	35.940	1.760

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
16	36-50-40.2 N	087-12-42.0 W	256.6	60.7	

Address: 5.8 KM NW OF

City: ELKTON County: TODD State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	102.100	95.500	91.800	117.800	119.100	128.800	118.300	103.200
Transmitting ERP (watts)	112.350	104.850	19.980	1.660	0.300	0.350	1.660	27.580

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	102.100	95.500	91.800	117.800	119.100	128.800	118.300	103.200
Transmitting ERP (watts)	0.940	15.530	144.900	372.460	200.020	26.370	1.550	0.840

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	102.100	95.500	91.800	117.800	119.100	128.800	118.300	103.200
Transmitting ERP (watts)	4.170	0.300	0.320	0.500	13.510	83.280	126.050	39.860

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
17	37-32-55.4 N	087-16-05.4 W	140.2	93.0	1244911

Address: 235 WEST KY 136

City: CALHOUN County: MCLEAN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	81.300	91.000	88.000	100.800	95.300	104.000	105.400	89.700
Transmitting ERP (watts)	30.940	106.670	82.330	13.120	0.980	0.240	0.310	2.310

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
17	37-32-55.4 N	087-16-05.4 W	140.2	93.0	1244911

Address: 235 WEST KY 136

City: CALHOUN County: MCLEAN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	81.300	91.000	88.000	100.800	95.300	104.000	105.400	89.700
Transmitting ERP (watts)	0.240	0.310	6.850	54.080	117.640	51.650	5.960	0.290

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	81.300	91.000	88.000	100.800	95.300	104.000	105.400	89.700
Transmitting ERP (watts)	27.580	2.590	0.240	0.300	0.630	15.420	82.330	106.670

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
18	37-38-33.2 N	086-42-46.0 W	210.3	60.7	

Address: 6 KM EAST OF

City: FORDSVILLE County: OHIO State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	84.000	65.700	96.800	89.400	105.200	118.300	113.200	109.900
Transmitting ERP (watts)	144.730	63.540	7.340	0.360	0.300	0.380	8.420	66.540

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	84.000	65.700	96.800	89.400	105.200	118.300	113.200	109.900
Transmitting ERP (watts)	0.780	18.970	101.290	131.240	33.930	3.180	0.300	0.370

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	84.000	65.700	96.800	89.400	105.200	118.300	113.200	109.900
Transmitting ERP (watts)	1.200	0.300	0.390	2.840	38.070	131.240	101.290	16.150

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
19	38-00-08.4 N	086-19-20.3 W	237.4	103.9	1049227

Address: 1.2 km Northwest of

City: PAYNEVILLE County: MEADE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	115.700	125.400	135.500	103.300	111.300	123.300	141.900	137.900
Transmitting ERP (watts)	172.880	116.290	19.640	1.990	0.530	4.460	28.140	120.910

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
19	38-00-08.4 N	086-19-20.3 W	237.4	103.9	1049227

Address: 1.2 km Northwest of

City: PAYNEVILLE County: MEADE State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	115.700	125.400	135.500	103.300	111.300	123.300	141.900	137.900
Transmitting ERP (watts)	8.740	48.710	165.560	182.540	70.320	9.950	0.770	1.160

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	115.700	125.400	135.500	103.300	111.300	123.300	141.900	137.900
Transmitting ERP (watts)	4.430	0.370	2.670	13.090	79.440	184.650	159.200	39.500

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
20	37-11-25.0 N	087-11-51.0 W	182.9	66.4	1065886

Address: 701 BASS LANE

City: GREENVILLE County: MUHLENBERG State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	103.800	96.500	95.100	84.500	77.800	98.000	117.300	91.200
Transmitting ERP (watts)	155.980	120.380	19.190	1.430	0.350	0.460	3.370	45.240

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	103.800	96.500	95.100	84.500	77.800	98.000	117.300	91.200
Transmitting ERP (watts)	0.510	13.220	93.080	171.700	62.700	6.760	0.350	0.380

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	103.800	96.500	95.100	84.500	77.800	98.000	117.300	91.200
Transmitting ERP (watts)	2.800	0.350	0.450	1.400	28.440	135.320	145.300	31.240

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
21	37-11-39.2 N	086-15-53.9 W	213.4	52.0	

Address: WATER TOWER ROAD

City: BROWNSVILLE County: EDMONSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.000	44.100	63.000	60.300	76.600	76.200	93.300	97.400
Transmitting ERP (watts)	331.960	148.280	17.830	0.910	0.740	0.870	19.100	155.270



Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

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Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
21	37-11-39.2 N	086-15-53.9 W	213.4	52.0	

Address: WATER TOWER ROAD

City: BROWNSVILLE County: EDMONSON State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.000	44.100	63.000	60.300	76.600	76.200	93.300	97.400
Transmitting ERP (watts)	1.780	43.760	235.010	302.750	81.490	7.780	0.740	0.850

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.000	44.100	63.000	60.300	76.600	76.200	93.300	97.400
Transmitting ERP (watts)	2.960	0.740	0.870	6.470	87.310	302.750	235.010	39.000

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
22	36-40-28.0 N	086-51-30.0 W	192.9	38.1	

Address: WITHIN THE TOWN OF

City: ADAIRVILLE County: LOGAN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	35.900	37.000	29.900	34.100	29.900	40.700	57.000	48.700
Transmitting ERP (watts)	148.100	65.400	7.600	0.390	0.300	0.430	8.720	70.070

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	35.900	37.000	29.900	34.100	29.900	40.700	57.000	48.700
Transmitting ERP (watts)	1.830	30.180	122.250	111.260	20.840	1.700	0.300	0.380

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	35.900	37.000	29.900	34.100	29.900	40.700	57.000	48.700
Transmitting ERP (watts)	2.360	0.300	0.370	1.180	23.930	113.860	122.250	26.290

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
23	37-13-17.0 N	086-42-02.0 W	190.8	57.9	

Address: Morgantown Downtown, Approx 1.5 KM ( 1.0 MI) ENE OF

City: MORGANTOWN County: BUTLER State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	102.300	72.100	81.900	88.300	85.600	94.300	111.800	102.700
Transmitting ERP (watts)	42.710	147.250	113.650	18.120	1.350	0.330	0.430	3.180

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
23	37-13-17.0 N	086-42-02.0 W	190.8	57.9	

Address: Morgantown Downtown, Approx 1.5 KM ( 1.0 MI) ENE OF

City: MORGANTOWN County: BUTLER State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	102.300	72.100	81.900	88.300	85.600	94.300	111.800	102.700
Transmitting ERP (watts)	0.330	0.420	9.450	74.650	162.390	71.290	8.230	0.410

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	102.300	72.100	81.900	88.300	85.600	94.300	111.800	102.700
Transmitting ERP (watts)	38.070	3.570	0.330	0.410	0.870	21.280	113.650	147.250

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
24	37-38-30.2 N	086-28-14.9 W	202.7	50.2	

Address: Rough River, 9.5KM (6.0 MI) SW OF

City: KINGSWOOD County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	43.600	58.600	57.500	57.700	60.100	89.000	70.700	65.400
Transmitting ERP (watts)	264.330	116.050	13.400	0.660	0.540	0.690	15.390	121.520

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	43.600	58.600	57.500	57.700	60.100	89.000	70.700	65.400
Transmitting ERP (watts)	1.420	34.650	184.990	239.690	61.970	5.820	0.540	0.670

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	43.600	58.600	57.500	57.700	60.100	89.000	70.700	65.400
Transmitting ERP (watts)	2.200	0.540	0.700	5.180	69.530	239.690	184.990	29.490

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
25	36-51-02.0 N	086-42-26.0 W	198.1	59.4	

Address: JCT. SR-103 & SR-603, APPROX. 3.2 KM SW OF

City: AUBURN County: LOGAN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	61.200	65.800	54.700	38.200	54.400	60.300	51.100	56.100
Transmitting ERP (watts)	124.760	162.210	90.940	14.810	1.300	0.640	5.680	30.740

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
25	36-51-02.0 N	086-42-26.0 W	198.1	59.4	

Address: JCT. SR-103 & SR-603, APPROX. 3.2 KM SW OF

City: AUBURN County: LOGAN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	61.200	65.800	54.700	38.200	54.400	60.300	51.100	56.100
Transmitting ERP (watts)	1.480	8.260	53.490	159.390	161.650	53.380	6.730	0.530

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	61.200	65.800	54.700	38.200	54.400	30.300	51.100	56.100
Transmitting ERP (watts)	41.260	4.310	0.490	3.550	23.820	120.300	242.920	193.090

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
26	37-23-00.0 N	086-52-28.0 W	163.4	125.3	1043042

Address: 1.6 KM SSE

City: BEAVER DAM County: OHIO State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	127.600	102.300	92.500	117.700	113.600	112.400	112.300	132.200
Transmitting ERP (watts)	3.020	33.930	100.130	64.650	9.650	0.650	0.240	0.270

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	127.600	102.300	92.500	117.700	113.600	112.400	112.300	132.200
Transmitting ERP (watts)	0.240	0.250	0.310	8.140	56.310	104.850	38.950	4.370

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	127.600	102.300	92.500	117.700	113.600	112.400	112.300	132.200
Transmitting ERP (watts)	100.130	31.660	3.320	0.240	0.260	0.400	10.730	66.150

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
27	37-02-39.4 N	086-10-59.9 W	212.8	106.4	1213318

Address: 470 Hayes Road

City: Smiths Grove County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	101.300	97.700	91.800	90.100	117.500	131.500	124.400	116.400
Transmitting ERP (watts)	96.880	58.040	4.690	0.270	0.190	0.360	4.280	56.720

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
27	37-02-39.4 N	086-10-59.9 W	212.8	106.4	1213318

Address: 470 Hayes Road

City: Smiths Grove County: WARREN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	101.600	97.700	91.800	90.100	117.500	131.500	124.400	116.400
Transmitting ERP (watts)	0.970	16.520	117.640	131.230	43.210	2.250	0.300	0.270

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	101.600	97.700	91.800	90.100	117.500	131.500	124.400	116.400
Transmitting ERP (watts)	0.570	0.190	0.210	1.560	29.210	92.910	81.390	12.800

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
28	36-44-52.5 N	086-11-51.7 W	219.4	77.7	1219613

Address: Downtown

City: Scottsville County: ALLEN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	85.000	66.900	61.300	43.400	61.400	63.100	73.600	85.500
Transmitting ERP (watts)	148.300	99.760	16.850	1.700	0.460	3.820	24.140	103.720

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	85.000	66.900	61.300	43.400	61.400	63.100	73.600	85.500
Transmitting ERP (watts)	7.500	41.790	142.020	156.580	60.320	8.540	0.660	0.990

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	85.000	66.900	61.300	43.400	61.400	63.100	73.600	85.500
Transmitting ERP (watts)	3.800	0.320	2.290	11.230	68.150	158.400	136.570	33.890

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
29	37-52-14.6 N	086-16-43.1 W	243.8	39.6	

Address: Irvington WT, 1.0 km ESE of

City: Irvington County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	72.800	71.900	56.800	59.600	69.700	80.000	110.200	67.900
Transmitting ERP (watts)	47.930	165.220	127.520	20.330	1.520	0.370	0.480	3.570

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
29	37-52-14.6 N	086-16-43.1 W	243.8	39.6	

Address: Irvington WT, 1.0 km ESE of

City: Irvington County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	72.800	71.900	56.800	59.600	69.700	80.000	110.200	67.900
Transmitting ERP (watts)	0.370	0.480	10.610	83.760	182.210	79.990	9.240	0.460

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	72.800	71.900	56.800	59.600	69.700	80.000	110.200	67.900
Transmitting ERP (watts)	42.710	4.010	0.370	0.460	0.980	23.880	127.520	165.220

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
30	37-56-31.2 N	086-03-37.8 W	193.5	77.7	1221515

Address: 0.8 km North Northwest of

City: Licksillet County: MEADE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	63.900	127.200	65.800	54.400	36.100	30.500	59.300	102.600
Transmitting ERP (watts)	61.740	82.330	23.470	2.370	0.260	0.260	0.510	11.360

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	63.900	127.200	65.800	54.400	36.100	30.500	59.300	102.600
Transmitting ERP (watts)	0.380	3.220	20.310	87.270	124.780	83.940	14.180	1.430

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	63.900	127.200	65.800	54.400	36.100	30.500	59.300	102.600
Transmitting ERP (watts)	14.180	1.430	0.380	3.220	20.310	87.270	124.780	83.940

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
31	36-57-06.0 N	086-26-12.0 W	166.1	16.8	

Address: Downtown

City: Bowling Green County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	29.900	29.900	29.900	29.900	29.900	29.900	29.900	29.900
Transmitting ERP (watts)	124.780	83.940	14.180	1.430	0.380	3.220	20.310	87.270

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
31	36-57-06.0 N	086-26-12.0 W	166.1	16.8	

Address: Downtown

City: Bowling Green County: WARREN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	29.900	29.900	29.900	29.900	29.900	29.900	29.900	29.900
Transmitting ERP (watts)	6.310	35.160	119.490	131.750	50.750	7.180	0.550	0.830

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	29.900	29.900	29.900	29.900	29.900	29.900	29.900	29.900
Transmitting ERP (watts)	3.200	0.270	1.930	9.450	57.340	133.270	114.910	28.510

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
32	37-59-31.1 N	086-11-44.3 W	187.7	77.7	1232593

Address: 1.6 km West of

City: Brandenburg County: MEADE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	58.400	56.600	82.400	34.400	36.100	41.000	40.100	67.700
Transmitting ERP (watts)	9.710	60.570	96.350	32.270	3.500	0.300	0.300	0.420

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	58.400	56.600	82.400	34.400	36.100	41.000	40.100	67.700
Transmitting ERP (watts)	0.300	0.380	8.420	66.540	144.730	63.540	7.340	0.360

Antenna: 4

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	58.400	56.600	82.400	34.400	36.100	41.000	40.100	67.700
Transmitting ERP (watts)	28.390	3.310	0.300	0.380	0.830	17.510	70.860	87.550

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
33	37-56-46.1 N	085-59-38.4 W	222.8	57.3	1200354

Address: 115 Timber Ct.

City: Muldraugh County: MEADE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	84.500	85.900	93.700	56.800	54.600	40.300	67.400	81.700
Transmitting ERP (watts)	57.050	54.960	17.180	1.960	0.330	0.430	1.840	21.320

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
33	37-56-46.1 N	085-59-38.4 W	222.8	57.3	1200354

Address: 115 Timber Ct.

City: Muldraugh County: MEADE State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	84.500	85.900	93.700	56.800	54.600	40.300	67.400	81.700
Transmitting ERP (watts)	0.380	0.800	19.520	104.850	135.070	36.350	3.470	0.330

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	84.500	85.900	93.700	56.800	54.600	40.300	67.400	81.700
Transmitting ERP (watts)	2.570	0.330	0.390	1.200	24.580	114.960	156.050	28.220

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
34	37-46-03.7 N	086-26-10.4 W	219.5	45.7	

Address: Hardinsburg Water Tank, 3.0 km SE of

City: Hardinsburg County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	77.900	54.500	36.600	52.000	74.200	60.600	78.300	83.900
Transmitting ERP (watts)	182.210	79.990	9.240	0.460	0.370	0.480	10.610	83.760

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	77.900	54.500	36.600	52.000	74.200	60.600	78.300	83.900
Transmitting ERP (watts)	0.980	23.880	127.520	165.220	42.710	4.010	0.370	0.460

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	77.900	54.500	36.600	52.000	74.200	60.600	78.300	83.900
Transmitting ERP (watts)	1.520	0.370	0.480	3.570	47.930	165.220	127.520	20.330

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
35	36-42-08.6 N	086-33-19.0 W	217.0	114.3	1200032

Address: Franklin South, Turners Ford Road

City: Franklin County: SIMPSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	75.500	67.800	58.900	47.700	34.900	56.000	62.700	57.000
Transmitting ERP (watts)	8.520	69.270	148.100	66.150	7.950	0.410	0.330	0.390

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
35	36-42-08.6 N	086-33-19.0 W	217.0	114.3	1200032

Address: Franklin South, Turners Ford Road

City: Franklin County: SIMPSON State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	75.500	67.800	58.900	47.700	34.900	56.000	62.700	57.000
Transmitting ERP (watts)	0.620	0.330	0.370	6.170	57.620	148.100	79.530	10.480

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	75.500	67.800	58.900	47.700	34.900	56.000	62.700	57.000
Transmitting ERP (watts)	126.050	28.220	2.570	0.330	0.390	1.200	24.580	114.960

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
36	36-44-58.7 N	087-01-10.9 W	179.8	37.5	

Address: Russellville Southwest, 0.8 km SW of

City: Olmstead County: LOGAN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	29.900	29.900	31.500	45.900	38.200	39.100	29.900	29.900
Transmitting ERP (watts)	124.780	83.940	14.180	1.430	0.380	3.220	20.310	87.270

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	29.900	29.900	31.500	45.900	38.200	39.100	29.900	29.900
Transmitting ERP (watts)	6.310	35.160	119.490	131.750	50.750	7.180	0.550	0.830

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	29.900	29.900	31.500	45.900	38.200	39.100	29.900	29.900
Transmitting ERP (watts)	3.200	0.270	1.930	9.450	57.340	133.270	114.910	28.510

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
37	36-49-37.9 N	086-18-51.3 W	192.0	77.7	1232590

Address: Allen Northwest cell, 13.7 km Northwest of

City: Scottsville County: ALLEN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	91.800	102.800	60.100	49.200	58.900	71.000	89.900	100.000
Transmitting ERP (watts)	0.540	4.010	53.770	185.380	143.070	22.810	1.700	0.420



Licensee Name: CELLCO PARTNERSHIP

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File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
37	36-49-37.9 N	086-18-51.3 W	192.0	77.7	1232590

Address: Allen Northwest cell, 13.7 km Northwest of

City: Scottsville County: ALLEN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	91.800	102.800	60.100	49.200	58.900	71.000	89.900	100.000
Transmitting ERP (watts)	0.400	0.290	0.290	0.290	5.380	93.450	104.850	10.250

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	91.800	102.800	60.100	49.200	58.900	71.000	89.900	100.000
Transmitting ERP (watts)	211.380	60.790	7.140	0.540	2.800	11.880	85.700	226.550

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
38	36-55-15.1 N	086-25-38.5 W	171.0	62.5	1210120

Address: 1140 Three Springs Road

City: Bowling Green County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	62.400	67.900	45.500	40.600	40.900	36.000	40.900	56.100
Transmitting ERP (watts)	41.740	24.340	4.420	0.400	0.330	0.330	3.510	21.690

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	62.400	67.900	45.500	40.600	40.900	36.000	40.900	56.100
Transmitting ERP (watts)	0.870	21.280	113.650	147.250	38.070	3.570	0.330	0.410

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	62.400	67.900	45.500	40.600	40.900	36.000	40.900	56.100
Transmitting ERP (watts)	1.130	0.260	0.370	2.600	30.680	93.270	73.680	13.650

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
39	36-49-54.5 N	086-29-39.3 W	192.6	66.1	1202759

Address: Warren South, 3184 Woodburn-Allen Springs Road

City: Woodburn County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	58.500	58.500	57.100	39.300	32.800	33.900	35.000	49.400
Transmitting ERP (watts)	157.120	103.520	17.130	1.570	0.350	3.440	23.000	104.220

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
39	36-49-54.5 N	086-29-39.3 W	192.6	66.1	1202759

Address: Warren South, 3184 Woodburn-Allen Springs Road

City: Woodburn County: WARREN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	58.500	58.500	57.100	39.300	32.800	33.900	35.000	49.400
Transmitting ERP (watts)	6.890	41.510	144.360	164.760	61.880	8.540	0.570	0.780

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	58.500	58.500	57.100	39.300	32.800	33.900	35.000	49.400
Transmitting ERP (watts)	0.610	0.310	0.310	0.310	2.120	58.290	121.780	19.300

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
40	37-03-19.5 N	086-35-24.6 W	184.4	67.1	1219414

Address: Warren Northwest cell, Old Morgantown Road

City: Bowling Green County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	91.800	71.100	64.500	67.200	57.900	67.700	67.900	70.300
Transmitting ERP (watts)	0.430	11.130	78.320	144.460	52.750	5.690	0.300	0.320

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	91.800	71.100	64.500	67.200	57.900	67.700	67.900	70.300
Transmitting ERP (watts)	0.560	0.300	0.370	6.090	56.530	144.460	74.790	9.690

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	91.800	71.100	64.500	67.200	57.900	67.700	67.900	70.300
Transmitting ERP (watts)	101.290	16.150	1.200	0.300	0.390	2.840	38.070	131.240

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
41	37-08-05.9 N	087-01-05.2 W	187.8	77.7	1278320

Address: Muhlenberg South, 21 Myers Chapel Road

City: Belton County: MUHLENBERG State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	110.500	126.100	111.400	114.500	86.400	73.900	100.200	112.200
Transmitting ERP (watts)	124.780	83.940	14.180	1.430	0.380	3.220	20.310	87.270

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
41	37-08-05.9 N	087-01-05.2 W	187.8	77.7	1278320

Address: Muhlenberg South, 21 Myers Chapel Road

City: Belton County: MUHLENBERG State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	110.500	126.100	111.400	114.500	86.400	73.900	100.200	112.200
Transmitting ERP (watts)	6.310	35.160	119.490	131.750	50.750	7.180	0.550	0.830

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	110.500	126.100	111.400	114.500	86.400	73.900	100.200	112.200
Transmitting ERP (watts)	3.200	0.270	1.930	9.450	57.340	133.270	114.910	28.510

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
42	37-00-06.1 N	086-19-52.5 W	161.2	77.4	1207196

Address: Bowling Green Corvette site, 1188 Red Pond Road

City: Bowling Green County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	48.300	48.300	47.300	66.500	54.700	68.100	79.200	59.700
Transmitting ERP (watts)	149.820	65.780	7.600	0.370	0.310	0.390	8.720	68.880

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	48.300	48.300	47.300	66.500	54.700	68.100	79.200	59.700
Transmitting ERP (watts)	0.850	18.620	85.580	108.340	31.760	3.380	0.310	0.410

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	48.300	48.300	47.300	66.500	54.700	68.100	79.200	59.700
Transmitting ERP (watts)	1.320	0.310	0.430	3.020	35.640	108.340	85.580	15.850

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
43	37-50-10.4 N	086-35-44.7 W	225.6	77.7	1242951

Address: Breckinridge West, 1.6 km ENE of

City: Cloverport County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	138.300	128.300	120.400	132.900	123.200	133.200	139.400	156.600
Transmitting ERP (watts)	63.170	117.640	43.710	4.900	0.260	0.280	0.350	9.130

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
43	37-50-10.4 N	086-35-44.7 W	225.6	77.7	1242951

Address: Breckinridge West, 1.6 km ENE of

City: Cloverport County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	138.300	128.300	120.400	132.900	123.200	133.200	139.400	156.600
Transmitting ERP (watts)	0.310	2.290	30.940	107.290	83.280	13.820	1.050	0.260

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	138.300	128.300	120.400	132.900	123.200	133.200	139.400	156.600
Transmitting ERP (watts)	4.400	0.370	0.370	0.530	12.230	76.250	121.300	40.630

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
44	37-51-15.4 N	086-06-03.2 W	303.9	67.4	1042711

Address: Garrett, State Road 44 (092010 / Fort Knox)

City: FORT KNOX County: MEADE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	153.600	154.600	149.600	132.900	121.400	131.200	143.100	146.300
Transmitting ERP (watts)	79.530	54.370	13.580	1.630	0.410	3.580	18.240	54.730

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	153.600	154.600	149.600	132.900	121.400	131.200	143.100	146.300
Transmitting ERP (watts)	5.460	32.920	114.480	130.660	49.070	6.770	0.450	0.620

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	153.600	154.600	149.600	132.900	121.400	131.200	143.100	146.300
Transmitting ERP (watts)	2.950	0.270	1.500	8.200	53.810	130.660	112.910	27.380

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
45	37-52-54.4 N	086-12-42.9 W	274.3	29.0	

Address: Meade South, 1.4 km southeast of

City: Guston County: MEADE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	109.800	103.800	82.400	63.100	79.200	105.900	114.800	76.100
Transmitting ERP (watts)	4.970	37.720	85.280	49.710	8.130	0.540	0.260	0.330

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
45	37-52-54.4 N	086-12-42.9 W	274.3	29.0	

Address: Meade South, 1.4 km southeast of

City: Guston County: MEADE State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	109.800	103.800	82.400	63.100	79.200	105.900	114.800	76.100
Transmitting ERP (watts)	1.870	0.260	0.280	0.860	17.310	81.910	91.780	21.270

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	109.800	103.800	82.400	63.100	79.200	105.900	114.800	76.100
Transmitting ERP (watts)	67.960	31.280	4.680	0.260	0.300	0.380	7.690	41.430

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
46	36-54-15.9 N	086-36-29.1 W	202.7	83.8	1200363

Address: Warren-Logan cell, 11372 Russellville Road

City: Rockfield County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	105.100	84.600	84.000	77.200	66.700	61.500	67.700	81.100
Transmitting ERP (watts)	19.380	98.240	108.110	44.550	2.720	0.270	0.230	1.010

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	105.100	84.600	84.000	77.200	66.700	61.500	67.700	81.100
Transmitting ERP (watts)	0.270	0.270	5.300	90.270	100.820	9.580	0.400	0.270

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	105.100	84.600	84.000	77.200	66.700	61.500	67.700	81.100
Transmitting ERP (watts)	0.880	0.230	0.310	2.530	42.550	110.630	96.000	20.290

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
47	37-24-19.0 N	086-42-17.0 W	199.9	94.5	1213965

Address: Ohio West, 3893 State Route 505 South

City: Horse Branch County: OHIO State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	112.900	104.700	91.700	117.300	127.400	134.600	135.400	100.900
Transmitting ERP (watts)	117.640	63.170	8.330	0.490	0.260	0.300	4.900	45.770

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
47	37-24-19.0 N	086-42-17.0 W	199.9	94.5	1213965

Address: Ohio West, 3893 State Route 505 South

City: Horse Branch County: OHIO State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	112.900	104.700	91.700	117.300	127.400	134.600	135.400	100.900
Transmitting ERP (watts)	1.260	33.960	209.410	316.960	100.230	10.500	0.740	0.810

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	112.900	104.700	91.700	117.300	127.400	134.600	135.400	100.900
Transmitting ERP (watts)	1.480	0.260	0.310	1.480	24.580	100.120	93.440	17.800

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
48	36-57-24.8 N	086-28-42.2 W	167.0	84.1	1056469

Address: 3090 Fitzgerald Industrial Drive

City: Bowling Green County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	71.400	63.700	65.900	62.600	44.100	41.900	36.500	59.500
Transmitting ERP (watts)	61.180	69.730	7.330	0.310	0.310	0.310	0.310	3.930

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	71.400	63.700	65.900	62.600	44.100	41.900	36.500	59.500
Transmitting ERP (watts)	0.310	2.460	45.980	65.510	8.220	0.390	0.310	0.310

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	71.400	63.700	65.900	62.600	44.100	41.900	36.500	59.500
Transmitting ERP (watts)	1.080	0.260	0.280	1.840	17.800	47.490	39.840	10.320

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
49	36-49-53.1 N	086-54-51.9 W	253.9	78.6	1043422

Address: RUSSELLVILLE WEST, 0.64 KM NORTH OF HWY 79, 0.16 KM WEST OF HWY 68 BYPASS

City: LEWISBURG County: LOGAN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.500	100.000	79.700	100.100	113.000	110.200	90.700	106.900
Transmitting ERP (watts)	151.070	101.210	20.030	2.250	0.630	5.060	28.690	105.230

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
49	36-49-53.1 N	086-54-51.9 W	253.9	78.6	1043422

Address: RUSSELLVILLE WEST, 0.64 KM NORTH OF HWY 79, 0.16 KM WEST OF HWY 68 BYPASS

City: LEWISBURG County: LOGAN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.500	100.000	79.700	100.100	113.000	110.200	90.700	106.900
Transmitting ERP (watts)	9.170	55.270	192.200	219.360	82.390	11.370	0.760	1.030

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.500	100.000	79.700	100.100	113.000	110.200	90.700	106.900
Transmitting ERP (watts)	4.520	0.380	2.720	13.340	81.000	188.260	162.320	40.280

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
50	37-05-38.9 N	086-25-49.5 W	217.6	103.6	1232131

Address: Richardsville, 604 Scroggins Road

City: Bowling Green County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	108.300	97.200	74.500	103.300	110.500	127.000	127.000	111.000
Transmitting ERP (watts)	144.730	63.540	7.340	0.360	0.300	0.380	8.420	66.540

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	108.300	97.200	74.500	103.300	110.500	100.500	127.000	111.000
Transmitting ERP (watts)	0.780	18.970	101.290	131.240	33.930	3.180	0.300	0.370

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	108.300	97.200	74.500	103.300	110.500	100.500	127.000	111.000
Transmitting ERP (watts)	1.200	0.300	0.390	2.840	38.070	131.240	101.290	16.150

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
51	37-31-30.4 N	086-55-04.2 W	195.7	97.8	1214609

Address: Beda, 729 Sherwood Drive

City: Hartford County: OHIO State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.800	100.300	110.100	108.400	122.200	117.000	103.100	107.200
Transmitting ERP (watts)	38.070	131.240	101.290	16.150	1.200	0.300	0.390	2.840

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
51	37-31-30.4 N	086-55-04.2 W	195.7	97.8	1214609

Address: Beda, 729 Sherwood Drive

City: Hartford County: OHIO State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.800	100.300	110.100	108.400	122.200	117.000	103.100	107.200
Transmitting ERP (watts)	0.340	0.540	14.700	90.110	137.670	42.790	4.300	0.300

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.800	100.300	110.100	108.400	122.200	117.000	103.100	107.200
Transmitting ERP (watts)	52.750	5.690	0.300	0.320	0.430	11.130	78.320	144.460

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
52	37-29-36.0 N	086-11-16.5 W	221.9	83.8	1217206

Address: Braton Road

City: Clarkson County: GRAYSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	80.100	57.600	68.100	71.000	82.900	101.700	77.300	93.100
Transmitting ERP (watts)	23.930	113.860	122.250	26.290	2.360	0.300	0.370	1.180

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	80.100	57.600	68.100	71.000	82.900	101.700	77.300	93.100
Transmitting ERP (watts)	2.360	0.300	0.370	1.180	23.930	113.860	122.250	26.290

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	80.100	57.600	68.100	71.000	82.900	101.700	77.300	93.100
Transmitting ERP (watts)	103.640	9.240	0.340	0.270	0.270	0.270	5.700	92.370

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
53	37-31-11.9 N	087-09-13.7 W	141.7	95.4	1018270

Address: 550 SCHNEIDER TANNER ROAD

City: LIVERMORE County: MCLEAN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	86.400	69.100	70.300	81.600	92.100	93.900	102.600	85.400
Transmitting ERP (watts)	73.900	149.230	118.620	25.350	2.650	0.300	2.180	14.630



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File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
53	37-31-11.9 N	087-09-13.7 W	141.7	95.4	1018270

Address: 550 SCHNEIDER TANNER ROAD

City: LIVERMORE County: MCLEAN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	86.400	69.100	70.300	81.600	92.100	93.900	102.600	85.400
Transmitting ERP (watts)	0.570	5.060	27.400	111.190	144.570	81.050	13.200	1.160

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	86.400	69.100	70.300	81.600	92.100	93.900	102.600	85.400
Transmitting ERP (watts)	47.570	6.000	0.480	1.320	7.360	47.670	142.060	144.070

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
54	37-19-05.4 N	086-12-12.3 W	231.6	83.8	1235514

Address: Nolin Lake North, 1900 Dickey's Mill Road

City: Mammoth Cave County: EDMONSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	93.200	91.500	87.800	91.400	103.800	115.800	129.600	104.400
Transmitting ERP (watts)	117.640	54.390	6.620	0.360	0.300	0.330	6.460	54.390

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	93.200	91.500	87.800	91.400	103.800	115.800	129.600	104.400
Transmitting ERP (watts)	3.300	11.570	54.260	67.250	19.880	3.340	0.340	0.490

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	93.200	91.500	87.800	91.400	103.800	115.800	129.600	104.400
Transmitting ERP (watts)	1.110	0.300	0.320	2.200	30.710	107.710	83.920	14.420

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
55	36-40-20.5 N	086-15-11.1 W	239.6	60.7	

Address: Allen South, 371 Andrew Jackson Highway

City: Adolphus County: ALLEN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	87.000	70.200	64.700	57.200	44.500	66.500	82.700	88.700
Transmitting ERP (watts)	117.640	63.170	8.330	0.490	0.260	0.300	4.900	45.770

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
55	36-40-20.5 N	086-15-11.1 W	239.6	60.7	

Address: Allen South, 371 Andrew Jackson Highway

City: Adolphus County: ALLEN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	87.000	70.200	64.700	57.200	44.500	66.500	82.700	88.700
Transmitting ERP (watts)	0.490	8.150	38.780	44.150	11.680	1.200	0.260	0.260

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	87.000	70.200	64.700	57.200	44.500	66.500	82.700	88.700
Transmitting ERP (watts)	4.900	0.260	0.280	0.350	9.130	63.170	117.640	43.710

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
56	36-42-03.8 N	086-23-15.8 W	226.2	77.7	1263047

Address: Alonzo, 4651 Perrytown Road

City: Franklin County: ALLEN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	114.500	97.300	87.900	75.000	66.000	77.000	88.300	100.400
Transmitting ERP (watts)	111.060	68.480	3.430	0.250	0.370	0.250	1.220	16.430

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	114.500	97.300	87.900	75.000	66.000	77.000	88.300	100.400
Transmitting ERP (watts)	1.480	24.580	100.120	93.440	17.800	1.480	0.260	0.310

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	114.500	97.300	87.900	75.000	66.000	77.000	88.300	100.400
Transmitting ERP (watts)	10.730	0.730	0.260	0.300	3.390	38.070	112.340	72.530

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
57	36-53-20.1 N	086-12-48.7 W	203.9	77.7	1264536

Address: Allen North, 173 Ray Vernon Lane

City: Scottsville County: ALLEN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.400	87.800	105.100	69.200	68.400	92.400	105.300	118.000
Transmitting ERP (watts)	12.040	74.220	112.340	35.530	3.720	0.260	0.290	0.450

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
57	36-53-20.1 N	086-12-48.7 W	203.9	77.7	1264536

Address: Allen North, 173 Ray Vernon Lane

City: Scottsville County: ALLEN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.400	87.800	105.100	69.200	68.400	92.400	105.300	118.000
Transmitting ERP (watts)	0.260	0.310	1.480	24.580	100.120	93.440	17.800	1.480

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.400	87.800	105.100	69.200	68.400	92.400	105.300	118.000
Transmitting ERP (watts)	63.170	8.330	0.490	0.260	0.300	4.900	45.770	117.640

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
58	37-07-58.9 N	086-13-12.8 W	197.8	77.7	1263384

Address: Edmonson South, 466 Rhea Road

City: Smiths Grove County: EDMONSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	70.900	74.500	47.600	73.500	83.900	88.000	89.200	76.800
Transmitting ERP (watts)	128.990	56.630	6.540	0.320	0.260	0.340	7.510	59.300

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	70.900	74.500	47.600	73.500	83.900	88.000	89.200	76.800
Transmitting ERP (watts)	0.690	16.910	90.270	116.960	30.240	2.840	0.260	0.330

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	70.900	74.500	47.600	73.500	83.900	88.000	89.200	76.800
Transmitting ERP (watts)	1.070	0.260	0.340	2.530	33.930	116.960	90.270	14.390

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
59	37-13-31.0 N	086-07-40.6 W	262.1	58.0	

Address: Near entrance to Mammoth Cave Park

City: Mammoth Cave County: EDMONSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	122.200	91.300	119.200	86.600	117.300	116.700	135.200	124.600
Transmitting ERP (watts)	170.670	78.910	9.600	0.520	0.430	0.480	9.380	78.910

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
59	37-13-31.0 N	086-07-40.6 W	262.1	58.0	

Address: Near entrance to Mammoth Cave Park

City: Mammoth Cave County: EDMONSON State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	122.200	91.300	119.200	86.600	117.300	116.700	135.200	124.600
Transmitting ERP (watts)	0.920	21.900	118.970	156.260	43.540	4.210	0.430	0.450

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	122.200	91.300	119.200	86.600	117.300	116.700	135.200	124.600
Transmitting ERP (watts)	1.600	0.430	0.470	3.190	44.550	156.260	121.750	20.910

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
60	37-23-49.1 N	087-08-43.7 W	135.0	94.2	1244765

Address: Bremen, 12849 Kentucky Highway

City: CENTRAL CITY County: MUHLENBERG State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	90.200	93.400	74.900	83.100	73.300	66.600	87.200	92.000
Transmitting ERP (watts)	122.700	78.480	11.150	0.740	0.260	0.340	3.750	40.860

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	90.200	93.400	74.900	83.100	73.300	66.600	87.200	92.000
Transmitting ERP (watts)	0.330	5.430	50.380	128.750	66.660	8.640	0.500	0.260

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	90.200	93.400	74.900	83.100	73.300	66.600	87.200	92.000
Transmitting ERP (watts)	3.840	0.260	0.300	0.480	13.100	80.300	122.700	38.140

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
61	37-57-06.1 N	086-24-38.3 W	260.0	96.3	1043429

Address: HWY 144, 4.8 KM (3 MILES) EAST OF

City: UNION STAR County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	155.100	133.800	120.800	135.100	151.300	176.200	170.600	164.100
Transmitting ERP (watts)	100.130	64.650	9.560	0.650	0.240	0.270	3.020	33.930

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
61	37-57-06.1 N	086-24-38.3 W	260.0	96.3	1043429

Address: HWY 144, 4.8 KM (3 MILES) EAST OF

City: UNION STAR County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	155.100	133.800	120.800	135.100	151.300	176.200	170.600	164.100
Transmitting ERP (watts)	0.310	8.140	56.310	104.850	38.950	4.370	0.240	0.250

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	155.100	133.800	120.800	135.100	151.300	176.200	170.600	164.100
Transmitting ERP (watts)	1.820	0.240	0.280	0.850	17.400	81.390	89.240	19.980

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
62	37-32-44.1 N	086-18-58.4 W	200.9	77.7	1258451

Address: 2408 Hanging Rock Road

City: Leitchfield County: GRAYSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	75.500	84.400	70.100	67.400	67.900	86.700	82.300	95.400
Transmitting ERP (watts)	97.150	35.730	4.550	0.310	0.380	0.580	13.630	68.070

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	75.500	84.400	70.100	67.400	67.900	86.700	82.300	95.400
Transmitting ERP (watts)	0.630	15.510	83.280	107.290	28.880	2.760	0.260	0.300

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	75.500	84.400	70.100	67.400	67.900	86.700	82.300	95.400
Transmitting ERP (watts)	1.050	0.260	0.310	2.290	30.940	107.290	83.280	13.820

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
63	36-41-48.4 N	087-07-44.2 W	176.5	60.7	1274279

Address: 4799 Russellville Road

City: Allensville County: TODD State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	39.500	56.100	59.000	64.900	64.800	67.600	57.500	49.800
Transmitting ERP (watts)	19.520	91.310	100.120	22.420	2.040	0.260	0.310	0.960

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
63	36-41-48.4 N	087-07-44.2 W	176.5	60.7	1274279

Address: 4799 Russellville Road

City: Allensville County: TODD State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	39.500	56.100	59.000	64.900	64.800	67.600	57.500	49.800
Transmitting ERP (watts)	0.260	0.290	0.450	12.040	74.220	112.340	35.530	3.720

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	39.500	56.100	59.000	64.900	64.800	67.600	57.500	49.800
Transmitting ERP (watts)	72.530	10.730	0.730	0.260	0.300	3.390	38.070	112.340

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
64	37-14-00.7 N	086-28-02.1 W	183.2	103.6	1231934

Address: 109 Peach Road North

City: Roundhill County: BUTLER State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.400	90.500	87.200	101.000	93.800	118.600	91.600	91.500
Transmitting ERP (watts)	363.980	159.800	18.450	0.910	0.740	0.950	21.190	167.330

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.400	90.500	87.200	101.000	93.800	118.600	91.600	91.500
Transmitting ERP (watts)	1.950	47.700	254.680	329.990	85.310	8.010	0.740	0.920

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.400	90.500	87.200	101.000	93.800	118.600	91.600	91.500
Transmitting ERP (watts)	3.030	0.740	0.970	7.140	95.740	330.050	254.730	40.610

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
65	37-52-03.2 N	086-41-39.8 W	149.0	60.7	

Address: Hancock South, 4586 Midway Lane

City: Hawesville County: HANCOCK State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	42.800	44.700	66.200	57.400	29.900	51.200	52.700	89.200
Transmitting ERP (watts)	115.500	73.040	10.410	0.540	0.280	0.490	4.480	36.360

Licensee Name: CELLCO PARTNERSHIP

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File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
65	37-52-03.2 N	086-41-39.8 W	149.0	60.7	

Address: Hancock South, 4586 Midway Lane

City: Hawesville County: HANCOCK State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	42.800	44.700	66.200	57.400	29.900	51.200	52.700	89.200
Transmitting ERP (watts)	3.060	20.470	92.740	139.820	92.120	15.240	1.400	0.310

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	42.800	44.700	66.200	57.400	29.900	51.200	52.700	89.200
Transmitting ERP (watts)	14.390	1.320	0.300	2.890	19.320	87.550	132.000	86.970

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
66	37-48-20.2 N	086-28-22.4 W	213.7	98.8	1215268

Address: Hardinsburg North, West side of Finley/Dowell Road

City: Hardinsburg County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	117.700	128.800	92.100	83.000	91.500	112.900	146.900	129.700
Transmitting ERP (watts)	65.140	85.560	23.840	2.300	0.240	0.240	0.510	11.990

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	117.700	128.800	92.100	83.000	91.500	112.900	146.900	129.700
Transmitting ERP (watts)	0.260	1.750	24.390	85.560	66.660	11.450	0.880	0.240

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	117.700	128.800	92.100	83.000	91.500	112.900	146.900	129.700
Transmitting ERP (watts)	5.250	0.290	0.240	0.260	5.140	43.210	93.440	43.210

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
67	37-31-51.2 N	086-28-23.9 W	192.0	123.4	1244902

Address: 3690 FALLS OF ROUGH ROAD

City: SHORT CREEK County: GRAYSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	81.800	72.500	68.000	60.600	85.600	82.500	104.300	89.800
Transmitting ERP (watts)	30.940	107.290	83.280	13.820	1.050	0.260	0.310	2.290

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
67	37-31-51.2 N	086-28-23.9 W	192.0	123.4	1244902

Address: 3690 FALLS OF ROUGH ROAD

City: SHORT CREEK County: GRAYSON State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	81.800	72.500	68.000	60.600	85.600	82.500	104.300	89.800
Transmitting ERP (watts)	0.260	0.310	6.770	55.020	117.640	52.550	6.320	0.320

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	81.800	72.500	68.000	60.600	85.600	82.500	104.300	89.800
Transmitting ERP (watts)	28.880	2.760	0.260	0.300	0.630	15.510	83.280	107.290

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
68	37-19-34.6 N	086-57-44.7 W	167.0	83.8	1217201

Address: Western KY Parkway, 256 Pond Run Church Road

City: Beaver Dam County: OHIO State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.000	93.500	89.600	96.400	94.000	100.700	102.100	97.600
Transmitting ERP (watts)	33.930	116.960	90.270	14.390	1.070	0.260	0.340	2.530

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.000	93.500	89.600	96.400	94.000	100.700	102.100	97.600
Transmitting ERP (watts)	3.840	0.260	0.300	0.480	13.100	80.300	122.700	38.140

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.000	93.500	89.600	96.400	94.000	100.700	102.100	97.600
Transmitting ERP (watts)	88.210	8.620	0.340	0.240	0.240	0.240	4.520	78.620

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
69	37-16-08.2 N	086-40-27.4 W	175.0	77.7	1268018

Address: Welcome, 224 Cook Road

City: Morgantown County: BUTLER State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.800	67.500	90.400	96.600	102.900	98.300	116.100	103.600
Transmitting ERP (watts)	117.640	52.550	6.320	0.320	0.260	0.310	6.770	55.020



Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
69	37-16-08.2 N	086-40-27.4 W	175.0	77.7	1268018

Address: Welcome, 224 Cook Road

City: Morgantown County: BUTLER State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.800	67.500	90.400	96.600	102.900	98.300	116.100	103.600
Transmitting ERP (watts)	0.630	15.510	83.280	107.290	28.880	2.760	0.260	0.300

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.800	67.500	90.400	96.600	102.900	98.300	116.100	103.600
Transmitting ERP (watts)	1.050	0.260	0.310	2.290	30.940	107.290	83.280	13.820

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
70	37-12-05.9 N	087-02-26.4 W	153.0	111.3	1231935

Address: 1317 US HWY 431

City: DRAKESBORO County: MUHLENBERG State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	106.300	109.400	98.200	89.900	81.000	80.100	89.600	94.400
Transmitting ERP (watts)	102.460	44.990	5.190	0.260	0.210	0.270	5.960	47.110

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	106.300	109.400	98.200	89.900	81.000	80.100	89.600	94.400
Transmitting ERP (watts)	0.550	13.430	71.710	92.910	24.020	2.250	0.210	0.260

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	106.300	109.400	98.200	89.900	81.000	80.100	89.600	94.400
Transmitting ERP (watts)	0.850	0.210	0.270	2.010	26.950	92.910	71.710	11.430

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
71	36-58-34.3 N	086-57-59.8 W	190.2	93.0	1246006

Address: Lewinsburg Downtown, Spa Road

City: LEWISBURG County: LOGAN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.500	103.300	93.900	90.700	82.900	85.300	84.200	89.200
Transmitting ERP (watts)	100.120	93.440	17.800	1.480	0.260	0.310	1.480	24.580

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
71	36-58-34.3 N	086-57-59.8 W	190.2	93.0	1246006

Address: Lewinsburg Downtown, Spa Road

City: LEWISBURG County: LOGAN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.500	103.300	93.900	90.700	82.900	85.300	84.200	89.200
Transmitting ERP (watts)	0.300	4.900	45.770	117.640	63.170	8.330	0.490	0.260

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.500	103.300	93.900	90.700	82.900	85.300	84.200	89.200
Transmitting ERP (watts)	2.040	0.260	0.310	0.960	19.520	91.310	100.120	22.420

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
72	37-02-45.0 N	086-21-53.0 W	167.6	102.7	1046177

Address: Bristow, KY Hwy 526, 5.9 MI (9.5 km) NE of

City: BOWLING GREEN County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	48.600	42.800	42.800	67.000	66.800	77.800	53.600	55.000
Transmitting ERP (watts)	144.730	63.540	7.340	0.360	0.300	0.380	8.420	66.540

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	48.600	42.800	42.800	67.000	66.800	77.800	53.600	55.000
Transmitting ERP (watts)	0.640	15.100	82.010	107.710	30.010	2.900	0.300	0.310

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	48.600	42.800	42.800	67.000	66.800	77.800	53.600	55.000
Transmitting ERP (watts)	1.180	0.300	0.350	2.570	34.720	120.380	93.440	15.510

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
73	36-48-17.7 N	087-09-29.0 W	195.1	37.0	

Address: Elkton Downtown, Water Tank within the Town of

City: Elkton County: TODD State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	29.900	29.900	36.400	49.400	47.700	51.300	46.600	29.900
Transmitting ERP (watts)	0.330	0.390	2.890	38.950	135.070	104.850	17.400	1.320

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
73	36-48-17.7 N	087-09-29.0 W	195.1	37.0	

Address: Elkton Downtown, Water Tank within the Town of  
City: Elkton County: TODD State: KY Construction Deadline:

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	29.900	29.900	36.400	49.400	47.700	51.300	46.600	29.900
Transmitting ERP (watts)	186.670	22.440	1.150	0.940	1.100	24.050	195.470	417.910

Antenna: 4

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	29.900	29.900	36.400	49.400	47.700	51.300	46.600	29.900
Transmitting ERP (watts)	69.360	324.400	355.700	79.630	7.260	0.940	1.100	3.400

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
74	36-45-37.5 N	086-43-02.9 W	197.2	77.7	1268208

Address: Middleton, 2514 Neely Road  
City: Franklin County: SIMPSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	65.100	67.700	65.900	61.000	73.500	89.900	84.400	76.100
Transmitting ERP (watts)	108.950	99.160	18.570	1.520	0.260	0.340	1.630	26.900

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	65.100	67.700	65.900	61.000	73.500	89.900	84.400	76.100
Transmitting ERP (watts)	0.340	7.510	59.300	128.990	56.630	6.540	0.320	0.260

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	65.100	67.700	65.900	61.000	73.500	89.900	84.400	76.100
Transmitting ERP (watts)	6.540	0.320	0.260	0.340	7.510	59.300	128.990	56.630

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
75	36-44-33.6 N	086-30-05.7 W	209.4	74.7	1057217

Address: Simpson I-65, 680 Phillips Lane  
City: Franklin County: SIMPSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	74.500	60.400	58.100	45.300	43.900	54.700	56.900	65.000
Transmitting ERP (watts)	113.860	122.250	26.290	2.360	0.300	0.370	1.180	23.930

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
75	36-44-33.6 N	086-30-05.7 W	209.4	74.7	1057217

Address: Simpson I-65, 680 Phillips Lane

City: Franklin County: SIMPSON State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	74.500	60.400	58.100	45.300	43.900	54.700	56.900	65.000
Transmitting ERP (watts)	0.430	11.130	78.320	144.460	52.750	5.690	0.300	0.320

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	74.500	60.400	58.100	45.300	43.900	54.700	56.900	65.000
Transmitting ERP (watts)	0.830	0.300	0.380	4.210	45.850	137.670	88.060	12.510

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
76	36-41-45.2 N	086-08-55.9 W	299.9	42.7	

Address: Allen Southeast, 7.0 km southeast of

City: Scottsville County: ALLEN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	108.900	124.900	127.700	96.400	75.800	97.900	122.100	116.000
Transmitting ERP (watts)	156.880	103.360	17.100	1.570	0.350	3.430	22.970	104.060

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	108.900	124.900	127.700	96.400	75.800	97.900	122.100	116.000
Transmitting ERP (watts)	6.870	41.440	144.130	164.500	61.780	8.520	0.570	0.770

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	108.900	124.900	127.700	96.400	75.800	97.900	122.100	116.000
Transmitting ERP (watts)	1.120	0.240	0.870	3.340	18.280	65.860	50.650	9.530

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
77	37-41-44.8 N	086-25-06.2 W	210.6	77.7	1262107

Address: Kingswood, 1065 Stinnett-Taul Lane

City: Harned County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	78.900	76.900	78.500	81.600	105.100	108.200	91.500	108.400
Transmitting ERP (watts)	6.770	55.020	117.640	52.550	6.320	0.320	0.260	0.310

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
77	37-41-44.8 N	086-25-06.2 W	210.6	77.7	1262107

Address: Kingswood, 1065 Stinnett-Taul Lane

City: Harned County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	78.900	76.900	78.500	81.600	105.100	108.200	91.500	108.400
Transmitting ERP (watts)	0.260	0.300	3.390	38.070	112.340	72.530	10.730	0.730

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	78.900	76.900	78.500	81.600	105.100	108.200	91.500	108.400
Transmitting ERP (watts)	112.340	35.530	3.720	0.260	0.290	0.450	12.040	74.220

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
78	36-54-24.5 N	086-19-35.4 W	172.8	77.7	1275463

Address: Claypool, 2818 Alvaton-Greenhill Road

City: Bowling Green County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.200	76.200	79.200	52.800	60.600	78.000	69.500	86.500
Transmitting ERP (watts)	18.240	82.650	124.610	82.100	13.580	1.250	0.280	2.730

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.200	76.200	79.200	52.800	60.600	78.000	69.500	86.500
Transmitting ERP (watts)	0.450	0.620	5.460	32.920	114.480	130.660	49.070	6.770

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.200	76.200	79.200	52.800	60.600	78.000	69.500	86.500
Transmitting ERP (watts)	112.910	27.380	2.950	0.270	1.500	8.200	53.810	130.660

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
79	37-54-07.2 N	086-31-56.1 W	185.9	30.3	

Address: 1.0 km SSW of

City: Stephensports County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.900	29.900	49.700	43.700	40.700	48.900	79.700	37.400
Transmitting ERP (watts)	20.210	136.640	63.910	3.510	0.310	0.310	0.310	0.340

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
79	37-54-07.2 N	086-31-56.1 W	185.9	30.3	

Address: 1.0 km SSW of

City: Stephensports County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.900	29.900	49.700	43.700	40.700	48.900	79.700	37.400
Transmitting ERP (watts)	0.310	0.310	3.510	82.330	124.620	15.330	0.570	0.310

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.900	29.900	49.700	43.700	40.700	48.900	79.700	37.400
Transmitting ERP (watts)	5.190	0.310	0.310	0.310	0.310	13.660	127.520	78.630

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
80	37-42-39.3 N	086-31-34.6 W	218.5	77.7	1272916

Address: 245 Dejarnette Lane

City: McQuady County: BRECKINRIDGE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	122.000	93.600	90.700	109.100	120.100	106.500	93.000	113.900
Transmitting ERP (watts)	128.360	93.210	17.180	1.520	0.270	1.720	14.250	71.470

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	122.000	93.600	90.700	109.100	120.100	106.500	93.000	113.900
Transmitting ERP (watts)	4.860	26.750	105.570	130.690	59.850	9.030	0.640	0.460

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	122.000	93.600	90.700	109.100	120.100	106.500	93.000	113.900
Transmitting ERP (watts)	3.780	0.270	1.280	5.690	46.750	127.920	120.460	33.780

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
81	37-29-16.7 N	086-16-14.7 W	231.6	44.2	

Address: Leitchfield WT, 1.5 km East of

City: Leitchfield County: GRAYSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	84.200	71.900	49.000	65.200	69.200	59.900	55.400	68.100
Transmitting ERP (watts)	127.520	78.630	5.190	0.310	0.310	0.310	0.310	13.660

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
81	37-29-16.7 N	086-16-14.7 W	231.6	44.2	

Address: Leitchfield WT, 1.5 km East of

City: Leitchfield County: GRAYSON State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	84.200	71.900	49.000	65.200	69.200	59.900	55.400	68.100
Transmitting ERP (watts)	0.310	0.790	40.320	146.410	38.510	1.570	0.310	0.310

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	84.200	71.900	49.000	65.200	69.200	59.900	55.400	68.100
Transmitting ERP (watts)	0.570	0.310	0.310	0.310	3.510	82.330	124.620	15.330

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
82	37-12-13.0 N	086-52-35.7 W	161.2	77.7	1263383

Address: 354 New Cut Road North

City: Rochester County: BUTLER State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	92.200	104.300	79.800	74.100	80.300	95.900	89.700	112.900
Transmitting ERP (watts)	63.170	117.640	43.710	4.900	0.260	0.280	0.350	9.130

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	92.200	104.300	79.800	74.100	80.300	95.900	89.700	112.900
Transmitting ERP (watts)	0.310	0.960	19.520	91.310	100.120	22.420	2.040	0.260

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	92.200	104.300	79.800	74.100	80.300	95.900	89.700	112.900
Transmitting ERP (watts)	10.730	0.730	0.260	0.300	3.390	38.070	112.340	72.530

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
83	36-45-39.5 N	086-51-51.6 W	186.6	77.7	1256442

Address: Logan South, 75 Hall Store Road

City: Russellville County: LOGAN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	70.500	51.300	69.000	75.700	80.000	87.100	81.800	59.200
Transmitting ERP (watts)	128.990	56.630	6.540	0.320	0.260	0.340	7.510	59.300

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
83	36-45-39.5 N	086-51-51.6 W	186.6	77.7	1256442

Address: Logan South, 75 Hall Store Road

City: Russellville County: LOGAN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	70.500	51.300	69.000	75.700	80.000	87.100	81.800	59.200
Transmitting ERP (watts)	0.340	2.530	33.930	116.960	90.270	14.390	1.070	0.260

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	70.500	51.300	69.000	75.700	80.000	87.100	81.800	59.200
Transmitting ERP (watts)	3.840	0.260	0.300	0.480	13.100	80.300	122.700	38.140

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
84	36-58-47.9 N	086-23-20.0 W	155.1	56.4	1241356

Address: Bowling Green Cemetery Road, 3700 Cumberland Trace Cell

City: Bowling Green County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	29.900	35.000	33.800	29.900	39.200	29.900	29.900	54.700
Transmitting ERP (watts)	129.890	61.320	3.430	0.310	0.310	0.310	0.450	18.690

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	29.900	35.000	33.800	29.900	39.200	29.900	29.900	54.700
Transmitting ERP (watts)	0.310	3.260	77.190	119.560	14.880	0.420	0.310	0.310

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	29.900	35.000	33.800	29.900	39.200	29.900	29.900	54.700
Transmitting ERP (watts)	0.310	0.310	0.310	0.570	26.700	136.640	48.150	2.270

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
85	36-53-34.0 N	086-24-38.0 W	184.4	46.7	

Address: Plano Water Tank, 9.0 SSE of

City: Bowling Green County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	61.200	49.800	45.800	33.400	35.100	33.600	34.800	46.200
Transmitting ERP (watts)	1.340	39.400	76.830	11.900	0.480	0.240	0.240	0.240



Licensee Name: CELLCO PARTNERSHIP

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File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
85	36-53-34.0 N	086-24-38.0 W	184.4	46.7	

Address: Plano Water Tank, 9.0 SSE of

City: Bowling Green County: WARREN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	61.200	49.800	45.800	33.400	35.100	33.600	34.800	46.200
Transmitting ERP (watts)	0.240	0.240	0.240	5.320	66.920	53.150	4.220	0.240

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	61.200	49.800	45.800	33.400	35.100	33.600	34.800	46.200
Transmitting ERP (watts)	28.550	1.400	0.240	0.240	0.240	0.370	16.810	84.240

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
86	36-53-16.1 N	086-30-48.3 W	183.8	60.6	

Address: Richpond, 608 Skeek Road

City: Bowling Green County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.900	78.100	67.600	58.700	47.300	43.600	56.900	73.400
Transmitting ERP (watts)	87.200	42.220	5.380	0.310	0.260	0.260	4.790	40.320

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.900	78.100	67.600	58.700	47.300	43.600	56.900	73.400
Transmitting ERP (watts)	1.480	24.580	100.120	93.440	17.800	1.480	0.260	0.310

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.900	78.100	67.600	58.700	47.300	43.600	56.900	73.400
Transmitting ERP (watts)	0.490	0.260	0.300	4.900	45.770	117.640	63.170	8.330

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
87	36-44-23.3 N	086-34-22.4 W	211.2	93.6	1007990

Address: Franklin Downtown, Ogles Road (Franklin #9142)

City: Franklin County: SIMPSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.400	91.500	77.000	60.200	57.000	65.400	75.500	64.400
Transmitting ERP (watts)	1.890	59.640	119.000	18.430	0.750	0.270	0.270	0.270

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
87	36-44-23.3 N	086-34-22.4 W	211.2	93.6	1007990

Address: Franklin Downtown, Ogles Road (Franklin #9142)

City: Franklin County: SIMPSON State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.400	91.500	77.000	60.200	57.000	65.400	75.500	64.400
Transmitting ERP (watts)	0.270	0.270	0.270	8.050	101.290	84.250	6.540	0.310

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.400	91.500	77.000	60.200	57.000	65.400	75.500	64.400
Transmitting ERP (watts)	44.210	2.120	0.270	0.270	0.270	0.400	25.440	127.510

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
88	36-50-51.7 N	086-46-11.1 W	198.4	82.3	1237175

Address: Rockcastle, 1365 Echo Valley Road

City: Auburn County: LOGAN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.000	66.400	63.200	58.100	74.800	70.400	71.300	75.200
Transmitting ERP (watts)	122.700	78.480	11.150	0.740	0.260	0.340	3.750	40.860

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.000	66.400	63.200	58.100	74.800	70.400	71.300	75.200
Transmitting ERP (watts)	0.380	9.920	69.800	128.750	47.020	5.070	0.260	0.280

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.000	66.400	63.200	58.100	74.800	70.400	71.300	75.200
Transmitting ERP (watts)	2.100	0.260	0.330	1.050	21.320	101.470	108.950	23.430

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
89	37-25-24.5 N	086-24-14.9 W	197.8	83.8	1217214

Address: Millwood, 1006 Pleasant View Road

City: Millwood County: GRAYSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	62.400	41.800	60.100	71.500	58.400	67.600	87.100	76.500
Transmitting ERP (watts)	39.870	122.420	126.750	40.620	4.930	0.330	0.900	5.470

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
89	37-25-24.5 N	086-24-14.9 W	197.8	83.8	1217214

Address: Millwood, 1006 Pleasant View Road

City: Millwood County: GRAYSON State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	62.400	41.800	60.100	71.500	58.400	67.600	87.100	76.500
Transmitting ERP (watts)	0.890	0.350	3.940	22.290	94.500	128.360	70.660	11.140

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	62.400	41.800	60.100	71.500	58.400	67.600	87.100	76.500
Transmitting ERP (watts)	103.880	21.640	2.140	0.270	1.490	11.530	61.810	130.990

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
90	37-17-38.2 N	086-44-29.7 W	129.8	83.8	1217204

Address: Natcher Parkway, 1 C. Beck Rd.

City: Morgantown County: BUTLER State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	37.600	36.200	41.100	50.200	36.800	52.200	53.300	52.700
Transmitting ERP (watts)	7.510	59.300	128.990	56.630	6.540	0.320	0.260	0.340

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	37.600	36.200	41.100	50.200	36.800	52.200	53.300	52.700
Transmitting ERP (watts)	0.260	0.340	3.750	40.860	122.700	78.480	11.150	0.740

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	37.600	36.200	41.100	50.200	36.800	52.200	53.300	52.700
Transmitting ERP (watts)	122.700	38.140	3.840	0.260	0.300	0.480	13.100	30.300

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
91	37-10-17.8 N	086-46-48.7 W	157.3	90.0	1273826

Address: South Hill, 231 Freeman Staples Road

City: Morgantown County: BUTLER State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	114.500	84.600	81.200	73.600	93.700	70.900	96.300	102.200
Transmitting ERP (watts)	71.470	128.360	93.210	17.180	1.520	0.270	1.720	14.250

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
91	37-10-17.8 N	086-46-48.7 W	157.3	90.0	1273826

Address: South Hill, 231 Freeman Staples Road

City: Morgantown County: BUTLER State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	114.500	84.600	81.200	73.600	93.700	70.900	96.300	102.200
Transmitting ERP (watts)	0.620	5.460	32.920	114.480	130.660	49.070	6.770	0.450

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	114.500	84.600	81.200	73.600	93.700	70.900	96.300	102.200
Transmitting ERP (watts)	21.640	2.140	0.270	1.490	11.530	61.810	130.990	103.880

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
92	36-57-07.6 N	086-47-36.4 W	210.0	77.7	1261473

Address: Chandler, 8773 Morgantown Road

City: Russellville County: LOGAN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	122.500	88.200	98.600	86.200	75.500	96.400	126.200	114.800
Transmitting ERP (watts)	122.700	78.480	11.150	0.740	0.260	0.340	3.750	40.860

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	122.500	88.200	98.600	86.200	75.500	96.400	126.200	114.800
Transmitting ERP (watts)	0.480	13.100	80.300	122.700	38.140	3.840	0.260	0.300

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	122.500	88.200	98.600	86.200	75.500	96.400	126.200	114.800
Transmitting ERP (watts)	0.500	0.260	0.330	5.430	50.380	128.750	66.660	8.640

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
93	37-03-12.4 N	086-44-45.3 W	184.4	77.7	1273825

Address: Davis Crossroads, 63 Fire Station Lane

City: Morgantown County: BUTLER State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	90.300	104.500	88.100	79.900	67.600	85.300	105.100	96.800
Transmitting ERP (watts)	94.500	128.360	70.660	11.140	0.890	0.350	3.940	22.290

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
93	37-03-12.4 N	086-44-45.3 W	184.4	77.7	1273825

Address: Davis Crossroads, 63 Fire Station Lane

City: Morgantown County: BUTLER State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	90.300	104.500	88.100	79.900	67.600	85.300	105.100	96.800
Transmitting ERP (watts)	0.350	3.940	22.290	94.500	128.360	70.660	11.140	0.890

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	90.300	104.500	88.100	79.900	67.600	85.300	105.100	96.800
Transmitting ERP (watts)	17.180	1.520	0.270	1.720	14.250	71.470	128.360	93.210

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
94	36-49-14.6 N	087-02-42.8 W	198.7	77.7	1261471

Address: Daysville, 1270 Daysville Road

City: Russellville County: LOGAN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	80.600	79.200	75.600	95.700	90.500	86.800	61.000	55.000
Transmitting ERP (watts)	2.290	30.940	107.290	83.280	13.820	1.050	0.260	0.310

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	80.600	79.200	75.600	95.700	90.500	86.800	61.000	55.000
Transmitting ERP (watts)	0.490	0.260	0.300	4.900	45.770	117.640	63.170	8.330

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	80.600	79.200	75.600	95.700	90.500	86.800	61.000	55.000
Transmitting ERP (watts)	112.340	35.530	3.720	0.260	0.290	0.450	12.040	74.220

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
95	36-41-25.9 N	086-04-02.1 W	237.1	77.7	1278967

Address: Holland, 359 Lafayette Road

City: Scottsville County: ALLEN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	114.100	88.200	100.700	73.600	49.300	69.400	81.800	87.800
Transmitting ERP (watts)	12.260	67.850	91.320	22.470	1.930	0.240	0.240	1.460

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
95	36-41-25.9 N	086-04-02.1 W	237.1	77.7	1278967

Address: Holland, 359 Lafayette Road

City: Scottsville County: ALLEN State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	114.100	88.200	100.700	73.600	49.300	69.400	81.800	87.800
Transmitting ERP (watts)	0.230	1.100	4.900	40.250	110.140	103.720	29.080	3.250

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	114.100	88.200	100.700	73.600	49.300	69.400	81.800	87.800
Transmitting ERP (watts)	93.210	17.180	1.520	0.270	1.720	14.250	71.470	128.360

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
96	36-59-23.5 N	086-28-21.6 W	146.6	76.2	1277050

Address: Lampkin Park, Behind Dept of Hwys Dist. Office on Old Morgantown Rd. off Hwy 231

City: Bowling Green County: WARREN State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.300	29.900	37.300	29.900	29.900	29.900	29.900	29.900
Transmitting ERP (watts)	111.310	29.890	1.180	0.240	0.240	0.240	0.710	29.750

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.300	29.900	37.300	29.900	29.900	29.900	29.900	29.900
Transmitting ERP (watts)	0.240	2.330	51.180	79.740	9.900	0.320	0.240	0.240

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.300	29.900	37.300	29.900	29.900	29.900	29.900	29.900
Transmitting ERP (watts)	0.240	0.240	0.240	0.280	10.010	96.730	60.750	3.910

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
97	37-25-27.1 N	086-13-46.7 W	252.1	41.1	1280487

Address: Johnson Crossroads, 2601 St. Augustine Road

City: Clarkson County: GRAYSON State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	97.900	73.900	78.500	96.700	106.000	108.500	99.600	95.600
Transmitting ERP (watts)	157.100	105.670	17.850	1.800	0.480	4.050	25.570	109.870

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKN867

File Number: 0009262184

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
97	37-25-27.1 N	086-13-46.7 W	252.1	41.1	1280487

Address: Johnson Crossroads, 2601 St. Augustine Road

City: Clarkson County: GRAYSON State: KY Construction Deadline:

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	97.900	73.900	78.500	96.700	106.000	108.500	99.600	95.600
Transmitting ERP (watts)	7.940	44.270	150.440	165.870	63.900	9.040	0.700	1.050

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	97.900	73.900	78.500	96.700	106.000	108.500	99.600	95.600
Transmitting ERP (watts)	4.030	0.340	2.430	11.890	72.190	167.790	144.670	35.900

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
98	37-54-31.9 N	085-59-25.9 W	236.2	35.0	

Address: Fort Knox IV, 5800 Block of Adams Street

City: Fort Knox County: MEADE State: KY Construction Deadline:

Antenna: 1

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.000	74.300	90.800	60.900	57.100	53.800	55.700	114.300
Transmitting ERP (watts)	36.310	138.730	165.910	77.210	12.030	0.950	0.820	6.980

Antenna: 2

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.000	74.300	90.800	60.900	57.100	53.800	55.700	114.300
Transmitting ERP (watts)	1.300	0.640	5.680	30.740	124.760	162.210	90.940	14.810

Antenna: 3

Maximum Transmitting ERP in Watts:	140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.000	74.300	90.800	60.900	57.100	53.800	55.700	114.300
Transmitting ERP (watts)	117.350	21.640	1.920	0.340	2.170	17.950	89.980	161.610

Control Points:

Control Pt. No. 1

Address: 216 W LINCOLN TRAIL

City: RADCLIFF County: State: KY Telephone Number:

Waivers/Conditions:

NONE

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Table with 2 columns: Call Sign (WQCS429), File Number (0010160221), and Radio Service (CW - PCS Broadband)

FCC Registration Number (FRN): 0003290673

Table with license details: Grant Date (04-23-2015), Effective Date (09-23-2022), Expiration Date (05-13-2025), Print Date (02-15-2023), Market Number (BTA263), Channel Block (C), Sub-Market Designator (5), Market Name (Louisville, KY), and Build-out Dates.

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).



**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WQCS429

**File Number:** 0010160221

**Print Date:** 02-15-2023

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Table with Call Sign (WQGA718), File Number (0009793647), and Radio Service (AW - AWS (1710-1755 MHz and 2110-2155 MHz)).

FCC Registration Number (FRN): 0003290673

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).

**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WQGA718

**File Number:** 0009793647

**Print Date:** 02-23-2022

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission  
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

CELLCO PARTNERSHIP  
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING  
ALPHARETTA, GA 30022

<b>Call Sign</b> WQGA958	<b>File Number</b> 0009775568
<b>Radio Service</b> AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003290673

<b>Grant Date</b> 01-03-2022	<b>Effective Date</b> 01-03-2022	<b>Expiration Date</b> 11-29-2036	<b>Print Date</b> 01-05-2022
<b>Market Number</b> BEA070	<b>Channel Block</b> B	<b>Sub-Market Designator</b> 0	
<b>Market Name</b> Louisville, KY-IN			
<b>1st Build-out Date</b>	<b>2nd Build-out Date</b>	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations. See, e.g., FCC and NTIA Coordination Procedures in the 1710-1755 MHz Band, Public Notice, FCC 06-50, WTB Docket No. 02-353, rel. April 20, 2006.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at <http://wireless.fcc.gov/uls/index.htm?job=home> and select "License Search". Follow the instructions on how to search for license information.

**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WQGA958

**File Number:** 0009775568

**Print Date:** 01-05-2022

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE ENGINEERING
ALPHARETTA, GA 30022

Table with Call Sign (WQGD757), File Number (0010160394), and Radio Service (AW - AWS (1710-1755 MHz and 2110-2155 MHz))

FCC Registration Number (FRN): 0003290673

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations.

Special Condition for AU/name change (6/4/2016): Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station is licensed under the prior name.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).

**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WQGD757

**File Number:** 0010160394

**Print Date:** 02-10-2023

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Table with Call Sign (WQJQ692), File Number, and Radio Service (WU - 700 MHz Upper Band (Block C)).

FCC Registration Number (FRN): 0003290673

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

If the facilities authorized herein are used to provide broadcast operations, whether exclusively or in combination with other services, the licensee must seek renewal of the license either within eight years from the commencement of the broadcast service or within the term of the license had the broadcast service not been provided, whichever period is shorter in length. See 47 CFR §27.13(b).

This authorization is conditioned upon compliance with section 27.16 of the Commission's rules

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.



**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WQJQ692

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission  
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY  
CELLCO PARTNERSHIP  
5055 NORTH POINT PKWY, NP2NE ENGINEERING  
ALPHARETTA, GA 30022

<b>Call Sign</b> WRAM748	<b>File Number</b> 0009262187
<b>Radio Service</b> WT - 600 MHz Band	

FCC Registration Number (FRN): 0003290673

<b>Grant Date</b> 01-09-2018	<b>Effective Date</b> 01-13-2021	<b>Expiration Date</b> 01-09-2030	<b>Print Date</b> 03-11-2021
<b>Market Number</b> PEA162	<b>Channel Block</b> G	<b>Sub-Market Designator</b> 0	
<b>Market Name</b> Elizabethtown, KY			
<b>1st Build-out Date</b> 01-09-2024	<b>2nd Build-out Date</b>	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WRAM748

**File Number:** 0009262187

**Print Date:** 03-11-2021

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE ENGINEERING
ALPHARETTA, GA 30022

Table with Call Sign (WRAY771), File Number, and Radio Service (UU - Upper Microwave Flexible Use Service).

FCC Registration Number (FRN): 0003290673

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

Special Condition for AU/name change (6/4/2016): Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station is licensed under the prior name.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).

**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WRAY771

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission  
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY  
CELLCO PARTNERSHIP  
5055 NORTH POINT PKWY, NP2NE ENGINEERING  
ALPHARETTA, GA 30022

<b>Call Sign</b> WREV455	<b>File Number</b> 0009262187
<b>Radio Service</b> UU - Upper Microwave Flexible Use Service	

FCC Registration Number (FRN): 0003290673

<b>Grant Date</b> 12-11-2019	<b>Effective Date</b> 01-13-2021	<b>Expiration Date</b> 12-11-2029	<b>Print Date</b> 03-11-2021
<b>Market Number</b> PEA162	<b>Channel Block</b> A	<b>Sub-Market Designator</b> 0	
<b>Market Name</b> Elizabethtown, KY			
<b>1st Build-out Date</b>	<b>2nd Build-out Date</b>	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at <http://wireless.fcc.gov/uls/index.htm?job=home> and select "License Search". Follow the instructions on how to search for license information.

**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WREV455

**File Number:** 0009262187

**Print Date:** 03-11-2021

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY  
CELLCO PARTNERSHIP  
5055 NORTH POINT PKWY, NP2NE ENGINEERING  
ALPHARETTA, GA 30022

<b>Call Sign</b> WREV456	<b>File Number</b> 0009262187
<b>Radio Service</b> UU - Upper Microwave Flexible Use Service	

FCC Registration Number (FRN): 0003290673

<b>Grant Date</b> 12-11-2019	<b>Effective Date</b> 01-13-2021	<b>Expiration Date</b> 12-11-2029	<b>Print Date</b> 03-11-2021
<b>Market Number</b> PEA162	<b>Channel Block</b> B	<b>Sub-Market Designator</b> 0	
<b>Market Name</b> Elizabethtown, KY			
<b>1st Build-out Date</b>	<b>2nd Build-out Date</b>	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WREV456

**File Number:** 0009262187

**Print Date:** 03-11-2021

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE ENGINEERING
ALPHARETTA, GA 30022

Table with Call Sign (WREV457), File Number (0009262187), and Radio Service (UU - Upper Microwave Flexible Use Service)

FCC Registration Number (FRN): 0003290673

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

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**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WREV457

**File Number:** 0009262187

**Print Date:** 03-11-2021

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission  
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RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY  
CELLCO PARTNERSHIP  
5055 NORTH POINT PKWY, NP2NE ENGINEERING  
ALPHARETTA, GA 30022

<b>Call Sign</b> WREV458	<b>File Number</b> 0009262187
<b>Radio Service</b> UU - Upper Microwave Flexible Use Service	

FCC Registration Number (FRN): 0003290673

<b>Grant Date</b> 12-11-2019	<b>Effective Date</b> 01-13-2021	<b>Expiration Date</b> 12-11-2029	<b>Print Date</b> 03-11-2021
<b>Market Number</b> PEA162	<b>Channel Block</b> D	<b>Sub-Market Designator</b> 0	
<b>Market Name</b> Elizabethtown, KY			
<b>1st Build-out Date</b>	<b>2nd Build-out Date</b>	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WREV458

**File Number:** 0009262187

**Print Date:** 03-11-2021

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE ENGINEERING
ALPHARETTA, GA 30022

Table with Call Sign (WRHF800), File Number (0010283156), and Radio Service (UU - Upper Microwave Flexible Use Service).

FCC Registration Number (FRN): 0003290673

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).

**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WRHF800

**File Number:** 0010283156

**Print Date:** 03-15-2023

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Table with Call Sign (WRNG302), File Number, and Radio Service (PM - 3.7 GHz Service).

FCC Registration Number (FRN): 0003290673

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This final license provides authorization during the full 15-year license term. Operation under this final license may begin on the earlier of (1) 12/5/2025 or (2) the date that the certification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR § 27.1412(g).

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).



**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WRNG302

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Table with Call Sign (WRNG307), File Number, and Radio Service (PM - 3.7 GHz Service).

FCC Registration Number (FRN): 0003290673

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This final license provides authorization during the full 15-year license term. Operation under this final license may begin on the earlier of (1) 12/5/2025 or (2) the date that the certification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR § 27.1412(g).

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).

**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WRNG307

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE ENGINEERING
ALPHARETTA, GA 30022

Table with 2 columns: Call Sign (WRWD815), File Number, and Radio Service (CW - PCS Broadband).

FCC Registration Number (FRN): 0003290673

Table with 4 columns: Grant Date (09-23-2022), Effective Date (09-23-2022), Expiration Date (09-06-2025), Print Date, Market Number (BTA263), Channel Block (C), Sub-Market Designator (8), Market Name (Louisville, KY), 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).

**Licensee Name:** CELLCO PARTNERSHIP

**Call Sign:** WRWD815

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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# TowerCo®

# ROUGH RIVER DAM

## KY0099

TBD KY HWY 79  
FALLS OF ROUGH, KY 40119  
GRAYSON COUNTY  
TENANT: LEGAL BUSINESS ENTITY d/b/a VERIZON WIRELESS  
"CK ROUGH RIVER DAM"  
BUILDING #:

### NEW 105'-0" MONOPOLE TOWER w/5'-0" LIGHTNING ROD TOTAL TOWER HEIGHT 110'-0"

**ROUGH RIVER DAM**  
SITE #: KY0099

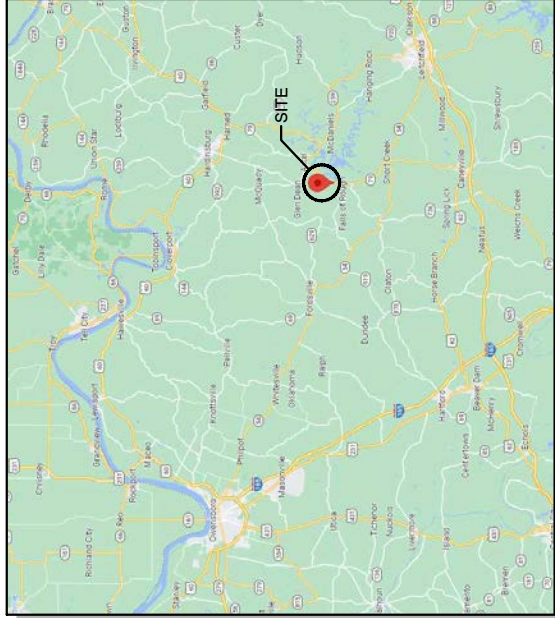
**VERIZON WIRELESS SITE**  
CK ROUGH RIVER DAM  
PROJECT#: 18735946  
MARKET ID: ----  
MID#: 50009086537

**SITE ADDRESS**  
TBD KY HWY 79  
FALLS OF ROUGH, KY 40119  
GRAYSON COUNTY  
E911 ADDRESS: TBD

**TOWER OWNER**  
TOWERCO  
5000 VALLEYSTONE DR #200 CARY, NC 27519  
CONTACT: EDWARD SCHAFFER  
PHONE: 338-325-1066  
E-MAIL: eschafer@towerco.com

**PROPERTY OWNER**  
DAVID WAYNE MERCER  
CONTACT: DAVID WAYNE MERCER  
PHONE: 270-589-0346  
E-MAIL: TBD

#### PROJECT SUMMARY



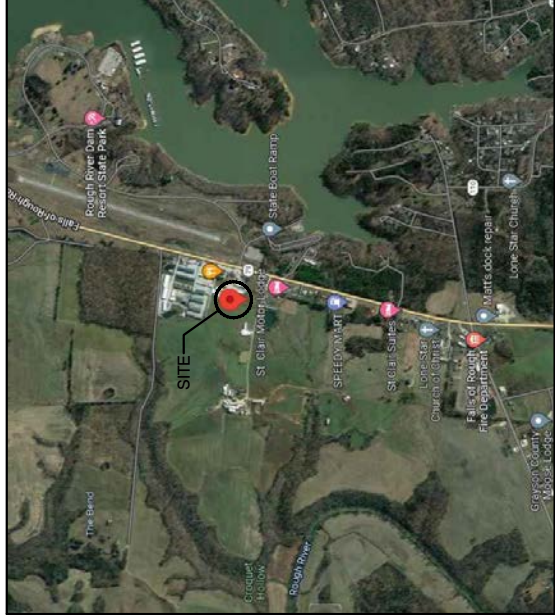
VICINITY MAP

**PROJECT DESCRIPTION:**  
NOTE: ALL ITEMS WITHIN THESE CONSTRUCTION DOCUMENTS ARE BY TOWER OWNER'S GENERAL CONTRACTOR AND HIS SUB-CONTRACTORS UNLESS NOTED AS (VZW GC) WHICH INCLUDES VERIZON WIRELESS GENERAL CONTRACTOR AND HIS SUB-CONTRACTORS. GENERALLY DESCRIBED BELOW:

- TOWER OWNER SCOPE (GTS GC):**
- INSTALL A NEW 105'-0" MONOPOLE W/ 5'-0" LIGHTNING ROD (TOTAL 110'-0")
  - INSTALL A NEW TOWER FOUNDATION SYSTEM
  - INSTALL A NEW FENCED PERIMETER FENCE COMPOUND
  - INSTALL A NEW ELECTRICAL SERVICE RUN TO SITE UTILITY H-FRAME
  - INSTALL A NEW GRAVEL ACCESS DRIVE
  - NO WATER OR SEWAGE SERVICES RUN TO SITE
  - INSTALL NEW TOWER & SITE GROUNDING SYSTEM
  - INSTALL NEW VZW SUBSURFACE GROUNDING SYSTEM
  - INSTALL A NEW VZW CONCRETE EQUIPMENT PAD
  - INSTALL ELECTRICAL SERVICE GENERATOR PAD
  - INSTALL ELECTRICAL SERVICE CONDUIT WITH PULL TAPES FROM ILC ENCLOSURE STUB-UP TO UTILITY H-FRAME
  - INSTALL NEW CONDUITS WITH PULL TAPES FROM VZW ILC STUB-UP LOCATION TO THE GENERATOR STUB-UP AT VZW GENERATOR PAD
  - INSTALL (1) NEW "VERIZON WIRELESS ONLY" FIBER OPTIC CONDUIT WITH INTEGRAL EQUIPMENT TO NEW "VERIZON WIRELESS ONLY" 24"x36" HAND HOLE OUTSIDE COMPOUND THEN TO NEW "VERIZON WIRELESS ONLY" 24"x36" HAND HOLE AT R.O.W.
  - PERMANENT ELECTRIC POWER MUST BE AVAILABLE FOR VERIZON WIRELESS AT THE INSTALL VZW ICE BRIDGE AND FOUNDATIONS
  - INSTALL VZW EQUIPMENT H-FRAME AND FOUNDATIONS
  - INSTALL NEW CONDUITS WITH PULL TAPES FROM RF CABINET TO OVP H-FRAME LT FIBER LOCATION
  - INSTALL NEW CONDUITS AND CIRCUITS FROM VZW ILC ENCLOSURE TO EQUIPMENT ENCLOSURES AT VZW EQUIPMENT PAD

- VERIZON WIRELESS SCOPE (VZW GC):**
- INSTALL VZW PREFABRICATED CANOPY AND FOUNDATIONS
  - INSTALL VZW ANTENNA MOUNTING SUPPORT STRUCTURE ON TOWER
  - INSTALL VZW ANTENNAS, LINES, COAX, GPS ANTENNA AND RADIO EQUIPMENT
  - INSTALL EXISTING SUBSURFACE GROUND LEADS TO VZW EQUIPMENT & FACILITIES ENCLOSURE
  - INSTALL NEW ELECTRICAL SERVICE CONDUCTORS FROM UTILITY H-FRAME TO VZW ILC ENCLOSURE
  - INSTALL VZW GENERATOR CIRCUITS FROM VZW ILC & EQUIPMENT ENCLOSURES TO VZW GENERATOR
  - INSTALL NEW OUTDOOR OVPs AND CABLING ON VZW EQUIPMENT H-FRAME

#### PROJECT DESCRIPTION



LOCATION MAP

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE (IBC) AND THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

**BUILDING CODE** MICHIGAN BUILDING CODE ADOPTED EDITION (IBC)  
**STRUCTURAL CODE** TH/EIA-222 - REVISION G  
**MECHANICAL CODE** MICHIGAN MECHANICAL CODE ADOPTED EDITION (MCC)  
**PLUMBING CODE** MICHIGAN PLUMBING CODE ADOPTED ADDITION (MPC)  
**ELECTRICAL CODE** 2017 NATIONAL ELECTRICAL CODE (NEC) - NFPA 70  
**FIRE/LIFE SAFETY CODE** MICHIGAN LIFE SAFETY CODE (2021 NFPA 101)

**ACCESSIBILITY REQUIREMENTS:**  
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. BARRIER FREE ACCESS REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH THE MICHIGAN (IBC) BUILDING CODE.

#### APPLICABLE CODES

**SURVEYOR**  
FSTAN  
1012 S 4TH STREET, SUITE 101  
LOUISVILLE, KY 40203  
PHONE: 502-636-5111

**ARCHITECTURAL**  
TELECAD WIRELESS  
1961 NORTHPOINT BLVD  
HIXSON, TN 37343  
CONTACT: DAVID STAMPE  
PHONE: 423-843-9500  
EMAIL: david.stampe@TeleCADeng.com

**ELECTRICAL**  
GRAYSON COUNTY RECC  
CONTACTS: CUSTOMER SERVICE  
PHONE: ----  
EMAIL: TBD

**ELECTRICAL UTILITY COORDINATION IS NOT FINALIZED. DO NOT PROCEED WITH CONSTRUCTION.**

#### CONSULTANT TEAM



AERIAL

SHEET NUMBER	DESCRIPTION
T-1	PROJECT INFORMATION, SITE MAPS, SHEET INDEX
ZONING	
Z-1	ASR COUNTY MAP
Z-2	OVERALL SITE PLAN w/AERIAL OVERLAY
Z-2A	OVERALL SITE PLAN w/AERIAL OVERLAY
Z-3	OVERALL SITE PLAN
Z-4	GRADING AND EAS CONTROL PLAN
Z-5	DETAILED SITE PLAN
Z-6	DIMENSIONED SITE PLAN
Z-7	FENCE DETAILS AND NOTES
Z-8	EROSION CONTROL DETAILS
Z-9	TOWER ELEVATION

DIRECTIONS FROM GRAYSON COUNTY COURTHOUSE:
DEPART AND HEAD (NORTHEAST), EXIT THE ROUNDABOUT AT THE 3RD EXIT, ONTO KY-54/ W MAIN ST, TURN RIGHT ONTO KY-79/ FALLS OF ROUGH RD. THE DESTINATION WILL BE ON THE LEFT.

PREPARED FOR:



PREPARED BY:



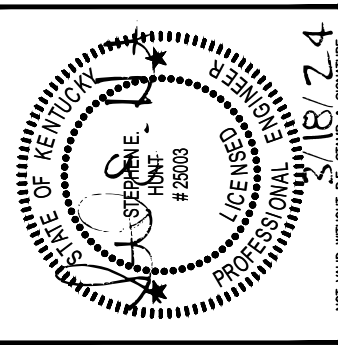
1961 NORTHPOINT BLVD, SUITE 130  
HIXSON, TN 37343  
PH: 423-843-9500  
FAX: 423-843-9509

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DRAWN BY: JAE  
CHECKED BY: DS

NO.	DATE	BY	DESCRIPTION
A	02/26/24	JAE	PRELIMINARY REVIEW
B	03/11/24	JAE	ZONING ISSUE
C	03/18/24	JAE	ZONING ISSUE

ENGINEER'S STAMP:



NOT VALID WITHOUT P.E. STAMP & SIGNATURE

**SITE NAME:**  
CK ROUGH RIVER DAM

**ADDRESS:**  
TBD KY HWY 79  
FALLS OF ROUGH, KY 40119

**COUNTY:**  
GRAYSON

**LATITUDE:**  
37° 36' 16.71" N

**LONGITUDE:**  
86° 30' 43.37" W

**SITE NUMBER:**  
KY0099

**SHEET TITLE:**

**DRAWING NO.:**  
T-1

**REVISION:**  
C



- PREMISES
- TITLE NOTES
- FLOOD ZONE DATA
- VICINITY MAP

**COORDINATE POINT LOCATION**

NAD 1983  
 LATITUDE: 37° 36' 16.71" N  
 LONGITUDE: 86° 30' 43.37" W  
 NAD 1988  
 SINGLE STATE PLANE COORDINATE  
 (BLUE MARBLE GEOGRAPHIC  
 CALCULATOR VERSION 3.0)  
 NORTHING: 3744637.165  
 EASTING: 4700502.732

**PROJECT BENCHMARK**

NORTH: 3744417.673  
 EAST: 4700524.730  
 ELEVATION: 558.11  
 LOCATION: BEING A SET 5/8" REBAR  
 W/CAP STAMPED "CONTROL  
 PNT. 172" SOUTH OF THE  
 SOUTHEAST CORNER OF THE  
 LEASE AREA.

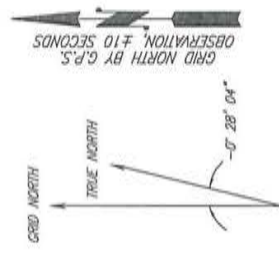
**SYMBOL LEGEND**

- WOOD POWER POLE
- CONCRETE POWER POLE
- METAL TRAFFIC POLE
- LIGHT POLE
- GUY POLE
- TELEPHONE PEDestal
- GUY ANCHOR
- MANHOLE
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- ELECTRIC BOX
- FENCE POST
- SPOT ELEVATION
- SET #5 REBAR (UNLESS OTHERWISE NOTED)
- EXISTING #5 REBAR (UNLESS OTHERWISE NOTED)
- OVERHEAD ELECTRIC
- UNDERGROUND GAS LINE
- UNDERGROUND WATER LINE
- OVERHEAD ELECTRIC & TELEPHONE LINE
- OVERHEAD TELEPHONE LINE
- DRAINAGE/STORM SEWER LINE
- EXISTING FENCE
- PROPOSED FENCE
- ETCH / SNAKE
- SUBJECT PROPERTY BOUNDARY
- RIGHT OF WAY CENTERLINE

**LINE LEGEND**

- OVERHEAD ELECTRIC
- UNDERGROUND GAS LINE
- UNDERGROUND WATER LINE
- OVERHEAD ELECTRIC & TELEPHONE LINE
- OVERHEAD TELEPHONE LINE
- DRAINAGE/STORM SEWER LINE
- EXISTING FENCE
- PROPOSED FENCE
- ETCH / SNAKE
- SUBJECT PROPERTY BOUNDARY
- RIGHT OF WAY CENTERLINE

NOTE: SYMBOLS, ABBREVIATIONS, OR LINE STYLES DO NOT NECESSARILY APPEAR ON DRAWINGS. USE ONLY AS APPLICABLE.



NORTH IS BASED ON THE SINGLE STATE PLANE COORDINATE SYSTEM, AND WAS DETERMINED BY COMPUTATION FROM G.P.S. OBSERVATION ON OCTOBER 19, 2022.

LINE	BEARING	DISTANCE
L1	S 75°08'57" E	30.00'
L2	S 14°51'03" W	30.00'

ERIC ST. & SHERRY CLAIR  
 D.B. 428, PG. 118,  
 DEED #2, PARCEL IV  
 PAR. #026-00-00-011

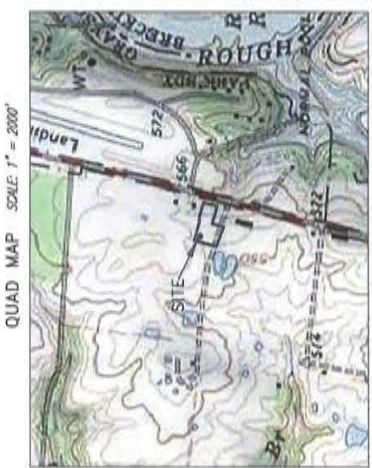


**Know what's below. Call before you dig.**  
 The 811 information shown on this site is provided by the utility companies and is not guaranteed. It is the contractor's responsibility to verify the location and depth of all utilities before any excavation work is performed. The contractor shall be responsible for the safety of all workers and the public.

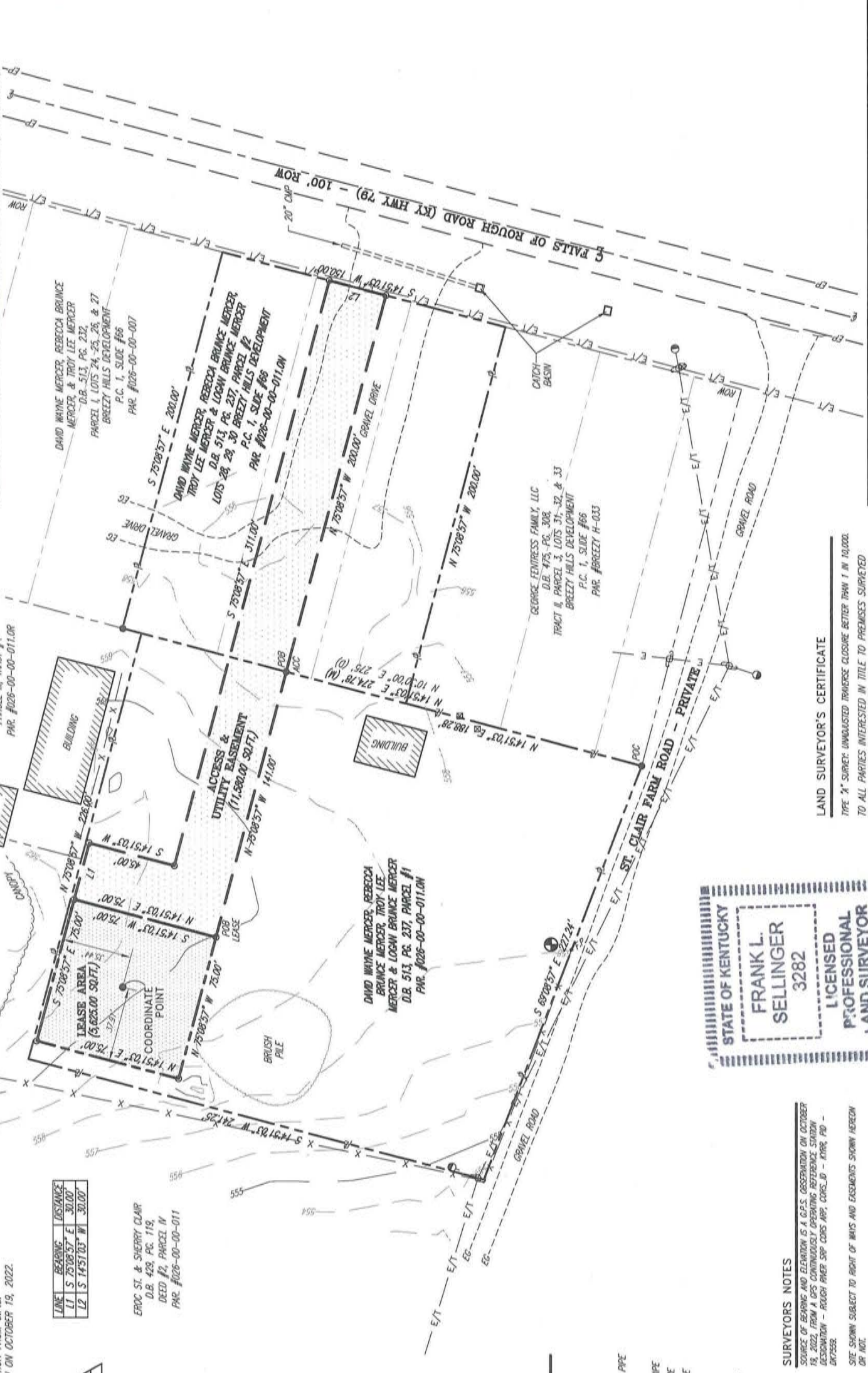
**LOCATION DESCRIPTION**  
 LOCATED ON NEAR FALLS OF ROUGH, GRAYSON COUNTY, KENTUCKY.

THIS SITE IS LOCATED ON THE FALLS OF THE ROUGH, KENTUCKY USGS QUADRANGLE SHEET.

The horizontal datum (coordinates) is referenced to the North American Datum 1983 (NAD 83) and is expressed in terms of Latitude and Longitude in degrees, minutes, seconds, and decimal parts thereof, and is accurate to within 15 feet horizontally. The site vertical datum (elevation and benchmark) is in terms of the North American Vertical Datum of 1988 (NAVD 88) and is accurate to within +/- 3 feet vertically.



QUAD MAP SCALE: 1" = 2000'



**"WIRELESS COMMUNICATION SITE SURVEY"**

OWNER APPROVAL: \_\_\_\_\_ DATE: \_\_\_\_\_  
 TENANT APPROVAL: \_\_\_\_\_ DATE: \_\_\_\_\_

I HAVE REVIEWED THE FLOOD INSURANCE RATE MAPS (FIRM) MAP NO. 21085C0035C DATED 09-19-2012 AND THE LEASE AREA DOES NOT APPEAR TO BE IN A FLOOD PRONE AREA. THE LEASE AREA IS LOCATED IN ZONE "X".

**LAND SURVEYOR'S CERTIFICATE**

TYPE "X" SURVEY: UNADJUSTED TRVERSE CLOSURE BETTER THAN 1 IN 10,000.

TO ALL PARTIES INTERESTED IN TITLE TO PREMISES SURVEYED I hereby certify that this plot and survey were made under my supervision, and that the angular and linear measurements, as witnessed by monuments shown hereon, are true and correct to the best of my knowledge and belief.

This survey and plot meets or exceeds the minimum standards of the governing authorities.

This property is subject to any recorded easements or right of ways not shown hereon.

*Frank L. Sellinger*  
 Frank L. Sellinger, KY. Reg. No. 3282

STATE OF KENTUCKY  
**FRANK L. SELLINGER**  
 3282  
 LICENSED PROFESSIONAL LAND SURVEYOR

**SURVEYORS NOTES**

SOURCE OF BEARING AND ELEVATION IS A G.P.S. OBSERVATION ON OCTOBER 19, 2022 FROM A G.P.S. CONTINUOUSLY OPERATING REFERENCE STATION (CORS) WITHIN - ROUGH RIVER SPP CORP APP, CORCLD - KURE, PD - 0K7558.

SITE SHOWN SUBJECT TO RIGHT OF WAYS AND EASEMENTS SHOWN HEREON OR NOT.

SOURCE OF ROTATION BASED ON THE SOUTH LINE OF PARCEL NUMBER 1 OF THE MERCER PROPERTY WHICH HAS THE BEARING OF N 03°00'00" E PER DEED BOOK 513, PAGE 237, AND THE CALCULATED BEARING OF N 14°51'03" E.

NO SEARCH OF PUBLIC RECORDS HAS BEEN PERFORMED BY THIS FIRM TO DETERMINE ANY DETECTS AND/OR AMBIGUITIES IN THE TITLE OF THE PARCEL TRACT.

THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.

EXISTING CONTOURS ARE AT ONE FOOT INTERVALS.



PREPARED FOR:

1961 NORTHPOINT BLVD, SUITE 130  
 HIXSON, TN 37343  
 PH: 423-843-9500  
 FAX: 423-843-9509




1012 S 4th Street, Suite 101  
 Louisville, Ky 40203  
 Phone: (502) 636-5111  
 Fax: (502) 636-5263

SITE NUMBER: 617130847  
 SITE NAME: ROUGH RIVER DAM  
 SITE ADDRESS: KY HWY 79, FALLS OF ROUGH, KY 40119  
 LEASE AREA: 5625.00 SQ.FT.  
 PROPERTY OWNER: DAVID WAYNE MERCER, REBECCA BRUNCE MERCER, TROY LEE MERCER, & LOGAN BRUNCE MERCER  
 PARCEL NUMBER: 026-00-00-011.0N, & 026-00-00-011.0K  
 SOURCE OF TITLE: D.B. 513, PG. 237

DWG BY: SNS FIELD DATE: DRAFT DATE: 11.08.22  
 CHKD BY: MRG 10.19.22  
 FSTAN PROJECT NO.: 22-11605

REVISIONS:  
 SHEET 1 OF 2  
 RAWLAND



-  - LEGAL DESCRIPTIONS (LEASE AREA)
-  - LEGAL DESCRIPTIONS (ACCESS ESMI)
-  - LEGAL DESCRIPTIONS (PARENT TRACT)

**LEGAL DESCRIPTIONS:**

This is a description for Verizon, of a lease area to be located on the property of the David Wayne Mercer, Rebecca Brunce Mercer, Troy Lee Mercer, & Logan Brunce Mercer, and being near Falls of Rough, Grayson County, Kentucky which is further described as follows:



**LEASE AREA**

Being a part of the property conveyed to David Wayne Mercer, Rebecca Brunce Mercer, Troy Lee Mercer, & Logan Brunce Mercer in Deed Book 513, Page 237 of the Grayson County Clerk's Office, and being near Falls of Rough, Grayson County, Kentucky which is further described as follows:

Commencing at a 5/8" rebar with cap found at the southeast corner of the property conveyed to David Wayne Mercer, Rebecca Brunce Mercer, Troy Lee Mercer, & Logan Brunce Mercer in Deed Book 513, Page 237 of the Grayson County Clerk's Office;  
 Thence with the east line of said Mercer property N 14°51'03" E - 188.28' to a set iron rod with a cap stamped "FStan 3282" on the south line of the Access & Utility Easement;  
 Thence leaving said property line and traversing said Mercer property with the said south line of the Access & Utility Easement N 75°08'57" W - 141.00' to a set iron rod with a cap stamped "FStan 3282", and being the True Point of Beginning of the Lease Area;  
 Thence leaving said Access & Utility Easement N 75°08'57" W - 75.00' to a set iron rod with a cap stamped "FStan 3282";  
 Thence N 14°51'03" E - 75.00' to a set iron rod with a cap stamped "FStan 3282";  
 Thence S 75°08'57" E - 75.00' to a set iron rod with a cap stamped "FStan 3282";  
 Thence S 14°51'03" W - 75.00' to the point of beginning, containing 5,625.00 square feet as per survey by Frank L. Sellinger, II dated November 08, 2022.



**ACCESS & UTILITY EASEMENT**

Being a part of the property conveyed to David Wayne Mercer, Rebecca Brunce Mercer, Troy Lee Mercer, & Logan Brunce Mercer in Deed Book 513, Page 237 of the Grayson County Clerk's Office, and being near Falls of Rough, Grayson County, Kentucky which is further described as follows:

Commencing at a 5/8" rebar with cap found at the southeast corner of the property conveyed to David Wayne Mercer, Rebecca Brunce Mercer, Troy Lee Mercer, & Logan Brunce Mercer in Deed Book 513, Page 237 of the Grayson County Clerk's Office;  
 Thence with the east line of said Mercer property N 14°51'03" E - 188.28' to a set iron rod with a cap stamped "FStan 3282", and being the True Point of Beginning the Access & Utility Easement;  
 Thence leaving said property line and traversing said Mercer property N 75°08'57" W - 141.00' to a set iron rod with a cap stamped "FStan 3282" on the southeast corner of the Lease Area;  
 Thence with the east line of said Lease Area N 14°51'03" E - 75.00' to a set iron rod with a cap stamped "FStan 3282" on the northeast corner of said Lease Area;  
 Thence leaving said Lease Area S 75°08'57" E - 30.00' to a set iron rod with a cap stamped "FStan 3282";  
 Thence S 14°51'03" W - 45.00' to a set iron rod with a cap stamped "FStan 3282";  
 Thence S 75°08'57" E - 311.00' to a set iron rod with a cap stamped "FStan 3282" on the northwest right-of-way of Falls of Rough Road;  
 Thence with said northwest right-of-way S 14°51'03" W - 30.00' to a set iron rod with a cap stamped "FStan 3282";  
 Thence leaving said northwest right-of-way of Falls of Rough Road and traversing said Mercer property N 75°08'57" W - 200.00' to the point of beginning, containing 11,580.00 square feet as per survey by Frank L. Sellinger, II dated November 08, 2022.



1012 S 4th Street, Suite 101  
 Louisville, Ky 40203  
 Phone: (502) 636-5111  
 Fax: (502) 636-5263

SITE NUMBER: 617130947

SITE NAME: ROUGH RIVER DAM

SITE ADDRESS: KY HWY 79  
 FALLS OF ROUGH, KY 40119

LEASE AREA: 5625.00 SQ.FT.

PROPERTY OWNER: DAVID WAYNE MERCER,  
 REBECCA BRUNCE MERCER,  
 TROY LEE MERCER, &  
 LOGAN BRUNCE MERCER  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

PARCEL NUMBER: 026-00-00-011.0N, &  
 026-00-00-011.0K

SOURCE OF TITLE: D.B. 513, PG. 237

DWG BY: SNS FIELD DATE: DRAFT DATE:  
 CHKD BY: MRG 10.19.22 11.08.22

FSTAN PROJECT NO.: 22-11605

SHEET 2 OF 2

**REVISIONS:**

RAWLAND



LAND SURVEYOR'S CERTIFICATE  
 TYPE "A" SURVEY: UNQUALIFIED TRVERSE CLOSURE BETTER THAN 1 IN 10,000  
 TO ALL PARTIES INTERESTED IN TITLE TO PREMISES SURVEYED  
 I hereby certify that this plat and survey were made under my  
 supervision, and that the angular and linear measurements,  
 as witnessed by monuments shown hereon, are true and correct  
 to the best of my knowledge and belief.  
 This survey and plat meets or exceeds the minimum standards  
 of the governing authorities.  
 This property is subject to any recorded easements or right  
 of way not shown hereon.

Frank L. Sellinger, II  
 KY. Reg. No. 3282



PREPARED FOR:



PREPARED BY:



1961 NORTHPOINT BLVD, SUITE 130  
 HIXSON, TN 37343  
 PH: 423-843-9500  
 FAX: 423-843-9509

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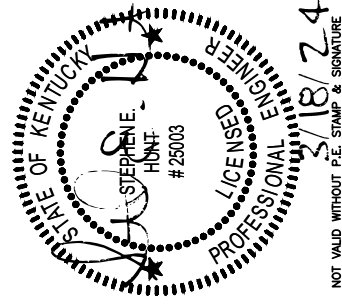
DRAWN BY: JAE

CHECKED BY: DS

REVISIONS

NO.	DATE	BY	DESCRIPTION
C	03/18/24	JMB	ZONING ISSUE
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A	02/26/24	JAE	PRELIMINARY REVIEW

ENGINEER'S STAMP:



NOT VALID WITHOUT P.E. STAMP & SIGNATURE  
 5/18/24

SITE NAME:

CK ROUGH RIVER DAM

ADDRESS:

TBD KY HWY 79  
 FALLS OF ROUGH, KY 40119

COUNTY:

GRAYSON

LATITUDE:

37° 36' 16.71" N

LONGITUDE:

86° 30' 43.37" W

SITE NUMBER:

KY00099

SHEET TITLE:

DRAWING NO.

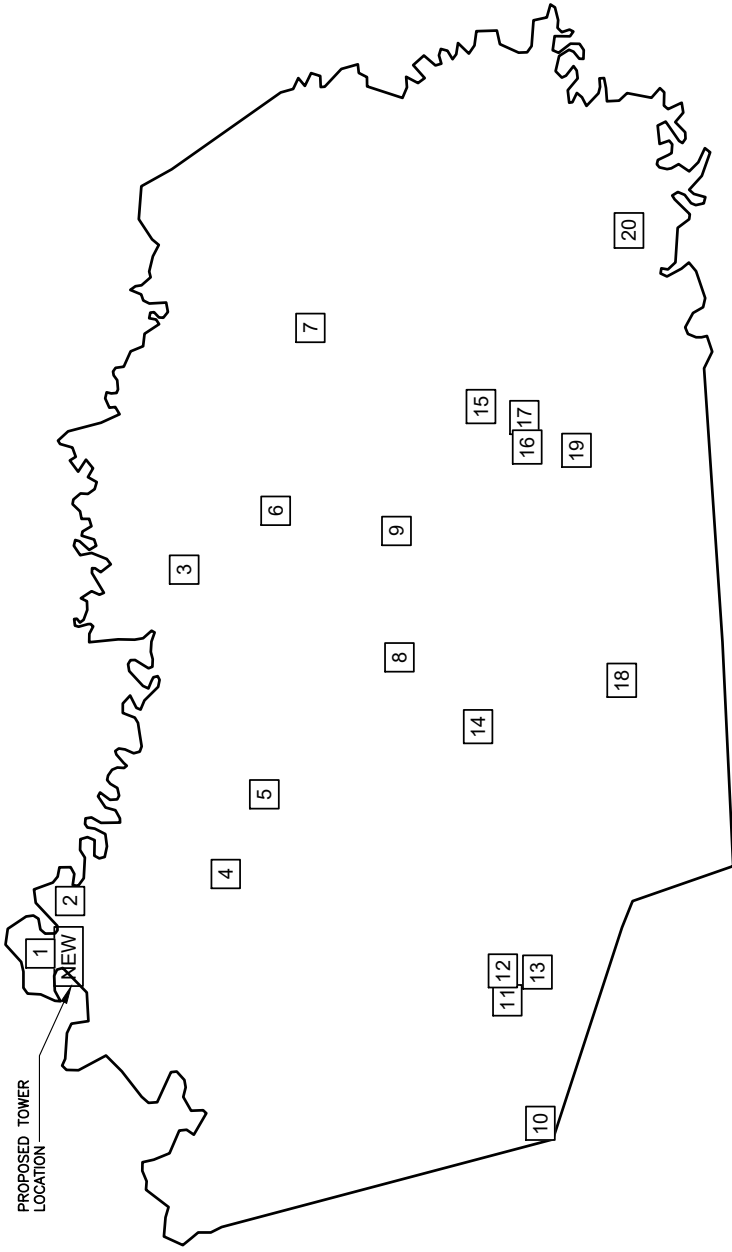
Z-1

REVISION:

C

FCC REGISTERED SITES  
 (GRAYSON COUNTY)

TOWER	ASR	LATITUDE	LONGITUDE	TOWER OWNER
1	1327131	37°36'16.70"N	86°30'43.40"W	TOWERCO 2013 LLC
2	1319716	37°35'48.00"N	86°29'24.50"W	TILLMAN INFRASTRUCTURE, LLC
3	1258451	37°32'44.10"N	86°18'58.40"W	CELLCO PARTNERSHIP
4	1244902	37°31'51.20"N	86°28'23.90"W	CCATT LLC
5	1268314	37°30'50.00"N	86°25'54.60"W	SBA MONARCH TOWERS III, LLC
6	1043268	37°30'40.00"	86°17'15.00"W	HERITAGE MEDIA OF KENTUCKY INC
7	1217206	37°29'36.00"N	86°11'16.50"W	CROWN COMMUNICATIONS LLC
8	1313734	37°27'22.60"N	86°21'49.00"W	CTI TOWERS ASSETS II, LLC
9	1043037	37°27'33.00"N	86°17'41.00"W	CELLCO PARTNERSHIP
10	1217219	37°23'39.90"N	86°36'37.80"W	CROWN COMMUNICATIONS LLC
11	1043431	37°24'41.0	86°32'12.00"W	CELLCO PARTNERSHIP
12	1043035	37°24'42.60"N	86°31'56.60"W	CROWN CASTLE SOUTH LLC
13	1284809	37°23'58.90"N	86°31'46.80"W	KENTUCKY UTILITIES COMPANY
14	1217214	37°25'24.50"N	86°24'14.90"W	CROWN COMMUNICATIONS LLC
15	1280487	37°25'27.10"N	86°13'46.70"W	CELLCO PARTNERSHIP
16	1315842	37°24'17.80"N	86°14'17.10"W	VB BTS, LLC
17	1250554	37°24'17.90"N	86°14'14.40"W	TENNESSEE VALLEY AUTHORITY
18	1323679	37°22'3.80"N	86°22'25.80"W	HORVATH TOWERS VI, LLC
19	1281698	37°23'1.90"N	86°15'21.70"W	KENTUCKY UTILITIES COMPANY
20	1310238	37°21'41.70"N	86°8'22.00"W	CELLCO PARTNERSHIP
PROPOSED TOWER	TBD	37°36'16.71"N	86°30'43.37"W	TOWERCO



GRAYSON COUNTY TOWER MAP



PREPARED FOR:



PREPARED BY:



1961 NORTHPOINT BLVD, SUITE 130  
HIXSON, TN 37343  
PH: 423-843-9500  
FAX: 423-843-9509

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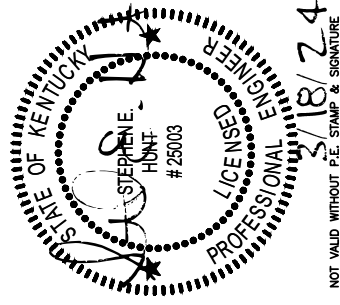
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ENGINEER'S STAMP:



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SITE NAME: CK ROUGH RIVER DAM

ADDRESS: TBD KY HWY 79

FALLS OF ROUGH, KY 40119

COUNTY: GRAYSON

LATITUDE: 37° 36' 16.71" N

LONGITUDE: 86° 30' 43.37" W

SITE NUMBER: KY0099

SHEET TITLE:

DRAWING NO. Z-2

REVISION: C



**OVERALL SITE PLAN  
W/AERIAL OVERLAY**

NOT TO SCALE



Call before you dig.  
Know what's below.  
1-800-752-6007  
Call Monday thru Friday - 7 am. to 6 pm.  
PER KENTUCKY STATE LAW, IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UTILITY COMPANIES AT LEAST 48 HOURS BEFORE COMMENCING WORK.



PREPARED FOR:  
**TowerCo®**

PREPARED BY:  
**TeleCAD Wireless**  
1961 NORTHPOINT BLVD, SUITE 130  
HIXSON, TN 37343  
PH: 423-843-9500  
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B	03/11/24 MJB ZONING ISSUE
A	02/26/24 JAE PRELIMINARY REVIEW

ENGINEER'S STAMP:  
NOT VALID WITHOUT P.E. STAMP & SIGNATURE  
5/18/24

SITE NAME: CK ROUGH RIVER DAM  
ADDRESS: TBD KY HWY 79  
FALLS OF ROUGH, KY 40119  
COUNTY: GRAYSON  
LATITUDE: 37° 36' 16.71" N  
LONGITUDE: 86° 30' 43.37" W  
SITE NUMBER: KY0099

SHEET TITLE:

DRAWING NO. Z-2A  
REVISION: C



**OVERALL SITE PLAN  
W/AERIAL OVERLAY**  
NOT TO SCALE

**Kentucky 811**  
Know what's below.  
Call before you dig.  
Call Monday thru Friday - 7 am. to 6 pm.  
**1-800-752-6007**  
PER KENTUCKY STATE LAW, IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UTILITY COMPANIES AT LEAST 48 HOURS BEFORE COMMENCING WORK.



PREPARED FOR:



PREPARED BY:



1961 NORTHPOINT BLVD, SUITE 130  
HIXSON, TN 37343  
PH: 423-843-9500  
FAX: 423-843-9509

DRAWING NOTICE:  
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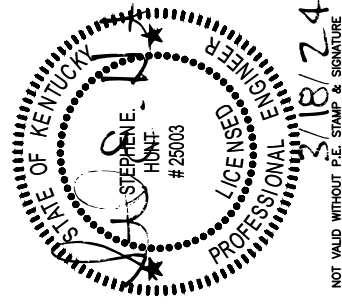
DRAWN BY: JAE

CHECKED BY: DS

REVISIONS

NO.	DATE	BY	DESCRIPTION
C	03/18/24	MJB	ZONING ISSUE
B	03/11/24	MJB	ZONING ISSUE
A	02/26/24	JAE	PRELIMINARY REVIEW

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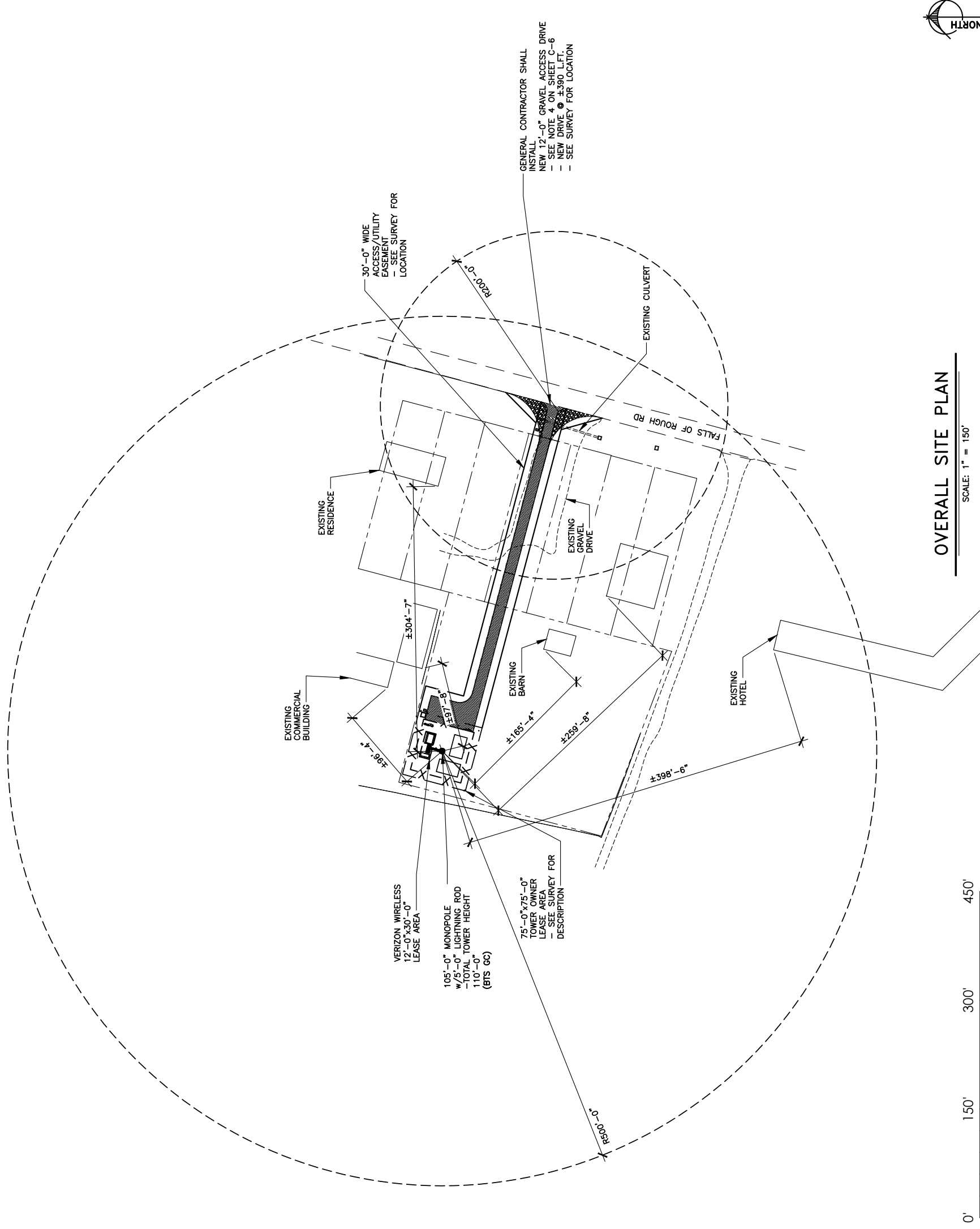
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DRAWING NO.

Z-3

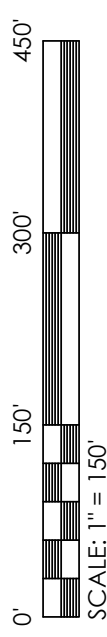
REVISION:

C



### OVERALL SITE PLAN

SCALE: 1" = 150'



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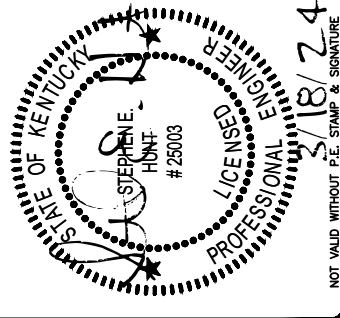
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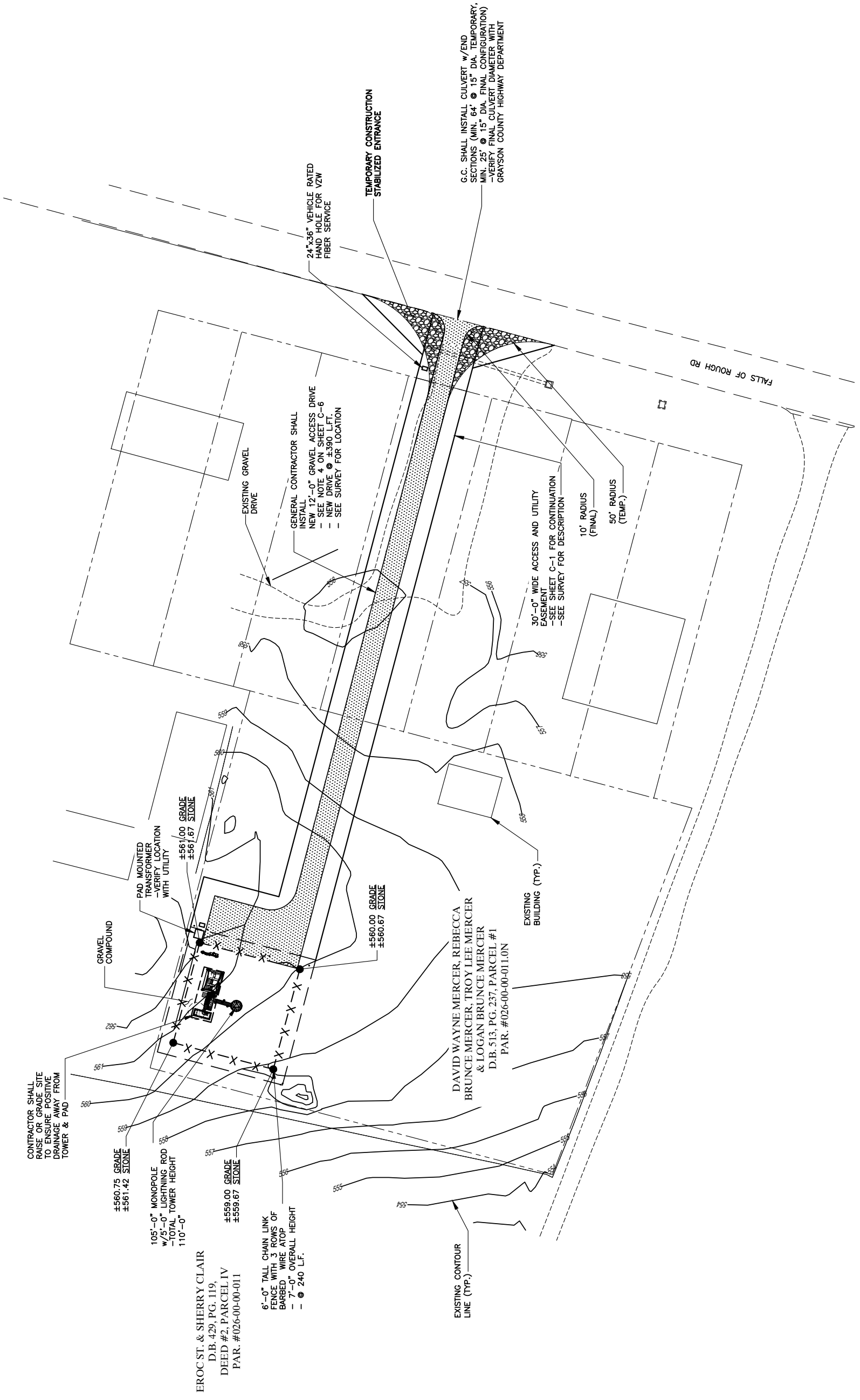
SHEET TITLE:

DRAWING NO.

Z-4

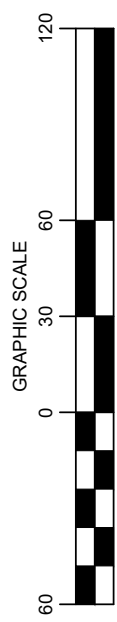
REVISION:

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### GRADING AND E&S CONTROL PLAN

SCALE: 1" = 60'



Know what's below.  
Call before you dig.  
1-800-752-6007  
PER KENTUCKY STATE LAW, IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE WORKING DAYS BEFORE COMMENCING WORK.

PREPARED FOR:



PREPARED BY:



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HIXSON, TN 37343  
PH: 423-843-9500  
FAX: 423-843-9509

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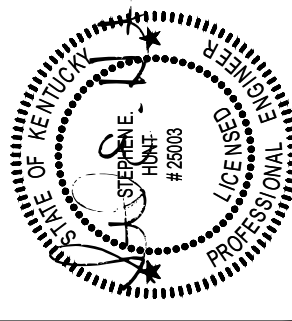
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CHECKED BY: DS

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B	03/11/24	JAE	MJB ZONING ISSUE
A	02/26/24	JAE	PRELIMINARY REVIEW

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86° 30' 43.37" W

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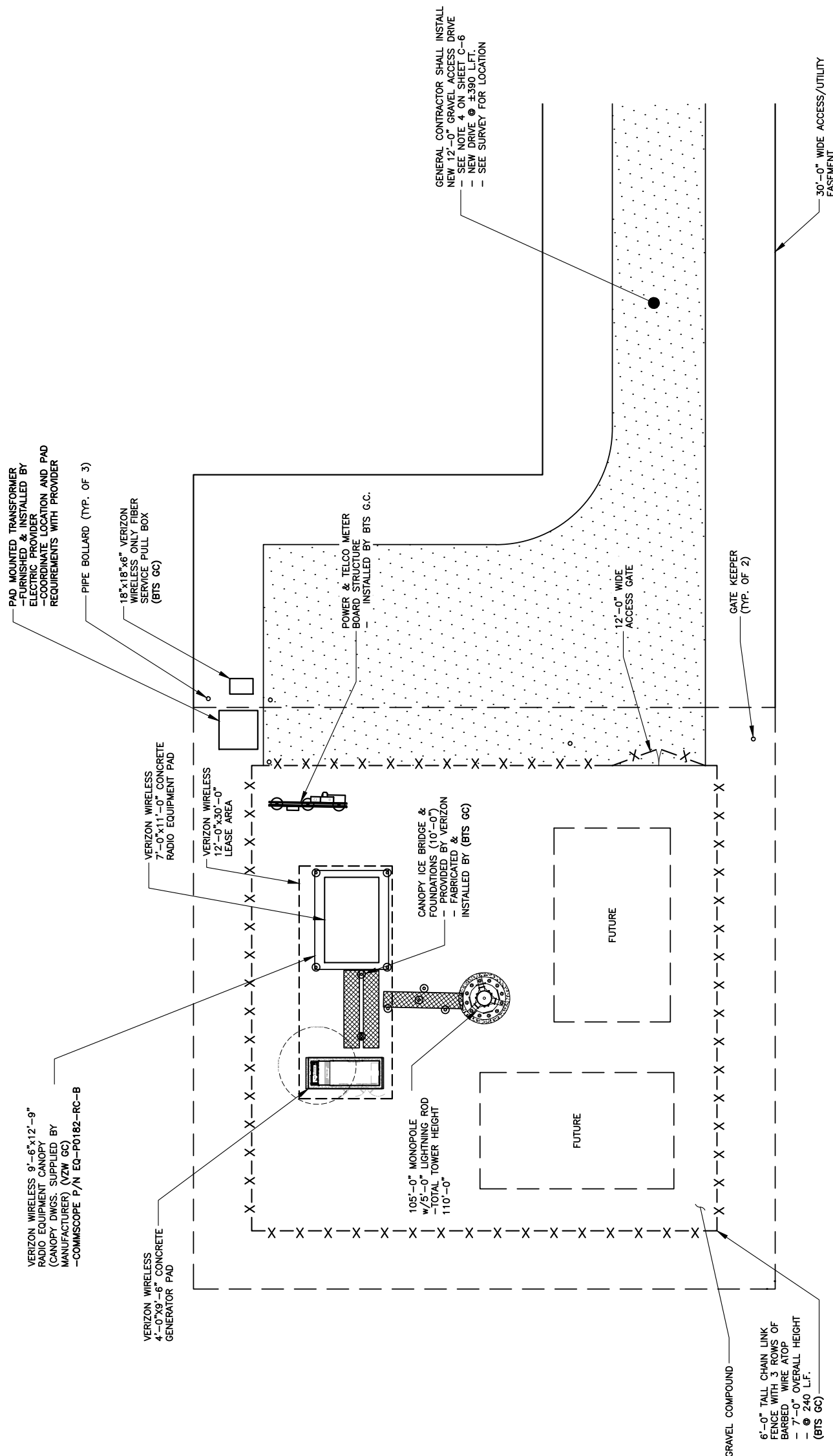
SHEET TITLE:

DRAWING NO.

Z-5

REVISION:

C



### LEGEND

- IRON PIN
- DRAINAGE LINE
- SPOT ELEVATION
- +XXX.XX
- GRAVEL COMPOUND
- CENTER LINE
- NEW FENCE LINE
- NEW SILT FENCE LINE
- POWER POLEw/OVERHEAD ELEC./TELE.
- EDGE OF NEW DRIVE
- UNDERGROUND ELECTRICAL CONDUIT
- UNDERGROUND TELEPHONE CONDUIT
- EXISTING CONTOURS
- NEW CONTOURS
- FENCED COMPOUND
- CONCRETE
- ACCESS DRIVE



## DETAILED SITE PLAN

SCALE: 1/16" = 1'-0"

\*NOTE: GENERAL CONTRACTOR IS TO ENSURE THERE IS NO DISTURBANCE OF PROPERTY, SOIL, ETC. OUTSIDE OF THE STAKED LEASE AREA WITHOUT APPROVAL FROM VERIZON WIRELESS CONSTRUCTION MANAGER

Know what's below.  
Call before you dig.  
Call Monday thru Friday - 7 am. to 6 pm.  
**1-800-752-6007**  
PER KENTUCKY STATE LAW IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND UTILITY SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

PREPARED FOR:



PREPARED BY:



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HIXSON, TN 37343  
PH: 423-843-9500  
FAX: 423-843-9509

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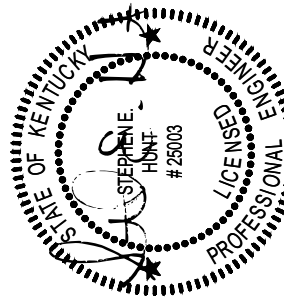
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B	03/11/24	IMB	ZONING ISSUE
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GRAYSON

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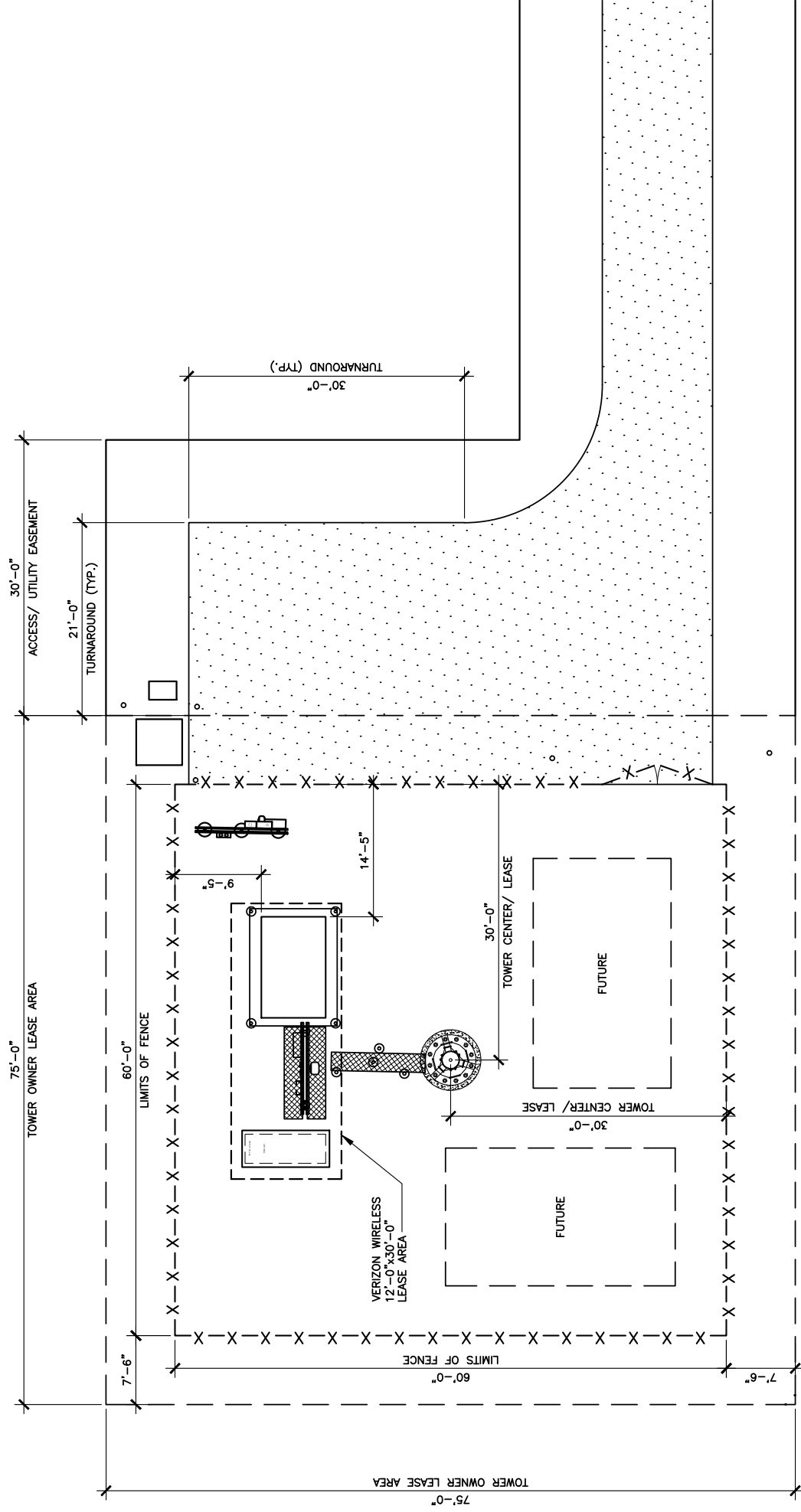
SITE NUMBER:

KY0099

SHEET TITLE:

DRAWING NO. Z-6

REVISION: C



### LEGEND

- IRON PIN
- DRAINAGE LINE
- SPOT ELEVATION
- GRAVEL COMPOUND
- CENTER LINE
- NEW FENCE LINE
- NEW SILT FENCE LINE
- POWER POLEW/OVERHEAD ELEC./TELE.
- EDGE OF NEW DRIVE
- UNDERGROUND ELECTRICAL CONDUIT
- UNDERGROUND TELEPHONE CONDUIT
- EXISTING CONTOURS
- NEW CONTOURS
- NEW LEASE AREA AND EASEMENT
- FENCED COMPOUND
- CONCRETE
- ACCESS DRIVE



### DIMENSIONED SITE PLAN

SCALE: 1/16" = 1'-0"

\*NOTE: GENERAL CONTRACTOR IS TO ENSURE THERE IS NO DISTURBANCE OF PROPERTY, SOIL, ETC. OUTSIDE OF THE STAKED LEASE AREA WITHOUT APPROVAL FROM VERIZON WIRELESS CONSTRUCTION MANAGER



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PER KENTUCKY STATE LAW, IT IS AGAINST THE LAW TO EXCAVATE WITHOUT OBTAINING THE NECESSARY CONSENT FROM THE WORKING DAYS BEFORE COMMENCING WORK.



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PREPARED BY:



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 FAX: 423-843-9509

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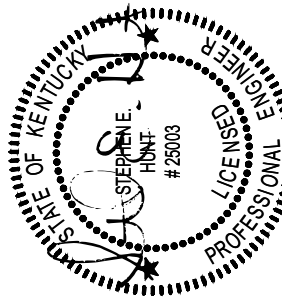
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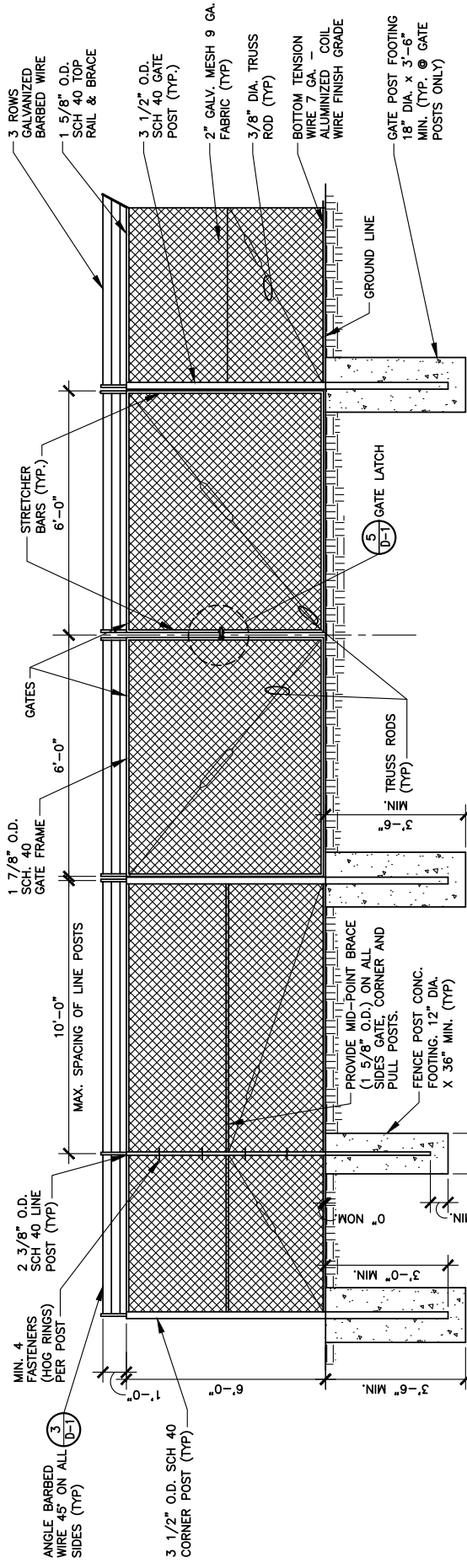
Z-7

REVISION:

C

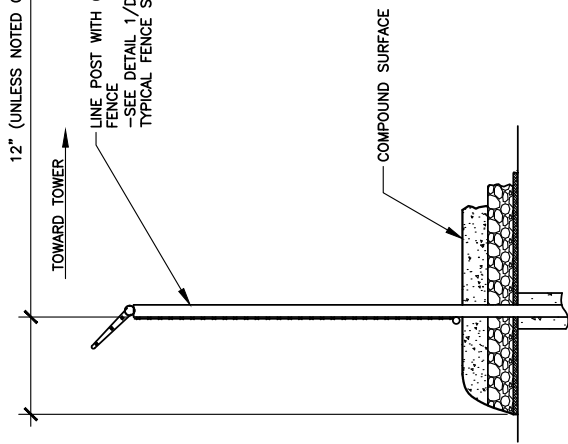
### CHAIN LINK FENCING NOTES

- ALL FENCE AND FABRIC SHALL BE HOT DIPPED GALVANIZED WITH A MINIMUM OF 2 OZ. PER SQUARE FOOT, 9 GAUGE WIRE (MIN. BREAKING STRENGTH OF 1,290 LBS) WITH 2" MESH. ALL BARBED WIRE SHALL BE ALUMINUM OR COATED PER NOTE #4.
- BOTTOM EDGE OF FENCE FABRIC SHALL EXTEND TO FINISHED GRADE.
- SITE FENCE SHALL BE 6'-0" FABRIC W/ 3 STRAND BARBED WIRE FOR TOTAL HEIGHT OF 7'-0".
- BARBED WIRE SHALL MEET ASTM A 121, CLASS 3 GALV. OR ASTM A 565, TYPE 1, CLASS 2 COATING (NOT LESS THAN 0.8 OZ. PER SQ. FT.) AND SHALL BE THREE STRAND 12.5 GAUGE W/4 POINT BARBS AT 5" O/C.
- BOTTOM OF CONCRETE BASE SHALL BE SET BELOW FROSTLINE (SEE LOCAL CODE) WHERE SOIL BEARING CAPACITY IS LESS THAN 2000 PSF. INCREASE CONCRETE SURROUNDING FENCE POST FOUNDATION DIAMETERS BY 6", PROVIDE CONCRETE WITH A 28 DAY STRENGTH OF 3000 PSI (MIN).
- PROVIDE A DIAGONAL BRACE ROD AND TURN BUCKLE ON BOTH GATE LEAFS.
- ALL RAILS AND BRACES SHALL BE SCHEDULE 40 STEEL PIPE, AND ALL FENCE POSTS SHALL BE SCHEDULE 40 STEEL PIPE, AND BE 2 OZ. GALVANIZED COATED.
- CONTRACTOR SHALL ENSURE ALL POSTS ARE PLUMB.
- ALL FENCE SHALL BE FABRICATED AND INSTALLED PER ASTM F2611-15, ASTM F567-14c AND CHAIN LINK FENCE MANUFACTURERS INSTITUTE CLFMI-PM 2445.
- CONTRACTOR SHALL FURNISH AND INSTALL ONE (1) MASTER LOCK LONG SHANK #175LH COMBINATION PADLOCK. COMBINATION TO BE SET AT 7011.

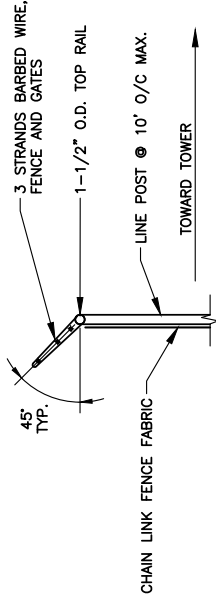


**1**  
 CHAIN LINK FENCE & POST DETAIL  
 SCALE: N.T.S.

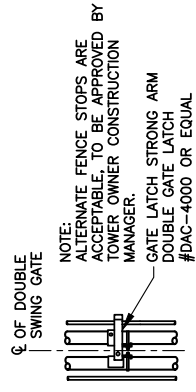
12" (UNLESS NOTED OTHERWISE)



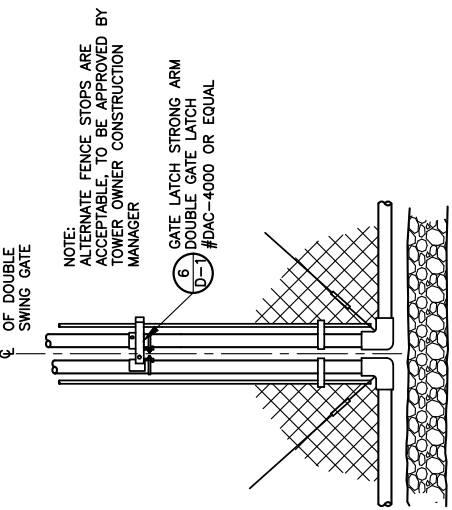
**2**  
 SITE AREA SURFACING  
 SCALE: N.T.S.



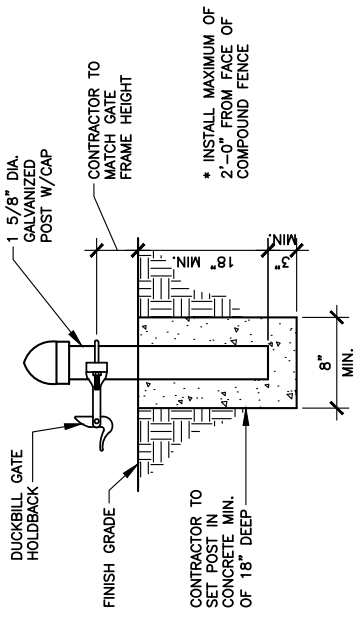
**3**  
 TYPICAL BARBED WIRE DETAIL  
 SCALE: N.T.S.



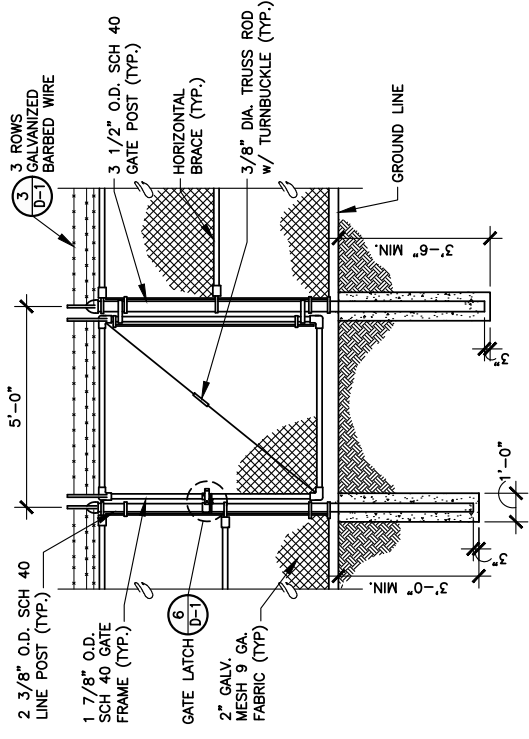
**6**  
 GATE LATCH DETAIL  
 SCALE: N.T.S.



**5**  
 GATE LATCH DETAIL  
 SCALE: N.T.S.



**4**  
 GATE KEEPER DETAIL  
 SCALE: N.T.S.



**7**  
 MAN GATE DETAIL  
 SCALE: N.T.S.



PREPARED FOR:



PREPARED BY:



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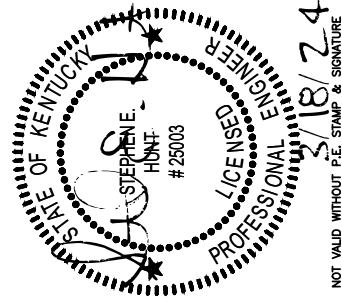
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LONGITUDE:

86° 30' 43.37" W

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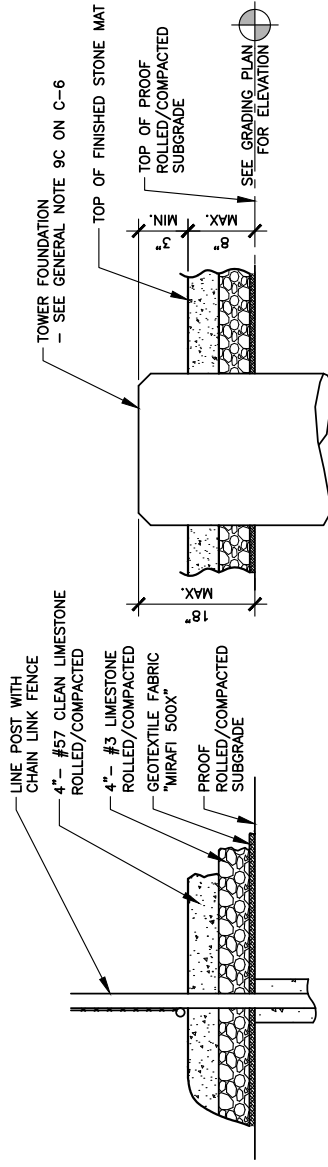
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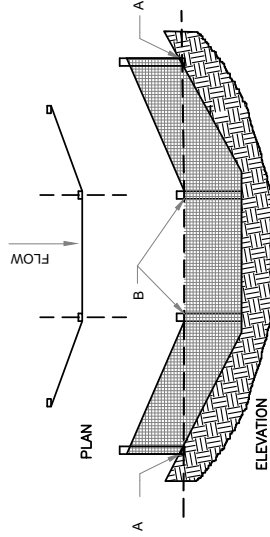
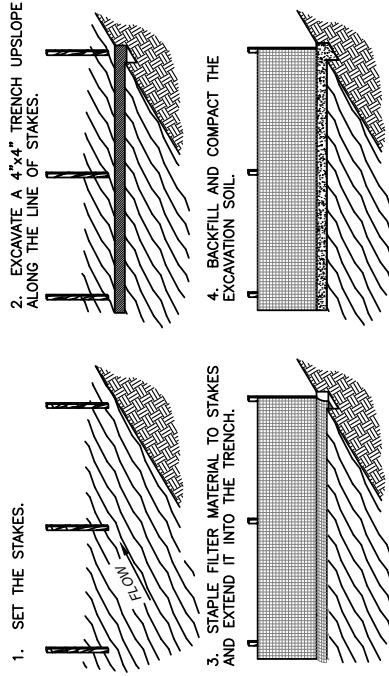
Z-8

REVISION:

C



**PARTIAL COMPOUND SECTION** 1  
D-2  
SCALE: N.T.S.



POINTS A SHOULD BE HIGHER THAN POINT B

**SILT FENCE DETAIL** 2  
C-7  
SCALE: N.T.S.

PREPARED FOR:



PREPARED BY:



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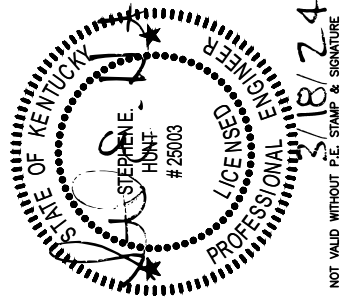
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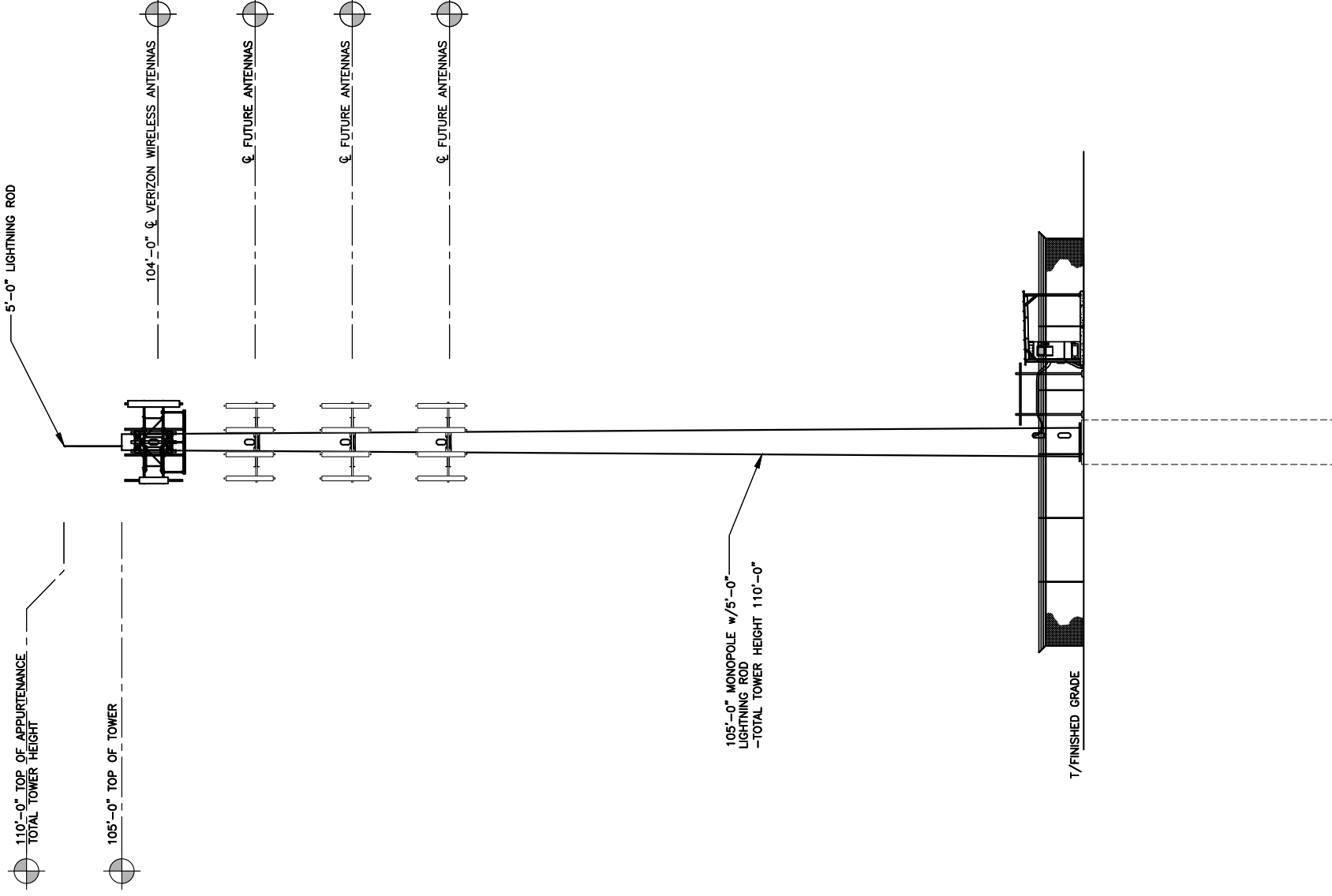
SHEET TITLE:

DRAWING NO.

Z-9

REVISION:

C



TOWER ELEVATION

1  
TE-1

SCALE: N.T.S.



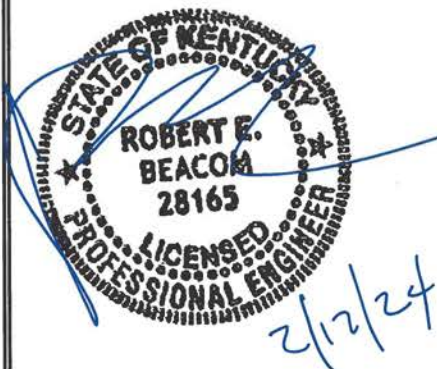
**Structural Design Report**  
105' Monopole  
Site: CK Rough River Dam, KY  
Site Number: KY0099

Prepared for: TOWERCO LLC  
by: Sabre Industries™

Job Number: 24-0319-JDS-R1

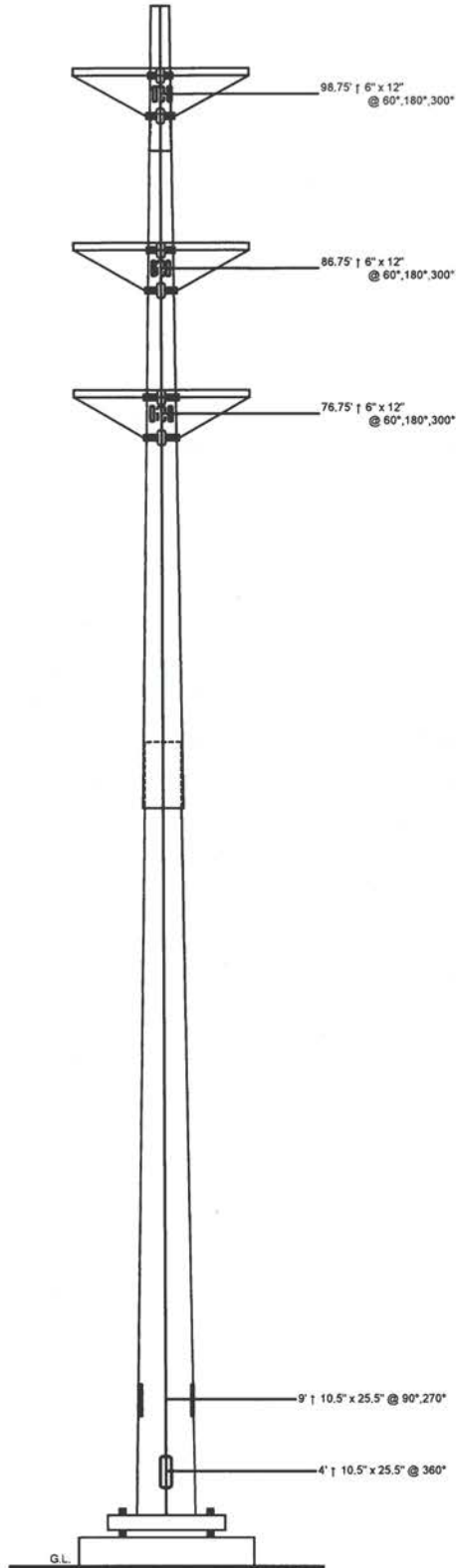
**February 12, 2024**

Monopole Profile.....	1
Pole Calculations.....	2-12



Digitally Signed By Robert Beacom  
DN:  
C=US,SERIALNUMBER=MAS20240205295328,ST=Texas,L=Alvarado,O=SABRE INDUSTRIES, INC.,CN=Robert Beacom Date: 2024.02.12 16:13:33

Length (ft)	53'-3"
Number Of Sides	18
Thickness (in)	5/16"
Lap Splice (ft)	4'-6"
Top Diameter (in)	29.88"
Bottom Diameter (in)	47.92"
Taper (in/ft)	0.337
Grade	A572-65
Weight (lbs)	8670
Overall Steel Height (ft)	104
	4238
	533
	17.37"
	14"
	1/4"
	10'-0"



### Designed Appurtenance Loading

Elev	Description	Tx-Line
100	Platform - 12' w/ Enhanced Support Rail	
100	(1) 42,000 Sq.In. EPA + 10,000 lbs	(12) 1 5/8"
88	Platform - 12' w/ Enhanced Support Rail	
88	(1) 20,000 Sq. Inches EPA (3,500 lbs)	(12) 1 5/8"
78	Platform - 12' w/ Enhanced Support Rail	
78	(1) 20,000 Sq. Inches EPA (3,500 lbs)	(12) 1 5/8"

### Design Criteria - ANSI/TIA-222-G

Ultimate Wind Speed (No Ice)	115 mph
Wind Speed (Ice)	30 mph
Design Ice Thickness	0.75 in
Structure Class	II
Risk Category	II
Exposure Category	C
Topographic Category	1
Seismic Importance Factor, I <sub>e</sub>	1.00
0.2-sec Spectral Response, S <sub>s</sub>	0.304 g
1-sec Spectral Response, S <sub>1</sub>	0.139 g
Site Class	D (DEFAULT)
Seismic Design Category	D
Basic Seismic Force-Resisting System	Telecommunication Tower (Pole: Steel)

### Limit State Load Combination Reactions

Load Combination	Axial (kips)	Shear (kips)	Moment (ft-k)	Deflection (ft)	Sway (deg)
1.2 D + 1.0 W <sub>o</sub>	45.49	33.16	2922.53	7.55	7.89
0.9 D + 1.0 W <sub>o</sub>	34.13	33.16	2867.99	7.35	7.66
1.2 D + 1.0 D <sub>i</sub> + 1.0 W <sub>i</sub>	82	4.16	394.25	1.07	1.12
1.2 D + 1.0 E <sub>v</sub> + 1.0 E <sub>h</sub>	47.88	1.82	176.95	0.48	0.51
0.9 D - 1.0 E <sub>v</sub> + 1.0 E <sub>h</sub>	31.72	1.82	171.9	0.46	0.49
1.0 D + 1.0 W <sub>o</sub> (Service @ 60 mph)	37.93	8.43	737.77	1.93	1.99

### Base Plate Dimensions

Shape	Diameter	Thickness	Bolt Circle	Bolt Qty	Bolt Diameter
Round	60"	2"	54.25"	12	2.25"

### Anchor Bolt Dimensions

Length	Diameter	Hole Diameter	Weight	Type	Finish
84"	2.25"	2.625"	1453.2	A615-75	Galv

### Material List

Display	Value
A	2' - 6"

### Notes

- 1) Antenna Feed Lines Run Inside Pole
- 2) All dimensions are above ground level, unless otherwise specified.
- 3) Weights shown are estimates. Final weights may vary.
- 4) This tower design and, if applicable, the foundation design(s) shown on the following page(s) also meet or exceed the requirements of the 2015 International Building Code.
- 5) Full Height Step Bolts
- 6) Tower Rating: 99.4%

**Sabre Industries**  
 INNOVATION DELIVERED

Sabre Industries  
 7101 Southbridge Drive  
 P.O. Box 658  
 Sioux City, IA 51102-0658  
 Phone: (712) 258-6690  
 Fax: (712) 279-0814

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Job:	24-0319-JDS-R1
Customer:	TOWERCO LLC
Site Name:	CK Rough River Dam, KY KY0099
Description:	105' Monopole
Date:	2/12/2024
By:	REB

=====
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 Sabre Towers and Poles on: 12 feb 2024 at: 16:01:42
 =====

105' Monopole / CK Rough River Dam, KY

\* All pole diameters shown on the following pages are across corners.
 See profile drawing for widths across flats.

POLE GEOMETRY

ELEV	SECTION No.	OUTSIDE	THICK	RESISTANCES	SPLICE	...OVERLAP...	w/t
ft	NAME	DIAM	-NESS	**Pn **Mn	TYPE	LENGTH RATIO	
		in	in	kip ft-kip		ft	
104.0	A	18	14.22	0.250	810.6	227.0	8.1
			16.77	0.250	959.2	318.7	
96.5	A/B	18	16.77	0.250	959.2	318.7	
			17.14	0.312	1220.7	411.6	SLIP 2.50 1.78
94.0	B	18	17.14	0.312	1220.7	411.6	
			31.07	0.312	2231.4	1386.5	7.8
53.2	B/C	18	31.07	0.312	2231.4	1386.5	
			31.99	0.312	2298.5	1471.6	SLIP 4.50 1.71
48.7	C	18	31.99	0.312	2298.5	1471.6	
			48.66	0.312	3046.0	2986.7	16.0
0.0							

POLE ASSEMBLY

SECTION NAME	BASE ELEV	BOLTS NUMBER	TYPE	AT BASE DIAM	OF SECTION STRENGTH	THREADS IN SHEAR PLANE	CALC BASE ELEV
	ft			in	ksi		ft
A	94.000	0	A325	0.00	92.0	0	94.000
B	48.750	0	A325	0.00	92.0	0	48.750
C	0.000	0	A325	0.00	92.0	0	0.000

POLE SECTIONS

SECTION No. of NAME SIDES	LENGTH	OUTSIDE DIAMETER	BEND RAD	MAT-ERIAL ID	FLANGE ID	FLANGE WELD
	ft	BOT TOP	in		BOT TOP	..GROUP.ID..
		* *	in			BOT TOP
A	18	10.00	17.64	14.22	0.000	1 0 0 0 0
B	18	47.75	32.62	16.27	0.000	2 0 0 0 0
C	18	53.25	48.66	30.44	0.000	3 0 0 0 0

\* - Diameter of circumscribed circle

MATERIAL TYPES

TYPE OF SHAPE	TYPE NO	NO OF ELEM.	ORIENT	HEIGHT	WIDTH	.THICKNESS. WEB FLANGE	IRREGULARITY .PROJECTION. % OF ORIENT AREA
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			& deg	in	in	in	in	in	deg
PL	1	1	0.0	17.64	0.25	0.250	0.250	0.00	0.0
PL	2	1	0.0	32.61	0.31	0.312	0.312	0.00	0.0
PL	3	1	0.0	48.66	0.31	0.312	0.312	0.00	0.0

& - With respect to vertical

MATERIAL PROPERTIES

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MATERIAL TYPE NO.	ELASTIC MODULUS ksi	UNIT WEIGHT pcf	.. STRENGTH ..		THERMAL COEFFICIENT /deg
			Fu ksi	Fy ksi	
1	29000.0	490.0	80.0	65.0	0.00001170
2	29000.0	490.0	80.0	65.0	0.00001170
3	29000.0	490.0	80.0	65.0	0.00001170

\* Only 5 condition(s) shown in full

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LOADING CONDITION A

115 mph Ultimate wind with no ice. Wind Azimuth: 0° (1.2 D + 1.0 Wo)

LOADS ON POLE

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LOAD TYPE	ELEV ft	APPLY. RADIUS ft	LOAD..AT AZI	LOAD AZI	.....FORCES.....		.....MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	99.000	0.00	0.0	0.0	0.0000	1.4826	0.0000	0.0000
C	99.000	0.00	0.0	0.0	13.5338	14.5836	0.0000	0.0000
C	87.000	0.00	0.0	0.0	0.0000	1.3029	0.0000	0.0000
C	87.000	0.00	0.0	0.0	6.7911	6.7836	0.0000	0.0000
C	77.000	0.00	0.0	0.0	0.0000	1.1532	0.0000	0.0000
C	77.000	0.00	0.0	0.0	6.6208	6.7836	0.0000	0.0000
D	104.000	0.00	180.0	0.0	0.0352	0.0473	0.0000	0.0000
D	99.000	0.00	180.0	0.0	0.0352	0.0473	0.0000	0.0000
D	99.000	0.00	180.0	0.0	0.0399	0.0834	0.0000	0.0000
D	80.417	0.00	180.0	0.0	0.0453	0.0746	0.0000	0.0000
D	80.417	0.00	180.0	0.0	0.0527	0.0949	0.0000	0.0000
D	66.833	0.00	180.0	0.0	0.0527	0.0949	0.0000	0.0000
D	66.833	0.00	180.0	0.0	0.0602	0.1132	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0602	0.1132	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0645	0.2489	0.0000	0.0000
D	48.750	0.00	180.0	0.0	0.0645	0.2489	0.0000	0.0000
D	48.750	0.00	180.0	0.0	0.0665	0.1348	0.0000	0.0000
D	36.562	0.00	180.0	0.0	0.0665	0.1348	0.0000	0.0000
D	36.562	0.00	180.0	0.0	0.0697	0.1513	0.0000	0.0000
D	24.375	0.00	180.0	0.0	0.0697	0.1513	0.0000	0.0000
D	24.375	0.00	180.0	0.0	0.0697	0.1678	0.0000	0.0000
D	12.187	0.00	180.0	0.0	0.0697	0.1678	0.0000	0.0000
D	12.187	0.00	180.0	0.0	0.0727	0.1843	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.0727	0.1843	0.0000	0.0000

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LOADING CONDITION M

115 mph Ultimate wind with no ice. Wind Azimuth: 0° (0.9 D + 1.0 Wo)

LOADS ON POLE

=====

LOAD TYPE	ELEV ft	APPLY. RADIUS ft	LOAD..AT AZI	LOAD AZI	.....FORCES.....		.....MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	99.000	0.00	0.0	0.0	0.0000	1.1120	0.0000	0.0000

C	99.000	0.00	0.0	0.0	13.5338	10.9377	0.0000	0.0000
C	87.000	0.00	0.0	0.0	0.0000	0.9772	0.0000	0.0000
C	87.000	0.00	0.0	0.0	6.7911	5.0877	0.0000	0.0000
C	77.000	0.00	0.0	0.0	0.0000	0.8649	0.0000	0.0000
C	77.000	0.00	0.0	0.0	6.6208	5.0877	0.0000	0.0000
D	104.000	0.00	180.0	0.0	0.0352	0.0355	0.0000	0.0000
D	99.000	0.00	180.0	0.0	0.0352	0.0355	0.0000	0.0000
D	99.000	0.00	180.0	0.0	0.0399	0.0626	0.0000	0.0000
D	80.417	0.00	180.0	0.0	0.0453	0.0560	0.0000	0.0000
D	80.417	0.00	180.0	0.0	0.0527	0.0712	0.0000	0.0000
D	66.833	0.00	180.0	0.0	0.0527	0.0712	0.0000	0.0000
D	66.833	0.00	180.0	0.0	0.0602	0.0849	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0602	0.0849	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0645	0.1867	0.0000	0.0000
D	48.750	0.00	180.0	0.0	0.0645	0.1867	0.0000	0.0000
D	48.750	0.00	180.0	0.0	0.0665	0.1011	0.0000	0.0000
D	36.562	0.00	180.0	0.0	0.0665	0.1011	0.0000	0.0000
D	36.562	0.00	180.0	0.0	0.0697	0.1135	0.0000	0.0000
D	24.375	0.00	180.0	0.0	0.0697	0.1135	0.0000	0.0000
D	24.375	0.00	180.0	0.0	0.0697	0.1259	0.0000	0.0000
D	12.187	0.00	180.0	0.0	0.0697	0.1259	0.0000	0.0000
D	12.187	0.00	180.0	0.0	0.0727	0.1382	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.0727	0.1382	0.0000	0.0000

=====  
LOADING CONDITION Y

30 mph wind with 0.75 ice. Wind Azimuth: 0° (1.2 D + 1.0 Di + 1.0 Wi)

LOADS ON POLE  
=====

LOAD TYPE	ELEV ft	APPLY RADIUS ft	LOAD AT AZI	LOAD AZI	.....FORCES.....		.....MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	99.000	0.00	0.0	0.0	0.0000	1.4826	0.0000	0.0000
C	99.000	0.00	0.0	0.0	1.6423	31.9959	0.0000	0.0000
C	87.000	0.00	0.0	0.0	0.0000	1.3029	0.0000	0.0000
C	87.000	0.00	0.0	0.0	0.8207	13.2199	0.0000	0.0000
C	77.000	0.00	0.0	0.0	0.0000	1.1532	0.0000	0.0000
C	77.000	0.00	0.0	0.0	0.7962	13.1427	0.0000	0.0000
D	104.000	0.00	180.0	0.0	0.0056	0.0817	0.0000	0.0000
D	99.000	0.00	180.0	0.0	0.0056	0.0817	0.0000	0.0000
D	99.000	0.00	180.0	0.0	0.0062	0.1223	0.0000	0.0000
D	80.417	0.00	180.0	0.0	0.0069	0.1184	0.0000	0.0000
D	80.417	0.00	180.0	0.0	0.0078	0.1461	0.0000	0.0000
D	66.833	0.00	180.0	0.0	0.0078	0.1461	0.0000	0.0000
D	66.833	0.00	180.0	0.0	0.0088	0.1723	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0088	0.1723	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0093	0.3130	0.0000	0.0000
D	48.750	0.00	180.0	0.0	0.0093	0.3130	0.0000	0.0000
D	48.750	0.00	180.0	0.0	0.0095	0.2019	0.0000	0.0000
D	36.562	0.00	180.0	0.0	0.0095	0.2019	0.0000	0.0000
D	36.562	0.00	180.0	0.0	0.0098	0.2238	0.0000	0.0000
D	24.375	0.00	180.0	0.0	0.0098	0.2238	0.0000	0.0000
D	24.375	0.00	180.0	0.0	0.0098	0.2439	0.0000	0.0000
D	12.187	0.00	180.0	0.0	0.0098	0.2439	0.0000	0.0000
D	12.187	0.00	180.0	0.0	0.0101	0.2595	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.0101	0.2595	0.0000	0.0000

=====  
LOADING CONDITION AK

Seismic - Azimuth: 0° (1.2 D + 1.0 Ev + 1.0 Eh)

LOADS ON POLE  
=====

LOAD TYPE	ELEV ft	APPLY RADIUS ft	LOAD AT AZI	LOAD AZI	.....FORCES.....		.....MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip

C	99.000	0.00	0.0	0.0	0.0296	0.5253	0.0000	0.0000
C	99.000	0.00	0.0	0.0	0.8649	15.3517	0.0000	0.0000
C	99.000	0.00	0.0	0.0	0.0879	1.5607	0.0000	0.0000
C	87.000	0.00	0.0	0.0	0.3107	7.1409	0.0000	0.0000
C	87.000	0.00	0.0	0.0	0.0597	1.3716	0.0000	0.0000
C	77.000	0.00	0.0	0.0	0.2434	7.1409	0.0000	0.0000
C	77.000	0.00	0.0	0.0	0.0414	1.2139	0.0000	0.0000
C	72.620	0.00	0.0	0.0	0.1463	4.8254	0.0000	0.0000
C	26.620	0.00	0.0	0.0	0.0356	8.7497	0.0000	0.0000
D	104.000	0.00	180.0	180.0	0.0000	0.0000	0.0000	0.0000
D	0.000	0.00	180.0	180.0	0.0000	0.0000	0.0000	0.0000

=====  
LOADING CONDITION AL =====

Seismic - Azimuth: 0\* (0.9 D - 1.0 Ev + 1.0 Eh)

LOADS ON POLE  
=====

LOAD TYPE	ELEV ft	APPLY RADIUS ft	LOAD AT		FORCES		MOMENTS	
			AZI	AZI	HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	99.000	0.00	0.0	0.0	0.0296	0.3479	0.0000	0.0000
C	99.000	0.00	0.0	0.0	0.8649	10.1696	0.0000	0.0000
C	99.000	0.00	0.0	0.0	0.0879	1.0338	0.0000	0.0000
C	87.000	0.00	0.0	0.0	0.3107	4.7304	0.0000	0.0000
C	87.000	0.00	0.0	0.0	0.0597	0.9086	0.0000	0.0000
C	77.000	0.00	0.0	0.0	0.2434	4.7304	0.0000	0.0000
C	77.000	0.00	0.0	0.0	0.0414	0.8042	0.0000	0.0000
C	72.620	0.00	0.0	0.0	0.1463	3.1966	0.0000	0.0000
C	26.620	0.00	0.0	0.0	0.0356	5.7961	0.0000	0.0000
D	104.000	0.00	180.0	180.0	0.0000	0.0000	0.0000	0.0000
D	0.000	0.00	180.0	180.0	0.0000	0.0000	0.0000	0.0000

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Sabre Towers and Poles on: 12 feb 2024 at: 16:01:42

105' Monopole / CK Rough River Dam, KY

MAXIMUM POLE DEFORMATIONS CALCULATED (w.r.t. wind direction)  
=====

MAST ELEV ft	DEFLECTIONS (ft)			ROTATIONS (deg)		TWIST
	HORIZONTAL ALONG	ACROSS	DOWN	TILT ALONG	ACROSS	
104.0	7.55C	-0.01R	0.76C	7.89C	-0.01R	0.00E
99.0	6.87C	0.00R	0.67C	7.89C	-0.01R	0.00E
94.0	6.20C	0.00R	0.58C	7.79C	-0.01R	0.00E
80.4	4.48C	0.00R	0.35C	6.92C	0.00R	0.00E
66.8	3.00C	0.00R	0.19C	5.65C	0.00R	0.00E
53.2	1.83E	0.00R	0.09C	4.30C	0.00R	0.00E
48.7	1.51E	0.00R	0.07C	3.87C	0.00R	0.00E
36.6	0.81F	0.00R	0.03C	2.72E	0.00R	0.00E



24.4	0.35F	0.00R	0.01C	1.70F	0.00R	0.00E
12.2	0.08F	0.00X	0.00C	0.80F	0.00R	0.00E
0.0	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A

MAXIMUM POLE FORCES CALCULATED(w.r.t. to wind direction)

MAST ELEV ft	TOTAL AXIAL kip	SHEAR.w.r.t. ALONG kip	WIND.DIR ACROSS kip	MOMENT.w.r.t. ALONG ft-kip	WIND.DIR ACROSS ft-kip	TORSION ft-kip
104.0	0.00 K	0.01 X	0.00 R	0.02 X	0.01 O	0.00 O
99.0	0.41 AG	0.18 X	0.00 R	-0.51 D	0.01 R	0.00 O
94.0	33.89 AG	13.72 R	0.01 B	-0.53 I	-0.02 F	0.00 F
80.4	34.50 AG	13.92 R	0.01 B	-79.43 B	-0.05 B	0.01 E
66.8	34.50 AG	13.93 C	-0.02 C	-79.44 E	0.05 K	-0.01 L
53.2	50.65 AG	21.31 C	-0.02 C	-349.85 C	0.29 C	-0.04 C
48.7	50.65 AG	21.32 R	-0.02 R	-349.85 C	0.30 C	-0.04 C
36.6	66.93 AG	28.65 R	-0.02 R	-754.95 C	0.49 R	0.06 E
24.4	66.93 AG	28.64 C	-0.02 R	-754.95 C	0.49 R	0.06 E
12.2	69.27 AG	29.46 C	-0.02 R	-1188.50 C	0.79 R	0.09 E
base	69.27 AG	29.49 O	-0.03 C	-1188.46 C	0.81 R	0.09 E
reaction	70.68 AG	29.78 O	-0.03 C	-1332.90 C	0.87 R	0.10 E
	70.68 AG	29.76 R	0.04 X	-1332.91 C	0.93 R	0.10 E
	73.14 AG	30.57 R	0.04 X	-1725.66 C	1.27 R	0.11 E
	73.14 AG	30.58 F	-0.03 R	-1725.66 C	1.27 R	0.11 E
	75.86 AG	31.43 F	-0.03 R	-2121.23 C	1.64 R	0.12 E
	75.86 AG	31.42 F	0.03 X	-2121.23 C	1.64 R	0.12 E
	78.84 AG	32.27 F	0.03 X	-2520.19 F	1.87 R	0.13 E
	78.84 AG	32.27 R	0.03 X	-2520.19 F	1.87 R	0.13 E
	82.00 AG	33.16 R	0.03 X	-2922.53 F	-2.18 X	0.13 E

COMPLIANCE WITH 4.8.2 & 4.5.4

ELEV ft	AXIAL	BENDING	SHEAR + TORSIONAL	TOTAL	SATISFIED	D/t (w/t)	MAX ALLOWED
104.00	0.00K	0.00X	0.00X	0.00X	YES	8.11A	45.2
99.00	0.00AG	0.00D	0.00X	0.00D	YES	9.30A	45.2
94.00	0.03AG	0.00I	0.02R	0.03AA	YES	7.09A	45.2
	0.03AG	0.18B	0.02R	0.20B	YES	8.04A	45.2
	0.03AG	0.19E	0.02C	0.21E	YES	7.76A	45.2
	0.03AG	0.52C	0.03C	0.54C	YES	10.34A	45.2

80.42	0.03AG	0.52C	0.03R	0.54C	YES	10.34A	45.2
	0.04AG	0.76C	0.03R	0.78C	YES	12.92A	45.2
66.83	0.04AG	0.76C	0.03C	0.78C	YES	12.92A	45.2
	0.03AG	0.86C	0.03C	0.87C	YES	15.50A	45.2
53.25	0.03AG	0.86C	0.03O	0.87C	YES	15.50A	45.2
	0.03AG	0.88C	0.03O	0.89C	YES	16.36A	45.2
48.75	0.03AG	0.91C	0.03R	0.92C	YES	16.01A	45.2
	0.03AG	0.95C	0.02R	0.96C	YES	18.33A	45.2
36.56	0.03AG	0.95C	0.02F	0.96C	YES	18.33A	45.2
	0.03AG	0.97C	0.02F	0.98C	YES	20.64A	45.2
24.37	0.03AG	0.97C	0.02F	0.98C	YES	20.64A	45.2
	0.03AG	0.97F	0.02R	0.99F	YES	22.96A	45.2
12.19	0.03AG	0.97F	0.02R	0.99F	YES	22.96A	45.2
	0.03AG	0.98F	0.02R	0.99F	YES	25.28A	45.2
0.00							

MAXIMUM LOADS ONTO FOUNDATION(w.r.t. wind direction)

DOWN	SHEAR.w.r.t.WIND.DIR	MOMENT.w.r.t.WIND.DIR	TORSION
kip	ALONG	ALONG	ft-kip
	ACROSS	ACROSS	
	kip	ft-kip	
82.00	33.16	-2922.53	0.13
AG	R	F	E

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Sabre Towers and Poles on: 12 feb 2024 at: 16:01:48

105' Monopole / CK Rough River Dam, KY

\*\*\*\*\*  
 \*\*\*\*\* Service Load Condition \*\*\*\*\*  
 \*\*\*\*\*

\* Only 1 condition(s) shown in full

LOADING CONDITION A

60 mph wind with no ice. Wind Azimuth: 0\* (1.0 D + 1.0 Wo)

LOADS ON POLE

LOAD TYPE	ELEV	APPLY..LOAD..AT	LOAD	.....FORCES.....	.....MOMENTS.....		
	ft	RADIUS	AZI	HORIZ	DOWN		
		ft		kip	kip		
					VERTICAL		
					ft-kip		
					TORSNAL		
					ft-kip		
C	99.000	0.00	0.0	0.0000	1.2355	0.0000	0.0000
C	99.000	0.00	0.0	3.4397	12.1530	0.0000	0.0000

C	87.000	0.00	0.0	0.0	0.0000	1.0858	0.0000	0.0000
C	87.000	0.00	0.0	0.0	1.7260	5.6530	0.0000	0.0000
C	77.000	0.00	0.0	0.0	0.0000	0.9610	0.0000	0.0000
C	77.000	0.00	0.0	0.0	1.6827	5.6530	0.0000	0.0000
D	104.000	0.00	180.0	0.0	0.0089	0.0394	0.0000	0.0000
D	99.000	0.00	180.0	0.0	0.0089	0.0394	0.0000	0.0000
D	99.000	0.00	180.0	0.0	0.0101	0.0695	0.0000	0.0000
D	80.417	0.00	180.0	0.0	0.0115	0.0622	0.0000	0.0000
D	80.417	0.00	180.0	0.0	0.0134	0.0791	0.0000	0.0000
D	66.833	0.00	180.0	0.0	0.0134	0.0791	0.0000	0.0000
D	66.833	0.00	180.0	0.0	0.0153	0.0943	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0153	0.0943	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0164	0.2074	0.0000	0.0000
D	48.750	0.00	180.0	0.0	0.0164	0.2074	0.0000	0.0000
D	48.750	0.00	180.0	0.0	0.0169	0.1123	0.0000	0.0000
D	36.562	0.00	180.0	0.0	0.0169	0.1123	0.0000	0.0000
D	36.562	0.00	180.0	0.0	0.0177	0.1261	0.0000	0.0000
D	24.375	0.00	180.0	0.0	0.0177	0.1261	0.0000	0.0000
D	24.375	0.00	180.0	0.0	0.0177	0.1398	0.0000	0.0000
D	12.187	0.00	180.0	0.0	0.0177	0.1398	0.0000	0.0000
D	12.187	0.00	180.0	0.0	0.0185	0.1536	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.0185	0.1536	0.0000	0.0000

=====

MAXIMUM POLE DEFORMATIONS CALCULATED(w.r.t. wind direction)

=====

MAST ELEV ft	DEFLECTIONS (ft)			ROTATIONS (deg)		
	HORIZONTAL ALONG	ACROSS	DOWN	TILT ALONG	ACROSS	TWIST
104.0	1.93F	0.00B	0.05A	1.99A	0.00B	0.00E
99.0	1.75F	0.00B	0.05A	1.99A	0.00B	0.00E
94.0	1.58F	0.00B	0.04A	1.97A	0.00B	0.00E
80.4	1.14F	0.00B	0.03A	1.75A	0.00B	0.00E
66.8	0.76F	0.00B	0.01A	1.43F	0.00B	0.00E
53.2	0.46F	0.00B	0.01A	1.08F	0.00B	0.00E
48.7	0.38F	0.00B	0.01A	0.98F	0.00B	0.00E
36.6	0.21L	0.00B	0.00A	0.69F	0.00B	0.00E
24.4	0.09L	0.00B	0.00A	0.43L	0.00B	0.00C
12.2	0.02L	0.00B	0.00F	0.20L	0.00B	0.00C
0.0	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A

=====

MAXIMUM POLE FORCES CALCULATED(w.r.t. to wind direction)

=====

MAST ELEV ft	TOTAL AXIAL kip	SHEAR.w.r.t.WIND.DIR		MOMENT.w.r.t.WIND.DIR		TORSION ft-kip
		ALONG kip	ACROSS kip	ALONG ft-kip	ACROSS ft-kip	
104.0	0.00 K	0.00 E	0.00 F	0.00 I	0.00 F	0.00 K
99.0	0.20 K	0.05 A	0.00 F	-0.13 A	0.00 F	0.00 F
94.0	13.59 F	3.49 I	0.00 K	-0.14 A	0.00 F	0.00 I
80.4	13.93 F	3.54 I	0.00 K	-20.05 I	0.00 C	0.00 E
77.0	13.93 D	3.54 A	0.00 B	-20.05 I	0.01 K	0.00 E
66.8	21.55 D	5.42 A	0.00 B	-88.24 A	0.04 B	0.00 E
53.2	21.55 F	5.42 F	0.00 B	-88.24 A	0.04 B	0.00 E
48.7	29.24 F	7.28 F	0.00 B	-190.25 A	0.07 B	0.00 E

66.8	29.24 F	7.28 F	0.00 B	-190.25 A	0.06 B	0.00 E
	30.52 F	7.49 F	0.00 B	-299.36 A	0.09 B	0.00 E
53.2	30.52 F	7.49 I	0.00 I	-299.37 A	0.10 B	0.00 E
	31.45 F	7.56 I	0.00 I	-335.72 A	0.10 B	0.00 E
48.7	31.45 I	7.56 K	-0.01 C	-335.72 A	0.10 B	0.00 E
	32.82 I	7.77 K	-0.01 C	-434.75 A	0.16 B	0.00 E
36.6	32.82 I	7.77 L	-0.01 C	-434.75 A	0.16 B	0.00 E
	34.36 I	7.99 L	-0.01 C	-534.69 F	0.21 B	-0.01 C
24.4	34.36 I	7.99 L	0.01 I	-534.69 F	0.21 B	-0.01 C
	36.06 I	8.20 L	0.01 I	-635.65 L	0.26 B	-0.01 C
12.2	36.06 I	8.20 L	-0.01 C	-635.65 L	0.26 B	-0.01 C
	37.93 I	8.43 L	-0.01 C	-737.77 L	0.31 B	-0.01 C
base						
reaction	37.93 I	-8.43 L	0.01 C	737.77 L	-0.31 B	0.01 C

COMPLIANCE WITH 4.8.2 & 4.5.4

ELEV ft	AXIAL	BENDING	SHEAR + TORSIONAL	TOTAL	SATISFIED	D/t (w/t)	MAX ALLOWED
104.00	0.00K	0.00I	0.00E	0.00I	YES	8.11A	45.2
	0.00K	0.00A	0.00A	0.00A	YES	9.30A	45.2
99.00	0.01F	0.00A	0.01I	0.01A	YES	7.09A	45.2
	0.01F	0.05I	0.01I	0.06I	YES	8.04A	45.2
94.00	0.01D	0.05I	0.01A	0.06I	YES	7.76A	45.2
	0.01D	0.13A	0.01A	0.15A	YES	10.34A	45.2
80.42	0.01F	0.13A	0.01F	0.15A	YES	10.34A	45.2
	0.02F	0.19A	0.01F	0.21A	YES	12.92A	45.2
66.83	0.02F	0.19A	0.01F	0.21A	YES	12.92A	45.2
	0.01F	0.22A	0.01F	0.23A	YES	15.50A	45.2
53.25	0.01F	0.22A	0.01I	0.23A	YES	15.50A	45.2
	0.01F	0.22A	0.01I	0.23A	YES	16.36A	45.2
48.75	0.01I	0.23A	0.01K	0.24A	YES	16.01A	45.2
	0.01I	0.24A	0.01K	0.25A	YES	18.33A	45.2
36.56	0.01I	0.24A	0.01L	0.25A	YES	18.33A	45.2
	0.01I	0.24F	0.01L	0.26F	YES	20.64A	45.2
24.37	0.01I	0.24F	0.01L	0.26F	YES	20.64A	45.2
	0.01I	0.25L	0.01L	0.26L	YES	22.96A	45.2
12.19	0.01I	0.25L	0.01L	0.26L	YES	22.96A	45.2
	0.01I	0.25L	0.01L	0.26L	YES	25.28A	45.2
0.00							

MAXIMUM LOADS ONTO FOUNDATION (w.r.t. wind direction)

DOWN	SHEAR.w.r.t.WIND.DIR		MOMENT.w.r.t.WIND.DIR		TORSION
	ALONG	ACROSS	ALONG	ACROSS	
kip	kip	kip	ft-kip	ft-kip	ft-kip
37.93	8.43	-0.01	-737.77	0.31	-0.01
I	L	C	L	B	C

=====

**Seismic Load Effects**  
**Equivalent Lateral Force Procedure**  
**ANSI/TIA-222-G**

<u>Parameters</u>		<u>Vertical Distribution of Seismic Forces</u>								
Risk Category	II	Description	$h_i$ (ft.)	$w_i$ (kips)	$W_{vi}$ (kips)	$\frac{w_i h_i^3}{\sum w_i h_i^3}$	$F_{s,or E_b}$ (kips)	$E_v$ (kips)	$1.2 D + 1.0 E_v$ (kips)	$0.9 D - 1.0 E_v$ (kips)
R	1.500	Line Deadload	99.00	1.2355	0.0000	12,109.1355	0.0879	0.0781	1.5607	1.0338
$S_s$	0.304	Mount/Antenna Load	99.00	12.1530	12.1530	119,111.5530	0.8649	0.7681	15.3517	10.1696
$S_1$	0.139	Structure - Section 1	99.00	0.4158	0.0000	4,075.2558	0.0296	0.0263	0.5253	0.3479
Site Class	D (default)	Line Deadload	87.00	1.0858	0.0000	8,218.4202	0.0597	0.0686	1.3716	0.9086
$T_L$ (sec)	12.000	Mount/Antenna Load	87.00	5.6530	5.6530	42,787.5570	0.3107	0.3573	7.1409	4.7304
$F_a$	1.557	Line Deadload	77.00	0.9610	0.0000	5,697.7690	0.0414	0.0607	1.2139	0.8042
$F_v$	2.322	Mount/Antenna Load	77.00	5.6530	5.6530	33,516.6370	0.2434	0.3573	7.1409	4.7304
$S_{MS}$	0.473	Structure - Section 2	72.62	3.8200	0.0000	20,145.3980	0.1463	0.2414	4.8254	3.1966
$S_{M1}$	0.323	Structure - Section 3	26.62	6.9266	0.0000	4,908.3578	0.0356	0.4378	8.7497	5.7961
$S_{ps}$	0.316	$\Sigma$		37.90	23.4590	250,570.08	1.82	2.40	47.88	31.72
$S_{D1}$	0.215									
$T_s$	0.680									
$I_e$	1.000									
$\Omega$	1.500									
$C_s$	0.048									
$E$ (ksi)	29,000									
$I_{top}$ (in <sup>4</sup> )	261									
$I_{bot}$ (in <sup>4</sup> )	13,553									
$I_{avg}$ (in <sup>4</sup> )	6,907									
$g$ (in/s <sup>2</sup> )	386.4									
$W_i$ (kips)	37.904									
$W_u$ (kips)	23.459									
$W_L$ (kips)	14.445									
$L_p$ (in)	1248									
$f_1$ (Hertz)	0.336									
$T$ (sec)	2.980									
$k_e$	2.0000									
$V_s$ (kips)	1.819									
Seismic Design Category	D									



## Round Base Plate and Anchor Rods, per ANSI/TIA 222-G

### Pole Data

Diameter: 47.920 in (flat to flat)  
Thickness: 0.3125 in  
Yield (Fy): 65 ksi  
# of Sides: 18 "0" IF Round  
Strength (Fu): 80 ksi

### Reactions

Moment, Mu: 2922.53 ft-kips  
Axial, Pu: 45.49 kips  
Shear, Vu: 33.16 kips

### Anchor Rod Data

Quantity: 12  
Diameter: 2.25 in  
Rod Material: A615  
Strength (Fu): 100 ksi  
Yield (Fy): 75 ksi  
BC Diam. (in): 54.25 BC Override:

### Anchor Rod Results

Maximum Rod (Pu+ Vu/η): 224.8 Kips  
Allowable  $\Phi \cdot R_{nt}$ : 260.0 Kips (per 4.9.9)  
Anchor Rod Interaction Ratio: **86.5% Pass**

### Plate Data

Diameter (in): 60 Dia. Override:   
Thickness: 2 in  
Yield (Fy): 50 ksi  
Eff Width/Rod: 12.67 in  
Drain Hole: 2.625 in. diameter  
Drain Location: 21.75 in. center of pole to center of drain hole  
Center Hole: 35.5 in. diameter

### Base Plate Results

Base Plate (Mu/Z): 37.3 ksi  
Allowable  $\Phi \cdot F_y$ : 45.0 ksi (per AISC)  
Base Plate Interaction Ratio: **83.0% Pass**



March 4, 2024

**Stephen Rambeau**  
Vice President of Engineering  
TowerCo  
5000 Valleystone Drive  
Cary, NC 27519

**Subject**

**Foundation Design Calculations**

**TowerCo Designation**

**Site Number: KY0099**  
**Site Name: CK Rough River Dam**  
**JIRA Ticket: ENG-38530**

**Engineering Firm Designation**

**Delta Oaks Group Project: STR24-20937-08**  
**Delta Oaks Group Site Number: 17-00287**

**Site Data**

**13965 Falls of Rough Road, Falls of Rough, Grayson County, KY 40119**  
**Latitude: 37.6046°± Longitude: -86.5120°±**  
**Elevation: 561-ft±, Topography Category 1;**  
**Exposure Category "C"; Structure Class/Risk Category II;**  
**105-ft Self-Supporting Pole Structure (Monopole)**

Dear Stephen Rambeau,

To your request, we present our foundation design calculations. Our work is in conformance ANSI/TIA-222-G and 2015 International Building Code (local building code) / ASCE 7-10 for:

- $V_{ult} = 115\text{-mph} / V_{asd} = 89\text{-mph}$  three-second gust basic wind speed [per Eqn. 16-33 of the 2015 IBC]
- 30-mph three-second gust basic wind speed with 3/4-in radial ice
- Earthquake design parameters and loading including:
  - $S_s = 0.266\text{ g}, S_1 = 0.127\text{ g}$
- Seismic Design Category B

Delta Oaks Group appreciates the opportunity to be of service to TowerCo. Please do not hesitate to contact us if you have any questions or require any additional information.

Sincerely,

Cort Hlavin  
Engineering Project Manger

Reviewed by: MLL



Michael L. Lassiter, SE, PE  
VP | Chief Structural Engineer  
KY PE License 24895

**Attachments:**

Foundation design calculations





**DS Design**

Job #: STR24-20937-08  
 Date: 3/4/2024  
 Calculated by: M Lassiter

**DRILLED SHAFT FOUNDATION DESIGN**

**Tower Design:**

Structure Type = SSPS  
 Code = TIA-222-G  
 V(ult) - Design = 115 mph  
 V(3s) - Design = 89.1 mph  
 V(3s) - Service = 60 mph  
 Seismic Design Category = B  
 BC = 54.25 in  
 AR Diameter = 2.25 in  
 AR Embedment = 72.00 in (assumed)  
 AR Template = 5.0 in (assumed)

**Design Notes:**

1. Site Class C; Seismic Design Cat B; overlapping ties
2. 7-ft diameter required for 180-deg hooks
3.  $L > 11$  ft and  $\rho = 0.51\%$  for LPILE convergence
4.  $r_m = 64\%$ ;  $r_v = 97\%$  ( $s=18"$ ) at  $L=11$  ft
5.  $r_m = 63\%$ ;  $r_v = 77\%$  ( $s=18"$ ) at  $L=13$  ft
6.  $r_m = 63\%$ ;  $r_v = 58\%$  ( $s=6"$ ) at  $L=13$  ft
7.  $r_m = 63\%$ ;  $r_v = 63\%$  ( $s=18"$ ) at  $L=15.5$  ft

**Factored Base Reactions:**

Moment = 2922.5 kip-ft  
 Shear = 33.2 kip  
 Axial = 45.5 kip

$D_{MIN,180-DEG} = 6.5625$  ft

**Drilled Shaft Concrete Properties:**

Req'd Clear Vert to AR Template = 3.00 in  
 $D_{MIN} = 6.50$  ft  
 $D = 7.00$  ft  
 Clear Vert to AR Template = 7.62 in  
 $L = 15.50$  ft  
 $f'_c = 4000$  psi  
 Side Cover = 3.00 in (to edge of tie)  
 Top/Bottom Cover = 3.00 in (to end of vertical)  
 Max Agg. Size = 3/4 in

Development Length OK: 54%

**Vertical Rebar Properties:**

Vert. Size = #9  
 $n_{bar} = 28$  [min. (28) #9 rebar req'd]  
 Grade = A615-60

$A_{t,vert} = 28.00$  in<sup>2</sup>  
 $\rho = 0.51\% > 0.005$  OK  
 $h_x = 7.34$  in  $> 3.75$  in OK

**Tie / Shear Reinforcement:**

Shear Area calc'd per: ACI 318  
 Tie Size = #5 (#5 min. size recommended)  
 $s_{tie} = 18.0$  in (max spacing req'd: 18.05")  
 $clr_{tie} = 17.38$  in  $> 3.75$  in OK  
 Grade = A615-60  
 Overlap = 2.7 ft  
 # of ties @ 3", TOP = 2  
 # of ties @ 3", BOT = 2

- Seismic Ties: NO = seismic ties req'd?



**DRILLED SHAFT FOUNDATION DESIGN**

**- Shaft Dimensions:**

L = 15.5 ft  
 D = 84.0 in

**- Concrete:**

f<sub>c</sub> = 4000 psi

**- Rebars:**

Vert. Size = #9  
 n<sub>bar</sub> = 28  
 Clr. cover = 3.625 in (to edge of vert)

**PILE-HEAD CONDITIONS**

**- Static Loading:**

Limit State	Condition 1	Condition 2	Axial Load
	lb	lb-in	lb
Structure	44213	46760480	60653
Design Defl.	20725	21918975	37908

**- Cyclic Loading:**

ratio = 0.41

Service Defl.	8413	8897564	37908

**CAISSON LOAD DATA**

Moment = 2923 kip-ft  
 Axial = 45.49 kip  
 Shear = 33.16 kip  
 Add. SF = 1.33

**LPILE RESULTS**

Design % = 100%

**- Design: Flexure**

M<sub>n</sub> = 62879 kip-in  
 φM<sub>n</sub> = 4716 kip-ft  
 M<sub>max</sub> = 3.59E+07 lb-in  
 M<sub>u</sub> = 2988 kip-ft  
 r<sub>M</sub> = 63% OK

**- Design: Deflection**

Δ = 0.071  
 Δ<sub>All</sub> = 1.5  
 r<sub>Δ</sub> = 5% OK

**- Design: Max Shear**

V<sub>max</sub> = 405095 lb  
 V<sub>u</sub> = 405.1 kip  
 d = 67.2 in  
 A<sub>c,eff</sub> = 5644.8 in<sup>2</sup>

V<sub>c</sub> = 716.9 kip  
 V<sub>s</sub> = 138.9 kip

S<sub>tie, MAX1</sub> = 18.05 in (7.10.5.2 - Vert)

S<sub>tie, MAX2</sub> = 24.00 in (11.5.5.1 - d/2)

S<sub>tie, MAX3</sub> = N/A (11.5.5.3 - d/4)

Min Stirrip Req'd ? YES (11.5.6.1)

S<sub>tie, MAX4</sub> = 28.45 in (11.5.6.3 - A<sub>v,min</sub>)

S<sub>tie, MAX5</sub> = N/A (11.5.7.2 - V<sub>s</sub>)

S<sub>tie, MAX</sub> = 18.05 in > 18.0 in OK

φV<sub>n</sub> = 641.9 kip  
 r<sub>V</sub> = 63% OK

**- Service: Deflection**

Δ = 0.017  
 Δ<sub>All</sub> = 0.75  
 r<sub>Δ</sub> = 2% OK

**CAISSON RESULTS**

L<sub>req'd</sub> = 7.5 ft  
 r<sub>soil</sub> = 48% OK

A<sub>s,req'd</sub> = 23.3 in<sup>2</sup>  
 A'<sub>s,req'd</sub> = 22.0 in<sup>2</sup>  
 r<sub>As</sub> = 79% OK

MAX, SOIL =	48%	OK
MAX, STRUCTURE =	79%	OK

\*\*\*\*\*  
 \* CAISSON - Pier Foundations Analysis and Design - Copyright Power Line Systems, Inc. 1993-2011 \*  
 \*\*\*\*\*

Project Title: 24-20937-22 CK Rough River Dam KY0099  
 Project Notes: Autogenerated By: Yamini Rajakumar on 02/23/2024  
 Calculation Method: Full 8CD

\*\*\*\*\* INPUT DATA

Pier Properties

Diameter (ft)	Distance of Top of Pier above Ground (ft)	Concrete Strength (ksi)	Steel Yield Strength (ksi)
7.00	0.50	4.00	60.00

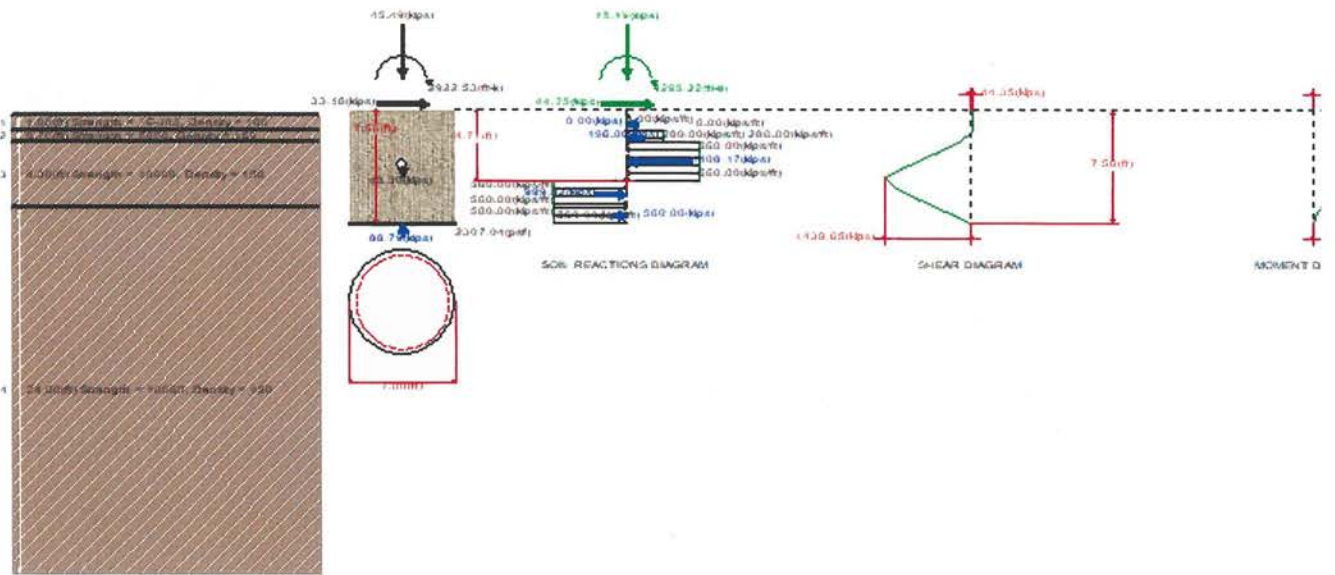
Soil Properties

Layer	Type	Thickness (ft)	Depth at Top of Layer (ft)	Density (lbs/ft^3)	CU (psf)	KP	PHI (deg)
1	Clay	1.00	0.00	100.0	0.0		
2	Clay	0.70	1.00	150.0	5000.0		
3	Clay	4.30	1.70	150.0	10000.0		
4	Clay	24.00	6.00	150.0	10000.0		

Design (Factored) Loads at Top of Pier

Moment (ft-k)	Axial Load (kips)	Shear Load (kips)	Additional Safety Factor Against Soil Failure
2922.5	45.5	33.16	1.33

\*\*\*\*\* RESULTS



Calculated Pier Properties

Length (ft)	Weight (kips)	Pressure Due To Axial Load (psf)	Pressure Due To Weight (psf)	Total End-Bearing Pressure (psf)
7.500	43.295	1182.0	1125.0	2307.0

Ultimate Resisting Forces Along Pier

Type	Distance of Top of Layer to Top of Pier (ft)	Thickness (ft)	Density (lbs/ft^3)	CU (psf)	KP	Force (kips)	Arm (ft)
Clay	0.50	1.00	100.0	0.0		0.00	1.00
Clay	1.50	0.70	150.0	5000.0		196.00	1.85
Clay	2.20	2.51	150.0	10000.0		1408.17	3.46
Clay	4.71	1.79	150.0	10000.0		-999.82	5.61
Clay	6.50	1.00	150.0	10000.0		-560.00	7.00

Shear and Moments Along Pier

Distance below Top of Pier (ft)	Shear (with Safety Factor) (kips)	Moment (with Safety Factor) (ft-k)	Shear (without Safety Factor) (kips)	Moment (without Safety Factor) (ft-k)
0.00	44.4	4295.2	33.3	3229.5
0.75	44.4	4328.5	33.3	3254.5
1.50	44.4	4361.7	33.3	3279.5
2.25	-179.6	4315.9	-135.1	3245.0
3.00	-599.6	4023.7	-450.9	3025.3
3.75	-1019.6	3416.4	-766.7	2568.8
4.50	-1439.6	2494.2	-1082.4	1875.3
5.25	-1260.0	1417.5	-947.4	1065.8
6.00	-840.0	630.0	-631.6	473.7
6.75	-420.0	157.5	-315.8	118.4
7.50	0.0	0.0	0.0	0.0

Reinforcement and Capacity

Total Reinforcement Percent	Reinforcement Area (in^2)	Usable Axial Capacity (kips)	Usable Moment Capacity (ft-k)
0.42	23.28	45.5	3711.9

US Standard Re-Bars (Select one of the following)

Quantity	Name	Area (in^2)	Diameter (in)	Spacing (in)
117	#4	0.20	0.500	1.99
76	#5	0.31	0.625	3.06
53	#6	0.44	0.750	4.39
39	#7	0.60	0.875	5.96
30	#8	0.79	1.000	7.75
24	#9	1.00	1.128	9.69
19	#10	1.27	1.270	12.24
15	#11	1.56	1.410	15.50
11	#14	2.25	1.693	21.13

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Files Used for Analysis  
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Path to file locations:

\2024 Projects\24-20937 CK Rough River Dam KY0099\STR\Additional Calculations\PrFDD\SSPS DS\LPILE\

Name of input data file:  
KY0099\_Design.lp10

Name of output report file:  
KY0099\_Design.lp10

Name of plot output file:  
KY0099\_Design.lp10

Name of runtime message file:

KY0099\_Design.lp10

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Date and Time of Analysis  
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Date: February 23, 2024      Time: 13:04:09

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Problem Title  
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24-20937-22 CK Rough River Dam KY0099

Yamini

Strength Design and Design Deflection Calculations

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Program Options and Settings  
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Computational Options:  
- Use unfactored loads in computations (conventional analysis)  
Engineering Units Used for Data Input and Computations:  
- US Customary System Units (pounds, feet, inches)

Analysis Control Options:

- Maximum number of iterations allowed = 500
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 100.0000 in
- Number of pile increments = 100

Loading Type and Number of Cycles of Loading:

- Static loading specified

- Use of p-y modification factors for p-y curves not selected
- Analysis uses layering correction (Method of Georgiadis)
- No distributed lateral loads are entered
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Input of moment resistance at the pile tip not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:

- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

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Pile Structural Properties and Geometry  
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Number of pile sections defined = 1  
Total length of pile = 15.500 ft  
Depth of ground surface below top of pile = 0.5000 ft

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over

the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	84.0000
2	15.500	84.0000

Input Structural Properties for Pile Sections:

Pile Section No. 1:

Section 1 is a round drilled shaft, bored pile, or CIDH pile

- Length of section = 15.500000 ft
- Shaft Diameter = 84.000000 in
- Shear capacity of section = 0.0000 lbs

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Ground Slope and Pile Batter Angles  
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Ground Slope Angle = 0.000 degrees  
= 0.000 radians

Pile Batter Angle = 0.000 degrees  
= 0.000 radians

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Soil and Rock Layering Information  
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The soil profile is modelled using 4 layers

Layer 1 is soft clay, p-y criteria by Matlock, 1970



Distance from top of pile to top of layer = 0.500000 ft  
 Distance from top of pile to bottom of layer = 1.500000 ft  
 Effective unit weight at top of layer = 100.000000 pcf  
 Effective unit weight at bottom of layer = 100.000000 pcf  
 Undrained cohesion at top of layer = 0.0000100 psf  
 Undrained cohesion at bottom of layer = 0.0000100 psf  
 Epsilon-50 at top of layer = 0.0000  
 Epsilon-50 at bottom of layer = 0.0000

NOTE: Default values for Epsilon-50 will be computed for this layer.

Layer 2 is stiff clay without free water

Distance from top of pile to top of layer = 1.500000 ft  
 Distance from top of pile to bottom of layer = 2.200000 ft  
 Effective unit weight at top of layer = 150.000000 pcf  
 Effective unit weight at bottom of layer = 150.000000 pcf  
 Undrained cohesion at top of layer = 5000. psf  
 Undrained cohesion at bottom of layer = 5000. psf  
 Epsilon-50 at top of layer = 0.0000  
 Epsilon-50 at bottom of layer = 0.0000

NOTE: Default values for Epsilon-50 will be computed for this layer.

Layer 3 is stiff clay with user-defined k-value

Distance from top of pile to top of layer = 2.200000 ft  
 Distance from top of pile to bottom of layer = 6.500000 ft  
 Effective unit weight at top of layer = 150.000000 pcf  
 Effective unit weight at bottom of layer = 150.000000 pcf  
 Undrained cohesion at top of layer = 10000. psf  
 Undrained cohesion at bottom of layer = 10000. psf  
 Epsilon-50 at top of layer = 0.0000  
 Epsilon-50 at bottom of layer = 0.0000  
 Subgrade k at top of layer = 0.0000 pci  
 Subgrade k at bottom of layer = 0.0000 pci

NOTE: Default values for Epsilon-50 will be computed for this layer.

NOTE: Default values for subgrade k will be computed for this layer.

Layer 4 is stiff clay with user-defined k-value

Distance from top of pile to top of layer = 6.500000 ft  
 Distance from top of pile to bottom of layer = 30.500000 ft  
 Effective unit weight at top of layer = 150.000000 pcf  
 Effective unit weight at bottom of layer = 150.000000 pcf  
 Undrained cohesion at top of layer = 10000. psf  
 Undrained cohesion at bottom of layer = 10000. psf  
 Epsilon-50 at top of layer = 0.0000  
 Epsilon-50 at bottom of layer = 0.0000  
 Subgrade k at top of layer = 0.0000 pci  
 Subgrade k at bottom of layer = 0.0000 pci

NOTE: Default values for Epsilon-50 will be computed for this layer.

NOTE: Default values for subgrade k will be computed for this layer.

(Depth of the lowest soil layer extends 15.000 ft below the pile tip)

\*\*\*\* Warning - Possible Input Data Error \*\*\*\*

Values entered for effective unit weights of soil were outside the limits of 20 pcf to 140 pcf.

The maximum input value, in layer 2, for effective unit weight = 150.00 pcf

This data may be erroneous. Please check your data.

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 Summary of Input Soil Properties  
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Layer Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	E50 or krm	kpy pci
1	Soft Clay	0.5000	100.0000	1.00E-05	default	--
2	Stiff Clay w/o Free Water	1.5000	150.0000	5000.	default	--
3	Stiff Clay w/o	2.2000	150.0000	10000.	default	default

4	Free Water, using k	6.5000	150.0000	10000.	default	default
	Stiff Clay w/o	6.5000	150.0000	10000.	default	default
	Free Water, using k	30.5000	150.0000	10000.	default	default

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 Static Loading Type  
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Static loading criteria were used when computing p-y curves for all analyses.

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 Pile-head Loading and Pile-head Fixity Conditions  
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Number of loads specified = 2

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length
1	1	V = 44213. lbs	M = 46760480. in-lbs	60653.	No
2	1	V = 20725. lbs	M = 21918975. in-lbs	37908.	No

V = shear force applied normal to pile axis  
 M = bending moment applied to pile head  
 y = lateral deflection normal to pile axis  
 S = pile slope relative to original pile batter angle  
 R = rotational stiffness applied to pile head  
 Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).  
 Thrust force is assumed to be acting axially for all pile batter angles.

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 Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness  
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Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:  
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Dimensions and Properties of Drilled Shaft (Bored Pile):  
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Length of Section	=	15.500000 ft
Shaft Diameter	=	84.000000 in
Concrete Cover Thickness (to edge of long. rebar)	=	3.625000 in
Number of Reinforcing Bars	=	28 bars
Yield Stress of Reinforcing Bars	=	60000. psi
Modulus of Elasticity of Reinforcing Bars	=	29000000. psi
Gross Area of Shaft	=	5542. sq. in.
Total Area of Reinforcing Steel	=	28.000000 sq. in.
Area Ratio of Steel Reinforcement	=	0.51 percent
Edge-to-Edge Bar Spacing	=	7.338978 in
Maximum Concrete Aggregate Size	=	0.750000 in
Ratio of Bar Spacing to Aggregate Size	=	9.79
Offset of Center of Rebar Cage from Center of Pile	=	0.0000 in

Axial Structural Capacities:  
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Nom. Axial Structural Capacity = $0.85 F_c A_c + F_y A_s$	=	20426.816 kips
Tensile Load for Cracking of Concrete	=	-2386.910 kips
Nominal Axial Tensile Capacity	=	-1680.000 kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches
1	1.128000	1.000000	37.811000	0.000000
2	1.128000	1.000000	36.862999	8.413739
3	1.128000	1.000000	34.066534	16.405578
4	1.128000	1.000000	29.561830	23.574773
5	1.128000	1.000000	23.574773	29.561830
6	1.128000	1.000000	16.405578	34.066534
7	1.128000	1.000000	8.413739	36.862999



8	1.128000	1.000000	0.000000	37.811000
9	1.128000	1.000000	-8.413739	36.862999
10	1.128000	1.000000	-16.405578	34.066534
11	1.128000	1.000000	-23.574773	29.561830
12	1.128000	1.000000	-29.561830	23.574773
13	1.128000	1.000000	-34.066534	16.405578
14	1.128000	1.000000	-36.862999	8.413739
15	1.128000	1.000000	-37.811000	0.000000
16	1.128000	1.000000	-36.862999	-8.413739
17	1.128000	1.000000	-34.066534	-16.405578
18	1.128000	1.000000	-29.561830	-23.574773
19	1.128000	1.000000	-23.574773	-29.561830
20	1.128000	1.000000	-16.405578	-34.066534
21	1.128000	1.000000	-8.413739	-36.862999
22	1.128000	1.000000	0.000000	-37.811000
23	1.128000	1.000000	8.413739	-36.862999
24	1.128000	1.000000	16.405578	-34.066534
25	1.128000	1.000000	23.574773	-29.561830
26	1.128000	1.000000	29.561830	-23.574773
27	1.128000	1.000000	34.066534	-16.405578
28	1.128000	1.000000	36.862999	-8.413739

NOTE: The positions of the above rebars were computed by LPILE

Minimum spacing between any two bars not equal to zero = 7.339 inches  
between bars 26 and 27.

Ratio of bar spacing to maximum aggregate size = 9.79

Concrete Properties:

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Compressive Strength of Concrete = 4000. psi  
 Modulus of Elasticity of Concrete = 3604997. psi  
 Modulus of Rupture of Concrete = -474.341649 psi  
 Compression Strain at Peak Stress = 0.001886  
 Tensile Strain at Fracture of Concrete = -0.0001154  
 Maximum Coarse Aggregate Size = 0.750000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 2

Number	Axial Thrust Force kips
1	37.908
2	60.653

Definitions of Run Messages and Notes:

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C = concrete in section has cracked in tension.  
 Y = stress in reinforcing steel has reached yield stress.  
 T = ACI 318 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than 0.003. See ACI 318, Section 10.3.4.  
 Z = depth of tensile zone in concrete section is less than 10 percent of section depth.

Bending Stiffness (EI) = Computed Bending Moment / Curvature.  
 Position of neutral axis is measured from edge of compression side of pile.  
 Compressive stresses and strains are positive in sign.  
 Tensile stresses and strains are negative in sign.

Axial Thrust Force = 37.908 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in <sup>2</sup>	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max Conc Stress ksi	Max Steel Stress ksi	Run Msg
3.12500E-07	3387.	1.08369E+10	47.0277143	0.00001470	-0.00001155	0.0615338	0.4223824	
6.25000E-07	6758.	1.08131E+10	44.5210377	0.00002783	-0.00002467	0.1160460	0.7993313	
9.37500E-07	10115.	1.07890E+10	43.6855178	0.00004096	-0.00003779	0.1701784	1.1762813	
0.00000125	13456.	1.07648E+10	43.2677808	0.00005408	-0.00005092	0.2239310	1.5532321	
0.00000156	16782.	1.07405E+10	43.0171563	0.00006721	-0.00006404	0.2773039	1.9301836	
0.00000188	20093.	1.07163E+10	42.8500876	0.00008034	-0.00007716	0.3302970	2.3071360	
0.00000219	23389.	1.06921E+10	42.7307652	0.00009347	-0.00009028	0.3829103	2.6840892	
0.00000250	26670.	1.06678E+10	42.6412842	0.00010666	-0.0001034	0.4351439	3.0610431	
0.00000281	26670.	9482489888.	19.3641614	0.00005446	-0.0001818	0.2227801	-5.2376043	C
0.00000313	26670.	8534240899.	19.0898712	0.00005966	-0.0002028	0.2436174	-5.8444179	C





0.00007719	57093.	739667873.	14.3758494	0.0011096	-0.0053741	3.2641206	-60.000000	CY
0.00007969	57291.	718948355.	14.2498145	0.0011355	-0.0055582	3.3086246	-60.000000	CY
0.00008219	57488.	699478332.	14.1322400	0.0011615	-0.0057423	3.3518519	-60.000000	CY
0.00008469	57685.	681147005.	14.0223833	0.0011875	-0.0059262	3.3937923	-60.000000	CY
0.00008719	57880.	663856282.	13.9195870	0.0012136	-0.0061101	3.4344358	-60.000000	CY
0.00008969	58072.	647488437.	13.8193936	0.0012394	-0.0062943	3.4732373	-60.000000	CY
0.00009219	58258.	631952300.	13.7194236	0.0012648	-0.0064790	3.5099474	-60.000000	CY
0.00009469	58444.	617227651.	13.6254185	0.0012902	-0.0066636	3.5454245	-60.000000	CY
0.00009719	58629.	603251778.	13.5369247	0.0013156	-0.0068481	3.5796589	-60.000000	CY
0.00009969	58812.	589968237.	13.4535343	0.0013411	-0.0070326	3.6126408	-60.000000	CY
0.0001022	58968.	577056260.	13.3694052	0.0013662	-0.0072176	3.6436522	-60.000000	CY
0.0001047	59100.	564541253.	13.2855228	0.0013908	-0.0074029	3.6728912	-60.000000	CY
0.0001072	59201.	552310849.	13.1999466	0.0014149	-0.0075889	3.7001814	-60.000000	CY
0.0001097	59301.	540632107.	13.1188206	0.0014390	-0.0077748	3.7263499	-60.000000	CY
0.0001122	59400.	529468069.	13.0418517	0.0014631	-0.0079606	3.7513879	-60.000000	CY
0.0001147	59493.	518744177.	12.9625899	0.0014866	-0.0081471	3.7745731	-60.000000	CY
0.0001172	59585.	508456295.	12.8846954	0.0015099	-0.0083338	3.7963978	-60.000000	CY
0.0001197	59675.	498593432.	12.8105453	0.0015333	-0.0085205	3.8171648	-60.000000	CY
0.0001222	59766.	489129438.	12.7399141	0.0015567	-0.0087071	3.8368657	-60.000000	CY
0.0001247	59855.	480040260.	12.6725946	0.0015801	-0.0088936	3.8554920	-60.000000	CY
0.0001272	59944.	471303738.	12.6083960	0.0016036	-0.0090801	3.8730351	-60.000000	CY
0.0001297	60032.	462899417.	12.5471423	0.0016272	-0.0092665	3.8894864	-60.000000	CY
0.0001322	60120.	454808390.	12.4886707	0.0016508	-0.0094529	3.9048368	-60.000000	CY
0.0001347	60207.	447013151.	12.4328310	0.0016745	-0.0096392	3.9190774	-60.000000	CY
0.0001372	60294.	439497471.	12.3794837	0.0016983	-0.0098254	3.9321992	-60.000000	CY
0.0001522	60786.	399412486.	12.0930336	0.0018404	-0.0109433	3.9864510	-60.000000	CY
0.0001672	61030.	365041001.	11.7970566	0.0019723	-0.0120714	3.9950367	-60.000000	CY
0.0001822	61237.	336121683.	11.5573450	0.0021056	-0.0131981	3.9998825	-60.000000	CY
0.0001972	61427.	311514890.	11.3658987	0.0022412	-0.0143225	3.9960665	60.000000	CY
0.0002122	61589.	290255598.	11.1871212	0.0023738	-0.0154500	3.9868625	60.000000	CY
0.0002272	61738.	271747456.	11.0361179	0.0025073	-0.0165765	3.9975235	60.000000	CY
0.0002422	61878.	255494432.	10.9112906	0.0026426	-0.0177012	3.9861184	60.000000	CY
0.0002572	62007.	241095521.	10.8060342	0.0027792	-0.0188246	3.9929370	60.000000	CY
0.0002722	62097.	228141772.	10.7043774	0.0029136	-0.0199502	3.9999973	60.000000	CY
0.0002872	62160.	216444598.	10.6111463	0.0030474	-0.0210764	3.9763136	60.000000	CYT
0.0003022	62201.	205834601.	10.5222022	0.0031797	-0.0222041	3.9881427	60.000000	CYT
0.0003172	62229.	196189725.	10.4314009	0.0033087	-0.0233350	3.9979245	60.000000	CYT
0.0003322	62250.	187394323.	10.3483040	0.0034376	-0.0244662	3.9947955	60.000000	CYT
0.0003472	62268.	179350937.	10.2758910	0.0035677	-0.0255961	3.9757383	60.000000	CYT
0.0003622	62286.	171971330.	10.2109647	0.0036983	-0.0267255	3.9691958	60.000000	CYT
0.0003772	62300.	165168535.	10.1554950	0.0038305	-0.0278532	3.9850833	60.000000	CYT

Axial Thrust Force = 60.653 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in <sup>2</sup>	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max Conc Stress ksi	Max Steel Stress ksi	Run Msg
3.12500E-07	3386.	1.08356E+10	50.0446233	0.0001564	-0.00001061	0.0655004	0.4497231	
6.25000E-07	6758.	1.08124E+10	46.0337352	0.0002877	-0.00002373	0.1199961	0.8267490	
9.37500E-07	10114.	1.07885E+10	44.6968632	0.0004190	-0.00003685	0.1741121	1.2037772	
0.00000125	13456.	1.07644E+10	44.0284693	0.0005504	-0.00004996	0.2278483	1.5808070	
0.00000156	16782.	1.07403E+10	43.6274626	0.0006817	-0.00006308	0.2812046	1.9578382	
0.00000188	20093.	1.07161E+10	43.3601486	0.0008130	-0.00007620	0.3341810	2.3348706	
0.00000219	23388.	1.06919E+10	43.1692305	0.0009443	-0.00008932	0.3867776	2.7119043	
0.00000250	26669.	1.06676E+10	43.0260595	0.001076	-0.0001024	0.4389943	3.0889393	
0.00000281	26669.	9482332622.	20.9622841	0.0005896	-0.0001773	0.2412819	-5.1072575	C
0.00000313	26669.	8534099360.	20.5623535	0.0006426	-0.0001982	0.2625058	-5.7109742	C
0.00000344	26669.	7758272145.	20.2198757	0.0006951	-0.0002192	0.2834551	-6.3162124	C
0.00000375	26669.	7111749466.	19.9350891	0.0007476	-0.0002402	0.3043549	-6.9213840	C
0.00000406	26669.	6564691815.	19.6922783	0.0008000	-0.0002613	0.3251654	-7.5267722	C
0.00000438	26669.	6095785257.	19.4758285	0.0008521	-0.0002823	0.3457695	-8.1332167	C
0.00000469	26669.	5689399573.	19.2887366	0.0009042	-0.0003033	0.3663252	-8.7395936	C
0.00000500	26669.	5333812100.	19.1254992	0.0009563	-0.0003244	0.3868322	-9.3459026	C
0.00000531	26669.	5020058447.	18.9819074	0.001008	-0.0003454	0.4072907	-9.9521436	C
0.00000563	26669.	4741166311.	18.8522208	0.001060	-0.0003665	0.4276449	-10.5587190	C
0.00000594	26669.	4491631242.	18.7326047	0.001112	-0.0003875	0.4478562	-11.1659109	C
0.00000625	26669.	4267049680.	18.6253368	0.001164	-0.0004086	0.4680199	-11.7730327	C
0.00000656	26669.	4063856838.	18.5286538	0.001216	-0.0004297	0.4881358	-12.3800845	C
0.00000688	26669.	3879136073.	18.4411133	0.001268	-0.0004507	0.5082039	-12.9870653	C
0.00000719	26669.	3710477982.	18.3615235	0.001320	-0.0004718	0.5282241	-13.5939762	C
0.00000750	26669.	3555874733.	18.2888913	0.001372	-0.0004928	0.5481963	-14.2008161	C
0.00000781	26669.	3413639744.	18.2223827	0.001424	-0.0005139	0.5681205	-14.8075851	C
0.00000813	26669.	3282345908.	18.1612917	0.001476	-0.0005349	0.5879967	-15.4142831	C
0.00000844	26669.	3160777541.	18.1050171	0.001528	-0.0005560	0.6078247	-16.0209099	C
0.00000875	26669.	3047892628.	18.0526484	0.001580	-0.0005770	0.6275911	-16.6275655	C
0.00000906	26669.	2942792883.	18.0017954	0.001631	-0.0005981	0.6472260	-17.2347719	C
0.00000938	26669.	2844699787.	17.9546064	0.001683	-0.0006192	0.6668134	-17.8419039	C
0.00000969	26669.	2752935277.	17.9107274	0.001735	-0.0006402	0.6863534	-18.4489612	C
0.00001000	26669.	2665906050.	17.8698488	0.001787	-0.0006613	0.7058459	-19.0559438	C
0.00001031	26669.	2586090715.	17.8316986	0.001839	-0.0006824	0.7252909	-19.6628514	C
0.00001063	26669.	2510029223.	17.7960364	0.001891	-0.0007034	0.7446882	-20.2696837	C
0.00001094	26669.	2438314103.	17.7626498	0.001943	-0.0007245	0.7640377	-20.8764407	C



0.00001125	26669.	2370583155.	17.7313497	0.0001995	-0.0007455	0.7833396	-21.4831221	C
0.00001156	26669.	2306513340.	17.7019675	0.0002047	-0.0007666	0.8025935	-22.0897277	C
0.00001188	26669.	2245815621.	17.6743523	0.0002099	-0.0007876	0.8217996	-22.6962574	C
0.00001219	26669.	2188230605.	17.6483688	0.0002151	-0.0008087	0.8409578	-23.3027109	C
0.00001281	26669.	2081487649.	17.6008215	0.0002255	-0.0008507	0.8791299	-24.5153885	C
0.00001344	26669.	1984674270.	17.5584853	0.0002359	-0.0008928	0.9171095	-25.7277590	C
0.00001406	26669.	1896466524.	17.5206692	0.0002464	-0.0009349	0.9548959	-26.9398208	C
0.00001469	26669.	1815765821.	17.4868002	0.0002568	-0.0009769	0.9924887	-28.1515722	C
0.00001531	26669.	1741652931.	17.4563987	0.0002673	-0.0010189	1.0298873	-29.3630117	C
0.00001594	26669.	1673352816.	17.4290602	0.0002778	-0.0010610	1.0670912	-30.5741374	C
0.00001656	26669.	1610207426.	17.4044416	0.0002883	-0.0011030	1.1040999	-31.7849478	C
0.00001719	26669.	1551654429.	17.3822495	0.0002988	-0.0011450	1.1409128	-32.9954412	C
0.00001781	26669.	1497210414.	17.3622319	0.0003093	-0.0011870	1.1775293	-34.2056158	C
0.00001844	26669.	1446457519.	17.3441708	0.0003198	-0.0012290	1.2139490	-35.4154699	C
0.00001906	26669.	1399032682.	17.3278770	0.0003303	-0.0012709	1.2501713	-36.6250017	C
0.00001969	27184.	1380787985.	17.3131853	0.0003409	-0.0013129	1.2861955	-37.8342100	C
0.00002031	27990.	1377954756.	17.2999508	0.0003514	-0.0013548	1.3220213	-39.0430919	C
0.00002094	28795.	1375265524.	17.2880460	0.0003620	-0.0013968	1.3576480	-40.2516462	C
0.00002156	29599.	1372707650.	17.2773582	0.0003725	-0.0014387	1.3930750	-41.4598710	C
0.00002219	30403.	1370269918.	17.2677874	0.0003831	-0.0014806	1.4283017	-42.6677646	C
0.00002281	31206.	1367942342.	17.2592446	0.0003937	-0.0015225	1.4633276	-43.8753250	C
0.00002344	32009.	1365715997.	17.2516503	0.0004043	-0.0015644	1.4981521	-45.0825503	C
0.00002406	32811.	1363582887.	17.2449334	0.0004150	-0.0016063	1.5327746	-46.2894387	C
0.00002469	33613.	1361535822.	17.2390300	0.0004256	-0.0016482	1.5671946	-47.4959883	C
0.00002531	34414.	1359568325.	17.2338823	0.0004362	-0.0016900	1.6014113	-48.7021971	C
0.00002594	35215.	1357674539.	17.2294384	0.0004469	-0.0017319	1.6354242	-49.9080631	C
0.00002656	36015.	1355849158.	17.2256511	0.0004576	-0.0017737	1.6692328	-51.1135843	C
0.00002719	36814.	1354087363.	17.2224778	0.0004682	-0.0018155	1.7028363	-52.3187589	C
0.00002781	37613.	1352384768.	17.2198719	0.0004789	-0.0018573	1.7362335	-53.5235908	C
0.00002844	38412.	1350737322.	17.2176811	0.0004896	-0.0018991	1.7694133	-54.7281748	C
0.00002906	39209.	1349141449.	17.2160297	0.0005003	-0.0019409	1.8023887	-55.9323837	C
0.00002969	40007.	1347593785.	17.2148862	0.0005111	-0.0019827	1.8351592	-57.1362151	C
0.00003031	40803.	1346091246.	17.2142221	0.0005218	-0.0020244	1.8677241	-58.3396666	C
0.00003094	41600.	1344630997.	17.2140109	0.0005326	-0.0020662	1.9000828	-59.5432758	C
0.00003156	42395.	1343210427.	17.2142284	0.0005433	-0.0021079	1.9322344	-60.0000000	CY
0.00003219	43190.	1341827126.	17.2148523	0.0005541	-0.0021496	1.9641785	-60.0000000	CY
0.00003281	43984.	1340478865.	17.2158621	0.0005649	-0.0021914	1.9959142	-60.0000000	CY
0.00003344	44720.	1337428576.	17.2097518	0.0005755	-0.0022333	2.0266952	-60.0000000	CY
0.00003406	45341.	1331104099.	17.1894640	0.0005855	-0.0022757	2.0557878	-60.0000000	CY
0.00003469	45920.	1323812432.	17.1649812	0.0005954	-0.0023183	2.0841628	-60.0000000	CY
0.00003531	46453.	1315488637.	17.1357711	0.0006051	-0.0023611	2.1117536	-60.0000000	CY
0.00003594	46901.	1305081437.	17.0969006	0.0006144	-0.0024043	2.1380343	-60.0000000	CY

0.00003656	47346.	1294944463.	17.0592291	0.0006237	-0.0024475	2.1641171	-60.0000000	CY
0.00003719	47791.	1285140147.	17.0230539	0.0006330	-0.0024907	2.1900404	-60.0000000	CY
0.00003969	49232.	1240488938.	16.8493428	0.0006687	-0.0026650	2.2874431	-60.0000000	CY
0.00004219	50516.	1197422637.	16.6805204	0.0007037	-0.0028400	2.3803651	-60.0000000	CY
0.00004469	51456.	1151466042.	16.4897624	0.0007369	-0.0030169	2.4659073	-60.0000000	CY
0.00004719	52356.	1109535439.	16.3122993	0.0007697	-0.0031940	2.5482949	-60.0000000	CY
0.00004969	53164.	1069973546.	16.1349701	0.0008017	-0.0033720	2.6262207	-60.0000000	CY
0.00005219	53753.	1030001744.	15.9466517	0.0008322	-0.0035515	2.6984669	-60.0000000	CY
0.00005469	54338.	993617763.	15.7768791	0.0008628	-0.0037310	2.7689326	-60.0000000	CY
0.00005719	54922.	960380555.	15.6234547	0.0008935	-0.0039103	2.8376341	-60.0000000	CY
0.00005969	55453.	929055148.	15.4722064	0.0009235	-0.0040903	2.9029482	-60.0000000	CY
0.00006219	55818.	897578797.	15.3034521	0.0009517	-0.0042721	2.9623926	-60.0000000	CY
0.00006469	56172.	868358710.	15.1473873	0.0009798	-0.0044539	3.0201332	-60.0000000	CY
0.00006719	56524.	841293188.	15.0040450	0.0010081	-0.0046357	3.0763726	-60.0000000	CY
0.00006969	56875.	816150089.	14.8720665	0.0010364	-0.0048174	3.1310988	-60.0000000	CY
0.00007219	57225.	792729430.	14.7502817	0.0010648	-0.0049990	3.1842992	-60.0000000	CY
0.00007469	57564.	770727059.	14.6307520	0.0010927	-0.0051810	3.2350022	-60.0000000	CY
0.00007719	57813.	748993998.	14.5008332	0.0011193	-0.0053645	3.2815653	-60.0000000	CY
0.00007969	58010.	727974456.	14.3712146	0.0011452	-0.0055485	3.3255772	-60.0000000	CY
0.00008219	58207.	708222601.	14.2502810	0.0011712	-0.0057326	3.3683088	-60.0000000	CY
0.00008469	58403.	689626021.	14.1372697	0.0011973	-0.0059165	3.4097499	-60.0000000	CY
0.00008719	58597.	672085195.	14.0315060	0.0012234	-0.0061004	3.4498903	-60.0000000	CY
0.00008969	58791.	655511697.	13.9323905	0.0012496	-0.0062842	3.4887196	-60.0000000	CY
0.00009219	58982.	639809736.	13.8371946	0.0012756	-0.0064681	3.5259320	-60.0000000	CY
0.00009469	59168.	624871332.	13.7404620	0.0013010	-0.0066527	3.5608656	-60.0000000	CY
0.00009719	59352.	610692632.	13.6493880	0.0013265	-0.0068372	3.5945518	-60.0000000	CY
0.00009969	59535.	597216376.	13.5635537	0.0013521	-0.0070216	3.6269807	-60.0000000	CY
0.0001022	59697.	584194118.	13.4785597	0.0013773	-0.0072064	3.6576322	-60.0000000	CY
0.0001047	59837.	571578421.	13.3939847	0.0014022	-0.0073916	3.6865175	-60.0000000	CY
0.0001072	59937.	559178765.	13.3061557	0.0014263	-0.0075775	3.7132545	-60.0000000	CY
0.0001097	60036.	547338446.	13.2228853	0.0014504	-0.0077634	3.7388658	-60.0000000	CY
0.0001122	60135.	536019993.	13.1438729	0.0014746	-0.0079492	3.7633425	-60.0000000	CY
0.0001147	60233.	525189198.	13.0688445	0.0014988	-0.0081349	3.7866756	-60.0000000	CY
0.0001172	60328.	514797072.	12.9948115	0.0015228	-0.0083209	3.8085581	-60.0000000	CY
0.0001197	60418.	504797269.	12.9186914	0.0015462	-0.0085075	3.8287131	-60.0000000	CY
0.0001222	60507.	495201883.	12.8461770	0.0015696	-0.0086941	3.8477970	-60.0000000	CY
0.0001247	60596.	485986543.	12.7770560	0.0015931	-0.0088806	3.8658011	-60.0000000	CY
0.0001272	60685.	477128776.	12.7111329	0.0016167	-0.0090671	3.8827166	-60.0000000	CY
0.0001297	60773.	468607843.	12.6482273	0.0016403	-0.0092534	3.8985348	-60.0000000	CY
0.0001322	60860.	460404572.	12.5881726	0.0016640	-0.0094398	3.9132465	-60.0000000	CY
0.0001347	60946.	452501214.	12.5308148	0.0016877	-0.0096260	3.9268427	-60.0000000	CY
0.0001372	61032.	444881313.	12.4760111	0.0017116	-0.0098122	3.9393141	-60.0000000	CY

0.0001522	61528.	404292370.	12.1927194	0.0018556	-0.0109282	3.9899370	-60.0000000	CY
0.0001672	61785.	369553641.	11.8951411	0.0019887	-0.0120550	3.9898953	-60.0000000	CY
0.0001822	61988.	340244529.	11.6492928	0.0021224	-0.0131814	3.9979532	-60.0000000	CY
0.0001972	62175.	315308226.	11.4526738	0.0022583	-0.0143054	3.9980130	60.0000000	CY
0.0002122	62342.	293807467.	11.2850753	0.0023946	-0.0154292	3.9849896	60.0000000	CY
0.0002272	62489.	275054802.	11.1294778	0.0025285	-0.0165553	3.9992561	60.0000000	CY
0.0002422	62626.	258584205.	11.0012536	0.0026644	-0.0176794	3.9792874	60.0000000	CY
0.0002572	62756.	244010027.	10.8935672	0.0028017	-0.0188021	3.9963793	60.0000000	CY
0.0002722	62847.	230894630.	10.7901818	0.0029370	-0.0199268	3.9931611	60.0000000	CY
0.0002872	62915.	219073834.	10.6964442	0.0030719	-0.0210519	3.9775884	60.0000000	CYT
0.0003022	62955.	208329287.	10.6042249	0.0032045	-0.0221793	3.9931755	60.0000000	CYT
0.0003172	62986.	198576958.	10.5270596	0.0033391	-0.0233047	3.9998208	60.0000000	CYT
0.0003322	63008.	189676611.	10.4498846	0.0034713	-0.0244324	3.9842160	60.0000000	CYT
0.0003472	63026.	181532252.	10.3742429	0.0036018	-0.0255619	3.9650326	60.0000000	CYT
0.0003622	63042.	174059938.	10.3064251	0.0037329	-0.0266909	3.9807200	60.0000000	CYT
0.0003772	63049.	167156522.	10.2541338	0.0038677	-0.0278160	3.9931631	60.0000000	CYT

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 Summary of Results for Nominal (Unfactored) Moment Capacity for Section 1  
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Moment values interpolated at maximum compressive strain = 0.003  
 or maximum developed moment if pile fails at smaller strains.

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
1	37.908	62137.924	0.00300000
2	60.653	62878.702	0.00300000

Note that the values of moment capacity in the table above are not factored by a strength reduction factor ( $\phi$ -factor).

In ACI 318, the value of the strength reduction factor depends on whether the transverse reinforcing steel bars are tied hoops (0.65) or spirals (0.70).

The above values should be multiplied by the appropriate strength reduction factor to compute ultimate moment capacity according to ACI 318, Section 9.3.2.2 or the value required by the design standard being followed.

The following table presents factored moment capacities and corresponding

bending stiffnesses computed for common resistance factor values used for reinforced concrete sections.

Axial Load No.	Resist. Factor for Moment	Nominal Moment Cap in-kips	Ult. (Fac) Ax. Thrust kips	Ult. (Fac) Moment Cap in-kips	Bend. Stiff. at Ult Mom kip-in <sup>2</sup>
1	0.65	62138.	24.640200	40390.	1.3273E+09
2	0.65	62879.	39.424450	40871.	1.3460E+09
1	0.70	62138.	26.535600	43497.	1.3229E+09
2	0.70	62879.	42.457100	44015.	1.3404E+09
1	0.75	62138.	28.431000	46603.	1.2809E+09
2	0.75	62879.	45.489750	47159.	1.2992E+09

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 Layering Correction Equivalent Depths of Soil & Rock Layers  
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Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	0.5000	0.00	N.A.	No	0.00	181.5006
2	1.5000	0.00173	No	No	181.5006	74316.
3	2.2000	0.3530	No	No	74498.	966447.
4	6.5000	4.6486	Yes	No	1040945.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

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 Computed Values of Pile Loading and Deflection  
 for Lateral Loading for Load Case Number 1  
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Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 44213.0 lbs  
 Applied moment at pile head = 46760480.0 in-lbs  
 Axial thrust load on pile head = 60653.0 lbs

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	0.6828	4.68E+07	44213.	-0.00803	0.00	1.31E+12	0.00	0.00	0.00
0.1550	0.6679	4.68E+07	44213.	-0.00796	0.00	1.31E+12	0.00	0.00	0.00
0.3100	0.6532	4.69E+07	44213.	-0.00790	0.00	1.30E+12	0.00	0.00	0.00
0.4650	0.6385	4.70E+07	44213.	-0.00783	0.00	1.30E+12	0.00	0.00	0.00
0.6200	0.6240	4.71E+07	44213.	-0.00776	0.00	1.30E+12	-1.39E-05	4.14E-05	0.00
0.7750	0.6097	4.72E+07	44213.	-0.00770	0.00	1.30E+12	-1.38E-05	4.21E-05	0.00
0.9300	0.5954	4.73E+07	44213.	-0.00763	0.00	1.30E+12	-1.37E-05	4.28E-05	0.00
1.0850	0.5813	4.73E+07	44213.	-0.00756	0.00	1.30E+12	-1.36E-05	4.34E-05	0.00
1.2400	0.5673	4.74E+07	44213.	-0.00749	0.00	1.29E+12	-1.35E-05	4.42E-05	0.00
1.3950	0.5534	4.75E+07	44213.	-0.00742	0.00	1.29E+12	-1.34E-05	4.49E-05	0.00
1.5500	0.5397	4.76E+07	40564.	-0.00736	0.00	1.29E+12	-3923.	13521.	0.00
1.7050	0.5261	4.77E+07	33273.	-0.00729	0.00	1.29E+12	-3917.	13849.	0.00
1.8600	0.5126	4.77E+07	25994.	-0.00722	0.00	1.29E+12	-3911.	14191.	0.00
2.0150	0.4992	4.78E+07	18726.	-0.00715	0.00	1.29E+12	-3904.	14546.	0.00
2.1700	0.4860	4.78E+07	11471.	-0.00708	0.00	1.29E+12	-3897.	14916.	0.00
2.3250	0.4729	4.78E+07	703.6236	-0.00701	0.00	1.28E+12	-7680.	30210.	0.00
2.4800	0.4599	4.78E+07	-13563.	-0.00694	0.00	1.29E+12	-7660.	30980.	0.00
2.6350	0.4470	4.78E+07	-27791.	-0.00687	0.00	1.29E+12	-7639.	31782.	0.00
2.7900	0.4343	4.77E+07	-41978.	-0.00680	0.00	1.29E+12	-7616.	32617.	0.00
2.9450	0.4217	4.76E+07	-56123.	-0.00673	0.00	1.29E+12	-7593.	33488.	0.00
3.1000	0.4093	4.75E+07	-70223.	-0.00667	0.00	1.29E+12	-7569.	34396.	0.00
3.2550	0.3969	4.73E+07	-84277.	-0.00660	0.00	1.30E+12	-7543.	35345.	0.00
3.4100	0.3847	4.72E+07	-98281.	-0.00653	0.00	1.30E+12	-7516.	36336.	0.00
3.5650	0.3727	4.70E+07	-112235.	-0.00646	0.00	1.30E+12	-7488.	37374.	0.00
3.7200	0.3607	4.68E+07	-126135.	-0.00640	0.00	1.31E+12	-7459.	38462.	0.00
3.8750	0.3489	4.65E+07	-139980.	-0.00633	0.00	1.31E+12	-7428.	39602.	0.00
4.0300	0.3371	4.62E+07	-153765.	-0.00626	0.00	1.32E+12	-7395.	40800.	0.00

4.1850	0.3256	4.59E+07	-167489.	-0.00620	0.00	1.32E+12	-7362.	42060.	0.00
4.3400	0.3141	4.56E+07	-181149.	-0.00613	0.00	1.33E+12	-7326.	43386.	0.00
4.4950	0.3027	4.53E+07	-194742.	-0.00607	0.00	1.33E+12	-7289.	44786.	0.00
4.6500	0.2915	4.49E+07	-208264.	-0.00601	0.00	1.34E+12	-7251.	46265.	0.00
4.8050	0.2804	4.45E+07	-221713.	-0.00595	0.00	1.34E+12	-7210.	47830.	0.00
4.9600	0.2694	4.41E+07	-235084.	-0.00588	0.00	1.34E+12	-7168.	49490.	0.00
5.1150	0.2585	4.36E+07	-248374.	-0.00582	0.00	1.34E+12	-7123.	51254.	0.00
5.2700	0.2477	4.31E+07	-261580.	-0.00576	0.00	1.34E+12	-7076.	53133.	0.00
5.4250	0.2371	4.26E+07	-274696.	-0.00570	0.00	1.34E+12	-7027.	55139.	0.00
5.5800	0.2265	4.21E+07	-287719.	-0.00565	0.00	1.34E+12	-6976.	57285.	0.00
5.7350	0.2160	4.16E+07	-300643.	-0.00559	0.00	1.34E+12	-6922.	59589.	0.00
5.8900	0.2057	4.10E+07	-313465.	-0.00553	0.00	1.35E+12	-6865.	62070.	0.00
6.0450	0.1955	4.04E+07	-326177.	-0.00547	0.00	1.35E+12	-6805.	64749.	0.00
6.2000	0.1853	3.98E+07	-338775.	-0.00542	0.00	1.35E+12	-6742.	67654.	0.00
6.3550	0.1753	3.92E+07	-351252.	-0.00536	0.00	1.35E+12	-6675.	70816.	0.00
6.5100	0.1654	3.85E+07	-363601.	-0.00531	0.00	1.35E+12	-6603.	74264.	0.00
6.6650	0.1556	3.78E+07	-375814.	-0.00526	0.00	1.35E+12	-6529.	78063.	0.00
6.8200	0.1458	3.71E+07	-387883.	-0.00521	0.00	1.35E+12	-6449.	82259.	0.00
6.9750	0.1362	3.64E+07	-399800.	-0.00516	0.00	1.36E+12	-6365.	86926.	0.00
7.1300	0.1266	3.56E+07	-411555.	-0.00511	0.00	1.36E+12	-6274.	92152.	0.00
7.2850	0.1172	3.48E+07	-423135.	-0.00506	0.00	1.36E+12	-6178.	98052.	0.00
7.4400	0.1078	3.40E+07	-434529.	-0.00501	0.00	1.36E+12	-6074.	104775.	0.00
7.5950	0.09854	3.32E+07	-445722.	-0.00497	0.00	1.36E+12	-5961.	112522.	0.00
7.7500	0.08935	3.24E+07	-456697.	-0.00492	0.00	1.36E+12	-5840.	121563.	0.00
7.9050	0.08024	3.15E+07	-467434.	-0.00488	0.00	1.37E+12	-5706.	132280.	0.00
8.0600	0.07120	3.06E+07	-477912.	-0.00484	0.00	1.37E+12	-5559.	145227.	0.00
8.2150	0.06225	2.97E+07	-488100.	-0.00479	0.00	1.37E+12	-5396.	161239.	0.00
8.3700	0.05337	2.88E+07	-497966.	-0.00475	0.00	1.38E+12	-5212.	181654.	0.00
8.5250	0.04456	2.79E+07	-507464.	-0.00472	0.00	1.38E+12	-5001.	208751.	0.00
8.6800	0.03582	2.69E+07	-516535.	-0.00469	0.00	6.15E+12	-4753.	246804.	0.00
8.8350	0.02710	2.60E+07	-525094.	-0.00469	0.00	1.07E+13	-4449.	305402.	0.00
8.9900	0.01838	2.50E+07	-532716.	-0.00468	0.00	1.07E+13	-3746.	378994.	0.00
9.1450	0.00968	2.40E+07	-538067.	-0.00468	0.00	1.07E+13	-2008.	385913.	0.00
9.3000	9.80E-04	2.30E+07	-540127.	-0.00467	0.00	1.07E+13	-206.8948	392832.	0.00
9.4550	-0.00771	2.20E+07	-538778.	-0.00467	0.00	1.07E+13	1657.	399751.	0.00
9.6100	-0.01640	2.10E+07	-533903.	-0.00467	0.00	1.07E+13	3585.	406670.	0.00
9.7650	-0.02507	2.00E+07	-526421.	-0.00466	0.00	1.07E+13	4461.	330908.	0.00
9.9200	-0.03374	1.90E+07	-517788.	-0.00466	0.00	1.07E+13	4822.	265797.	0.00
10.0750	-0.04241	1.81E+07	-508538.	-0.00466	0.00	1.07E+13	5124.	224741.	0.00
10.2300	-0.05107	1.71E+07	-498763.	-0.00465	0.00	1.07E+13	5387.	196215.	0.00
10.3850	-0.05972	1.62E+07	-488524.	-0.00465	0.00	1.07E+13	5622.	175199.	0.00
10.5400	-0.06837	1.53E+07	-477867.	-0.00465	0.00	1.07E+13	5837.	158787.	0.00



10.6950	-0.07701	1.44E+07	-466827.	-0.00465	0.00	1.08E+13	6034.	145744.	0.00
10.8500	-0.08565	1.36E+07	-455431.	-0.00464	0.00	1.08E+13	6219.	135053.	0.00
11.0050	-0.09428	1.27E+07	-443703.	-0.00464	0.00	1.08E+13	6393.	126113.	0.00
11.1600	-0.1029	1.19E+07	-431659.	-0.00464	0.00	1.08E+13	6557.	118513.	0.00
11.3150	-0.1115	1.11E+07	-419317.	-0.00464	0.00	1.08E+13	6714.	111964.	0.00
11.4700	-0.1202	1.04E+07	-406688.	-0.00463	0.00	1.08E+13	6864.	106254.	0.00
11.6250	-0.1288	9629740.	-393786.	-0.00463	0.00	1.08E+13	7009.	101227.	0.00
11.7800	-0.1374	8909943.	-380621.	-0.00463	0.00	1.08E+13	7148.	96764.	0.00
11.9350	-0.1460	8214876.	-367200.	-0.00463	0.00	1.08E+13	7283.	92772.	0.00
12.0900	-0.1546	7545003.	-353533.	-0.00463	0.00	1.08E+13	7413.	89177.	0.00
12.2450	-0.1632	6900778.	-339626.	-0.00463	0.00	1.08E+13	7540.	85922.	0.00
12.4000	-0.1718	6282639.	-325486.	-0.00463	0.00	1.08E+13	7664.	82958.	0.00
12.5550	-0.1804	5691015.	-311118.	-0.00463	0.00	1.08E+13	7785.	80247.	0.00
12.7100	-0.1890	5126323.	-296528.	-0.00462	0.00	1.08E+13	7903.	77758.	0.00
12.8650	-0.1976	4588973.	-281721.	-0.00462	0.00	1.08E+13	8019.	75462.	0.00
13.0200	-0.2062	4079363.	-266702.	-0.00462	0.00	1.08E+13	8132.	73337.	0.00
13.1750	-0.2148	3597886.	-251473.	-0.00462	0.00	1.08E+13	8243.	71365.	0.00
13.3300	-0.2234	3144927.	-236039.	-0.00462	0.00	1.08E+13	8352.	69530.	0.00
13.4850	-0.2320	2720864.	-220403.	-0.00462	0.00	1.08E+13	8460.	67816.	0.00
13.6400	-0.2406	2326069.	-204570.	-0.00462	0.00	1.08E+13	8566.	66212.	0.00
13.7950	-0.2492	1960908.	-188540.	-0.00462	0.00	1.08E+13	8670.	64707.	0.00
13.9500	-0.2578	1625742.	-172318.	-0.00462	0.00	1.08E+13	8773.	63292.	0.00
14.1050	-0.2664	1320927.	-155906.	-0.00462	0.00	1.08E+13	8874.	61959.	0.00
14.2600	-0.2750	1046813.	-139306.	-0.00462	0.00	1.08E+13	8975.	60702.	0.00
14.4150	-0.2836	803749.	-122521.	-0.00462	0.00	1.08E+13	9074.	59512.	0.00
14.5700	-0.2922	592076.	-105553.	-0.00462	0.00	1.08E+13	9172.	58386.	0.00
14.7250	-0.3008	412134.	-88403.	-0.00462	0.00	1.08E+13	9269.	57317.	0.00
14.8800	-0.3094	264258.	-71075.	-0.00462	0.00	1.08E+13	9365.	56302.	0.00
15.0350	-0.3180	148779.	-53568.	-0.00462	0.00	1.08E+13	9460.	55336.	0.00
15.1900	-0.3266	66027.	-35886.	-0.00462	0.00	1.08E+13	9554.	54417.	0.00
15.3450	-0.3351	16326.	-18029.	-0.00462	0.00	1.08E+13	9647.	53539.	0.00
15.5000	-0.3437	0.00	0.00	-0.00462	0.00	1.08E+13	9739.	26351.	0.00

\* This analysis computed pile response using nonlinear moment-curvature relationships. Values of total stress due to combined axial and bending stresses are computed only for elastic sections only and do not equal the actual stresses in concrete and steel. Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 1:

Pile-head deflection = 0.68279455 inches  
 Computed slope at pile head = -0.00803079 radians  
 Maximum bending moment = 47803605. inch-lbs  
 Maximum shear force = -540127. lbs  
 Depth of maximum bending moment = 2.32500000 feet below pile head  
 Depth of maximum shear force = 9.30000000 feet below pile head  
 Number of iterations = 48  
 Number of zero deflection points = 1

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 Computed Values of Pile Loading and Deflection  
 for Lateral Loading for Load Case Number 2  
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Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 20725.0 lbs  
 Applied moment at pile head = 21918975.0 in-lbs  
 Axial thrust load on pile head = 37908.0 lbs

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb <sup>2</sup>	Soil Res. p lb/inch	Soil Spr. Es <sup>h</sup> lb/inch	Distrib. Lat. Load lb/inch
0.00	0.07083	2.19E+07	20725.	-7.11E-04	0.00	1.07E+13	0.00	0.00	0.00
0.1550	0.06951	2.20E+07	20725.	-7.07E-04	0.00	1.07E+13	0.00	0.00	0.00
0.3100	0.06820	2.20E+07	20725.	-7.03E-04	0.00	1.07E+13	0.00	0.00	0.00
0.4650	0.06690	2.20E+07	20725.	-7.00E-04	0.00	1.07E+13	0.00	0.00	0.00
0.6200	0.06560	2.21E+07	20725.	-6.96E-04	0.00	1.07E+13	-6.56E-06	1.86E-04	0.00
0.7750	0.06431	2.21E+07	20725.	-6.92E-04	0.00	1.07E+13	-6.52E-06	1.89E-04	0.00
0.9300	0.06302	2.22E+07	20725.	-6.88E-04	0.00	1.07E+13	-6.48E-06	1.91E-04	0.00
1.0850	0.06175	2.22E+07	20725.	-6.84E-04	0.00	1.07E+13	-6.43E-06	1.94E-04	0.00
1.2400	0.06048	2.22E+07	20725.	-6.80E-04	0.00	1.07E+13	-6.39E-06	1.96E-04	0.00
1.3950	0.05922	2.23E+07	20725.	-6.77E-04	0.00	1.07E+13	-6.34E-06	1.99E-04	0.00
1.5500	0.05796	2.23E+07	18636.	-6.73E-04	0.00	1.07E+13	-2246.	72075.	0.00
1.7050	0.05671	2.23E+07	14460.	-6.69E-04	0.00	1.07E+13	-2245.	73615.	0.00
1.8600	0.05547	2.24E+07	10286.	-6.65E-04	0.00	1.07E+13	-2243.	75212.	0.00
2.0150	0.05424	2.24E+07	6115.	-6.61E-04	0.00	1.07E+13	-2242.	76868.	0.00
2.1700	0.05302	2.24E+07	1948.	-6.57E-04	0.00	1.07E+13	-2240.	78585.	0.00

2.3250	0.05180	2.24E+07	-2245.	-6.53E-04	0.00	1.07E+13	-2269.	81468.	0.00
2.4800	0.05059	2.24E+07	-6591.	-6.49E-04	0.00	1.07E+13	-2404.	88387.	0.00
2.6350	0.04938	2.24E+07	-11180.	-6.45E-04	0.00	1.07E+13	-2530.	95306.	0.00
2.7900	0.04818	2.23E+07	-15996.	-6.42E-04	0.00	1.07E+13	-2648.	102226.	0.00
2.9450	0.04699	2.23E+07	-21023.	-6.38E-04	0.00	1.07E+13	-2758.	109145.	0.00
3.1000	0.04581	2.23E+07	-26246.	-6.34E-04	0.00	1.07E+13	-2859.	116064.	0.00
3.2550	0.04464	2.22E+07	-31650.	-6.30E-04	0.00	1.07E+13	-2951.	122983.	0.00
3.4100	0.04347	2.21E+07	-37218.	-6.26E-04	0.00	1.07E+13	-3036.	129902.	0.00
3.5650	0.04231	2.21E+07	-42935.	-6.22E-04	0.00	1.07E+13	-3112.	136822.	0.00
3.7200	0.04115	2.20E+07	-48787.	-6.18E-04	0.00	1.07E+13	-3180.	143741.	0.00
3.8750	0.04001	2.19E+07	-54759.	-6.15E-04	0.00	1.07E+13	-3241.	150660.	0.00
4.0300	0.03887	2.18E+07	-60835.	-6.11E-04	0.00	1.07E+13	-3293.	157579.	0.00
4.1850	0.03774	2.17E+07	-67001.	-6.07E-04	0.00	1.07E+13	-3337.	164498.	0.00
4.3400	0.03661	2.15E+07	-73243.	-6.03E-04	0.00	1.07E+13	-3374.	171418.	0.00
4.4950	0.03549	2.14E+07	-79545.	-6.00E-04	0.00	1.07E+13	-3403.	178337.	0.00
4.6500	0.03438	2.12E+07	-85894.	-5.96E-04	0.00	1.07E+13	-3424.	185256.	0.00
4.8050	0.03327	2.11E+07	-92276.	-5.92E-04	0.00	1.07E+13	-3438.	192175.	0.00
4.9600	0.03218	2.09E+07	-98676.	-5.89E-04	0.00	1.07E+13	-3444.	199094.	0.00
5.1150	0.03108	2.07E+07	-105081.	-5.85E-04	0.00	1.07E+13	-3443.	206014.	0.00
5.2700	0.03000	2.05E+07	-111477.	-5.81E-04	0.00	1.07E+13	-3434.	212933.	0.00
5.4250	0.02892	2.03E+07	-117850.	-5.78E-04	0.00	1.07E+13	-3419.	219852.	0.00
5.5800	0.02785	2.01E+07	-124188.	-5.74E-04	0.00	1.07E+13	-3396.	226771.	0.00
5.7350	0.02679	1.98E+07	-130475.	-5.71E-04	0.00	1.07E+13	-3365.	233690.	0.00
5.8900	0.02573	1.96E+07	-136700.	-5.67E-04	0.00	1.07E+13	-3328.	240610.	0.00
6.0450	0.02467	1.93E+07	-142849.	-5.64E-04	0.00	1.07E+13	-3284.	247529.	0.00
6.2000	0.02363	1.90E+07	-148909.	-5.61E-04	0.00	1.07E+13	-3232.	254448.	0.00
6.3550	0.02259	1.88E+07	-154867.	-5.57E-04	0.00	1.07E+13	-3174.	261367.	0.00
6.5100	0.02156	1.85E+07	-160711.	-5.54E-04	0.00	1.07E+13	-3109.	268286.	0.00
6.6650	0.02053	1.82E+07	-166427.	-5.51E-04	0.00	1.07E+13	-3037.	275206.	0.00
6.8200	0.01951	1.78E+07	-172003.	-5.48E-04	0.00	1.07E+13	-2959.	282125.	0.00
6.9750	0.01849	1.75E+07	-177426.	-5.45E-04	0.00	1.07E+13	-2873.	289044.	0.00
7.1300	0.01748	1.72E+07	-182685.	-5.42E-04	0.00	1.07E+13	-2781.	295963.	0.00
7.2850	0.01647	1.68E+07	-187766.	-5.39E-04	0.00	1.07E+13	-2682.	302882.	0.00
7.4400	0.01547	1.65E+07	-192657.	-5.36E-04	0.00	1.07E+13	-2577.	309802.	0.00
7.5950	0.01448	1.61E+07	-197347.	-5.33E-04	0.00	1.07E+13	-2465.	316721.	0.00
7.7500	0.01349	1.58E+07	-201823.	-5.30E-04	0.00	1.07E+13	-2347.	323640.	0.00
7.9050	0.01251	1.54E+07	-206073.	-5.28E-04	0.00	1.07E+13	-2223.	330559.	0.00
8.0600	0.01153	1.50E+07	-210085.	-5.25E-04	0.00	1.08E+13	-2091.	337478.	0.00
8.2150	0.01055	1.46E+07	-213847.	-5.23E-04	0.00	1.08E+13	-1954.	344398.	0.00
8.3700	0.00958	1.42E+07	-217347.	-5.20E-04	0.00	1.08E+13	-1810.	351317.	0.00
8.5250	0.00862	1.38E+07	-220574.	-5.18E-04	0.00	1.08E+13	-1660.	358236.	0.00
8.6800	0.00766	1.34E+07	-223515.	-5.15E-04	0.00	1.08E+13	-1503.	365155.	0.00

8.8350	0.00670	1.30E+07	-226160.	-5.13E-04	0.00	1.08E+13	-1340.	372074.	0.00
8.9900	0.00575	1.25E+07	-228496.	-5.11E-04	0.00	1.08E+13	-1171.	378994.	0.00
9.1450	0.00480	1.21E+07	-230511.	-5.09E-04	0.00	1.08E+13	-995.9093	385913.	0.00
9.3000	0.00386	1.17E+07	-232195.	-5.07E-04	0.00	1.08E+13	-814.3310	392832.	0.00
9.4550	0.00292	1.12E+07	-233535.	-5.05E-04	0.00	1.08E+13	-626.5323	399751.	0.00
9.6100	0.00198	1.08E+07	-234520.	-5.03E-04	0.00	1.08E+13	-432.5246	406670.	0.00
9.7650	0.00104	1.04E+07	-235138.	-5.01E-04	0.00	1.08E+13	-232.3166	413590.	0.00
9.9200	1.15E-04	9927111.	-235378.	-4.99E-04	0.00	1.08E+13	-25.9152	420509.	0.00
10.0750	-8.12E-04	9489299.	-235229.	-4.98E-04	0.00	1.08E+13	186.6750	427428.	0.00
10.2300	-0.00174	9052131.	-234678.	-4.96E-04	0.00	1.08E+13	405.4516	434347.	0.00
10.3850	-0.00266	8616367.	-233714.	-4.94E-04	0.00	1.08E+13	630.4139	441266.	0.00
10.5400	-0.00358	8182783.	-232327.	-4.93E-04	0.00	1.08E+13	861.5633	448186.	0.00
10.6950	-0.00449	7752180.	-230504.	-4.92E-04	0.00	1.08E+13	1099.	455105.	0.00
10.8500	-0.00540	7325379.	-228233.	-4.90E-04	0.00	1.08E+13	1342.	462024.	0.00
11.0050	-0.00632	6903222.	-225504.	-4.89E-04	0.00	1.08E+13	1592.	468943.	0.00
11.1600	-0.00722	6486573.	-222305.	-4.88E-04	0.00	1.08E+13	1848.	475862.	0.00
11.3150	-0.00813	6076317.	-218623.	-4.87E-04	0.00	1.08E+13	2110.	482782.	0.00
11.4700	-0.00903	5673363.	-214448.	-4.86E-04	0.00	1.08E+13	2379.	489701.	0.00
11.6250	-0.00994	5278637.	-209769.	-4.85E-04	0.00	1.08E+13	2653.	496620.	0.00
11.7800	-0.01084	4893092.	-204572.	-4.84E-04	0.00	1.08E+13	2934.	503539.	0.00
11.9350	-0.01174	4517697.	-198847.	-4.83E-04	0.00	1.08E+13	3221.	510458.	0.00
12.0900	-0.01264	4153447.	-192583.	-4.82E-04	0.00	1.08E+13	3515.	517378.	0.00
12.2450	-0.01353	3801358.	-185766.	-4.82E-04	0.00	1.08E+13	3815.	524297.	0.00
12.4000	-0.01443	3462466.	-178386.	-4.81E-04	0.00	1.08E+13	4121.	531216.	0.00
12.5550	-0.01532	3137830.	-170644.	-4.81E-04	0.00	1.08E+13	4204.	510271.	0.00
12.7100	-0.01622	2827737.	-162756.	-4.80E-04	0.00	1.08E+13	4278.	490704.	0.00
12.8650	-0.01711	2532445.	-154731.	-4.80E-04	0.00	1.08E+13	4351.	472979.	0.00
13.0200	-0.01800	2252205.	-146573.	-4.79E-04	0.00	1.08E+13	4421.	456836.	0.00
13.1750	-0.01889	1987260.	-138286.	-4.79E-04	0.00	1.08E+13	4490.	442067.	0.00
13.3300	-0.01978	1737848.	-129872.	-4.79E-04	0.00	1.08E+13	4557.	428496.	0.00
13.4850	-0.02067	1504203.	-121334.	-4.78E-04	0.00	1.08E+13	4623.	415977.	0.00
13.6400	-0.02156	1286552.	-112675.	-4.78E-04	0.00	1.08E+13	4688.	404388.	0.00
13.7950	-0.02245	1085119.	-103897.	-4.78E-04	0.00	1.08E+13	4751.	393626.	0.00
13.9500	-0.02334	900122.	-95002.	-4.78E-04	0.00	1.08E+13	4813.	383602.	0.00
14.1050	-0.02423	731778.	-85993.	-4.78E-04	0.00	1.08E+13	4875.	374239.	0.00
14.2600	-0.02512	580297.	-76870.	-4.77E-04	0.00	1.08E+13	4935.	365472.	0.00
14.4150	-0.02600	445889.	-67636.	-4.77E-04	0.00	1.08E+13	4994.	357243.	0.00
14.5700	-0.02689	328759.	-58292.	-4.77E-04	0.00	1.08E+13	5053.	349503.	0.00
14.7250	-0.02778	229110.	-48840.	-4.77E-04	0.00	1.08E+13	5111.	342208.	0.00
14.8800	-0.02867	147143.	-39281.	-4.77E-04	0.00	1.08E+13	5168.	335319.	0.00
15.0350	-0.02955	83053.	-29616.	-4.77E-04	0.00	1.08E+13	5224.	328802.	0.00
15.1900	-0.03044	37038.	-19847.	-4.77E-04	0.00	1.08E+13	5280.	322627.	0.00



15.3450	-0.03133	9290.	-9975.	-4.77E-04	0.00	1.08E+13	5335.	316767.	0.00
15.5000	-0.03222	0.00	0.00	-4.77E-04	0.00	1.08E+13	5390.	155599.	0.00

\* This analysis computed pile response using nonlinear moment-curvature relationships. Values of total stress due to combined axial and bending stresses are computed only for elastic sections only and do not equal the actual stresses in concrete and steel. Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 2:

Pile-head deflection = 0.07083191 inches  
 Computed slope at pile head = -0.00071109 radians  
 Maximum bending moment = 22381675. inch-lbs  
 Maximum shear force = -235378. lbs  
 Depth of maximum bending moment = 2.17000000 feet below pile head  
 Depth of maximum shear force = 9.92000000 feet below pile head  
 Number of iterations = 12  
 Number of zero deflection points = 1

-----  
 Summary of Pile-head Responses for Conventional Analyses  
 -----

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs  
 Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians  
 Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.  
 Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs  
 Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	44213.	M, in-lb	4.68E+07	60653.	0.6828	-0.00803	-540127.	4.78E+07
2	V, lb	20725.	M, in-lb	2.19E+07	37908.	0.07083	-7.11E-04	-235378.	2.24E+07

Maximum pile-head deflection = 0.6827945493 inches  
 Maximum pile-head rotation = -0.0080307899 radians = -0.460130 deg.

-----  
 Summary of Warning Messages  
 -----

The following warning was reported 1032 times

\*\*\*\* Warning \*\*\*\*

An unreasonable input value for shear strength has been specified for a layer. defined using the stiff clay without free water criteria using k. The input value is greater than 8,000 psf. Please check your input data for correctness.

The analysis ended normally.

=====

LPIle for Windows(Beta), Version 2018-10.008

Analysis of Individual Piles and Drilled Shafts  
Subjected to Lateral Loading Using the p-y Method  
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Files Used for Analysis

-----

Path to file locations:

\2024 Projects\24-20937 CK Rough River Dam KY0099\STR\Additional Calculations\PrFDD\SSPS DS\LPILE\

Name of input data file:

KY0099\_Service.lp10

Name of output report file:

KY0099\_Service.lp10

Name of plot output file:

KY0099\_Service.lp10

Name of runtime message file:

KY0099\_Service.lp10

-----

Date and Time of Analysis

-----

Date: February 22, 2024                      Time: 14:51:47

-----

Problem Title

-----

24-20937-22 CK Rough River Dam KY0099

Yamini

Service Deflection Calculations

-----

Program Options and Settings

-----

Computational Options:

- Use unfactored loads in computations (conventional analysis)

Engineering Units Used for Data Input and Computations:

- US Customary System Units (pounds, feet, inches)

Analysis Control Options:

- Maximum number of iterations allowed = 500  
- Deflection tolerance for convergence = 1.0000E-05 in  
- Maximum allowable deflection = 100.0000 in  
- Number of pile increments = 100

Loading Type and Number of Cycles of Loading:

- Cyclic loading specified  
- Number of cycles of loading = 100 cycles  
- Use of p-y modification factors for p-y curves not selected  
- Analysis uses layering correction (Method of Georgiadis)  
- No distributed lateral loads are entered  
- Loading by lateral soil movements acting on pile not selected  
- Input of shear resistance at the pile tip not selected  
- Input of moment resistance at the pile tip not selected  
- Computation of pile-head foundation stiffness matrix not selected  
- Push-over analysis of pile not selected  
- Buckling analysis of pile not selected

Output Options:

- Output files use decimal points to denote decimal symbols.  
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.  
- Printing Increment (nodal spacing of output points) = 1  
- No p-y curves to be computed and reported for user-specified depths  
- Print using wide report formats

-----  
Pile Structural Properties and Geometry  
-----

Number of pile sections defined = 1  
Total length of pile = 30.000 ft  
Depth of ground surface below top of pile = 0.5000 ft

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	96.0000
2	30.000	96.0000

Input Structural Properties for Pile Sections:  
-----

Pile Section No. 1:

Section 1 is a round drilled shaft, bored pile, or CIDH pile  
Length of section = 30.000000 ft  
Shaft Diameter = 96.000000 in  
Shear capacity of section = 0.0000 lbs

-----  
Ground Slope and Pile Batter Angles  
-----

Ground Slope Angle = 0.000 degrees  
= 0.000 radians  
Pile Batter Angle = 0.000 degrees  
= 0.000 radians

-----  
Soil and Rock Layering Information  
-----

The soil profile is modelled using 4 layers

Layer 1 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = 0.500000 ft

Distance from top of pile to bottom of layer = 1.50000 ft  
 Effective unit weight at top of layer = 38.00000 pcf  
 Effective unit weight at bottom of layer = 38.00000 pcf  
 Undrained cohesion at top of layer = 0.0000100 psf  
 Undrained cohesion at bottom of layer = 0.0000100 psf  
 Epsilon-50 at top of layer = 0.0000  
 Epsilon-50 at bottom of layer = 0.0000

NOTE: Default values for Epsilon-50 will be computed for this layer.

Layer 2 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = 1.50000 ft  
 Distance from top of pile to bottom of layer = 2.20000 ft  
 Effective unit weight at top of layer = 88.00000 pcf  
 Effective unit weight at bottom of layer = 88.00000 pcf  
 Undrained cohesion at top of layer = 0.0000100 psf  
 Undrained cohesion at bottom of layer = 0.0000100 psf  
 Epsilon-50 at top of layer = 0.0000  
 Epsilon-50 at bottom of layer = 0.0000

NOTE: Default values for Epsilon-50 will be computed for this layer.

Layer 3 is stiff clay with water-induced erosion

Distance from top of pile to top of layer = 2.20000 ft  
 Distance from top of pile to bottom of layer = 6.50000 ft  
 Effective unit weight at top of layer = 88.00000 pcf  
 Effective unit weight at bottom of layer = 88.00000 pcf  
 Undrained cohesion at top of layer = 10000. psf  
 Undrained cohesion at bottom of layer = 10000. psf  
 Epsilon-50 at top of layer = 0.0000  
 Epsilon-50 at bottom of layer = 0.0000  
 Subgrade k at top of layer = 0.0000 pci  
 Subgrade k at bottom of layer = 0.0000 pci

NOTE: Default values for Epsilon-50 will be computed for this layer.

NOTE: Default values for subgrade k will be computed for this layer.

Layer 4 is stiff clay with water-induced erosion

Distance from top of pile to top of layer = 6.50000 ft  
 Distance from top of pile to bottom of layer = 30.50000 ft  
 Effective unit weight at top of layer = 88.00000 pcf  
 Effective unit weight at bottom of layer = 88.00000 pcf  
 Undrained cohesion at top of layer = 10000. psf  
 Undrained cohesion at bottom of layer = 10000. psf  
 Epsilon-50 at top of layer = 0.0000  
 Epsilon-50 at bottom of layer = 0.0000  
 Subgrade k at top of layer = 0.0000 pci  
 Subgrade k at bottom of layer = 0.0000 pci

NOTE: Default values for Epsilon-50 will be computed for this layer.

NOTE: Default values for subgrade k will be computed for this layer.

(Depth of the lowest soil layer extends 0.500 ft below the pile tip)

-----  
 Summary of Input Soil Properties  
 -----

Layer Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	E50 or krm	kpy pci
1	Soft Clay	0.5000 1.5000	38.0000 38.0000	1.00E-05 1.00E-05	default default	-- --
2	Soft Clay	1.5000 2.2000	88.0000 88.0000	1.00E-05 1.00E-05	default default	-- --
3	Stiff Clay with Free Water	2.2000 6.5000	88.0000 88.0000	10000. 10000.	default default	default default
4	Stiff Clay with Free Water	6.5000 30.5000	88.0000 88.0000	10000. 10000.	default default	default default

-----  
 Cyclic Loading Type  
 -----

Cyclic loading criteria were used for computation of p-y curves for all analyses.

Number of cycles of loading = 100

-----  
 Pile-head Loading and Pile-head Fixity Conditions  
 -----

Number of loads specified = 1

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length
1	1	V = 8413. lbs	M = 8897564. in-lbs	37908.	No

V = shear force applied normal to pile axis  
 M = bending moment applied to pile head  
 y = lateral deflection normal to pile axis  
 S = pile slope relative to original pile batter angle  
 R = rotational stiffness applied to pile head  
 Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).  
 Thrust force is assumed to be acting axially for all pile batter angles.

-----  
 Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness  
 -----

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:  
 -----

Dimensions and Properties of Drilled Shaft (Bored Pile):  
 -----

Length of Section	=	30.000000 ft
Shaft Diameter	=	96.000000 in
Concrete Cover Thickness (to edge of long. rebar)	=	3.500000 in
Number of Reinforcing Bars	=	40 bars
Yield Stress of Reinforcing Bars	=	60000. psi
Modulus of Elasticity of Reinforcing Bars	=	29000000. psi
Gross Area of Shaft	=	7238. sq. in.
Total Area of Reinforcing Steel	=	40.000000 sq. in.
Area Ratio of Steel Reinforcement	=	0.55 percent
Edge-to-Edge Bar Spacing	=	5.766358 in
Maximum Concrete Aggregate Size	=	0.750000 in
Ratio of Bar Spacing to Aggregate Size	=	7.69
Offset of Center of Rebar Cage from Center of Pile	=	0.0000 in

Axial Structural Capacities:  
 -----

Nom. Axial Structural Capacity = $0.85 F_c A_c + F_y A_s$	=	26873.980 kips
Tensile Load for Cracking of Concrete	=	-3127.642 kips
Nominal Axial Tensile Capacity	=	-2400.000 kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches
1	1.128000	1.000000	43.936000	0.000000
2	1.128000	1.000000	43.395075	6.873105
3	1.128000	1.000000	41.785619	13.576971
4	1.128000	1.000000	39.147263	19.946527
5	1.128000	1.000000	35.544971	25.824933
6	1.128000	1.000000	31.067444	31.067444
7	1.128000	1.000000	25.824933	35.544971
8	1.128000	1.000000	19.946527	39.147263
9	1.128000	1.000000	13.576971	41.785619
10	1.128000	1.000000	6.873105	43.395075
11	1.128000	1.000000	0.000000	43.936000
12	1.128000	1.000000	-6.873105	43.395075
13	1.128000	1.000000	-13.576971	41.785619
14	1.128000	1.000000	-19.946527	39.147263
15	1.128000	1.000000	-25.824933	35.544971



16	1.128000	1.000000	-31.067444	31.067444
17	1.128000	1.000000	-35.544971	25.824933
18	1.128000	1.000000	-39.147263	19.946527
19	1.128000	1.000000	-41.785619	13.576971
20	1.128000	1.000000	-43.395075	6.873105
21	1.128000	1.000000	-43.936000	0.000000
22	1.128000	1.000000	-43.395075	-6.873105
23	1.128000	1.000000	-41.785619	-13.576971
24	1.128000	1.000000	-39.147263	-19.946527
25	1.128000	1.000000	-35.544971	-25.824933
26	1.128000	1.000000	-31.067444	-31.067444
27	1.128000	1.000000	-25.824933	-35.544971
28	1.128000	1.000000	-19.946527	-39.147263
29	1.128000	1.000000	-13.576971	-41.785619
30	1.128000	1.000000	-6.873105	-43.395075
31	1.128000	1.000000	0.000000	-43.936000
32	1.128000	1.000000	6.873105	-43.395075
33	1.128000	1.000000	13.576971	-41.785619
34	1.128000	1.000000	19.946527	-39.147263
35	1.128000	1.000000	25.824933	-35.544971
36	1.128000	1.000000	31.067444	-31.067444
37	1.128000	1.000000	35.544971	-25.824933
38	1.128000	1.000000	39.147263	-19.946527
39	1.128000	1.000000	41.785619	-13.576971
40	1.128000	1.000000	43.395075	-6.873105

NOTE: The positions of the above rebars were computed by LPILE

Minimum spacing between any two bars not equal to zero = 5.766 inches  
between bars 24 and 25.

Ratio of bar spacing to maximum aggregate size = 7.69

Concrete Properties:

-----

Compressive Strength of Concrete = 4000. psi  
Modulus of Elasticity of Concrete = 3604997. psi  
Modulus of Rupture of Concrete = -474.341649 psi  
Compression Strain at Peak Stress = 0.001886

Tensile Strain at Fracture of Concrete = -0.0001154  
Maximum Coarse Aggregate Size = 0.750000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 1

Number	Axial Thrust Force kips
1	37.908

Definitions of Run Messages and Notes:

-----

C = concrete in section has cracked in tension.  
Y = stress in reinforcing steel has reached yield stress.  
T = ACI 318 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than 0.003. See ACI 318, Section 10.3.4.  
Z = depth of tensile zone in concrete section is less than 10 percent of section depth.

Bending Stiffness (EI) = Computed Bending Moment / Curvature.  
Position of neutral axis is measured from edge of compression side of pile.  
Compressive stresses and strains are positive in sign.  
Tensile stresses and strains are negative in sign.

Axial Thrust Force = 37.908 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in <sup>2</sup>	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max Conc Stress ksi	Max Steel Stress ksi	Run Msg
3.12500E-07	5810.	1.85925E+10	51.8405198	0.00001620	-0.00001380	0.0677819	0.4654547	
6.25000E-07	11591.	1.85456E+10	49.9265248	0.00003120	-0.00002880	0.1299958	0.8962183	
9.37500E-07	17342.	1.84985E+10	49.2885583	0.00004621	-0.00004379	0.1917138	1.3269827	
0.00000125	23064.	1.84513E+10	48.9695966	0.00006121	-0.00005879	0.2529357	1.7577479	
0.00000156	28756.	1.84041E+10	48.7782365	0.00007622	-0.00007378	0.3136617	2.1885138	
0.00000188	34419.	1.83569E+10	48.6506774	0.00009122	-0.00008878	0.3738917	2.6192806	
0.00000219	40052.	1.83097E+10	48.5595761	0.0001062	-0.0001038	0.4336257	3.0500481	

0.00000250	40052.	1.60210E+10	21.7703321	0.00005443	-0.0001856	0.2225550	-5.3468510	C
0.00000281	40052.	1.42409E+10	21.5090095	0.00006049	-0.0002095	0.2469077	-6.0365214	C
0.00000313	40052.	1.28168E+10	21.2937406	0.00006654	-0.0002335	0.2711022	-6.7267548	C
0.00000344	40052.	1.16516E+10	21.1185717	0.00007260	-0.0002574	0.2952319	-7.4168924	C
0.00000375	40052.	1.06806E+10	20.9734805	0.00007865	-0.0002813	0.3192968	-8.1069340	C
0.00000406	40052.	9859057126.	20.8515281	0.00008471	-0.0003053	0.3432967	-8.7968793	C
0.00000438	40052.	9154838760.	20.7477584	0.00009077	-0.0003292	0.3672315	-9.4867281	C
0.00000469	40052.	8544516176.	20.6585368	0.00009684	-0.0003532	0.3911013	-10.1764801	C
0.00000500	40052.	8010483915.	20.5778172	0.0001029	-0.0003771	0.4148391	-10.8666165	C
0.00000531	40052.	7539278979.	20.5063311	0.0001089	-0.0004011	0.4384930	-11.5567933	C
0.00000563	40052.	7120430146.	20.4434119	0.0001150	-0.0004250	0.4620826	-12.2468684	C
0.00000594	40052.	6745670665.	20.3877086	0.0001211	-0.0004489	0.4856078	-12.9368414	C
0.00000625	40052.	6408387132.	20.3381407	0.0001271	-0.0004729	0.5090686	-13.6267120	C
0.00000656	40052.	6103225840.	20.2938332	0.0001332	-0.0004968	0.5324647	-14.3164799	C
0.00000688	40052.	5825806483.	20.2540704	0.0001392	-0.0005208	0.5557962	-15.0061447	C
0.00000719	40052.	5572510549.	20.2182610	0.0001453	-0.0005447	0.5790629	-15.6957062	C
0.00000750	40052.	5340322610.	20.1859122	0.0001514	-0.0005686	0.6022647	-16.3851641	C
0.00000781	40052.	5126709705.	20.1566103	0.0001575	-0.0005925	0.6254016	-17.0745180	C
0.00000813	40052.	4929528563.	20.1300050	0.0001636	-0.0006164	0.6484733	-17.7637676	C
0.00000844	40052.	4746953431.	20.1057979	0.0001696	-0.0006404	0.6714799	-18.4529125	C
0.00000875	40052.	4577419380.	20.0837335	0.0001757	-0.0006643	0.6944211	-19.1419528	C
0.00000906	40052.	4419577332.	20.0635912	0.0001818	-0.0006882	0.7172970	-19.8308876	C
0.00000938	40052.	4272258088.	20.0451801	0.0001879	-0.0007121	0.7401074	-20.5197168	C
0.00000969	40052.	4134443311.	20.0283338	0.0001940	-0.0007360	0.7628522	-21.2084401	C
0.00001000	40052.	4005241957.	20.0129068	0.0002001	-0.0007599	0.7855313	-21.8970572	C
0.00001031	40052.	3883870989.	19.9987711	0.0002062	-0.0007838	0.8081446	-22.5855676	C
0.00001063	40052.	3769639489.	19.9858138	0.0002123	-0.0008077	0.8306920	-23.2739712	C
0.00001094	40052.	3661935504.	19.9739351	0.0002185	-0.0008315	0.8531734	-23.9622675	C
0.00001125	40052.	3560215073.	19.9630461	0.0002246	-0.0008554	0.8755887	-24.6504563	C
0.00001156	40052.	3463993044.	19.9530675	0.0002307	-0.0008793	0.8979378	-25.3385371	C
0.00001188	40052.	3372835333.	19.9439284	0.0002368	-0.0009032	0.9202205	-26.0265097	C
0.00001219	40052.	3286352375.	19.9355654	0.0002430	-0.0009270	0.9424368	-26.7143736	C
0.00001281	40052.	3126042503.	19.9209437	0.0002552	-0.0009748	0.9866696	-28.0897745	C
0.00001344	40052.	2980645178.	19.9088077	0.0002675	-0.0010225	1.0306355	-29.4647366	C
0.00001406	40052.	2848172059.	19.8988328	0.0002798	-0.0010702	1.0743335	-30.8392573	C
0.00001469	40052.	2726973248.	19.8907500	0.0002921	-0.0011179	1.1177627	-32.2133337	C
0.00001531	40052.	2615668217.	19.8843339	0.0003045	-0.0011655	1.1609222	-33.5869630	C
0.00001594	40052.	2513092993.	19.8793949	0.0003168	-0.0012132	1.2038112	-34.9601422	C
0.00001656	41385.	2498732813.	19.8757719	0.0003292	-0.0012608	1.2464287	-36.3328683	C
0.00001719	42891.	2495458951.	19.8733273	0.0003416	-0.0013084	1.2887739	-37.7051384	C
0.00001781	44395.	2492350200.	19.8719429	0.0003540	-0.0013560	1.3308458	-39.0769494	C
0.00001844	45898.	2489389411.	19.8715168	0.0003664	-0.0014036	1.3726435	-40.4482983	C

0.00001906	47400.	2486561678.	19.8719601	0.0003788	-0.0014512	1.4141660	-41.8191820	C
0.00001969	48901.	2483853988.	19.8731957	0.0003913	-0.0014987	1.4554124	-43.1895973	C
0.00002031	50400.	2481254922.	19.8751558	0.0004037	-0.0015463	1.4963818	-44.5595410	C
0.00002094	51899.	2478754423.	19.8777809	0.0004162	-0.0015938	1.5370732	-45.9290899	C
0.00002156	53396.	2476343596.	19.8810182	0.0004287	-0.0016413	1.5774856	-47.2980008	C
0.00002219	54892.	2474014544.	19.8848213	0.0004412	-0.0016888	1.6176180	-48.6665103	C
0.00002281	56387.	2471760232.	19.8891486	0.0004537	-0.0017363	1.6574695	-50.0345351	C
0.00002344	57881.	2469574373.	19.8939633	0.0004663	-0.0017837	1.6970390	-51.4020719	C
0.00002406	59373.	2467451327.	19.8992321	0.0004788	-0.0018312	1.7363255	-52.7691171	C
0.00002469	60864.	2465386025.	19.9049256	0.0004914	-0.0018786	1.7753280	-54.1356674	C
0.00002531	62354.	2463373892.	19.9110171	0.0005040	-0.0019260	1.8140455	-55.5017191	C
0.00002594	63843.	2461410793.	19.9174824	0.0005166	-0.0019734	1.8524769	-56.8672688	C
0.00002656	65330.	2459492977.	19.9242999	0.0005292	-0.0020208	1.8906212	-58.2323129	C
0.00002719	66816.	2457617036.	19.9314500	0.0005419	-0.0020681	1.9284773	-59.5968476	C
0.00002781	68301.	2455779864.	19.9389148	0.0005546	-0.0021154	1.9660441	-60.9600000	CY
0.00002844	69785.	2453978625.	19.9466781	0.0005672	-0.0021628	2.0033206	-60.0000000	CY
0.00002906	71173.	2448959412.	19.9460367	0.0005797	-0.0022103	2.0395559	-60.0000000	CY
0.00002969	72365.	2437560230.	19.9282914	0.0005916	-0.0022584	2.0739630	-60.0000000	CY
0.00003031	73384.	2420907538.	19.8960387	0.0006031	-0.0023069	2.1067178	-60.0000000	CY
0.00003094	74350.	2403236921.	19.8607580	0.0006144	-0.0023556	2.1388041	-60.0000000	CY
0.00003156	75192.	2382320685.	19.8159380	0.0006254	-0.0024046	2.1696260	-60.0000000	CY
0.00003219	76033.	2362195687.	19.7732184	0.0006365	-0.0024535	2.2002235	-60.0000000	CY
0.00003281	76777.	2339861712.	19.7234985	0.0006472	-0.0025028	2.2297644	-60.0000000	CY
0.00003344	77457.	2316470795.	19.6695440	0.0006577	-0.0025523	2.2584908	-60.0000000	CY
0.00003406	78135.	2293882849.	19.6150005	0.0006681	-0.0026019	2.2867393	-60.0000000	CY
0.00003469	78813.	2272093445.	19.5627254	0.0006786	-0.0026514	2.3147857	-60.0000000	CY
0.00003531	79365.	2247507863.	19.5001406	0.0006886	-0.0027014	2.3414282	-60.0000000	CY
0.00003594	79899.	2223285576.	19.4382839	0.0006986	-0.0027514	2.3677173	-60.0000000	CY
0.00003656	80433.	2199879524.	19.3787939	0.0007085	-0.0028015	2.3938212	-60.0000000	CY
0.00003719	80966.	2177248502.	19.3215523	0.0007185	-0.0028515	2.4197393	-60.0000000	CY
0.00003781	82748.	2084991495.	19.0790902	0.0007284	-0.0029015	2.4454756	-60.0000000	CY
0.00003844	84355.	1999519255.	18.8527251	0.0007383	-0.0029515	2.4710219	-60.0000000	CY
0.00003906	85990.	1915293626.	18.6117419	0.0007482	-0.0030015	2.4964782	-60.0000000	CY
0.00003969	86792.	1839302772.	18.3876238	0.0007581	-0.0030515	2.5218445	-60.0000000	CY
0.00004031	87747.	1765978214.	18.1623336	0.0007680	-0.0031015	2.5471208	-60.0000000	CY
0.00004094	88614.	1698000346.	17.9520462	0.0007779	-0.0031515	2.5723071	-60.0000000	CY
0.00004156	89478.	1636172729.	17.7629746	0.0007878	-0.0032015	2.5974034	-60.0000000	CY
0.00004219	90168.	1576714565.	17.5593711	0.0007977	-0.0032515	2.6224997	-60.0000000	CY
0.00004281	90761.	1520610499.	17.3634384	0.0008076	-0.0033015	2.6476060	-60.0000000	CY
0.00004344	91352.	1468975290.	17.1848251	0.0008175	-0.0033515	2.6727123	-60.0000000	CY
0.00004406	91940.	1421290188.	17.0215403	0.0008274	-0.0034015	2.6978186	-60.0000000	CY
0.00004469	92468.	1376268883.	16.8649785	0.0008373	-0.0034515	2.7229249	-60.0000000	CY



0.00006969	92871.	1332676333.	16.6986362	0.0011637	-0.0055263	3.3574000	-60.0000000	CY
0.00007219	93256.	1291859886.	16.5381785	0.0011938	-0.0057362	3.4057001	-60.0000000	CY
0.00007469	93639.	1253749952.	16.3896512	0.0012241	-0.0059459	3.4522453	-60.0000000	CY
0.00007719	94021.	1218083168.	16.2519072	0.0012544	-0.0061556	3.4970276	-60.0000000	CY
0.00007969	94400.	1184629215.	16.1239438	0.0012849	-0.0063651	3.5400309	-60.0000000	CY
0.00008219	94750.	1152855490.	16.0011945	0.0013151	-0.0065749	3.5808227	-60.0000000	CY
0.00008469	95037.	1122211617.	15.8784539	0.0013447	-0.0067853	3.6189187	-60.0000000	CY
0.00008719	95278.	1092798848.	15.7503006	0.0013732	-0.0069968	3.6538470	-60.0000000	CY
0.00008969	95514.	1064961665.	15.6262676	0.0014015	-0.0072085	3.6867750	-60.0000000	CY
0.00009219	95748.	1038618641.	15.5098548	0.0014298	-0.0074202	3.7181502	-60.0000000	CY
0.00009469	95980.	1013651196.	15.4004676	0.0014582	-0.0076318	3.7479586	-60.0000000	CY
0.00009719	96211.	989952949.	15.2975730	0.0014867	-0.0078433	3.7761858	-60.0000000	CY
0.00009969	96440.	967428184.	15.2006914	0.0015153	-0.0080547	3.8028171	-60.0000000	CY
0.0001022	96668.	945990549.	15.1093907	0.0015440	-0.0082660	3.8278376	-60.0000000	CY
0.0001047	96882.	925440959.	15.0213032	0.0015725	-0.0084775	3.8510630	-60.0000000	CY
0.0001072	97079.	905692299.	14.9357765	0.0016009	-0.0086891	3.8724806	-60.0000000	CY
0.0001097	97235.	886477167.	14.8456457	0.0016284	-0.0089016	3.8915862	-60.0000000	CY
0.0001122	97369.	867909272.	14.7509994	0.0016549	-0.0091151	3.9085292	-60.0000000	CY
0.0001147	97501.	850141384.	14.6611620	0.0016815	-0.0093285	3.9240793	-60.0000000	CY
0.0001172	97632.	833122198.	14.5758329	0.0017081	-0.0095419	3.9382234	-60.0000000	CY
0.0001197	97761.	816804656.	14.4947367	0.0017348	-0.0097552	3.9509483	-60.0000000	CY
0.0001222	97890.	801145552.	14.4176206	0.0017617	-0.0099683	3.9622407	-60.0000000	CY
0.0001247	98017.	786105138.	14.3442526	0.0017885	-0.0101815	3.9720868	-60.0000000	CY
0.0001272	98144.	771646792.	14.2744189	0.0018155	-0.0103945	3.9804729	-60.0000000	CY
0.0001297	98269.	757736711.	14.2079224	0.0018426	-0.0106074	3.9873847	-60.0000000	CY
0.0001322	98393.	744343648.	14.1445814	0.0018697	-0.0108203	3.9928079	-60.0000000	CY
0.0001347	98516.	731438673.	14.0842277	0.0018970	-0.0110330	3.9967277	-60.0000000	CY
0.0001372	98637.	718994962.	14.0267056	0.0019243	-0.0112457	3.9991291	-60.0000000	CY
0.0001522	99188.	651751798.	13.6810840	0.0020821	-0.0125279	3.9993881	-60.0000000	CY
0.0001672	99543.	595399032.	13.3747421	0.0022361	-0.0138139	3.9970262	-60.0000000	CY
0.0001822	99871.	548176845.	13.1337898	0.0023928	-0.0150972	3.9874614	-60.0000000	CY
0.0001972	100175.	508020061.	12.9375536	0.0025511	-0.0163789	3.9992780	-60.0000000	CY
0.0002122	100432.	473317420.	12.7518851	0.0027058	-0.0176642	3.9893938	-60.0000000	CY
0.0002272	100604.	442823942.	12.5777068	0.0028575	-0.0189525	3.9998825	-60.0000000	CY
0.0002422	100721.	415879474.	12.4237456	0.0030089	-0.0202411	3.9760609	-60.0000000	CYT
0.0002572	100828.	392039214.	12.2908106	0.0031610	-0.0215290	3.9922220	-60.0000000	CYT
0.0002722	100902.	370708985.	12.1908076	0.0033182	-0.0228118	3.9999692	-60.0000000	CYT
0.0002872	100960.	351545832.	12.1120011	0.0034784	-0.0240916	3.9762366	-60.0000000	CYT
0.0003022	101013.	334272211.	12.0443823	0.0036397	-0.0253703	3.9803346	-60.0000000	CYT
0.0003172	101055.	318596765.	11.9864226	0.0038019	-0.0266481	3.9954558	-60.0000000	CYT

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Summary of Results for Nominal (Unfactored) Moment Capacity for Section 1  
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Moment values interpolated at maximum compressive strain = 0.003  
or maximum developed moment if pile fails at smaller strains.

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
1	37.908	100713.965	0.00300000

Note that the values of moment capacity in the table above are not factored by a strength reduction factor ( $\phi$ -factor).

In ACI 318, the value of the strength reduction factor depends on whether the transverse reinforcing steel bars are tied hoops (0.65) or spirals (0.70).

The above values should be multiplied by the appropriate strength reduction factor to compute ultimate moment capacity according to ACI 318, Section 9.3.2.2 or the value required by the design standard being followed.

The following table presents factored moment capacities and corresponding bending stiffnesses computed for common resistance factor values used for reinforced concrete sections.

Axial Load No.	Resist. Factor for Moment	Nominal Moment Cap in-kips	Ult. (Fac) Ax. Thrust kips	Ult. (Fac) Moment Cap in-kips	Bend. Stiff. at Ult Mom kip-in <sup>2</sup>
1	0.65	100714.	24.640200	65464.	2.4593E+09
1	0.70	100714.	26.535600	70500.	2.4514E+09
1	0.75	100714.	28.431000	75535.	2.3741E+09

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Layering Correction Equivalent Depths of Soil & Rock Layers  
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Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	0.5000	0.00	N.A.	No	0.00	5.18E-04
2	1.5000	9.60E-05	Yes	No	5.18E-04	1.7792
3	2.2000	0.2909	No	No	1.7797	90299.
4	6.5000	5.7212	Yes	No	90301.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

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 Computed Values of Pile Loading and Deflection  
 for Lateral Loading for Load Case Number 1  
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Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 8413.0 lbs  
 Applied moment at pile head = 8897564.0 in-lbs  
 Axial thrust load on pile head = 37908.0 lbs

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	0.01691	8897564.	8413.	-1.30E-04	0.00	1.86E+13	0.00	0.00	0.00
0.3000	0.01645	8927868.	8413.	-1.28E-04	0.00	1.86E+13	0.00	0.00	0.00
0.6000	0.01599	8958173.	8413.	-1.26E-04	0.00	1.86E+13	-4.48E-06	0.00101	0.00
0.9000	0.01554	8988477.	8413.	-1.25E-04	0.00	1.86E+13	-4.44E-06	0.00103	0.00
1.2000	0.01509	9018780.	8413.	-1.23E-04	0.00	1.86E+13	-4.40E-06	0.00105	0.00
1.5000	0.01465	9049084.	8413.	-1.21E-04	0.00	1.86E+13	-4.35E-06	0.00107	0.00
1.8000	0.01422	9079387.	8413.	-1.19E-04	0.00	1.86E+13	-4.31E-06	0.00109	0.00

2.1000	0.01379	9109690.	8413.	-1.18E-04	0.00	1.86E+13	-4.27E-06	0.00111	0.00
2.4000	0.01337	9139993.	7974.	-1.16E-04	0.00	1.86E+13	-243.9123	65664.	0.00
2.7000	0.01296	9167134.	7042.	-1.14E-04	0.00	1.86E+13	-273.6757	76032.	0.00
3.0000	0.01255	9190728.	6008.	-1.12E-04	0.00	1.86E+13	-301.2067	86400.	0.00
3.3000	0.01215	9210419.	4878.	-1.11E-04	0.00	1.86E+13	-326.5609	96768.	0.00
3.6000	0.01175	9225877.	3660.	-1.09E-04	0.00	1.86E+13	-349.7943	107136.	0.00
3.9000	0.01137	9236801.	2363.	-1.07E-04	0.00	1.86E+13	-370.9628	117504.	0.00
4.2000	0.01098	9242918.	992.7737	-1.05E-04	0.00	1.86E+13	-390.1223	127872.	0.00
4.5000	0.01061	9243978.	-442.6383	-1.03E-04	0.00	1.86E+13	-407.3288	138240.	0.00
4.8000	0.01024	9239759.	-1937.	-1.02E-04	0.00	1.86E+13	-422.6380	148608.	0.00
5.1000	0.00988	9230062.	-3482.	-9.99E-05	0.00	1.86E+13	-436.1055	158976.	0.00
5.4000	0.00952	9214713.	-5073.	-9.81E-05	0.00	1.86E+13	-447.7868	169344.	0.00
5.7000	0.00917	9193561.	-6703.	-9.63E-05	0.00	1.86E+13	-457.7372	179712.	0.00
6.0000	0.00883	9166476.	-8366.	-9.45E-05	0.00	1.86E+13	-466.0112	190080.	0.00
6.3000	0.00849	9133352.	-10056.	-9.27E-05	0.00	1.86E+13	-472.6635	200448.	0.00
6.6000	0.00816	9094101.	-11766.	-9.10E-05	0.00	1.86E+13	-477.7480	210816.	0.00
6.9000	0.00783	9048659.	-13493.	-8.92E-05	0.00	1.86E+13	-481.3179	221184.	0.00
7.2000	0.00752	8996978.	-15229.	-8.75E-05	0.00	1.86E+13	-483.4263	231552.	0.00
7.5000	0.00720	8939032.	-16970.	-8.57E-05	0.00	1.86E+13	-483.4054	241560.	0.00
7.8000	0.00690	8874821.	-18687.	-8.40E-05	0.00	1.86E+13	-470.7154	245634.	0.00
8.1000	0.00660	8804509.	-20358.	-8.23E-05	0.00	1.86E+13	-457.6634	249653.	0.00
8.4000	0.00631	8728266.	-21982.	-8.06E-05	0.00	1.86E+13	-444.2823	253619.	0.00
8.7000	0.00602	8646264.	-23556.	-7.89E-05	0.00	1.86E+13	-430.6035	257532.	0.00
9.0000	0.00574	8558682.	-25081.	-7.72E-05	0.00	1.86E+13	-416.6572	261393.	0.00
9.3000	0.00546	8465699.	-26556.	-7.56E-05	0.00	1.86E+13	-402.4721	265204.	0.00
9.6000	0.00519	8367500.	-27979.	-7.39E-05	0.00	1.86E+13	-388.0759	268967.	0.00
9.9000	0.00493	8264272.	-29350.	-7.23E-05	0.00	1.86E+13	-373.4947	272681.	0.00
10.2000	0.00467	8156203.	-30668.	-7.07E-05	0.00	1.86E+13	-358.7532	276350.	0.00
10.5000	0.00442	8043484.	-31932.	-6.92E-05	0.00	1.86E+13	-343.8751	279974.	0.00
10.8000	0.00418	7926308.	-33143.	-6.76E-05	0.00	1.86E+13	-328.8823	283555.	0.00
11.1000	0.00393	7804870.	-34300.	-6.61E-05	0.00	1.86E+13	-313.7959	287095.	0.00
11.4000	0.00370	7679365.	-35403.	-6.46E-05	0.00	1.86E+13	-298.6353	290595.	0.00
11.7000	0.00347	7549989.	-36450.	-6.31E-05	0.00	1.86E+13	-283.4187	294057.	0.00
12.0000	0.00325	7416940.	-37443.	-6.17E-05	0.00	1.86E+13	-268.1631	297483.	0.00
12.3000	0.00303	7280415.	-38381.	-6.02E-05	0.00	1.86E+13	-252.7843	300757.	0.00
12.6000	0.00281	7140615.	-39263.	-5.88E-05	0.00	1.86E+13	-237.2356	303775.	0.00
12.9000	0.00260	6997739.	-40089.	-5.75E-05	0.00	1.86E+13	-221.7742	306823.	0.00
13.2000	0.00240	6851989.	-40860.	-5.61E-05	0.00	1.86E+13	-206.3991	309902.	0.00
13.5000	0.00220	6703564.	-41575.	-5.48E-05	0.00	1.86E+13	-191.1088	313013.	0.00
13.8000	0.00200	6552662.	-42236.	-5.35E-05	0.00	1.86E+13	-175.9017	316154.	0.00
14.1000	0.00181	6399480.	-42842.	-5.23E-05	0.00	1.86E+13	-160.7755	319328.	0.00
14.4000	0.00163	6244214.	-43394.	-5.11E-05	0.00	1.86E+13	-145.7280	322534.	0.00



14.7000	0.00144	6087059.	-43891.	-4.99E-05	0.00	1.86E+13	-130.7562	325773.	0.00
15.0000	0.00127	5928210.	-44335.	-4.87E-05	0.00	1.86E+13	-115.8571	329044.	0.00
15.3000	0.00109	5767859.	-44726.	-4.76E-05	0.00	1.86E+13	-101.0272	332348.	0.00
15.6000	9.25E-04	5606199.	-45063.	-4.65E-05	0.00	1.86E+13	-86.2628	335686.	0.00
15.9000	7.60E-04	5443420.	-45347.	-4.54E-05	0.00	1.86E+13	-71.5596	339058.	0.00
16.2000	5.98E-04	5279714.	-45578.	-4.44E-05	0.00	1.86E+13	-56.9133	342463.	0.00
16.5000	4.40E-04	5115270.	-45757.	-4.33E-05	0.00	1.86E+13	-42.3193	345903.	0.00
16.8000	2.86E-04	4950278.	-45883.	-4.24E-05	0.00	1.86E+13	-27.7723	349376.	0.00
17.1000	1.35E-04	4784925.	-45957.	-4.14E-05	0.00	1.86E+13	-13.2672	352885.	0.00
17.4000	-1.21E-05	4619401.	-45978.	-4.05E-05	0.00	1.86E+13	1.2018	356412.	0.00
17.7000	-1.56E-04	4453891.	-45948.	-3.96E-05	0.00	1.86E+13	15.6317	359798.	0.00
18.0000	-2.98E-04	4288585.	-45866.	-3.88E-05	0.00	1.86E+13	30.0229	363221.	0.00
18.3000	-4.36E-04	4123667.	-45732.	-3.80E-05	0.00	1.86E+13	44.3825	366681.	0.00
18.6000	-5.71E-04	3959324.	-45546.	-3.72E-05	0.00	1.86E+13	58.7179	370177.	0.00
18.9000	-7.04E-04	3795743.	-45309.	-3.64E-05	0.00	1.86E+13	73.0368	373710.	0.00
19.2000	-8.33E-04	3633108.	-45021.	-3.57E-05	0.00	1.86E+13	87.3469	377279.	0.00
19.5000	-9.61E-04	3471604.	-44680.	-3.50E-05	0.00	1.86E+13	101.6564	380884.	0.00
19.8000	-0.00109	3311418.	-44289.	-3.44E-05	0.00	1.86E+13	115.9734	384525.	0.00
20.1000	-0.00121	3152735.	-43845.	-3.38E-05	0.00	1.86E+13	130.3062	388202.	0.00
20.4000	-0.00133	2995741.	-43350.	-3.32E-05	0.00	1.86E+13	144.6635	391915.	0.00
20.7000	-0.00145	2840621.	-42804.	-3.26E-05	0.00	1.86E+13	159.0540	395663.	0.00
21.0000	-0.00156	2687563.	-42205.	-3.21E-05	0.00	1.86E+13	173.4864	399447.	0.00
21.3000	-0.00168	2536753.	-41555.	-3.16E-05	0.00	1.86E+13	187.9698	403265.	0.00
21.6000	-0.00179	2388379.	-40852.	-3.11E-05	0.00	1.86E+13	202.5133	407117.	0.00
21.9000	-0.00190	2242629.	-40096.	-3.06E-05	0.00	1.86E+13	217.1260	411004.	0.00
22.2000	-0.00201	2099694.	-39288.	-3.02E-05	0.00	1.86E+13	231.8172	414924.	0.00
22.5000	-0.00212	1959763.	-38427.	-2.98E-05	0.00	1.86E+13	246.5962	418878.	0.00
22.8000	-0.00223	1823027.	-37513.	-2.95E-05	0.00	1.86E+13	261.4724	422865.	0.00
23.1000	-0.00233	1689680.	-36544.	-2.91E-05	0.00	1.86E+13	276.4552	426884.	0.00
23.4000	-0.00244	1559916.	-35522.	-2.88E-05	0.00	1.86E+13	291.5539	430935.	0.00
23.7000	-0.00254	1433931.	-34445.	-2.85E-05	0.00	1.86E+13	306.7778	435017.	0.00
24.0000	-0.00264	1311921.	-33313.	-2.82E-05	0.00	1.86E+13	322.1362	439130.	0.00
24.3000	-0.00274	1194086.	-32125.	-2.80E-05	0.00	1.86E+13	337.7508	443420.	0.00
24.6000	-0.00284	1080629.	-30880.	-2.78E-05	0.00	1.86E+13	353.6713	447924.	0.00
24.9000	-0.00294	971755.	-29578.	-2.76E-05	0.00	1.86E+13	369.7475	452427.	0.00
25.2000	-0.00304	867672.	-28218.	-2.74E-05	0.00	1.86E+13	385.9861	456929.	0.00
25.5000	-0.00314	768593.	-26799.	-2.72E-05	0.00	1.86E+13	402.3937	461429.	0.00
25.8000	-0.00324	674728.	-25325.	-2.71E-05	0.00	1.86E+13	416.4593	463129.	0.00
26.1000	-0.00333	586260.	-23803.	-2.70E-05	0.00	1.86E+13	428.9082	463049.	0.00
26.4000	-0.00343	503351.	-22237.	-2.69E-05	0.00	1.86E+13	441.3005	462970.	0.00
26.7000	-0.00353	426162.	-20626.	-2.68E-05	0.00	1.86E+13	453.6437	462891.	0.00
27.0000	-0.00362	354851.	-18971.	-2.67E-05	0.00	1.86E+13	465.9448	462812.	0.00

27.3000	-0.00372	289579.	-17271.	-2.66E-05	0.00	1.86E+13	478.2100	462733.	0.00
27.6000	-0.00382	230505.	-15528.	-2.66E-05	0.00	1.86E+13	490.4453	462654.	0.00
27.9000	-0.00391	177787.	-13740.	-2.66E-05	0.00	1.86E+13	502.6559	462576.	0.00
28.2000	-0.00401	131584.	-11909.	-2.65E-05	0.00	1.86E+13	514.8465	462498.	0.00
28.5000	-0.00410	92052.	-10033.	-2.65E-05	0.00	1.86E+13	527.0213	462420.	0.00
28.8000	-0.00420	59351.	-8114.	-2.65E-05	0.00	1.86E+13	539.1838	462341.	0.00
29.1000	-0.00429	33638.	-6151.	-2.65E-05	0.00	1.86E+13	551.3369	462263.	0.00
29.4000	-0.00439	15070.	-4144.	-2.65E-05	0.00	1.86E+13	563.4828	462185.	0.00
29.7000	-0.00448	3805.	-2094.	-2.65E-05	0.00	1.86E+13	575.6233	462107.	0.00
30.0000	-0.00458	0.00	0.00	-2.65E-05	0.00	1.86E+13	587.7593	231015.	0.00

\* This analysis computed pile response using nonlinear moment-curvature relationships. Values of total stress due to combined axial and bending stresses are computed only for elastic sections only and do not equal the actual stresses in concrete and steel. Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 1:

Pile-head deflection = 0.01691442 inches  
 Computed slope at pile head = -0.00012995 radians  
 Maximum bending moment = 9243978. inch-lbs  
 Maximum shear force = -45978. lbs  
 Depth of maximum bending moment = 4.50000000 feet below pile head  
 Depth of maximum shear force = 17.40000000 feet below pile head  
 Number of iterations = 6  
 Number of zero deflection points = 1

Summary of Pile-head Responses for Conventional Analyses

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs  
 Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians  
 Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.  
 Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs  
 Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	8413.	M, in-lb	8897564.	37908.	0.01691	-1.30E-04	-45978.	9243978.

Maximum pile-head deflection = 0.0169144207 inches  
Maximum pile-head rotation = -0.0001299526 radians = -0.007446 deg.

-----  
Summary of Warning Messages  
-----

The following warning was reported 558 times

\*\*\*\* Warning \*\*\*\*

An unreasonable input value for shear strength has been specified for a layer. defined using the stiff clay with free water criteria. The input value is greater than 8000 psf. Please check your input data for correctness.

The analysis ended normally.

**SITE OVERVIEW**

TYPE OF OCCUPANCY: TELECOMMUNICATIONS  
TOWER TYPE: MONOPOLE  
FOUNDATION DESIGN: DRILLED SHAFT  
TOWER HEIGHT: 105-FT +/-  
TOWER LATITUDE: 37.6046°N  
TOWER LONGITUDE: -86.5120°W  
RISK CATEGORY/  
STRUCTURE CLASS: II

**PROJECT CONTACT DIRECTORY**

TOWER OWNER: TOWERCO  
5000 VALLEYSTONE DR.  
CARY, NC 27519  
OFFICE: (919) 653-5700  
WWW.TOWERCO.COM  
  
ENGINEER:  
DELTA OAKS GROUP  
CONTACT: CORT HLAVIN  
4904 PROFESSIONAL COURT, 2ND FLOOR  
RALEIGH, NC 27609  
(919) 342-8247  
ENG-STRUCTURAL@DELTAOAKSGROUP.COM



KENTUCKY  
KENTUCKY 811  
811 OR (800) 752-6007

CALL 48 HOURS BEFORE YOU DIG



ALL DIMENSIONS, MEASUREMENTS, QUANTITIES, AND PART NUMBERS TO BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO MATERIAL ORDERS AND CONSTRUCTION

CONSTRUCTION SHALL BE PER STANDARDS TIA-322-2016: LOADING, ANALYSIS, AND DESIGN CRITERIA RELATED TO THE INSTALLATION, ALTERATION AND MAINTENANCE OF COMMUNICATION STRUCTURES AND ASP A10-48-2016: CRITERIA FOR SAFETY PRACTICES WITH THE CONSTRUCTION, DEMOLITION, MODIFICATION AND MAINTENANCE OF COMMUNICATION STRUCTURES.

**SHEET INDEX**

SHEET NO.	DESCRIPTION
T-1	TITLE SHEET
F-1	DRILLED SHAFT FOUNDATION DESIGN
F-2	FOUNDATION SECTION DETAILS
GN-1	GENERAL NOTES

# FOUNDATION DESIGN DRAWINGS

## 105-FT MONOPOLE

**SITE NAME**

CK ROUGH RIVER DAM

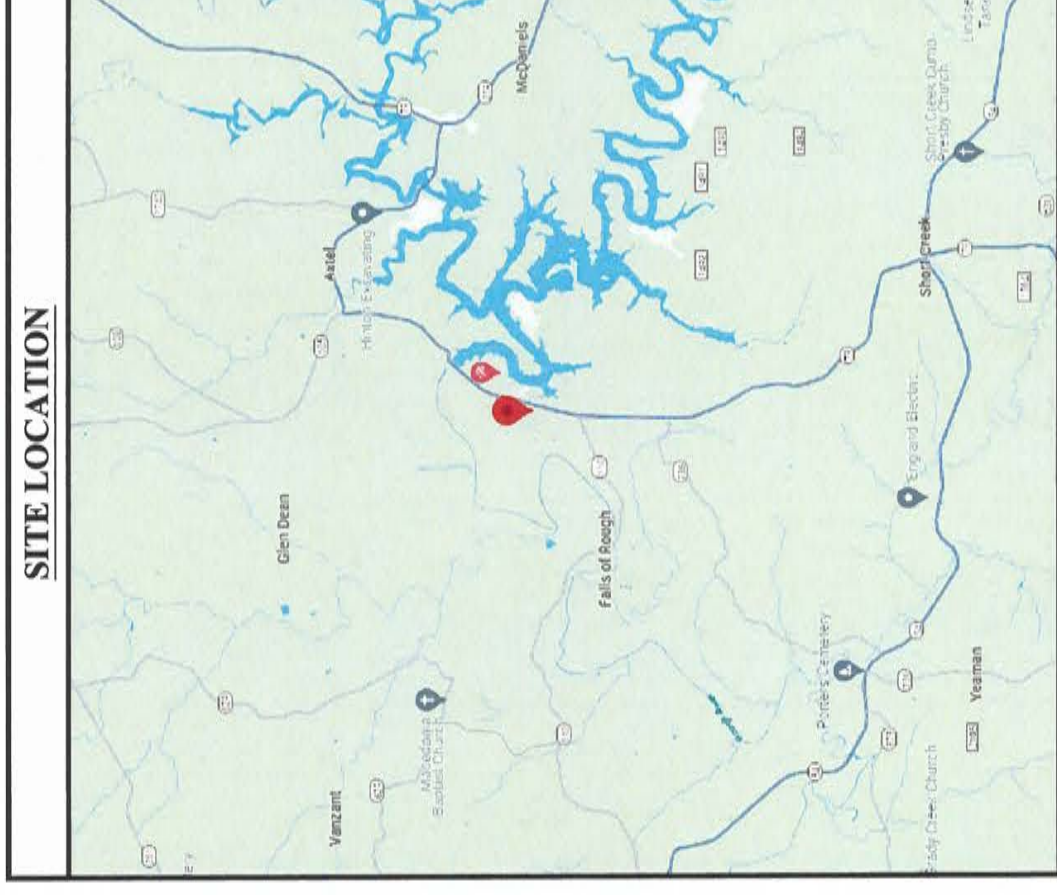
**SITE ID**

KY0099

**SITE ADDRESS**

13959 FALLS OF ROUGH RD  
FALLS OF ROUGH, KY 40119

**SITE LOCATION**



PREPARED FOR:



5000 VALLEYSTONE DR.  
CARY, NC 27519  
OFFICE: (919) 653-5700  
WWW.TOWERCO.COM

PREPARED BY:



DELTA OAKS GROUP  
4904 PROFESSIONAL COURT, SECOND FLOOR  
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PHONE: (919) 342-8247  
www.deltaoaksgroup.com



MICHAEL LASSITER, SE, PE  
KENTUCKY LICENSE NO. 24895  
34024

DRAWN BY: MEA  
CHECKED BY: JCI  
APP'D: MLL  
PROJECT NO: STR04-20037-08

SUBMITTALS		REV	ISSUED BY
DATE	DESCRIPTION	#	MEA
34024	REVIEW		

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**SITE NAME:**  
CK ROUGH RIVER DAM

**SITE ADDRESS:**  
13959 FALLS OF ROUGH RD  
FALLS OF ROUGH, KY 40119

**SITE ID:**  
KY0099

**SHEET TITLE**  
TITLE SHEET

**SHEET NUMBER**



PREPARED FOR:



5000 VALLEYSTONE DR.  
CARY, NC 27519  
OFFICE: (919) 653-5700  
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PREPARED BY:



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RALEIGH, NC 27609  
PHONE: (919) 342-8247  
www.deltaoaksgroup.com



MICHAEL LASSITER, SE, PE  
KENTUCKY LICENSE NO. 24895  
3/4/24

DRAWN BY: MEA  
CHECKED BY: JCH  
APP'D: MILL  
PROJECT NO: STR24-20937-08

SUBMITTALS		
DATE	DESCRIPTION	REV / ISSUED BY
3/2024	REVIEW	0 / MEA

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**SITE NAME:**  
CK ROUGH RIVER DAM

**SITE ADDRESS:**  
13959 FALLS OF ROUGH RD  
FALLS OF ROUGH, KY 40119

**SITE ID:**  
KY00099

**SHEET TITLE**  
DRILLED SHAFT  
FOUNDATION DESIGN

**SHEET NUMBER**  
F-1

**PARTS LIST - DRILLED SHAFT**

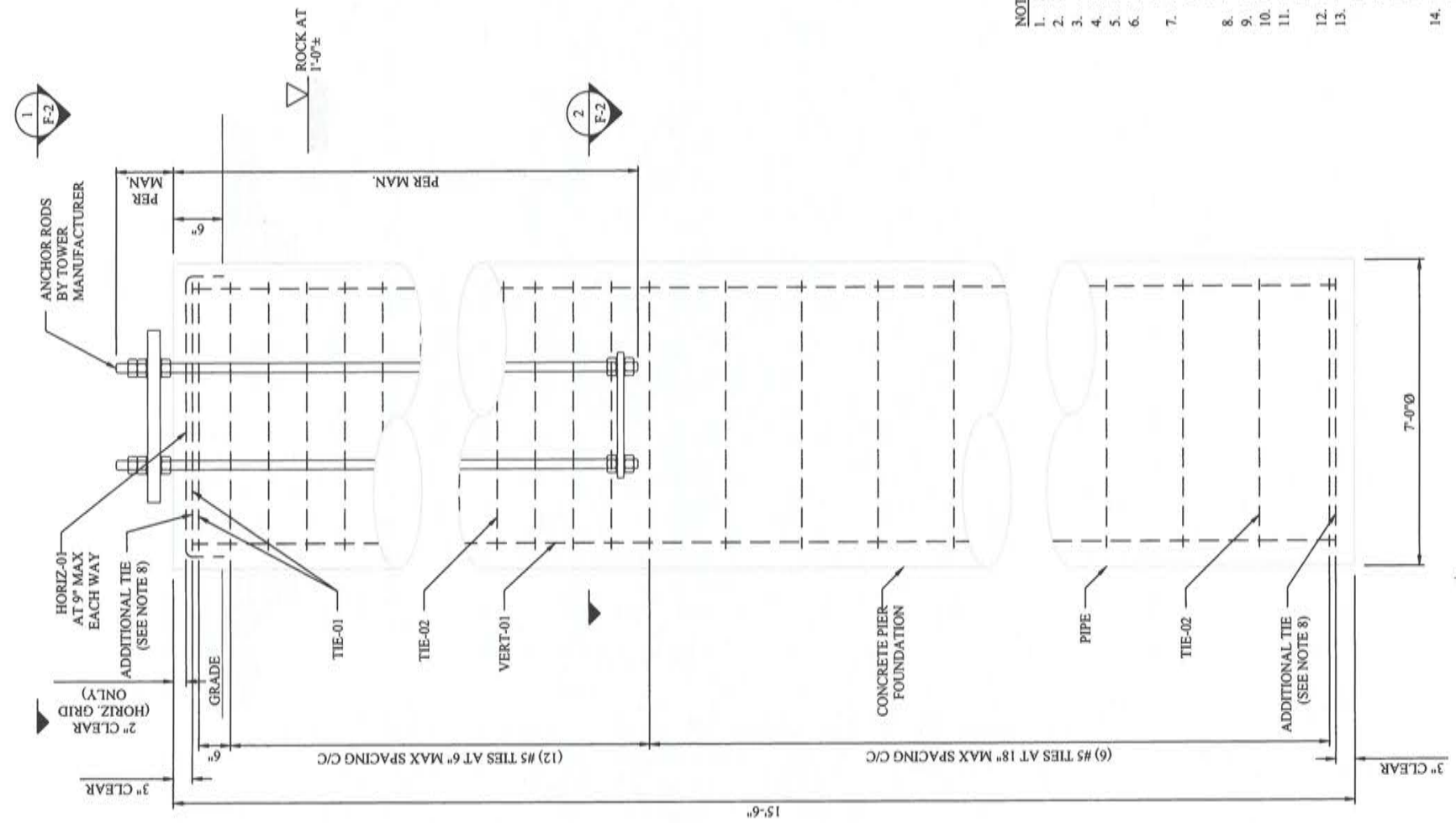
MARK NO.	DESCRIPTION	SIZE	QTY.
CONCRETE	4500-PSI MIX - LARGEST COURSE AGGREGATE SHALL BE 3/4-IN OR LESS	22.1 CY	1
VERT-01	VERTICAL REBAR	#9 ASTM A615-60 X 15'-0"	28
TIE-01	REBAR TIE (TOP TIES)	#5 ASTM A615-60 X 22'-3"	2
TIE-02	REBAR TIE (BELOW ANCHORAGE)	#5 ASTM A615-60 X 23'-1"	19
HORIZ-01	HORIZONTAL REBAR	#3 ASTM A615-60 X 7'-8"	16
PIPE	TEMPORARY STEEL PIPE (SEE NOTE 13)	PL 3/8"	1

**VERTICAL REBAR SPLICE LENGTH**

REBAR SIZE	MIN. LAP LENGTH
#8	62"
#9	69"
#10	78"
#11	85"

**CONCRETE AIR CONTENT**

NOMINAL MAXIMUM AGGREGATE SIZE	TARGET AIR CONTENT
3/8"	7.5%
1/2"	7.0%
3/4"	6.0%



- NOTES:**
- CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4500-PSI.
  - REBAR SHALL CONFORM TO ASTM SPECIFICATION A615.
  - ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 1 INCH.
  - SEE GEOTECHNICAL REPORT(S) FOR INSTALLATION REQUIREMENTS
  - REINFORCEMENT SHALL BE 3 INCHES CLEAR FROM EDGES OF CONCRETE.
  - REFER TO CONCRETE AIR CONTENT TABLE FOR TARGET AIR CONTENT PER MAXIMUM AGGREGATE SIZE.
  - IF REQUIRED, VERTICAL BARS MAY BE SPLICED. REFER TO VERTICAL REBAR SPLICE LENGTH TABLE. SPLICES SHALL BE STAGGERED FOR ADJACENT BARS TO ALLOW CONCRETE FLOW ABOUT REBAR CAGE.
  - TOP AND BOTTOM TIES TO BE DOUBLE TIES, TOP TIES TO BE HOOKED ON EACH END.
  - GROUND WATER NOT ENCOUNTERED.
  - HORIZ-01 SHALL BE HOOKED 90° EACH END. SEE TYPICAL 90° HOOK DETAILS ON SHEET F-2.
  - FOUNDATION ORIENTATION RELATIVE TO NORTH TO BE PROVIDED BY OTHERS.
  - TEMPORARY STEEL CASING RECOMMENDED TO PREVENT CAVING DURING INSTALLATION (BEND 3/8" PL INTO 7.0-FT DIAMETER). THE PROTECTIVE STEEL CASING SHOULD BE EXTRACTED AS CONCRETE IS PLACED. A HEAD OF CONCRETE SHOULD BE MAINTAINED ABOVE THE BOTTOM OF THE CASING TO PREVENT SOIL AND WATER INTRUSION INTO THE CONCRETE BELOW THE CASING.
  - FOUNDATION DESIGN(S) ARE BASED ON:
    - 14.1. TOWER DESIGN CALCULATIONS BY SABRE INDUSTRIES DATED FEBRUARY 12, 2024, PROJECT: 24-0319-JDS-R1 WITH DESIGN CRITERIA:
      - 14.1.1.1. ANSII/A-232-G
      - 14.1.1.2. 2015 INTERNATIONAL BUILDING CODE

- 14.1.2. BASIC WIND SPEED V(ULT) OF 115 MPH / V(3s) OF 89 MPH, NO ICE
  - 14.1.3. BASIC WIND SPEED V(I) OF 30 MPH, 0.75-IN RADIAL ICE
  - 14.1.4. STRUCTURE CLASSIFICATION AND RISK CATEGORY "II"
  - 14.1.5. EXPOSURE CATEGORY "C"
  - 14.1.6. TOPOGRAPHY CATEGORY "1"
- 14.2. REACTIONS AND ANCHOR BOLT LAYOUT FROM DESIGN DRAWINGS:
    - 14.2.1. MOMENT = 2,922.5 KIP-FT (FACTORED, DESIGN)
    - 14.2.2. SHEAR = 33.2 KIP (FACTORED, DESIGN)
    - 14.2.3. AXIAL = 45.5 KIP (FACTORED, DESIGN)
    - 14.2.4. (12) 2 1/4"Ø X 84" (GRADE A615-75) ANCHOR RODS EQUALLY SPACED ON 54 1/4"Ø B.C. WITH MINIMUM EMBEDMENT OF 72".
- 14.3. GEOTECHNICAL INVESTIGATION REPORT BY DELTA OAKS GROUP DATED SEPTEMBER 19, 2023, PROJECT NO.: GEO23-19774-08
- 14.4. 1.50" DEFLECTION LIMIT CRITERIA AT UNFACTORED DESIGN REACTIONS.
  - 14.5. 0.75" DEFLECTION LIMIT CRITERIA AT UNFACTORED SERVICE REACTIONS.
- 15. SEISMIC DESIGN PARAMETERS:
    - 15.1. ASCE 7-10 DESIGN STANDARD
    - 15.2. SITE CLASS "C"
    - 15.3. SEISMIC DESIGN CATEGORY "B"

**1 FOUNDATION ELEVATION**  
SCALE: N.T.S.



PREPARED FOR:



5900 VALLEYSTONE DR.  
CARY, NC 27519  
OFFICE: (919) 653-5700  
WWW.TOWERCO.COM

PREPARED BY:



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MICHAEL LASSITER, SE, PE  
KENTUCKY LICENSE NO. 24895

3/4/24

DRAWN BY: MEA  
CHECKED BY: JCI  
APP'D: MILL  
PROJECT NO: STR24-20937-08

DATE	DESCRIPTION	REV	ISSUED BY
3/4/24	REVIEW	0	MEA

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. REPRODUCTION OR CAUSING TO BE REPRODUCED WITHOUT THE WRITTEN PERMISSION OF THE DELTA OAKS GROUP, FELLS IS PROHIBITED.

**SITE NAME:**

CK ROUGH RIVER DAM

**SITE ADDRESS:**

13959 FALLS OF ROUGH RD  
FALLS OF ROUGH, KY 40119

**SITE ID:**

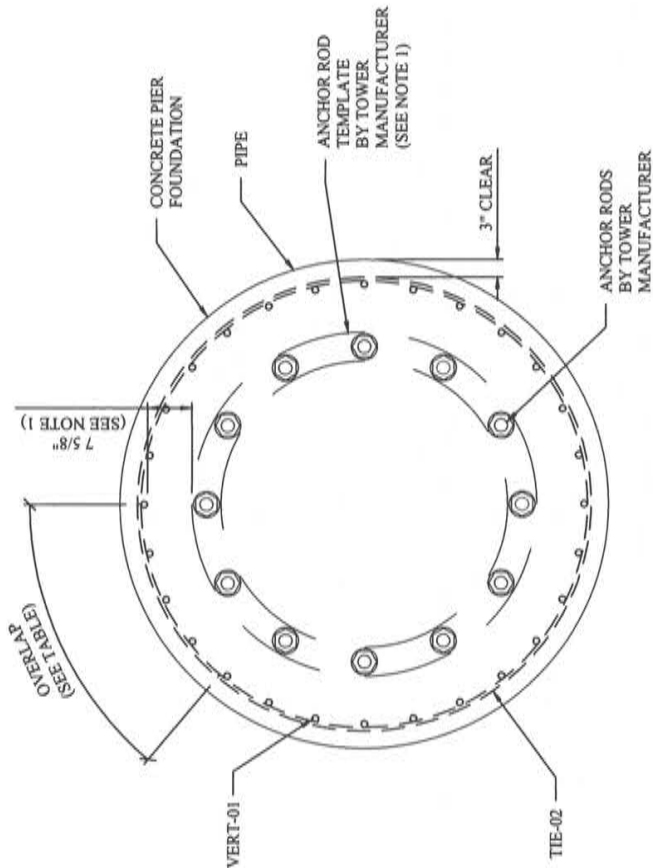
KY00099

**SHEET TITLE**

FOUNDATION SECTION DETAILS

**SHEET NUMBER**

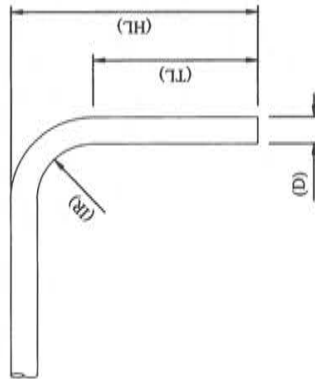
F-2



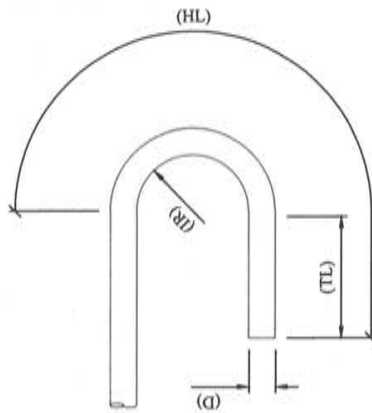
**2 FOUNDATION SECTION DETAIL**

F-2 SCALE: N.T.S.

- NOTES:**
- APPROXIMATE CLEAR FROM ANCHOR ROD TEMPLATE TO REBAR CAGE SHOWN.
  - HORIZONTAL REBAR GRID AT TOP OF PIER MAY BE ADJUSTED AS NECESSARY NOT TO INTERFERE WITH ANCHOR RODS. CONTRACTOR TO MAINTAIN ALL SPACING REQUIREMENTS SPECIFIED IN DETAILS.
  - REFER TO SHEET F-1 FOR PARTS LIST.
  - HORIZ SHALL BE HOOKED 90° EACH END. SEE TYPICAL 90° HOOK (AS REQUIRED FOR VERT AND HORIZ) DETAILS ON THIS SHEET.
  - TIE OVERLAPS AND HOOKS SHALL BE STAGGERED 180° BETWEEN ADJACENT TIES.



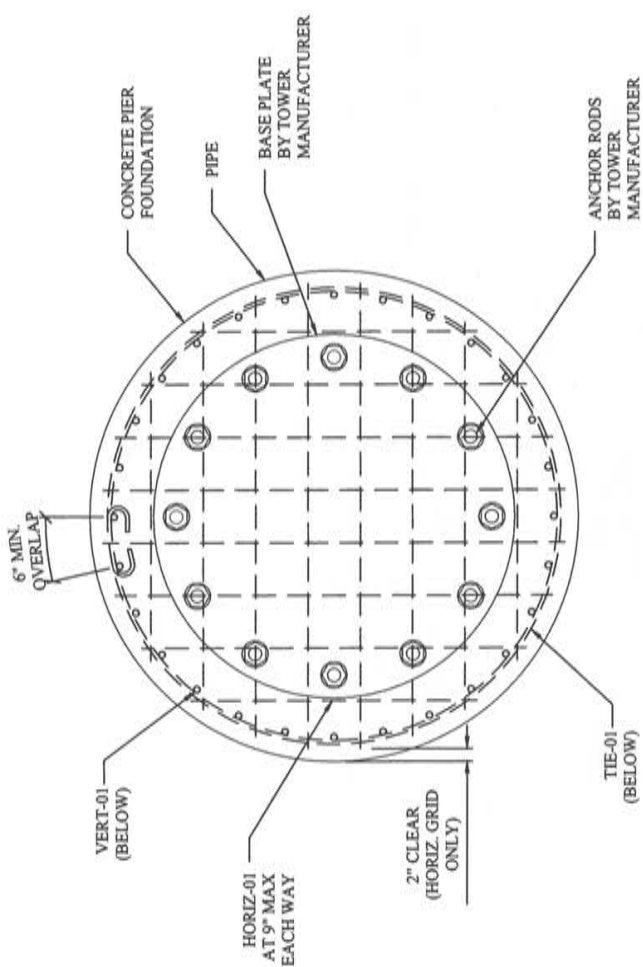
TYPICAL 90° HOOK



TYPICAL 180° HOOK

**TYPICAL REBAR TERMINATION DETAILS**

REBAR SIZE	OVERLAP (TIES)	90° HOOK (AS REQUIRED FOR VERT AND HORIZ)				90° HOOK (TIES)				180° HOOK (TIES)				
		BAR Ø (D)	INSIDE RADIUS (IR)	HOOK TAIL LENGTH (TL)	TOTAL HOOK LENGTH (HL)	INSIDE RADIUS (IR)	HOOK TAIL LENGTH (TL)	TOTAL HOOK LENGTH (HL)	INSIDE RADIUS (IR)	HOOK TAIL LENGTH (TL)	TOTAL HOOK LENGTH (HL)	INSIDE RADIUS (IR)	HOOK TAIL LENGTH (TL)	TOTAL HOOK LENGTH (HL)
#3	1'-8"	3/8"	1 1/8"	4 1/2"	6"	3/4"	3"	4 1/8"	3/4"	2 1/2"	7 13/16"	1"	2 1/2"	9 9/16"
#4	2'-3"	1/2"	1 1/2"	6"	8"	1"	3"	4 1/2"	1"	2 1/2"	9 9/16"	1 1/4"	2 1/2"	11 5/16"
#5	5'-8"	5/8"	1 7/8"	7 1/2"	10"	1 1/4"	3 3/4"	5 5/8"	1 1/4"	2 1/2"	11 5/16"	2 1/4"	3"	18 5/16"
#6	3'-4"	3/4"	2 1/4"	9"	12"	2 1/4"	9"	12"	2 1/4"	3"	18 5/16"	---	---	---
#7	7'-8"	7/8"	2 5/8"	10 1/2"	14"	---	---	---	---	---	---	---	---	---
#8	1"	1"	3"	12"	16"	---	---	---	---	---	---	---	---	---
#9	1 1/8"	---	4 1/2"	13 9/16"	19 3/16"	---	---	---	---	---	---	---	---	---
#10	1 1/4"	---	5"	15 1/4"	21 9/16"	---	---	---	---	---	---	---	---	---
#11	1 3/8"	---	5 5/8"	16 15/16"	24"	---	---	---	---	---	---	---	---	---
#14	1 3/4"	---	8 1/2"	20 5/16"	30 1/2"	---	---	---	---	---	---	---	---	---
#18	2 1/4"	---	11 3/8"	27 1/16"	40 5/8"	---	---	---	---	---	---	---	---	---



**1 FOUNDATION SECTION DETAIL**

F-2 SCALE: N.T.S.



## GENERAL NOTES:

1. ALL REFERENCES TO TOWER OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED AS TOWERCO OR ITS DESIGNATED REPRESENTATIVE.
2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY, THAT HE IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE.
3. THE STRUCTURE IS DESIGNED IN ACCORDANCE WITH ANSITIA 222-G ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE.
4. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
5. ALL PRODUCT MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERCEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
6. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE MODIFICATION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE-DOWNS THAT MAY BE NECESSARY, SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
7. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATION. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES AND PROCEDURES.
8. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR INSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE AND LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.
10. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE RESIDENT LEASING AGENT FOR APPROVAL.
11. PARTS LISTS AND PART NUMBERS LISTED ON THE CONSTRUCTION DRAWINGS ARE INTENDED TO AID THE CONTRACTOR/OWNER. CONTRACTOR/OWNER SHALL VERIFY PARTS AND QUANTITIES WITH THE MANUFACTURER PRIOR TO BIDDING AND/OR ORDERING MATERIALS.
12. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FOR THIS PROJECT FROM ALL APPLICABLE GOVERNING AGENCIES.
13. ALL PERMITS THAT MUST BE OBTAINED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
14. 24 HOURS BEFORE THE BEGINNING OF ANY CONSTRUCTION, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTIONAL (STATE, COUNTY OR CITY) ENGINEER. THE CONTRACTOR SHALL REWORK (DRY, SCARIFY, ETC.) ALL MATERIAL NOT SUITABLE FOR SUBGRADE IN ITS PRESENT STATE.
15. IF THE MATERIAL REMAINS UNSUITABLE AFTER REWORKING, THE CONTRACTOR SHALL UNDERCUT THIS MATERIAL AND REPLACE IT WITH APPROVED MATERIAL. IF PAVING IS TO BE DONE, ALL SUBGRADES SHALL BE PROOFROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK PRIOR TO PAVING. ANY SOFT MATERIAL SHALL BE REWORKED OR REPLACED.
16. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL PIPES, DITCHES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL WORK IS ACCEPTED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURE IN OPERABLE CONDITION.
17. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.
18. ALL DIMENSIONS SHALL BE VERIFIED WITH THE PLANS (LATEST REVISION) PRIOR TO COMMENCING CONSTRUCTION. THE OWNER SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.

## APPLICABLE CODES AND STANDARDS:

1. ANSITIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.
2. 2015 INTERNATIONAL BUILDING CODE
3. ACI 318: AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, 318-14.
4. CRSI: CONCRETE REINFORCING STEEL INSTITUTE, MANUAL OF STANDARD PRACTICE, LATEST EDITION.
5. AISC: AMERICAN INSTITUTE OF STEEL CONSTRUCTION, MANUAL OF STEEL CONSTRUCTION, 13TH EDITION.
6. AWS: AMERICAN WELDING SOCIETY D.1.1, STRUCTURAL WELDING CODE, LATEST EDITION.

## CONSTRUCTION INSPECTION NOTES:

1. FOUNDATION AND GEOTECHNICAL INSPECTIONS: A THIRD PARTY INSPECTION SHALL BE PERFORMED TO VERIFY:
  - A. PARAMETERS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT FOR THE SITE
  - B. FOUNDATION DIMENSIONS
  - C. REINFORCING STEEL GRADE, SIZE, CONDITION, SUPPORT, PLACEMENT AND COVER
  - D. CONCRETE MIX DESIGN DOCUMENTATION MATCHES STRENGTH AND DURABILITY REQUIREMENTS
  - E. CONCRETE TESTS REQUIRED TO BE PERFORMED PRIOR TO PLACEMENT OF CONCRETE, INCLUDING SLUMP, TEMPERATURE, AIR CONTENT, AND TEST CYLINDERS
  - F. ANCHOR ROD AND/OR POST-INSTALLED REBAR DIMENSIONS AND PLACEMENT, SIZE, EMBEDMENT DEPTH, PROJECTION ABOVE CONCRETE, ORIENTATION, PATTERN, AND ALIGNMENT
  - G. CONDITION OF SUBGRADE IMMEDIATELY PRIOR TO CONCRETE PLACEMENT
  - H. PROPER CONCRETE PLACEMENT, AVOIDING SEGREGATION OF AGGREGATES, AND CURING
  - I. STRUCTURAL BACKFILL MATERIAL AND PLACEMENT, INCLUDING MAXIMUM LIFT THICKNESS, MOISTURE CONTENT AND DENSITY.

PREPARED FOR:



5000 VALLEYSTONE DR.  
CARY, NC 27519  
OFFICE: (919) 651-5700  
WWW.TOWERCO.COM

PREPARED BY:



DELTA OAKS GROUP  
10000 WOODBOND FLOOR  
RALEIGH, NC 27609  
PHONE: (919) 342-8247  
www.deltaoaksgroup.com



MICHAEL LASSITER, SE, PE  
KENTUCKY LICENSE NO. 24895  
3/4/24

DRAWN BY: MEA  
CHECKED BY: JCH  
APP'VD: MLL  
PROJECT NO: ST024-20074-01

SUBMITTALS		REV	ISSUED BY
DATE	DESCRIPTION		
3/4/24	REVIEW	0	MEA

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. REPRODUCTION OR CAUSING TO BE REPRODUCED IN WHOLE OR ANY PART OF THESE DRAWINGS WITHOUT THE PERMISSION OF THE DELTA OAKS GROUP: PLLC IS PROHIBITED.

### SITE NAME:

CK ROUGH RIVER DAM

### SITE ADDRESS:

13959 FALLS OF ROUGH RD  
FALLS OF ROUGH, KY 40119

### SITE ID:

KY0099

### SHEET TITLE

GENERAL NOTES

### SHEET NUMBER

GN-1

PREPARED FOR:



PREPARED BY:



1961 NORTHPOINT BLVD, SUITE 130  
HIXSON, TN 37343  
PH: 423-843-9500  
FAX: 423-843-9509

DRAWING NOTICE:  
THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

DRAWN BY: JAE

CHECKED BY: DS

REVISIONS

NO.	DATE	BY	DESCRIPTION
A	02/26/24	JAE	PRELIMINARY REVIEW

ENGINEER'S STAMP:

NOT VALID WITHOUT P.E. STAMP & SIGNATURE

SITE NAME:

CK ROUGH RIVER DAM

ADDRESS:

TBD KY HWY 79  
FALLS OF ROUGH, KY 40119

COUNTY:

GRAYSON

LATITUDE:

37° 36' 16.71" N

LONGITUDE:

86° 30' 43.37" W

SITE NUMBER:

KY00099

SHEET TITLE:

DRAWING NO.

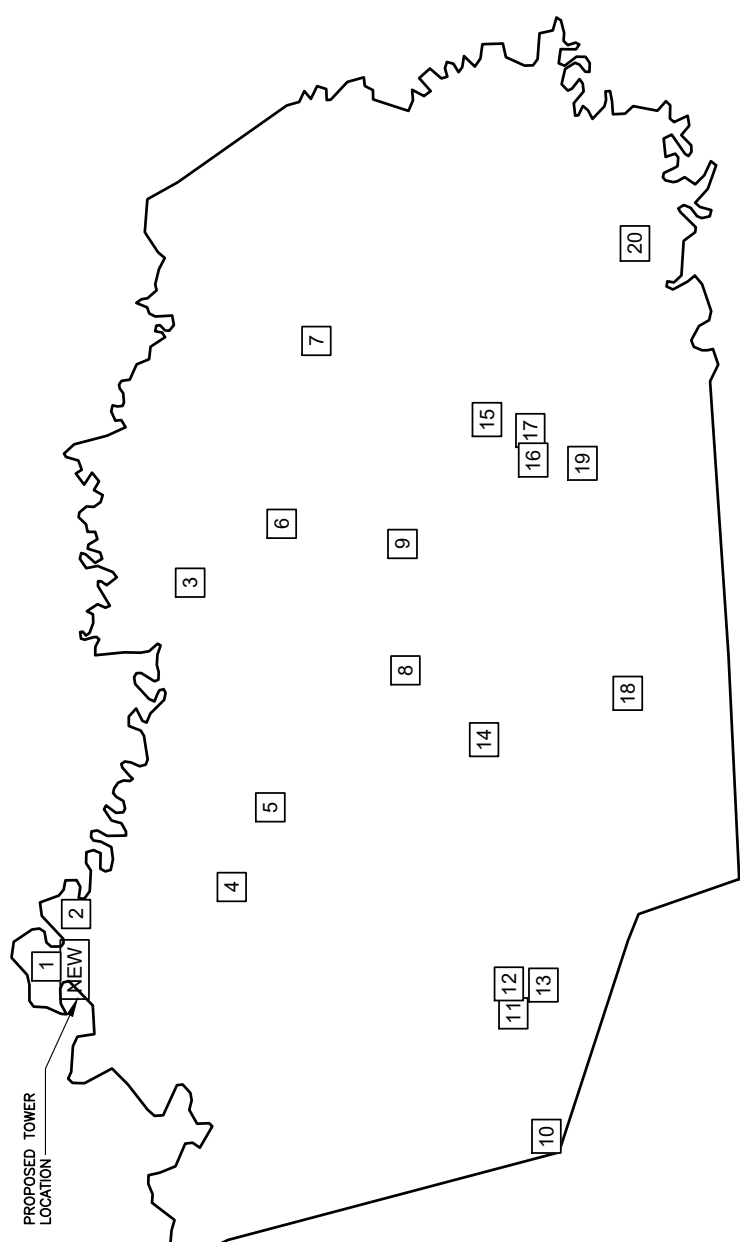
Z-1

REVISION:

A

FCC REGISTERED SITES  
(GRAYSON COUNTY)

TOWER	ASR	LATITUDE	LONGITUDE	TOWER OWNER
1	1327131	37°36'16.70"N	86°30'43.40"W	TOWERCO 2013 LLC
2	1319716	37°35'48.00"N	86°29'24.50"W	TILLMAN INFRASTRUCTURE, LLC
3	1258451	37°32'44.10"N	86°18'58.40"W	CELLCO PARTNERSHIP
4	1244902	37°31'51.20"N	86°28'23.90"W	CCATT LLC
5	1268314	37°30'50.00"N	86°25'54.60"W	SBA MONARCH TOWERS III, LLC
6	1043268	37°30'40.00"	86°17'15.00"W	HERITAGE MEDIA OF KENTUCKY INC
7	1217206	37°29'36.00"N	86°11'16.50"W	CROWN COMMUNICATIONS LLC
8	1313734	37°27'22.60"N	86°21'49.00"W	CTI TOWERS ASSETS II, LLC
9	1043037	37°27'33.00"N	86°17'41.00"W	CELLCO PARTNERSHIP
10	1217219	37°23'39.90"N	86°36'37.80"W	CROWN COMMUNICATIONS LLC
11	1043431	37°24'41.0	86°32'12.00"W	CELLCO PARTNERSHIP
12	1043035	37°24'42.60"N	86°31'56.60"W	CROWN CASTLE SOUTH LLC
13	1284809	37°23'58.90"N	86°31'46.80"W	KENTUCKY UTILITIES COMPANY
14	1217214	37°25'24.50"N	86°24'14.90"W	CROWN COMMUNICATIONS LLC
15	1280487	37°25'27.10"N	86°13'46.70"W	CELLCO PARTNERSHIP
16	1315842	37°24'17.80"N	86°14'17.10"W	VB BTS, LLC
17	1250554	37°24'17.90"N	86°14'14.40"W	TENNESSEE VALLEY AUTHORITY
18	1323679	37°22'3.80"N	86°22'25.80"W	HORVATH TOWERS VI, LLC
19	1281698	37°23'1.90"N	86°15'21.70"W	KENTUCKY UTILITIES COMPANY
20	1310238	37°21'41.70"N	86°8'22.00"W	CELLCO PARTNERSHIP
PROPOSED TOWER	TBD	37°36'16.71"N	86°30'43.37"W	TOWERCO



GRAYSON COUNTY TOWER MAP





Archive Search Results Form 7460-1 for ASN 2023-ASO-16887-OE

Overview				
<b>Study (ASN):</b>	2023-ASO-16887-OE			
<b>Prior Study:</b>				
<b>Status:</b>	Determined			
<b>Letters:</b>	<a href="#">Determination</a>			
<b>Supplemental Form 7460-2:</b> Please <a href="#">login</a> to add a Supplemental Form 7460-2.				
<b>Received Date:</b>	05/11/2023			
<b>Entered Date:</b>	05/11/2023			
<b>Completion Date:</b>	07/25/2023			
<b>Expiration Date:</b>	01/25/2025			
<b>Map:</b>	<a href="#">View Map</a>			
Sponsor Information				
<b>Sponsor:</b>	TowerCo 2013 LLC			
<b>Attention Of:</b>	Chad Doherty			
<b>Address:</b>	5000 Valleystone Dr			
<b>Address2:</b>				
<b>City:</b>	Cary			
<b>State:</b>	NC			
<b>Postal Code:</b>	27519			
<b>Country:</b>	US			
<b>Phone:</b>	919-653-5742			
<b>Fax:</b>				
Sponsor's Representative Information				
<b>Representative:</b>	TowerCo			
<b>Attention Of:</b>	FAA Towerco			
<b>Address:</b>	5000 Valleystone Dr			
<b>Address2:</b>				
<b>City:</b>	Cary			
<b>State:</b>	NC			
<b>Postal Code:</b>	27519			
<b>Country:</b>	US			
<b>Phone:</b>	919-653-5700			
<b>Fax:</b>				
Construction Info				
<b>Notice Of:</b>	CONSTR			
<b>Duration:</b>	PERM (Months: 0 Days: 0)			
<b>Work Schedule:</b>				
<b>Date Built:</b>				
Structure Summary				
<b>Structure Type:</b>	Monopole			
<b>Structure Name:</b>	KY0099 CK Rough River Dam - Tower			
<b>FCC Number:</b>	1327131 <a href="#">FCC ASR Registration</a>			
Structure Details				
<b>Latitude (NAD 83):</b>	37° 36' 16.71" N			
<b>Longitude (NAD 83):</b>	86° 30' 43.37" W			
<b>Horizontal Datum:</b>	NAD 83			
<b>Survey Accuracy:</b>	4D			
<b>Marking/Lighting:</b>	None			
<b>Other Description:</b>				
<b>Current Marking/Lighting:</b>	None			
<b>Current Marking/Lighting Other Description:</b>				
<b>Name:</b>				
<b>City:</b>	Glen Dean			
<b>State:</b>	KY			
<b>Nearest County:</b>	Grayson			
<b>Nearest Airport:</b>	2I3			
<b>Distance to Structure:</b>	2352.62 feet			
<b>On Airport:</b>	No			
<b>Direction to Structure:</b>	216.94°			
<b>Description of Location:</b>	see map			
<b>Description of Proposal:</b>	Proposed new construction			
Height and Elevation				
	<b>Proposed</b>	<b>DNE</b>	<b>DET</b>	
<b>Site Elevation:</b>	561			
<b>Structure Height:</b>	166	110	110	
<b>Total Height (AMSL):</b>	727	671	671	
Frequencies				
<b>Low Freq</b>	<b>High Freq</b>	<b>Unit</b>	<b>ERP</b>	<b>Unit</b>
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W

1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W

Previous [Back to Search Result](#) Next



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

Aeronautical Study No.  
 2023-ASO-16887-OE

Issued Date: 07/25/2023

Chad Doherty  
 TowerCo 2013 LLC  
 5000 Valleystone Dr  
 Cary, NC 27519

**\*\* 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: Monopole KY0099 CK Rough River Dam - Tower  
 Location: Glen Dean, KY  
 Latitude: 37-36-16.71N NAD 83  
 Longitude: 86-30-43.37W  
 Heights: 561 feet site elevation (SE)  
 110 feet above ground level (AGL)  
 671 feet above mean sea level (AMSL)

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

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

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

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

This determination expires on 01/25/2025 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 (817) 222-5928, or [chris.smith@faa.gov](mailto:chris.smith@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2023-ASO-16887-OE.

**Signature Control No: 585031515-594534745**

( DNE )

Chris Smith  
Specialist

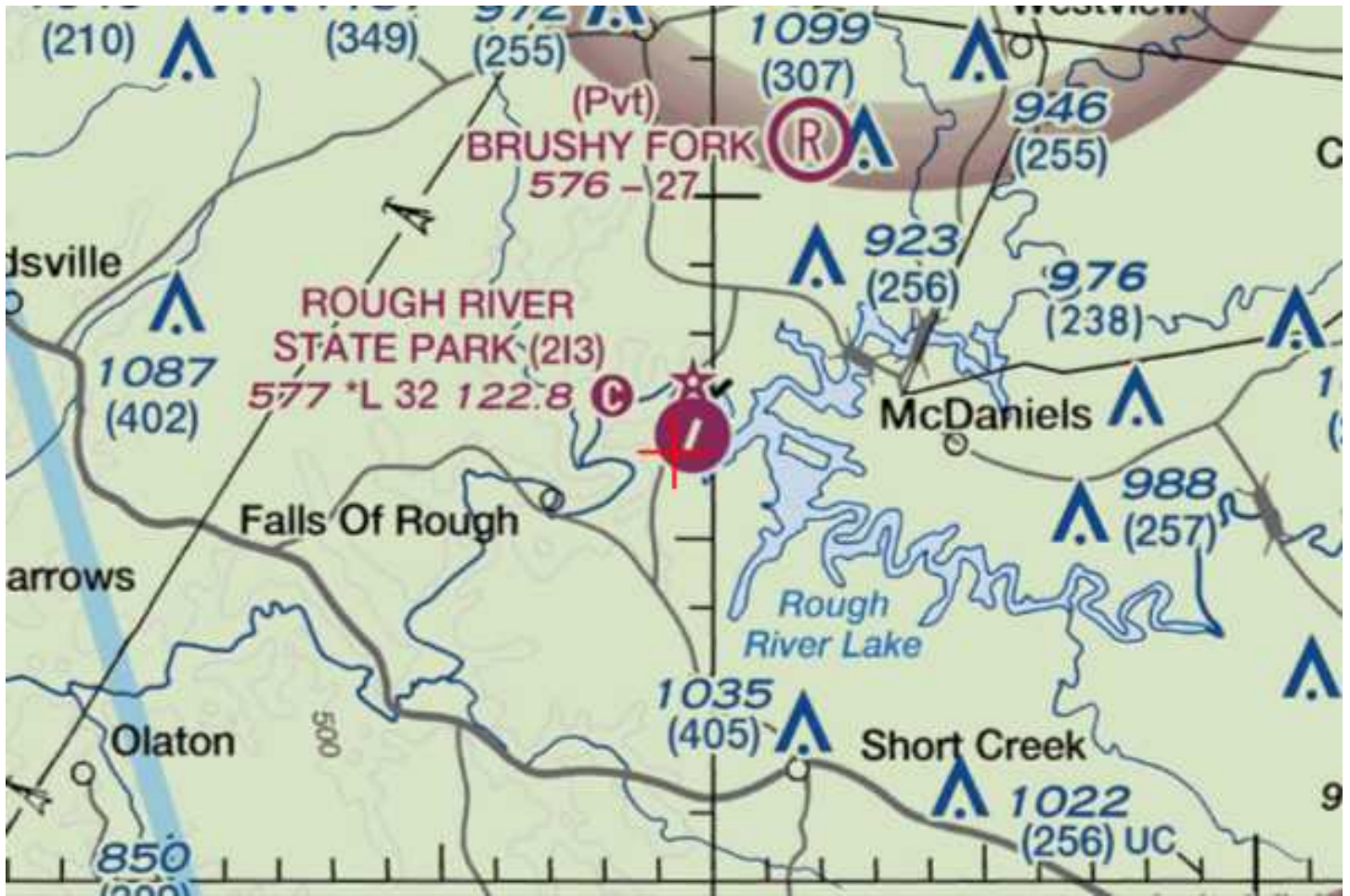
Attachment(s)  
Frequency Data  
Map(s)

cc: FCC

**Frequency Data for ASN 2023-ASO-16887-OE**

<b>LOW FREQUENCY</b>	<b>HIGH FREQUENCY</b>	<b>FREQUENCY UNIT</b>	<b>ERP</b>	<b>ERP UNIT</b>
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
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901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W





## **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 502-782-4043.
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. A 7.5 minute quadrangle topographical map prepared by the U.S. Geological Survey and the Kentucky Geological Survey with the exact location of the structure which is the subject of the application indicated thereon. (*The 7.5 minute quadrangle map may be obtained from the Kentucky Geological Survey, Department of Mines and Minerals, Lexington, KY 40506.*)

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

Appendix D. 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 E. 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.



KENTUCKY TRANSPORTATION CABINET  
**KENTUCKY AIRPORT ZONING COMMISSION**

**APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE**

<b>APPLICANT (name)</b> TowerCo 2013 LLC		<b>PHONE</b> 919-653-5753	<b>FAX</b> 919-469-5530	<b>KY AERONAUTICAL STUDY #</b>	
<b>ADDRESS (street)</b> 5000 Valley Stone Drive, Suite 200		<b>CITY</b> Cary		<b>STATE</b> NC	<b>ZIP</b> 27519
<b>APPLICANT'S REPRESENTATIVE (name)</b> Wireless Applications Corporation		<b>PHONE</b> 425-643-5000	<b>FAX</b>		
<b>ADDRESS (street)</b> 111 108 <sup>th</sup> Ave NE, Suite 160		<b>CITY</b> Bellevue		<b>STATE</b> WA	<b>ZIP</b> 98004
<b>APPLICATION FOR</b> <input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing			<b>WORK SCHEDULE</b>		
<b>DURATION</b> <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary (months days )			Start 5/1/2024 End 6/30/2024		
<b>TYPE</b> <input type="checkbox"/> Crane <input type="checkbox"/> Building <input checked="" type="checkbox"/> Antenna Tower <input type="checkbox"/> Power Line <input type="checkbox"/> Water Tank <input type="checkbox"/> Landfill <input type="checkbox"/> Other		<b>MARKING/PAINTING/LIGHTING PREFERRED</b> <input type="checkbox"/> Red Lights & Paint <input type="checkbox"/> White- medium intensity <input type="checkbox"/> White- high intensity <input type="checkbox"/> Dual- red & medium intensity white <input type="checkbox"/> Dual- red & high intensity white <input checked="" type="checkbox"/> Other None			
<b>LATITUDE</b> 37°36'16.71"		<b>LONGITUDE</b> 086°30'43.37"		<b>DATUM</b> <input checked="" type="checkbox"/> NAD83 <input type="checkbox"/> NAD27 <input type="checkbox"/> Other	
<b>NEAREST KENTUCKY</b> City Glen Dean County Grayson		<b>NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT</b> 213: Rough River State			
<b>SITE ELEVATION (AMSL, feet)</b> 561		<b>TOTAL STRUCTURE HEIGHT (AGL, feet)</b> 110		<b>CURRENT (FAA aeronautical study #)</b> 2023-ASO-16887-OE	
<b>OVERALL HEIGHT (site elevation plus total structure height, feet)</b> 671				<b>PREVIOUS (FAA aeronautical study #)</b>	
<b>DISTANCE (from nearest Kentucky public use or Military airport to structure)</b> 0.166 nm				<b>PREVIOUS (KY aeronautical study #)</b>	
<b>DIRECTION (from nearest Kentucky public use or Military airport to structure)</b> 37.07 degrees					
<b>DESCRIPTION OF LOCATION (Attach USGS 7.5 minute quadrangle map or an airport layout drawing with the precise site marked and any certified survey.)</b> Proposed 110 MP tower near Bend Cemetery Rd, Grayson County, Glen Den, KY, 40119					
<b>DESCRIPTION OF PROPOSAL</b> Proposed 110 ft AGL MP tower					
<b>FAA Form 7460-1 (Has the "Notice of Construction or Alteration" been filed with the Federal Aviation Administration?)</b> <input type="checkbox"/> No <input type="checkbox"/> Yes, when? 5/11/2023					
<b>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.)</b>					
<b>PENALTIES (Persons failing to comply with KRS 183.861 to 183.990 and 602 KAR 050 are liable for fines and/or imprisonment as set forth in KRS 183.990(3). Noncompliance with FAA regulations may result in further penalties.)</b>					
<b>NAME</b> Ronald W. Lageson, Jr.	<b>TITLE</b> Manager	<b>SIGNATURE</b>		<b>DATE</b> 9/6/2023	
<b>COMMISSION ACTION</b>		<input type="checkbox"/> Chairperson, KAZC <input type="checkbox"/> Administrator, KAZC			
<input type="checkbox"/> Approved	<b>SIGNATURE</b>			<b>DATE</b>	
<input type="checkbox"/> Disapproved					





## KENTUCKY AIRPORT ZONING COMMISSION

ANDY BESHEAR  
Governor

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

JIM GRAY  
Secretary

### APPROVAL OF APPLICATION

Thursday, October 12, 2023

TowerCo 2013 LLC  
5000 valley Stone Drive, Suite 200  
Cary, NC 27519

**AS-2023-067-213**                      **Rough River State Park**  
**APPLICANTS NAME:**              TowerCo 2013 LLC  
**NEAREST CITY:**                      Glen Dean  
**LATITUDE/LONGITUDE:**          37°36'16.71" N, 86°30'43.37" W  
**HEIGHT (In Feet):**                  110' AGL/671' AMSL  
**CONSTRUCTION PROPOSED:**      Monopole

**NOTES:** The monopole is located approx 0.2 nm W of the RWY centerline. It penetrates the 100:1 Slope Surface of RWY 02/20 by 84 ft and the Transitional Surface by 30 ft.

**FAA DETERMINATION:** 2023-ASO-16887-OE. No Hazard/No Impact to Air Navigation. Marking/lighted not required.

This letter is to notify you that the Kentucky Airport Zoning Commission approved your permit application for the construction of Structures at the Location, Coordinates, and Height as indicated above. Construction must comply with requirements, if any, listed in the FAA Determination.

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

An email of this letter was also sent to your representative, Ron Lageson, at [ron.lageson@wacorp.net](mailto:ron.lageson@wacorp.net). If you have any questions, please contact us.

Respectfully,

*Anthony Adams*

Airport Zoning Commission Administrator  
KY Department of Aviation  
502-564-0151 Office  
[AirportZoning@ky.gov](mailto:AirportZoning@ky.gov)



# DELTA OAKS GROUP

## GEOTECHNICAL INVESTIGATION REPORT

September 19, 2023

Prepared For:

TeleCAD Wireless



**CK Rough River Dam  
KY0099**

**Proposed 105-Foot Monopole Tower**

13965 Falls of Rough Road, Falls of Rough (Grayson County), Kentucky 40119  
Latitude N 37° 36' 16.71" Longitude W 86° 30' 43.37"

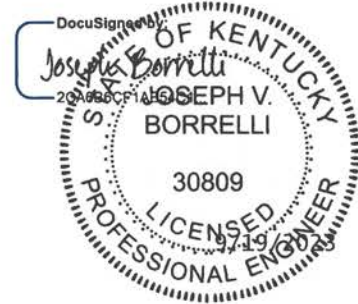
Delta Oaks Group Project GEO23-19774-08  
Revision 0  
[geotech@deltaoaksgroup.com](mailto:geotech@deltaoaksgroup.com)

Performed By:

Sarah C. Russek, P.E.

Reviewed By:

Joseph V. Borrelli, Jr., P.E.





## **DELTA OAKS GROUP**

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### **INTRODUCTION**

This geotechnical investigation report has been completed for the proposed 105-foot monopole tower located at 13965 Falls of Rough Road in Falls of Rough (Grayson County), Kentucky. The purpose of this investigation was to provide engineering recommendations and subsurface condition data at the proposed tower location. A geotechnical engineering interpretation of the collected information was completed and utilized to suggest design parameters regarding the adequacy of the structure's proposed foundation capacity under various loading conditions. This report provides the scope of the geotechnical investigation; geologic material identification; results of the geotechnical laboratory testing; and design parameter recommendations for use in the design of the telecommunication facility's foundation and site development.

### **SITE CONDITION SUMMARY**

The proposed tower and compound are located in an open grass field on a residential property exhibiting a generally flat topography across the tower compound and subject property.

### **REFERENCES**

- Survey Drawings, provided by TeleCAD Wireless, dated November 8, 2022
- Site Sketch, provided by TeleCAD Wireless
- SCIP, provided by TeleCAD Wireless, dated August 13, 2022
- TIA Standard (TIA-222-G), dated August 2005

### **SUBSURFACE FIELD INVESTIGATION SUMMARY**

The subsurface field investigation was conducted through the advancement of one mechanical soil test boring to the auger refusal depth of 1.0 foot bgs. The sampling was conducted at the staked centerline of the proposed tower. Upon encountering auger refusal, 5.0 feet of rock coring was conducted in accordance with ASTM D 2113. Rock samples were transported to our laboratory and classified by a geotechnical engineer in accordance with ASTM D 2487. A detailed breakdown of the material encountered in our subsurface field investigation can be found in the boring log presented in the Appendix of this report.

Additional testing was performed on selected samples in accordance with ASTM D 7012 (Unconfined Compressive Strength – Rock). Laboratory data can be found in the Appendix of this report.

A boring plan portraying the spatial location of the boring in relation to the proposed tower, tower compound and immediate surrounding area can be found in the Appendix.



## **DELTA OAKS GROUP**

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### **SUBSURFACE CONDITION SUMMARY**

The following provides a general overview of the site's subsurface conditions based on the data obtained during our field investigation.

#### **FILL**

Fill material was not encountered during the subsurface field investigation.

#### **SOIL**

The residual soil encountered in the subsurface field investigation began at the existing ground surface in the boring. Four inches of topsoil was encountered. No soil sample was retrieved due to shallow refusal on bedrock.

Auger advancement refusal was encountered during the subsurface field investigation at a depth of 1.0 foot bgs.

#### **ROCK**

Rock was encountered during the subsurface investigation at a depth of 1.0 foot bgs. The rock can be described as moderately fractured, slightly weathered, hard limestone.

#### **SUBSURFACE WATER**

Subsurface water was not encountered during the subsurface investigation. However, subsurface water elevations can fluctuate throughout the year due to variations in climate, hydraulic parameters, nearby construction activity and other factors.

#### **FROST PENETRATION**

The frost penetration depth for Grayson County, Kentucky is 20 inches (1.7 feet).

#### **CORROSIVITY**

Soil resistivity was not performed due to shallow refusal on bedrock at the proposed tower location.





## DELTA OAKS GROUP

### FOUNDATION DESIGN SUMMARY

In consideration of the provided tower parameters and the determined soil characteristics, Delta Oaks Group recommends utilizing a shallow foundation or drilled shaft foundation for the proposed structure. The strength parameters presented in the following sections can be utilized for design of the foundation.

### GENERAL SUBSURFACE STRENGTH PARAMETERS

Boring	Depth (bgs)	USCS	Moist/Buoyant Unit Weight (pcf)	Phi Angle (degrees)	Cohesion (psf)
B-1	0.0 – 1.0	Topsoil	100	--	--
	1.0 – 6.0	Limestone	150	0	10,000

- The unit weight provided assumes overburden soil was compacted to a minimum of 95% of the maximum dry density as obtained by the standard Proctor method (ASTM D 698) and maintained a moisture content within 3 percent of optimum.
- The values provided for phi angle and cohesion should be considered ultimate.



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### SUBSURFACE STRENGTH PARAMETERS – SHALLOW FOUNDATION

Boring	Dimensions (feet)	Depth (feet bgs)	Net Ultimate Bearing Capacity (psf)
B-1	Greater than 5.0 x 5.0	Greater than 1.0	30,000*

\*Value assumes that foundation is bearing entirely on competent bedrock

- Delta Oaks Group recommends the foundation bear a minimum of 1.0 feet bgs bearing entirely on competent bedrock.
- A sliding friction factor of 0.45 can be utilized along the base of the proposed foundation.
- An Ultimate Passive Pressure Table with a reduction due to frost penetration to a depth of 1.7 feet bgs is presented on the following page.
- Delta Oaks Group recommends an appropriate factor of safety be utilized for the design of the foundation.





# DELTA OAKS GROUP

## ULTIMATE PASSIVE PRESSURE VS. DEPTH - TOWER FOUNDATION

Soil Layers (feet)		Moist Unit Weight	Phi Angle	Cohesion	PV	KP	Ph
Top	0.0	100	0	0	0.00	1.00	0.00
Bottom	1.0	100	0	0	100.00	1.00	50.00
Top	1.0	150	0	10,000	100.00	1.00	10050.00
Bottom	1.7	150	0	10,000	205.00	1.00	10102.50
Top	1.7	150	0	10,000	205.00	1.00	20205.00
Bottom	6.0	150	0	10,000	850.00	1.00	20850.00



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## SUBSURFACE STRENGTH PARAMETERS – ROCK ANCHORS

Boring	Depth (bgs)	Rock Type	Ultimate Grout to Ground Bond Strength (psi)
B-1	1.0 – 6.0	Limestone	200

- The rock anchor design should extend into competent rock and have an adequate embedment length to resist the applied loads.
- Group effects can contribute to a reduction in resistance for the rock anchors and should be taken into consideration during foundation design.
- Delta Oaks Group recommends an appropriate factor of safety be utilized and the appropriate manufacturer recommendations be followed for the design of the rock anchors.



## DELTA OAKS GROUP

### SUBSURFACE STRENGTH PARAMETERS - DRILLED SHAFT FOUNDATION

Boring	Depth (bgs)	Net Ultimate Bearing Capacity (psf)	Ultimate Skin Friction - Compression (psf)	Ultimate Skin Friction - Uplift (psf)
B-1	0.0 – 3.0	--	--	--
	3.0 – 6.0*	87,010	4,000	4,000

\*Rock strength parameters can be assumed similar beyond the boring termination depth for design purposes. Additional investigations would be necessary to determine rock parameters at greater depths.

- The top 3.0 feet of soil should be ignored due to the frost penetration and the potential ground disturbance during construction.
- The values presented assume the concrete is cast-in-place against earth walls and any casing utilized during construction of the foundation was removed.
- Delta Oaks Group recommends an appropriate factor of safety be utilized for the design of the foundation.



## DELTA OAKS GROUP

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### CONSTRUCTION

#### **SITE DEVELOPMENT**

The proposed access road and tower compound should be evaluated by a Geotechnical Engineer, or their representative, after the removal or "cutting" of the areas to design elevation but prior to the placement of any structural fill material to verify the presence of unsuitable or weak material. Unsuitable or weak materials should be undercut to a suitable base material as determined by a Geotechnical Engineer, or their representative. Backfill of any undercut area(s) should be conducted in accordance with the recommendations provided in the *STRUCTURAL FILL PLACEMENT* section of this report.

Excavations should be sloped or shored in accordance and compliance with OSHA 29 CFR Part 1926, Excavation Trench Safety Standards as well as any additional local, state and federal regulations.

#### **STRUCTURAL FILL PLACEMENT**

Structural fill materials should be verified, prior to utilization, to have a minimum unit weight of 110 pcf (pounds per cubic foot) when compacted to a minimum of 95% of its maximum dry density and within plus or minus 3 percentage points of optimum moisture. Materials utilized should not contain more than 5 percent by weight of organic matter, waste, debris or any otherwise deleterious materials. The Liquid Limit should be no greater than 40 with a Plasticity Index no greater than 20. Structural fill material should contain a maximum particle size of 4 inches with 20 percent or less of the material having a particle size between 2 and 4 inches. Backfill should be placed in thin horizontal lifts not to exceed 8 inches (loose) in large grading areas and 4 inches (loose) where small handheld or walk-behind compaction equipment will be utilized. The potential suitability of on-site materials to be utilized as fill should be evaluated by a Geotechnical Engineer, or their representative just prior to construction.

During construction structural fill placement should be monitored and tested. This should include at minimum, visual observation as well as a sufficient amount of in-place field density tests by a Geotechnical Engineer, or their representative. Materials should be compacted to a minimum of 95% of the maximum dry density as determined by ASTM D 698 (standard Proctor method). Moisture contents should be maintained to within plus or minus 3 percentage points of the optimum moisture content.

#### **SHALLOW FOUNDATIONS**

Foundation excavation(s) should be evaluated by a Geotechnical Engineer, or their representative, prior to reinforcing steel and concrete placement. This evaluation should include visual observation to verify a level bearing surface; vertical side-walls with no protrusions, sloughing or caving; and the exposed bearing surface is free of deleterious material, loose soil and standing water. Excavation dimensions should be verified and testing performed on the exposed bearing surface to verify compliance with design recommendations. Bearing testing should be conducted in accordance with ASTM STP399 (Dynamic Cone Penetrometer). A 6-inch layer of compacted crushed stone should be installed prior to reinforcing steel and concrete placement. If subsurface water is encountered during excavation dewatering methods such as sump pumps or well points may be required.





## DELTA OAKS GROUP

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### **DRILLED SHAFT FOUNDATIONS**

Drilled shaft foundations (caissons) are typically installed utilizing an earth auger to reach the design depth of the foundation. Specialized roller bits or core bits can be utilized to penetrate boulders or rock. The equipment utilized should have cutting teeth to result in an excavation with little or no soil smeared or caked on the excavation sides with spiral-like corrugated walls. The drilled shaft design diameter should be maintained throughout the excavation with a plumbness tolerance of 2 percent of the length and an eccentricity tolerance of 3 inches from plan location. A removable steel casing can be installed in the shaft to prevent caving of the excavation sides due to soil relaxation. Upon completion of the drilling and casing placement, loose soils and subsurface water greater than 3-inches in depth should be removed from the bottom of the excavation for the "dry" installation method. The drilled shaft installation should be evaluated by a Geotechnical Engineer, or their representative, to verify suitable end bearing conditions, design diameter and bottom cleanliness. The evaluation should be conducted immediately prior to as well as during concrete placement operations.

The drilled shaft should be concreted as soon as reasonably practical after excavation to reduce the deterioration of the supporting soils to prevent potential caving and water intrusion. A concrete mix design with a slump of 6 to 8 inches employed in conjunction with the design concrete compressive strength should be utilized for placement. Super plasticizer may be required to obtain the recommended slump range. During placement, the concrete may fall freely through the open area in the reinforcing steel cage provided it does not strike the reinforcing steel and/or the casing prior to reaching the bottom of the excavation. The removable steel casing should be extracted as concrete is placed. During steel casing removal a head of concrete should be maintained above the bottom of the casing to prevent soil and water intrusion into the concrete below the bottom of the casing.

If subsurface water is anticipated and/or weak soil layers are encountered drilled shafts are typically installed utilizing the "wet" method by excavating beneath a drilling mud slurry. The drilling mud slurry is added to the drilled shaft excavation after groundwater has been encountered and/or the sides of the excavation are observed to be caving or sloughing. Additional inspection by a Geotechnical Engineer, or their representative, during the "wet" method should consist of verifying maintenance of sufficient slurry head, monitoring the specific gravity, pH and sand content of the drilling slurry, and monitoring any changes in the depth of the excavation between initial approval and just prior to concreting.

Concrete placement utilizing the "wet" method is conducted through a tremie pipe at the bottom of the excavation with the drilling mud slurry level maintained at a minimum of 5 feet or one shaft diameter, whichever is greater, above the ground water elevation. The bottom of the tremie should be set one tremie pipe diameter above the excavation. A closure flap at the bottom of the tremie or a sliding plug introduced into the tremie before the concrete is recommended to reduce the potential contamination of the concrete by the drilling mud slurry. The bottom of the tremie must be maintained in the concrete during placement. Additional concrete should be placed through the tremie causing the slurry to overflow from the excavation in order to reduce the potential for the development of "slurry pockets" remaining in the drilled shaft.



## DELTA OAKS GROUP

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### QUALIFICATIONS

The design parameters and conclusions provided in this report have been determined in accordance with generally accepted geotechnical engineering practices and are considered applicable to a rational degree of engineering certainty based on the data available at the time of report preparation and our practice in this geographic region. All recommendations and supporting calculations were prepared based on the data available at the time of report preparation and knowledge of typical geotechnical parameters in the applicable geographic region.

The subsurface conditions used in the determination of the design recommendations contained in this report are based on interpretation of subsurface data obtained at specific boring locations. Irrespective of the thoroughness of the subsurface investigation, the potential exists that conditions between borings will differ from those at the specific boring locations, that conditions are not as anticipated during the original analysis, or that the construction process has altered the soil conditions. That potential is significantly increased in locations where existing fill materials are encountered. Additionally, the nature and extent of these variations may not be evident until the commencement of construction. Therefore, a geotechnical engineer, or their representative, should observe construction practices to confirm that the site conditions do not differ from those conditions anticipated in design. If such variations are encountered, Delta Oaks Group should be contacted immediately in order to provide revisions and/or additional site exploration, as necessary.

Samples obtained during our subsurface field investigation will be retained by Delta Oaks Group for a period of 30 days unless otherwise instructed by TeleCAD Wireless. No warranty, expressed or implied, is presented.

Delta Oaks Group appreciates the opportunity to be of service for this Geotechnical Investigation Report. Please do not hesitate to contact Delta Oaks Group with any questions or should you require additional service on this project.





# DELTA OAKS GROUP

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## APPENDIX



# DELTA OAKS GROUP

## BORING PLAN





**PROJECT NAME** CK Rough River Dam (KY0099)  
**PROJECT NUMBER** GEO23-19774-08  
**PROJECT LOCATION** Falls of Rough, Kentucky

**CLIENT** TeleCAD Wireless

**Boring No.: B-1**

**DATE DRILLED :** 9/6/2023

**DRILLING METHOD :** Hollow Stem Auger & Rock Coring

**GROUND ELEVATION :**

**BORING DEPTH (ft) :** 6

**GROUND WATER LEVELS:**

▽ **AT TIME OF DRILLING :** — Not encountered

▼ **AT END OF DRILLING :** — Not encountered

▽ **AFTER DRILLING :** — Not measured

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE	MATERIAL CLASSIFICATION	Pocket Penetrometer (tsf)	BLOWS 1st	BLOWS 2nd	BLOWS 3rd	N VALUE	▲ SPT N VALUE ▲												
									10	20	30	40	50	60	70	80	90				
0	4" Topsoil																				
	-- No sample																				
1	Gray, moderately fractured, slightly weathered, hard, LIMESTONE  Unconfined compressive strength = 12,670 psi																				
2																					
3																					
4																					
5	Unconfined compressive strength = 11,410 psi																				
6	Refusal at 1.0 feet. Bottom of borehole at 6.0 feet.																				
7																					

REC = 98.8 %  
 RQD = 80.6 %

DIRECTIONS TO THE SITE:

DEPART AND HEAD (NORTHEAST). EXIT THE ROUNDABOUT AT THE THIRD EXIT, ONTO KENTUCKY 54 / WEST MAIN STREET, TURN RIGHT ONTO KENTUCKY 79 / FALLS OF ROUGH ROAD. THE DESTINATION WILL BE ON THE LEFT.

PREPARED BY: TELECAD WIRELESS, 423-843-9500

9  
mailed to  
↓

\$42.00

Rec'd 50.00+4

Ex. Pg. 4=\$12

Date 3-27-2023

520/162

**This instrument was prepared by  
and after recording return to:**

TowerCo 2013 LLC  
5000 Valleystone Drive, Suite 200  
Cary, NC 27519  
919-653-5700  
Jason Catalini



		(Recorder's Use Above this Line)
<b>STATE OF KENTUCKY</b>	<b>Parcel Nos:</b>	026-00-00-011.0N; 026-00-00-011.0K; and BREEZY H-029
<b>COUNTY OF GRAYSON</b>		

**MEMORANDUM OF LEASE**

Document Date: March 14, 2023

Lessor: DAVID WAYNE MERCER and REBECCA BRUNCE MERCER, husband and wife;  
TROY LEE MERCER, single; and LOGAN BRUNCE MERCER, single  
Address: 13965 Falls of Rough Road, Falls of Rough, KY 40119

Lessee: TOWERCO 2013 LLC, a Delaware limited liability company  
Address: 5000 Valleystone Drive, Suite 200, Cary, NC 27519

Legal Description of the Land is attached as Exhibit A.

## MEMORANDUM OF LEASE

This Memorandum of Lease made and entered into effective as of the 14<sup>th</sup> day of March, 2023, by and between DAVID WAYNE MERCER and REBECCA BRUNCE MERCER, husband and wife; TROY LEE MERCER, single; and LOGAN BRUNCE MERCER, single, having a mailing address of 13965 Falls of Rough Road, Falls of Rough, KY 40119 (hereinafter referred to as “Lessor” or “Grantor”) and TOWERCO 2013 LLC, a Delaware limited liability company having a mailing address of 5000 Valleystone Drive, Suite 200, Cary, NC 27519 (hereinafter referred to as “Lessee” or “Grantee”).

1. Lessor and Lessee entered into that certain Ground Lease Agreement dated the 14<sup>th</sup> day of March, 2023 (the “Lease”) for certain real property and easements as described in Exhibit B attached hereto (collectively, the “Premises”), which are a portion of that certain parcel of real property located in Falls of Rough, County of Grayson, State of Kentucky, described in Exhibit A attached hereto (the “Land”).
2. The Lease shall have an initial term of ten (10) years, with ten (10) additional five (5) year renewal terms.
3. The purpose of this Memorandum is to give record notice of the Lease and of the rights created thereby, all of which are hereby confirmed. In the event of a conflict between the terms of this Memorandum or the addition of any terms in this Memorandum which are not contained in the Lease, the Lease shall control. The terms of the Lease are hereby incorporated by reference.
4. Upon written notice to Lessee, Lessor is permitted to transfer the Lease only in connection with the sale of the Land and only on the following conditions: (a) the acquiring party must and will assume in writing all of the rights and obligations of Lessor under this Lease on and after the date of purchase of the Land and (b) Lessor must retain no rights or obligations under the Lease after the date of sale of the Land (a “Lessor Permitted Assignment”). Other than a Lessor Permitted Assignment, Lessor is prohibited from assigning, selling or otherwise transferring the Lease in whole or in part and Lessor is prohibited from granting any third party an easement or other real property interest in the Premises.
5. Pursuant to the Lease, Lessee has a right of first refusal to meet any bona fide offers for (i) any sale or transfers of the Land, and any (ii) grant from Lessor to a third party by easement or other legal instrument of an interest in and to any portion of the Land, the Premises or the Lease for any purpose relating to operating and maintaining communications facilities or the management thereof, with or without an assignment of the Lease to such third party, including but not limited to assignments of any right to the rent or rental stream associated with the Lease.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]



IN WITNESS WHEREOF, the parties have executed this Memorandum under seal as of the dates set forth in the respective acknowledgements.

**LESSOR:**

DAVID WAYNE MERCER and REBECCA BRUNCE MERCER, husband and wife; TROY LEE MERCER, single; and LOGAN BRUNCE MERCER, single

By: David Wayne Mercer  
 Name: David Wayne Mercer  
 Title: Owner  
 Date: 3-9-23

By: Rebecca Brunce Mercer  
 Name: Rebecca Brunce Mercer  
 Title: Owner  
 Date: 3-9-23

By: Troy Lee Mercer  
 Name: Troy Lee Mercer  
 Title: Owner  
 Date: 3-9-23

By: Logan Brunce Mercer  
 Name: Logan Brunce Mercer  
 Title: Owner  
 Date: 3-9-23

**LESSOR ACKNOWLEDGMENT**

STATE OF Kentucky )  
 ) ss:  
 COUNTY OF Corydon )

The foregoing instrument was acknowledged before me this 3-9-23 (date) by David Wayne Mercer.

Charlotte Willis  
 Notary Public  
 Print Name Charlotte Willis  
 Title (and Rank): NP #622786  
 My commission expires: 5-24-23 (seal)

STATE OF Kentucky )  
 ) ss:  
 COUNTY OF Corydon )

The foregoing instrument was acknowledged before me this 3-9-23 (date) by Rebecca Brunce Mercer.

Charlotte Willis  
 Notary Public  
 Print Name Charlotte Willis  
 Title (and Rank): NP #622786  
 My commission expires: 5-24-23 (seal)

STATE OF Kentucky )  
 ) ss:  
COUNTY OF Crayson )

The foregoing instrument was acknowledged before me this 3-9-23 (date) by Troy Lee Mercer.

Charlotte Willis  
Notary Public  
Print Name Charlotte Willis  
Title (and Rank): NP # 622786  
My commission expires: 5-24-23

(seal)

STATE OF Kentucky )  
 ) ss:  
COUNTY OF Crayson )

The foregoing instrument was acknowledged before me this 3-9-23 (date) by Logan Brunce Mercer.

Charlotte Willis  
Notary Public  
Print Name Charlotte Willis  
Title (and Rank): NP # 622786  
My commission expires: 5-24-23

(seal)

**LESSEE:**

TOWERCO 2013 LLC, a Delaware limited liability company

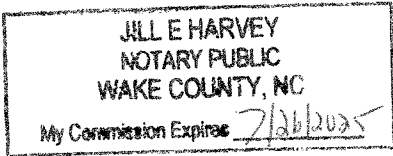
By: [Signature]  
Name: Mike Smith  
Title: CFO  
Date: 3/14/23

**LESSEE ACKNOWLEDGMENT**

STATE OF NORTH CAROLINA     )  
  ) ss:  
COUNTY OF WAKE                             )

The foregoing instrument was acknowledged before me this March 14, 2023 (date) by Mike Smith, CFO of TowerCo 2013 LLC, a Delaware limited liability company, on behalf of the limited liability company.

[Signature]  
Notary Public  
Print Name Jill E. Harvey  
Title (and Rank): Paralegal  
My commission expires: 7/26/2025



(seal)

**EXHIBIT A**  
**DESCRIPTION OF LAND**

The Land is described and/or depicted as follows:

PARCELS 026-00-00-011.0N AND 026-00-00-011.0K:

A CERTAIN TRACT OR PARCEL OF LAND LYING AND BEING IN GRAYSON COUNTY, KENTUCKY AND BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A CONCRETE MARKER, BEING THE SOUTHWEST CORNER OF THE HAROLD MAYS' LOT, THENCE WITH THE WEST LINE OF SAID MAY' S LOT, N 10 ½ DEGREES E 265 FEET TO AN IRON POST; THENCE ALONG THE LINE OF DAVID MERCER, N 79 ½ DEGREES W 226 FEET TO A STAKE, A CORNER OF ROBERT B. ST. CLAIR; THENCE WITH SAID ST. CLAIR LINE, S 10 ½ DEGREES W APPROXIMATELY 240 FEET TO A FENCE ON THE NORTH SIDE OF THE ROBERT B. ST. CLAIR FARM ROAD; THENCE S 73 ½ DEGREES E ALONG SAID ROAD RIGHT OF WAY 235 FEET TO THE BEGINNING CONTAINING APPROXIMATELY 1.2 ACRES.

PARCEL BREEZY H-029:

A CERTAIN TRACT OF PARCEL OF LAND LYING IN GRAYSON COUNTY, KENTUCKY, AND DESCRIBED AS FOLLOWS:

BEING ALL OF #29 OF BREEZY HILL DEVELOPMENT AS SHOWN ON THE PLAT OF SAID BREEZY HILL DEVELOPMENT OF RECORD IN PLAT CABINET 1, SLIDE #66, RECORDS OF THE GRAYSON COUNTY CLERK'S OFFICE.

**EXHIBIT B**  
**DESCRIPTION OR DEPICTION OF PREMISES**

An approximately 5,625 square foot tract of land, together with easements for ingress, egress and utilities described or depicted as follows. Exact legal description to be determined by survey.

(see attached)

**Note:** At Lessee's option, Lessee may replace this Exhibit with an exhibit setting forth the legal description of the Premises, or an as-built drawing depicting the site. Any visual or textual representation of the Improvements (as defined in the Lease) and facilities is illustrative only, and does not limit the rights of Lessee as provided for in the Lease. Without limiting the generality of the foregoing:

1. The Premises may be setback from the boundaries of Lessor's property as required by the applicable governmental authorities.
2. The access road's width may be modified as required by governmental authorities, including police and fire departments.
3. The locations of any access and utility easements are illustrative only. Actual locations may be determined by Lessee and/or the servicing utility company in compliance with local laws and regulations.

PREPARED FOR:



TeleCAD  
1981 ADAMS BLVD., SUITE 170  
HUNTSVILLE, TN 37401  
TEL: 423-484-9900  
FAX: 423-484-9999



FSTAN  
1012 S 4th Street, Suite 101  
Louisville, Ky 40203  
Phone: (502) 636-5111  
Fax: (502) 636-5263

SITE NUMBER: 617730047

SITE NAME: ROUGH RIVER DAM

SITE ADDRESS:  
KY HWY 79  
FALLS OF ROUGH, KY 40119

LEASE AREA: 5625.00 SQ.FT.

PROPERTY OWNER:  
DAVID WYATT MERCEZ  
REBECCA BRANCE MERCEZ  
LOREN BRANCE MERCEZ  
13965 FALLS OF ROUGH RD  
FALLS OF ROUGH, KY 40119

PARCEL NUMBER:  
026-00-00-011.0N &  
026-00-00-011.0K

SOURCE OF TITLE:  
D.B. 513, PG. 237

UNG BT: SWS FIELD DATE: UNBT DATE:  
CHD BT: NRC 10.19.22 11.08.22

FSTAN PROJECT NO.:  
22-11805

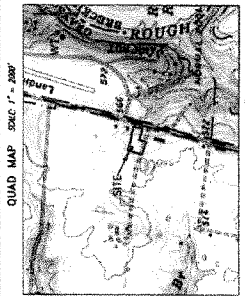
SHEET 1 OF 2

REVISIONS:

RAWLAND

LOCATION DESCRIPTION  
LOCATED ON NEAR FALLS OF ROUGH, ROSS  
COUNTY, KENTUCKY.

THIS SITE IS LOCATED ON THE FALLS OF THE  
ROSS, KENTUCKY LOSS GUARANTEE SHEET.  
The Kentucky Atlas (containing) is referenced to the  
Ross Survey (Book 188) (Page 87) and is incorporated  
herein by reference. The site is situated on  
the east side of the road, and is bounded  
to the west by the road, to the north by the  
road, and to the south by the road. The site  
measures to within 1/4" of 1 foot accuracy.

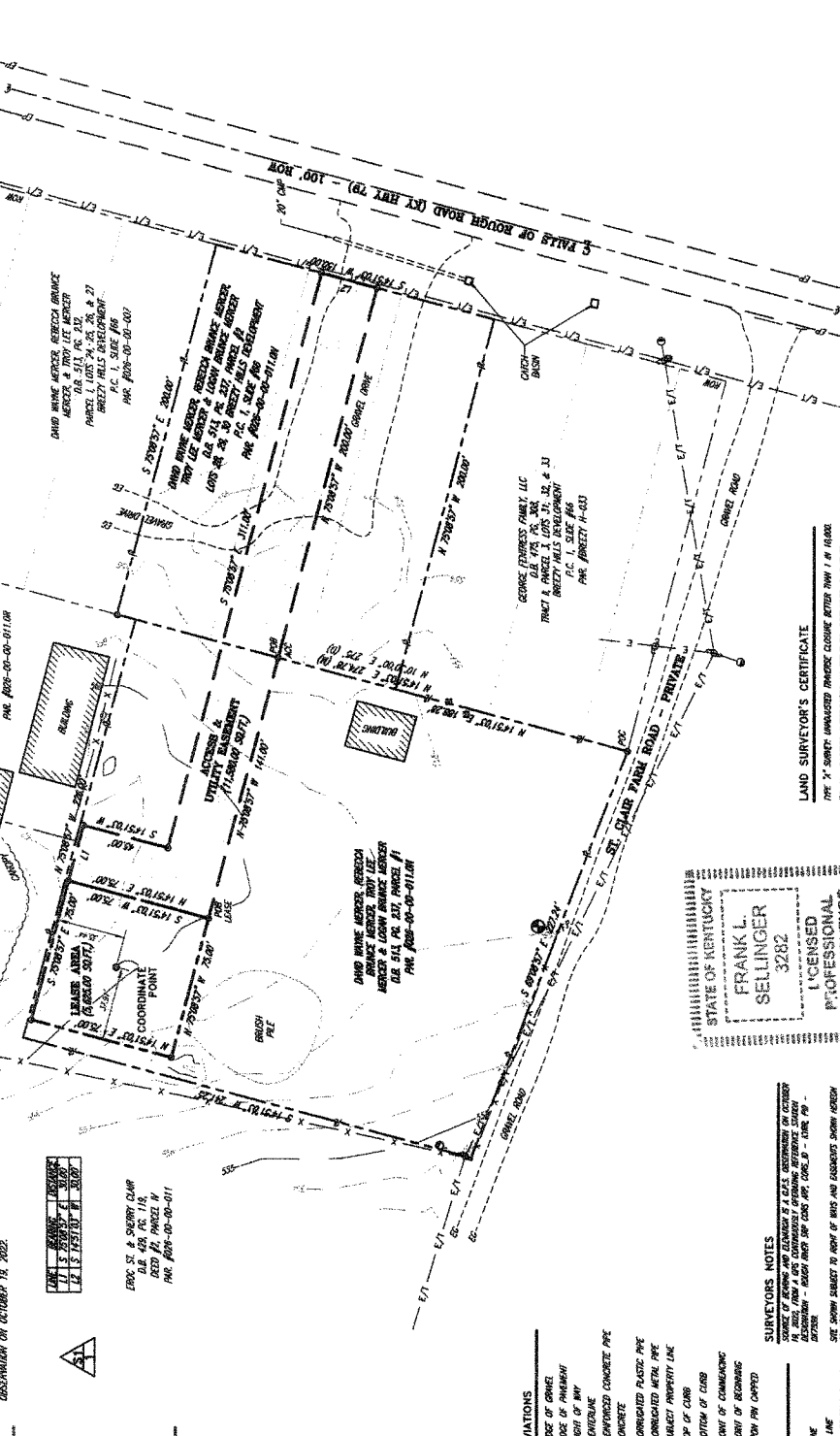


DAVID WYATT MERCEZ  
REBECCA BRANCE MERCEZ  
LOREN BRANCE MERCEZ  
13965 FALLS OF ROUGH RD  
FALLS OF ROUGH, KY 40119  
P.C. 1, SURE P&S  
P&S #026-00-00-011.0K

DAVID WYATT MERCEZ  
REBECCA BRANCE MERCEZ  
LOREN BRANCE MERCEZ  
13965 FALLS OF ROUGH RD  
FALLS OF ROUGH, KY 40119  
P.C. 1, SURE P&S  
P&S #026-00-00-011.0K

DAVID WYATT MERCEZ  
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LOREN BRANCE MERCEZ  
13965 FALLS OF ROUGH RD  
FALLS OF ROUGH, KY 40119  
P.C. 1, SURE P&S  
P&S #026-00-00-011.0K

DAVID WYATT MERCEZ  
REBECCA BRANCE MERCEZ  
LOREN BRANCE MERCEZ  
13965 FALLS OF ROUGH RD  
FALLS OF ROUGH, KY 40119  
P.C. 1, SURE P&S  
P&S #026-00-00-011.0K



DAVID WYATT MERCEZ  
REBECCA BRANCE MERCEZ  
LOREN BRANCE MERCEZ  
13965 FALLS OF ROUGH RD  
FALLS OF ROUGH, KY 40119  
P.C. 1, SURE P&S  
P&S #026-00-00-011.0K

OWNER APPROVAL: \_\_\_\_\_ DATE: \_\_\_\_\_  
TECHNICAL APPROVAL: \_\_\_\_\_ DATE: \_\_\_\_\_

"WIRELESS COMMUNICATION SITE SURVEY"  
I HAVE REVIEWED THE FLOOD INSURANCE RATE MAPS (FIRM)  
MAP NO. 21080C0002C DATED 08-19-2012 AND THE LEASE  
AREA. THE LEASE AREA IS LOCATED IN ZONE "X".

LAND SURVEYOR'S CERTIFICATE  
I, FRANK L. SELINGER, A LICENSED PROFESSIONAL LAND SURVEYOR  
IN THE STATE OF KENTUCKY, HAVE SURVEYED THE ABOVE  
DESCRIBED PROPERTY AND HAVE FOUND THAT THE SAME  
IS ACCURATELY DESCRIBED BY THE ABOVE INSTRUMENTS.  
I HEREBY CERTIFY THAT I AM A LICENSED PROFESSIONAL  
LAND SURVEYOR IN THE STATE OF KENTUCKY.  
FRANK L. SELINGER  
KY Reg. No. 3282

STATE OF KENTUCKY  
FRANK L. SELINGER  
LICENSED PROFESSIONAL  
LAND SURVEYOR  
3282

ABBREVIATIONS  
C CONCRETE  
CP CORRUGATED PLASTIC PIPE  
CP CORRUGATED METAL PIPE  
A SURVEY PROPERTY LINE  
PC POINT OF CORNER  
PC POINT OF BEGINNING  
PC POINT OF ENDING  
PC POINT OF INTERSECTION




SYMBOL LEGEND  
C CONCRETE  
CP CORRUGATED PLASTIC PIPE  
CP CORRUGATED METAL PIPE  
A SURVEY PROPERTY LINE  
PC POINT OF CORNER  
PC POINT OF BEGINNING  
PC POINT OF ENDING  
PC POINT OF INTERSECTION

Know what's below.  
Call before you dig.  
811

Know what's below.  
Call before you dig.  
811



SHEET 3

-  LEGAL DESCRIPTIONS (LEASE AREA)
-  LEGAL DESCRIPTIONS (ACCESS ESMU)
-  LEGAL DESCRIPTIONS (PARENT TRACT)

**LEGAL DESCRIPTIONS:**

This is a description for Verizon, of a lease area to be located on the property of the David Wayne Mercer, Rebecca Brunce Mercer, Troy Lee Mercer, & Logan Brunce Mercer, and being near Falls of Rough, Grayson County, Kentucky which is further described as follows:

**LEASE AREA**

Being a part of the property conveyed to David Wayne Mercer, Rebecca Brunce Mercer, Troy Lee Mercer, & Logan Brunce Mercer in Deed Book 513, Page 237 of the Grayson County Clerk's Office, and being near Falls of Rough, Grayson County, Kentucky which is further described as follows:

**ACCESS & UTILITY EASEMENT**

Commencing at a 3/4" rebar with cap found at the southeast corner of the property conveyed to David Wayne Mercer, Rebecca Brunce Mercer, Troy Lee Mercer, & Logan Brunce Mercer in Deed Book 513, Page 237 of the Grayson County Clerk's Office;

Thence with the east line of said Mercer property N 14°51'03" E - 188.28' to a set iron rod with a cap stamped "TStan 3282"; and being the True Point of Beginning, the Access & Utility Easement;

Thence leaving said property line and traversing said Mercer property N 75°08'57" W - 141.00' to a set iron rod with a cap stamped "TStan 3282" on the southeast corner of the Lease Area;

Thence with the east line of said Lease Area N 14°51'03" E - 75.00' to a set iron rod with a cap stamped "TStan 3282" on the northeast corner of said Lease Area;

Thence leaving said Lease Area S 75°08'57" E - 30.00' to a set iron rod with a cap stamped "TStan 3282";

Thence N 14°51'03" W - 45.00' to a set iron rod with a cap stamped "TStan 3282";

Thence S 75°08'57" E - 311.00' to a set iron rod with a cap stamped "TStan 3282" on the northwest right-of-way of Falls of Rough Road;

Thence with said northwest right-of-way S 14°51'03" W - 30.00' to a set iron rod with a cap stamped "TStan 3282";

Thence leaving said northwest right-of-way of Falls of Rough Road and traversing said Mercer property N 75°08'57" W - 200.00' to the point of beginning, containing 17,380.00 square feet as per survey by Frank L. Sellinger, II dated November 08, 2022.

Commencing at a 3/4" rebar with cap found at the southeast corner of the property conveyed to David Wayne Mercer, Rebecca Brunce Mercer, Troy Lee Mercer, & Logan Brunce Mercer in Deed Book 513, Page 237 of the Grayson County Clerk's Office;

Thence with the east line of said Mercer property N 14°51'03" E - 188.28' to a set iron rod with a cap stamped "TStan 3282"; and being the True Point of Beginning, the Access & Utility Easement;

Thence leaving said property line and traversing said Mercer property N 75°08'57" W - 141.00' to a set iron rod with a cap stamped "TStan 3282" on the southeast corner of the Lease Area;

Thence with the east line of said Lease Area N 14°51'03" E - 75.00' to a set iron rod with a cap stamped "TStan 3282" on the northeast corner of said Lease Area;

Thence leaving said Lease Area S 75°08'57" E - 30.00' to a set iron rod with a cap stamped "TStan 3282";

Thence N 14°51'03" W - 45.00' to a set iron rod with a cap stamped "TStan 3282";

Thence S 75°08'57" E - 311.00' to a set iron rod with a cap stamped "TStan 3282" on the northwest right-of-way of Falls of Rough Road;

Thence with said northwest right-of-way S 14°51'03" W - 30.00' to a set iron rod with a cap stamped "TStan 3282";

Thence leaving said northwest right-of-way of Falls of Rough Road and traversing said Mercer property N 75°08'57" W - 200.00' to the point of beginning, containing 17,380.00 square feet as per survey by Frank L. Sellinger, II dated November 08, 2022.

Commencing at a 3/4" rebar with cap found at the southeast corner of the property conveyed to David Wayne Mercer, Rebecca Brunce Mercer, Troy Lee Mercer, & Logan Brunce Mercer in Deed Book 513, Page 237 of the Grayson County Clerk's Office, and being near Falls of Rough, Grayson County, Kentucky which is further described as follows:

Commencing at a 3/4" rebar with cap found at the southeast corner of the property conveyed to David Wayne Mercer, Rebecca Brunce Mercer, Troy Lee Mercer, & Logan Brunce Mercer in Deed Book 513, Page 237 of the Grayson County Clerk's Office;

Thence with the east line of said Mercer property N 14°51'03" E - 188.28' to a set iron rod with a cap stamped "TStan 3282"; and being the True Point of Beginning, the Access & Utility Easement;

Thence leaving said property line and traversing said Mercer property N 75°08'57" W - 141.00' to a set iron rod with a cap stamped "TStan 3282" on the southeast corner of the Lease Area;

Thence with the east line of said Lease Area N 14°51'03" E - 75.00' to a set iron rod with a cap stamped "TStan 3282" on the northeast corner of said Lease Area;

Thence leaving said Lease Area S 75°08'57" E - 30.00' to a set iron rod with a cap stamped "TStan 3282";

Thence N 14°51'03" W - 45.00' to a set iron rod with a cap stamped "TStan 3282";

Thence S 75°08'57" E - 311.00' to a set iron rod with a cap stamped "TStan 3282" on the northwest right-of-way of Falls of Rough Road;

Thence with said northwest right-of-way S 14°51'03" W - 30.00' to a set iron rod with a cap stamped "TStan 3282";

Thence leaving said northwest right-of-way of Falls of Rough Road and traversing said Mercer property N 75°08'57" W - 200.00' to the point of beginning, containing 17,380.00 square feet as per survey by Frank L. Sellinger, II dated November 08, 2022.

State of Kentucky, County of Grayson...SCT  
 This instrument was filed for record on the  
27 day of March 2023  
 at 11:04 o'clock A M and duly recorded in  
Deed Book 520 Page 162  
 of the records of this office.  
 Att. Charlotte Willis, Clerk  
 By Alissa Whiskey Deputy Clerk

STATE OF KENTUCKY

FRANK L. SELLINGER  
3282

LICENSED  
LAND SURVEYOR

LAND SURVEYOR'S CERTIFICATE

I, FRANK L. SELLINGER, UNASSISTED THEREIN, BEING A REGISTERED LAND SURVEYOR IN THE STATE OF KENTUCKY, HAVE SURVEYED THE ABOVE DESCRIBED PROPERTY AND HAVE FOUND THAT THE SAME IS ACCURATELY DESCRIBED BY THE FOREGOING INSTRUMENTS, AND THAT THE SAME ARE IN ACCORDANCE WITH THE ACTS OF THE LEGISLATURE OF THE STATE OF KENTUCKY, AND THAT THE SAME ARE IN ACCORDANCE WITH THE ACTS OF THE LEGISLATURE OF THE STATE OF KENTUCKY, AND THAT THE SAME ARE IN ACCORDANCE WITH THE ACTS OF THE LEGISLATURE OF THE STATE OF KENTUCKY.

Witness my hand and seal of office at the City of Louisville, Kentucky, this 10th day of March, 2023.

Frank L. Sellinger, II, Reg. No. 3282

PREPARED FOR:

**verizon**

**teleCAD**  
Wireless  
1941 NORTHSHORE DRIVE, SUITE 170  
LOUISVILLE, KY 40203  
TEL: 502-636-5263  
FAX: 502-636-5263

**FSTAN**

1012 S 4th Street, Suite 101  
Louisville, Ky 40203  
Phone: (502) 636-5111  
Fax: (502) 636-5263

SITE NUMBER:	617130847
SITE NAME:	ROUGH RIVER DAM
SITE ADDRESS:	KY HWY 79 FALLS OF ROUGH, KY 40119
LEASE AREA:	5625.00 SQ.FT.
PROPERTY OWNER:	DAVID WAYNE MERCER, REBECCA BRUNCE MERCER, TROY LEE MERCER, LOGAN BRUNCE MERCER
PARCEL NUMBER:	028-00-00-011.0N & 028-00-00-011.0K
SOURCE OF TITLE:	D.B. 513, P.C. 237
DATE OF SURVEY:	10.19.22
DATE OF RECORDING:	11.08.22
FSTAN PROJECT NO.:	22-11605

SHEET 2 OF 2

REVISIONS:

RAWLAND

Parcel Number 026-00-00-011.0K  
 MERCER DAVID W & REBECCA B &  
 TROY L & LOGAN B  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

**qPublic.net**™ Grayson County, KY PVA Elizabeth Williams Search search..

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: 026-00-00-011.0K  
 Account Number: 165529  
 Location Address: FALLS OF ROUGH RD 0  
 Description: 1.09 TOT AC & BLDG  
 (Note: Not to be used on legal documents)  
 Class: Residential  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**

Primary Owner  
[MERCER DAVID W & REBECCA B & TROY L & LOGAN B](#)  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

**Land Characteristics**

**Valuation**


**Taxes**

**Improvement Information**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book Page	Grantee	Grantor
6/30/2022	\$100,000	Close Relative Sale	513-237	MERCER DAVID W & REBECCA B &	MERCER DAVID W & REBECCA B & TROY L

**Information**



Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation  
 Administrator  
 Ernie Perkins  
 (270) 259-6838

**Announcements**

[How to use the Beacon site - view Demo Videos](#)

Parcel Number BREEZY H-028  
 MERCER DAVID W & REBECCA B &  
 TROY L & LOGAN B  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

**qPublic.net**™ Grayson County, KY PVA Elizabeth Williams Search search..

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-028  
 Account Number: 165529  
 Location Address: FALLS OF ROUGH RD 0  
 Description: .22 AC  
 (Note: Not to be used on legal documents)  
 Class: Residential  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**

Primary Owner  
[MERCER DAVID W & REBECCA B & TROY L & LOGAN B](#)  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119


**Land Characteristics**

**Valuation**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book Page	Grantee	Grantor
6/30/2022	\$100,000	Close Relative Sale	513-237	MERCER DAVID W & REBECCA B &	MERCER DAVID W & REBECCA B & TROY L

**Information**



Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation  
 Administrator  
 Ernie Perkins  
 (270) 259-4030

**Announcements**

[How to use the Beacon site - view Demo Videos](#)

Parcel Number BREEZY H-029  
 MERCER DAVID W & REBECCA B &  
 TROY L & LOGAN B  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

**qPublic.net**™ Grayson County, KY PVA Elizabeth Williams Search search...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-029  
 Account Number: 165529  
 Location Address: FALLS OF ROUGH RD 0  
 Description: .22 AC  
 (Note: Not to be used on legal documents)

Class: Residential  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)

[View Map](#)

**Owner**

Primary Owner:  
[MERCER DAVID W & REBECCA B & TROY L & LOGAN B](#)  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119


**Land Characteristics**

**Valuation**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
6/30/2022	\$100,000	Close Relative Sale	513-237	MERCER DAVID W & REBECCA B &	MERCER DAVID W & REBECCA B & TROY L

**Information**



Grayson County, KY  
 10 Public Square  
 Letchfield, KY 42754

Property Valuation  
 Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

[How to use the Beacon site - view Demo Videos](#)

Parcel Number BREEZY H-030  
 MERCER DAVID W & REBECCA B &  
 TROY L & LOGAN B  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

**qPublic.net**™ Grayson County, KY PVA Elizabeth Williams Search search...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-030  
 Account Number: 165529  
 Location Address: FALLS OF ROUGH RD 0  
 Description: .22 AC  
 (Note: Not to be used on legal documents)

Class: Residential  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)

[View Map](#)

**Owner**

Primary Owner:  
[MERCER DAVID W & REBECCA B & TROY L & LOGAN B](#)  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

**Land Characteristics**


**Valuation**

**Taxes**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
6/30/2022	\$100,000	Close Relative Sale	513-237	MERCER DAVID W & REBECCA B &	MERCER DAVID W & REBECCA B & TROY L

**Information**



Grayson County, KY  
 10 Public Square  
 Letchfield, KY 42754

Property Valuation  
 Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

[How to use the Beacon site - view Demo Videos](#)

Parcel Number BREEZY H-031  
 FENTRESS GEORGE FAMILY LLC  
 2230 JUNCTION RD  
 FALLS OF ROUGH, KY 40119

**qPublic.net** Grayson County, KY PVA Elizabeth Williams Search search...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-031  
 Account Number: 158017  
 Location Address: FALLS OF ROUGH RD 0  
 Description: .23 AC  
 (Note: Not to be used on legal documents)  
 Class: Residential  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**

Primary Owner:  
[FENTRESS GEORGE FAMILY LLC](#)  
 2230 JUNCTION RD  
 FALLS OF ROUGH, KY 40119


**Land Characteristics**

**Valuation**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book Page	Grantee	Grantor
11/8/2018	\$95,000	Multiple Properties	475-308	FENTRESS GEORGE FAMILY LLC	GEORGE FENTRESS FAMILY LLC

**Information**



Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation  
 Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

[How to use the Beacon site - view Demo Videos](#)

Parcel Number BREEZY H-032  
 FENTRESS GEORGE FAMILY LLC  
 2230 JUNCTION RD  
 FALLS OF ROUGH, KY 40119

**qPublic.net** Grayson County, KY PVA Elizabeth Williams Search search...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-032  
 Account Number: 158017  
 Location Address: FALLS OF ROUGH RD 19911  
 Description: 3 LOTS (0.57 TOT AC) & H  
 (Note: Not to be used on legal documents)  
 Class: Residential  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**

Primary Owner:  
[FENTRESS GEORGE FAMILY LLC](#)  
 2230 JUNCTION RD  
 FALLS OF ROUGH, KY 40119

**Land Characteristics**


**Valuation**

**Improvement Information**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book Page	Grantee	Grantor
11/8/2018	\$95,000	Affiliated Organizations	487-308	FENTRESS GEORGE FAMILY LLC	GEORGE FENTRESS FAMILY LLC

**Information**



Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation  
 Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

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Parcel Number BREEZY H-033  
 FENTRESS GEORGE FAMILY LLC  
 2230 JUNCTION RD  
 FALLS OF ROUGH, KY 40119

**qPublic.net** Grayson County, KY PVA Elizabeth Williams Search search...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-033  
 Account Number: 158017  
 Location Address: FALLS OF ROUGH RD 0  
 Description: 11 AC  
 (Note: Not to be used on legal documents)  
 Class: Residential  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**

Primary Owner: [FENTRESS GEORGE FAMILY LLC](#)  
 2230 JUNCTION RD  
 FALLS OF ROUGH, KY 40119

**Land Characteristics**

**Valuation**

**Taxes**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
11/0/2010	\$95,000	Multiple Properties	475-300	FENTRESS GEORGE FAMILY LLC	GEORGE FENTRESS FAMILY LLC

**Information**



Grayson County, KY  
 10 Public Square  
 Letchfield, KY 42754

Property Valuation Administrator  
 Ernie Perkins  
 (270) 259-4030

**Announcements**

[How to use the Beacon site - view Demo Videos](#)

Parcel Number BREEZY H-034  
 EVANS EDWARD V  
 P O BOX 58  
 FALLS OF ROUGH, KY 40119

**qPublic.net** Grayson County, KY PVA Elizabeth Williams Search search...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-034  
 Account Number: 161196  
 Location Address: FALLS OF ROUGH RD 0  
 Description: LOT  
 (Note: Not to be used on legal documents)  
 Class: Commercial  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**

Primary Owner: [EVANS EDWARD V](#)  
 P O BOX 58  
 FALLS OF ROUGH, KY 40119

**Land Characteristics**


**Valuation**

**Taxes**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
7/18/2020	\$149,000	Multiple Properties	491-446	EVANS EDWARD V	CLEMENTS BRIAN & MIRANDA R

**Information**



Grayson County, KY  
 10 Public Square  
 Letchfield, KY 42754

Property Valuation Administrator  
 Ernie Perkins  
 (270) 259-4030

**Announcements**

[How to use the Beacon site - view Demo Videos](#)

Parcel Number BREEZY H-035  
 EVANS EDWARD V  
 P O BOX 58  
 FALLS OF ROUGH, KY 40119

**qPublic.net**™ Grayson County, KY PVA Elizabeth Williams Search search...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-035  
 Account Number: 161996  
 Location Address: FALLS OF ROUGH RD 0  
 Description: LOT  
(Note: Not to be used on legal documents)  
 Class: Commercial  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
(City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**

Primary Owner  
[EVANS EDWARD V](#)  
 P O BOX 58  
 FALLS OF ROUGH, KY 40119


**Land Characteristics**

**Valuation**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
7/18/2020	\$149,000	Multiple Properties	491-446	EVANS EDWARD V	CLEMENTS BRIAN & MIRANDA R

**Information**



Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation  
 Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

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Parcel Number BREEZY H-036  
 EVANS EDWARD V  
 P O BOX 58  
 FALLS OF ROUGH, KY 40119

**qPublic.net**™ Grayson County, KY PVA Elizabeth Williams Search search...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-036  
 Account Number: 161996  
 Location Address: FALLS OF ROUGH RD 0  
 Description: LOT  
(Note: Not to be used on legal documents)  
 Class: Commercial  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
(City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**

Primary Owner  
[EVANS EDWARD V](#)  
 P O BOX 58  
 FALLS OF ROUGH, KY 40119


**Land Characteristics**

**Valuation**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
7/18/2020	\$149,000	Multiple Properties	491-446	EVANS EDWARD V	CLEMENTS BRIAN & MIRANDA R

**Information**



Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation  
 Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

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Parcel Number BREEZY H-037  
 EVANS EDWARD V  
 P O BOX 58  
 FALLS OF ROUGH, KY 40119

**qPublic.net**™ Grayson County, KY PVA Elizabeth Williams Search search...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-037  
 Account Number: 161996  
 Location Address: FALLS OF ROUGH RD 0  
 Description: LOT  
 (Note: Not to be used on legal documents)

Class: Commercial  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)

[View Map](#)

**Owner**

Primary Owner: [EVANS EDWARD V](#)  
 P O BOX 58  
 FALLS OF ROUGH, KY 40119


**Land Characteristics**

**Valuation**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
7/18/2020	\$149,000	Multiple Properties	491-446	EVANS EDWARD V	CLEMENTS BRIAN & MIRANDA R

**Information**



Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

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Parcel Number 026-00-00-011.0T  
 EVANS EDWARD V  
 P O BOX 58  
 FALLS OF ROUGH, KY 40119

**qPublic.net**™ Grayson County, KY PVA Elizabeth Williams Search search...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: 026-00-00-011.0T  
 Account Number: 161996  
 Location Address: FALLS OF ROUGH RD 0  
 Description: 5.6 AC TOT & BOAT SHEDS & MOTEL  
 (Note: Not to be used on legal documents)

Class: Commercial  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)

[View Map](#)

**Owner**

Primary Owner: [EVANS EDWARD V](#)  
 P O BOX 58  
 FALLS OF ROUGH, KY 40119

**Land Characteristics**

**Valuation**

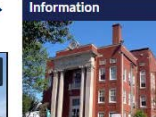
**Taxes**

**Improvement Information**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
7/18/2020	\$149,000	Multiple Properties	491-446	EVANS EDWARD V	CLEMENTS BRIAN & MIRANDA R

**Information**



Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

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Parcel Number 026-00-00-011  
 ST CLAIR ERIC & SHERRY  
 13433 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

**qPublic.net** Grayson County, KY PVA Elizabeth Williams Search search...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: 026-00-00-011  
 Account Number: 152593  
 Location Address: FALLS OF ROUGH RD 13899  
 Description: 344 TOT AC & H & BLDGS  
 (Note: Not to be used on legal documents)  
 Class: Farm  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**

Primary Owner  
[ST CLAIR ERIC & SHERRY](#)  
 13433 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

**Land Characteristics**


**Valuation**

**Taxes**

**Improvement Information**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
11/12/2013	\$398,000	Close Relative Sale	429-119	ST CLAIR ERIC & SHERRY	ST CLAIR REVOCABLE LIVING TR



**Information**

Grayson County, KY  
 10 Public Square  
 Letchfield, KY 42754

Property Valuation Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

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Parcel Number 026-00-00-011.0R  
 MERCER DAVID W & REBECCA B &  
 TROY LEE  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

**qPublic.net** Grayson County, KY PVA Elizabeth Williams Search search...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: 026-00-00-011.0R  
 Account Number: 165528  
 Location Address: FALLS OF ROUGH RD 0  
 Description: 1.745 AC & BOAT SHEDS  
 (Note: Not to be used on legal documents)  
 Class: Commercial  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**

Primary Owner  
[MERCER DAVID W & REBECCA B & TROY LEE](#)  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

**Land Characteristics**


**Valuation**

**Taxes**

**Improvement Information**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
6/30/2022	\$67,000	Close Relative Sale	513-232	MERCER DAVID W & REBECCA B &	MERCER DAVID & REBECCA



**Information**

Grayson County, KY  
 10 Public Square  
 Letchfield, KY 42754

Property Valuation Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

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Parcel Number 026-00-00-007  
 MERCER DAVID W & REBECCA B &  
 TROY LEE  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

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Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: 026-00-00-007  
 Account Number: 165529  
 Location Address: FALLS OF ROUGH RD 0  
 Description: L & BOAT SHEDS & BLDGS  
(Note: not to be used on legal documents)  
 Class: Commercial  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
(City district rates are the combined rate of city and county)

[View Map](#)

**Owner**

Primary Owner: [MERCER DAVID W & REBECCA B & TROY LEE](#)  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

**Land Characteristics**


**Valuation**

**Taxes**

**Improvement Information**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book Page	Grantee	Grantor
6/30/2022	\$67,000	Close Relative Sale	513-232	MERCER DAVID W & REBECCA B &	MERCER REBECCA BRUNCE &



**Information**

Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

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Parcel Number 026-00-00-006  
 DAM LAND COMPANY LLC  
 C/O BIGMOUTHS INCORPORATED  
 640 FENTRESS LOOKOUT RD  
 FALLS OF ROUGH, KY 40119

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**Summary**

Parcel Number: 026-00-00-006  
 Account Number: 168015  
 Location Address: FALLS OF ROUGH RD 0  
 Description: 1.088 TOT AC & RESTAURANT & BLDG (0.298 AC)  
(Note: Not to be used on legal documents)  
 Class: Commercial  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
(City district rates are the combined rate of city and county)

[View Map](#)

**Owner**

Primary Owner: [DAM LAND COMPANY LLC](#)  
 C/O BIGMOUTHS INCORPORATED  
 640 FENTRESS LOOKOUT RD  
 FALLS OF ROUGH, KY 40119

**Land Characteristics**


**Valuation**

**Taxes**

**Improvement Information**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book Page	Grantee	Grantor
1/24/2024	\$500,000	Obligation Transfer	528-139	DAM LAND COMPANY LLC	DAM LAND COMPANY LLC



**Information**

Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

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Parcel Number BREEZY H-020  
 DAM LAND COMPANY LLC  
 C/O BIGMOUTHS INCORPORATED  
 640 FENTRESS LOOKOUT RD  
 FALLS OF ROUGH, KY 40119

**qPublic.net** Grayson County, KY PVA Elizabeth Williams Search search...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-020  
 Account Number: 168015  
 Location Address: FALLS OF ROUGH RD 0  
 Description: 0.229 AC [PLAT]  
 (Note: Not to be used on legal documents)  
 Class: Commercial  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**

Primary Owner  
 DAM LAND COMPANY LLC  
 C/O BIGMOUTHS INCORPORATED  
 640 FENTRESS LOOKOUT RD  
 FALLS OF ROUGH, KY 40119

**Land Characteristics**


**Valuation**

**Taxes**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
1/24/2024	\$350,000	Obligation Transfer	528-139	DAM LAND COMPANY LLC	DAM LAND COMPANY LLC

**Information**



Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation  
 Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

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Parcel Number BREEZY H-021  
 JAY THAKORJI ONE LLC  
 PO BOX 577  
 HARDINSBURG, KY 40143

**qPublic.net** Grayson County, KY PVA Elizabeth Williams Search search...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-021  
 Account Number: 167544  
 Location Address: FALLS OF ROUGH RD 14005  
 Description: 0.58 AC & STORE(0.193 AC)  
 (Note: Not to be used on legal documents)  
 Class: Commercial  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)  
[View Map](#)



**Owner**

Primary Owner  
 JAY THAKORJI ONE LLC  
 PO BOX 577  
 HARDINSBURG, KY 40143

**Land Characteristics**

**Valuation**

**Taxes**

**Improvement Information**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
9/20/2023	\$80,000	Arms-Length Transaction	525-020	JAY THAKORJI ONE LLC	EMBRY CHRISTOPHER

**Information**



Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation  
 Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

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Parcel Number BREEZY H-022  
 JAY THAKORJI ONE LLC  
 PO BOX 577  
 HARDINSBURG, KY 40143

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Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-022  
 Account Number: 167544  
 Location Address: FALLS OF ROUGH RD 0  
 Description: 0.193 AC  
 (Note: Not to be used on legal documents)  
 Class: Commercial  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**

Primary Owner: [JAY THAKORJI ONE LLC](#)  
 PO BOX 577  
 HARDINSBURG, KY 40143


**Land Characteristics**

**Valuation**

**Improvement Information**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
9/20/2023	\$90,000	Expansion Sale	525-020	JAY THAKORJI ONE LLC	EMBRY CHRISTOPHER R.



**Information**

Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation Administrator  
 Ernie Perkins  
 (270) 259-4830

**Announcements**

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Parcel Number BREEZY H-023  
 JAY THAKORJI ONE LLC  
 PO BOX 577  
 HARDINSBURG, KY 40143

**qPublic.net** Grayson County, KY PVA Elizabeth Williams Search 5637C...

Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-023  
 Account Number: 167544  
 Location Address: FALLS OF ROUGH RD 0  
 Description: 0.193 AC  
 (Note: Not to be used on legal documents)  
 Class: Commercial  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**


Primary Owner: [JAY THAKORJI ONE LLC](#)  
 PO BOX 577  
 HARDINSBURG, KY 40143

**Land Characteristics**

**Valuation**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
9/20/2023	\$90,000	Expansion Sale	525-020	JAY THAKORJI ONE LLC	EMBRY CHRISTOPHER R.



**Information**

Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation Administrator  
 Ernie Perkins  
 (270) 259-4830

**Announcements**

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Parcel Number BREEZY H-024  
 MERCER DAVID W & REBECCA B &  
 TROY LEE  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

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**Summary**

Parcel Number: BREEZY H-024  
 Account Number: 165527  
 Location Address: FALLS OF ROUGH RD 0  
 Description: 4 LOTS & BLDG & G & 2000 28 X 68  
 (Note: Not to be used on legal documents)

Class: Residential  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)

[View Map](#)

**Owner**

Primary Owner  
[MERCER DAVID W & REBECCA B &](#)  
 TROY LEE  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

**Land Characteristics**


**Valuation**

**Taxes**


**Improvement Information**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
6/30/2022	\$94,000	Close Relative Sale	513-232	MERCER DAVID W & REBECCA B &	MERCER REBECCA B & DAVID W



**Information**



Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

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Parcel Number BREEZY H-025  
 MERCER DAVID W & REBECCA B &  
 TROY LEE  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

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**Summary**

Parcel Number: BREEZY H-025  
 Account Number: 165527  
 Location Address: FALLS OF ROUGH RD 0  
 Description: (Note: Not to be used on legal documents)

Class: Residential  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)

[View Map](#)

**Owner**

Primary Owner  
[MERCER DAVID W & REBECCA B &](#)  
 TROY LEE  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

**Land Characteristics**

**Valuation**

**Improvement Information**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book-Page	Grantee	Grantor
6/30/2022	\$94,000	Close Relative Sale	513-232	MERCER DAVID W & REBECCA B &	MERCER REBECCA B & DAVID W



**Information**



Grayson County, KY  
 10 Public Square  
 Leitchfield, KY 42754

Property Valuation Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

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Parcel Number BREEZY H-026  
 MERCER DAVID W & REBECCA B &  
 TROY LEE  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

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Layers Map Search Results **Report** Sales Search Sales List Sales Results Tax Estimator Home

**Summary**

Parcel Number: BREEZY H-026  
 Account Number: 165527  
 Location Address: FALLS OF ROUGH RD 13965  
 Description: (Note: Not to be used on legal documents)  
 Class: Residential  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**

Primary Owner: [MERCER DAVID W & REBECCA B & TROY LEE](#)  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119


**Land Characteristics**

**Valuation**

**Improvement Information**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book Page	Grantee	Grantor
6/30/2022	\$94,000	Close Relative Sale	513-232	MERCER DAVID W & REBECCA B &	MERCER REBECCA B & DAVID W



**Information**

Grayson County, KY  
 10 Public Square  
 Letchfield, KY 42754

Property Valuation  
 Administrator  
 Ernie Perkins  
 (270) 259-4830

**Announcements**

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Parcel Number BREEZY H-027  
 MERCER DAVID W & REBECCA B &  
 TROY LEE  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

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**Summary**

Parcel Number: BREEZY H-027  
 Account Number: 165527  
 Location Address: FALLS OF ROUGH RD 0  
 Description: (Note: Not to be used on legal documents)  
 Class: Residential  
 Tax District: 09 County  
 Rate Per Thousand: 9.7900  
 (City district rates are the combined rate of city and county)  
[View Map](#)

**Owner**

Primary Owner: [MERCER DAVID W & REBECCA B & TROY LEE](#)  
 13965 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119

**Land Characteristics**

**Valuation**

**Taxes**

**Sale Information**

Sale Date	Sale Price	Sale Type	Book Page	Grantee	Grantor
6/30/2022	\$94,000	Close Relative Sale	513-232	MERCER DAVID W & REBECCA B &	MERCER REBECCA B & DAVID W



**Information**

Grayson County, KY  
 10 Public Square  
 Letchfield, KY 42754

Property Valuation  
 Administrator  
 Ernie Perkins  
 (270) 259-4838

**Announcements**

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**Russell L. Brown**  
Attorney at Law  
rbrown@clarkquinnlaw.com

**320 N. Meridian St., Ste. 1100**  
**Indianapolis, IN 46204**  
**(317) 637-1321 main**  
**(317) 687-2344 fax**

March 8, 2024

**Notice of Proposed Construction of  
Wireless Communications Facility  
Site Name: Rough River Dam**

Cellco Partnership, d/b/a Verizon Wireless and TowerCo are filing an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located on the west side of Falls of Rough Road at its intersection with Rough River Lodge Rd., Falls of Rough, KY 40119. (North Latitude: (37° 36' 16.71", West Longitude 86° 30' 43.37"). The proposed facility will include a 105-foot tall antenna tower, plus a 5-foot lightning arrestor and related ground facilities. Site name is Rough River Dam. This facility is needed to provide improved coverage for wireless communications in the area.

This notice is being sent to you because the County Property Valuation Administrator's records indicate that you may own property that is within a 500' radius of the proposed tower site or contiguous to the property on which the tower is to be constructed. You have a right to submit testimony to the Kentucky Public Service Commission ("PSC"), either in writing or to request intervention in the PSC's proceedings on the application. You may contact the PSC for additional information concerning this matter at: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2024-00059 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. Applicant's radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the area. Please feel free to contact us at 317-637-1321 if you have any comments or questions about this proposal.

Sincerely,  
Russell L. Brown



Attorney for Applicant  
RLB/mnw  
enclosure

# Location Map



**ClarkQuinn**  
Clark, Quinn, Moses, Scott & Grahn, LLP



9589 0710 5270 0471 4850 37

MERCER DAVID W & REBECCA B &  
TROY L & LOGAN B  
13965 FALLS OF ROUGH RD  
FALLS OF ROUGH, KY 40119

FIRST-CLASS



US POSTAGE<sup>IMI</sup>PITNEY BOWES



ZIP 46204 \$ 008.69<sup>0</sup>  
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9589 0710 5270 0471 4850 44

FENTRESS GEORGE FAMILY LLC  
2230 JUNCTION RD  
FALLS OF ROUGH, KY 40119

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9589 0710 5270 0471 4850 51

EVANS EDWARD V  
P O BOX 58  
FALLS OF ROUGH, KY 40119

FIRST-CLASS



US POSTAGE<sup>IMI</sup>PITNEY BOWES



ZIP 46204 \$ 008.69<sup>0</sup>  
02 7H  
0006035028 MAR 08 2024



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9589 0710 5270 0471 4850 68

ST CLAIR ERIC & SHERRY  
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DAM LAND COMPANY LLC  
C/O BIGMOUTHS INCORPORATED  
640 FENTRESS LOOKOUT RD  
FALLS OF ROUGH, KY 40119

FIRST-CLASS



US POSTAGE<sup>TM</sup> PITNEY BOWES



ZIP 46204 \$ 008.69<sup>0</sup>  
02 7H  
0006035028 MAR 08 2024



**CERTIFIED MAIL®**

**ClarkQuinn**  
Clark, Quinn, Moses, Scott & Grahn, LLP



9589 0710 5270 0471 4850 99

FIRST-CLASS



US POSTAGE<sup>SM</sup> PITNEY BOWES



ZIP 46204 \$ 008.69<sup>0</sup>  
02 7H  
0006035028 MAR 08 2024

JAY THAKORJI ONE LLC  
PO BOX 577  
HARDINSBURG, KY 40143

**CERTIFIED MAIL**

**Quinn**  
oses, Scott & Grahn, LLP



9589 0710 5270 0471 4850 99

INDIANAPOLIS IN 460

8 MAR 2024 PM 2:1

FIRST-CLASS



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ZIP 46204 \$ 008.69<sup>0</sup>  
02 7H 0006035028 MAR 08 2024

3-13

JAY THAKORJI ONE LLC  
PO BOX 577  
HARDINSBURG, KY 40142

NIXIE 402 CE 1 0203/15/24

RETURN TO SENDER  
REFUSED  
UNABLE TO FORWARD

BC: 46204172975 \*1812-05807-08-39

REF  
40142-02-57779

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MERCER DAVID W & REBECCA B &  
TROY LEE  
13965 FALLS OF ROUGH RD  
FALLS OF ROUGH, KY 40119



9590 9402 8749 3310 9103 17

2. Article Number (Transfer from service label)

9589 0710 5270 0471 4850 75

PS Form 3811, July 2020 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

- A. Signature  
 *Kenny Arnold*  Agent  
 Addressee
- B. Received by (Printed Name) *Kenny Arnold* C. Date of Delivery
- D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type
- |  |   |
|--|---|
| <input type="checkbox"/> Adult Signature                         | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery     | <input type="checkbox"/> Registered Mail™                           |
| <input checked="" type="checkbox"/> Certified Mail®              | <input type="checkbox"/> Registered Mail Restricted Delivery        |
| <input type="checkbox"/> Certified Mail Restricted Delivery      | <input type="checkbox"/> Signature Confirmation™                    |
| <input type="checkbox"/> Collect on Delivery                     | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery |   |
- Mail Restricted Delivery (500)

Domestic Return Receipt

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MERCER DAVID W & REBECCA B &  
TROY L & LOGAN B  
13965 FALLS OF ROUGH RD  
FALLS OF ROUGH, KY 40119



9590 9402 8749 3310 9103 55

2. Article Number (Transfer from service label)

**COMPLETE THIS SECTION ON DELIVERY**

- A. Signature  
 *Kenny Arnold*  Agent  
 Addressee
- B. Received by (Printed Name) *Kenny Arnold* C. Date of Delivery
- D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type
- |  |   |
|--|---|
| <input type="checkbox"/> Adult Signature                         | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery     | <input type="checkbox"/> Registered Mail™                           |
| <input checked="" type="checkbox"/> Certified Mail®              | <input type="checkbox"/> Registered Mail Restricted Delivery        |
| <input type="checkbox"/> Certified Mail Restricted Delivery      | <input type="checkbox"/> Signature Confirmation™                    |
| <input type="checkbox"/> Collect on Delivery                     | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery |   |



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

DAM LAND COMPANY LLC  
 C/O BIGMOUTHS INCORPORATED  
 640 FENTRESS LOOKOUT RD  
 FALLS OF ROUGH, KY 40119



9590 9402 8749 3310 9103 00

2. Article Number (Transfer from service label)

9589 0710 5270 0471 4850 82

COMPLETE THIS SECTION ON DELIVERY

A. Signature

*[Handwritten Signature]*

- Agent
- Addressee

B. Received by (Printed Name)

C. Date of Delivery

- D. Is delivery address different from item 1?  Yes
- If YES, enter delivery address below:  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Mail Restricted Delivery 00

PS Form 3811, July 2020 PSN 7530-02-000-9053

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

ST CLAIR ERIC & SHERRY  
 13433 FALLS OF ROUGH RD  
 FALLS OF ROUGH, KY 40119



9590 9402 8749 3310 9103 24

2. Article Number (Transfer from service label)

9589 0710 5270 0471 4850 68

COMPLETE THIS SECTION ON DELIVERY

A. Signature

*[Handwritten Signature]*

- Agent
- Addressee

B. Received by (Printed Name)

C. Date of Delivery

- D. Is delivery address different from item 1?  Yes
- If YES, enter delivery address below:  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Mail Restricted Delivery 00

PS Form 3811, July 2020 PSN 7530-02-000-9053

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

EVANS EDWARD V  
 P O BOX 58  
 FALLS OF ROUGH, KY 40119



9590 9402 8749 3310 9103 31

2. Article Number (Transfer from service label)

9589 0710 5270 0471 4850 51

COMPLETE THIS SECTION ON DELIVERY

A. Signature

*[Handwritten Signature]*

- Agent
- Addressee

B. Received by (Printed Name)

*[Handwritten Name]*

C. Date of Delivery

- D. Is delivery address different from item 1?  Yes
- If YES, enter delivery address below:  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Mail Restricted Delivery 00

PS Form 3811, July 2020 PSN 7530-02-000-9053

Domestic Return Receipt

**ALERT: SEVERE WEATHER IN THE SOUTH, SOUTHEAST, AND MIDWEST MAY IMPACT DELIVE...**

# USPS Tracking®

[FAQs >](#)

Tracking Number:

[Remove X](#)

## 9589071052700471485044

[Copy](#)

[Add to Informed Delivery \(https://informedelivery.usps.com/\)](https://informedelivery.usps.com/)

### Latest Update

Your item was picked up at a postal facility at 2:34 pm on March 12, 2024 in FALLS OF ROUGH, KY 40119.

Get More Out of USPS Tracking:

[USPS Tracking Plus®](#)

Feedback

### Delivered

**Delivered, Individual Picked Up at Postal Facility**

FALLS OF ROUGH, KY 40119

March 12, 2024, 2:34 pm

[See All Tracking History](#)

[What Do USPS Tracking Statuses Mean? \(https://faq.usps.com/s/article/Where-is-my-package\)](https://faq.usps.com/s/article/Where-is-my-package)

[Text & Email Updates](#)



[USPS Tracking Plus®](#)



[Product Information](#)



[See Less ^](#)

[Track Another Package](#)



Enter tracking or barcode numbers

## Need More Help?

Contact USPS Tracking support for further assistance.

[FAQs](#)



www.clarkquinnlaw.com

**Russell L. Brown**  
Attorney at Law  
rbrown@clarkquinnlaw.com

**320 N. Meridian St., Ste. 1100**  
**Indianapolis, IN 46204**  
**(317) 637-1321 main**  
**(317) 687-2344 fax**

March 8, 2024

Via Certified Mail, Return Receipt Requested  
9589 0710 5270 0471 4848 87

Hon. Kevin Henderson  
Grayson County Judge Executive  
130 E. Market Street  
Leitchfield, KY 42754

RE: Notice of Proposal to Construct Wireless Communications Facility  
Kentucky Public Service Commission Docket No. 2024-00059  
Site Name: Rough River Dam

Dear Judge Henderson:

Cellco Partnership, d/b/a Verizon Wireless and TowerCo is filing an application with the Kentucky Public Service Commission ("PSC") to construct a wireless communications facility on a site located on the west side of Falls of Rough Road at its intersection with Rough River Lodge Rd., Falls of Rough, KY 40119. (North Latitude: (37° 36' 16.71", West Longitude 86° 30' 43.37"). The proposed facility will include a 105-foot tall antenna tower, plus a 5-foot lightning arrestor and related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

You have a right to submit comments to the PSC or to request intervention in the PSC's proceedings on the application. You may contact the PSC at: Executive Director, Public Service Commission, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2024-00059 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. Verizon Wireless' radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the area. Please feel free to contact us with any comments or questions you may have.

Sincerely,  
Russell L. Brown

A handwritten signature in black ink, appearing to read 'R. Brown', written over a horizontal line.

Attorney for Applicant



# Location Map



**CERTIFIED MAIL**

**ClarkQuinn**  
Clark, Quinn, Moses, Scott & Grahn, LLP



9589 0710 5270 0471 4848 87

FIRST-CLASS



US POSTAGE IMPITNEY BOWES



ZIP 46204 \$ 008.69<sup>0</sup>  
02 7H 0006035028 MAR 08 2024

Hon. Kevin Henderson  
Grayson County Judge Executive  
130 E. Market Street  
Leitchfield, KY 42754

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Hon. Kevin Henderson  
Grayson County Judge Executive  
130 E. Market Street  
Leitchfield, KY 42754



9590 9402 8749 3310 9102 56

2. Article Number (Transfer from service label)

9589 0710 5270 0471 4848 87

PS Form 3811, July 2020 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

- Agent
- Addressee

B. Received by (Printed Name)

MARIANNE DOWNS

C. Date of Delivery

3-11-24

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

130 E MARKET ST  
LEITCHFIELD, KY 42754

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Signature Confirmation™
- Signature Confirmation Restricted Delivery
- Mail Restricted Delivery

Domestic Return Receipt

## SITE NAME: ROUGH RIVER DAM NOTICE SIGNS

The signs are at least (2) feet by four (4) feet in size, of durable material, with the text printed in black letters at least one (1) inch in height against a white background, except for the word "**tower**," which is at least four (4) inches in height.

TowerCo and Cellco Partnership, d/b/a Verizon Wireless proposes to construct a telecommunications **tower** on this site. If you have questions, please contact Clark, Quinn, Moses, Scott & Grahn, LLP, 320 N. Meridian Street, Indianapolis, IN 46204; 317-637-1321, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2024-00059 in your correspondence.

TowerCo and Cellco Partnership, d/b/a Verizon Wireless proposes to construct a telecommunications **tower** on this site. If you have questions, please contact Clark, Quinn, Moses, Scott & Grahn, LLP, 320 N. Meridian Street, Indianapolis, IN 46204; 317-637-1321, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2024-00059 in your correspondence.



ClarkQuinn  
Clark, Quinn, Moses, Scott & Grahn, LLP

Robert B. Scott  
Charles R. Grahn  
Frank D. Otte\*  
John "Bart" Herriman  
William W. Gooden\*\*  
Michael P. Maxwell  
Russell L. Brown\*\*†  
Jennifer F. Perry  
Keith L. Beall  
N. Davey Neal  
Travis W. Cohron  
Maggie L. Sadler  
Kristin A. McIlwain  
Olivia A. Hess

VIA EMAIL: [classifieds@graysonconews.com](mailto:classifieds@graysonconews.com)

---

Land Use Consultant  
Elizabeth Bentz Williams, AICP

---

Grayson County News  
52 Public Square  
Leitchfield, KY 42754

\*Also admitted in Montana

†Also admitted in Kentucky  
\*\*

Registered Civil Mediator

RE: Legal Notice Advertisement  
Site Name: Rough River Dam

To Whom It May Concern,

Please publish the following legal notice advertisement in the next available edition of the publication serving Grayson County, Falls of Rough, Kentucky:

#### NOTICE

**Cellco Partnership, d/b/a Verizon Wireless and TowerCo are filing an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located on the west side of Falls of Rough Road at its intersection with Rough River Lodge Rd., Falls of Rough, KY 40119. (North Latitude: (37° 36' 16.71" , West Longitude 86° 30' 43.37"). The proposed facility will include a 105-foot tall antenna tower, plus a 5-foot lightning arrestor and related ground facilities. Site name is Rough River Dam. You have a right to submit comments to the PSC or to request intervention in the PSC's proceedings on the application. You may contact the PSC at: Executive Director, Public Service Commission, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2024-00059 in any correspondence sent in connection with this matter.**

After this advertisement has been published, please forward a tearsheet copy, affidavit of publication, and invoice to Clark, Quinn, Moses, Scott & Grahn, LLC, 320 N. Meridian Street, Indianapolis, IN 46204 or by email to [ebw@clarkquinnlaw.com](mailto:ebw@clarkquinnlaw.com). Please call me on my cell with any questions at 317-902-2187 if you have any questions. Thank you for your assistance.

Sincerely,

Elizabeth Bentz Williams, AICP



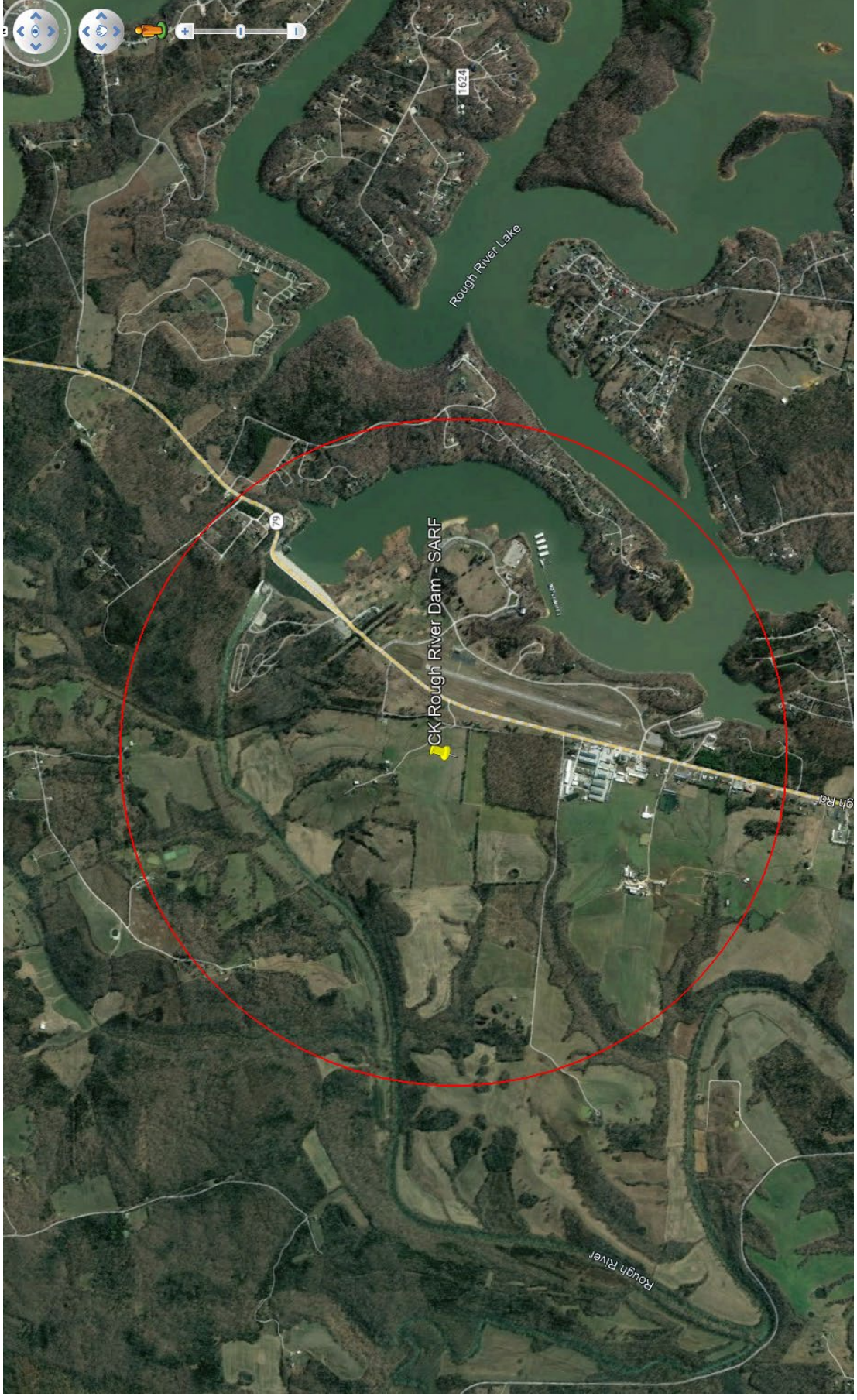
**CK Rough River Dam SARF**

Lat: 37.61271944

Long: -86.51066111

Ring Radius: 1 mile

Desired RAD Center: 100 – 150 ft.







February 21, 2024

RE: Proposed Cellco Partnership d/b/a Verizon Wireless Communications

Facility Site Name: CK Rough River Dam

Type of Tower: 110ft. Monopole

Location: 13965 Falls Of Rough Rd., Falls Of Rough, KY 40119

To Whom It May Concern:

As a radio frequency engineer for Verizon Wireless, I am providing this letter to state the need for a Verizon Wireless site called, CK Rough River Dam.

The CK Rough River Dam site is proposed with the below objectives:

1. To improve service along Kentucky Route 79.
2. To improve coverage in the Rough River Dam Resort State Park.
3. To offload existing traffic of existing Verizon sites in this area.

Currently the area is experiencing poor service along Kentucky Route 79, and in the Rough River Dam Resort State Park. There is a high demand for wireless high-speed data and phone service in this area. This tower is needed to provide all Verizon customers in the area with the best experience on their wireless devices.

Raw Land – Design plans for a new tower would provide overall tower height of 110' with a Verizon Wireless Centerline of 104'. The new structure height was decided upon to best cover Kentucky Route 79, to better serve the Rough River Dam Resort State Park and to offload traffic from the nearby existing Verizon sites. If we are limited to building a structure less than the proposed height, another tower would be needed in the vicinity in the near future. In addition, building a structure that is too short can cause existing taller sites to cover over the proposed site and building a site that is too tall can cause the proposed site to shoot over existing sites. Both situations create a poor experience from a user perspective. The new structure is proposed to be placed near the center of the problem area. The new tower design solves the stated objectives.

Verizon Wireless cares about the communities as well as the environment and prefers to collocate on existing structures when available. Verizon Wireless is currently collocated on some existing structures in the area. We prefer collocation due to reduced construction costs, faster deployment, and environment protection. However, Verizon Wireless was unable to find a suitable structure within the center of demand area to collocate the proposed site.



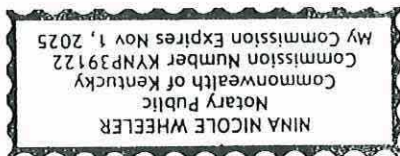
Verizon Wireless design engineers establish search area criteria in order to effectively meet coverage objectives as well as offload existing Verizon cell sites. When met, the criterion also reduces the need for a new site to cover the area in the immediate future. Each cellular site covers a limited area, depending on site configuration and the surrounding terrain. Cell sites are built in an interconnected network; which means each cell site must be located so that their respective coverage areas are contiguous. This provides uninterrupted communications throughout the coverage area.

Since collocation is generally the most cost-effective means for prompt deployment of new facilities, Verizon Wireless makes every effort to investigate the feasibility for using existing towers or other tall structures for collocation when designing a new site or system expansion. However, collocation on an existing tower or tall structure is not always feasible due to location of existing cell sites. Cell sites are placed in a way so they provide smooth hand off to each other and are placed at some distance from each other to eliminate too much overlap. Too much overlap may result in a waste of resources and raise a system capacity overload concern. This cell site has been designed, and shall be constructed and operated in a manner that satisfies regulations and requirements of all applicable governmental agencies that have been charged with regulating tower specifications, operation, construction, and placement, including the FAA and FCC.

Sincerely,

Steven Belcher  
Sr. RF Engineer  
*Verizon Wireless*

2/22/24  
notary public  
Nina Nicole Wheeler





January 30, 2024

RE: Zoning Plots

Site Name: CK Rough River Dam

To Whom It May Concern:

This map is not a guarantee of coverage and may contain areas with no service. This map reflects a depiction of predicted and approximate wireless coverage of the network and is intended to provide a relative comparison of coverage. The depictions of coverage do not guarantee service availability as there are many factors that can influence coverage and service availability. These factors vary from location to location and change over time. The coverage areas may include locations with limited or no coverage. Even within a coverage area shown, there are many factors, including but not limited to, usage volumes, outages, customer's equipment, terrain, proximity to buildings, foliage, and weather that may impact service.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Belcher", with a long, sweeping underline.

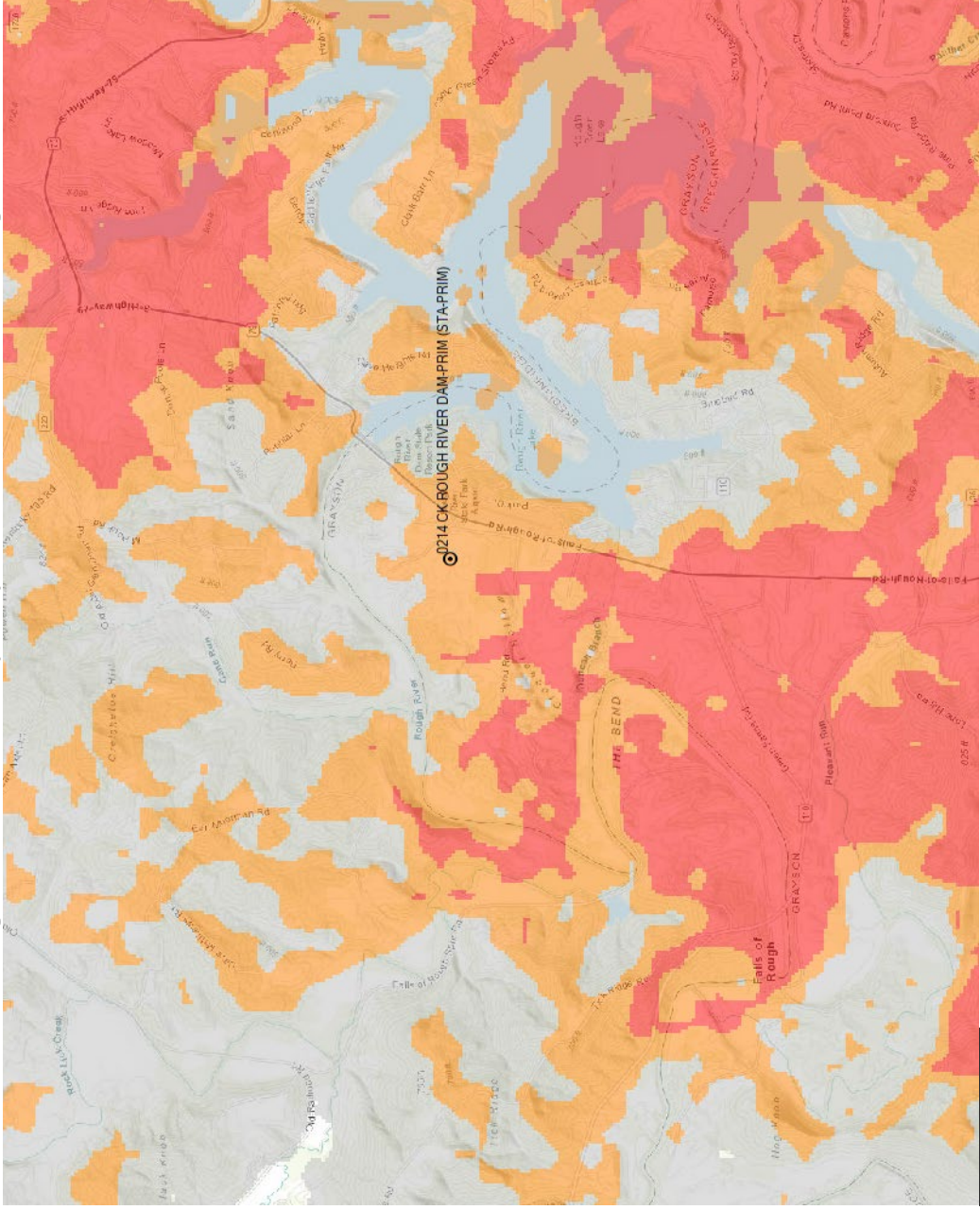
Steven Belcher

Sr RF Engineer

**Verizon Wireless**



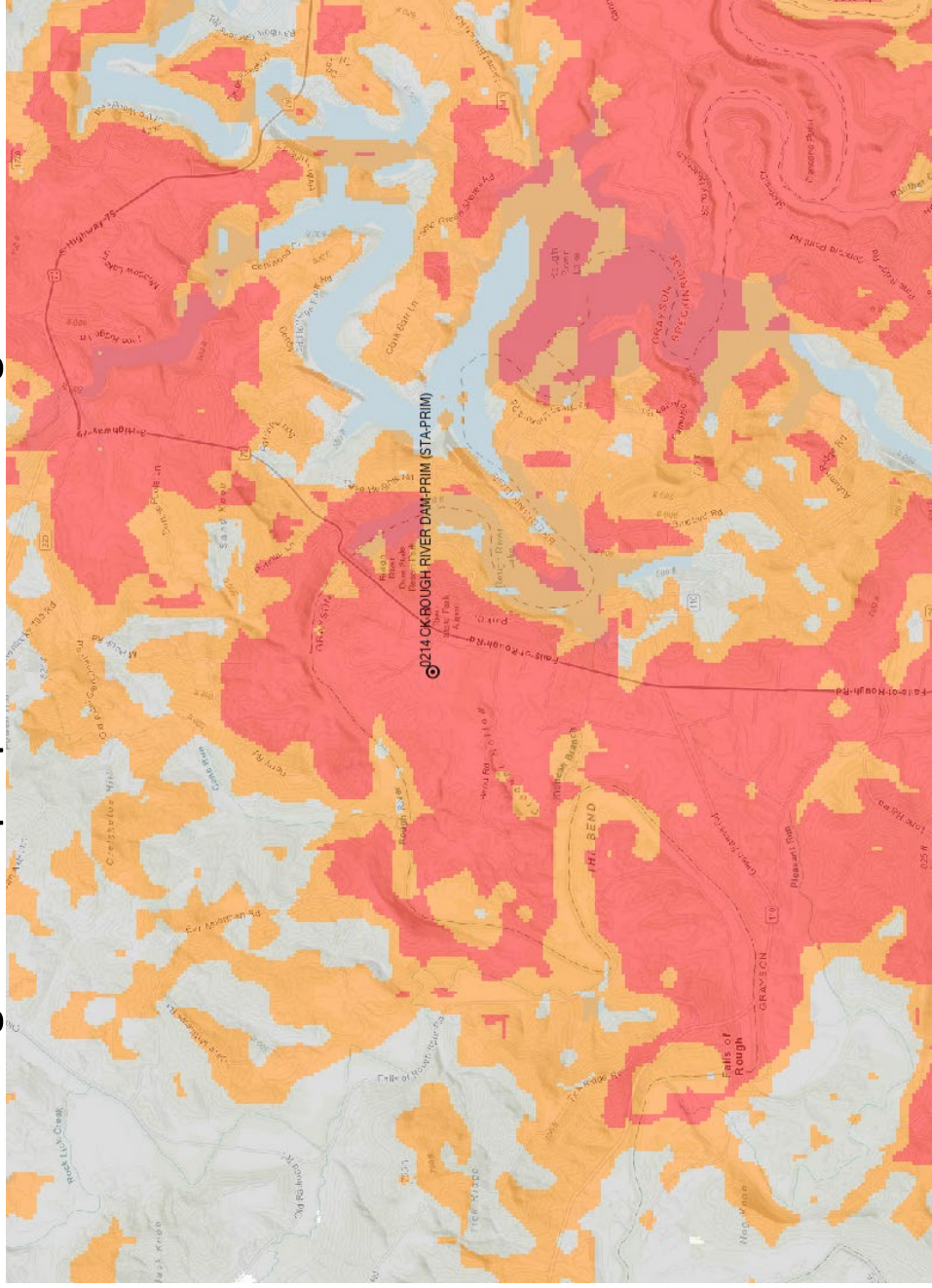
# Current Coverage - Without proposed site CK Rough River Dam







# Coverage - With proposed site CK Rough River Dam





**Exhibit S**  
**List and Identity and Qualifications of Professionals**

Stephen E. Hont  
Professional Engineer  
Kentucky License 25003  
TeleCad Communications  
1961 Northpoint Blvd. Suite 130  
Hixson, TX, 37343

Frank L. Sellinger  
Professional Land Surveyor  
Kentucky License 3282  
FSTAN  
1012 S. 4<sup>th</sup> St., Suite 101  
Louisville, KY 40203

Robert E. Beacom  
Professional Engineer  
Kentucky License 28165  
Sabre Industries  
PO Box 658  
Sioux City, IA 51102

Michael L. Lassiter  
Professional Engineer  
Kentucky License 24895  
Delta Oaks Group  
4904 Professional Court, Second Floor  
Raleigh, NC 27609

Joseph V. Borrelli  
Professional Engineer  
Kentucky License 30809  
Delta Oaks Group  
4904 Professional Court, Second Floor  
Raleigh, NC 27609

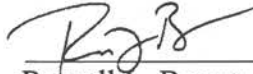
Larry Rhoads  
Construction Manager  
Verizon Wireless  
2421 Holloway Road  
Louisville, KY 40299

Steven Belchen  
RF Engineer  
Verizon Wireless  
2421 Holloway Road  
Louisville, KY 40299

STATE OF INDIANA )  
                              ) SS:  
COUNTY OF MARION )

**AFFIDAVIT OF CERTIFICATION  
COMMONWEALTH OF KENTUCKY  
PUBLIC SERVICE COMMISSION**

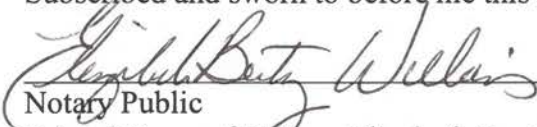
I Russell L. Brown, attorney for Cellco Partnership, d/b/a Verizon Wireless do hereby certify that as the person supervising the preparation of this application and all statements and information contained herein are true and accurate to the best of that person’s knowledge, information, and belief formed after a reasonable inquiry for all information within this application.



\_\_\_\_\_  
Russell L. Brown  
Attorney, for Cellco Partnership, d/b/a Verizon Wireless

STATE OF INDIANA,  
COUNTY OF MARION, SS:

Subscribed and sworn to before me this 9<sup>th</sup> day of May, 2024.



\_\_\_\_\_  
Notary Public  
Printed Name of Notary: Elizabeth Bentz Williams  
My commission expires: November 18, 2028  
My County of Residence: Marion  
Commission #: 0639620

