COMMONWEALTH OF KENTUCKY BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS FOR ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A WIRELESS COMMUNICATIONS FACILITY IN THE COMMONWEALTH OF KENTUCKY IN THE COUNTY OF TODD

CASE NO. 2022-00230

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SITE NAME: CLIFTY

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

Cellco Partnership, d/b/a Verizon Wireless ("Applicant"), 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 submits 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 Applicant with wireless communications services.

In support of this Application, Applicant respectfully provides and states the following information:

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

2. Applicant is a Delaware general partnership and a copy of the Amended Certificate of Assumed Name is on file with the Secretary of State of Commonwealth of Kentucky is included as part of **Exhibit A**.

3. Applicant proposes construction of an antenna tower for communications services, which is to be located in an area outside the jurisdiction of a planning commission, and Applicant submits 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 Applicant operates on frequencies licensed by the Federal Communications
Commission ("FCC") pursuant to applicable FCC requirements. A copy of the Applicant's FCC
licenses 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 Applicant's services to an area currently not served or not adequately served by the Applicant by increasing coverage or capacity and thereby enhancing the public's access to innovative and competitive wireless communications services. A statement from Applicant's RF Design Engineer outlining said need is attached as **Exhibit Q** along with Propagation Maps attached as **Exhibit Qa**. 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, Applicant proposes to construct a WCF at 462 Clifty-Kirkmansville Road, Elkton 42220 (36° 59' 26.09" North latitude, 87° 09' 44.12" West longitude), 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 Stevie

and Brenda Powell pursuant to a Deed recorded at Deed Book 102, Page 489 in the office of the County Clerk. The proposed WCF will consist of a 250-foot tall tower, with an approximately 5-foot tall lightning arrestor attached at the top, for a total height of 255-feet. The WCF will also include concrete foundations and a shelter or cabinets to accommodate the placement of the Applicant's radio electronics equipment and appurtenant equipment. The 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 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. Applicant has 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 Applicant's antennas on an existing structure. When suitable towers or

structures exist, Applicant attempts to co-locate on existing structures such as communications towers or other structures capable of supporting Applicant's facilities; however, no other suitable or available co-location site was found to be located in the vicinity of the site.

11. A copy Federal Aviation Administration ("FAA") submission for proposed case #2022-ASO-8404-OE which indicates that the filing is under study as is attached as **Exhibit F**.

12. A copy of the Kentucky Airport Zoning Commission ("KAZC") Application to construct the tower is attached as **Exhibit G**.

13. A geotechnical engineering report was performed at the Collier Engineering Co.,
Inc., 2949 Nolensville Pike, Nashville, TN 37411, dated May 20, 2022, 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 R.

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 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.

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 R**.

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 21219C0125C, Dated July 22, 2010.

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 (according to the records maintained by the County Property Valuation Administrator). 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 is illustrated in **Exhibit C**.

20. Applicant has notified 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 will be informed of his or her right to request intervention. A list of the notified property owners and a copy of the form of the notice to be sent by certified mail to each landowner are attached as **Exhibit K** and **Exhibit L**, respectively.

21. Applicant has 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 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**. 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**.

23. The general area where the proposed facility is to be located is undeveloped and removed a significant distance from any residential structures. The nearest residential structure is 916.8 feet from the proposed tower site.

24. The process that was used by the 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. 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 Applicant when searching for sites for its antennas that would provide the coverage deemed necessary by the 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**. 25. 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 Engineers' Statement of Need and Propagation Maps attached as **Exhibit Q and Qa.** The proposed tower will expand and improve voice and data service for Verizon Wireless customers.

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

27. 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: <u>rbrown@clarkquinnlaw.com</u> Attorney for Cellco Partnership d/b/a Verizon Wireless

WHEREFORE, Applicant 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,

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 Attorney for Cellco Partnership d/b/a Verizon Wireless

LIST OF EXHIBITS

- A Applicant Entity
- B FCC 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 Information (Proposed Case)
- G KAZC Application
- H Geotechnical Report
- I Directions to WCF Site
- J Copy of Real Estate Agreement
- K Notification Listing
- L Copy of Property Owner Notification
- M Copy of County Judge/Executive notice
- N Copy of Posted Notices
- O Copy of Newspaper Legal Notice Advertisement
- P Copy of Radio Frequency Design Search Area
- Q Copy of RF Design Engineer State of Need
- Qa Propagation Maps
- R List of Qualified Professionals

COMMONWEALTH OF KENTUCKY TREY GRAYSON SECRETARY OF STATE



Secretary of State Received and Filed 08/21/2008 12:06:09 PM Fee Receipt: \$20.03

CERTIFICATE OF ASSUMED NAME

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COMMONWEALTH OF KENTUCKY ELAINE N. WALKER, SECRETARY OF STATE

Division of Business Filings Business Filings PO Box 718 Frankfort, KY 40802 (502) 564-3490 www.sos.ky.gov		ertificate of Assum Foreign Business Entit		AAN
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		a name on record with the Sec	miary of State.)	
2. The certificate of assumed na				
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3 The current principal office ad	dress (if any) is:			
One Verizon Way		Basking Ridge	NJ	07920
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5. This application will be effective or the delayed effective date can	ve upon filing, unless not be ortor to the de	a delayed effective date a table to the application is filed	and/or time is provide	d. The effective date
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6. The changes in the identity of	the partners are as f	ollows. See Addend	dum for currer	
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declare under penalty of perjury	under the laws of Ke GTE Wireless I	entucky that the forgoing is accorporated	s true and correct.	
save ascharge	Jana A. Schank		Assistant Secretary	1/21/2012

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Addendum

The full name of the Partnership is Cellco Partnership, a Delaware general partnership composed of the following partners:

General Partners of Cellco Partnership	Address
Bell Atlantic Mobile Systems LLC	One Varizon Way Basking Ridge, NJ 07920
GTE Wireless Incorporated	One Verizon Way Basking Ridge, NJ 07920
PCS Nucleus, L.P.	Denver Place South Tower 999-18 th Stroet, Suite 1750 Denver, CO 80202
JV PartnerCo, LLC	Denver Place South Tower 999-18 th Street, Suite 1750 Denver, CO 80202

REFERENCE COPY

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search for license information.

Call Sign: WRAM732

File Number: 0009262182

Print Date: 03-11-2021

700 MHz Relicensed Area Information:

Market Market Name **Buildout Deadline Buildout Notification** Status

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Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters)	78 14 n Watts: 140 0 78 0.	.700 81.100 4.730 63.54 .820 45 .700 81.100 710 17.40	0 68.500 0 7.340 90 68.500 0 68.500	56.000 0.360 135 56.000) 56.400 0.300 180) 56.400	56.600 0.380 225 56.600	64.300 8.420 270 64.300	66.540 315 64.200
Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north)	78 14 n Watts: 140 0 78 0.' n Watts: 140 0	.700 81.100 .4.730 63.54 .820 45 .700 81.100 .700 17.40 .820 45 .820 45 .700 81.100 .700 81.100 .700 81.100 .700 81.100 .820 45	0 68.500 0 7.340 90 68.500 0 68.500 0 93.440 90 90	56.000 0.360 135 56.000 120.38 135	56.400 0.300 180 56.400 30 32.400 180	225 56.600 0.380 225 56.600 3.090 225	64.300 8.420 270 64.300 0.300 270	 66.540 315 64.200 0.340 315
Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in	78 14 n Watts: 140 0 78 0.' n Watts: 140 0 78	.700 81.100 4.730 63.54 .820 45 .700 81.100 710 17.40 .820 .820	0 68.500 0 7.340 90 68.500 0 93.440 90 68.500 0 93.440 90 68.500	56.000 0.360 135 56.000 120.38	56.400 0.300 180 56.400 30 32.400 180	225 56.600 3.090	64.300 8.420 270 64.300 0.300	315 64.200 0.340



Call Sign: KNKN867	File	Number:	00092621	34	Р	rint Date	:	
Location Latitude	Longitude		round Elev neters)	ation	Structure Hg (meters)	t to Tip	Antenna St Registratio	
7 37-03-33.7 N	087-01-50.4 W	20	0.0		77.7		1266950	
Address: Lake Malone, 1038	Heltsley Road							
City: Lewisburg County: L	OGAN State: F	KY Cons	struction D	eadline	:			
Antenna: 1								
Maximum Transmitting ERP in Azimuth(from true north)		45	00	125	100	225	270	215
Antenna Height AAT (meters)	0 120.200	45 116.000	90 119.100	135 120.90	180 00 103.100	225 89,400	270 78.300	315 104.000
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	Watte: 140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	120.200	116.000	119.100	120.90	00 103.100	89.400	78.300	104.000
Transmitting ERP (watts) Antenna: 3	0.570	14.860	102.840	191.49	90 71.150	7.980	0.430	0.450
Maximum Transmitting ERP in	Watts: 140.820							
Azimuth(from true north) Antenna Height AAT (meters)	0	45	90	135	180	225	270	315
Transmitting ERP (watts)	120.200 3.330	$116.000 \\ 0.430$	$119.100 \\ 0.500$	120.90 1.560	00 103.100 31.780	89.400 148.650	78.300 162.990	104.000 36.490
	5.550	0.430	0.500	1.500	51.700	140.050	102.770	50.470
Location Latitude	Longitude	G	round Elev	ation	Structure Hg	t to Tip	Antenna St	ructure
		(n	neters)		(meters)		Registratio	n No.
8 36-47-11.0 N	086-08-35.3 W	25	53.3		91.1		1043039	
Address: 4.8 KM NORTHEA	ST OF							
City: SCOTTSVILLE Cour	nty: ALLEN Sta	ate: KY	Construct	on Dea	dline:			
Antenna: 1								
Maximum Transmitting ERP in		45	00	105	100	225	250	01 <i>5</i>
Azimuth(from true north) Antenna Height AAT (meters)	0 151.400	45 124.900	90 113.700	135 118.20	180 00 77.200	225 108.300	270 128.800	315 139.000
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	Watte: 140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	151.400	124.900	113.700	118.20	00 77.200	108.300	128.800	139.000
Transmitting ERP (watts) Antenna: 3	0.630	15.510	83.280	107.29	90 28.880	2.760	0.260	0.300
Maximum Transmitting ERP in	Watts: 140.820							
	0	45	90	135	180	225	270	315
Azimuth(from true north)	•							
Azimutn(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	151.400 1.050	124.900 0.260	$113.700 \\ 0.310$	118.20 2.290	00 77.200 30.940	108.300 107.290	$128.800 \\ 83.280$	139.000 13.820



Call Sign: KNKN867	File	e Number:	00092621	84	Р	rint Date	:	
Location Latitude	Longitude		round Elev neters)	ation	Structure Hg (meters)	t to Tip	Antenna S Registratio	
9 37-53-45.0 N	086-49-51.0 W	16	54.5		65.6		1043711	
Address: OLD LEWISPORT	OWENSBORO F	RD, 7.6 KM	WEST OF	1				
City: HAWESVILLE Cou	nty: HANCOCK	State: KY	Y Constr	uction]	Deadline:			
Antenna: 1 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)		45 79.800 61.740	90 95.100 131.990	135 59.500 58.960		225 82.700 0.360	270 89.400 0.300	315 93.100 0.350
Antenna: 2 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	n Watts: 140.820	45 79.800 0.340	90 95.100 0.710	135 59.500 17.400	180) 72.200	225 82.700 120.380	270 89.400 32.400	315 93.100 3.090
Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)		45 79.800 15.510	90 95.100 1.180	135 59.500 0.300	180 72.200 0.350	225 82.700 2.570	270 89.400 34.720	315 93.100 120.380
Location Latitude	Longitude	(n	round Elev neters)	ation	Structure Hg (meters)	t to Tip	Antenna S Registratio	
10 37-16-52.0 N	087-06-06.0 W	(n 15	neters) 50.0		(meters) 128.0	t to Tip		
10 37-16-52.0 N Address: 0.4 MI. EAST OF I	087-06-06.0 W NTERCHANGE ((m 15 DF 58 & W	neters) 50.0 . KY PKW	Y; IMM	(meters) 128.0 IED. ESE OF	-	Registratio	
10 37-16-52.0 N Address: 0.4 MI. EAST OF I	087-06-06.0 W	(m 15 DF 58 & W	neters) 50.0 . KY PKW	Y; IMM	(meters) 128.0	-	Registratio	
10 37-16-52.0 N Address: 0.4 MI. EAST OF I City: CENTRAL CITY Co Antenna: 1 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters)	087-06-06.0 W INTERCHANGE (Dunty: MUHLENE n Watts: 140.820 0 126.500	(n 15 DF 58 & W BERG Sta 45 101.500	neters) 50.0 . KY PKW ate: KY 90 105.400	Y; IMM Constru 135 104.30	(meters) 128.0 IED. ESE OF action Deadlin 180 00 100.200	225 87.900	Registratio 1043038 270 94.300	315 112.900
10 37-16-52.0 N Address: 0.4 MI. EAST OF I City: CENTRAL CITY Co Antenna: 1 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: Maximum Transmitting ERP i Azimuth(from true north)	087-06-06.0 W NTERCHANGE (ounty: MUHLENE n Watts: 140.820 0 126.500 50.380 n Watts: 140.820 0	(n 15 DF 58 & W BERG St 101.500 128.750 45	neters) 50.0 . KY PKW ate: KY 90	Y; IMM Constru 135	(meters) 128.0 ED. ESE OF action Deadlin	e: 225	Registratio 1043038	n No.
10 37-16-52.0 N Address: 0.4 MI. EAST OF I City: CENTRAL CITY Co Antenna: 1 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP i Azimuth(from true north) Antenna: Maximum Transmitting ERP i Azimuth(from true north) Antenna: 2 Maximum Transmitting ERP i Azimuth(from true north) Antenna: 2 Maximum Transmitting ERP i Azimuth(from true north) Antenna: 3	087-06-06.0 W NTERCHANGE (ounty: MUHLENE n Watts: 140.820 0 126.500 50.380 n Watts: 140.820 0 126.500 0.300	(n 15 DF 58 & W BERG Sta 101.500 128.750	90 105.400 66.660	Y; IMM Constru 135 104.30 8.640	(meters) 128.0 IED. ESE OF action Deadlin 180 100.200 180 00 100.200	225 87.900 0.260	Registratio 1043038 270 94.300 0.330	315 112.900 5.430
1037-16-52.0 NAddress:0.4 MI. EAST OF ICity:CENTRAL CITYCoAntenna:1Maximum Transmitting ERP i Azimuth(from true north)Antenna Height AAT (meters)Transmitting ERP (watts)Antenna:2Maximum Transmitting ERP i Azimuth(from true north)Antenna Height AAT (meters)Transmitting ERP i Azimuth(from true north)Antenna Height AAT (meters)Transmitting ERP i Azimuth(from true north)Antenna Height AAT (meters)Transmitting ERP (watts)	087-06-06.0 W NTERCHANGE (ounty: MUHLENE n Watts: 140.820 0 126.500 50.380 n Watts: 140.820 0 126.500 0.300	(n 15 DF 58 & W BERG St 101.500 128.750 45 101.500	90 105.400 66.660 90 105.400	Y; IMM Constru 135 104.30 8.640 135 104.30	(meters) 128.0 ED. ESE OF action Deadlin 100.200 0.500 180 100.200 0.500 180 180 180	225 87.900 0.260 225 87.900	Registratio 1043038 270 94.300 0.330 270 94.300	315 112.900 5.430 315 112.900



Call Sign: KNKN867	File	Number:	000926218	34	P	rint Date	:	
Location Latitude	Longitude		ound Eleva eters)		tructure Hg neters)	t to Tip	Antenna St Registratio	
11 37-27-33.0 N	086-17-41.0 W	22	0.7	12	28.0		1043037	
Address: 0.8 KM SSE OF I		Y & SR-25						
City: LEITCHFIELD Cou	inty: GRAYSON	State: KY	Constru	iction Dea	adline:			
Antenna: 1 Maximum Transmitting ERP Azimuth(from true north Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP Azimuth(from true north Antenna Height AAT (meters)	0 136.500 92.370 in Watts: 140.820 0	45 139.400 12.750 45 139.400	90 136.800 0.300 90 136.800	135 139.500 0.450 135 139.500	180 172.500 0.200 180 172.500	225 127.300 0.420 225 127.300	270 136.600 3.510 270 136.600	315 156.800 48.480 315 156.800
Transmitting ERP (watts) Antenna: 3	3.700	26.630	74.790	73.070	22.660	3.610	0.490	0.490
Maximum Transmitting ERP Azimuth(from true north Antenna Height AAT (meters) Transmitting ERP (watts)	0 136.500 2.080	45 139.400 0.820	90 136.800 0.770	135 139.500 7.520	180 172.500 42.060	225 127.300 84.790	270 136.600 55.750	315 156.800 12.610
Location Latitude	Longitude		ound Eleva eters)		tructure Hg neters)	t to Tip	Antenna St Registratio	
12 37-59-17.0 N	086-08-53.0 W	202			1.0		1043036	II 1 10 .
Address: 1.6 km ESE of	000 00 <i>00</i> .0 W	20.		01			1010000	
	County: MEADE	State: KY	Constru	ction Dea	adline:			
Antenna: 1 Maximum Transmitting ERP Azimuth(from true north Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP	0 82.800 0.480 in Watts: 140.820	45 58.900 12.480	90 109.700 87.870	135 63.200 162.090	180 40.600 56.190	225 55.600 6.380	270 61.600 0.330	315 100.400 0.360
Azimuth(from true north Antenna Height AAT (meters)	82.800	45 58.900	90 109.700	135 63.200	180 40.600	225 55.600	270 61.600	315 100.400
Transmitting ERP (watts)	5.570	0.500	0.330	0.330	4.740	24.940	42.710	26.730
Location Latitude 13 37-24-41.0 N	Longitude 086-32-12.0 W		eters)	(n	tructure Hg neters) 28.0	t to Tip	Antenna St Registratio 1043035	
Address: 3.2 KM WEST SC		State IX	Comt	otion D-	adlina:			
City: CANEYVILLE Cou	inty: GRAYSON	State: KY	Constru	iction Dea	adline:			
Antenna: 1 Maximum Transmitting ERP Azimuth(from true north Antenna Height AAT (meters) Transmitting ERP (watts)) 0	45 135.600 94.240	90 147.900 14.690	135 125.100 1.160	180 152.900 1.000	225 161.200 8.520	270 146.000 44.320	315 164.600 169.340

Call Sign: KNKN867	File	Number:	0009262184	Ļ	Pı	rint Date	:	
Location Latitude	Longitude		ound Elevat eters)		tructure Hgt neters)	to Tip	Antenna St Registratio	
13 37-24-41.0 N	086-32-12.0 W	23	3.5	12	28.0		1043035	
Address: 3.2 KM WEST SO								
City: CANEYVILLE Cou	nty: GRAYSON	State: KY	Construc	tion De	adline:			
Antenna: 2 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters)	0 136.900 20.040	45 135.600 101.220 45 135.600	147.900 204.390 90	135 125.100 162.460 135 125.100	180 152.900 34.720 180 152.900	225 161.200 3.620 225 161.200	270 146.000 0.410 270 146.000	315 164.600 2.990 315 164.600
Transmitting ERP (watts)	4.910	0.410		14.520	88.120	204.810	176.590	43.820
Location Latitude	Longitude		ound Elevat eters)		tructure Hgt neters)	to Tip	Antenna St Registratio	
14 36-55-48.0 N	086-56-27.0 W	20	7.9	60	0.7			
Address: 6.4 KM SOUTH O				n				
City: LEWISBURG Coun	ty: LOGAN Stat	e: KY C	onstruction	Deadlir	ne:			
Antenna: 1 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters)	0 116.400	45 93.400	82.400	135 74.500	180 68.800	225 70.800	270 79.200	315 98.300
Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 116.400	45 93.400	90 82.400	3.570 135 74.500	0.330 180 68.800	0.410 225 70.800	0.870 270 79.200	21.280 315 98.300
Antenna: 3 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0.430 n Watts: 140.820 0 116.400 8.230	3.180 45 93.400 0.410	90 82.400	147.250 135 74.500 0.420	113.650 180 68.800 9.450	18.120 225 70.800 74.650	1.350 270 79.200 162.390	0.330 315 98.300 71.290
Location Latitude	Longitude		ound Elevat eters)		tructure Hgt neters)	to Tip	Antenna St Registratio	
15 36-59-27.0 N	086-26-29.0 W	16	0.9	79	9.3		1201033	
Address: 537 10th Street at C								
City: BOWLING GREEN	County: WARREN	State:	KY Const	ruction	Deadline:			
Antenna: 1 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 60.100 162.390	45 54.500 71.290	67.300	135 54.300 0.410	180 51.400 0.330	225 51.700 0.420	270 45.400 9.450	315 61.600 74.650

Call Sign: KNKN867	File	Number: 00092	62184	Р	rint Date	:	
Location Latitude	Longitude	Ground (meters)	Elevation	Structure Hg (meters)	t to Tip	Antenna S Registratio	
15 36-59-27.0 N	086-26-29.0 W	160.9		79.3		1201033	
Address: 537 10th Street at C							
City: BOWLING GREEN	County: WARREN	State: KY	Construct	ion Deadline:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north)	0 60.100 0.310	45 90 54.500 67.30 2.780 58.87 45 90			225 51.700 0.400 225	270 45.400 0.310 270	315 61.600 0.310 315
Antenna Height AAT (meters)	60.100	54.500 67.30			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 (meters)	Elevation	Structure Hg (meters)	t to Tip	Antenna St Registratio	
16 36-50-40.2 N	087-12-42.0 W	256.6		60.7			
Address: 5.8 KM NW OF City: ELKTON County: TO	ODD State: KY	Construction	Doodline				
City: ELKTON County: IV	JDD State: K1	Construction	Deaume:				
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	watts: 140.820 0 102.100 112.350	45 90 95.500 91.80 104.850 19.98			225 128.800 0.350	270 118.300 1.660	315 103.200 27.580
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	Watts: 140.820 0 102.100 0.940	45 90 95.500 91.80 15.530 144.9			225 128.800 26.370	270 118.300 1.550	315 103.200 0.840
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 102.100 4.170	45 90 95.500 91.80 0.300 0.320			225 128.800 83.280	270 118.300 126.050	315 103.200 39.860
Location Latitude	Longitude	Ground (meters)		Structure Hg (meters)	t to Tip	Antenna St Registratio	
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	e: KY Constru	ction Dead	line:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 81.300 30.940	45 90 91.000 88.00 106.670 82.33			225 104.000 0.240	270 105.400 0.310	315 89.700 2.310

File	Number:	000926218	34	P	rint Date	:	
Longitude 087-16-05.4 W	(n	neters)	(r	neters)	to Tip		
		.					
MCLEAN State	e: KY C	Construction	n Deadlin	e:			
watts: 140.820 0 81.300 0.240	45 91.000 0.310	90 88.000 6.850	135 100.800 54.080	180 95.300 117.640	225 104.000 51.650	270 105.400 5.960	315 89.700 0.290
n Watts: 140.820 0 81.300 27.580	45 91.000 2.590	90 88.000 0.240	135 100.800 0.300	180 95.300 0.630	225 104.000 15.420	270 105.400 82.330	315 89.700 106.670
Longitude				0	to Tip		
086-42-46.0 W	21	10.3	6	0.7			
			D				
ty: OHIO State:	KY Co	onstruction	Deadline	:			
1 Watts: 140.820							
0 84.000 144.730	45 65.700 63.540	90 96.800 7.340	135 89.400 0.360	180 105.200 0.300	225 118.300 0.380	270 113.200 8.420	315 109.900 66.540
1 Watts: 140.820 0 84.000 0.780	45 65.700 18.970	90 96.800 101.290	135 89.400 131.240	180 105.200 33.930	225 118.300 3.180	270 113.200 0.300	315 109.900 0.370
u Watts: 140.820 0 84.000 1.200	45 65.700 0.300	90 96.800 0.390	135 89.400 2.840	180 105.200 38.070	225 118.300 131.240	270 113.200 101.290	315 109.900 16.150
Longitude					to Tip		
086-19-20.3 W			,			1049227	-
ty: MEADE Sta	te: KY	Constructi	on Deadl	ine:			
n Watts: 140.820 0 115.700 172.880	45 125.400 116.290	90 135.500 19.640	135 103.300 1.990	180 111.300 0.530	225 123.300 4.460	270 141.900 28.140	315 137.900 120.910
	Longitude 087-16-05.4 W MCLEAN State MCLEAN State MATTS: 140.820 0 81.300 0.240 Matts: 140.820 0 81.300 27.580 Longitude 086-42-46.0 W ty: OHIO State: Matts: 140.820 0 84.000 144.730 Matts: 140.820 0 84.000 144.730 Matts: 140.820 0 84.000 144.730 Matts: 140.820 0 84.000 144.730 Matts: 140.820 0 84.000 144.730 Matts: 140.820 0 84.000 144.730 Matts: 140.820 0 84.000 1.200 Longitude 086-19-20.3 W f ty: MEADE State 0 15.700	Longitude G 087-16-05.4 W 14 MCLEAN State: KY C MCLEAN State: KY C n Watts: 140.820 45 81.300 91.000 0.240 0.310 n Watts: 140.820 45 81.300 91.000 2.40 0.310 Neatts: 140.820 45 086-42-46.0 W 2 ty: OHIO State: KY Co n Watts: 140.820 6 0 45 84.000 65.700 144.730 63.540 18.970 n Watts: 140.820 0 45 84.000 65.700 1.8.970 n Watts: 140.820 0 45 84.000 65.700 1.200 0.300 Longitude G G G 086-19-20.3 W 2: 1 140.820 0 45 84.000 65.700 1.200 0.300 1 1 140.820	Longitude Ground Elevation 087-16-05.4 W 140.2 MCLEAN State: KY Construction MCLEAN State: KY Construction Matts: 140.820 90 0 81.300 91.000 88.000 0.240 0.310 6.850 0 45 90 81.300 91.000 88.000 27.580 2.590 0.240 Longitude Ground Elevation $086-42-46.0$ W 210.3 ty: OHIO State: KY Construction 0 45 90 84.000 65.700 96.800 144.730 63.540 7.340 144.730 63.540 7.340 0 45 90 84.000 65.700 96.800 0.780 18.970 101.290 Natts: 140.820 0 84.000 65.700 96.800 0.780 18.970 101.290 $086.19-20.3$ W 237.4	(meters) (refers) (refs) (refs) (r	Longitude Ground Elevation (meters) Structure Hgt (meters) 087-16-05.4 W 140.2 93.0 MCLEAN State: KY Construction Deadline: 1 0 45 90 135 180 1 0.240 0.310 6.850 54.080 117.640 1 0 45 90 135 180 1 0.240 0.310 6.850 54.080 117.640 1 0 45 90 135 180 1 140.820 0 2.590 0.240 0.300 95.300 2.7.580 2.590 0.240 0.300 95.300 0.630 1 140.820 0 0.240 0.300 0.630 1 0 45 90 135 180 84.000 65.700 96.800 89.400 105.200 1 0 45 90 135 180 84.000 65.700 96.800 </td <td>Longitude Ground Elevation (meters) Structure Hgt to Tip (meters) 087-16-05.4 W 140.2 93.0 MCLEAN State: KY Construction Deadline: 1 Watis: 140.820 90 135 180 225 1 Ground Elevation (meters) Structure Hgt to Tip (meters) Tip (meters) 104.000 2 0.300 63.7 105.200 118.300 0 45 90 135 180 225 0 45 90 135 180 225 0 45 90 135 180 225 0 45 90 135 180 225 0 45 <td< td=""><td>Longitude Ground Elevation (meters) Structure Hgt to Tip (meters) Antenna St Registration (244911 MCLEAN State: KY Construction Deadline: 33.0 1244911 MCLEAN State: KY Construction Deadline: 225 270 Number 140.820 9 90 135 180 225 270 Number 140.820 9 0.240 0.300 95.300 104.000 105.400 086-42-46.0 W 210.3 60.7 Haters) Antenna St Registration 086-42-46.0 W 210.3 60.7 135 180 225 270 Number 140.820 0 45 90 135 180 225 270 Number 140.820 0 96 89.400</td></td<></td>	Longitude Ground Elevation (meters) Structure Hgt to Tip (meters) 087-16-05.4 W 140.2 93.0 MCLEAN State: KY Construction Deadline: 1 Watis: 140.820 90 135 180 225 1 Ground Elevation (meters) Structure Hgt to Tip (meters) Tip (meters) 104.000 2 0.300 63.7 105.200 118.300 0 45 90 135 180 225 0 45 90 135 180 225 0 45 90 135 180 225 0 45 90 135 180 225 0 45 <td< td=""><td>Longitude Ground Elevation (meters) Structure Hgt to Tip (meters) Antenna St Registration (244911 MCLEAN State: KY Construction Deadline: 33.0 1244911 MCLEAN State: KY Construction Deadline: 225 270 Number 140.820 9 90 135 180 225 270 Number 140.820 9 0.240 0.300 95.300 104.000 105.400 086-42-46.0 W 210.3 60.7 Haters) Antenna St Registration 086-42-46.0 W 210.3 60.7 135 180 225 270 Number 140.820 0 45 90 135 180 225 270 Number 140.820 0 96 89.400</td></td<>	Longitude Ground Elevation (meters) Structure Hgt to Tip (meters) Antenna St Registration (244911 MCLEAN State: KY Construction Deadline: 33.0 1244911 MCLEAN State: KY Construction Deadline: 225 270 Number 140.820 9 90 135 180 225 270 Number 140.820 9 0.240 0.300 95.300 104.000 105.400 086-42-46.0 W 210.3 60.7 Haters) Antenna St Registration 086-42-46.0 W 210.3 60.7 135 180 225 270 Number 140.820 0 45 90 135 180 225 270 Number 140.820 0 96 89.400

Call Sign: KNKN867	File	Number:	00092621	84	Pr	int Date	:	
Location Latitude 19 38-00-08.4 N	Longitude 086-19-20.3 W	(m	round Elev neters) 37.4	(Structure Hgt meters) 03.9	to Tip	Antenna St Registratio 1049227	
Address: 1.2 km Northwest of			_					
City: PAYNEVILLE Coun	ty: MEADE Sta	te: KY	Construct	on Dead	line:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in	115.700 8.740 Watts: 140.820	125.400 48.710	135.500 165.560	103.300 182.540		123.300 9.950	141.900 0.770	137.900 1.160
Azimuth (from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 115.700 4.430	45 125.400 0.370	90 135.500 2.670	135 103.300 13.090	180 111.300 79.440	225 123.300 184.650	270 141.900 159.200	315 137.900 39.500
Location Latitude	Longitude		round Elev ieters)		Structure Hgt meters)	to Tip	Antenna St Registratio	
20 37-11-25.0 N	087-11-51.0 W	18	32.9	e	6.4		1065886	
Address: 701 BASS LANE				, , .	р Ш			
City: GREENVILLE Coun	ty: MUHLENBER	G State	e: KY Co	onstructio	on Deadline:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north)	1 Watts: 140.820	45	90	135	180	225	270	315
Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2	103.800 155.980	96.500 120.380	95.100 19.190	84.500 1.430	77.800 0.350	98.000 0.460	117.300 3.370	91.200 45.240
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 103.800 0.510	45 96.500 13.220	90 95.100 93.080	135 84.500 171.700	180 77.800 62.700	225 98.000 6.760	270 117.300 0.350	315 91.200 0.380
Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	1 Watts: 140.820 0 103.800 2.800	45 96.500 0.350	90 95.100 0.450	135 84.500 1.400	180 77.800 28.440	225 98.000 135.320	270 117.300 145.300	315 91.200 31.240
Location Latitude	Longitude		round Elev neters)		Structure Hgt meters)	to Tip	Antenna St Registratio	
21 37-11-39.2 N	086-15-53.9 W		.3.4		52.0			
Address: WATER TOWER R								
City: BROWNSVILLE Co	unty: EDMONSO	N State:	KY Co	nstructio	n Deadline:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 69.000 331.960	45 44.100 148.280	90 63.000 17.830	135 60.300 0.910	180 76.600 0.740	225 76.200 0.870	270 93.300 19.100	315 97.400 155.270
						·		

Call Sign: KNKN867	File 1	Number: 00	009262184	Pı	rint Date	:	
Location Latitude	Longitude	Grou (met	ind Elevation ers)	Structure Hgt (meters)	to Tip	Antenna St Registration	
21 37-11-39.2 N	086-15-53.9 W	213.4	/	52.0		8	
Address: WATER TOWER R							
City: BROWNSVILLE Con	unty: EDMONSON	State: K	Y Construct	ion Deadline:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters)	0 69.000 1.780	44.100 43.760 2 45 9	0 135 3.000 60.30 35.010 302.7 00 135 3.000 60.30	50 81.490 180	225 76.200 7.780 225 76.200	270 93.300 0.740 270 93.300	315 97.400 0.850 315 97.400
Transmitting ERP (watts)	2.960		.870 6.470	87.310	302.750	235.010	39.000
LocationLatitude2236-40-28.0 N	Longitude 086-51-30.0 W	Grou (met 192.9		Structure Hgt (meters) 38.1	to Tip	Antenna St Registration	
Address: WITHIN THE TOW							
City: ADAIRVILLE Count	ty: LOGAN Stat	e: KY Co	nstruction Dea	dline:			
Antenna: 1 Maximum Transmitting ERP ir Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP ir Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP ir Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 35.900 148.100 n Watts: 140.820 0 35.900 1.830	37.000 2 65.400 7 45 9 37.000 2 30.180 1 45 9 37.000 2 37.000 2	0 135 9.900 34.10 .600 0.390 00 135 9.900 34.10 22.250 111.2 00 135 9.900 34.10 .370 1.180	0.300 180 29.900 20.840 180	225 40.700 0.430 225 40.700 1.700 225 40.700 113.860	270 57.000 8.720 270 57.000 0.300 270 57.000 122.250	315 48.700 70.070 315 48.700 0.380 315 48.700 26.290
Location Latitude	Longitude	Grou (met		Structure Hgt (meters)	to Tip	Antenna St Registration	
23 37-13-17.0 N	086-42-02.0 W	190.8		57.9		0	
Address: Morgantown Downt							
City: MORGANTOWN Co	ounty: BUTLER	State: KY	Construction	Deadline:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 102.300 42.710	72.100 8	0 135 1.900 88.30 13.650 18.12	180 0 85.600 0 1.350	225 94.300 0.330	270 111.800 0.430	315 102.700 3.180

Call Sign: KNKN867	File	Number: 00092621	84	Print	Date:
Location Latitude	Longitude	Ground Elev (meters)	vation	Structure Hgt to (meters)	Tip Antenna Structure Registration No.
23 37-13-17.0 N	086-42-02.0 W	190.8		57.9	-
Address: Morgantown Down					
City: MORGANTOWN C	ounty: BUTLER	State: KY Const	ruction	Deadline:	
Antenna: 2 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP i Azimuth(from true north)	0 102.300 0.330	45 90 72.100 81.900 0.420 9.450 45 90	135 88.300 74.650 135	0 85.600 94 0 162.390 71	25 270 315 4.300 111.800 102.700 1.290 8.230 0.410 25 270 315
Antenna Height AAT (meters)	102.300	72.100 81.900	88.300) 85.600 94	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 Elev (meters)	vation	Structure Hgt to (meters)	Tip Antenna Structure Registration No.
24 37-38-30.2 N	086-28-14.9 W	202.7		50.2	
Address: Rough River, 9.5K	, ,				
City: KINGSWOOD Cour	nty: BRECKINRID	GE State: KY C	Constru	ction Deadline:	
Antenna: 1 Maximum Transmitting ERP i Azimuth(from true north)	n Watts: 140.820 0	45 90	135	180 22	25 270 315
Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2	43.600 264.330	45 90 58.600 57.500 116.050 13.400	133 57.700 0.660	60.100 89	25 270 315 0.000 70.700 65.400 690 15.390 121.520
Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	n Watts: 140.820 0 43.600 1.420	45 90 58.600 57.500 34.650 184.990	135 57.700 239.69		25 270 315 0.000 70.700 65.400 820 0.540 0.670
Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 43.600 2.200	45 90 58.600 57.500 0.540 0.700	135 57.700 5.180		25 270 315 0.000 70.700 65.400 39.690 184.990 29.490
Location Latitude	Longitude	Ground Elev (meters)	vation	Structure Hgt to (meters)	Tip Antenna Structure Registration No.
25 36-51-02.0 N	086-42-26.0 W	198.1		59.4	
Address: JCT. SR-103 & SR					
City: AUBURN County: I	LOGAN State: K	Construction I	Deadline	:	
Antenna: 1 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 61.200 124.760	45 90 65.800 54.700 162.210 90.940	135 38.200 14.810	54.400 60	25 270 315 0.300 51.100 56.100 640 5.680 30.740

Call Sign: KNKN867	File	Number: 0009262	184	Pr	rint Date	:	
Location Latitude	Longitude	Ground Ele (meters)		Structure Hgt meters)	to Tip	Antenna St Registratio	
25 36-51-02.0 N	086-42-26.0 W	198.1	5	59.4		8	
Address: JCT. SR-103 & SR-							
City: AUBURN County: L	OGAN State: K	Y Construction	Deadline:				
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in	0 61.200 1.480 Watts: 140.820	45 90 65.800 54.700 8.260 53.490	135 38.200 159.390		225 60.300 53.380	270 51.100 6.730	315 56.100 0.530
Azimuth(from true north) Antenna Height AAT (meters)	0 61.200	45 90 65.800 54.700	135 38.200	180 54.400	225 30.300	270 51.100	315 56.100
Transmitting ERP (watts)	41.260	4.310 0.490	3.550	23.820	120.300	242.920	193.090
Location Latitude 26 37-23-00.0 N	Longitude 086-52-28.0 W	Ground Ele (meters) 163.4	(Structure Hgt meters)	to Tip	Antenna St Registratio 1043042	
Address: 1.6 KM SSE	000 02 2010 11	103.1	1	20.0		1015012	
	nty: OHIO State	e: KY Construction	on Deadlii	ne:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Interna Height AAT (meters) Transmitting ERP (watts) Location Latitude 27 37-02-39.4 N	0 127.600 3.020 Watts: 140.820 0 127.600 0.240	45 90 102.300 92.500 33.930 100.130 45 90 102.300 92.500 0.250 0.310 45 90 102.300 92.500 0.310 92.500 31.660 3.320 Ground Ele (meters) 212.8	(9.650 180 113.600 56.310 180	225 112.400 0.650 225 112.400 104.850 225 112.400 0.400 225	270 112.300 0.240 270 112.300 38.950 270 112.300 10.730 Antenna St Registratio 1213318	
Address: 470 Hayes Road	080-10- <i>39.9</i> W	212.0	1	100.4		1215516	
•	: WARREN Sta	ate: KY Construc	tion Dead	line:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)		45 90 97.700 91.800 58.040 4.690	135 90.100 0.270	180 117.500 0.190	225 131.500 0.360	270 124.400 4.280	315 116.400 56.720

Call Sign: KNKN867	File	Number:	000926218	4	Pi	rint Date	:	
Location Latitude 27 37-02-39.4 N	Longitude 086-10-59.9 W	(m	round Eleva neters) .2.8	(n	ructure Hg neters) 16.4	to Tip	Antenna St Registratio 1213318	
Address: 470 Hayes Road								
City: Smiths Grove County	y: WARREN Sta	ate: KY	Constructi	on Deadli	ne:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north)	0 101.600 0.970	45 97.700 16.520 45	90 91.800 117.640 90	135 90.100 131.230 135	180 117.500 43.210 180	225 131.500 2.250 225	270 124.400 0.300 270	315 116.400 0.270 315
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 28 36-44-52 5 N	Longitude	(m	round Eleva neters)	(m	ructure Hgt neters)	to Tip	Antenna St Registratio	
28 36-44-52.5 N Address: Downtown	086-11-51.7 W	21	.9.4	77	./		1219613	
City: Scottsville County: A	ALLEN State: K	Y Const	truction De	adline				
			il detion De					
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2	0 85.000 148.300	45 66.900 99.760	90 61.300 16.850	135 43.400 1.700	180 61.400 0.460	225 63.100 3.820	270 73.600 24.140	315 85.500 103.720
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	n Watts: 140.820 0 85.000 7.500	45 66.900 41.790	90 61.300 142.020	135 43.400 156.580	180 61.400 60.320	225 63.100 8.540	270 73.600 0.660	315 85.500 0.990
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 85.000 3.800	45 66.900 0.320	90 61.300 2.290	135 43.400 11.230	180 61.400 68.150	225 63.100 158.400	270 73.600 136.570	315 85.500 33.890
Location Latitude	Longitude		round Eleva neters)		ructure Hg neters)	to Tip	Antenna St Registratio	
29 37-52-14.6 N	086-16-43.1 W	24	3.8	39	9.6		-	
Address: Irvington WT, 1.0 k								
City: Irvington County: Bl	RECKINRIDGE	State: KY	Constru	ction Dea	adline:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 72.800 47.930	45 71.900 165.220	90 56.800 127.520	135 59.600 20.330	180 69.700 1.520	225 80.000 0.370	270 110.200 0.480	315 67.900 3.570

Call Sign: KNKN867	Fil	e Number:	0009262184		Pr	int Date	:	
Location Latitude	Longitude	(me	ound Elevatio eters)	(r	tructure Hgt neters)	to Tip	Antenna St Registratio	
29 37-52-14.6 N	086-16-43.1 W	243	3.8	39	9.6			
Address: Irvington WT,		CA-A IXX	Constant of	D.				
City: Irvington Count	y: BRECKINRIDGE	State: KY	Constructi	on De	adiine:			
Antenna: 2 Maximum Transmitting I			00 1	_	100			
Azimuth(from true r Antenna Height AAT (me Transmitting ERP (watts) Antenna: 3	ters) 72.800	45 71.900 0.480		9.600 8.760	180 69.700 182.210	225 80.000 79.990	270 110.200 9.240	315 67.900 0.460
Maximum Transmitting I								
Azimuth(from true r Antenna Height AAT (me		45 71.900	90 1 56.800 59	35 9.600	180 69.700	225 80.000	270 110.200	315 67.900
Transmitting ERP (watts)		4.010		460	0.980	23.880	127.520	165.220
Location Latitude	Longitude		ound Elevatio eters)		tructure Hgt neters)	to Tip	Antenna St Registratio	
30 37-56-31.2 N	086-03-37.8 W	193	3.5	7	7.7		1221515	
Address: 0.8 km North	Northwest of							
City: Lickskillet Cour	nty: MEADE State:	KY Const	truction Dead	line:				
Antenna: 1 Maximum Transmitting I	DD in Watte: 140.820							
Azimuth(from true r	orth) 0	45	90 1	35	180	225	270	315
Antenna Height AAT (me Transmitting ERP (watts		127.200		4.400	36.100	30.500	59.300	102.600
Antenna: 2	011710	82.330	23.470 2.	370	0.260	0.260	0.510	11.360
Maximum Transmitting I Azimuth(from true r	ERP in Watts: 140.820 orth) 0	45	90 1.	25	180	225	270	315
Antenna Height AAT (me	ters) 63.900	43 127.200		.400	36.100	30.500	59.300	102.600
Transmitting ERP (watts) Antenna: 3	0.380	3.220	20.310 87	.270	124.780	83.940	14.180	1.430
Maximum Transmitting I	• •							
Azimuth(from true r Antenna Height AAT (me		45 127.200		35 .400	180 36.100	225 30.500	270 59.300	315 102.600
Transmitting ERP (watts)		1.430		220	20.310	87.270	124.780	83.940
Loootion Lotterde	Longitude	Cr	ound Elevatio		tmuotumo Uat	to Tin	Antonno Ed	
Location Latitude	Longitude		eters)		tructure Hgt neters)	w rip	Antenna St Registratio	
31 36-57-06.0 N	086-26-12.0 W				6.8		registi atto	
Address: Downtown								
City: Bowling Green	County: WARREN	State: KY	Construction	n Dead	dline:			
Antenna: 1 Maximum Transmitting I Azimuth(from true r Antenna Height AAT (me Transmitting ERP (watts)	orth) 0 ters) 29.900	45 29.900 83.940	29.900 29	35 9.900 430	180 29.900 0.380	225 29.900 3.220	270 29.900 20.310	315 29.900 87.270

Call Sign: KNKN867	File	e Number:	000926218	34	Pr	rint Date	:	
Location Latitude	Longitude	(n	round Elev neters)		Structure Hgt (meters)	to Tip	Antenna St Registratio	
50 57 00.0 1	086-26-12.0 W	16	56.1		16.8			
Address: Downtown City: Bowling Green Coun	ty: WARREN	State: KY	Construc	tion De	adline			
		<i>State</i> , 111	construc		uumie.			
Antenna: 2								
Maximum Transmitting ERP in Azimuth(from true north)		45	00	125	190	225	270	215
Antenna Height AAT (meters)	0 29.900	45 29.900	90 29.900	135 29.900	180 29.900	225 29.900	270 29.900	315 29.900
Transmitting ERP (watts) Antenna: 3	6.310	35.160	119.490	131.75		7.180	0.550	0.830
Maximum Transmitting ERP in	n Watts: 140.820							
Azimuth(from true north) Antenna Height AAT (meters)	0 29.900	45 29.900	90	135	180	225	270	315
Fransmitting ERP (watts)	3.200	0.270	29.900 1.930	29.900 9.450	29.900 57.340	29.900 133.270	29.900 114.910	29.900 28.510
					<u> </u>			
Location Latitude	Longitude		round Elev 1eters)		Structure Hgt (meters)	to Tip	Antenna St	
32 37-59-31.1 N	086-11-44.3 W		87.7		(incers) 77.7		Registratio	II 190.
Address: 1.6 km West of	000 11 11.5 1		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		//./		1252575	
	: MEADE State	e: KY Co	onstruction	Deadli	ne:			
Antenna: 1								
Maximum Transmitting ERP in Azimuth(from true north)		45	00	125	100	225	270	215
Antenna Height AAT (meters)	0 58.400	45 56.600	90 82.400	135 34.400	180 36.100	225 41.000	270 40.100	315 67.700
Transmitting ERP (watts) Antenna: 2	9.710	60.570	96.350	32.270		0.300	0.300	0.420
Maximum Transmitting ERP in	n Watts: 140.820							
Azimuth(from true north) Antenna Height AAT (meters)	0 58.400	45	90	135	180	225	270	315
Fransmitting ERP (watts)	0.300	56.600 0.380	82.400 8.420	34.400 66.540		41.000 63.540	40.100 7.340	67.700 0.360
Antenna: 4 Maximum Transmitting ERP in		01000	01120			001010	110 10	01200
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters) Fransmitting ERP (watts)	58.400	56.600	82.400	34.400		41.000	40.100	67.700
ransiniting EKP (waits)	28.390	3.310	0.300	0.380	0.830	17.510	70.860	87.550
Location Latitude	Longitude		round Elev neters)		Structure Hgt (meters)	to Tip	Antenna St Registratio	
33 37-56-46.1 N	085-59-38.4 W	22	22.8		57.3		1200354	
Address: 115 Timber Ct.								
City: Muldraugh County: N	MEADE State:	KY Con	struction D	eadline	:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Fransmitting ERP (watts)	Watts: 140.820 0 84.500 57.050	45 85.900 54.960	90 93.700 17.180	135 56.800 1.960	180 54.600 0.330	225 40.300 0.430	270 67.400 1.840	315 81.700 21.320

Call Sign: KNKN867	File I	Number: 0009262	184	Pı	rint Date	:	
Location Latitude	Longitude	Ground Ele (meters)		Structure Hgt meters)	to Tip	Antenna St Registratio	
33 37-56-46.1 N	085-59-38.4 W	222.8	5	57.3		1200354	
Address: 115 Timber Ct.							
City: Muldraugh County:	MEADE State: K	Y Construction	Deadline:	:			
Antenna: 2 Maximum Transmitting ERP Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP	0 84.500 0.380 in Watts: 140.820	45 90 85.900 93.700 0.800 19.520	135 56.800 104.850	180 54.600 135.070	225 40.300 36.350	270 67.400 3.470	315 81.700 0.330
Azimuth(from true north) Antenna Height AAT (meters)		45 90	135	180	225	270	315
Transmitting ERP (watts)	84.500 2.570	85.900 93.700 0.330 0.390	$56.800 \\ 1.200$	$54.600 \\ 24.580$	40.300 114.960	67.400 156.050	81.700 28.220
Location Latitude	Longitude 086-26-10.4 W	Ground Ele (meters) 219.5	(Structure Hgt (meters) 45.7	to Tip	Antenna St Registratio	
Address: Hardinsburg Water							
e	: BRECKINRIDGE		nstruction	n Deadline:			
Antenna: 1							
Maximum Transmitting ERP	in Watts: 140.820						
Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2	0	459054.50036.60079.9909.240	135 52.000 0.460	180 74.200 0.370	225 60.600 0.480	270 78.300 10.610	315 83.900 83.760
Maximum Transmitting ERP Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0	45 90 54.500 36.600 23.880 127.520	135 52.000 165.220	180 74.200 42.710	225 60.600 4.010	270 78.300 0.370	315 83.900 0.460
Antenna: 3 Maximum Transmitting ERP Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0	45 90 54.500 36.600 0.370 0.480	135 52.000 3.570	180 74.200 47.930	225 60.600 165.220	270 78.300 127.520	315 83.900 20.330
Location Latitude	Longitude	Ground Ele (meters)		Structure Hgt meters)	to Tip	Antenna St Registratio	
35 36-42-08.6 N	086-33-19.0 W	217.0		114.3		1200032	
Address: Franklin South, Tu						1200032	
City: Franklin County: SI		Y Construction	Deadline:				
Antenna: 1 Maximum Transmitting ERP Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0	45 90 67.800 58.900 69.270 148.100	135 47.700 66.150	180 34.900 7.950	225 56,000 0.410	270 62.700 0.330	315 57,000 0.390

Call Sign: KNKN867	File	Number:	00092621	84	Pı	rint Date	:	
Location Latitude	Longitude		round Elev leters)		Structure Hgt (meters)	to Tip	Antenna St Registratio	
35 36-42-08.6 N	086-33-19.0 W	21	7.0		114.3		1200032	
Address: Franklin South, Turr								
City: Franklin County: SIN	IPSON State: K	Y Cons	truction D	eadline	:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	Watts: 140.820 0 75.500 0.620	45 67.800 0.330	90 58.900 0.370	135 47.700 6.170	180 34.900 57.620	225 56.000 148.100	270 62.700 79.530	315 57.000 10.480
Maximum Transmitting ERP in	Watts: 140.820							
Azimuth(from true north) Antenna Height AAT (meters)	0 75.500	45 67.800	90 50 000	135	180	225	270	315
Transmitting ERP (watts)	126.050	28.220	58.900 2.570	47.700 0.330) 34.900 0.390	56.000 1.200	62.700 24.580	57.000 114.960
Location Latitude	Longitude	Gı	ound Elev		Structure Hgt	to Tip	Antenna St	ructure
26			eters)		(meters)		Registratio	n No.
36 36-44-58.7 N	087-01-10.9 W	17	9.8		37.5			
Address: Russellville Southwe	,	Z Count						
City: Olmstead County: LC	GAN State: KY	r Const	ruction De	adline:				
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) Transmitting ERP (watts)	29.900 124.780	29.900 83.940	31.500 14.180	45.900 1.430	38.200 0.380	39.100 3.220	29.900 20.310	29.900 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) Transmitting ERP (watts)	29.900 6.310	29.900 35.160	31.500 119.490	45.900		39.100 7.180	29.900 0.550	29.900 0.830
Antenna: 3		55.100	119.490	131.75	0 30.750	7.180	0.330	0.850
Maximum Transmitting ERP in Azimuth(from true north)	Watts: 140.820 0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	29.900	29.900	31.500	45.900		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		round Elev eters)		Structure Hgt (meters)	to Tip	Antenna St Registratio	
37 36-49-37.9 N	086-18-51.3 W	19	2.0		77.7		1232590	
Address: Allen Northwest cell	·							
City: Scottsville County: A	LLEN State: K	Y Const	truction D	eadline:				
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 91.800 0.540	45 102.800 4.010	90 60.100 53.770	135 49.200 185.38		225 71.000 22.810	270 89.900 1.700	315 100.000 0.420

Call Sign: KNKN867	File	Number: 000926	umber: 0009262184 Print Dat			te:		
Location Latitude 37 36-49-37.9 N	Longitude 086-18-51.3 W	Ground F (meters) 192.0			Structure Hgt to Tip (meters) 77.7		Antenna Structure Registration No. 1232590	
Address: Allen Northwest ce	ll, 13.7 km Northwe	est of						
City: Scottsville County: A	ALLEN State: K	Y Construction	Deadline	:				
Antenna: 2 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP i Azimuth(from true north)	0 91.800 0.400 n Watts: 140.820 0	45 90 102.800 60.100 0.290 0.290 45 90	135 49.20 0.290 135		225 71.000 93.450 225	270 89.900 104.850 270	315 100.000 10.250 315	
Antenna Height AAT (meters) Transmitting ERP (watts)	91.800	102.800 60.100			71.000	89.900	100.000	
	211.380	60.790 7.140	0.540	2.800	11.880	85.700	226.550	
Location Latitude	Longitude	Ground E (meters)	levation	Structure Hg (meters)	t to Tip	Antenna St Registratio		
38 36-55-15.1 N	086-25-38.5 W	171.0		62.5		1210120		
Address: 1140 Three Springs								
City: Bowling Green Coun	ty: WARREN S	tate: KY Const	ruction D	eadline:				
Antenna: 1 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 62.400 41.740 n Watts: 140.820 0 62.400 0.870	45 90 67.900 45.500 24.340 4.420 45 90 67.900 45.500 21.280 113.65 45 90 67.900 45.500 21.280 13.65 45 90 67.900 45.500 0.260 0.370	0.400 135 40.60	0.330 180 40.900 38.070 180 0 40.900	225 36.000 0.330 225 36.000 3.570 225 36.000 93.270	270 40.900 3.510 270 40.900 0.330 270 40.900 73.680	315 56.100 21.690 315 56.100 0.410 315 56.100 13.650	
Location Latitude	Longitude	Ground H	levation	Structure Hg (meters)	t to Tip	Antenna St		
39 36-49-54.5 N	086-29-39.3 W	(meters) 192.6		(ineters) 66.1		Registratio	II 1NO .	
Address: Warren South, 3184				00.1		1202137		
	WARREN State:		ion Deadli	ine:				
	,	Comparact						
Antenna: 1 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 58.500 157.120	45 90 58.500 57.100 103.520 17.130			225 33.900 3.440	270 35.000 23.000	315 49.400 104.220	

Call Sign: KNKN867	File Number: 0009262184			84	Print Date:					
Location Latitude	Longitude		round Elev leters)	ation	Structure Hg (meters)	t to Tip	Antenna Structure Registration No.			
39 36-49-54.5 N	086-29-39.3 W	19	2.6		66.1		1202759			
Address: Warren South, 3184		1 0								
City: Woodburn County: W	VARREN State:	KY Co	nstruction	Deadli	ne:					
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in	0 58.500 6.890	45 58.500 41.510	90 57.100 144.360	135 39.300 164.76		225 33.900 8.540	270 35.000 0.570	315 49.400 0.780		
Azimuth(from true north)	0	45	90	135	180	225	270	315		
Antenna Height AAT (meters) Transmitting ERP (watts)	58.500 0.610	58.500 0.310	57.100 0.310	39.300 0.310) 32.800 2.120	33.900 58.290	35.000 121.780	49.400 19.300		
LocationLatitude4037-03-19.5 NAddressNorthern the state	Longitude 086-35-24.6 W	Ga (m 18	round Elev neters) 34.4		Structure Hg (meters) 67.1		Antenna St Registratio 1219414	ructure		
Address: Warren Northwest c City: Bowling Green Count	, 0	vn Road tate: KY	Construc	tion De	adline					
	ty. WARREN 5		Collsti ut		aume.					
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 91.800 0.430	45 71.100 11.130 45 71.100 0.300	90 64.500 78.320 90 64.500 0.370	135 67.200 144.46 135 67.200 6.090	50 52.750 180	225 67.700 5.690 225 67.700 144.460	270 67.900 0.300 270 67.900 74.790	315 70.300 0.320 315 70.300 9.690		
Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 91.800 101.290	45 71.100 16.150	90 64.500 1.200	135 67.200 0.300	180 57.900 0.390	225 67.700 2.840	270 67.900 38.070	315 70.300 131.240		
Location Latitude	Longitude	Gi	round Elev	ation	Structure Hg	t to Tip	Antenna St	ructure		
41			eters)		(meters)		Registratio	n No.		
41 37-08-05.9 N	087-01-05.2 W		37.8		77.7		1278320			
Address: Muhlenberg South, 2 City: Belton County: MUH	• 1		Constructi	on Dear	lline					
			constituction							
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 110.500 124.780	45 126.100 83.940	90 111.400 14.180	135 114.50 1.430	180 00 86.400 0.380	225 73.900 3.220	270 100.200 20.310	315 112.200 87.270		

Call Sign: KNKN867	File	Number: 000926	Print Date:				
Location Latitude	Longitude	Ground H (meters)	levation	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,	· ·						
City: Belton County: MUH	ILENBERG Stat	te: KY Constru	iction Dea	dline:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in	0 110.500 6.310 n Watts: 140.820	45 90 126.100 111.40 35.160 119.49	0 131.7	50 50.750	225 73.900 7.180	270 100.200 0.550	315 112.200 0.830
Azimuth(from true north) Antenna Height AAT (meters)	0 110.500	45 90 126.100 111 40	135	180	225 73.900	270 100.200	315 112.200
Transmitting ERP (watts)	3.200	126.100 111.40 0.270 1.930	0 114.5 9.450		133.270	114.910	28.510
Location Latitude 42 37-00-06.1 N	Longitude 086-19-52.5 W	Ground H (meters) 161.2	Elevation	Structure Hg (meters) 77.4	t to Tip	Antenna St Registratio 1207196	
Address: Bowling Green Cor	vette site, 1188 Red	Pond Road					
City: Bowling Green Coun	ty: WARREN St	tate: KY Const	ruction D	eadline:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Location Latitude 43 37-50-10.4 N	0 48.300 149.820 n Watts: 140.820 0 48.300 0.850 n Watts: 140.820 0 48.300 1.320 Longitude 086-35-44.7 W	45 90 48.300 47.300 65.780 7.600 45 90 48.300 47.300 18.620 85.580 45 90 48.300 47.300 0.310 0.430 Ground E (meters) 225.6	0.370 135 66,50 108,3 135 66,50 3.020	0.310 180 54,700 31.760 180 0 54.700	225 68.100 0.390 225 68.100 3.380 225 68.100 108.340 t to Tip	270 79.200 8.720 270 79.200 0.310 270 79.200 85.580 Antenna St Registratio 1242951	
Address: Breckinridge West, City: Cloverport County: H	1.6 km ENE of BRECKINRIDGE	State: KY Co	nstructio	n Deadline:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)		45 90 128.300 120.40 117.640 43.710	135 0 132.9	180 00 123.200	225 133.200 0.280	270 139.400 0.350	315 156.600 9.130

Call Sign: KNKN867	File	ile Number: 0009262184			Print Date:			
Location Latitude	Longitude	Ground Elevation Structure Hgt to T (meters) (meters)		to Tip	Fip Antenna Structure Registration No.			
43 37-50-10.4 N	086-35-44.7 W	22	5.6	7	7.7		1242951	
Address: Breckinridge West,	1.6 km ENE of BRECKINRIDGE	State: K	V Const	mation T	Deadline:			
City: Cloverport County: H	DRECKINKIDGE	State: K		ruction	Jeaunne:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	watts: 140.820 0 138.300 0.310	45 128.300 2.290	90 120.400 30.940	135 132.900 107.290		225 133.200 13.820	270 139.400 1.050	315 156.600 0.260
Antenna: 3 Maximum Transmitting ERP in	Watts: 140 820							
Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 138.300 4.400	45 128.300 0.370	90 120.400 0.370	135 132.900 0.530	180 123.200 12.230	225 133.200 76.250	270 139.400 121.300	315 156.600 40.630
Location Latitude	Longitude		ound Elev eters)		Structure Hgt meters)	to Tip	Antenna St Registratio	
44 37-51-15.4 N	086-06-03.2 W	30	3.9	6	57.4		1042711	
Address: Garrett, State Road								
City: FORT KNOX Count	y: MEADE Stat	e: KY C	onstructio	n Deadli	ne:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north)		45	00	125	100	225	270	215
Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2	0 153.600 79.530	45 154.600 54.370	90 149.600 13.580	135 132.900 1.630	180 121.400 0.410	225 131.200 3.580	270 143.100 18.240	315 146.300 54.730
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	Watts: 140.820 0 153.600 5.460	45 154.600 32.920	90 149.600 114.480	135 132.900 130.660		225 131.200 6.770	270 143.100 0.450	315 146.300 0.620
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 153.600 2.950	45 154.600 0.270	90 149.600 1.500	135 132.900 8.200	180 121.400 53.810	225 131.200 130.660	270 143.100 112.910	315 146.300 27.380
Location Latitude	Longitude		ound Elev eters)		Structure Hgt meters)	to Tip	Antenna St Registratio	
45 37-52-54.4 N	086-12-42.9 W	27	4.3	2	.9.0		-	
Address: Meade South, 1.4 km		a i						
City: Guston County: MEA	ADE State: KY	Constru	ction Dead	lline:				
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 109.800 4.970	45 103.800 37.720	90 82.400 85.280	135 63.100 49.710	180 79.200 8.130	225 105.900 0.540	270 114.800 0.260	315 76.100 0.330

Call Sign: KNKN867	File	File Number: 0009262184			Print Date:					
Location Latitude	Longitude	Ground Elevation (meters)		vation	Structure Hgt to Tip (meters)		Antenna Structure Registration No.			
45 37-52-54.4 N	086-12-42.9 W	27	4.3		29.0		C			
Address: Meade South, 1.4 km		<i>a</i> ,								
City: Guston County: MEA	DE State: KY	Constru	ction Dea	dline:						
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	0 109.800 1.870	45 103.800 0.260	90 82.400 0.280	135 63.100 0.860	180) 79.200 17.310	225 105.900 81.910	270 114.800 91.780	315 76.100 21.270		
Maximum Transmitting ERP in Azimuth(from true north)	Watts: 140.820	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	(m	round Elev ieters)	vation	Structure Hgt (meters)	to Tip	Antenna St Registratio			
46 36-54-15.9 N Address: Warren-Logan cell,	086-36-29.1 W		02.7		83.8		1200363			
City: Rockfield County: W			struction	Deadlin	·					
	Jucc.		istruction	Deauiii						
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2	Watts: 140.820 0 105.100 19.380	45 84.600 98.240	90 84.000 108.110	135 77.200 44.550		225 61.500 0.270	270 67.700 0.230	315 81.100 1.010		
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	Watts: 140.820 0 105.100 0.270	45 84.600 0.270	90 84.000 5.300	135 77.200 90.270		225 61.500 9.580	270 67.700 0.400	315 81.100 0.270		
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 105.100 0.880	45 84.600 0.230	90 84.000 0.310	135 77.200 2.530	180 0 66.700 42.550	225 61.500 110.630	270 67.700 96.000	315 81.100 20.290		
Location Latitude	Longitude	_		vation	Structure Hgt	to Tip	Antenna Structure			
47 37-24-19.0 N	086-42-17.0 W		ieters) 19.9		(meters) 94.5		Registratio	n 1 NO.		
Address: Ohio West, 3893 Sta					94.5		1213903			
City: Horse Branch County			struction I	Deadlin	e:					
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 112.900 117.640	45 104.700 63.170	90 91.700 8.330	135 117.30 0.490	180 00 127.400 0.260	225 134.600 0.300	270 135.400 4.900	315 100.900 45.770		

Call Sign: KNKN867	File	Number:	000926218	4	Pr	int Date	:	
Location Latitude 47 37-24-19.0 N	Longitude 086-42-17.0 W	(m 19	round Eleva neters) 09.9	(1	Structure Hgt meters) 94.5	to Tip	Antenna Sa Registratio 1213965	
Address: Ohio West, 3893 S City: Horse Branch Count	tate Route 505 Sout ty: OHIO State: 1		struction D	eadline				
Antenna: 2 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	in Watts: 140.820 0 112.900 1.260 in Watts: 140.820 0	45 104.700 33.960 45 104.700 0.260	90 91.700 209.410 90 91.700 0.310	135 117.300 316.960 135 117.300 1.480	100.230 180	225 134.600 10.500 225 134.600 100.120	270 135.400 0.740 270 135.400 93.440	315 100.900 0.810 315 100.900 17.800
Location Latitude	Longitude	Gı	round Eleva	ation S	Structure Hgt meters)		Antenna S Registratio	tructure
48 36-57-24.8 N	086-28-42.2 W	16	57.0	8	4.1		1056469	
Address: 3090 Fitzgerald Inc			C					
City: Bowling Green Cour	nty: WARREN S	tate: KY	Construc	tion Dea	aline:			
Antenna: 1 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP i	0 71.400 61.180 in Watts: 140.820	45 63.700 69.730	90 65.900 7.330	135 62.600 0.310	180 44.100 0.310	225 41.900 0.310	270 36.500 0.310	315 59.500 3.930
Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	0	45 63.700 2.460	90 65.900 45.980	135 62.600 65.510	180 44.100 8.220	225 41.900 0.390	270 36.500 0.310	315 59.500 0.310
Maximum Transmitting ERP Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0	45 63.700 0.260	90 65.900 0.280	135 62.600 1.840	180 44.100 17.800	225 41.900 47.490	270 36.500 39.840	315 59.500 10.320
Location Latitude	Longitude	(m	round Eleva neters)	(1	tructure Hgt meters)	to Tip	Antenna S Registratio	
49 36-49-53.1 N	086-54-51.9 W		53.9		8.6	UNI 60	1043422	
Address: RUSSELLVILLE ' BYPASS	WEST, 0.64 KM NO	JRTH OF	нw ү 79,0	.16 KM '	WEST OF HV	VY 68		
	ty: LOGAN Stat	e: KY C	Constructio	n Deadli	ne:			
Antenna: 1 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	in Watts: 140.820	45 100.000 101.210	90 79.700 20.030	135 100.100 2.250	180 113.000 0.630	225 110.200 5.060	270 90.700 28.690	315 106.900 105.230

Call Sign: KNKN867	File	Number:	000926218	34	P	rint Date	:	
Location Latitude	Longitude		ound Eleva		ructure Hg neters)	t to Tip	Antenna St Registratio	
49 36-49-53.1 N	086-54-51.9 W	25	3.9	78	.6		1043422	
Address: RUSSELLVILLE V	VEST, 0.64 KM NO	ORTH OF	HWY 79, 0	.16 KM W	EST OF H	WY 68		
BYPASS Citru LEWISDUDC Count	y: LOGAN Stat	e: KY C	onstructio	n Doodlin				
City: LEWISBURG Count	y: LOGAN Stat	e: KY C	onstructio	n Deadlin	e:			
Antenna: 2								
Maximum Transmitting ERP in	n Watts: 140.820							
Azimuth(from true north) Antenna Height AAT (meters)	0 107.500	45 100.000	90	135	180	225	270	315
Transmitting ERP (watts)	9.170	55.270	79.700 192.200	$100.100 \\ 219.360$	113.000 82.390	110.200 11.370	90.700 0.760	106.900 1.030
Antenna: 3 Maximum Transmitting ERP in	n Watts: 140.820							
Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters) Transmitting ERP (watts)	107.500 4.520	$100.000 \\ 0.380$	79.700 2.720	$100.100 \\ 13.340$	$113.000 \\ 81.000$	110.200 188.260	90.700 162.320	$106.900 \\ 40.280$
	7.520	0.500	2.720				102.320	40.200
Location Latitude	Longitude		ound Elev		ructure Hg	t to Tip	Antenna St	
50 37-05-38.9 N	086-25-49.5 W		eters) 7.6	· · ·	eters)		Registratio	n No.
Address: Richardsville, 604 S		21	7.0	10	3.6		1232131	
	66	tate: KY	Construe	tion Dead	line•			
Antenna: 1								
Maximum Transmitting ERP in								
Azimuth(from true north) Antenna Height AAT (meters)	0 108.300	45 97.200	90 74.500	135 103.300	180 110.500	225 127.000	270 127.000	315 111.000
Transmitting ERP (watts)	144.730	63.540	74.300	0.360	0.300	0.380	8.420	66.540
Antenna: 2 Maximum Transmitting ERP in	n Watts: 140.820							
Azimuth(from true north) Antenna Height AAT (meters)	0	45	90	135	180	225	270	315
Transmitting ERP (watts)	108.300 0.780	97.200 18.970	74.500 101.290	$103.300 \\ 131.240$	110.500 33.930	100.500 3.180	$127.000 \\ 0.300$	$111.000 \\ 0.370$
Antenna: 3		10.770	101.270	131.240	33.750	5.100	0.300	0.370
Maximum Transmitting ERP in Azimuth(from true north)	140.820	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	Gı	ound Elev	ation St	ructure Hg	t to Tip	Antenna St	ructure
			eters)		eters)		Registratio	
51 37-31-30.4 N	086-55-04.2 W	19	5.7	97	.8		1214609	
Address: Beda, 729 Sherwoo								
City: Hartford County: OH	IIO State: KY	Construc	tion Deadli	ine:				
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) Transmitting ERP (watts)	107.800	100.300	110.100	108.400	122.200	117.000	103.100	107.200
Fransmitting EXI (watts)	38.070	131.240	101.290	16.150	1.200	0.300	0.390	2.840

	Number:	000926218	34	Pr	int Date	:	
Longitude 086-55-04.2 W	(m	eters)		0	to Tip		
	a i						
IO State: KY	Construc	tion Deadl	ne:				
	47	00	125	100	225	270	215
107.800 0.340	45 100.300 0.540	90 110.100 14.700	108.40	0 122.200	225 117.000 42.790	103.100 4.300	315 107.200 0.300
Watts: 140.820 0 107.800 52.750	45 100.300 5.690	90 110.100 0.300	135 108.40 0.320	180 0 122.200 0.430	225 117.000 11.130	270 103.100 78.320	315 107.200 144.460
Longitude				0	to Tip		
086-11-16.5 W				83.8		1217206	
AYSON State:	KY Cor	istruction	Deadlin	ie:			
	45	00	125	100	225	270	215
80.100 23.930	45 57.600 113.860	90 68.100 122.250	71.000	82.900	225 101.700 0.300	270 77.300 0.370	315 93.100 1.180
Watts: 140.820 0 80.100 2.360	45 57.600 0.300	90 68.100 0.370	135 71.000 1.180	180 82.900 23.930	225 101.700 113.860	270 77.300 122.250	315 93.100 26.290
Watts: 140.820 0 80.100 103.640	45 57.600 9.240	90 68.100 0.340	135 71.000 0.270	180 82.900 0.270	225 101.700 0.270	270 77.300 5.700	315 93.100 92.370
Longitude				Structure Hgt (meters)	to Tip		
087-09-13.7 W		,				1018270	
y: MCLEAN St	ate: KY	Construct	ion Dea	dline:			
0	45 69 100	90 70 200	135	180 92 100	225	270	315 85.400
73.900	149.230	70.300 118.620			93.900 0.300	2.180	85.400
	$\begin{array}{c} 0 \\ 086-55-04.2 \ W \\ 1 \ Drive \\ 10 \ State: KY \\ \hline 10 \ State: 140.820 \\ \hline 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 $	(m) 086-55-04.2 W 19 1 Drive IO State: KY Construct 10 State: 140.820 0 45 10 086-11-16.5 W 22 CAYSON State: KY Construct 10 086-11-16.5 W 22 CAYSON State: KY Construct 10 0 45 80.100 57.600 23.930 113.860 10 45 80.100 57.600 2.360 0.300 10 45 80.100 57.600 10 57		$(meters) \\ 086-55-04.2 W 195.7 \\ 1Drive \\ IO State: KY Construction Deadline: (Watts: 140.820 0 45 90 135 \\ 107.800 100.300 110.100 108.40 0.340 0.540 14.700 90.110 0 45 90 135 107.800 100.300 110.100 108.40 52.750 5.690 0.300 0.320 \\ Longitude Ground Elevation (meters) 086-11-16.5 W 221.9 \\ AYSON State: KY Construction Deadline (meters) 086-11-16.5 W 221.9 \\ AYSON State: KY Construction Deadline (meters) 086-11-16.5 W 221.9 \\ AYSON State: KY Construction Deadline (meters) 086-11-16.5 W 221.9 \\ AYSON State: KY Construction Deadline (meters) 086-11-16.5 W 221.9 \\ AYSON State: KY Construction Deadline (meters) 086-11-16.5 W 221.9 \\ AYSON State: KY Construction Deadline (meters) 086-11-16.5 W 221.9 \\ AYSON State: KY Construction Deadline (meters) 087-09 135 80.100 57.600 68.100 71.000 2.360 0.300 0.370 1.180 \\ Watts: 140.820 0 0 45 90 135 80.100 57.600 68.100 71.000 0.3640 9.240 0.340 0.270 \\ Longitude Ground Elevation (meters) 087-09-13.7 W 141.7 ANNER ROAD y: MCLEAN State: KY Construction Dead (meters) 087-09-13.7 W 141.7 ANNER ROAD y: MCLEAN State: KY Construction Dead (meters) 087-09-13.7 W 141.7 ANNER ROAD y: MCLEAN State: KY Construction Dead (meters) 086.400 69.100 70.300 81.600 \\ 0 45 90 135 80.100 57.600 57.600 58.100 57.6$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

Location Latitude 53 37-31-11.9 N Address: 550 SCHNEIDER T City: LIVERMORE Count Antenna: 2 Maximum Transmitting ERP in		(n	round Elev neters)	vation	Structure Hgt	to Tin	Antonno St	motores
Address: 550 SCHNEIDER T City: LIVERMORE Count Antenna: 2	ANNER ROAD	14			(meters)		- Registration No.	
City: LIVERMORE Count Antenna: 2		-	41.7		95.4		1018270	
Antenna: 2			<i>.</i>					
	y: MCLEAN Sta	ate: KY	Construc	tion Dea	idline:			
Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP ir	0 86.400 0.570	45 69.100 5.060	90 70.300 27.400	135 81.600 111.19		225 93.900 81.050	270 102.600 13.200	315 85.400 1.160
Azimuth(from true north) Antenna Height AAT (meters)	0 86.400	45	90	135	180	225	270	315
Transmitting ERP (watts)	47.570	69.100 6.000	$70.300 \\ 0.480$	81.600 1.320	92.100 7.360	93.900 47.670	$102.600 \\ 142.060$	$85.400 \\ 144.070$
LocationLatitude5437-19-05.4 N	Longitude 086-12-12.3 W	(n 2:	round Elev neters) 31.6	vation	Structure Hgt (meters) 83.8	to Tip	Antenna St Registratio 1235514	
Address: Nolin Lake North, 1	•							
City: Mammoth Cave Cour	nty: EDMONSON	State:	KY Con	struction	n Deadline:			
Antenna: 1 Maximum Transmitting ERP ir Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP ir Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	0 93.200 117.640 a Watts: 140.820 0 93.200 3.300	45 91.500 54.390 45 91.500 11.570	90 87.800 6.620 90 87.800 54.260	135 91.400 0.360 135 91.400 67.250	0.300 180 103.800	225 115.800 0.330 225 115.800 3.340	270 129.600 6.460 270 129.600 0.340	315 104.400 54.390 315 104.400 0.490
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 93.200 1.110	45 91.500 0.300	90 87.800 0.320	135 91.400 2.200	180 103.800 30.710	225 115.800 107.710	270 129.600 83.920	315 104.400 14.420
Location Latitude	Longitude	-	round Elev neters)	vation	Structure Hgt (meters)	to Tip	Antenna St Registratio	
55 36-40-20.5 N	086-15-11.1 W		39.6		60.7			
Address: Allen South, 371 Ar	ndrew Jackson High	nway						
City: Adolphus County: Al	LLEN State: KY	Const	ruction De	adline:				
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 87.000 117.640	45 70.200 63.170	90 64.700 8.330	135 57.200 0.490	180 44.500 0.260	225 66.500 0.300	270 82.700 4.900	315 88.700 45.770

File	Number:	00092621	84	Р	rint Date	2:	
Longitude					t to Tip	Antenna St Registratio	
086-15-11.1 W	2.	39.6		60.7		-	
- U	•						
LLEN State: KY	Const	ruction De	adline:				
n Watts: 140.820 0 87.000 0.490 n Watts: 140.820 0	45 70.200 8.150 45	90 64.700 38.780 90	135 57.200 44.150	11.680	225 66.500 1.200 225	270 82.700 0.260 270	315 88.700 0.260 315
87.000	70.200	64.700	57.200		66.500	82.700	88.700
4.900	0.260	0.280	0.350	9.130	63.170	117.640	43.710
Longitude					t to Tip	Antenna St Registratio	
086-23-15.8 W	2	26.2	,	77.7		1263047	
town Road							
LEN State: KY	Constr	uction Dea	dline:				
n Watts: 140.820	45	90	135	180	225	270	315
114.500 111.060	97.300 68.480	87.900 3.430	75.000 0.250		77.000 0.250	88.300 1.220	100.400 16.430
n Watts: 140.820 0 114.500	45 97.300	90 87.900	135 75.000		225 77.000	270 88.300	315 100.400 0.310
	24.580	100.120	93.440	17.800	1.460	0.200	0.510
n watts: 140.820 0 114.500 10.730	45 97.300 0.730	90 87.900 0.260	135 75.000 0.300	180 66.000 3.390	225 77.000 38.070	270 88.300 112.340	315 100.400 72.530
Longitude	-				t to Tip	Antenna St Registratio	
086-12-48.7 W	20	03.9		77.7		1264536	
ay Vernon Lane							
ALLEN State: K	Y Cons	truction D	eadline:				
n Watts: 140.820 0 94.400 12.040	45 87.800 74.220	90 105.100 112.340	135 69.200 35.530	180 68.400 3.720	225 92.400 0.260	270 105.300 0.290	315 118.000 0.450
	Longitude 086-15-11.1 W ndrew Jackson Hig LLEN State: KY n Watts: 140.820 0 87.000 0.490 n Watts: 140.820 0 87.000 4.900 Longitude 086-23-15.8 W town Road LEN State: KY n Watts: 140.820 0 114.500 114.500 114.500 114.500 144.500 114.500 144.5	Longitude G (n (n) 086-15-11.1 W 2. ndrew Jackson Highway LLEN State: KY Const n Watts: 140.820 0 45 87.000 70.200 0.490 8.150 n Watts: 140.820 0 45 87.000 70.200 0.490 8.150 n Watts: 140.820 0 45 87.000 70.200 4.900 0.260 Longitude G 086-23-15.8 W 2 town Road 2 LEN State: KY Natts: 140.820 0 45 114.500 97.300 114.500 97.300 1480 24.580 n Watts: 140.820 0 45 114.500 97.300 1.480 24.580 n Watts: 140.820 0 45 114.500 97.300 10.730	Longitule Ground Elex (meters) 086-15-11.1 W 239.6 ndrew Jackson Highway 239.6 LLEN State: KY Construction De n Watts: 140.820 90 87.000 70.200 64.700 0.490 8.150 38.780 n Watts: 140.820 90 87.000 70.200 64.700 0.490 8.150 38.780 n Watts: 140.820 0 0 45 90 87.000 70.200 64.700 0.4900 0.260 0.280 Longitule 086-23-15.8 W 226.2 086-23-15.8 W 226.2 town Road 214.0 LEN State: KY Construction Dea n Watts: 140.820 90 114.500 97.300 87.900 114.500 97.300 87.900 140.820 0 45 90 141.500 97.300 87.900 14.800 24.580 100.120	(meters) (meters) 086-15-11.1 W 239.6 ndrew Jackson Highway LLEN State: KY Construction Deadline: n Watts: 140.820 0 45 90 135 87.000 70.200 64.700 57.200 0.490 8.150 38.780 44.150 n Watts: 140.820 90 135 0 45 90 135 87.000 70.200 64.700 57.200 0 45 90 135 87.000 70.200 64.700 57.200 Longitude Ground Elevation (meters) 086-23-15.8 226.2 town Road LEN State: KY Construction Deadline: n Watts: 140.820 90 135 114.500 97.300 87.900 75.000 114.500 97.300 87.900 75.000 144.820 6	Longitude Ground Elevation (meters) Structure Hg (meters) 086-15-11.1 W 239.6 60.7 ndrew Jackson Highway LLEN State: KY Construction Deadline: n Watts: 140.820 64.700 57.200 44.500 0.490 8.150 38.780 44.150 11.680 n Watts: 140.820 90 135 180 87.000 70.200 64.700 57.200 44.500 1.009 0.260 0.280 0.350 9.130 Itongitude Ground Elevation (meters) Structure Hg (meters) 086-23-15.8 W 226.2 77.7 town Road 226.2 77.7 town Road 226.2 77.7 town Road 24.580 0.250 0.370 14.500 97.300 87.900 75.000 66.000 114.500 97.300 87.900 75.000 66.000 14.480 6 90 135 180 14.500 97.300	Longitude Ground Elevation (meters) Structure Hgt to Tip (meters) 086-15-11.1 W 239.6 60.7 ndrew Jackson Higbway LLEN State: KY Construction Deadline: n Watts: 140.820 64.700 57.200 44.500 66.500 n Watts: 140.820 90 135 180 225 n Watts: 140.820 64.700 57.200 44.500 66.500 n Watts: 140.820 90 135 180 225 n Watts: 140.820 64.700 57.200 44.500 66.500 0.4900 0.260 0.280 0.350 9.130 63.170 Longitude Ground Elevation Structure Hgt to Tip (meters) 0.86-23-15.8 W 226.2 77.7 70.00 1.1060 68.480 3.430 0.250 0.370 0.250 1.4500 97.300 87.900 75.000 66.000 77.000 114.500 97.300 87.900 75.000 66.00	Longitude Ground Elevation (meters) Structure Hgt to Tip (meters) Antenna St Registration 086-15-11.1 239.6 60.7 ndrew Jackson Highway 239.6 60.7 LLEN State: KY Construction Deadline: 60.7 n Watts: 140.820 90 135 180 225 270 Number of the state: 81.50 38.780 44.150 11.680 1.200 0.260 Number of the state: 140.820 0 65.700 57.200 44.500 66.500 82.700 Number of the state: 140.820 0 226 270 44.500 66.500 82.700 Number of the state: Kround Elevation Structure Hgt to Tip Antenna St Number of the state: KY Construction Deadline: Registration Number of the state: 87.900 75.900 66.000 77.000 88.300 114.500 97.300 87.900 75.000 66.000 77.000 88.300 114.500 97.300 87.900 75.000 66.000 77.000 88.300

Call Sign: KNKN867	File	Number:	00092621	84	Pr	rint Date	:	
Location Latitude 57 36-53-20.1 N Address: Allen North, 173 Ra	Longitude 086-12-48.7 W v Vernon Lane	(m	round Elev neters) 03.9		Structure Hgt (meters) 77.7	to Tip	Antenna St Registratio 1264536	
City: Scottsville County: A	•	Y Const	truction D	eadline:				
Antenna: 2 Maximum Transmitting ERP ir Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP ir Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 94.400 0.260	45 87.800 0.310 45 87.800 8.330	90 105.100 1.480 90 105.100 0.490	135 69.200 24.580 135 69.200 0.260	100.120 180	225 92.400 93.440 225 92.400 4.900	270 105.300 17.800 270 105.300 45.770	315 118.000 1.480 315 118.000 117.640
Location Latitude	Longitude	Gi	round Elev	ation	Structure Hgt	to Tip	Antenna St	tructure
59 05 05 50 000	006 10 10 0 1	×	eters)		(meters)		Registratio	n No.
58 37-07-58.9 N	086-13-12.8 W	19	07.8		77.7		1263384	
Address: Edmonson South, 46 City: Smiths Grove County		State: KY	Constr	uction T	Deadline:			
City: Simula Ofove County	· LDMONSON	State. KI	Constr		Jeaunne.			
Antenna: 1 Maximum Transmitting ERP ir Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP ir Azimuth(from true north)	0 70.900 128.990 a Watts: 140.820 0	45 74.500 56.630 45	90 47.600 6.540 90	135 73.500 0.320 135	180 83.900 0.260 180	225 88.000 0.340 225	270 89.200 7.510 270	315 76.800 59.300 315
Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	70.900 0.690	74.500 16.910	47.600 90.270	73.500 116.96		88.000 2.840	89.200 0.260	76.800 0.330
Maximum Transmitting ERP ir Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 70.900 1.070	45 74.500 0.260	90 47.600 0.340	135 73.500 2.530	180 83.900 33.930	225 88.000 116.960	270 89.200 90.270	315 76.800 14.390
Location Latitude	Longitude		round Elev		Structure Hgt (meters)	to Tip	Antenna St	
59 37-13-31.0 N	086-07-40.6 W		eters) 52.1		(inecers) 58.0		Registratio	ui 190,
Address: Near entrance to Ma		20						
City: Mammoth Cave Cour	ty: EDMONSON	State: F	KY Cons	truction	n Deadline:			
Antenna: 1 Maximum Transmitting ERP ir Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 122.200 170.670	45 91.300 78.910	90 119.200 9.600	135 86.600 0.520	180 117.300 0.430	225 116.700 0.480	270 135.200 9.380	315 124.600 78.910

Call Sign: KNKN867	File	Number: 000	9262184	P	rint Date	:	
Location Latitude	Longitude 086-07-40.6 W	Groun (meter 262.1	d Elevation s)	Structure Hg (meters) 58.0	t to Tip	Antenna St Registratio	
Address: Near entrance to M		202.1		38.0			
	nty: EDMONSON	State: KY	Constructio	on Deadline:			
Antenna: 2							
Maximum Transmitting ERP i Azimuth(from true north)	n Watts: 140.820 0	45 90	135	180	225	270	315
Antenna Height AAT (meters)	122.200		.200 86.60		116.700		124.600
Transmitting ERP (watts) Antenna: 3	0.920	21.900 118	.970 156.2	43.540	4.210	0.430	0.450
Maximum Transmitting ERP i	n Watts: 140.820						
Azimuth(from true north) Antenna Height AAT (meters)	0 122.200	45 90 91.300 119	135	180 00 117.300	225 116.700	270 135.200	315 124.600
Transmitting ERP (watts)	1.600	0.430 0.4	.200 86.60 70 3.190		156.260		20.910
				Channe of a start of the	4.a TP		
Location Latitude	Longitude	Groun (meter	d Elevation	Structure Hg (meters)	t to 11p	Antenna St Registratio	
60 37-23-49.1 N	087-08-43.7 W	135.0	-)	94.2		1244765	
Address: Bremen, 12849 Ker	ntucky Highway						
City: CENTRAL CITY Co	ounty: MUHLENB	ERG State: I	Constr	ruction Deadlin	e:		
Antenna: 1							
Maximum Transmitting ERP i Azimuth(from true north)	n Watts: 140.820	45 90	135	180	225	270	315
Antenna Height AAT (meters)	90.200	93.400 74.			66.600	87.200	92.000
Fransmitting ERP (watts) Antenna: 2	122.700	78.480 11.	150 0.740	0.260	0.340	3.750	40.860
Maximum Transmitting ERP i							
Azimuth(from true north) Antenna Height AAT (meters)	0 90.200	45 90 93.400 74.9	135 900 83.10	180 00 73.300	225 66.600	270 87.200	315 92.000
Transmitting ERP (watts)	0.330	5.430 50.			8.640	0.500	0.260
Antenna: 3 Maximum Transmitting ERP i	n Watts: 140.820						
Azimuth(from true north) Antenna Height AAT (meters)	0 90.200	45 90	135	180	225	270	315
Transmitting ERP (watts)	3.840	93.400 74. 0.260 0.3			66.600 80.300	87.200 122.700	92.000 38.140
Location Latitude	Longitude	(meter	d Elevation	Structure Hg (meters)	t to 11p	Antenna St Registratio	
61 37-57-06.1 N	086-24-38.3 W	260.0	-)	96.3		1043429	
Address: HWY 144, 4.8 KM							
City: UNION STAR Coun	ty: BRECKINRID	GE State: K	Y Constru	ction Deadline:			
Antenna: 1 Marimum Transmitting EDD :	- Watter 140.820						
Maximum Transmitting ERP i Azimuth(from true north)	1 watts: 140.820 0	45 90	135	180	225	270	315
Antenna Height AAT (meters) Transmitting ERP (watts)	155.100	133.800 120	.800 135.1	00 151.300	176.200	170.600	164.100
LI anshitting EAF (watts)	100.130	64.650 9.5	50 0.650	0.240	0.270	3.020	33.930

Call Sign: KNKN867	File	Number:	00092621	84	Рі	int Date	:	
	Longitude	(m	round Elev eters)		tructure Hgt neters)	to Tip	Antenna St Registratio	
	086-24-38.3 W		0.0	96	5.3		1043429	
Address: HWY 144, 4.8 KM (3	· · · · ·							
City: UNION STAR County:	BRECKINRID	JE State	e: KY C	onstructio	on Deadline:			
Antenna: 2 Maximum Transmitting ERP in V Azimuth(from true north) Antenna Height AAT (meters)	0 155.100	45 133.800	90 120.800	135 135.100	180 151.300	225 176.200	270 170.600	315 164.100
Transmitting ERP (watts) Antenna: 3	0.310	8.140	56.310	104.850	38.950	4.370	0.240	0.250
Maximum Transmitting ERP in V					100		•=•	
Azimuth(from true north) Antenna Height AAT (meters)	0 155.100	45 133.800	90 120.800	135 135.100	180 151.300	225 176.200	270 170.600	315 164.100
Transmitting ERP (watts)	1.820	0.240	0.280	0.850	17.400	81.390	89.240	19.980
Location Latitude	Longitude		ound Elev		tructure Hgt neters)	to Tip	Antenna St Registratio	
62 37-32-44.1 N	086-18-58.4 W		0.9		1.7		Registratio 1258451	II INO.
Address: 2408 Hanging Rock R				//	/		1200 101	
City: Leitchfield County: GR		e: KY C	onstructio	n Deadlin	e:			
Antenna: 1 Maximum Transmitting ERP in V	Vatts: 140.820							
Azimuth(from true north) Antenna Height AAT (meters)	0 75.500	45 84.400	90	135	180	225	270	315
Transmitting ERP (watts) Antenna: 2	97.150	35.730	70.100 4.550	67.400 0.310	67.900 0.380	86.700 0.580	82.300 13.630	95.400 68.070
Maximum Transmitting ERP in V	Vatts: 140.820							
Azimuth(from true north) Antenna Height AAT (meters)	0 75.500	45 84.400	90	135	180	225	270	315
Transmitting ERP (watts)	0.630	15.510	70.100 83.280	67.400 107.290	67.900 28.880	86.700 2.760	82.300 0.260	95.400 0.300
Antenna: 3 Maximum Transmitting ERP in V	Vatts: 140.820							
Azimuth(from true north) Antenna Height AAT (meters)	0 75.500	45	90	135	180	225	270	315
Transmitting ERP (watts)	1.050	84.400 0.260	70.100 0.310	67.400 2.290	67.900 30.940	86.700 107.290	82.300 83.280	95.400 13.820
	Longitude	(m	eters)	(n	tructure Hgt neters)	to Tip	Antenna St Registratio	
	087-07-44.2 W	17	6.5	60	0.7		1274279	
Address: 4799 Russellville Road		Comete						
City: Allensville County: TO	DD State: KY	Constr	ruction De	adiine:				
Antenna: 1 Maximum Transmitting ERP in V	Vatts: 140.820							
Azimuth(from true north) Antenna Height AAT (meters)	0 39.500	45 56.100	90 59.000	135 64.900	180 64.800	225 67.600	270 57.500	315 49.800
Transmitting ERP (watts)	19.520	91.310	100.120	22.420	2.040	0.260	0.310	0.960

Call Sign: KNKN867	File	Number:	000926218	34	Pr	rint Date	:	
Location Latitude 63 36-41-48.4 N	Longitude 087-07-44.2 W	(m	round Elev neters) '6.5	(1	tructure Hgt meters) 0.7	to Tip	Antenna St Registratio 1274279	
Address: 4799 Russellville Ro								
City: Allensville County: 7	FODD State: KY	Y Const	ruction Dea	adline:				
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	0 39.500 0.260	45 56.100 0.290	90 59.000 0.450	135 64.900 12.040	180 64.800 74.220	225 67.600 112.340	270 57.500 35.530	315 49.800 3.720
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	a Watts: 140.820 0 39.500 72.530	45 56.100 10.730	90 59.000 0.730	135 64.900 0.260	180 64.800 0.300	225 67.600 3.390	270 57.500 38.070	315 49.800 112.340
Location Latitude	Longitude	Gi	ound Elev		tructure Hgt	to Tip	Antenna St	
64		×	eters)	`	meters)		Registratio	n No.
64 37-14-00.7 N Address: 109 Peach Road No	086-28-02.1 W	18	3.2	1	03.6		1231934	
City: Roundhill County: B		XY Cons	struction D	eadline:				
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2	0 64.400 363.980	45 90.500 159.800	90 87.200 18.450	135 101.000 0.910	180 93.800 0.740	225 118.600 0.950	270 91.600 21.190	315 91.500 167.330
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	n Watts: 140.820 0 64.400 1.950	45 90.500 47.700	90 87.200 254.680	135 101.000 329.990		225 118.600 8.010	270 91.600 0.740	315 91.500 0.920
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 64.400 3.030	45 90.500 0.740	90 87.200 0.970	135 101.000 7.140	180 93.800 95.740	225 118.600 330.050	270 91.600 254.730	315 91.500 40.610
Location Latitude	Longitude		round Elev leters)		tructure Hgt meters)	to Tip	Antenna St Registratio	
65 37-52-03.2 N	086-41-39.8 W	14	9.0	6	0.7			
Address: Hancock South, 458 City: Hawesville County: 1	36 Midway Lane HANCOCK Sta	te: KY (Constructio	n Deadli	ne:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)		45 44.700 73.040	90 66.200 10.410	135 57.400 0.540	180 29.900 0.280	225 51.200 0.490	270 52.700 4.480	315 89.200 36.360

File				rint Date	nt Date:			
Longitude 086-41-39.8 W	(m	eters)	(r	neters)	t to Tip			
	1		0	0.7				
	e: KY (Constructio	on Deadli	ne:				
0 42.800 3.060	45 44.700 20.470	90 66.200 92.740	135 57.400 139.820	180 29.900 92.120	225 51.200 15.240	270 52.700 1.400	315 89.200 0.310	
0 42.800	45 44,700	90 66 200	135 57.400	180 29.900	225 51,200	270 52 700	315 89.200	
14.390	1.320	0.300	2.890	19.320	87.550	132.000	86.970	
Longitude	(m	eters)	(r	neters)	t to Tip	Registratio		
			9	0.0		1213208		
•			struction	Deadline:				
0 117.700 65.140 n Watts: 140.820	45 128.800 85.560	90 92.100 23.840	135 83.000 2.300	180 91.500 0.240	225 112.900 0.240	270 146.900 0.510	315 129.700 11.990 315	
117.700 0.260	45 128.800 1.750	90 92.100 24.390	83.000 85.560	91.500 66.660	112.900 11.450	146.900 0.880	129.700 0.240	
n Watts: 140.820 0 117.700 5.250	45 128.800 0.290	90 92.100 0.240	135 83.000 0.260	180 91.500 5.140	225 112.900 43.210	270 146.900 93.440	315 129.700 43.210	
Longitude					t to Tip			
086-28-23.9 W	19	2.0	12	23.4		1244902		
	State IT	V Cont	motion P	andline i				
inty: GRAYSON	State: K	r Const	ruction D	eadline:				
n Watts: 140.820 0 81.800 30.940	45 72.500 107.290	90 68.000 83.280	135 60.600 13.820	180 85.600 1.050	225 82.500 0.260	270 104.300 0.310	315 89.800 2.290	
	Longitude 086-41-39.8 W 86 Midway Lane HANCOCK Stat n Watts: 140.820 0 42.800 3.060 n Watts: 140.820 0 42.800 14.390 Longitude 086-28-22.4 W West side of Finley BRECKINRIDGE n Watts: 140.820 0 117.700 65.140 n Watts: 140.820 0 117.700 0.260 n Watts: 140.820 0 117.700 117.700 0 117.700	Longitude Gram 086-41-39.8 W 14 86 Midway Lane HANCOCK HANCOCK State: KY 0 n Watts: 140.820 0 45 42.800 44.700 3.060 20.470 n Watts: 140.820 0 45 42.800 44.700 1.320 Itongitude Gram Gram 086-28-22.4 W 21 West side of Finley/Dowell F BRECKINRIDGE State: n Watts: 140.820 0 45 117.700 128.800 65.140 85.560 n Watts: 140.820 0 45 117.700 128.800 0.260 1.750 n Watts: 140.820 0 45 117.700 128.800 0.260 1.750 n Watts: 140.820 0 45 0.260 1.750 128.800 0.290 Longitude 0 45 117.700 128.800 0.250 0.290 19 00 19 <	Longitude Ground Elex (meters) 086-41-39.8 W 149.0 86 Midway Lane HANCOCK State: KY Construction n Watts: 140.820 90 42.800 44.700 66.200 a.060 20.470 92.740 92.740 90 n Watts: 140.820 90 42.800 44.700 66.200 n Watts: 140.820 0 45 90 42.800 44.700 66.200 14.390 1.320 0.300 Longitude Ground Elex (meters) 0 0 0 0 086-28-22.4 W 213.7 West side of Finley/Dowell Road EBRECKINRIDGE State: KY Con n Watts: 140.820 0 117.700 128.800 92.100 0.260 1.750 24.390 117.700 128.800 92.100 0.260 1.750 24.390 117.700 128.800 92.100 0.260 1.750 24.390 117.700 128.800 92.100	Longitude Ground Elevation S (meters) (n 086-41-39.8 149.0 6 86 Midway Lane HANCOCK State: KY Construction Deadling HANCOCK State: KY Construction Deadling n Watts: 140.820 0 45 90 135 42.800 44.700 66.200 57.400 139.820 n Watts: 140.820 0 45 90 135 42.800 44.700 66.200 57.400 14.390 1.320 0.300 2.890 Longitude Ground Elevation S (neters) (n 086-28-22.4 213.7 9 9 9 9 9 West side of Finley/Dowell Road BRECKINRIDGE State: KY Construction 8 90 135 117.700 128.800 92.100 83.000 0.260 1.750 24.390 85.560 n Watts: 140.820 0 135 117.700 128.800 92.100 83	Longitude Ground Elevation (meters) Structure Hg (meters) 086-41-39.8 W 149.0 60.7 86 Midway Lane HANCOCK State: KY Construction Deadline: n Watts: 140.820 0 135 180 42.800 44.700 66.200 57.400 29.900 3.060 20.470 92.740 139.820 92.120 n Watts: 140.820 0 45 90 135 180 0 42.800 44.700 66.200 57.400 29.900 135 180 14.390 1.320 0.300 2.890 19.320 19.320 Longitude Ground Elevation Structure Hg (meters) (meters) 91.320 086-28-22.4 W 213.7 98.8 90 135 180 177.700 128.800 92.100 83.000 91.500 0.5140 85.560 23.840 2.300 91.500 0.260 1.750 24.390 83.000 91.500 </td <td>Longitude Ground Elevation (meters) Structure Hgt to Tip (meters) 086-41-39.8 W 149.0 60.7 86 Midway Lane HANCOCK State: KY Construction Deadline: n Watts: 140.820 60.7 225 0 45 90 135 180 225 10 0 45 90 135 180 225 10 0 45 90 135 180 225 10 410.820 0 135 180 225 114.390 1,320 0.300 2.890 19.320 87.550 Longitude Ground Elevation Structure Hgt to Tip (meters) 0 135 180 225 086-28-22.4 W 213.7 98.8 90 135 180 225 086-28-22.4 W 213.7 98.8 90 135 180 225 017.700 128.800 92.100 83.000 91.500 112.900 0 177.700 128.800 92.100 83.000 91.500 112.900 0<</td> <td>Longitude Ground Elevation (meters) Structure Hgt to Tip (meters) Antenna Si Registration 086-41-39.8 W 149.0 60.7 80</td>	Longitude Ground Elevation (meters) Structure Hgt to Tip (meters) 086-41-39.8 W 149.0 60.7 86 Midway Lane HANCOCK State: KY Construction Deadline: n Watts: 140.820 60.7 225 0 45 90 135 180 225 10 0 45 90 135 180 225 10 0 45 90 135 180 225 10 410.820 0 135 180 225 114.390 1,320 0.300 2.890 19.320 87.550 Longitude Ground Elevation Structure Hgt to Tip (meters) 0 135 180 225 086-28-22.4 W 213.7 98.8 90 135 180 225 086-28-22.4 W 213.7 98.8 90 135 180 225 017.700 128.800 92.100 83.000 91.500 112.900 0 177.700 128.800 92.100 83.000 91.500 112.900 0<	Longitude Ground Elevation (meters) Structure Hgt to Tip (meters) Antenna Si Registration 086-41-39.8 W 149.0 60.7 80	

Call Sign: KNKN867	File	Number:	00092621	84	Pı	rint Date	:	
Location Latitude	Longitude		round Elev leters)	vation	Structure Hgt (meters)	to Tip	Antenna St Registratio	
67 37-31-51.2 N	086-28-23.9 W	19	2.0		123.4		1244902	
Address: 3690 FALLS OF RO		G () T			N 111			
City: SHORT CREEK Cou	nty: GRAYSON	State: K	Y Const	ruction	Deadline:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in	0 81.800 0.260	45 72.500 0.310	90 68.000 6.770	135 60.600 55.020) 117.640	225 82.500 52.550	270 104.300 6.320	315 89.800 0.320
Azimuth(from true north) Antenna Height AAT (meters)	0 81.800	45 72.500	90	135	180	225	270	315
Transmitting ERP (watts)	28.880	2.760	68.000 0.260	60.600 0.300) 85.600 0.630	82.500 15.510	104.300 83.280	89.800 107.290
Location Latitude 68 37-19-34.6 N	Longitude 086-57-44.7 W	(m	cound Elev eters) 57.0	vation	Structure Hgt (meters) 83.8	to Tip	Antenna St Registratio 1217201	
Address: Western KY Parkwa								
City: Beaver Dam County:	OHIO State: K	Y Const	truction D	eadline	:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Icocation Latitude 69 37-16-08.2 N Address: Welcome, 224 Cook	0 94.000 33.930 Watts: 140.820 0 94.000 3.840 Watts: 140.820 0 94.000 88.210 Longitude 086-40-27.4 W	(m	90 89.600 90.270 90 89.600 0.300 90 89.600 0.340 round Elev reters) 5.0	135 96.400 14.390 135 96.400 0.480 135 96.400 0.240 vation	 1.070 180 94,000 13.100 180 	225 100.700 0.260 225 100.700 80.300 225 100.700 0.240 : to Tip	0.340 270 102.100 122.700 270	
		KY C	onstructio	n Dead	ine			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)		45 67.500 52.550	90 90.400 6.320	135 96.600 0.320	180	225 98.300 0.310	270 116.100 6.770	315 103.600 55.020

Call Sign: KNKN867	File	Number:	00092621	84	Pı	rint Date	:	
Location Latitude 69 37-16-08.2 N	Longitude 086-40-27.4 W	(n	round Elev neters) 75.0	vation	Structure Hgt (meters) 77.7	to Tip	Antenna S Registratio 1268018	
Address: Welcome, 224 Cool	k Road							
City: Morgantown County	BUTLER State	e: KY C	onstructio	n Deadl	ine:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 94.800 0.630 n Watts: 140.820 0 94.800	45 67.500 15.510 45 67.500	90 90.400 83.280 90 90.400	135 96.600 107.29 135 96.600	0 28.880 180 102.900	225 98.300 2.760 225 98.300	270 116.100 0.260 270 116.100	315 103.600 0.300 315 103.600
	1.050	0.260	0.310	2.290	30.940	107.290	83.280	13.820
Location Latitude 70 37-12-05.9 N	Longitude 087-02-26.4 W	(n	round Ele [,] neters) 53.0	vation	Structure Hgt (meters) 111.3	to Tip	Antenna St Registratio 1231935	
Address: 1317 US HWY 431	007 02 20.4 W		55.0		111.5		1251755	
City: DRAKESBORO Cou	nty: MUHLENBE	RG Sta	te: KY	Construe	ction Deadline	:		
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2	watts: 140.820 0 106.300 102.460	45 109.400 44.990	90 98.200 5.190	135 89.900 0.260	180 81.000 0.210	225 80.100 0.270	270 89.600 5.960	315 94.400 47.110
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	a Watts: 140.820 0 106.300 0.550	45 109.400 13.430	90 98.200 71.710	135 89.900 92.910		225 80.100 2.250	270 89.600 0.210	315 94.400 0.260
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 106.300 0.850	45 109.400 0.210	90 98.200 0.270	135 89.900 2.010	180 81.000 26.950	225 80.100 92.910	270 89.600 71.710	315 94.400 11.430
Location Latitude	Longitude		round Elev neters)	vation	Structure Hgt (meters)	to Tip	Antenna S Registratio	
71 36-58-34.3 N	086-57-59.8 W	19	90.2		93.0		1246006	
Address: Lewinsburg Downto	•	***	~					
City: LEWISBURG Count	y: LOGAN Stat	e: KY (Construction	on Dead	line:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 107.500 100.120	45 103.300 93.440	90 93.900 17.800	135 90.700 1.480	180 82.900 0.260	225 85.300 0.310	270 84.200 1.480	315 89.200 24.580

Call Sign: KNKN867	File	Number:	00092621	84	P	rint Date	:	
LocationLatitude7136-58-34.3 N	Longitude 086-57-59.8 W	(n	round Elev neters) 90.2	(1	tructure Hg meters) 3.0	t to Tip	Antenna St Registratio 1246006	
Address: Lewinsburg Downte City: LEWISBURG Count		e: KY (Constructio	on Deadli	ne:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	107.500 0.300	103.300 4.900	93.900 45.770	90.700 117.640	82.900 63.170	85.300 8.330	84.200 0.490	89.200 0.260
Maximum Transmitting ERP is Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 107.500 2.040	45 103.300 0.260	90 93.900 0.310	135 90.700 0.960	180 82.900 19.520	225 85.300 91.310	270 84.200 100.120	315 89.200 22.420
Location Latitude	Longitude	(n	round Elev neters)		tructure Hg meters)	t to Tip	Antenna St Registratio	
72 37-02-45.0 N Address: Bristow, KY Hwy 5	,) NE of	57.6		02.7		1046177	
City: BOWLING GREEN	County: WARREN	N State:	KY Cor	istruction	Deadline:			
Antenna: 1 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2	n Watts: 140.820 0 48.600 144.730	45 42.800 63.540	90 42.800 7.340	135 67.000 0.360	180 66.800 0.300	225 77.800 0.380	270 53.600 8.420	315 55.000 66.540
Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	n Watts: 140.820 0 48.600 0.640	45 42.800 15.100	90 42.800 82.010	135 67.000 107.710	180 66.800 30.010	225 77.800 2.900	270 53.600 0.300	315 55.000 0.310
Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 48.600 1.180	45 42.800 0.300	90 42.800 0.350	135 67.000 2.570	180 66.800 34.720	225 77.800 120.380	270 53.600 93.440	315 55.000 15.510
Location Latitude	Longitude	(n	round Elev neters)	(1	tructure Hg meters)	t to Tip	Antenna St Registratio	
73 36-48-17.7 N Address: Elkton Downtown, City: Elkton County: TOD		the Town	95.1 of ion Deadli		7.0			
Antenna: 2			2 vuuli					
Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 29.900 0.330	45 29.900 0.390	90 36.400 2.890	135 49.400 38.950	180 47.700 135.070	225 51.300 104.850	270 46.600 17.400	315 29.900 1.320

Call Sign: KNKN867	File	Number: 00092621	84	Р	rint Date	:	
Location Latitude	Longitude	Ground Ele (meters)	vation	Structure Hg (meters)	t to Tip	Antenna St Registratio	
73 36-48-17.7 N	087-09-29.0 W	195.1		37.0		0	
Address: Elkton Downtown,							
City: Elkton County: TOD	D State: KY	Construction Deadli	ine:				
Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 4	0 29.900 186.670	45 90 29.900 36.400 22.440 1.150	135 49.400 0.940	180) 47.700 1.100	225 51.300 24.050	270 46.600 195.470	315 29.900 417.910
Maximum Transmitting ERP in Azimuth(from true north)	n Watts: 140.820	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	0 7.260	0.940	1.100	3.400
Location Latitude 74 36-45-37.5 N	Longitude 086-43-02.9 W	Ground Ele (meters) 197.2	vation	Structure Hg (meters) 77.7	t to Tip	Antenna St Registratio 1268208	
Address: Middleton, 2514 Ne		197.2		//./		1208208	
City: Franklin County: SIN	5	XY Construction I	Deadline	•			
	JI SOIV Stute. I	Construction 1		•			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north)	n Watts: 140.820 0	45 90	135	180	225	270	315
Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2	65.100 108.950	45 50 67.700 65.900 99.160 18.570	61.000 1.520		89.900 0.340	84.400 1.630	76.100 26.900
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	watts: 140.820 0 65.100 0.340	459067.70065.9007.51059.300	135 61.000 128.99		225 89.900 6.540	270 84.400 0.320	315 76.100 0.260
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 65.100 6.540	459067.70065.9000.3200.260	135 61.000 0.340	180 0 73.500 7.510	225 89.900 59.300	270 84.400 128.990	315 76.100 56.630
Location Latitude	Longitude	Ground Ele (meters)	vation	Structure Hg (meters)	t to Tip	Antenna St Registratio	
75 36-44-33.6 N	086-30-05.7 W	209.4		74.7		1057217	
Address: Simpson I-65, 680 I	-						
City: Franklin County: SIN	APSON State: k	KY Construction I	Deadline				
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 74.500 113.860	45 90 60.400 58.100 122.250 26.290	135 45.300 2.360	180 0 43.900 0.300	225 54.700 0.370	270 56.900 1.180	315 65.000 23.930

Call Sign: KNKN867	File	Number:	000926218	34	Рі	rint Date	:	
Location Latitude	Longitude		round Elev neters)	ation	Structure Hgt (meters)	to Tip	Antenna St Registratio	
75 36-44-33.6 N	086-30-05.7 W	20	9.4		74.7		1057217	
Address: Simpson I-65, 680 F	-							
City: Franklin County: SIM	IPSON State: K	Cons	truction D	eadline	:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north)	0 74.500 0.430	45 60.400 11.130 45	90 58.100 78.320 90	135 45.300 144.46 135		225 54.700 5.690 225	270 56.900 0.300 270	315 65.000 0.320 315
Antenna Height AAT (meters) Transmitting ERP (watts)	74.500	60.400	58.100	45.300		54.700	56.900	65.000
	0.830	0.300	0.380	4.210	45.850	137.670	88.060	12.510
Location Latitude	Longitude		round Elev neters)	ation	Structure Hgt (meters)	to Tip	Antenna St Registratio	
76 36-41-45.2 N	086-08-55.9 W	29	99.9		42.7		-	
Address: Allen Southeast, 7.0								
City: Scottsville County: A	LLEN State: K	Y Cons	truction De	eadline:	:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Location Latitude 77 37-41-44.8 N Address: Kingswood, 1065 St	0 108.900 156.880 • Watts: 140.820 0 108.900 6.870 • Watts: 140.820 0 108.900 1.120 • Longitude 086-25-06.2 W	(m	90 127.700 17.100 90 127.700 144.130 90 127.700 0.870 round Elev neters) 0.6	135 96.400 1.570 135 96.400 164.50 135 96.400 3.340 ation	0.350 180 0 75.800 61.780 180	225 97.900 3.430 225 97.900 8.520 225 97.900 65.860 c to Tip	270 122.100 22.970 270 122.100 0.570 270 122.100 50.650 Antenna St Registratio 1262107	
City: Harned County: BRE	CKINRIDGE S	tate: KY	Construc	tion De	adline:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 78.900 6.770	45 76.900 55.020	90 78.500 117.640	135 81.600 52.550	180 105.100 6.320	225 108.200 0.320	270 91.500 0.260	315 108.400 0.310

Call Sign: KNKN867	File	Number:	000926218	34	Pr	int Date	:	
LocationLatitude7737-41-44.8 N	Longitude 086-25-06.2 W	(m	round Elev aeters) 0.6	(Structure Hgt (meters) 77.7	to Tip	Antenna S Registratio 1262107	
Address: Kingswood, 1065 S								
City: Harned County: BRE	ECKINRIDGE St	tate: KY	Construc	tion Dea	adline:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in	0 78.900 0.260	45 76.900 0.300	90 78.500 3.390	135 81.600 38.070	180 105.100 112.340	225 108.200 72.530	270 91.500 10.730	315 108.400 0.730
Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 78.900 112.340	45 76.900 35.530	90 78.500 3.720	135 81.600 0.260	180 105.100 0.290	225 108.200 0.450	270 91.500 12.040	315 108.400 74.220
Location Latitude	Longitude	(m	round Elev ieters)		Structure Hgt (meters)	to Tip	Antenna S Registratio	
78 36-54-24.5 N	086-19-35.4 W		2.8	,	77.7		1275463	
Address: Claypool, 2818 Alv			Constant	tion D-	adlina			
City: Bowling Green Coun	ty: WARREN S	tate: KY	Construc	tion Dea	adline:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north)	n Watts: 140.820	45	90	135	180	225	270	315
Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2	82.200 18.240	76.200 82.650	79.200 124.610	52.800 82.100	60.600 13.580	78.000 1.250	69.500 0.280	86.500 2.730
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	n Watts: 140.820 0 82.200 0.450	45 76.200 0.620	90 79.200 5.460	135 52.800 32.920	180 60.600 114.480	225 78.000 130.660	270 69.500 49.070	315 86.500 6.770
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 82.200 112.910	45 76.200 27.380	90 79.200 2.950	135 52.800 0.270	180 60.600 1.500	225 78.000 8.200	270 69.500 53.810	315 86.500 130.660
Location Latitude	Longitude		round Elev leters)		Structure Hgt (meters)	to Tip	Antenna S Registratio	
79 37-54-07.2 N	086-31-56.1 W		35.9		30.3			
Address: 1.0 km SSW of								
City: Stephensports Count	y: BRECKINRIDG	E State	:KY Co	nstructi	on Deadline:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 69.900 20.210	45 29.900 136.640	90 49.700 63.910	135 43.700 3.510	180 40.700 0.310	225 48.900 0.310	270 79.700 0.310	315 37.400 0.340

Call Sign: KNKN867	File	Number: 00	09262184	Pri	nt Date	:	
Location Latitude	Longitude	Grou (mete	nd Elevation ers)	Structure Hgt ((meters)	to Tip	Antenna Sti Registration	
79 37-54-07.2 N	086-31-56.1 W	185.9	/	30.3		8	
Address: 1.0 km SSW of							
City: Stephensports Count	y: BRECKINRIDG	E State: K	Y Construct	tion Deadline:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 69.900 0.310 n Watts: 140.820 0 69.900 5.190	0.310 3. 45 9 29.900 49 0.310 0.	9,700 43,700 510 82,330 0 135 9,700 43,700 310 0,310	124.620 180 0 40.700 0.310	225 48.900 15.330 225 48.900 13.660	270 79.700 0.570 270 79.700 127.520	315 37.400 0.310 315 37.400 78.630
Location Latitude	Longitude		nd Elevation	Structure Hgt	to Tip	Antenna Sti	
80 37-42-39.3 N	086-31-34.6 W	(mete 218.5	· ·	(meters) 77.7		Registration 1272916	L 1NO .
Address: 245 Dejarnette Lane		210.5		, , , , ,		12,2710	
5	RECKINRIDGE	State: KY	Construction	Deadline:			
Antenna: 1Maximum Transmitting ERP in Azimuth(from true north)Antenna Height AAT (meters)Transmitting ERP (watts)Antenna: 2Maximum Transmitting ERP in Azimuth(from true north)Antenna Height AAT (meters)Transmitting ERP (watts)Antenna: 3Maximum Transmitting ERP in Azimuth(from true north)Antenna: 3Maximum Transmitting ERP in Azimuth(from true north)Antenna Height AAT (meters)Transmitting ERP (watts)Location Latitude8137-29-16.7 N	0 122.000 128.360 n Watts: 140.820 0 122.000 4.860 n Watts: 140.820 0 122.000 3.780 Longitude 086-16-14.7 W	93.210 1 45 90 93.600 90 26.750 10 45 90 93.600 90 0.270 1.	0.700 109,10 7.180 1.520 0 135 0.700 109.10 05.570 130.69 0 135 0.700 109.10 280 5.690 nd Elevation ers)	0.270 180 120.100 59.850 180	225 106.500 1.720 225 106.500 9.030 225 106.500 127.920 to Tip	270 93.000 14.250 270 93.000 0.640 270 93.000 120.460 Antenna Str Registration	
Address: Leitchfield WT, 1.5							
City: Leitchfield County: (GRAYSON State	e: KY Con	struction Dead	line:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 84.200 127.520		0 135 9.000 65.200 190 0.310		225 59.900 0.310	270 55.400 0.310	315 68.100 13.660

Call Sign: KNKN867	File	Number:	000926218	34	Р	rint Date	:	
Location Latitude 81 37-29-16.7 N	Longitude 086-16-14.7 W	(m	round Elev neters) 31.6		Structure Hgt (meters) 44.2	to Tip	Antenna St Registratio	
Address: Leitchfield WT, 1.5	km East of							
City: Leitchfield County:	GRAYSON Stat	e: KY C	onstructio	n Deadl	line:			
Antenna: 2 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 84.200 0.310	45 71.900 0.790 45 71.900 0.310	90 49.000 40.320 90 49.000 0.310	135 65.200 146.41 135 65.200 0.310	0 38.510 180	225 59.900 1.570 225 59.900 82.330	270 55.400 0.310 270 55.400 124.620	315 68.100 0.310 315 68.100 15.330
	0.370	0.310	0.310	0.310	5.510	82.330	124.020	15.550
Location Latitude 82 37-12-13.0 N	Longitude 086-52-35.7 W	(n	round Elev ieters) 51.2		Structure Hgt (meters) 77.7	to Tip	Antenna St Registratio 1263383	
Address: 354 New Cut Road)1.2		//./		1205505	
City: Rochester County: B		XY Con	struction D	eadline	:			
<i>. .</i>								
Antenna: 1 Maximum Transmitting ERP is Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP is Azimuth(from true north)	0 92.200 63.170 n Watts: 140.820 0	45 104.300 117.640 45	90 79.800 43.710 90	135 74.100 4.900 135	180 80.300 0.260 180	225 95.900 0.280 225	270 89.700 0.350 270	315 112.900 9.130 315
Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	92.200 0.310	104.300 0.960	79.800 19.520	74.100 91.310		95.900 22.420	89.700 2.040	112.900 0.260
Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 92.200 10.730	45 104.300 0.730	90 79.800 0.260	135 74.100 0.300	180 80.300 3.390	225 95.900 38.070	270 89.700 112.340	315 112.900 72.530
Location Latitude	Longitude		round Elev neters)		Structure Hgt (meters)	to Tip	Antenna St Registratio	
83 36-45-39.5 N	086-51-51.6 W		86.6		77.7		1256442	
Address: Logan South, 75 Ha								
City: Russellville County:	LOGAN State:	KY Cor	struction l	Deadlin	e:			
Antenna: 1 Maximum Transmitting ERP i Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 70.500 128.990	45 51.300 56.630	90 69.000 6.540	135 75.700 0.320	180 80.000 0.260	225 87.100 0.340	270 81.800 7.510	315 59.200 59.300

Location Latitude Longitude Ground Elevation Structure Hgt to Tip (meters) Antenna Structure Registration No. 33 36-45-39.5 N 086-51-51.6 W 186.6 77.7 1256442 Address: Logan South, 75 Hall, Store Road 186.6 77.7 1256442 Maximum Fransmitting ERP in Watts: 140.820 Antenna Structure 180.0 27.00 81.800 25.200 Maximum Transmitting ERP in Watts: 140.820 0.500 45.000 0.500 1.800 82.100 81.800 32.500 Antenna 3 Maximum Transmitting ERP in Watts: 140.820 0.500 1.500 80.000 82.100 81.800 32.50 Antenna 4 Edgit AAT (meters) 0.500 51.800 0.260 0.900 0.450 18.00 82.100 81.800 32.50 Antenna Structure Maximum Transmitting ERP in Watts: 140.820 Constructure Hgt to Tip Antenna Structure Address: Poweling Green County: WARREN State: KY Construction Deadline: Hitting ERP in Watts: 140.820 2.300 33.800 33.800 <td< th=""><th>Call Sign: KNKN867</th><th>File</th><th>Number:</th><th>00092621</th><th>84</th><th>Рі</th><th>rint Date</th><th>:</th><th></th></td<>	Call Sign: KNKN867	File	Number:	00092621	84	Рі	rint Date	:	
Address: Logan South, 75 Hall Store Road How	Location Latitude	Longitude			ation	-	to Tip		
City: Russelfville County: LOGAN State: KY Construction Deadline: Antenna: 2 Maximum Transmitting ERP in Watts: 140.820	50 15 5915 11		18	36.6		77.7		1256442	
Antenna: 2 Maximum Transmitting ERP in Wafts: 140.820 Azimuth(from true north) 0 45 90 135 180 225 270 315 Antenna: 1 Maximum Transmitting ERP (watts) 0.340 2.530 33.930 116.960 90.0270 14.390 81.800 59.200 Antenna: 3 Maximum Transmitting ERP in Watts: 140.820 45 90 135 180 225 270 315 Antenna: 4104(from true north) 0.340 2.530 33.930 116.960 90.270 14.390 81.800 59.200 Antenna: 4104(from true north) 0.350 51.300 69.000 75.700 80.000 87.100 81.800 59.200 Transmitting ERP (watts) 3.840 0.260 0.300 51.300 80.300 122.700 31.50 Address: Bowling Green Centery Road, 3700 Cumberland Trace Cell 55.4 1241356 1241356 Antenna: Hight AAT (meters) 29.900 35.000 33.800 29.900 39.200 29.900 54.700 Transmitting ERP in Watts: 140.820	e .				Б ШР				
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	City: Russellville County:	LOGAN State:	KY Con	istruction	Deadlin	e:			
Azimuth/from true north Antenna Height AAT (meters) 0 45 90 135 180 225 270 315 Transmitting ERP (watts) 3.840 0.260 0.300 0.480 13.100 87.100 81.800 59.200 Main and the expension of	Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	0 70.500 0.340	51.300	69.000	75.700	80.000	87.100	81.800	59.200
Antenna Height AAT (meters) 70.500 51.800 69.000 75.700 80.000 87.100 81.800 50.200 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 Construction Deadline: 225 270 315 Maximum Transmitting ERP in Watts: 140.820 35.000 33.800 29.900 39.200 29.90			45	00	125	190	225	270	215
Transmitting ERP (watts) 3.840 0.260 0.300 0.480 13.100 80.300 122.700 38.140 Location Latitude Longitude Ground Elevation Structure Hgt to Tip (meters) Antenna Structure 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: WAREN State: KY Construction Deadline: Antenna: 1 Maximum Transmitting ERP in Watts: 140.820 45 90 135 180 225 270 315 Antenna: 1 Maximum Transmitting ERP in Watts: 140.820 33.800 29.900 39.200 29.900 18.69 Maximum Transmitting ERP in Watts: 140.820 35.000 33.800 29.900 39.200 29.900 54.700 Maximum Transmitting ERP in Watts: 140.820 35.000 33.800 29.900 39.200 29.900 54.700 Antenna Height AAT (meters) 29.900 35.000 33.800 29.900 29.900 29.900 29.900 29.900	Antenna Height AAT (meters)								
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 Construction Deadline: 221 221 Antenna: 1 Maximum Transmitting ERP in Watts: 140.820 Astrona 29.900 35.000 33.800 29.900 39.200 29.900 29.900 54.700 Antenna Height AAT (meters) 29.900 35.000 33.800 29.900 39.200 29.900 29.900 54.700 Antenna X: Maximum Transmitting ERP in Watts: 140.820 45 90 135 180 225 270 315 Antenna: 2 Maximum Transmitting ERP in Watts: 140.820 45 90 135 180 225 270 315 Antenna Height AAT (meters) 29.900 35.000 33.800 29.900 39.200 29.900 54.700 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 54.700 225 270	Transmitting ERP (watts)	3.840	0.260						
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) 129.890 61.320 3.430 0.310 0.310 0.450 18.690 Maximum Transmitting ERP in Watts: 140.820 34.300 0.310 0.310 0.450 18.690 Maximum Transmitting ERP in Watts: 140.820 3.430 0.310 0.310 0.450 18.690 Maximum Transmitting ERP in Watts: 140.820 3.430 0.310 19.560 14.880 0.420 0.310 0.310 Antenna + eight AAT (meters) 0.310 3.260 77.190 119.560 14.880 0.420 0.310 0.310 Antenna + eight AAT (meters) 0.310 0.310 0.310 0.570 26.700 136.640 48.150	Location Latitude	Longitude			vation	0	to Tip		
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 Antenna Height AAT (meters) 129.890 61.320 3.430 0.310 0.310 0.310 0.450 18.690 Maximum Transmitting ERP in Watts: 140.820 Azimuth(from true north) 0 45 90 135 180 225 270 315 Antenna Height AAT (meters) 0.310 3.260 77.190 119.560 14.880 0.420 0.310 0.310 0.310 Maximum Transmitting ERP in Watts: 140.820 Azimuth(from true north) 0 45 90 135 180 225 270 315 Antenna Height AAT (meters) 0.310 0.310 0.310 0.570 26.700 135.640 48.150 2.270 <	50 50 47.7 10					56.4		1241356	
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 0.450 18.690 Maximum Transmitting ERP in Watts: 140.820 Azimuth(from true north) 0 45 90 135 180 225 270 315 Antenna: 1 0.310 3.260 77.190 119.560 14.880 0.420 0.310 <td>Ũ</td> <td>•</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Ũ	•							
Maximum Transmitting ERP in Watts: 140.820 Azimuth(from true north)04590135180225270315Antenna Height AT (meters)29.90035.00033.80029.90039.20029.90029.90054.700Maximum Transmitting ERP in Watts:140.820Azimuth(from true north)04590135180225270315Antenna Height AAT (meters)29.90035.00033.80029.90039.20029.90029.90054.700Transmitting ERP (watts)0.3103.26077.190119.56014.8800.4200.3100.310Antenna Height AAT (meters)29.90035.00033.80029.90039.20029.90029.90054.700Maximum Transmitting ERP in Watts:140.820140.82014.8800.4200.3100.3100.310Antenna Height AAT (meters)04590135180225270315Antenna Height AAT (meters)0.3100.3100.3100.57026.700136.64048.1502.270Location LatitudeLongitudeGround Elevation (meters)Structure Hgt to Tip (meters)Antenna Structure Registration No.8536-53-34.0 N086-24-38.0 W184.446.7Address: Plano Water Tank, 9.0 SSE of135180225270315City: Bowling GreenCounty: WARRENState: KYConstruction Deadline:Maximum Transmitting ERP in Watts:<	City: Bowling Green Coun	ty: WARREN S	tate: KY	Constru	ction De	adline:			
Antenna: 2 10000 00000000000000000000000000000000	Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters)	0 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 Maximum Transmitting ERP in Watts: 140.820 119.560 14.880 0.420 0.310 0.310 Antenna: 3 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 Structure Hgt to Tip (meters) Antenna Structure (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: Maximum Transmitting ERP in Watts: 140.820 45.90 135 180 225 270 315 Antenna: 1 Maximum Transmitting ERP in Watts: 140.820 45.800 33.400	Maximum Transmitting ERP in Azimuth(from true north)	watts: 140.820 0	45	90	135	180	225	270	315
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 Construction Deadline: Antenna: 225 270 315 Antenna: 1 Maximum Transmitting ERP in Watts: 140.820 45 90 135 180 225 270 315 Antenna: 1 Maximum Transmitting ERP in Watts: 140.820 45 90 135 180 225 270 315 Antenna Height AAT (meters) 61.200 45 90 135 180 225 270 315	Transmitting ERP (watts)								
(meters) (meters) 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 Construction Deadline: Registration No. City: Bowling Green County: WARREN State: KY Construction Deadline: Antenna: 1 Maximum Transmitting ERP in Watts: 140.820 225 270 315 Antenna Height AAT (meters) 61.200 49.800 45.800 33.400 35.100 33.600 34.800 46.200	Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters)	0 29.900	35.000	33.800	29.900	39.200	29.900	29.900	54.700
85 36-53-34.0 N 086-24-38.0 W 184.4 46.7 Address: Plano Water Tank, 9.0 SSE of 61.200 Construction Deadline: 6.7 Antenna: 1 Maximum Transmitting ERP in Watts: 140.820 61.200 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	Location Latitude	Longitude			ation		to Tip		
City: Bowling GreenCounty: WARRENState: KYConstruction Deadline:Antenna: 1 Maximum Transmitting ERP in Watts: 140.820 Azimuth(from true north)04590135180225270315Antenna Height AAT (meters)61.20049.80045.80033.40035.10033.60034.80046.200	85 36-53-34.0 N	086-24-38.0 W	18	34.4		46.7		Ŭ	
Antenna: 1 Maximum Transmitting ERP in Watts: 140.820 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									
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	City: Bowling Green Coun	ty: WARREN S	tate: KY	Constru	ction De	adline:			
	Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters)	0 61.200	49.800	45.800	33.400	35.100	33.600	34.800	46.200

Call Sign: KNKN867	File	Number:	00092621	84	P	rint Date	:	
Location Latitude	Longitude	(m	round Elev ieters)	ation	Structure Hgt (meters)	t to Tip	Antenna S Registratio	
85 36-53-34.0 N	086-24-38.0 W	18	34.4		46.7			
Address: Plano Water Tanl City: Bowling Green Co		tate: KY	Construc	tion D	adlina			
City. Bowing Green Co	unty. WARKEN S		Construc		aunne.			
Antenna: 2 Maximum Transmitting ERI Azimuth(from true nort Antenna Height AAT (meter	h) 0	45 49.800	90 45.800	135 33.400	180) 35,100	225 33.600	270 34.800	315 46.200
Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERI	0.240	0.240	0.240	5.320	66.920	53.150	4.220	0.240
Azimuth(from true nort Antenna Height AAT (meter Transmitting ERP (watts)	h) 0	45 49.800 1.400	90 45.800 0.240	135 33.400 0.240	180 35.100 0.240	225 33.600 0.370	270 34.800 16.810	315 46.200 84.240
Location Latitude	Longitude		round Elev eters)	ation	Structure Hg (meters)	t to Tip	Antenna S Registratio	
86 36-53-16.1 N	086-30-48.3 W	18	3.8		60.6		0	
Address: Richpond, 608 Sk	keek Road							
City: Bowling Green Co	unty: WARREN S	tate: KY	Construc	ction De	eadline:			
Antenna: 1 Maximum Transmitting ERI Azimuth(from true nort Antenna Height AAT (meter	h) 0	45 78.100	90 67.600	135 58.700	180) 47.300	225 43.600	270 56.900	315 73.400
Fransmitting ERP (watts) Antenna: 2 Maximum Transmitting ERI	• `	42.220	5.380	0.310	0.260	0.260	4.790	40.320
Azimuth(from true nort Antenna Height AAT (meter Fransmitting ERP (watts) Antenna: 3		45 78.100 24.580	90 67.600 100.120	135 58.700 93.440		225 43.600 1.480	270 56.900 0.260	315 73.400 0.310
Maximum Transmitting ERI Azimuth(from true nort Antenna Height AAT (meter Fransmitting ERP (watts)	h) 0	45 78.100 0.260	90 67.600 0.300	135 58.700 4.900	180) 47.300 45.770	225 43.600 117.640	270 56.900 63.170	315 73.400 8.330
Location Latitude	Longitude	Gi	round Elev		Structure Hgt (meters)		Antenna S Registratio	tructure
87 36-44-23.3 N	086-34-22.4 W		1.2		93.6		1007990	
Address: Franklin Downto								
City: Franklin County: S	SIMPSON State: K	KY Cons	truction D	eadline	:			
Antenna: 1 Maximum Transmitting ERI Azimuth(from true nort Antenna Height AAT (meter Transmitting ERP (watts)	h) 0	45 91.500 59.640	90 77.000 119.000	135 60.200 18.430		225 65.400 0.270	270 75.500 0.270	315 64.400 0.270

Call Sign: KNKN867	File	Number:	00092621	84	Pı	rint Date	:	
Location Latitude	Longitude		round Elev neters)		Structure Hgt (meters)	to Tip	Antenna St Registratio	
87 36-44-23.3 N	086-34-22.4 W	21	11.2		93.6		1007990	
Address: Franklin Downtown			,					
City: Franklin County: SIN	APSON State: K	Y Cons	struction D	eadline	•			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters)	watts: 140.820 0 82.400	45 91,500	90 77.000	135 60.200	180 57.000	225 65.400	270 75,500	315 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	n Watts: 140.820							
Azimuth(from true north) Antenna Height AAT (meters)	0	45	90	135	180	225	270	315
Transmitting ERP (watts)	82.400 44.210	91.500 2.120	$77.000 \\ 0.270$	60.200 0.270	$57.000 \\ 0.270$	65.400 0.400	$75.500 \\ 25.440$	64.400 127.510
Location Latitude	Longitude		round Elev neters)		Structure Hgt (meters)	to Tip	Antenna St	
88 36-50-51.7 N	086-46-11.1 W		98.4		(meters) 82.3		Registratio	II 1NU.
Address: Rockcastle, 1365 Ed					02.5		1237173	
City: Auburn County: LOC	5	Constru	uction Dea	dline:				
Antenna: 1								
Maximum Transmitting ERP in Azimuth(from true north)	1 Watts: 140.820	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.000	6 6.400	63.200	58.100		70.400	71.300	75.200
Transmitting ERP (watts) Antenna: 2	122.700	78.480	11.150	0.740	0.260	0.340	3.750	40.860
Maximum Transmitting ERP in					100		•=•	
Azimuth(from true north) Antenna Height AAT (meters)	0 64.000	45 66.400	90 63.200	135 58,100	180 74.800	225 70.400	270 71.300	315 75.200
Transmitting ERP (watts) Antenna: 3	0.380	9.920	69.800	128.75		5.070	0.260	0.280
Maximum Transmitting ERP in	n Watts: 140.820							
Azimuth(from true north) Antenna Height AAT (meters)	0 64.000	45 66.400	90 63.200	135 58.100	180 74.800	225 70,400	270 71.300	315 75.200
Transmitting ERP (watts)	2.100	0.260	0.330	1.050	21.320	101.470		23.430
Location Latitude	Longitude	_			Structure Hgt	to Tip	Antenna St	
89 37-25-24.5 N	086-24-14.9 W		neters) 97.8		(meters) 83.8		Registratio	n 1 NO.
Address: Millwood, 1006 Ple		12	,,.0		0.00		121/214	
City: Millwood County: G		KY Co	onstruction	n Deadli	ne:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	n Watts: 140.820 0 62.400 39.870	45 41.800 122.420	90 60.100 126.750	135 71.500 40.620		225 67.600 0.330	270 87.100 0.900	315 76.500 5.470

Call Sign: KNKN867	File N	umber: 00092621	84	Print Date	:
Location Latitude	Longitude	Ground Elev (meters)	vation Struc (mete	ture Hgt to Tip ers)	Antenna Structure Registration No.
89 37-25-24.5 N	086-24-14.9 W	197.8	83.8		1217214
Address: Millwood, 1006 Ple					
City: Millwood County: G	RAYSON State: K	Construction	n Deadline:		
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 4 62.400 4 0.890 0 n Watts: 140.820 0 4 62.400 4	15 90 1.800 60.100 0.350 3.940 15 90 1.800 60.100 21.640 2.140	71.500 22.290 9 135 71.500 5	180 225 58.400 67.600 04.500 128.360 180 225 58.400 67.600 1.490 11.530	270 315 87.100 76.500 70.660 11.140 270 315 87.100 76.500 61.810 130.990
	105.000 2	2.140	0.270	11.550	01.010 150.770
Location Latitude	Longitude	Ground Elev		ture Hgt to Tip	Antenna Structure
00 07 17 20 2 1	006 44 00 7 33	(meters)	(mete	ers)	Registration No.
90 37-17-38.2 N	086-44-29.7 W	129.8	83.8		1217204
Address: Natcher Parkway, 1 City: Morgantown County	C. Beck Rd. BUTLER State: 1	KY Constructio	n Deedliner		
City: Morganiowin County	BUILER State: I	KI Constructio	li Deaulille:		
Antenna: 1 Maximum Transmitting ERP in	1 Watts: 140.820				
Azimuth(from true north)	0 4	15 90		180 225	270 315
Antenna Height AAT (meters) Transmitting ERP (watts)		6.20041.10059.300128.990		36.80052.2005.5400.320	53.300 52.700 0.260 0.340
Antenna: 2 Maximum Transmitting ERP in					
Azimuth(from true north)	0 4	15 90	135	180 225	270 315
Antenna Height AAT (meters) Transmitting ERP (watts)		6.200 41.100		36.800 52.200	53.300 52.700
Antenna: 3		0.340 3.750	40.860	122.700 78.480	11.150 0.740
Maximum Transmitting ERP in Azimuth(from true north)		15 90	135	180 225	270 315
Antenna Height AAT (meters)		6.200 41.100		36.800 52.200	53.300 52.700
Transmitting ERP (watts)	122.700 3	38.140 3.840	0.260	0.300 0.480	13.100 30.300
Location Latitude	Longitude	Ground Elev (meters)	vation Struc (mete	ture Hgt to Tip ers)	Antenna Structure Registration No.
91 37-10-17.8 N	086-46-48.7 W	157.3	90.0		1273826
Address: South Hill, 231 Free	-				
City: Morgantown County	BUTLER State: 1	KY Constructio	n Deadline:		
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 4 114.500 8	15 90 4.600 81.200 128.360 93.210	73.600	180 225 03.700 70.900 1.520 0.270	270 315 96.300 102.200 1.720 14.250

Call Sign: KNKN867	File Nu	nber: 0009262184	Print Date	2:
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 Free	-			
City: Morgantown County	BUTLER State: K	Y Construction Dead	lline:	
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters)	0 45 114.500 84 0.620 5.4 h Watts: 140.820 0 45	600 81.200 73.60 32.920 114.4 90 135	130.660 49.070 180 225	270 315 96.300 102.200 6.770 0.450 270 315 96.300 102.200
Transmitting ERP (watts)		600 81.200 73.60 40 0.270 1.490	• • • • • • • • • • • • • • • •	130.990 102.200
Location Latitude 92 36-57-07.6 N	Longitude 086-47-36.4 W	Ground Elevation (meters) 210.0	Structure Hgt to Tip (meters) 77.7	Antenna Structure Registration No. 1261473
Address: Chandler, 8773 Mor	gantown Road			
City: Russellville County:	LOGAN State: KY	Construction Deadli	ne:	
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Location Latitude 93 37-03-12.4 N Address: Davis Crossroads, 6 City: Morgantown County	0 45 122.500 88 122.700 78 1Watts: 140.820 0 45 122.500 88 0.480 13 1Watts: 140.820 0 45 122.500 88 0.500 0.1 Longitude 086-44-45.3 W	200 98.600 86.20 .480 11.150 0.740 90 135 200 98.600 86.20 .100 80.300 122.7 90 135 200 98.600 86.20 .100 80.300 122.7 90 135 200 98.600 86.20 200 98.600 86.20 200 98.600 86.20 200 98.600 86.20 200 98.600 86.20 200 98.600 86.20 200 98.400 84.20 Hata 184.4 184.4	0 0.260 0.340 180 225 00 75.500 96.400 38.140 3.840 180 225 00 75.500 96.400 00 75.500 96.400 00 75.500 96.400 00 75.500 96.400 00 75.380 128.750 Structure Hgt to Tip (meters) 77.7	270 315 126.200 114.800 3.750 40.860 270 315 126.200 114.800 0.260 0.300 270 315 126.200 114.800 0.260 114.800 66.660 8.640 Antenna Structure Registration No. 127.3825
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	0 45 90.300 10	90 135 4.500 88.100 79.90 8.360 70.660 11.14		270 315 96.800 22.290

Call Sign: KNKN867	File I	Number:	00092621	34	Pı	rint Date	:	
Location Latitude	Longitude		round Elev neters)	ation	Structure Hgt (meters)	to Tip	Antenna St Registratio	
93 37-03-12.4 N	086-44-45.3 W	18	34.4		77.7		1273825	
Address: Davis Crossroads, 6				וו ת				
City: Morgantown County:	BUTLER State	KY C	onstruction	1 Deadl	ine:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters)	Watts: 140.820 0 90.300	45 104.500	90 88.100	135 79.900	180 67.600	225 85,300	270 105.100	315 96.800
Transmitting ERP (watts) Antenna: 3	0.350	3.940	22.290	94.500		70.660	11.140	0.890
Maximum Transmitting ERP ir	watts: 140.820							
Azimuth(from true north) Antenna Height AAT (meters)	0 90.300	45 104.500	90	135	180	225 85.300	270 105.100	315 96.800
Transmitting ERP (watts)	17.180	1.520	88.100 0.270	79.900 1.720	67.600 14.250	83.300 71.470	128.360	93.210
Location Latitude	Longitude		round Elev neters)	ation	Structure Hgt (meters)	to Tip	Antenna St Registratio	
94 36-49-14.6 N	087-02-42.8 W	× .	98.7		77.7		1261471	
Address: Daysville, 1270 Day	vsville Road							
City: Russellville County:	LOGAN State: F	KY Cor	nstruction 1	Deadlin	e:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2	80.600 2.290	79.200 30.940	75.600 107.290	95.700 83.280		86.800 1.050	61.000 0.260	55.000 0.310
Maximum Transmitting ERP ir Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	0 0 80.600 0.490	45 79.200 0.260	90 75.600 0.300	135 95.700 4.900	180 90.500 45.770	225 86.800 117.640	270 61.000 63.170	315 55.000 8.330
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 80.600 112.340	45 79.200 35.530	90 75.600 3.720	135 95.700 0.260	180 90.500 0.290	225 86.800 0.450	270 61.000 12.040	315 55.000 74.220
Location Latitude	Longitude	_	round Elev neters)		Structure Hgt (meters)	to Tip	Antenna St Registratio	
95 36-41-25.9 N	086-04-02.1 W		37.1		77.7		1278967	
Address: Holland, 359 Lafaye								
City: Scottsville County: A	LLEN State: KY	Y Cons	truction Do	eadline:				
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 114.100 12.260	45 88.200 67.850	90 100.700 91.320	135 73.600 22.470		225 69.400 0.240	270 81.800 0.240	315 87.800 1.460

Call Sign: KNKN867	File	Number:	0009262184	4	Pr	int Date	:	
Location Latitude 95 36-41-25.9 N Address: Holland, 359 Lafaye	Longitude 086-04-02.1 W	(m	round Eleva aeters) 57.1	tion	Structure Hgt (meters) 77.7	to Tip	Antenna St Registratio 1278967	
City: Scottsville County: A		Y Const	truction Dea	adline	:			
Antenna: 2 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 114.100 0.230	45 88.200 1.100 45 88.200 17.180	90 100.700 4.900 90 100.700 1.520	135 73.600 40.250 135 73.600 0.270) 110.140 180	225 69.400 103.720 225 69.400 14.250	270 81.800 29.080 270 81.800 71,470	315 87.800 3.250 315 87.800 128,360
Location Latitude	Longitude	(m	round Eleva ieters)	tion	Structure Hgt (meters)	to Tip	Antenna St Registratio	
96 36-59-23.5 N	086-28-21.6 W		6.6		76.2	a at	1277050	
Address: Lampkin Park, Behin	1 1			0	•	231		
City: Bowling Green Count	ty: WARREN S	tate: KY	Construct	ion De	eadine:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north)		45	00	125	100	225	270	215
Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2	0 30.300 111.310	45 29.900 29.890	90 37.300 1.180	135 29.900 0.240	180 29.900 0.240	225 29.900 0.240	270 29.900 0.710	315 29.900 29.750
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 3	Watts: 140.820 0 30.300 0.240	45 29.900 2.330	90 37.300 51.180	135 29.900 79.740		225 29.900 0.320	270 29.900 0.240	315 29.900 0.240
Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 30.300 0.240	45 29.900 0.240	90 37.300 0.240	135 29.900 0.280	180) 29.900 10.010	225 29.900 96.730	270 29.900 60.750	315 29.900 3.910
Location Latitude	Longitude		round Eleva ieters)	tion	Structure Hgt (meters)	to Tip	Antenna St Registratio	
97 37-25-27.1 N	086-13-46.7 W		52.1		41.1		1280487	
Address: Johnson Crossroads,	-							
City: Clarkson County: GR	AYSON State:	KY Coi	nstruction E	Deadlii	ne:			
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north) Antenna Height AAT (meters) Transmitting ERP (watts)	Watts: 140.820 0 97.900 157.100	45 73.900 105.670	90 78.500 17.850	135 96.700 1.800	180) 106.000 0.480	225 108.500 4.050	270 99.600 25.570	315 95.600 109.870

Call Sign: KNKN867	File	Number:	000926218	34	Pı	rint Date	:	
Location Latitude	Longitude	(m	round Elev neters)	(Structure Hgt meters)	to Tip	Antenna St Registratio	
97 37-25-27.1 N	086-13-46.7 W		52.1	4	1.1		1280487	
Address: Johnson Crossroads City: Clarkson County: GF			nstruction	Deadline	7.			
					-•			
Antenna: 2 Maximum Transmitting ERP in	watts: 140.820							
Azimuth(from true north) Antenna Height AAT (meters)	0 97.900	45 73.900	90 78.500	135 96.700	180 106.000	225 108,500	270 99.600	315 95.600
Transmitting ERP (watts) Antenna: 3	7.940	44.270	150.440	165.870		9.040	0.700	1.050
Maximum Transmitting ERP in								
Azimuth(from true north) Antenna Height AAT (meters)	0 97.900	45 73,900	90 78.500	135 96.700	180 106.000	225 108.500	270 99.600	315 95.600
Transmitting ERP (watts)	4.030	0.340	2.430	11.890	72.190	167.790	144.670	35.900
Location Latitude	Longitude		round Elev neters)		Structure Hgt meters)	to Tip	Antenna St Registratio	
98 37-54-31.9 N	085-59-25.9 W		36.2	```	35.0			
Address: Fort Knox IV, 5800								
City: Fort Knox County: N	IEADE State: H	KY Cons	struction D	eadline:				
Antenna: 1 Maximum Transmitting ERP in Azimuth(from true north)	1 Watts: 140.820	45	90	135	180	225	270	315
Antenna Height AAT (meters) Transmitting ERP (watts) Antenna: 2	94.000 36.310	74.300 138.730	90.800 165.910	60.900 77.210	57.100 12.030	53.800 0.950	55.700 0.820	114.300 6.980
Maximum Transmitting ERP in Azimuth(from true north)		47	00	105	100	225	250	215
Antenna Height AAT (meters)	0 94.000	45 74.300	90 90.800	135 60.900	180 57.100	225 53.800	270 55.700	315 114.300
Transmitting ERP (watts) Antenna: 3	1.300	0.640	5.680	30.740	124.760	162.210	90.940	14.810
Maximum Transmitting ERP in							•=•	
Azimuth(from true north) Antenna Height AAT (meters)	0 94.000	45 74.300	90 90.800	135 60.900	180 57.100	225 53.800	270 55.700	315 114.300
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 T	TRAIL							
City: RADCLIFF County:	State: KY	Telephone	e Number:					
Waivers/Conditions:								
NONE								
								-

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CTUTTED STATES		al Communica Vireless Telecomm				
A CATUON CATUON	RA	ADIO STATION A	UTHORIZAT	ΓΙΟΝ		
LICENSEE: CELLCO	PARTNE	RSHIP				
ATTN: REGULATORY				Call Si WPZV4		
CELLCO PARTNERSHIPRadio Service5055 NORTH POINT PKWY, NP2NE ENGINEERINGCW - PCS BroadbandALPHARETTA, GA 30022CW - PCS Broadband						
FCC Registration Number (FF	RN): 0003	290673			-	
Grant Date 06-23-2015	I	Effective Date 01-13-2021	Expiration 06-23-		Print Date 03-10-2021	
Market Number MTA043		Channe	el Block 3	Sub-Market Designator 7		
Market Name Nashville						
1st Build-out Date	2nd	Build-out Date	te 3rd Build-out Date 4th Build-out Date			

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

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.

Call Sign: WPZV472

File Number: 0009262040

Print Date: 03-10-2021

700 MHz Relicensed Area Information:

Market Market Name **Buildout Deadline Buildout Notification** Status

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THE D STATES	Federal Commu Wireless Teleo	unications Co communications B		l			
CHANNEATUONS	RADIO STATI	ION AUTHORIZA	ATION				
LICENSEE: CELLCO	PARTNERSHIP						
	CELLCO PARTNERSHIP						
	5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022						
FCC Registration Number (FI	RN): 0003290673						
Grant Date 02-22-2022	Effective Date 02-22-2022		Expiration Date 11-29-2036				
Market Number REA004		Channel Block F		Sub-Market Designator 15			
		Market Name ississippi Valley					
1st Build-out Date	2nd Build-out Date	e 3rd Buil	d-out Date	4th Build-out Dat	æ		
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.

Call Sign: WQGA718

File Number: 0009793647

Print Date: 02-23-2022

700 MHz Relicensed Area Information:

Market Market Name **Buildout Deadline Buildout Notification** Status

REFERENCE COPY

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CUTTED STATES	Federal Commun Wireless Telecon	nications Com mmunications B		L	
CALL AND	RADIO STATIO	N AUTHORIZA	ATION		
LICENSEE: CELLCO	PARTNERSHIP				
CELLCO PARTNERSH			Call Si WQGA9		
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022 AW - AWS (1710-1755 M 2110-2155 MHz)					
FCC Registration Number (FF	RN): 0003290673				
Grant Date 01-03-2022	Effective Date 01-03-2022		tion Date 9-2036	Print Date 01-05-2022	
Market Number BEA071	Сн	hannel Block B	Sub-Market Designator 0		
		arket Name ville, TN-KY			
1st Build-out Date	2nd Build-out Date	3rd Build	l-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. 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.

Call Sign: WQGA959

File Number: 0009775569

Print Date: 01-05-2022

700 MHz Relicensed Area Information:

Market Market Name **Buildout Deadline Buildout Notification** Status

REFERENCE COPY

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		al Communica /ireless Telecomm			on		
P CAN DO TO	RA	DIO STATION A	UTHORIZA	ΓΙΟΝ			
LICENSEE: CELLCO P	ARTNER	SHIP					
ATTN: REGULATORY					l l Sign JQ692	File Number	
5055 NORTH POINT PK	CELLCO PARTNERSHIP 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022 RUL - 700 MHz Upper Band (Block C						
FCC Registration Number (FR	N): 00032	290673					
Grant Date 01-10-2020		Effective Date 02-11-2021	Expiration Date 06-13-2029Prin			Print Date	
Market Number REA004			el Block		Sub-Ma	n rket Designator 0	
Market Name Mississippi Valley							
1st Build-out Date 06-13-2013		Build-out Date 06-13-2019	3rd Build-out Date 4th Build-out Dat			th 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.

Call Sign: WQJQ692		File Number:	Print Date	e:
700 MHz Relicensed A	rea Information:			
Market	Market Name	Buildout Dea	dline Buildout Notific	ation Status
	C			
		6		

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	W	al Communica Vireless Telecomm ADIO STATION A	unications Bu	reau		
LICENSEE: CELLCO	PARTNE	RSHIP				
ATTN: REGULATORY CELLCO PARTNERSHIP 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022 File Number MQVN764 Radio Service AT - AWS-3 (1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz)						
FCC Registration Number (FF Grant Date 04-08-2015		2290673 Effective Date 02-24-2017	Expirati 04-08			Print Date
Market Number BEA071			Channel Block H			rket Designator 0
		Market Nashville,				
1st Build-out Date 04-08-2021	2nd	Build-out Date 04-08-2027	3rd Build-	out Date	41	th Build-out Date
Waivers/Conditions: NONE						
Conditions: Pursuant to §309(h) of the Confollowing conditions: This lic frequencies designated in the l license nor the right granted the 1934, as amended. See 47 U.S. the Communications Act of 19	ense shall icense bey rereunder S.C. § 310	not vest in the licensee yond the term thereof no shall be assigned or oth (d). This license is sub	any right to opera or in any other ma erwise transferred ject in terms to the	ate the station n inner than author l in violation of	or any r orized h the Cor	ight in the use of the erein. Neither the nmunications Act of
This license may not authorize To view the specific geographic under the Market Tab of the lic	c area and	spectrum authorized by	this license, refe	r to the Spectru	im and M	Market Area information

search for license information.

homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to

Call Sign: WQVN764	F	ile Number:	Print Date:	
700 MHz Relicensed A	rea Information:			
Market	Market Name	Buildout Deadlin	e Buildout Notification	n Status
		G		
			C	
				5

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CONTROL STATE	W	al Communica Vireless Telecomm	unications Bu	reau		
LICENSEE: CELLCO	PARTNEF	RSHIP				
ATTN: REGULATORY CELLCO PARTNERSHIP 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022				55 Radio WS-3 (1	File Number Service 695-1710 MHz, nd 2155-2180 MHz)	
FCC Registration Number (FF	RN): 0003	290673	1			
Grant Date 04-08-2015	I	Effective Date 02-24-2017	Expirati 04-08			Print Date
Market Number BEA071			el Block [S	Sub-Mai	rket Designator 0
		Market Nashville,				
1st Build-out Date 04-08-2021	2nd	Build-out Date 04-08-2027	3rd Build-	out Date	4t	h Build-out Date
Waivers/Conditions: NONE				C		
Conditions: Pursuant to §309(h) of the Confollowing conditions: This lice frequencies designated in the H license nor the right granted the 1934, as amended. See 47 U.S. the Communications Act of 19	ense shall icense bey rereunder s S.C. § 310	not vest in the licensee yond the term thereof no shall be assigned or oth (d). This license is sub	any right to opera or in any other ma erwise transferred ject in terms to the	ate the station n inner than authors l in violation of	for any r orized he the Cor	ight in the use of the erein. Neither the nmunications Act of
This license may not authorize To view the specific geographic						

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.

Call Sign: WQVN765		File Number:	Print Date:	
700 MHz Relicensed A	rea Information:			
Market	Market Name	Buildout Deadli	ne Buildout Notification	Status

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THE STATES	W	al Communica Vireless Telecomm	unications Bu	reau		
E CHANGE ATTONS	KA	ADIO STATION A	UTHORIZAT	TION		
LICENSEE: CELLCO	PARTNEF	RSHIP				
ATTN: REGULATORY				Call Si WRAM7		File Number 0009262184
CELLCO PARTNERSH 5055 NORTH POINT PI ALPHARETTA, GA 300	KWY, NP	2NE ENGINEERING		W	Radio S /T - 600 N	Service MHz Band
FCC Registration Number (FF	RN): 0003	290673				
Grant Date 01-09-2018	I	Effective Date 01-13-2021	Expiration 01-09-			Print Date 03-11-2021
Market Number PEA112			el Block A		Sub-Mar	ket Designator 0
		Market Bowling G				
1st Build-out Date 01-09-2024	2nd	Build-out Date	3rd Build-	out Date	4tl	h Build-out Date
Waivers/Conditions: NONE Conditions:				C		
Pursuant to §309(h) of the Con following conditions: This lic frequencies designated in the I license nor the right granted th 1934, as amended. See 47 U.S the Communications Act of 19	ense shall icense bey ereunder s S.C. § 310	not vest in the licensee youd the term thereof no shall be assigned or oth (d). This license is sub-	any right to opera or in any other ma erwise transferred ject in terms to the	te the station nner than auth in violation c	nor any ri orized he f the Corr	ght in the use of the brein. Neither the munications Act of
This license may not authorize To view the specific geographic under the Market Tab of the lic homepage at http://wireless.fcc	c area and ense recor	spectrum authorized by d in the Universal Lice	y this license, refer nsing System (UL	r to the Spectr S). To view t	um and M he license	Iarket Area information e record, go to the ULS

search for license information.

Call Sign: WRAM746

File Number: 0009262184

Print Date: 03-11-2021

700 MHz Relicensed Area Information:

Market Market Name **Buildout Deadline Buildout Notification** Status

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		al Communic Vireless Telecomm			ion	
	RA	ADIO STATION A	UTHORIZAT	TION		
LICENSEE: CELLCO	PARTNEF	RSHIP				
ATTN: REGULATORY				Call SignFile NumberWREV4490009262184		
CELLCO PARTNERSH 5055 NORTH POINT PI ALPHARETTA, GA 300	KWY, NP	2NE ENGINEERING		UU -	Upper Mi	lio Service crowave Flexible Use Service
FCC Registration Number (FF	RN): 0003	290673				
Grant Date 12-11-2019]	Effective Date 01-13-2021	Expiration 12-11-			Print Date 03-11-2021
Market Number PEA112		Channel Block A			Sub-N	Market Designator
		Market Bowling G				
1st Build-out Date	2nd	Build-out Date	3rd Build-o	out Date		4th Build-out Date
Waivers/Conditions: NONE Conditions:						
Pursuant to \$309(h) of the Confollowing conditions: This lic frequencies designated in the l license nor the right granted th 1934, as amended. See 47 U.S the Communications Act of 19	ense shall icense bey ereunder s S.C. § 310	not vest in the licensee yond the term thereof no shall be assigned or oth (d). This license is sub	any right to opera or in any other man erwise transferred ject in terms to the	te the sta nner than in violati	tion nor an authorized ion of the (y right in the use of the d herein. Neither the Communications Act of
This license may not authorize To view the specific geographic under the Market Tab of the lic homepage at http://wireless.fcc	c area and ense recor	spectrum authorized by d in the Universal Lice	y this license, refer nsing System (UL	to the Sp S). To vi	pectrum an iew the lice	nd Market Area information ense record, go to the ULS

search for license information.

Call Sign: WREV449

File Number: 0009262184

Print Date: 03-11-2021

700 MHz Relicensed Area Information:

Market Market Name **Buildout Deadline Buildout Notification** Status

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	W	al Communica Vireless Telecomm	unications Bu	reau		
LICENSEE: CELLCO	PARTNEF	RSHIP				
ATTN: REGULATORY CELLCO PARTNERSHIP 5055 NORTH POINT PKWY, NP2NE ENGINEERING ALPHARETTA, GA 30022			Call Si WREV4 UU - Upp	51 Radio per Micro	File Number 0009262184 Service wave Flexible Use vice	
FCC Registration Number (FF	RN): 0003	290673				
Grant Date 12-11-2019	I	Effective Date 01-13-2021	Expiration 12-11-			Print Date 03-11-2021
Market Number PEA112		Chann	el Block 3		Sub-Mai	rket Designator 0
		Market Bowling G				
1st Build-out Date	2nd	Build-out Date	3rd Build-	out Date	4t	h Build-out Date
Waivers/Conditions: NONE						
Conditions: Pursuant to §309(h) of the Confollowing conditions: This lic frequencies designated in the l license nor the right granted th 1934, as amended. See 47 U.S the Communications Act of 19	ense shall icense bey ereunder s S.C. § 310	not vest in the licensee yond the term thereof no shall be assigned or othe (d). This license is subj	any right to opera or in any other ma erwise transferred ject in terms to the	te the station nner than auth in violation o	nor any r orized he f the Cor	ight in the use of the erein. Neither the nmunications Act of
This license may not authorize To view the specific geographic under the Market Tab of the lic homepage at http://wireless.fcc	c area and ense recor	spectrum authorized by d in the Universal Licer	this license, refernsing System (UL	to the Spectr S). To view t	um and M he licens	Market Area information e record, go to the ULS

search for license information.

Call Sign: WREV451

File Number: 0009262184

Print Date: 03-11-2021

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status
		C		

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		al Communica Vireless Telecomm			sion		
	RA	DIO STATION A	UTHORIZAT	TION			
LICENSEE: CELLCO	PARTNEF	RSHIP					
ATTN: REGULATORY					C all Sign REV453		File Number 0009262184
CELLCO PARTNERSH 5055 NORTH POINT PI ALPHARETTA, GA 300	KWY, NP	2NE ENGINEERING		UU			Service wave Flexible Use ice
FCC Registration Number (FF	RN): 0003	290673					
Grant Date 12-11-2019]	Effective Date 01-13-2021	Expiration 12-11-)		Print Date 03-11-2021
Market Number PEA112			el Block		Su	b-Marl	ket Designator 0
		Market Bowling G					
1st Build-out Date	2nd	Build-out Date	3rd Build-o	out Dat	e	4th	n Build-out Date
Waivers/Conditions: NONE Conditions:							
Pursuant to \$309(h) of the Confollowing conditions: This lic frequencies designated in the l license nor the right granted th 1934, as amended. See 47 U.S the Communications Act of 19	ense shall icense bey ereunder s S.C. § 310	not vest in the licensee yond the term thereof no shall be assigned or oth (d). This license is sub	any right to opera or in any other man erwise transferred ject in terms to the	te the st nner tha in viola	tation nor in authori ation of th	r any rig ized her ne Com	ght in the use of the rein. Neither the munications Act of
This license may not authorize To view the specific geographic under the Market Tab of the lic homepage at http://wireless.fcc	c area and ense recor	spectrum authorized by d in the Universal Lice	y this license, refer nsing System (UL	to the S(S). To	Spectrum view the	and M license	larket Area information record, go to the ULS

search for license information.

Call Sign: WREV453

File Number: 0009262184

Print Date: 03-11-2021

700 MHz Relicensed Area Information:

Market Market Name **Buildout Deadline Buildout Notification** Status

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THE STATES	Federal Communic Wireless Telecomm			
	RADIO STATION A	AUTHORIZAT	ΓΙΟΝ	
LICENSEE: STRAIGH	IT PATH SPECTRUM, LLC			
ATTN: REGULATORY STRAIGHT PATH SPECTRUM, LLC 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022				
FCC Registration Number (FR	RN): 0012576435			
Grant Date 06-04-2020	Effective Date 06-04-2020	Expirati 06-04-		Print Date
Market Number PEA112		Channel Block Su M1		ub-Market Designator 0
	Market Bowling C			
1st Build-out Date	2nd Build-out Date	3rd Build-	out Date	4th Build-out Date
Waivers/Conditions: NONE				
following conditions: This lice frequencies designated in the li license nor the right granted th 1934, as amended. See 47 U.S.	mmunications Act of 1934, as am cense shall not vest in the licensee license beyond the term thereof no nereunder shall be assigned or oth S.C. § 310(d). This license is sub 934, as amended. See 47 U.S.C.	e any right to opera or in any other ma herwise transferred bject in terms to the	ate the station no inner than author l in violation of t	or any right in the use of the rized herein. Neither the the Communications Act of
To view the specific geographic	operation throughout the entire g c area and spectrum authorized by cense record in the Universal Lice	y this license, refe	r to the Spectrur	m and Market Area information

Call Sign: WRHF210	File Nu	imber:	Print Date:	
700 MHz Relicensed A	rea Information:			
Market	Market Name	Buildout Deadline	Buildout Notification	Status
		C		
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· CITED STATES		al Communica /ireless Telecomm				
	RA	DIO STATION A	UTHORIZA	ΓΙΟΝ		
LICENSEE: STRAIGH	Т РАТН S	SPECTRUM, LLC				
ATTN: REGULATORY STRAIGHT PATH SPECTRUM, LLC 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022				l Radio	File Number Service wave Flexible Use vice	
FCC Registration Number (FR	RN): 0012	576435				
Grant Date 06-04-2020	Ι	Effective Date 06-04-2020	Expirati 06-04			Print Date
Market Number PEA112		Channel Block S M10		S	Sub-Market Designator 0	
		Market Bowling G				
1st Build-out Date	2nd	Build-out Date	3rd Build-	out Date	4t	h Build-out Date
Waivers/Conditions: NONE				C		
Conditions: Pursuant to §309(h) of the Corfollowing conditions: This lice frequencies designated in the 1 license nor the right granted the 1934, as amended. See 47 U.S the Communications Act of 19	ense shall icense bey ereunder s S.C. § 310(not vest in the licensee rond the term thereof no shall be assigned or oth (d). This license is sub	any right to opera or in any other ma erwise transferred ject in terms to the	ate the station no inner than autho in violation of	or any ri rized he the Con	ight in the use of the erein. Neither the nmunications Act of
This license may not authorize To view the specific geographic under the Market Tab of the lice	c area and	spectrum authorized by	this license, refe	r to the Spectru	m and M	Aarket Area information

Call Sign: WRHF211	File Nu	mber:	Print Date:	
700 MHz Relicensed A	rea Information:			
Market	Market Name	Buildout Deadline	Buildout Notification	Status

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THE STATES	Federal Communic Wireless Telecomm							
	RADIO STATION AUTHORIZATION							
LICENSEE: STRAIGH	T PATH SPECTRUM, LLC							
ATTN: REGULATORY STRAIGHT PATH SPECTRUM, LLC 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022								
FCC Registration Number (FR	RN): 0012576435							
Grant Date 06-04-2020	Effective Date 06-04-2020	Expirati 06-04-		Print Date				
Market Number PEA112		Channel Block Su M2		Sub-Market Designator 0				
	Market Bowling C							
1st Build-out Date	2nd Build-out Date	3rd Build-	out Date	4th Build-out Date				
Waivers/Conditions: NONE					_			
following conditions: This lice frequencies designated in the li license nor the right granted th 1934, as amended. See 47 U.S.	mmunications Act of 1934, as am eense shall not vest in the licensee license beyond the term thereof no nereunder shall be assigned or oth S.C. § 310(d). This license is sub 934, as amended. See 47 U.S.C.	e any right to opera or in any other ma herwise transferred ject in terms to the	ate the station no inner than author l in violation of t	or any right in the use of the orized herein. Neither the the Communications Act of				
To view the specific geographic	operation throughout the entire g c area and spectrum authorized by tense record in the Universal Lice	y this license, refe	r to the Spectrur	m and Market Area information	on			

Call Sign: WRHF212	File Nu	umber:	Print Date:			
700 MHz Relicensed A	rea Information:					
700 MHz Relicensed A Market		Buildout Deadline	Buildout Notification	Status		

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THE STATES	Federal Communica Wireless Telecomm			
	RADIO STATION A	UTHORIZAT	ΓΙΟΝ	
LICENSEE: STRAIGH	T PATH SPECTRUM, LLC			
ATTN: REGULATORY STRAIGHT PATH SPEC 5055 NORTH POINT PH ALPHARETTA, GA 300	CTRUM, LLC KWY, NP2NE NETWORK ENG	INEERING		
FCC Registration Number (FR	RN): 0012576435			·
Grant Date 06-04-2020	Effective Date 06-04-2020	Expirati 06-04-		Print Date
Market Number PEA112		el Block 13	Su	ub-Market Designator 0
	Market Bowling G			
1st Build-out Date	2nd Build-out Date	3rd Build-	out Date	4th Build-out Date
Waivers/Conditions: NONE				
following conditions: This lice frequencies designated in the li license nor the right granted th 1934, as amended. See 47 U.S.	mmunications Act of 1934, as am ense shall not vest in the licensee license beyond the term thereof no nereunder shall be assigned or oth S.C. § 310(d). This license is sub 934, as amended. See 47 U.S.C. §	any right to opera or in any other ma erwise transferred ject in terms to the	the station no nner than author in violation of t	or any right in the use of the rized herein. Neither the the Communications Act of
To view the specific geographic	operation throughout the entire g c area and spectrum authorized by ense record in the Universal Lice	y this license, refe	r to the Spectrur	m and Market Area information

Call Sign: WRHF213	File Nı	umber:	Print Date:	
700 MHz Relicensed A	rea Information:			
700 MHz Relicensed A Market	rea Information: Market Name	Buildout Deadline	Buildout Notification	Status

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	Federal Co Wireless		ations Con unications Bu			
	RADIO S	STATION A	UTHORIZAT	ΓΙΟΝ		
LICENSEE: STRAIGH	T PATH SPECTR	UM, LLC				
ATTN: REGULATORY STRAIGHT PATH SPECTRUM, LLC 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022					t Radio r Micro	File Number Service wave Flexible Use vice
FCC Registration Number (FR	N): 0012576435					
Grant Date 06-04-2020	Effective 06-04-2		Expirati 06-04-			Print Date
Market Number PEA112			hannel Block S M4		Sub-Market Designator 0	
		Market Bowling C				
1st Build-out Date	2nd Build-o	out Date	3rd Build-	out Date	4t	h Build-out Date
Waivers/Conditions: NONE						
Conditions: Pursuant to §309(h) of the Corr following conditions: This lice frequencies designated in the 1 license nor the right granted th 1934, as amended. See 47 U.S the Communications Act of 19	ense shall not vest icense beyond the ereunder shall be a S.C. § 310(d). This	in the licensee term thereof n assigned or oth s license is sub	e any right to opera or in any other ma herwise transferred bject in terms to the	ate the station no nner than autho in violation of	or any r rized he the Con	ight in the use of the erein. Neither the nmunications Act of
This license may not authorize To view the specific geographic under the Market Tab of the lice	c area and spectrun	n authorized by	y this license, refe	r to the Spectru	n and N	Market Area information

Call Sign: WRHF214	File Num	ber:	Print Date:	
700 MHz Relicensed A	rea Information:			
700 MHz Relicensed A Market	rea Information: Market Name	Buildout Deadline	Buildout Notification	Status

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.

THE STATES	Federal Communica Wireless Telecomm				
	RADIO STATION A	UTHORIZA	ΓΙΟΝ		
LICENSEE: STRAIGH	T PATH SPECTRUM, LLC				
ATTN: REGULATORY STRAIGHT PATH SPEC 5055 NORTH POINT PH ALPHARETTA, GA 300	CTRUM, LLC KWY, NP2NE NETWORK ENG	INEERING	Call Sign WRHF215File NumberRadio ServiceUU - Upper Microwave Flexible Use Service		
FCC Registration Number (FR	RN): 0012576435				
Grant Date 06-04-2020	Effective Date 06-04-2020	Expiration 06-04-		Print Date	
Market Number PEA112		el Block 15	Su	ub-Market Designator 0	
	Market Bowling G				
1st Build-out Date	2nd Build-out Date	3rd Build-	out Date	4th Build-out Date	
Waivers/Conditions: NONE					
following conditions: This lice frequencies designated in the li license nor the right granted th 1934, as amended. See 47 U.S.	mmunications Act of 1934, as amovenese shall not vest in the licensee license beyond the term thereof non- nereunder shall be assigned or other S.C. § 310(d). This license is subj 934, as amended. See 47 U.S.C. §	any right to opera or in any other ma erwise transferred ject in terms to the	ate the station no inner than author l in violation of t	or any right in the use of the rized herein. Neither the the Communications Act of	
To view the specific geographic	operation throughout the entire ge c area and spectrum authorized by	y this license, refer	r to the Spectrun		

Call Sign: WRHF215	l Sign: WRHF215 File Number:		Print Date:			
700 MHz Relicensed A	rea Information:					
700 MHz Relicensed A Market	rea Information: Market Name	Buildout Deadline	Buildout Notification	Status		

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	Federal Communica Wireless Telecomm			
	RADIO STATION A	UTHORIZAT	ΓΙΟΝ	
LICENSEE: STRAIGH	T PATH SPECTRUM, LLC			
ATTN: REGULATORY STRAIGHT PATH SPEC 5055 NORTH POINT PH ALPHARETTA, GA 300	CTRUM, LLC KWY, NP2NE NETWORK ENG	INEERING		
FCC Registration Number (FR	RN): 0012576435			
Grant Date 06-04-2020	Effective Date 06-04-2020	Expirati 06-04-		Print Date
Market Number PEA112		annel Block S M6		ub-Market Designator 0
	Market Bowling G			
1st Build-out Date	2nd Build-out Date	3rd Build-	out Date	4th Build-out Date
Waivers/Conditions: NONE				
following conditions: This lice frequencies designated in the license nor the right granted th 1934, as amended. See 47 U.S.	mmunications Act of 1934, as amense shall not vest in the licensee icense beyond the term thereof not rereunder shall be assigned or other S.C. § 310(d). This license is subjoat, as amended. See 47 U.S.C. §	any right to opera or in any other ma erwise transferred ject in terms to the	ate the station no inner than autho in violation of	or any right in the use of the rized herein. Neither the the Communications Act of
To view the specific geographic	operation throughout the entire ge c area and spectrum authorized by	this license, refe	r to the Spectru	

Call Sign: WRHF216	File Nur	nber:	Print Date:	
700 MHz Relicensed A	rea Information:			
700 MHz Relicensed A Market	rea Information: Market Name	Buildout Deadline	Buildout Notification	Status

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		al Communica Vireless Telecomm				
		ADIO STATION A	UTHORIZAT	ΓΙΟΝ		
LICENSEE: STRAIGH	Т РАТН S	SPECTRUM, LLC	ľ	Call Si	<u>on</u>	File Number
ATTN: REGULATORY STRAIGHT PATH SPEC 5055 NORTH POINT PI	· · · · ·		INEERING	WRHF2	17 Radio	Service
ALPHARETTA, GA 300				00-00		vice
FCC Registration Number (FR			[
Grant Date 06-04-2020	I	Effective Date 06-04-2020	Expiration 06-04-			Print Date
Market Number PEA112		Channe	el Block 17		Sub-Ma	rket Designator 0
		Market Bowling G				
1st Build-out Date	2nd	l Build-out Date	3rd Build-	out Date	41	th Build-out Date
Waivers/Conditions: NONE				C		
Conditions: Pursuant to §309(h) of the Corr following conditions: This lice frequencies designated in the 1 license nor the right granted th 1934, as amended. See 47 U.S the Communications Act of 19	ense shall icense bey ereunder s S.C. § 310 934, as am	not vest in the licensee yond the term thereof no shall be assigned or othe (d). This license is subj ended. See 47 U.S.C. §	any right to opera or in any other ma erwise transferred fect in terms to the 6006.	the station nner than auth in violation of e right of use of	nor any r horized he f the Cor or control	right in the use of the erein. Neither the mmunications Act of l conferred by §706 of
This license may not authorize To view the specific geographic under the Market Tab of the lice homepage at http://wireless.fcc.	c area and ense recor	spectrum authorized by d in the Universal Licer	this license, references the sing System (UL	r to the Spectr S). To view t	um and M he licens	Market Area information be record, go to the ULS

Call Sign: WRHF217	File Num	lber:	Print Date:	
700 MH- Dollassad A	t f			
700 MHZ Kencensed A	rea information:			
700 MHz Relicensed A Market	rea Information: Market Name	Buildout Deadline		Status

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THE STATES		al Communica Vireless Telecomm				
	RA	ADIO STATION A	UTHORIZA	ΓΙΟΝ		
LICENSEE: STRAIGH	T PATH S	SPECTRUM, LLC				
ATTN: REGULATORY STRAIGHT PATH SPECTRUM, LLC 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022				Call Sign WRHF218File NumberRadio ServiceUU - Upper Microwave Flexible Use Service		
FCC Registration Number (FR	RN): 0012	2576435				
Grant Date 06-04-2020	I	Effective Date 06-04-2020	Expirati 06-04			Print Date
Market Number PEA112			hannel Block S M8		Sub-Market Designator 0	
		Market Bowling G				
1st Build-out Date	2nd	Build-out Date	3rd Build-	out Date	4t	h Build-out Date
Waivers/Conditions: NONE				C		
Conditions: Pursuant to §309(h) of the Corfollowing conditions: This lice frequencies designated in the 1 license nor the right granted the 1934, as amended. See 47 U.S. the Communications Act of 19	ense shall icense bey ereunder s S.C. § 310	not vest in the licensee youd the term thereof no shall be assigned or oth (d). This license is sub	any right to opera or in any other ma erwise transferred ject in terms to the	ate the station no inner than autho in violation of	or any ri orized he the Con	ight in the use of the erein. Neither the nmunications Act of
This license may not authorize To view the specific geographic under the Market Tab of the lice	c area and	spectrum authorized by	this license, refe	r to the Spectru	m and M	Aarket Area information

Call Sign: WRHF218	File N	umber:	Print Date:	
700 MHz Relicensed A	rea Information:			
Market	Market Name	Buildout Deadline	Buildout Notification	Status
		C		

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	Federal Communica Wireless Telecomm			
	RADIO STATION A	UTHORIZAT	ΓΙΟΝ	
LICENSEE: STRAIGH	T PATH SPECTRUM, LLC			
ATTN: REGULATORY STRAIGHT PATH SPEC 5055 NORTH POINT PH ALPHARETTA, GA 300	CTRUM, LLC KWY, NP2NE NETWORK ENG	INEERING		
FCC Registration Number (FR	RN): 0012576435			
Grant Date 06-04-2020	Effective Date 06-04-2020	Expirati 06-04-		Print Date
Market Number PEA112		el Block 19	Sı	ub-Market Designator 0
	Market Bowling G			
1st Build-out Date	2nd Build-out Date	3rd Build-	out Date	4th Build-out Date
Waivers/Conditions: NONE				
following conditions: This lice frequencies designated in the li license nor the right granted th 1934, as amended. See 47 U.S.	mmunications Act of 1934, as amense shall not vest in the licensee license beyond the term thereof non- nereunder shall be assigned or other S.C. § 310(d). This license is sub 934, as amended. See 47 U.S.C. §	any right to opera or in any other ma erwise transferred ject in terms to the	ate the station no inner than author l in violation of t	or any right in the use of the rized herein. Neither the the Communications Act of
To view the specific geographic	operation throughout the entire ge c area and spectrum authorized by	y this license, refe	r to the Spectrur	

Call Sign: WRHF219	File Nu	imber:	Print Date:	
	T. C			
700 MHZ Kencensed A	rea information:			
700 MHz Relicensed A Market	rea Information: Market Name		Buildout Notification	Status

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	Federal Communi Wireless Telecom				
P P P P P P P P P P P P P P P P P P P	RADIO STATION	AUTHORIZA	ΓΙΟΝ		
LICENSEE: CELLCO F	ARTNERSHIP				
ATTN: REGULATORY			Call Sig WRNF68		
5055 NORTH POINT PK	CELLCO PARTNERSHIP 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022 Radio Service PM - 3.7 GHz Service				
FCC Registration Number (FR	N): 0003290673				
Grant Date 07-23-2021	Effective Date 07-23-2021	Expirati 07-23		Print Date	
Market Number PEA112	Chainer Diven			e	
		et Name Green, KY			
1st Build-out Date 07-23-2029	2nd Build-out Date 07-23-2033	3rd Build-	out Date	4th Build-out Date	

Waivers/Conditions:

Operation for this combination license grants both interim and final rights for this PEA and is not impacted by the relocation process 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. 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.

Call Sign: WRNF682		File Number:		Print Date:	
700 MHz Relicensed A	rea Information:				
Market	Market Name	Buildout Do	eadline	Buildout Notificati	on Status
	C				
	1				

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	Federal Communic Wireless Telecomm			
A CALL CATIONS	RADIO STATION A	AUTHORIZAT	ΓΙΟΝ	
LICENSEE: CELLCO P.	ARTNERSHIP			
ATTN: REGULATORY			Call Sig WRNF68	
5055 NORTH POINT PK	CELLCO PARTNERSHIP 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022 Radio Service PM - 3.7 GHz Service			
FCC Registration Number (FR	N): 0003290673	1		
Grant Date 07-23-2021	Effective Date 07-23-2021	Expirati 07-23-		Print Date
Market Number PEA112				ub-Market Designator 0
	Marke Bowling (t Name Green, KY		
1st Build-out Date 07-23-2029	2nd Build-out Date 07-23-2033	3rd Build-	out Date	4th Build-out Date

Waivers/Conditions:

Operation for this combination license grants both interim and final rights for this PEA and is not impacted by the relocation process 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. 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.

Call Sign: WRNF683		File Number:	Print Dat	e:
700 MHz Relicensed A	rea Information:			
Market	Market Name	Buildout Dea	dline Buildout Notific	ration Status
	G			
		C C		
				0,

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	Federal Communic Wireless Telecomm			
P P P P P P P P P P P P P P P P P P P	RADIO STATION	AUTHORIZAT	ΓΙΟΝ	
LICENSEE: CELLCO F	ARTNERSHIP			
ATTN: REGULATORY			Call Sig WRNF68	
5055 NORTH POINT PK	CELLCO PARTNERSHIP 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022 Radio Service PM - 3.7 GHz Service			
FCC Registration Number (FR	N): 0003290673			
Grant Date 07-23-2021	Effective Date 07-23-2021	Expirati 07-23-		Print Date
Market Number PEA112	Chumici Diota			e
		e t Name Green, KY		
1st Build-out Date 07-23-2029	2nd Build-out Date 07-23-2033	3rd Build-	out Date	4th Build-out Date

Waivers/Conditions:

Operation for this combination license grants both interim and final rights for this PEA and is not impacted by the relocation process 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. 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.

Call Sign: WRNF684		File Number:	Print Date:	
700 MHz Relicensed A	rea Information:			
Market	Market Name	Buildout Dead	dline Buildout Notificatio	on Status

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I A A A A A A A A A A A A A A A A A A A	Federal Communic Wireless Telecomm				
A CALIFIC ATTONNES	RADIO STATION A	AUTHORIZAT	ΓΙΟΝ		
LICENSEE: CELLCO P.	ARTNERSHIP				
ATTN: REGULATORY			Call Sig WRNF68		
5055 NORTH POINT PK	CELLCO PARTNERSHIP 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022 Radio Service PM - 3.7 GHz Service				
FCC Registration Number (FR	N): 0003290673	1			
Grant Date 07-23-2021	Effective Date 07-23-2021	Expirati 07-23-		Print Date	
Market Number PEA112		nel Block A4	s	ub-Market Designator 0	
		t Name Green, KY			
1st Build-out Date 07-23-2029	2nd Build-out Date 07-23-2033	3rd Build-	out Date	4th Build-out Date	

Waivers/Conditions:

Operation for this combination license grants both interim and final rights for this PEA and is not impacted by the relocation process 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. 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.

Call Sign: WRNF685		File Number:	Print	Date:	
700 MHz Relicensed A	rea Information:				
700 MHz Relicensed A Market	rea Information: Market Name	Buildout Dea	dline Buildout No	otification Stat	JUS

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	Federal Communio Wireless Telecom				
P P P P P P P P P P P P P P P P P P P	RADIO STATION	AUTHORIZAT	ΓΙΟΝ		
LICENSEE: CELLCO F	ARTNERSHIP				
ATTN: REGULATORY			Call Sig WRNF68		
5055 NORTH POINT PK	CELLCO PARTNERSHIP 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022 Radio Service PM - 3.7 GHz Service				
FCC Registration Number (FR	N): 0003290673				
Grant Date 07-23-2021	Effective Date 07-23-2021	Expirati 07-23-		Print Date	
Market Number PEA112	Chan	nnel Block A5	s	ub-Market Designator 0	
Market Name Bowling Green, KY					
1st Build-out Date 07-23-2029	2nd Build-out Date 07-23-2033	3rd Build-	out Date	4th Build-out Date	

Waivers/Conditions:

Operation for this combination license grants both interim and final rights for this PEA and is not impacted by the relocation process 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. 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.

Call Sign: WRNF686		File Number:	Print Date):
700 MHz Relicensed A	rea Information:			
Market	Market Name	Buildout Dea	dline Buildout Notifica	ation Status
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				0

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STATED STATES		al Communica /ireless Telecomm			
P QP T ST	RA	DIO STATION A	UTHORIZAT	ΓΙΟΝ	
LICENSEE: CELLCO	PARTNER	SHIP			
ATTN: REGULATORY				Call Sig WRNF68	
5055 NORTH POINT P	CELLCO PARTNERSHIP 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022 Radio Service PM - 3.7 GHz Service				
FCC Registration Number (FF	RN): 0003	290673	1		
Grant Date 07-23-2021		Offective Date 07-23-2021	Expirati 07-23-		Print Date
Market Number PEA112			el Block 31	S	Sub-Market Designator 0
Market Name Bowling Green, KY					
1st Build-out Date 07-23-2029		Build-out Date 07-23-2033	3rd Build-	out Date	4th Build-out Date

Waivers/Conditions:

This interim license, in conjunction with one or more final licenses, collectively 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 thecertification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR ? 27.1412(g). Assignment application(s) and transfers of control filed for this interim license must be done in conjunction with any linked final license.

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. 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.

Call Sign: WRNF687	File Numb	er:	Print Date:	
700 MHz Relicensed Area	Information:			
	Information: arket Name	Buildout Deadline	Buildout Notification	Status

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		l Communic ireless Telecomm			
P QP TO ST	RA	DIO STATION A	UTHORIZA	ΓΙΟΝ	
LICENSEE: CELLCO	PARTNER:	SHIP			
ATTN: REGULATORY				Call Sig WRNF68	
5055 NORTH POINT P	CELLCO PARTNERSHIP 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022 Radio Service PM - 3.7 GHz Service				
FCC Registration Number (FF	RN): 00032	90673	1		
Grant Date 07-23-2021		ffective Date 07-23-2021	Expirati 07-23		Print Date
Market Number PEA112			el Block 32	S	Sub-Market Designator 0
Market Name Bowling Green, KY					
1st Build-out Date 07-23-2029		Build-out Date 07-23-2033	3rd Build-	out Date	4th Build-out Date

Waivers/Conditions:

This interim license, in conjunction with one or more final licenses, collectively 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 thecertification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR ? 27.1412(g). Assignment application(s) and transfers of control filed for this interim license must be done in conjunction with any linked final license.

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. 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.

Call Sign: WRNF688		File Number:		Print Date:	
700 MHz Relicensed A	rea Information:				
Market	Market Name	Buildout D	Deadline	Buildout Notificat	ion Status
	Č				
				-	

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.

STATED STATES		Communic eless Telecomm			
PARTINICATIONS	RAD	IO STATION A	AUTHORIZA	ΓΙΟΝ	
LICENSEE: CELLCO	PARTNERSI	HIP			
ATTN: REGULATORY				Call Sig WRNF68	
5055 NORTH POINT P	CELLCO PARTNERSHIP 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING ALPHARETTA, GA 30022 Radio Service PM - 3.7 GHz Service				
FCC Registration Number (FF	RN): 000329	0673	1		
Grant Date 07-23-2021		ective Date 7-23-2021	Expirati 07-23		Print Date
Market Number PEA112			nel Block B3	5	Sub-Market Designator 0
Market Name Bowling Green, KY					
1st Build-out Date 07-23-2029		uild-out Date -23-2033	3rd Build-	out Date	4th Build-out Date

Waivers/Conditions:

This interim license, in conjunction with one or more final licenses, collectively 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 thecertification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR ? 27.1412(g). Assignment application(s) and transfers of control filed for this interim license must be done in conjunction with any linked final license.

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. 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.

Call Sign: WRNF689		File Number:	Print Date:	
700 MHz Relicensed A	rea Information:			
Market	Market Name	Buildout Deadli	ne Buildout Notification	Status
	C			
		C		
			0	

PARTNERSHIP D/B/A Verizon wireless

2421 HOLLOWAY RD LOUISVILLE, KY 40299

NEW 250' SELF-SUPPORT TOWER w/5' LIGHTNING ROD

TOTAL TOWER HEIGHT 255"

Tower owner site CK CLIFTY SITE #: 617103749

POLICE TODD COUNTY SHERIFF 202 E WASHINGTON ST ELKTON, KY 42220 PHONE: 270-265-9966

CK CLIFTY PROJECT#: 20212296998 MARKET ID: CK LOCATION CODE: 706080

FIRE

VERIZON WIRELESS SITE

462 CLIFTY KIRKSMANVILLE ROAD ELKTON, KY 42220 TODD COUNTY E911 ADDRESS: TBD

SITE ADDRESS

CLIFTY VOLUNTEER FIRE DEPT 16840 GREENVILLE RD CLIFTY, KY 42216 PHONE: 270-277-6762

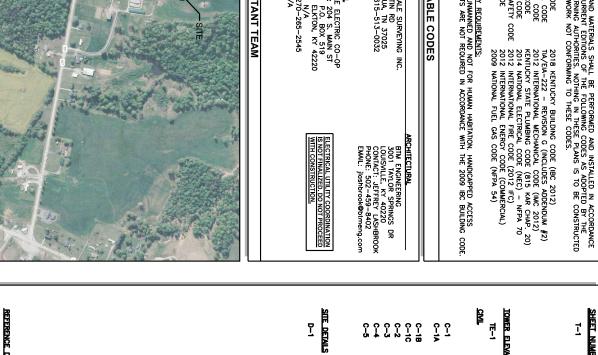
IOWER OWNER VERIZON WIRELESS 250 E. 96H ST. SUITE 300 INDIANAPOLIS, IN 46240 CONTACT: ERIN MORRISON PHONE: (207) 385-5594 E-MAIL: erin.morrison@verizonwire

ELEVATION - 7 1988 (NAVD88)

- 798.00' AMSL

<u>TOWER OWNER LEASE AREA</u> 100'-0" x 100'-0" (10000 SF)

<u>General Information</u> Latitude – 36° 59' 26.09" N Longitude – 87° 09' 44.12" W 1983 (NAD83) COMPOUND: (10000 SF) = (0.23 ACRE ACCESS DRIVE: (3435 SF) = (0.08 ACRE) GROSS AREA: (1345 SF) = (0.31 ACRE) PROJECT TOTAL DISTURBED AREA PROJECT DESCRIPTION VERIZON WIRELESS SCOPE (VZW GC):
 INSTALL A NEW 11'-6'x14'-9' PREFABRICATED CANOPY ON EXISTING CONCRETE PAD INSTALL NEW FIBER LOCATIC INSTALL (1) N AND TRACER V NORTAL (1) NEW <u>"DEBLON WIRELESS ONL"</u> FIGER OPTIC CONDUIT WITH PULL TAPE FROM NEW <u>DEBLOON WIRELESS ONL"</u> HAND HOLE AND STUB UP AT FUTURE FIGER PEDESTAL COLTINON WIRELESS ONL" HAND HOLE AND STUB UP AT FUTURE FIGER PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON WIRELESS AT THE PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON WIRELESS AT THE PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON WIRELESS AT THE PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON WIRELESS AT THE PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON WIRELESS AT THE PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON WIRELESS AT THE PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON WIRELESS AT THE PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON WIRELESS AT THE PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON WIRELESS AT THE PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON WIRELESS AT THE PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON WIRELESS AT THE PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON WIRELESS AT THE PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON WIRELESS AT THE PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON WIRELESS AT THE PERMANENT ELECTRIC POWER MUST BE ANALABLE FOR VERZON POWER PERZON WIRELESS AT THE PERMANENT ELECTRIC POWER PO **IECL DESCRIPTION:** E..ALL ITEMS WITHIN THESE CONSTRUCTION DOCUMENTS ARE BY TOWER OMNER'S EPAL CONTRACTOR AND HIS SUB-CONTRACTORS UNLESS NOTED AS (VZW GC) WHICH LL INCLUDE VERIZON WIRELESS GENERAL CONTRACTOR AND HIS SUB-CONTRACTORS. HERALLY DESCRIPED BELOW: A NEW 11'-5".19"-5" CONCRETE EQUIPAENT PAD ELECTRICAL SERVICE CONDUNT WITH PULL TAPES FROM ILC ENCLOSURE PWTHIN VCW EQUIPAENT PAD TO JULITY I-FRAME DEVENDOUDES WITH PULL TAPES FROM VCW ILC ENCLOSURE STUB-UPS TO ENT ENCLOSURE STUB-UPS INTHIN VCW EQUIPAENT PAD LOCATION TO THE ENT ENCLOSURE STUB-UPS INTHIN VCW EQUIPAENT PAD LOCATION TO THE ENT ENCLOSURES STUB-UPS INTHIN VCW EQUIPAENT PAD LOCATION TO THE ENT ENCLOSURES STUB-UPS INTHIN VCW EQUIPAENT PAD LOCATION TO THE ENT ENCLOSURES STUB-UPS INTHIN VCW EQUIPAENT PAD LOCATION TO THE INTERCONDURS WITH PULL TAPES FROM RE CABINET TO OVP H-FRAME LIT JOCATION NEW <u>VERIZON WIRELESS ONLY</u> FIBER OPTIC CONDUIT WITH PULL TAPE WIRE FROM VZW EQUIPMENT TO NEW <u>VERIZON WIRELESS ONLY</u> HAND C. COMPOUND THEN TO NEW <u>VERIZON WIRELESS ONLY</u> 36°X60° HAND SITE BUILDING CODE STRUCTURAL CODE PLUMBING CODE FIREFICAL CODE FIREFUTE SAFETY CODE ENERGY CODE ENERGY CODE CONSULTANT TEAM SURVEYOR SHARONDALE SURVEYING INC. 161 MARTIN RD BONA AQUA, TN 37025 PHONE: 615-513-0032 ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL COVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES. APPLICABLE CODES ACCESSIBILITY REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, HANDICAPPED ACCESS REQUIREMENTS ARE NOT RECURED IN ACCORDANCE WITH THE 2009 IBC BUILDING CODE. PENCYRLE ELECTRIC CO-OP ADDRESS: 204 S. MAIN ST P.O. BOX 519 P.O. BOX 519 CONTACT: LIVTON, KY 42220 CONTACT: N/A PHONE: 270-285-2545 EMAL: N/A -2018 KENTUCKY BUILDING CODE (IBC 2012) TIA/EIA-222 - REVISION G (INCLUDES ADDENDUM #2) 2012 INTERNATIONAL INCCHANICA CODE (MC 2012) KENTUCKY STATE PLUMBING CODE (815 KAR CHAP. 20) 2014 INATIONAL ELECTRICAL CODE (MEC) - NFPA 70 2012 INTERNATIONAL ELECTRICAL CODE (MC) - NFPA 70 2012 INTERNATIONAL ELECTRICAL CODE (MC) 2012 INTERNATIONAL ELECTRICAL CODE (MC) 2012 INTERNATIONAL FIRE CODE (2012 IFC) 2012 INTERNATIONAL FIRE CODE (NFPA 54) BTM ENGINEERING 3001 TAYLOR SPRINGS DR LOUISVILLE, KY 40220 CONTACT: JEFFREY LASHBROOK PHONE: 502-459-8402 EMAIL: Jioshbrook@btmeng.com CHITECTURAL UTILITY COORDINATION



VICINITY MAP

LOCATION MAP

PROJECT SUMMARY

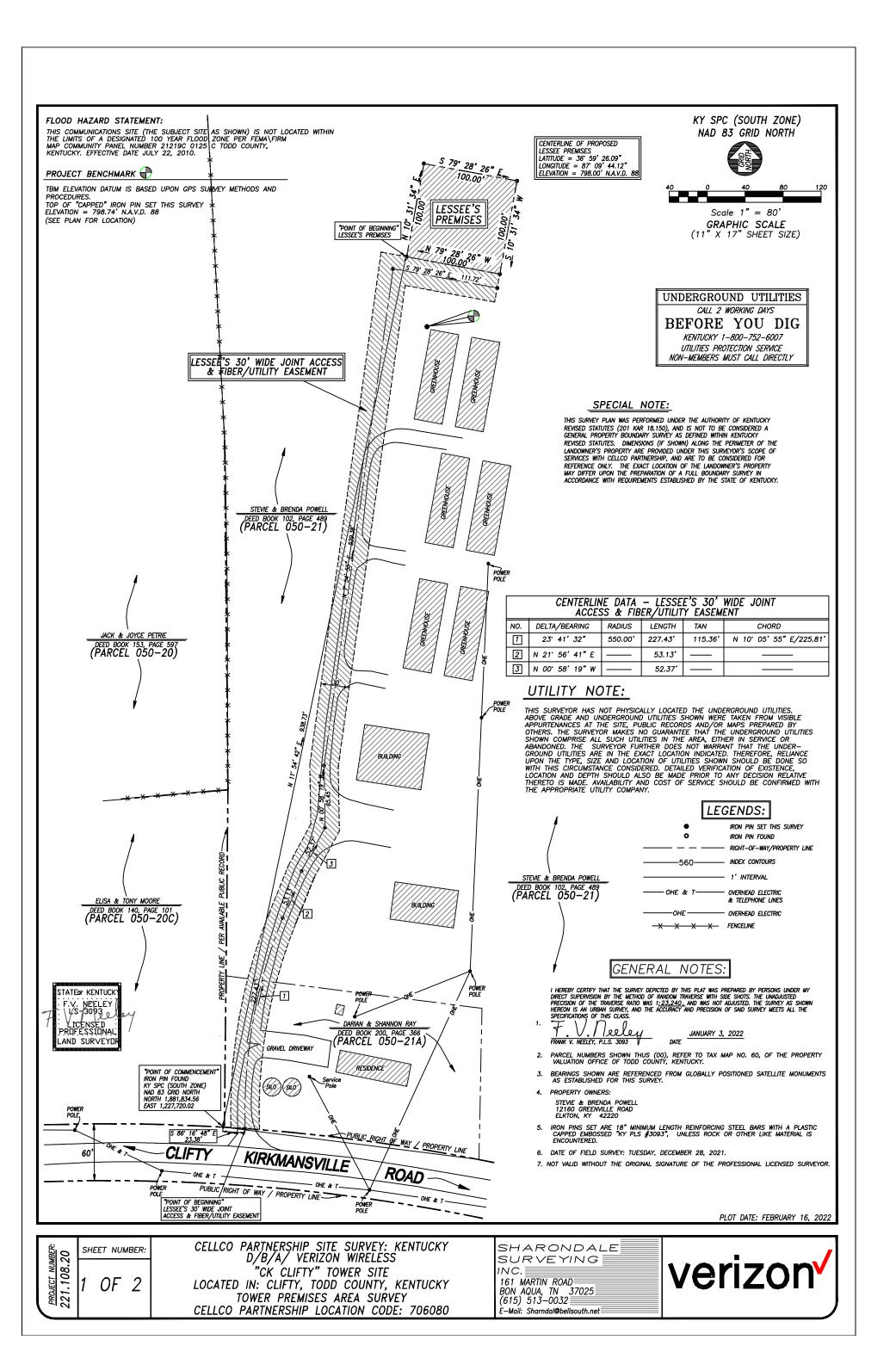
STEVE AND BRENDA POWELL 12160 GREENVILE ROAD ELKTON, KY 42200 CONTACT: STEVIE POWELL PHONE: (270) 604-5515 E-MAIL: STEVIEPOWELL©CMAILCOM

ROPERTY OWNER

20'-0" x 36'-0" (720 SF)

VERIZON WIRELESS LEASE AREA

<image/> <image/>	AD ELECTRICA FENNRELE ELECTRIC CO-OP ADDRESS ZO4 S. MAIN ST P.O. BOX 519 ELECTRICA, BOX 519 ELECTRICA, WITH ST ELECTRICA, VIA 12220 CONTACT: N/A PHONE: 270-265-2545 EMAIL: N/A CONSULTANT TEAM CONSULTANT TEAM] <u></u>	ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE SHEEL WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL COVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUCTED TO TO PERMIT WORK NOT CONFORMING TO THESE CODES. BUILDING CODE 2018 KENTUCKY BUILDING CODE (BIGC 2012) To STRUCTURAL CODE TA/EGA-222 - REVISION G (INCLUDES ADDENDUM #2) STRUCTURAL CODE 2012 INTERNATIONAL MECHANICAL CODE (MIGC 2012) PLUMBING CODE 2012 INTERNATIONAL MECHANICAL CODE (BIS KAR CHAP. 20) FIRE/LIFE SAFETY CODE 2012 INTERNATIONAL ELECTRICAL CODE (MIG 2012) INFERVATIONAL FIRE CODE (COMMERCIAL) TOWER ENERGY CODE 2012 INTERNATIONAL FIRE CODE (COMMERCIAL) TOWER ENERGY CODE 2012 INTERNATIONAL FIRE CODE (COMMERCIAL) TOWER ENERGY CODE 2012 INTERNATIONAL FIRE CODE (COMMERCIAL) TOWER	TENANT: LEGAL BUSINESS ENTITY d/b/a VERIZON "CK CLIFTY" "CK CLIFTY" FROM LOUISVILLE MTSO: 2441 HOLLOWAY RD LOUISVILLE KY: HEAD SOUTH ON HOLLOWAY R TOWARD CHUTTE STATION PI (354FT.). NAME CHANGES TO PLANTSIDE DR (0.6MI.). TURN LEFT ONTO BLANKENBAKER PKWY (0.7MI.). TAKE THE RAMP ON THE RIGHT FOR I-64E FOLLOW SINS FOR I-265S (2.8MI.). ROAD NAME CHANGES TO I-265W (12.5MI.). AT EXIT 10B, HEAD RIGHT ON THE RAMP FOR I-65S (KY-61 (75.6MI.). ROAD NAME CHANGES TO WESTERN KENTUCKY PKWY (2.1MI.). TURN RIGHT ONTO KY-181 (17.8MI.). TURN I	CK CLIFTY KIRKSMANVILLE ROAD 462 CLIFTY KIRKSMANVILLE ROAD ELKTON, KY 42220 TODD COUNTY
REFERENCE DRAWINGS RF-1 ANTENINA PLAN AND DETAILS (REFERENCE ONLY)	detailed Equipment Pad Plan LS Fence Details and notes	OVERALL SITE PLAN W/AERAL OVERLAY OVERALL SITE PLAN W/PLATFORM DISTANCE TO PROPERTY LINES TOWER DISTANCE TO RESIDENTIAL STRUCTURES COUNTY TOWER MAP GRAVING AND EAS CONTROL PLAN DETAILED SITE PLAN DIMENSIONED SITE PLAN	DESCRIPTION PROJECT INFORMATION, STE MAPS, SHEET INFOR SURVEY PLAN (10F2) SURVEY PLAN (20F2) SOO' RADIUS & ADJOINERS MAP (10F1) SOO' RADIUS & ADJOINERS MAP (10F1)	CON WIRELESS 354FT.). TURN LEFT ONTO SCHUTTE STATION PI (0.3MI.). ROAD R I-64E (1.6MI.). AT EXIT 19A, HEAD ON THE RAMP RIGHT AND I-65S (33.39MI.). AT EXIT 19A, HEAD RIGHT ON THE RAMP FOR XWY W (6.9MI.). AT EXIT 153, HEAD RIGHT ON THE RMP FOR TURN RIGHT ONTO KY-107 (0.5MI.). SITE ON THE RIGHT.	
NWY PU & CMOPY REV 5 00/29/18	AD KY 42220	A LASHBROOK	REV. DATE DES A 01/13/22 LEASE EXHIB B 01/26/22 ISSUE FOR ZO C 02/16/22 ISSUE FOR ZO	SCRIPTION IT DNING DNING CELLCO PAR VERIZO 2421 H LOUISVIL PHONE (5	ATNERSHIP D/B/A MULOWAY RD LE, KY 40299 2) 256-7548 BTM Engineering, Inc.



LESSEE'S PREMISES AREA DESCRIPTION

Commencing at an iron pin found in the north margin of Clifty Kirkmansville Road located at Kentucky State Plane (South Zone) NAD 83 Grid Coordinate North 1,881,834.56, East 1,227,720.02;

Thence, North 11 degrees 54 minutes 42 seconds East, 938.73 feet to a capped "KY PLS ∦3093" iron pin set at the southwest corner of Lessee's Premises, said iron pin being the point of beginning of the following described Lessee's Premises;

Thence, North 10 degrees 31 minutes 34 seconds East, 100.00 feet to a capped "Sharondale Nashville" iron pin set at the northwest corner of Lessee's Premises

Thence, South 79 degrees 28 minutes 26 seconds East, 100,00 feet to a capped "Sharondale Nashville" iron pin set at the northeast corner of Lessee's Premises

Thence, South 10 degrees 31 minutes 34 seconds West, 100,00 feet to a capped "Sharondale Nashville" iron pin set at the of Lessee's Premise

Thence, North 79 degrees 28 minutes 26 seconds West, 100.00 feet to the point of beginning, containing 10,000 square feet, (0.230 acres).

Being a portion of the property conveyed to Stevie Powell and wife, Brenda Powell, of record in Deed Book 102, Page 489, of the Court Clerk's Office of Todd County, Kentucky.



Commencing at an iron pin found in the north margin of Clifty Kirkmansville Road located at Kentucky State Plane (South Zone) NAD 83 Grid Coordinate North 1,881,834.56, East 1,227,720.02;

Being a thirty foot wide joint access and fiber/utility easement extending from the north margin of Clifty Kirkmansville Road to the south margin of Leessee's Premises, at all times being fifteen feet wide each side of and parallel with the following described centerline

Commencing at an iron pin found in the north margin of Clifty Kirkmansville Road located at Kentucky State Plane (South Zone) NAD 83 Grid Coordinate North 1.881.834.56. East 1.227.720.02:

Thence, South 86 degrees 16 minutes 48 seconds East, 23.38 feet to a survey spike set in the north margin of Clifty Krikmansville Road, said survey nail being at the point of beginning of the following described thirty foot wide joint access and fiber/utility easement;

Thence, leaving the north margin of Clifty Kirkmansville Road, along a curve to the left with a central angle of 23 degrees 41 minutes 32 seconds, a radius of 550.00 feet, and a chord bearing of North 10 degrees 05 minutes 55 seconds East, 225.81 feet, a total distance of 227.43 feet to a point

Thence, North 21 degrees 56 minutes 41 seconds East, 53.13 feet to a point;

Thence, North 28 degrees 24 minutes 57 seconds East, 52.37 feet to a point;

Thence, North 00 degrees 58 minutes 19 seconds West, 65.45 feet to a point;

Thence, North 7 degrees 54 minutes 55 seconds East, 529.38 feet to a point;

Thence, South 79 degrees 28 minutes 26 seconds East, 111.72 feet to a capped "KY PLS #3093" iron pin set at the point of termination of this easement, containing 31,184 square feet, (0.716 acres).

Being a portion of the property conveyed to Stevie Powell and wife, Brenda Powell, of record in Deed Book 102, Page 489, of the Court Clerk's Office of Todd County, Kentucky.

UNDERLYING LANDOWNER'S PROPERTY AREA DESCRIPTION

A certain tract of land in Todd County, Kentucky, located on the North side of KY Hwy. No. 107 approximately 105 miles Southwest of Clifty, and further described from a survey by E. T. Riley, Land Surveyor, KY Reg. No. 128 on April 11, 1978, as follows:

Beginning at a stake in the North right of way line of Hwy. 107, a corner with Gilbert Francis; thence with Francis' line, passing just East of a well house, N 2 degrees 51' W - 14.71 chains to a rock, a corner with same; thence with Francis' line N 14 just East of a well house, N 2 degrees 51' W - 14.71 chains to a rock, a corner with same; thence with Francis' line N 14 degrees 34' W - 5.77 chains to a stake in the center of an old road; thence with Francis' line leaving the old road N 57 degrees 02' W - 8.51 chains crossing the branch to a beech on the West side thereof, a corner with Francis and the Petrie Heirs; thence with the line of the Petrie Heirs 12 calls along a bluff crossing the branch N 20 degrees 30' E - 5.71 chains to a point of the bluff, N 36 degrees 04' E - 6.37 chains, S 28 degrees 51' E - 6.37 chains, S 28 degrees 30' E - 5.71 chains to a point of the bluff, N 36 degrees 53' e - 4.64 chains, S 11 degrees 15' E - 6.37 chains, S 30 degrees 15' W - 1.39 chains, S 86 degrees 11 E - 3.01 chains to a waterfall, a corner with the Petrie Heirs and William Carver; thence up the branch with Carver's line S 6 degrees 20' e - 9.06 chains and S 21 degrees 38' W - 2.78 chains to a point in the fork of the branch; thence with the Southwest fork along Carver's line S 31 degrees 22' W - 4.80 chains and S 9 degrees 03' E - 5.12 chains to a rock on the East side of a gravel drive, said rock being 31 feet North of the North right of Way. 107; thence along the North of the old rood N 85 degrees 36' W - 5.99 chains to an North right of way line of KY Hwy. 107; thence along the North side of the old road N 85 degrees 36' W - 5.99 chains to an oak tree in the North right of way line of Hwy. 107 at the junction with the North side of the old road; thence with the said right of way line N 83 degrees 15' W - 3.92 chains and N 86 degrees 51' W - 2.55 chains to the beginning point, containing 63.905 acres.

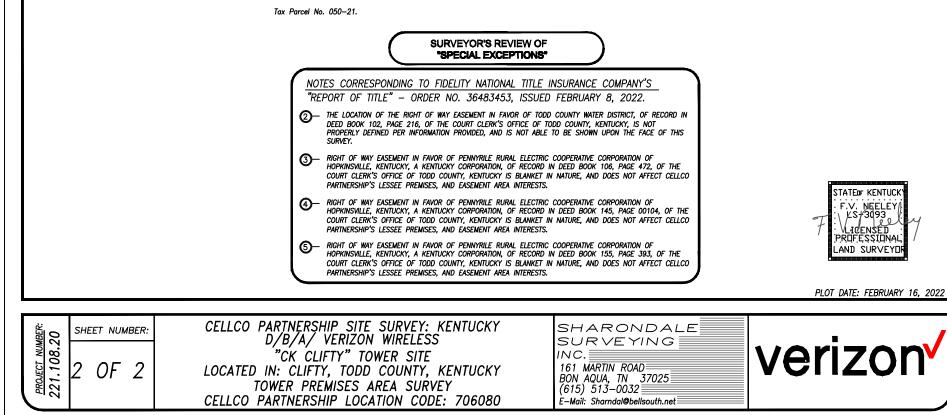
EXCEPTION: There is excepted from the foregoing described property a certain tract conveyed therefrom by Huston McGehee, widower, to Morris B. McGehee and wife by Deed dated August 5, 1968, and recorded in Deed Book 85, Page 694, records of the Todd County Court Clerk's Office, and more fully described as follows:

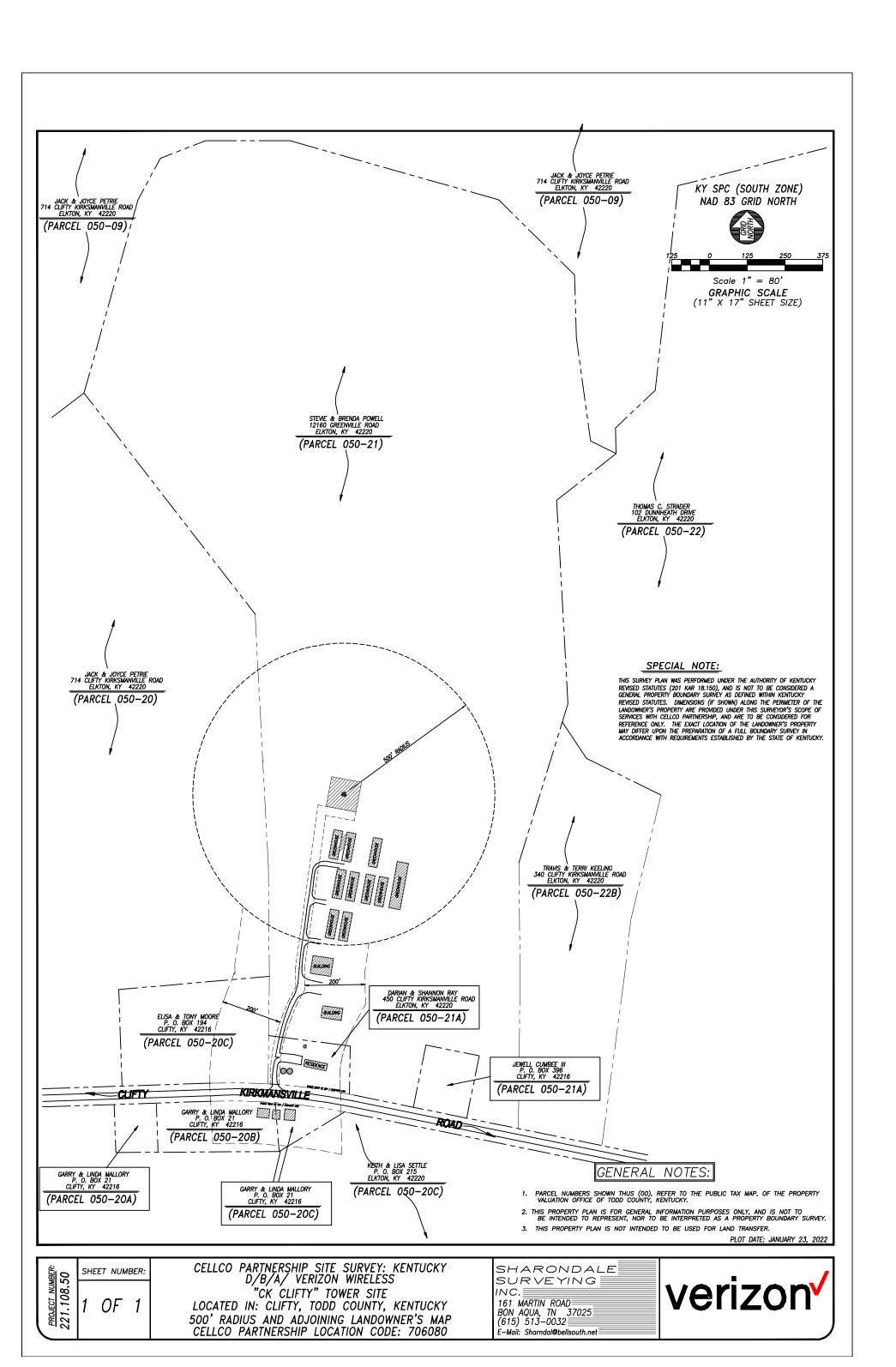
Beginning at a stake in the North right of way line of KY Hwy. No. 107, 162 feet West of the Southeast corner of the Huston McGehee property, a new corner with said McGehee; thence on a new line with said McGehee N 9 degrees E 190.4 feet to a stake, thence on a new line with McGehee N 78 degrees W 132.0 feet to a stake; thence on a new line with McGehee S 9 degrees W 197.9 feet to a stake in the North right of way line of KY Hwy. No. 107, a new corner with McGehee, with the North right of way line of said Hwy. S 81 degrees E 133.5 feet, to the point of beginning, containing .59 acres.

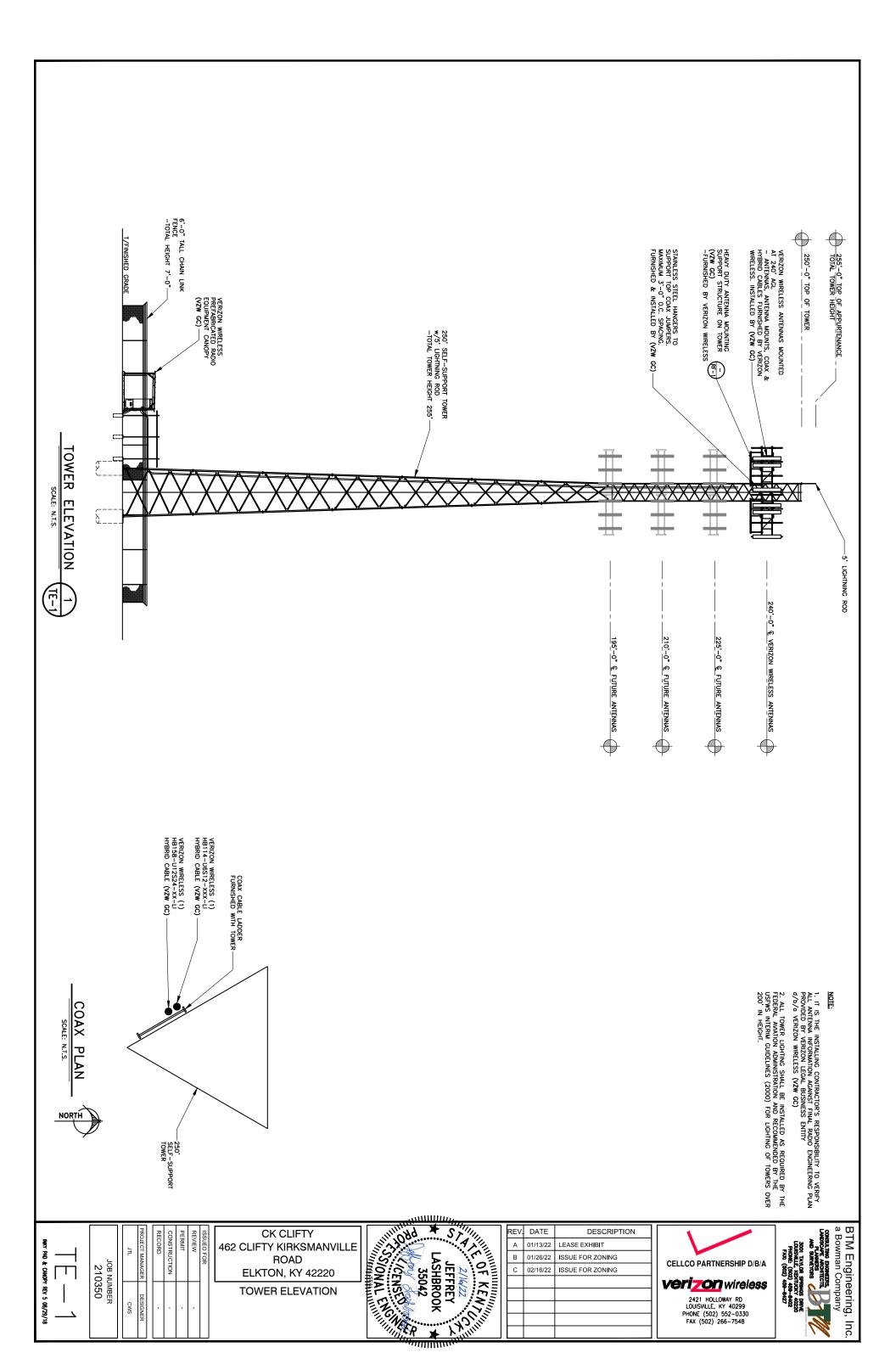
The above description is according to a survey made by V. Glenn Hughes, Surveyor on August 3, 1968.

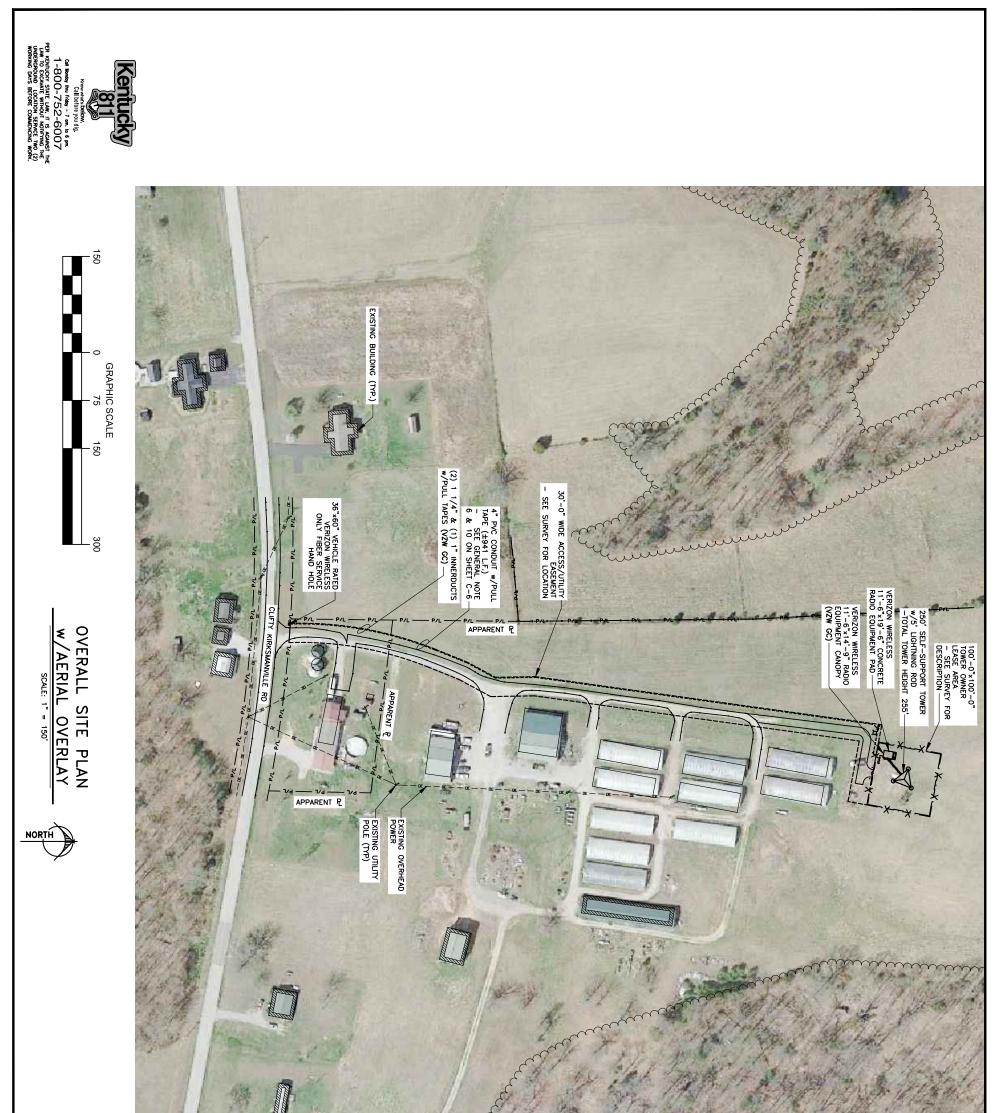
LESS AND EXCEPT that portion of property conveyed to Darian Michael Ray and Shannon Denise Powell Ray from Stevie A. Powell and Brenda L. Powell by Deed of Conveyance dated February 22, 2016, and recorded February 23, 2016, in Deed Book 200, Page 366.

AND BEING the same property conveyed to Stevie A. Powell and Brenda L. Powell from Eleanor Frazier, George Frazier, Uela Adams, Junior McGehee, Patricia McGehee, Audrey Raulston, Ross Raulston, by Dorris McGehee and Morris McGehee, their joint attorney in fact, Dorris McGehee, Karlene McGehee, Morris McGehee, Louise Mc Gehee, William McGehee and Verna McGehee by Deed of Conveyance dated July 25, 1978, and recorded July 25, 1978, in Deed Book 102, Page 489.

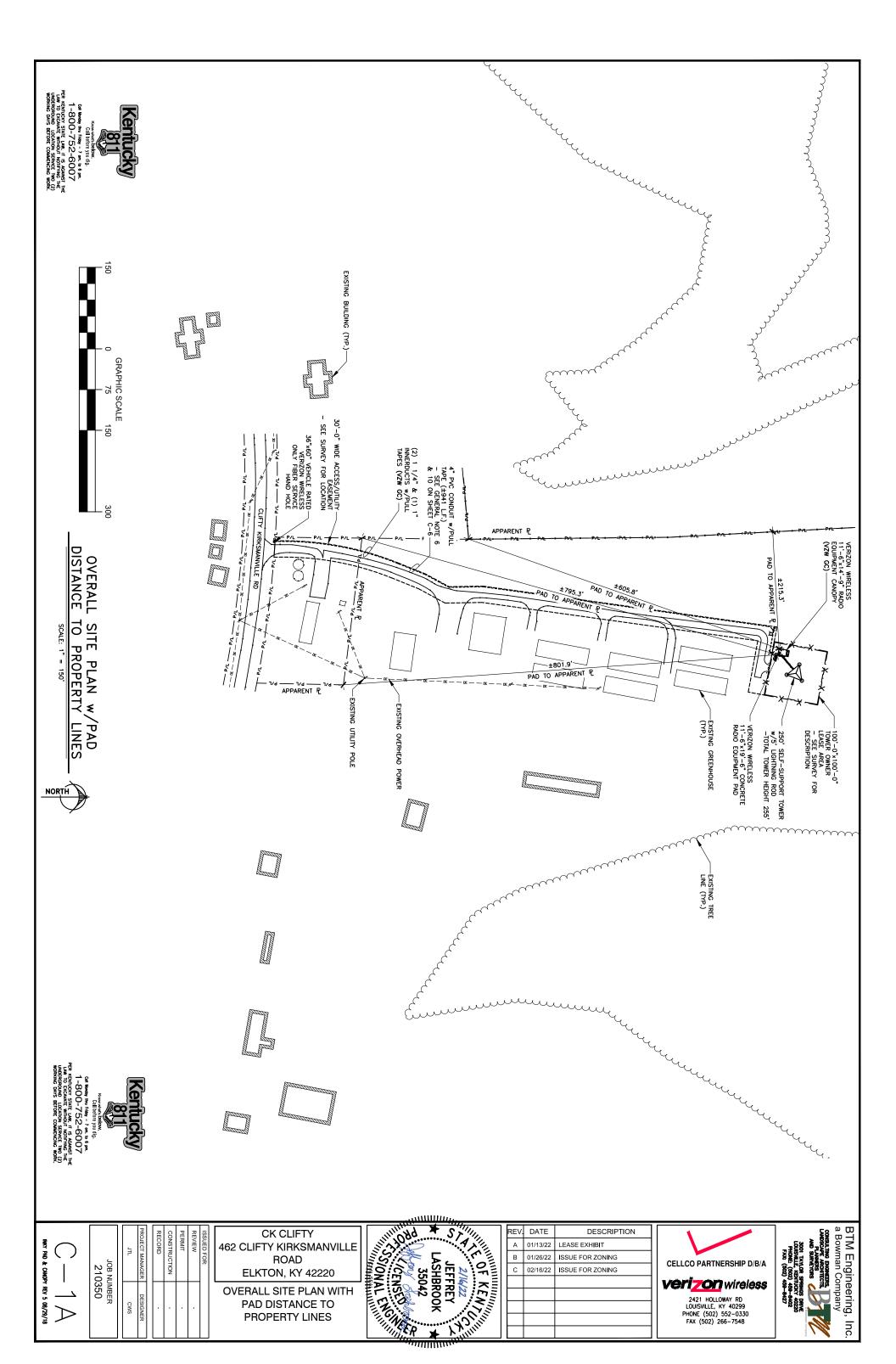


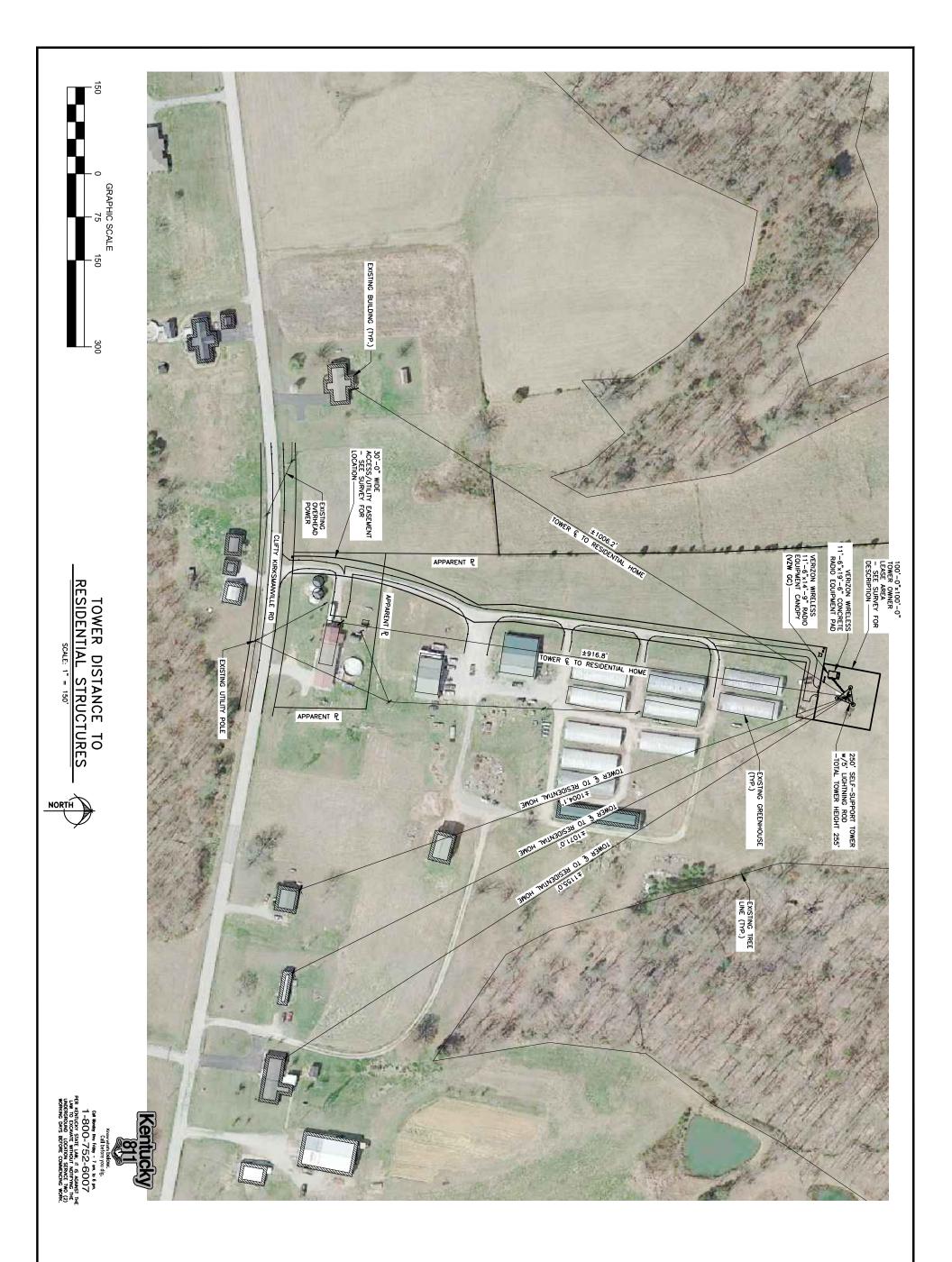


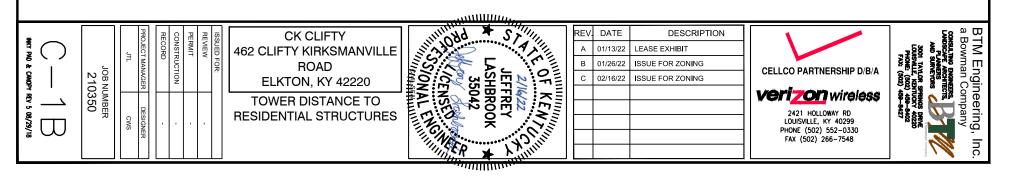




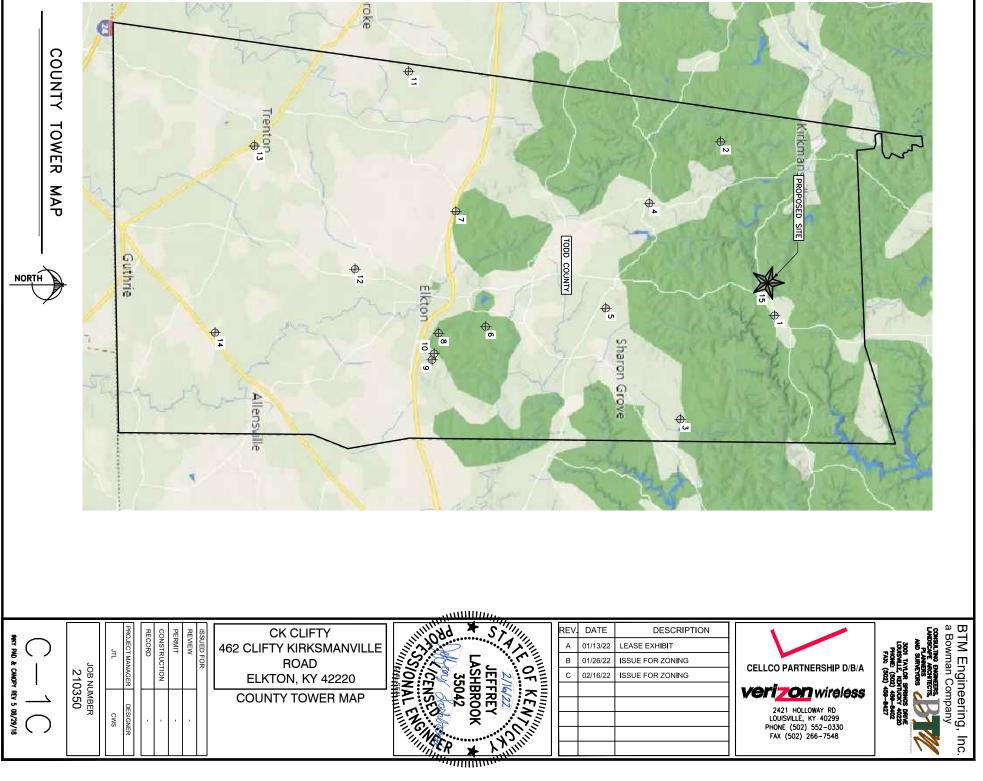
	www.unununununununununununununununununun	
ASHBROOK SOAD ELKTON, KY 42220 OVERALL SITE PLAN WITH AERIAL OVERLAY AREIAL OVERLAY	2421 HOLLOWAY E LOUISVILLE, KY 402 PHONE (502) 552-C FAX (502) 266-75	

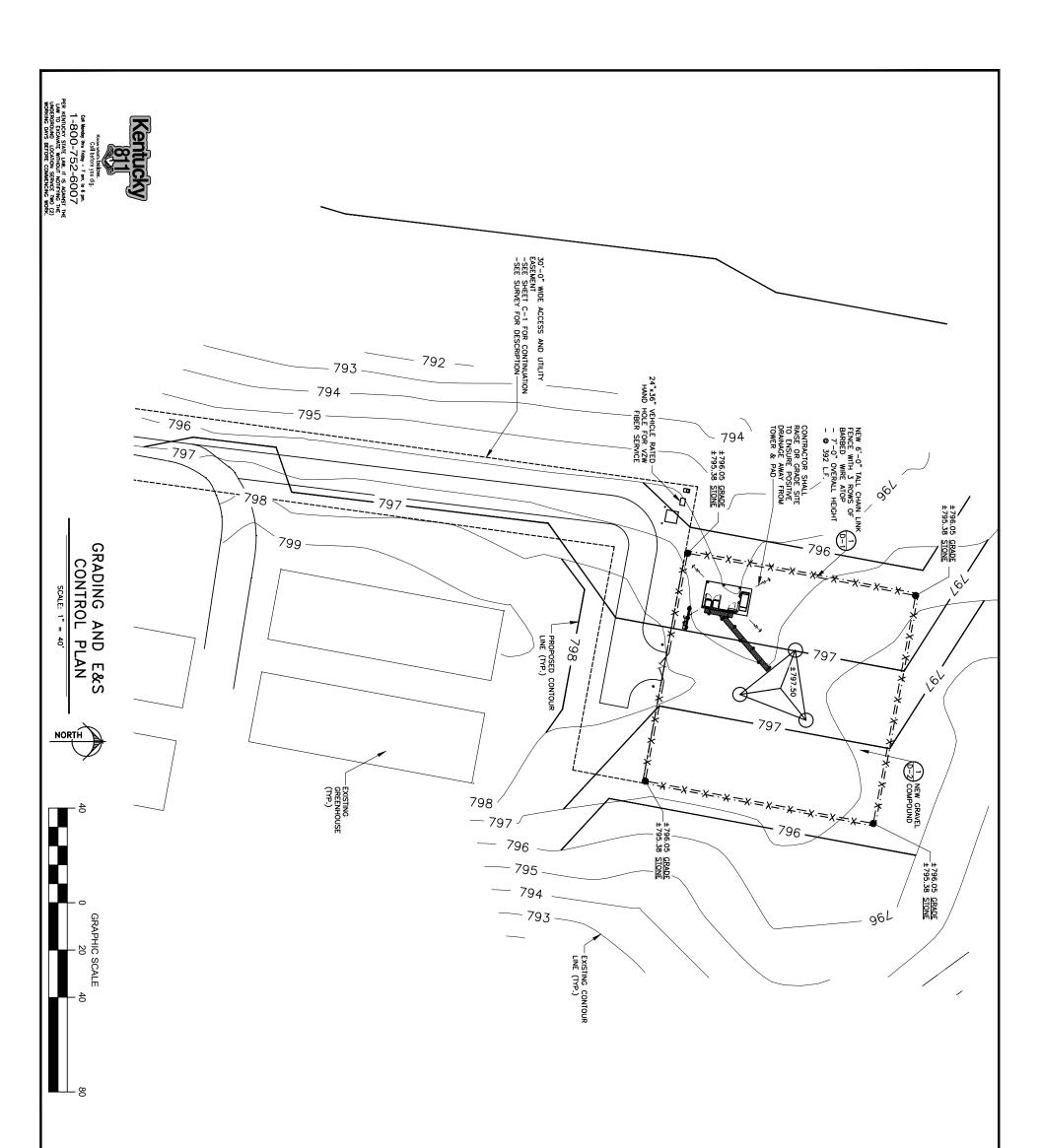


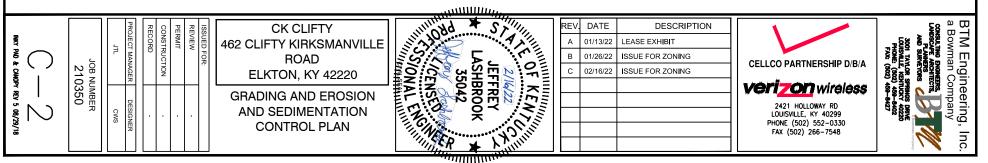




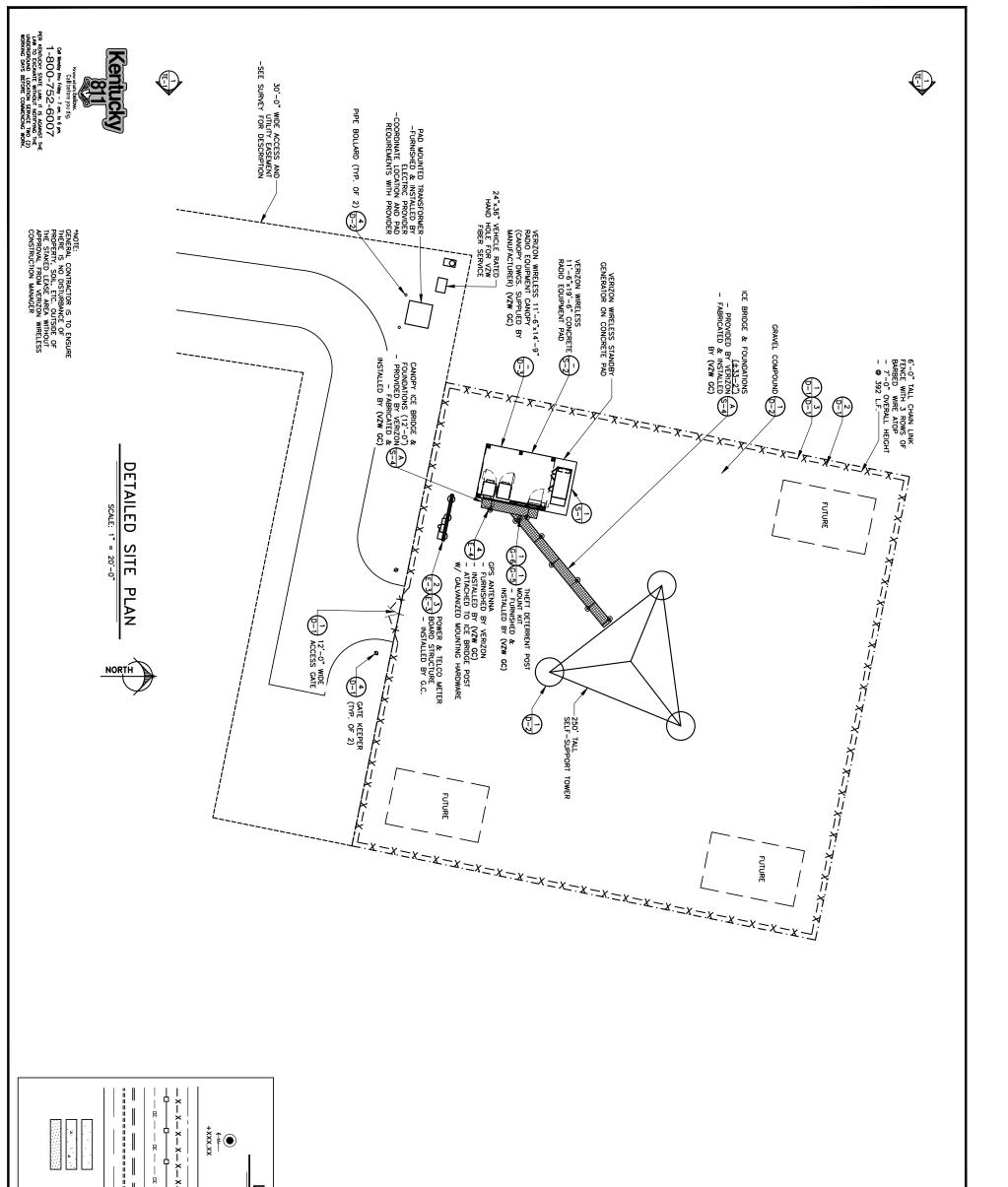
LATITUDE I 36° 59° 46.4° N 36° 58° 03.0° N 36° 56° 42.5° N 36° 56° 42.5° N 36° 56° 42.5° N 36° 56° 23.2° N 36° 49° 24.7° N 36° 48° 57.2° N 36° 48° 57.2° N 36° 48° 46.6° N 36° 48° 01.3° N 36° 46° 16.9° N 36° 43° 04.8° N 36° $4 3^{\circ}$ 04.8° N 36° $4 3^{\circ}$ 04.8° N 36° $4 3^{\circ}$ 04.8° N	VERIZON WIRELESS	87°09'43.9" W	36°59'26.0" N		15
LATITUDE LONGITUDE 36° 59' 46.4" N 87° 08' 24.4" W 36° 58' 03.0" N 87° 15' 24.0" W 36° 56' 42.5" N 87° 04' 14.4" W 36° 54' 23.2" N 87° 08' 24.4" W 36° 54' 23.2" N 87° 04' 14.4" W 36° 54' 23.2" N 87° 08' 42.4" W 36° 54' 23.2" N 87° 08' 42.4" W 36° 50' 29.0" N 87° 07' 59.0" W 36° 48' 57.2" N 87° 06' 42.0" W 36° 48' 48.0" N 87° 06' 42.0" W 36° 48' 01.3" N <	CELLCO PARTNERSHIP	87°07'44.2"W	36°41'48.4" N	1274279	14
LATITUDE LONGITUDE 36° 59' 46.4" N 87° 08' 24.4" W 36° 58' 03.0" N 87° 15' 24.0" W 36° 56' 42.5" N 87° 04' 14.4" W 36° 56' 44.4" N 87° 04' 14.4" W 36° 50' 29.0" N 87° 08' 24.2" W 36° 50' 29.0" N 87° 04' 14.4" W 36° 50' 29.0" N 87° 07' 59.0" W 36° 48' 23.2" N 87° 07' 59.0" W 36° 48' 29.0" N 87° 07' 59.0" W 36° 48' 57.2" N 87° 07' 40.0" W 36° 48' 46.6" N <	AMERICAN TOWERS LLC	87° 15' 12.0" W	36°43'04.8" N	1290301	13
LATITUDE LONGITUDE 36° 59' 46.4" N 87° 08' 24.4" W 36° 58' 03.0" N 87° 15' 24.0" W 36° 56' 42.5" N 87° 04' 14.4" W 36° 54' 23.2" N 87° 08' 42.4" W 36° 54' 23.2" N 87° 07' 59.0" W 36° 49' 34.7" N 87° 07' 59.0" W 36° 48' 57.2" N 87° 07' 40.0" W 36° 48' 48.0" N 87° 06' 42.0" W 36° 48' 46.6" N 87° 06' 42.0" W 36° 48' 01.3" N 87° 18' 10.1"	TILLMAN INFRASTRUCTURE, LLC	87°10'18.1" W		1317471	12
LATITUDE LONGITUDE 36° 59' 46.4" N 87° 08' 24.4" W 36° 58' 03.0" N 87° 15' 24.0" W 36° 56' 42.5" N 87° 04' 14.4" W 36° 55' 44.4" N 87° 04' 14.4" W 36° 50' 29.0" N 87° 08' 42.4" W 36° 50' 29.0" N 87° 04' 14.4" W 36° 50' 29.0" N 87° 07' 59.0" W 36° 49' 34.7" N 87° 07' 59.0" W 36° 48' 57.2" N 87° 07' 40.0" W 36° 48' 48.0" N 87° 06' 42.0" W 36° 48' 46.6" N <	TILLMAN INFRASTRUCTURE, LLC	87°18'10.1" W	36°48'01.3"N	130577	11
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<u>LATITUDE</u> <u>LATITUDE</u> <u>LONGITUDE</u> <u>36</u> 59' 46.4" N 87' 08' 24.4" W <u>36</u> 58' 03.0" N 87' 15' 24.0" W <u>36</u> 56' 42.5" N 87' 04' 14.4" W	UNITI TOWERS LLC	87°12'55.7" W	55' 44.4"	1309970	4
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LATITUDE LONGITUDE	GLOBAL TOWER, LLC. THRU AMERICAN TOWER, LLC	87°08'24.4" W	36°59'46.4" N	1052933	_
	TOWER OWNER	LONGITUDE	<u>LATITUDE</u>	<u>ASR</u>	TOWER
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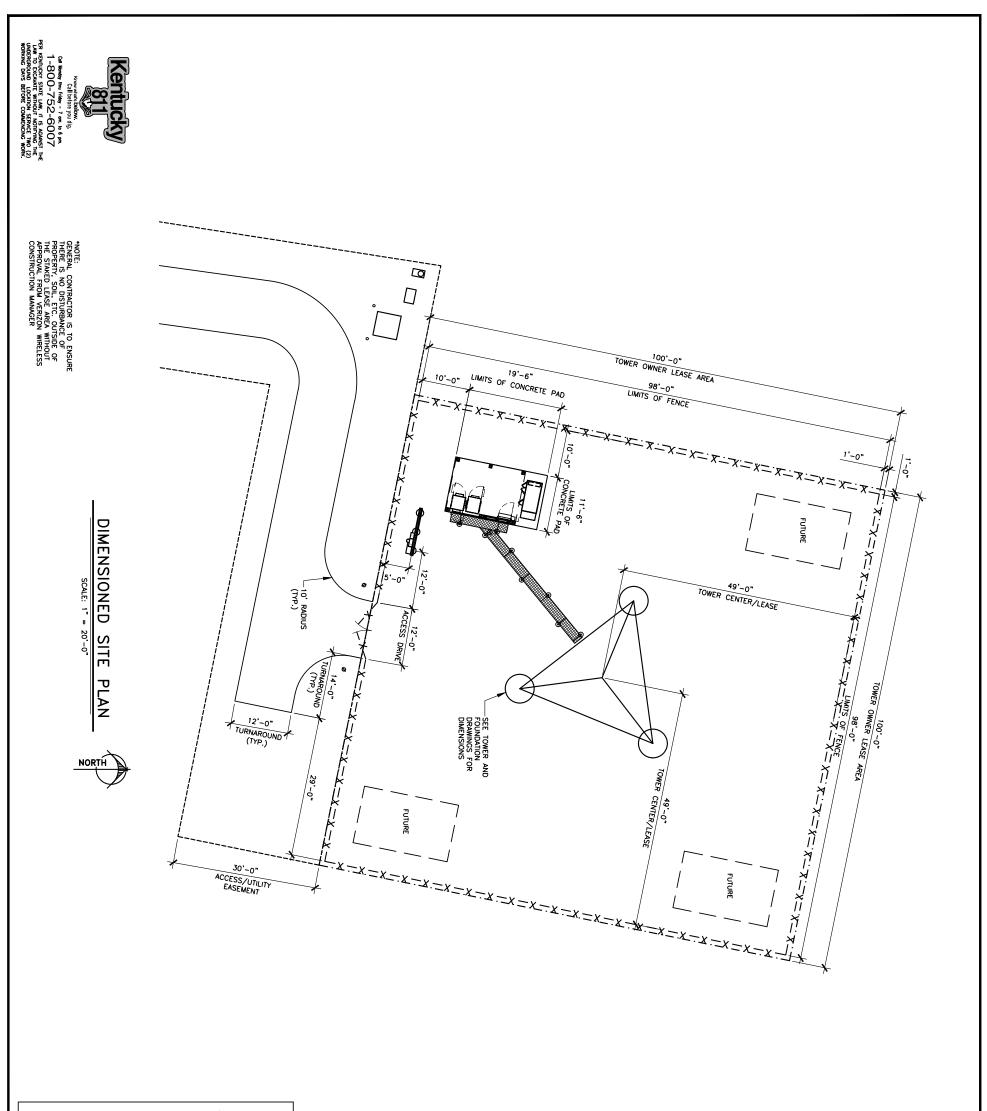




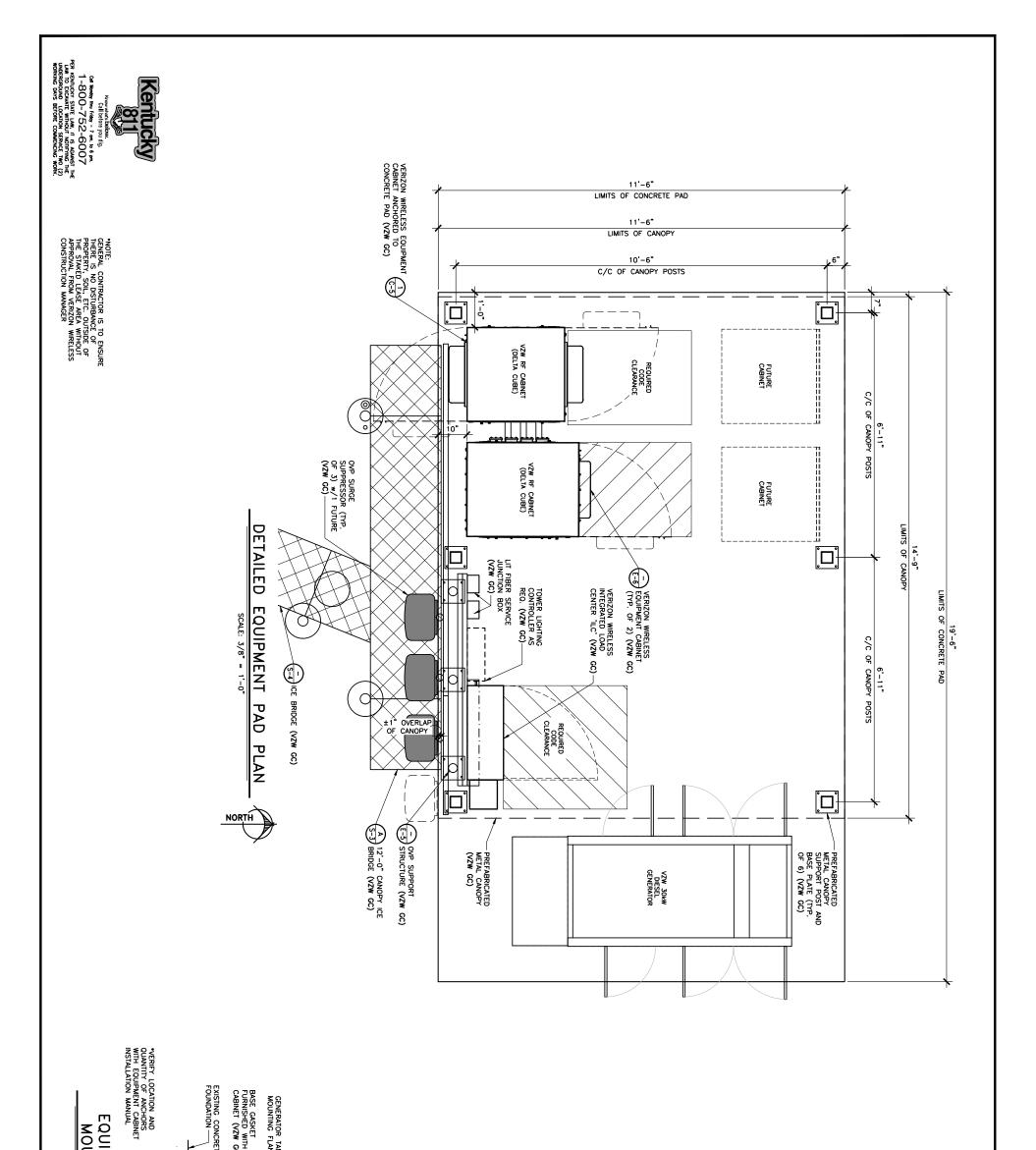
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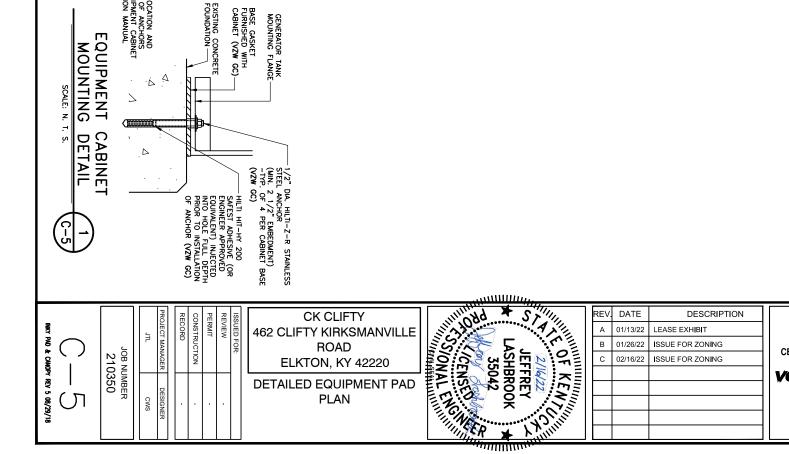


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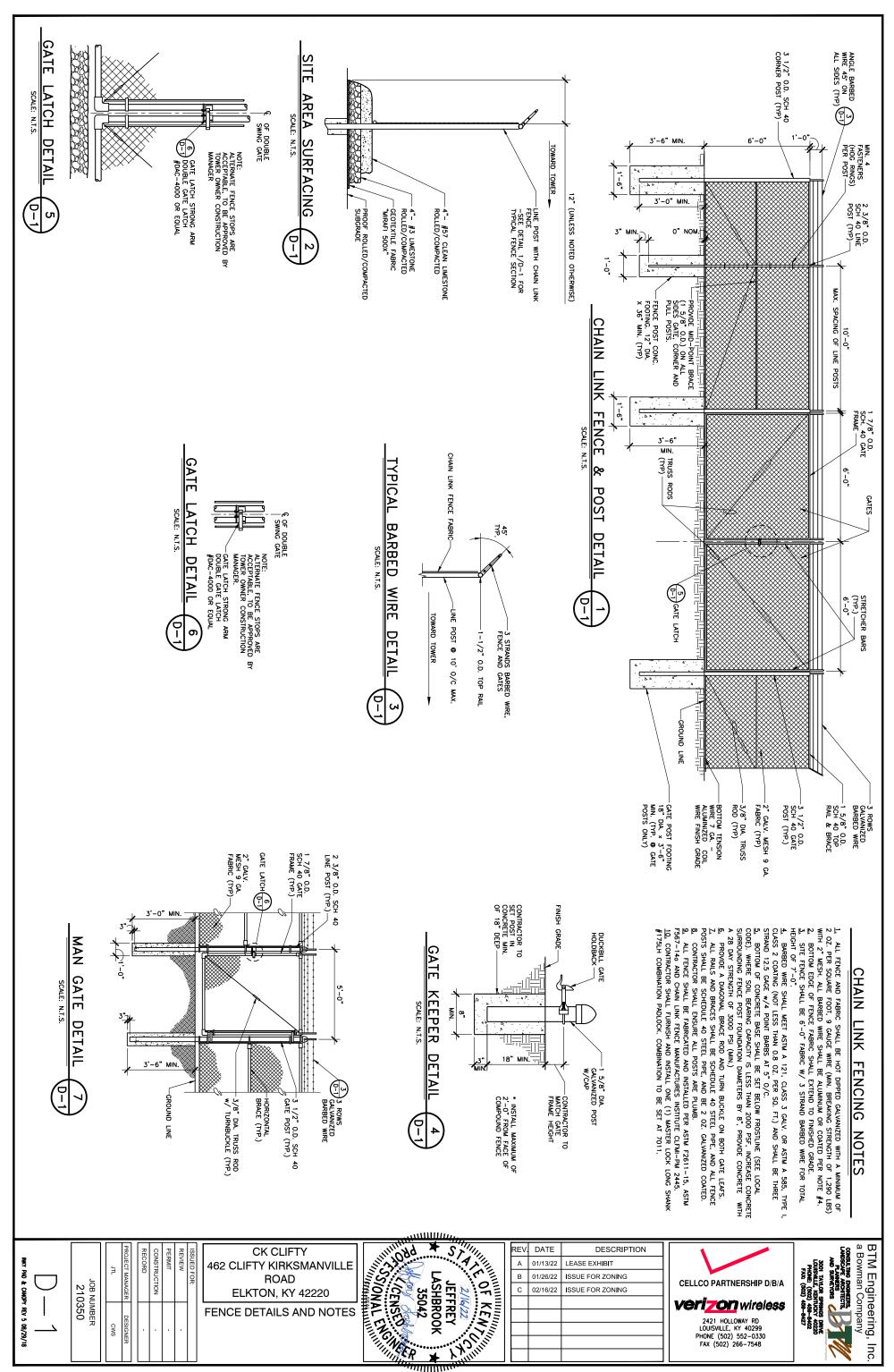
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INKY PAD & CANOPY REV 5 08/29/18	210350 C — 4		CK CLIFTY 52 CLIFTY KIRKSMAN ROAD ELKTON, KY 42220 DIMENSIONED SITE F	VILLE	REV DATE DESCRIPTI A 01/13/22 LEASE EXHIBIT B 01/26/22 ISSUE FOR ZONING C 02/16/22 ISSUE FOR ZONING I I I I I I I I I I I I I I I	ON CELLCO PARTNERSHIP D/B/A CELLCO PARTNERSHIP D/B/A Verizon wireless 2421 HOLLOWAY RD LOUISVILE, KY 40299 PHONE (502) 552-0330 FAX (502) 266-7548	BTM Engineering, Inc. a Bowman Company consume Bowmens was survey and a survey was survey and a survey was survey and a survey was survey and a survey mover (say) ven-ever rwy (say) ven-ever







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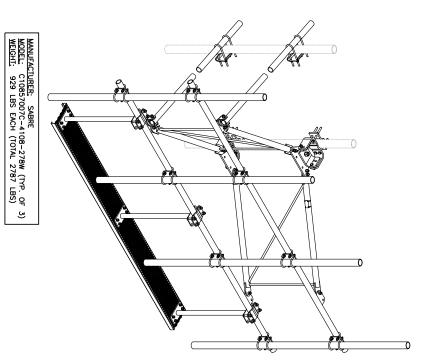


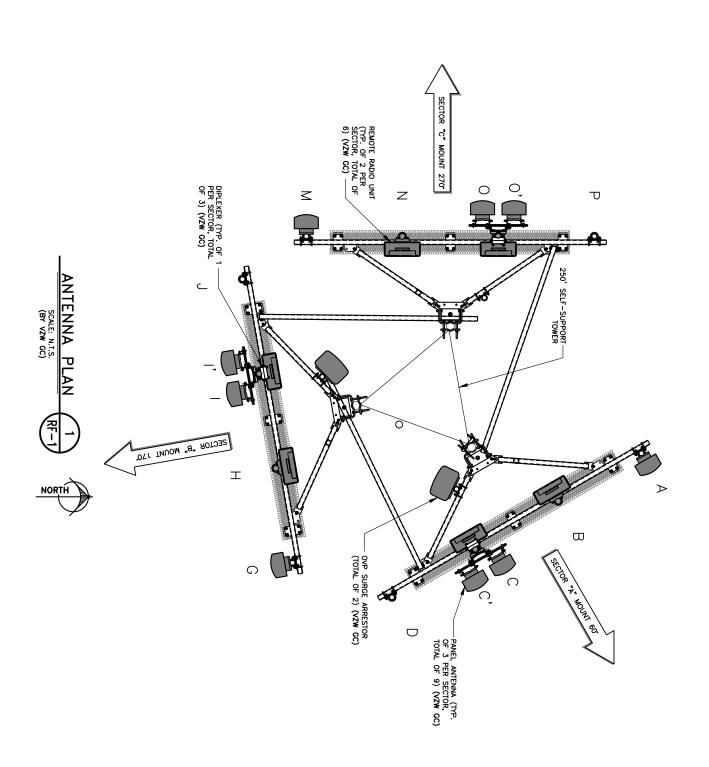
NOTE: ANTENNA INSTALLER SHALL UTILIZE VERIZON WIRE FINAL CONFIGURATION. SEE VERIZON WIRELESS CONSTRU

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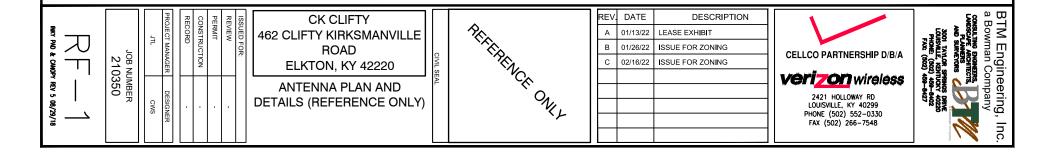


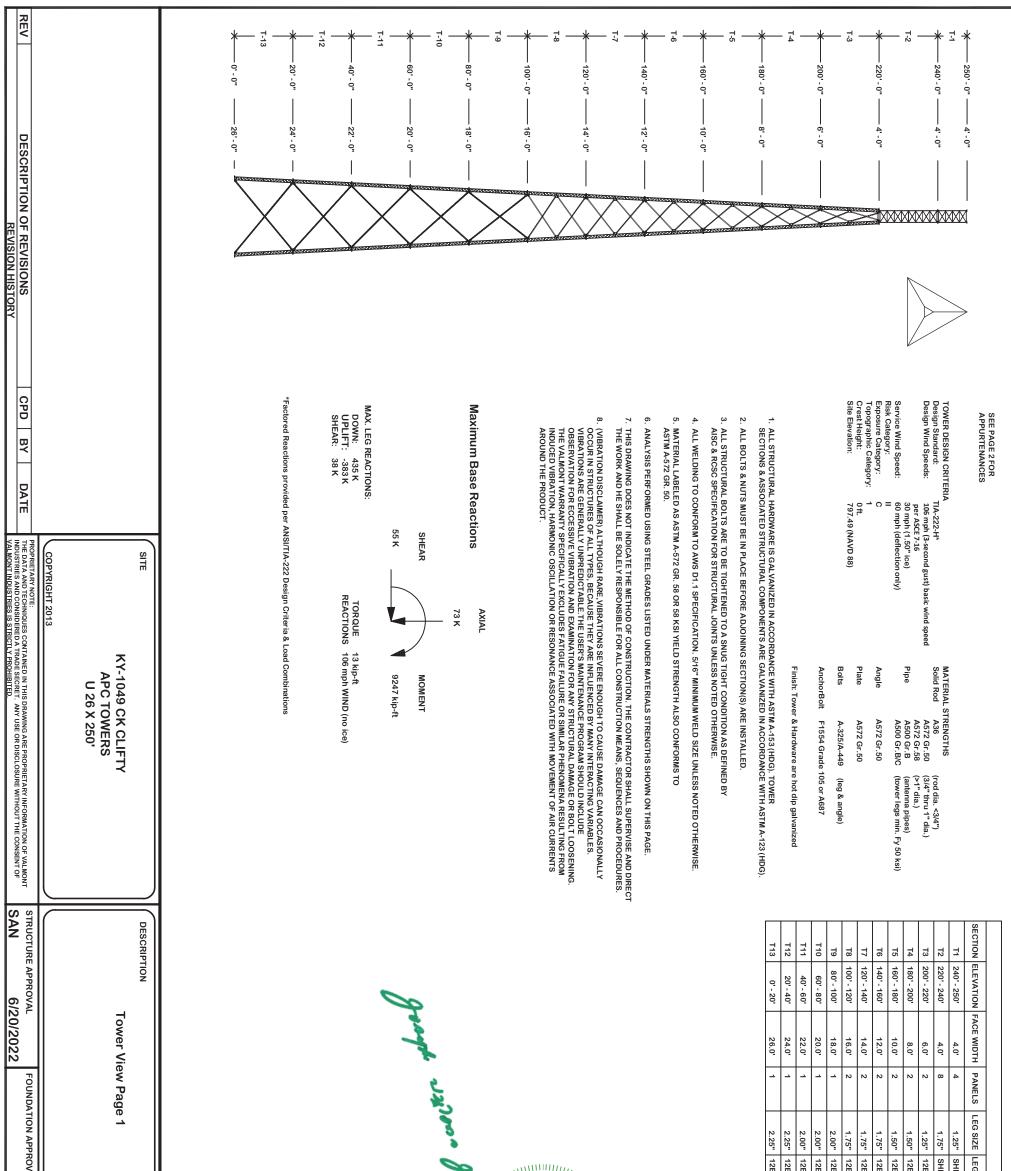


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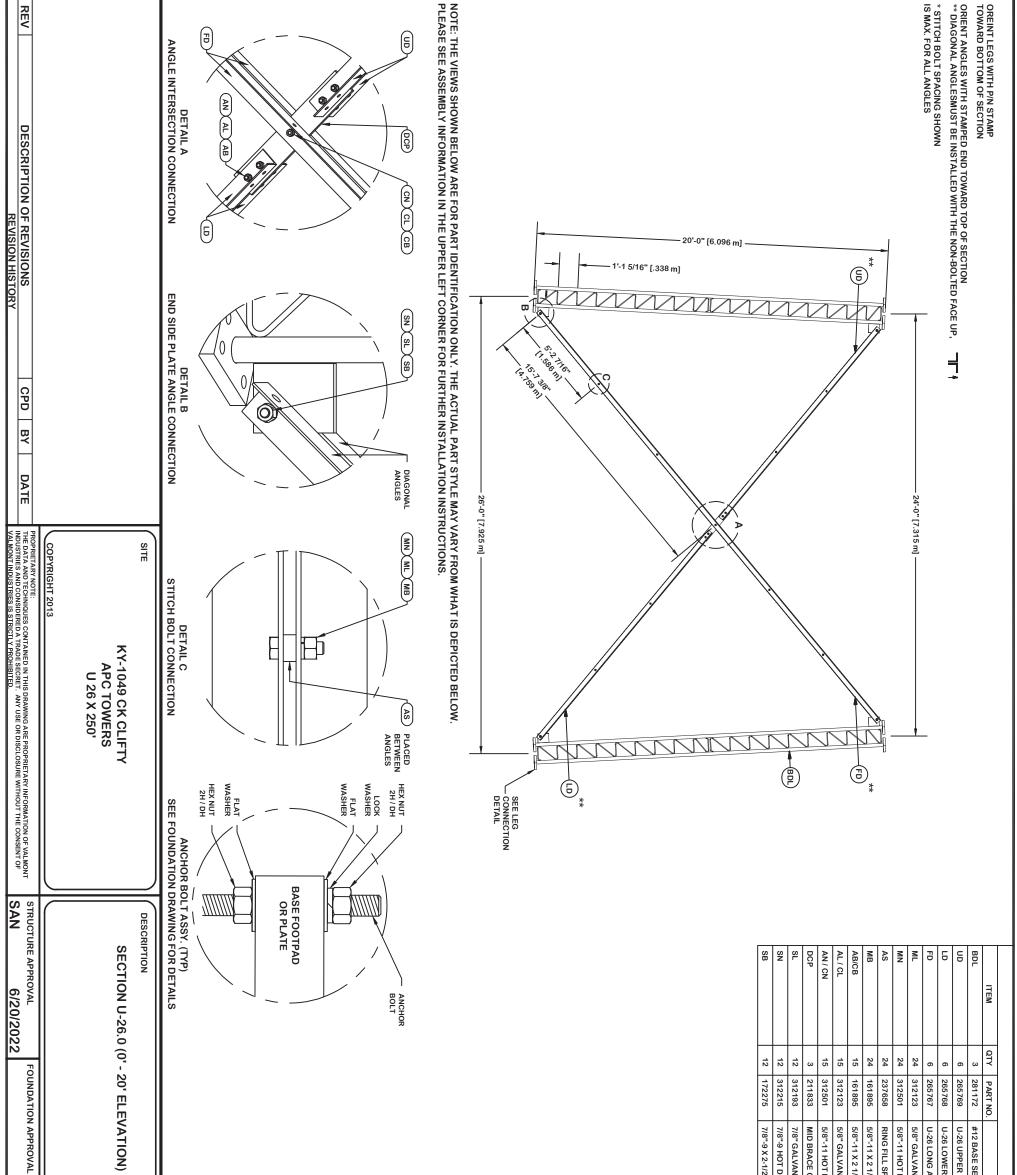
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	DESCRIPTION Tower View Page 2		

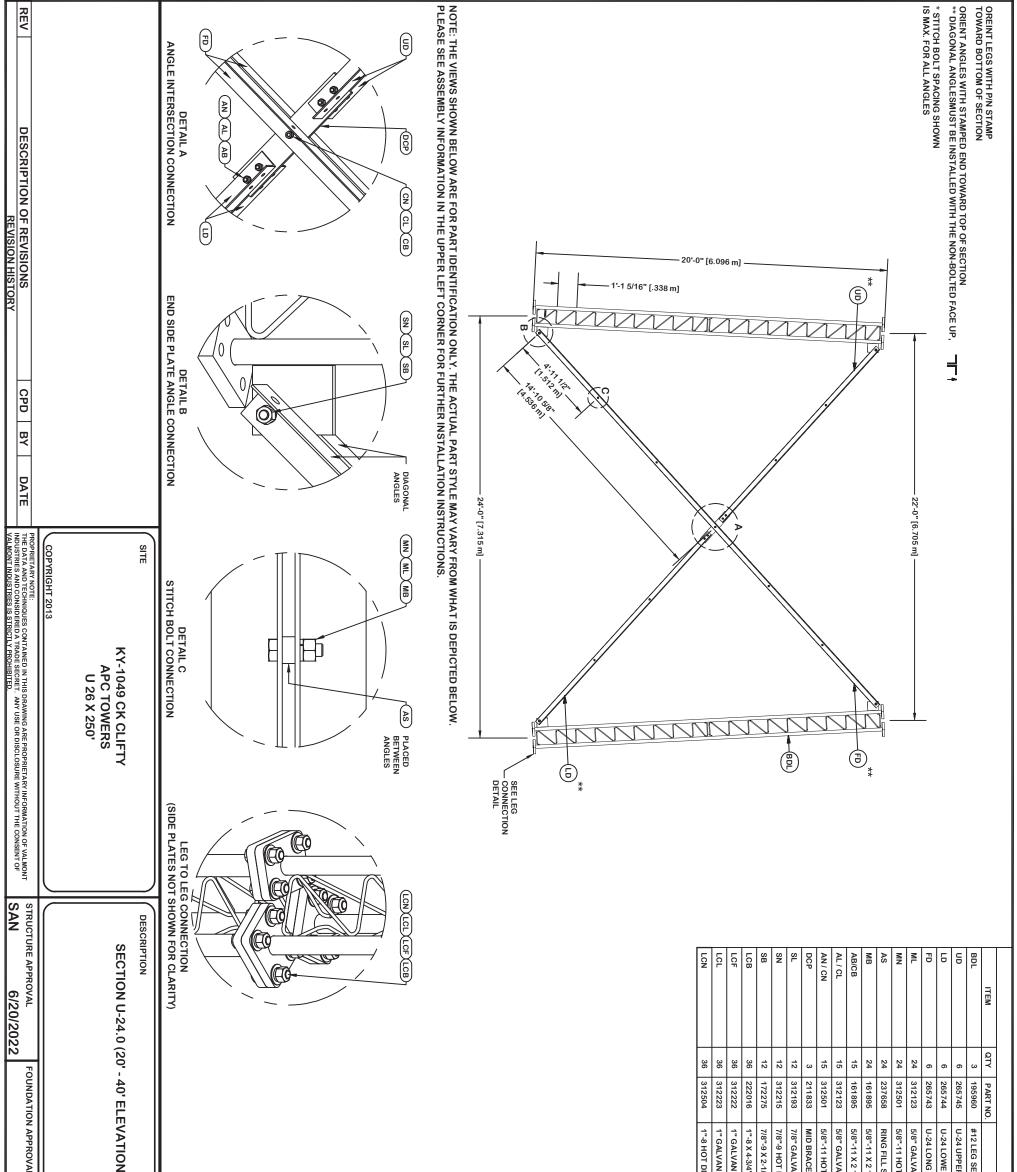
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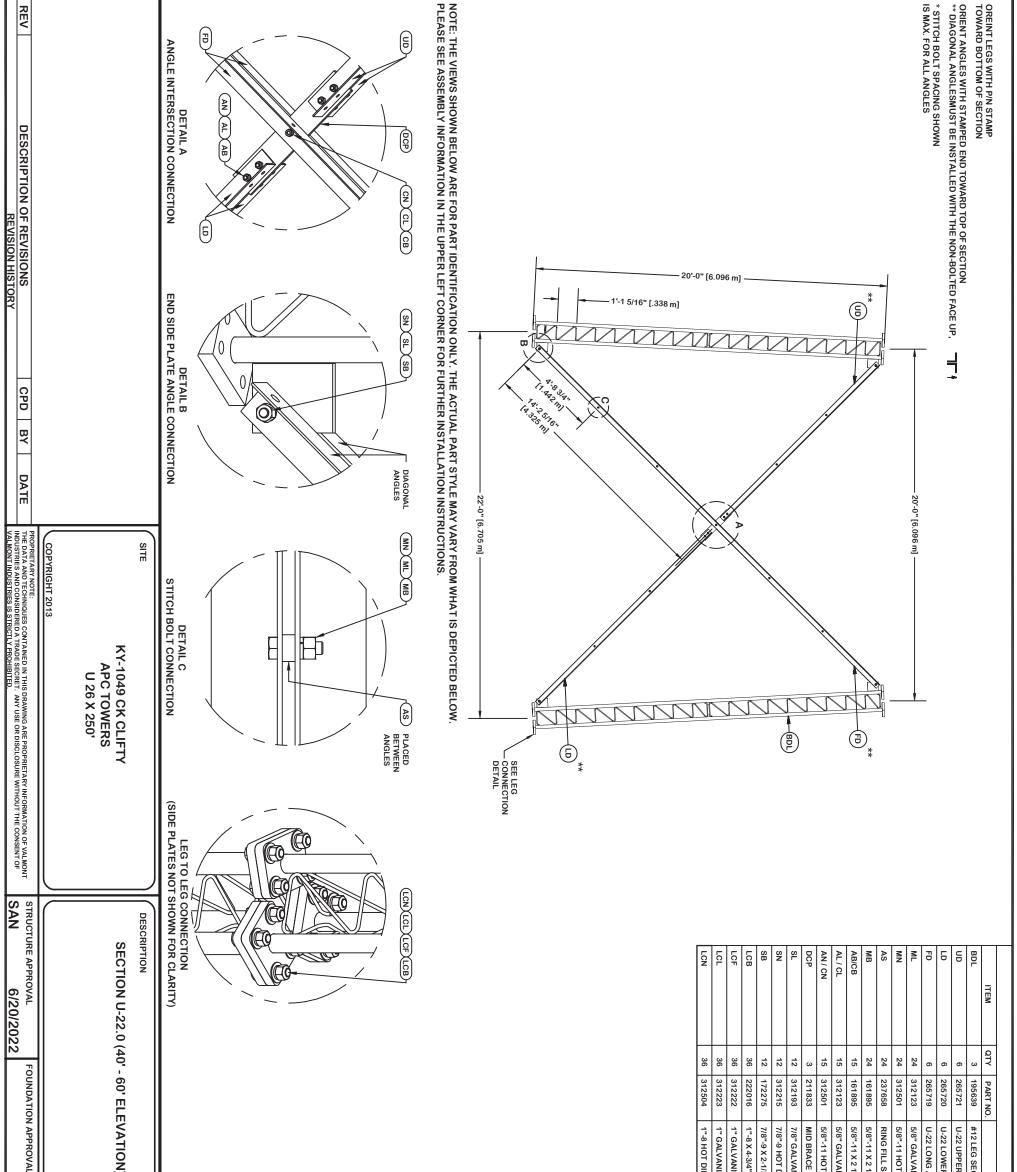
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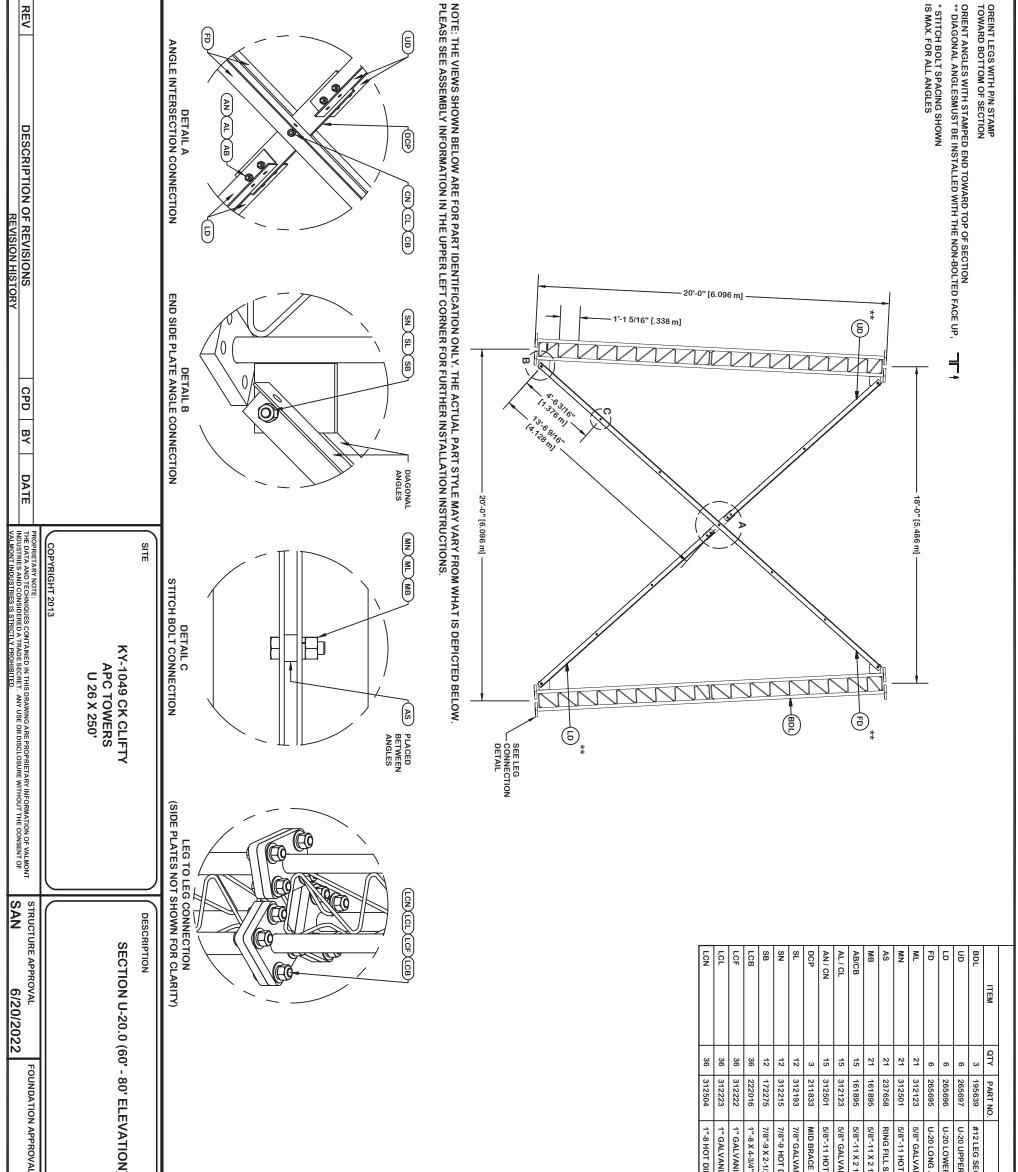
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RES		N) 1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR
B 83 knl	5085 4	Total Wt
3.60U 14.760	1.230	01 DIPPED GALVANIZED NUT 2-1/2" A-325 BOLT WITH 1-1/2" THREAD
3 600	0.050	
61.770	20.590	ACE CONNECTION PLATE FOR #12 B/D LEG ANGLES
1.800	0.120	DT DIPPED GALVANIZED NUT
3.900	0.260	X 2 1/4" A-325 BOLT 1 1/4" THREAD
6.240	0.260	X 2 1/4" A-325 BOLT 1 1/4" THREAD
2.160	0.090	LL SPACER 5/8" THICK 1.049" HOLE
0.480	0.020	LVANIZEU LUCKWASHER (53-22239) HOT DIPPED GALVANIZED NUT
706.800	117.800	NG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP
355.800	59.300	WER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA
326.700	54.450	PER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA
NET WT.	UNIT WT.	PART DESCRIPTION
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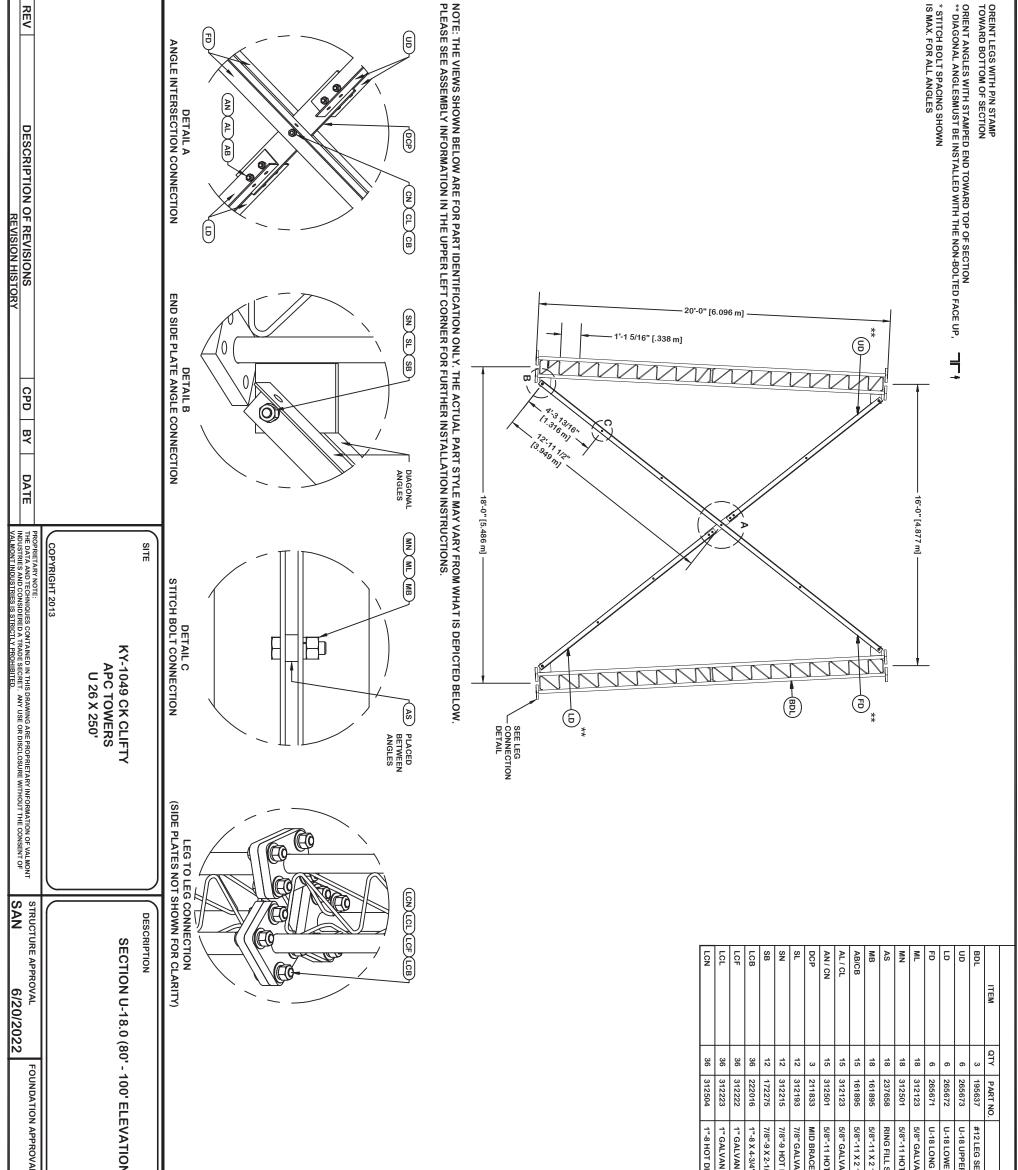
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е ч се		DWG. NO.	OVAL
A9 10 4		ENG. FILE NO. 553842	
URES		Valmo 1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR	ON)
6.37 kg]	4793.67 lb [2176.37 kg]	Total Wt	
2.880	0.080	VANIZED LOCKWASHER	VANIZED L
5.040	0.140	VANIZED FLAT WASHER (F436)	VANIZED F
49.680	1.380	-3/4" A-325 BOLT WITH 1-3/4" THREAD	1-3/4" A-32
3.600 14.760	1.230	101 DIFFED GALVANIZED NUT (2-1/2" A-325 BOLT WITH 1-1/2" THREAD	(2-1/2" A-3
3 600	0.050	ADT DIBBED GALVANIZED NIT	
61.770	20.590	ACE CONNECTION PLATE FOR #12 B/D LEG ANGLES	ACE CON
1.800	0.120	HOT DIPPED GALVANIZED NUT	HOT DIPP
3.900	0.260	X 2 1/4" A-325 BOLT 1 1/4" THREAD	X 2 1/4" A-
6.240	0.260	X 2 1/4" A-325 BOLT 1 1/4" THREAD	X 2 1/4" A-
2.160	0.090	ILL SPACER 5/8" THICK 1.049" HOLE	ILL SPACE
0.480	0.020	LUANIZED LUCKWASHER (03-22230) HOT DIPPED GALVANIZED NUT	HOT DIPP
671.460	111.910	ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	ONG ANGL
338.700	56.450	DWER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	OWER ANG
310.380	51.730	PPER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA	PPER ANG
3301.560	1100.520	3 SECTION - 2-1/4" LEG - 1/2" BRACE - 7/8" B	3 SECTION
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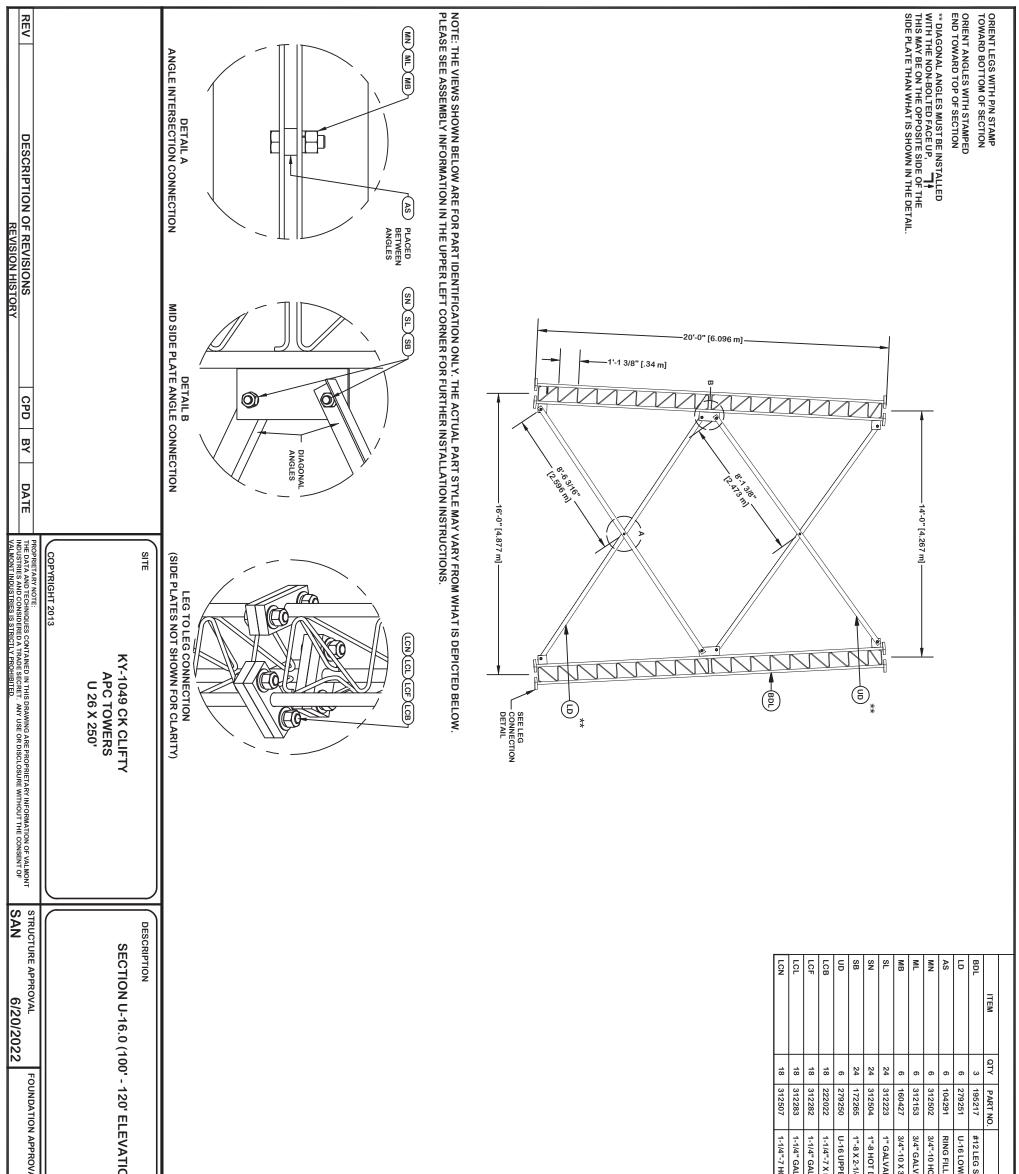
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S LIST AGE 7/8 'BOLT 4 928.920 FOR 20-0° LONG TA FOR 20-0° LONG TA 100 Z2 -0° LONG	RES		7-4763 47-215	(NC
S LIST UNIT WT. NI NI SCRIPTION 926.920 2 FOR 20-0" LONG TA 48.760 2 FOR 20-0" LONG TA 53.750 2 FOR 20-0" LONG TA 106.280 2 FOR 20-0" LONG TA 0.020 2 FOR 20-0" LONG TA 0.020 2 FOR 20-0" LONG TA 0.020 2 S2230) 0.020 0.020 3-22230) 0.0260 0.260 IT 0.020 0.020 IREAD 0.020 0.020 IREAD 0.020 0.120 IT 0.120 0.020 IT 0.050 0.050 IT 0.300 1.230 IT 0.300 1.230 IT 0.140 0.140 IT 0.040 0.040 IT 0.040 0.040 IT 0.040 0.040 IT 0.040 0.040 IT 0.040				
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UNITWT. N OLT 926.920 2 LONG TA 48.760 2 LONG TA 106.280 0.020 DNG TAP 0.020 0.120 SUGTA 0.260 0.260 SUGTA 0.020 0.260 SUGTA 0.020 0.260 SUGTA 0.020 0.120 SUGTA 0.020 0.120 SUGTA 0.020 0.120 SUGTA 0.020 0.120 SUGTA 0.120 0.120 SUGTA 0.120 0.120 SUGTA 0.0300 0.120 SUGTA 0.300 1.230	49.680	1.380	325 BOLT WITH 1-3/4" THREAD	3/4" A-325 BOL
LIST UNIT WT. NI NI SRIPTION 926.920 2 SE-7/8" BOLT 926.920 2 SR 20-0" LONG TA 48.760 2 DR 20-0" LONG TA 53.750 106.280 R 20-0" LONG TAP 106.280 0.020 R 20-0" LONG TAP 0.120 0.120 R 20-0" LONG TAP 0.120 0.260 R 20-0" LONG TAP 0.260 2 R 20-0" LONG TAP 0.260 2 R 20-0" LONG TAP 0.260 2 T 0.260 0.260 2 EAD 0.260 0.260 2 EAD 0.020 0.260 2 EAD 0.260 0.260 2 EAD 0.200 0.200 2 FT 0.020 0.200 0.2050 #12 B/D LEG ANGLES 0.050 0.300 0.300	14.760	1.230	4-325 BOLT WITH 1-1/2" THREAD	(2-1/2" A-325 BC
ISE CRIPTION UNIT WT. NI NI BRACE - 7/8" BOLT 926.920 2 IT FOR 20'-0" LONG TA 48.760 2 LT FOR 20'-0" LONG TA 53.750 106.280 LT FOR 20'-0" LONG TA 0.020 0.020 (53-22230) 0.120 0.120 NUT 0.260 0.260 THREAD 0.260 0.260 THREAD 0.020 0.120 NUT 0.120 0.260 THREAD 0.260 0.260 THREAD 0.260 0.260 THREAD 0.260 0.260 NUT 0.120 0.260 NUT 0.120 0.260	3.600	0.300	PED GALVANIZED NUT	OT DIPPED GAI
Image: Total and the state of the	0.600	20.590	ED LOCKWASHER	ACE CONNECTI
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T UNIT WT. NI ION 926.920 2 IO" LONG TA 48.760 2 IO" LONG TA 53.750 2 IO" LONG TA 106.280 2 IO" LONG TA 0.020 0 IOT LONG TA 0.020 0	0.300	0.020	ED LOCKWASHER (53-22230)	LVANIZED LOC
T I I I I I I I I	3.900	0.260	A-325 BOLT 1 1/4" THREAD	X 2 1/4" A-325 B
Image: Normal Strain	6.240	0.260	CER 5/8" THICK 1.049" HOLE A-325 BOLT 1 1/4" THREAD	ILL SPACER 5/8 X 2 1/4" A-325 B
- NI UNIT WT. NI "BOLT 926.920 2 0"LONG TA 48.760 0"LONG TA 53.750 "LONG TA 106.280 "LONG TAP 0.020	2.880	0.120		HOT DIPPED G/
PARTS LIST UNIT WT. NI PART DESCRIPTION UNIT WT. NI CTION - 2" LEG - 1/2" BRACE - 7/8" BOLT 926.920 2 CANGLE - SINGLE BOLT FOR 20'-0" LONG TA 48.760 48.760 R ANGLE - SINGLE BOLT FOR 20'-0" LONG TA 53.750 53.750 ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP 106.280 106.280	0.480	0.020	ED LOCKWASHER (53-22230)	LVANIZED LOC
UNITWT. NI 926.920 2 48.760 53.750	637.680	106.280	GLE - SINGLE BOLT FOR 20'-0" LONG TAP	DNG ANGLE - SI
UNITWT. N 926.920 2 48.760	322.500	53.750	NGLE - SINGLE BOLT FOR 20'-0" LONG TA	WER ANGLE - S
UNIT WT. N	2780.760	926.920 48.760	ON - 2" LEG - 1/2" BRACE - 7/8" BOLT JGLE - SINGLE BOLT FOR 20-0" LONG TA	PPER ANGLE - S
PARTS LIST	NET WT.	UNIT WT.	PART DESCRIPTION	
			PARTS LIST	



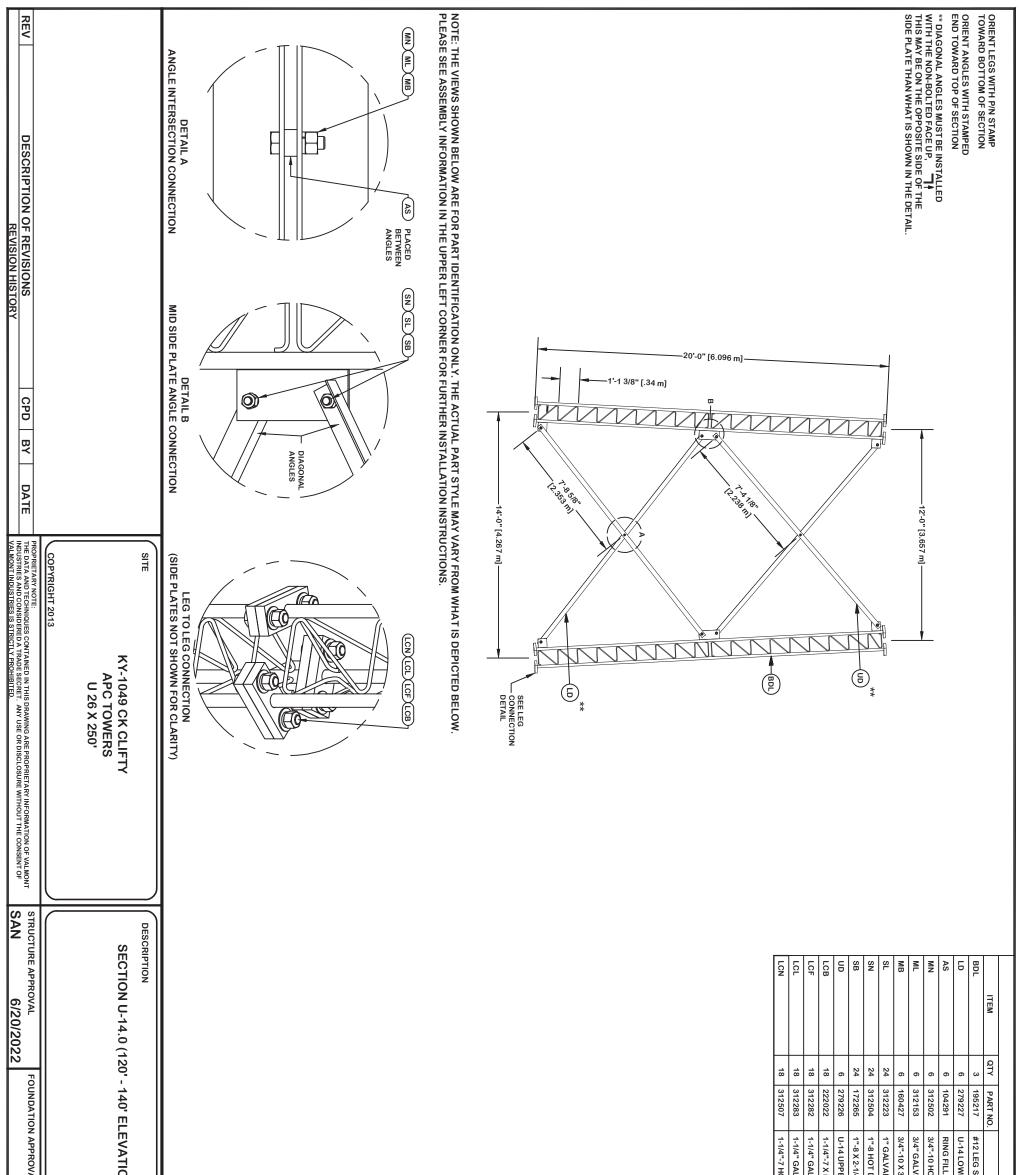
Instructor Partoscierion unitry Section 2: FLEG. Boart 2000 PREAMULE: SNOLE BOAT TOR 2007 LONG TA 6.00 2000 INFORMENCE: SNOLE BOAT TOR 2007 LONG TA 6.00 2000 INFORMENCE: SNOLE BOAT TOR 2007 LONG TA 6.00 2000 INFORMED CONVINATED INFOR 1000 0.00 0.00 INFORMED CONVINATED INFORMATION 0.00 0.00 0.00 INFORMED CONVINATED INFORMATION 1.00 0.00 0.00 INFORMED CONVINTED INFORMATION 1.00 0.00 0.00 INFORMED CONVINTED INFORMATION 1.00 0.00 0.00 0.00 INFORMATION INFORMATION 1.00 0.00 0.00 0.00 INFORED CONVINTED INFORMATION	FOR 201 96.800 45.800 45.800 67.800 45.800 67.800 45.800 67.800	17-4763 Ply 147-2151 S.
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Scentrion UNIT WT. N FOR 2010 TA 45.800 45.800 76.800<	FOR 2-10"LONG TA 45.630 45.930 45.	
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UNIT WT. N 926.920 ; 45.630 ; 110.930 ; 0.020 ; 0.120 ; 0.260 ; 0.260 ; 0.260 ; 0.260 ; 0.260 ; 0.220	926,920 45,630 51.240 0.020 0.120 0.260 0.260 0.260 0.260 0.260 0.220 0.220	VANIZED LOCKWASHED
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ON UNITWT. N "BOLT 926.920 2 0"LONG TA 45.630 2 -0" LONG TA 51.240 51.240 -0" LONG TA 100.930 2	"BOLT 926.920 2 0"LONG TA 45.630 2 -0"LONG TA 51.240 2 "LONG TA 100.930 2	HOT DIPPED GALVANIZED NUT
PART DESCRIPTION UNITWT. N "LEG - 1/2" BRACE - 7/8" BOLT 926.920 2 - SINGLE BOLT FOR 20'-0" LONG TA 45.630 2 - SINGLE BOLT FOR 20'-0" LONG TA 51.240 51.240	926,920 4 45,630 51,240	DNG ANGLE - SINGLE BOLT FOR 20-0" LONG TAP
UNITWT. N 926.920 2 45.630	926.920 2 45.630	WER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA
UNITWT. N		SECTION - 2" LEG - 1/2" BRACE - 7/8" BOLT PER ANGLE - SINGLE BOLT FOR 20'-0" LONG TA
	UNITWT. N	PART DESCRIPTION



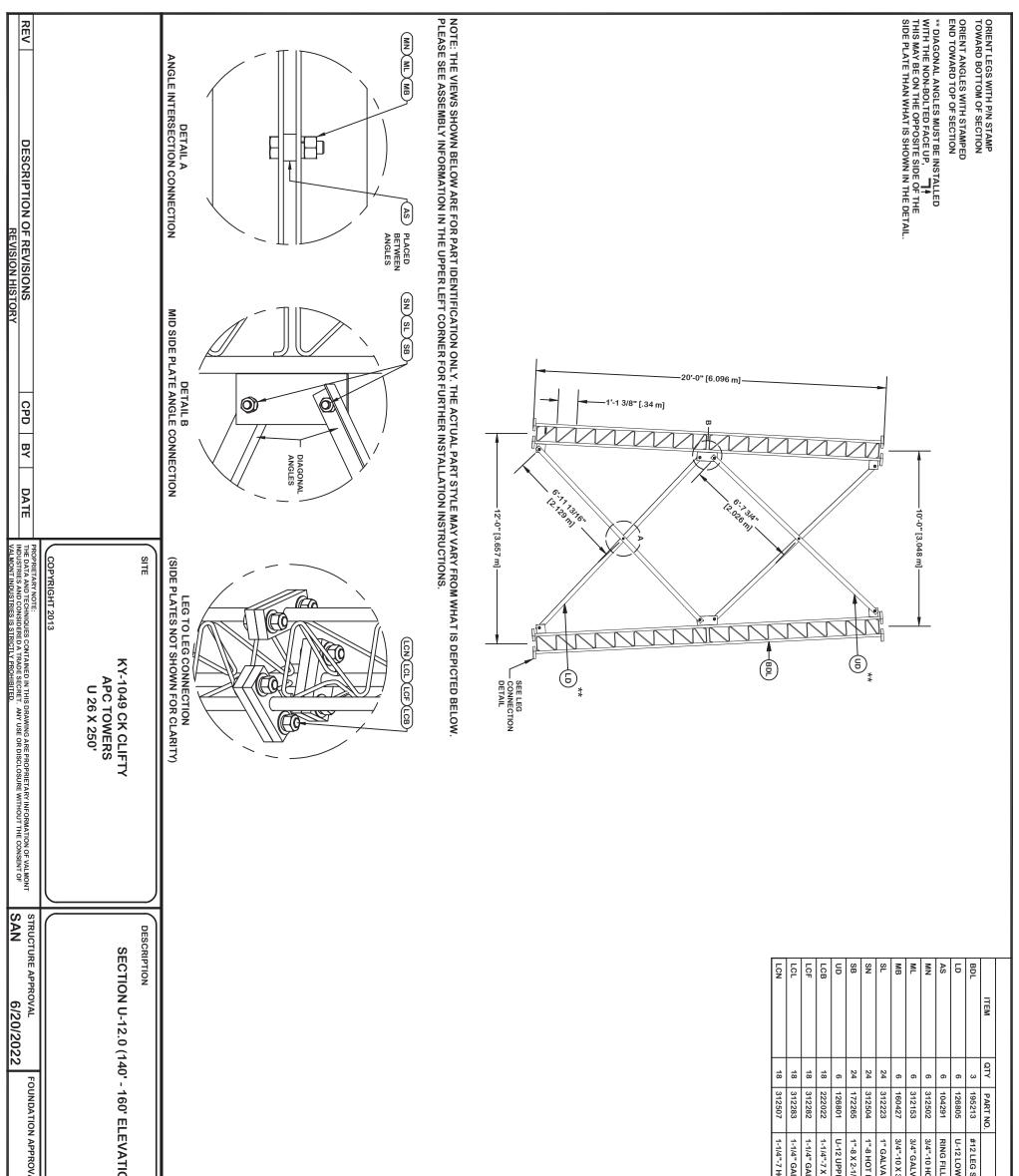
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S LIST UNITWT. NET SCRIPTION 906.870 27. EGG.1/2" BRACE 906.870 27. FOR 20-0" LONG TA 35.510 2 FOR 20-0" LONG TAP 79.370 4 3-22230) 0.020 0.020 UT 0.120 0.020 UT 0.260 0.260 UT 0.260 0.260 IREAD 0.260 0.260 READ 0.260 0.260 IREAD 0.020 0.020 IT 0.120 0.050 IT 0.300 1.230 - IT 0.300 1.230 - IT 0.040 0.040 - IT				
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UNITWT. NET RACE 906.870 27 ONG TA 35.510 2 LONG TA 40.500 2 NG TAP 0.020 0.120 JUG TAP 0.260 0.260 LONG TAP 0.120 0.260 JUG TAP 0.120 0.260 LONG TAP 0.120 0.260 LONG TAP 0.120 0.120 LG ANGLES 20.590 0 LG ANGLES 1.230 LG ANGLES 0.120 0.120 LG ANGLES 0.050	15.480	0.430	DIPPED GALVANIZED NUT	TOTA
UNITWT. NET RACE 906.870 27. ONG TA 35.510 2 LONG TA 79.370 4 MG TAP 0.020 0.120 JNG TAP 0.260 0.260 LONG TA 0.260 0.260 JNG TAP 0.260 0.260 LONG TA 0.200 0.200 LEG ANGLES 20.590 0 JUNG TA 1.230 1.230 LING TA 1.380 1.380	5.040	0.140	ANIZED FLAT WASHER (F436)	
UNITWT. NET RACE 906.870 27 ONG TA 35.510 2 LONG TA 40.500 2 NG TAP 0.020 2 JUG TAP 0.120 0.120 SUG TAP 0.090 0.260 JUG TAP 0.120 0.260 JUG TAP 0.020 0.260 JUG TAP 0.120 0.260 JUG TAP 0.020 0.260 JUG TAP 0.120 0.120 JUG TAP 0.120 0.120 JUG ANGLES 0.050 0 JUG ANGLES 0.120 0 JUG ANGLES 0.120 0 JUG ANGLES 0.120 0	49.680	1.380	3/4" A-325 BOLT WITH 1-3/4" THREAD	1-3/4
LIST UNITWT. NET Carpertion UNITWT. NET EG - 1/2" BRACE 906.870 27. EG - 1/2" DRACE 906.870 27. Carperion Cong TA 35.510 2 DR 20-0" LONG TA 40.500 2 Carperion Cong TA 0.020 2 R 20-0" LONG TA 0.020 2 P 20230) 0.120 0.120 P Cong TA 0.260 2 P EAD 0.260 2 P EAD 0.120 2 P EAD 0.120 2 P EAD 0.120 2 P EAD 0.120 2 2 P EAD 0.120 1 P EAD 0.120	3.000 14.760	1.230	2-1/2" A-325 BOLT WITH 1-1/2" THREAD	2
RTS LIST UNIT WT. NET DESCRIPTION UNIT WT. NET SLEG - 1/2" BRACE 906.870 27. LT FOR 20-0" LONG TA 40.500 2 LT FOR 20-0" LONG TA 79.370 4 (53-22230) 0.020 0.020 NUT 0.120 0.900 HFRAD 0.260 1 THREAD 0.220 1 1HREAD 0.260 1 10.427230) 0.020 0.260 10.53-22230) 0.020 0.260 THREAD 0.260 1 THREAD 0.260 1 DS-22230) 0.020 0.260 THREAD 0.260 1 THREAD 0.260 1 FOR #12 B/D LEG ANGLES 20.590 0	0.600	0.050	VANIZED LOCKWASHER	ġ €
Image: F UNITWT. NET 2" BRACE 906.870 272 0" LONG TA 35.510 22 -0" LONG TA 40.500 22 "LONG TA 0.120 24 -10" LONG TA 0.120 41 -10" LONG TA 0.120 0.120 -10" LONG TA 0.260 0.260 -10" LONG TA 0.260 0.260 0.020 0.260 0.260 0.020 0.260 0.220 0.120 0.120 0.120	61.770	20.590	FOR #12 B/D LEG	ACE
Image: Constraint of the system of	1.800	0.120	OT DIPPED GALVANIZED NUT	F
T UNITWT. NET ION 906.870 27.27 0"LONG TA 35.510 27 -0"LONG TA 40.500 20 0"LONG TA 0.020 20 0"LONG TA 0.120 0.120 0.100 TAP 0.260 0.260	0.300	0.020	VANIZED LOCKWASHER (53-22230)	Ň
T UNITWT. NET ION 996.870 272 2" BRACE 996.870 272 -0" LONG TA 35.510 22 -0" LONG TA 40.500 24 -0" LONG TA 0.020 24 0" LONG TA 0.120 41 0" LONG TA 0.120 0.120	4.680	0.260	2 1/4" A-325 BOLT 1 1/4" THREAD 2 1/4" A-325 BOLT 1 1/4" THREAD	× ×
T UNITWT. NET ION 906.870 27. 2" BRACE 906.870 27. -0" LONG TA 35.510 21. -0" LONG TA 40.500 22. "O" LONG TA 79.370 43. 0 0.020 0.120	1.620	0.090	L SPACER 5/8" THICK 1.049" HOLE	ŚĒ
- UNITWT. NET ON UNITWT. NET 906.870 277 0° LONG TA 35.510 27 -0° LONG TA 40.500 22 -0° LONG TA 79.370 41 LONG TAP 0.020	2.160	0.120	OT DIPPED GALVANIZED NUT	F
UNITWT. N 906.870 2 35.510 40.500 79.370	0.360	0.020	VANIZED LOCKWASHER (53-22230)	Ĭ
PARTS LIST PART DESCRIPTION UNIT WT. N 1-3/4" TRANS LEG - 1/2" BRACE 906.870 2 SINGLE BOLT FOR 20-0" LONG TA 35.510 35.510	476.220	79.370	VG ANGLE - SINGLE BOLT FOR 20'-0" LONG TAP	NG
UNITWT. NS 906.870 2	213.060	40.500		
UNIT WT.	2720.610	906.870	SECT - 2" TO 1-3/4" TRANS LEG - 1/2" BRACE	GSE
PARTS LIST	NET WT.	UNIT WT.	PART DESCRIPTION	
			PARTS LIST	



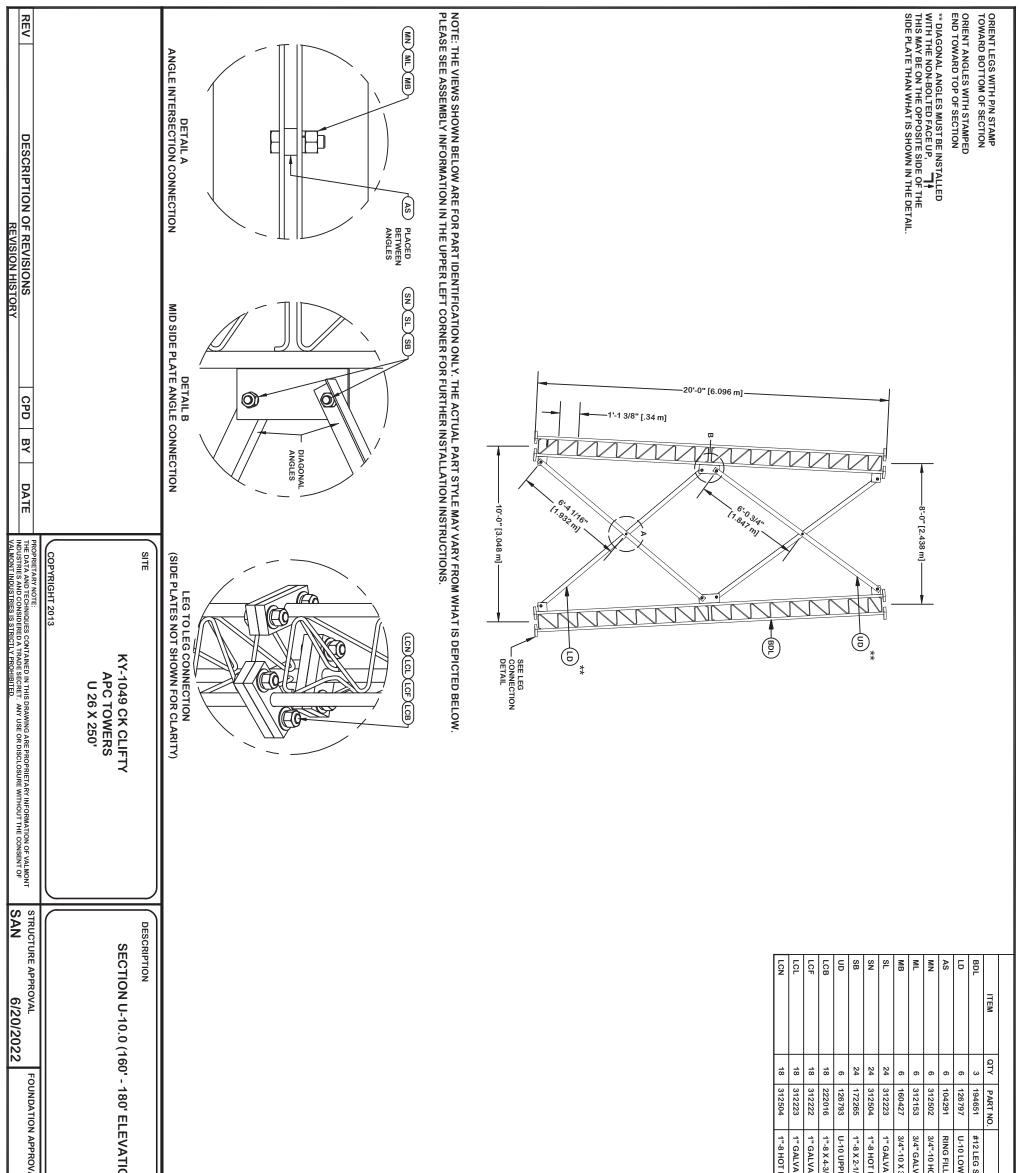
ב ופ פנ	1	
A9 10 8		ENG. FILE NO. 553842
RES		ION) 1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR
.15 kal	3183.0	Total Wt
2.700	0.150	ALVANIZED LOCKWASHER
2.340	0.130	ALVANIZED FLAT WASHER (F436)
45.540	2.530	X 5-1/2" A-325 BOLT WITH 2" THREAD
20.160	0.840	-1/4" A-325 BOLT WITH 1-3/4" THREAD PER DIAGONAL - 2 1/2" x 2 1/2" x 1/4" ANGLE
10.320	0.430	T DIPPED GALVANIZED NUT
1.920	0.080	ANIZED LOCKWASHER
0.180	0.030	LVANIZED LOCKWASHER X 3" A-325T BOLT WITH FULL THREAD
1.140	0.190	HOT DIPPED GALVANIZED NUT
0.420	0.070	LL SPACER 1/2" THICK 1.049" HOLE
2240.130 431.700	746.710	3 SECTION - 1-3/4" LEG - 1/2" BRACE - 1" BOL WER DIAGONAL - 2 1/2" x 2 1/2" x 1/4" ANGLE
NET WT.	UNIT WT.	PART DESCRIPTION
		PARTS LIST



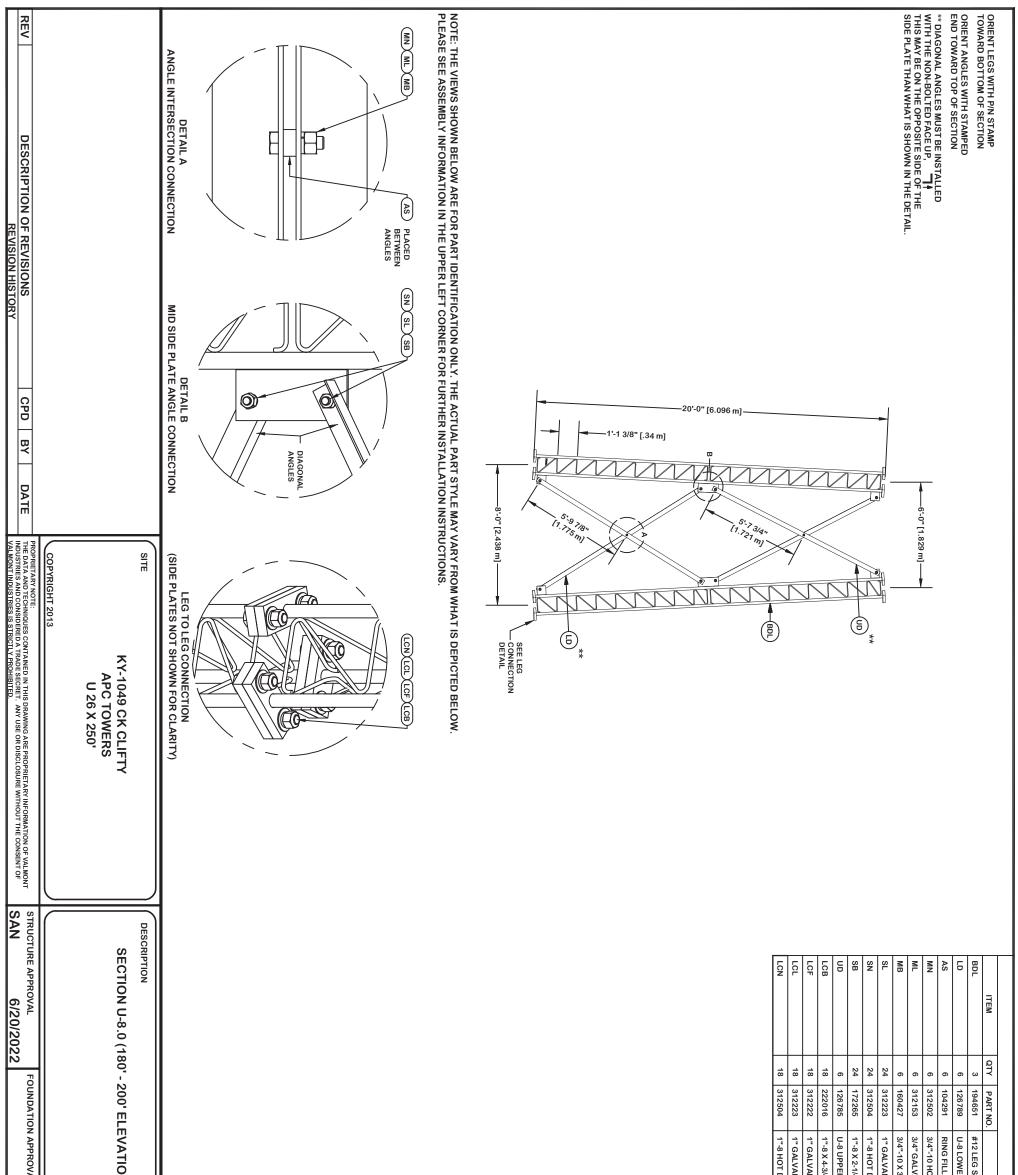
9	293342T	
IE J ∀GE		VAL DWG. NO.
0 6 ∀d	553842	ENG. FILE NO. 553
RES		ION) 1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR
7.83 kg]	Total Wt 3100.89 lb [1407.83 kg]	
13.140	0.730	HOT DIPPED GALVANIZED NUT
2.340	0.130	ALVANIZED FLAT WASHER (F436)
45.540	2.530	X 5-1/2" A-325 BOLT WITH 2" THREAD
370.080	61.680	PPER DIAGONAL - 2 1/2" x 2 1/2" x 1/4" ANGLE
20 160	0.430	T DIPPED GALVANIZED NUT
1.920	0.080	/ANIZED LOCKWASHER
2.820	0.470	X 3" A-325T BOLT WITH FULL THREAD
0.180	0.030	HOT UIFFEU GALVANIZEU NOT
0.420	0.070	LL SPACER 1/2" THICK 1.049" HOLE
390.000	65.000	WER DIAGONAL - 2 1/2" x 2 1/2" x 1/4" ANGLE
2240.130	746.710	3 SECTION - 1-3/4" LEG - 1/2" BRACE - 1" BOL
NET WT.		PART DESCRIPTION
		DADTO - 10T



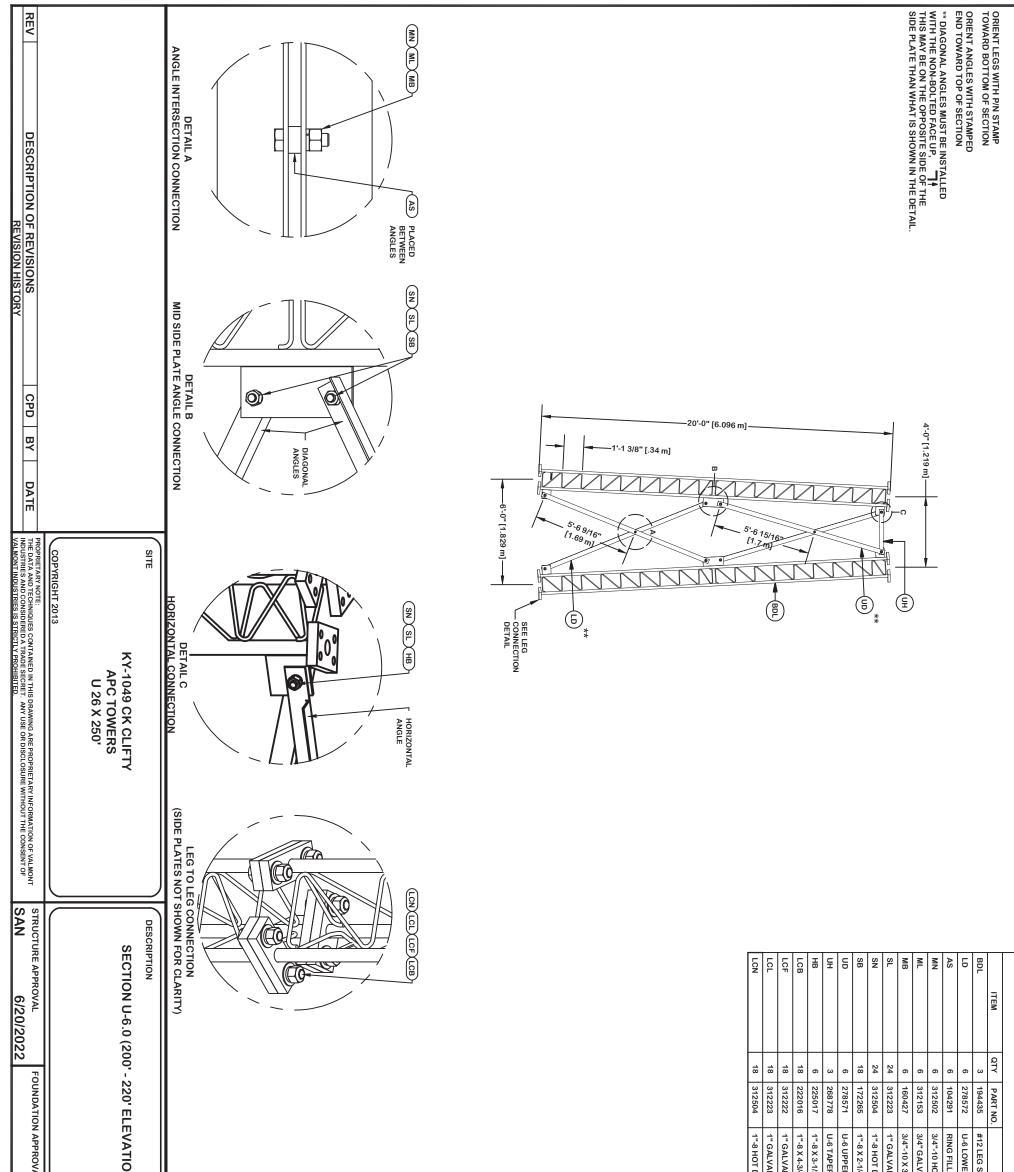
<u>c</u>	1 240062	
		WAL
0 0 PAG	ENG. FILE NO. 553842	
RES	1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR STRUCTURES	ION)
9.96 kg]	Total Wt 2841.2	
13.140	HOT DIPPED GALVANIZED NUT 0.730	HOT DIPP
2.340	(F436)	ALVANIZE
45.540	X 5-1/2" A-325 BOLT WITH 2" THREAD 2.530	X 5-1/2" A-
253.500	ANGL	PER DIAG
10.320	T DIPPED GALVANIZED NUT 0.430 0.840 0.840	T DIPPED (-1/4" A-325
1.920		ANIZED L
2.820	JLL THREAD	X 3" A-325
1.140	HOT DIPPED GALVANIZED NUT 0.190 0.190	HOT DIPPE
0.420		LL SPACEF
267.420	6" ANGL	WER DIAG
NET WT. 2219.670	-3/4" TO 1-1/2" TRANS LEG - 1/2" B 739.890	SECT - 1-



	DWG. NO. 293342T	VAL
049 0666	ENG. FILE NO. 553842	
RES	1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR STRUCTURES	ION)
7.24 kg]	Total Wt 2350.7	
7.740	T DIPPED GALVANIZED NUT 0.430	T DIPPED G
2.520	(F436)	ANIZED FL
24.840		-3/4" A-325
228.300	ANGL	PER DIAGO
10.320	T DIPPED GALVANIZED NUT 0.430 0.430 0.840	T DIPPED 0
1.920		ANIZED LO
2.820	JLL THREAD	X 3" A-325T
1.140	VANIZED LOCKWASHER 0.030	HOT DIPPE
0.420		LL SPACER
240.420	16" ANGL	WER DIAG
1808.490	SECTION - 1-1/2" LEG - 1/2" BRACE - 1" BOL 602.830	SECTION
NET WT		



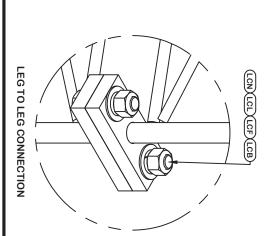
			VAL
A9 0 2 1		ENG.	
RES			ON)
17.38 kg]	2306.97 lb [1047.38 kg]	Total Wt	
1.440 7.740	0.080	T DIPPED GALVANIZED NUT	T DIP
2.520	0.140	IZED FLAT WASHER (F436)	ANIZ
24.840	1.380	-3/4" A-325 BOLT WITH 1-3/4" THREAD	-3/4" /
20.160	0.840	-1/4" A-325 BOLT WITH 1-3/4" THREAD 5FR DIAGONAL - 2 1/2" x 2 1/2" x 3/16" ANGLE	-1/4" /
10.320	0.430	T DIPPED GALVANIZED NUT	TDIP
1 920	0.080	A3 A-3231 BUCI WITH FULL INREAU JANIZEDI OCKWASHER	A S A
0.180	0.030	LVANIZED LOCKWASHER	LVAN
1.140	0.190	HOT DIPPED GALVANIZED NUT	НОТ [
0.420	0.070	LL SPACER 1/2" THICK 1.049" HOLE	LL SP
1808.490	602.830 36.220	3 SECTION - 1-1/2" LEG - 1/2" BRACE - 1" BOL VER DIAGONAL - 2 1/2" × 2 1/2" × 3/16" ANGLE	SEC
NET WT.	UNIT WT.	PART DESCRIPTION	
		PARTS LIST	

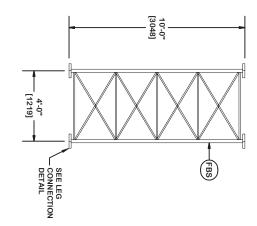


9		2933421	
	1	DWG. NO.	OVAL
A9 0 81	2	ENG. FILE NO. 553842	
RES		Valm 1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR	ION)
2.91 kg]	Wt 2231.04 lb [1012.91 kg]	Total Wt	
7.740	0.430	JT DIPPED GALVANIZED NUT	T DIPP
2.520	0.140	VANIZED FLAT WASHER (F438) VANIZED LOCKWASHER	VANIZE
24.840	1.380	-325 BOLT WITH 1-3/4" THREAD	1-3/4" A
6.540	1.090	-1/2" A-325T BOLT WITH FULL THREAD	3-1/2" A
24.870	8.290	UPPER HORIZONTAL ANGLE (TYPE 1) - 3" x	PERED
253.200	42.200	PER DIAGONAL - 2 1/2" x 2 1/2" x 1/4" ANGLE	PER DI/
10.320	0.430	2-1/4" A-325 BOLT WITH 1-3/4" THREAD	2-1/4" A
1.920	0.080	VANIZED LOCKWASHER	VANIZE
2.820	0.470	X 3" A-325T BOLT WITH FULL THREAD	X 3" A-:
0.180	0.030	ZED LOCKWASHER	LVANIZ
0.420	0.070	ILL SPACER 1/2" THICK 1.049" HOLE	
261.720	43.620	AGONAL - 2 1/2" x 2 1/2" x 1/4" ANGLE	WER DI
1616.250	538.750	3 SECTION - 1-1/4" LEG - 5/8" BRACE - 1" BOL	G SECT
NET WT.	UNIT WT.	PART DESCRIPTION	

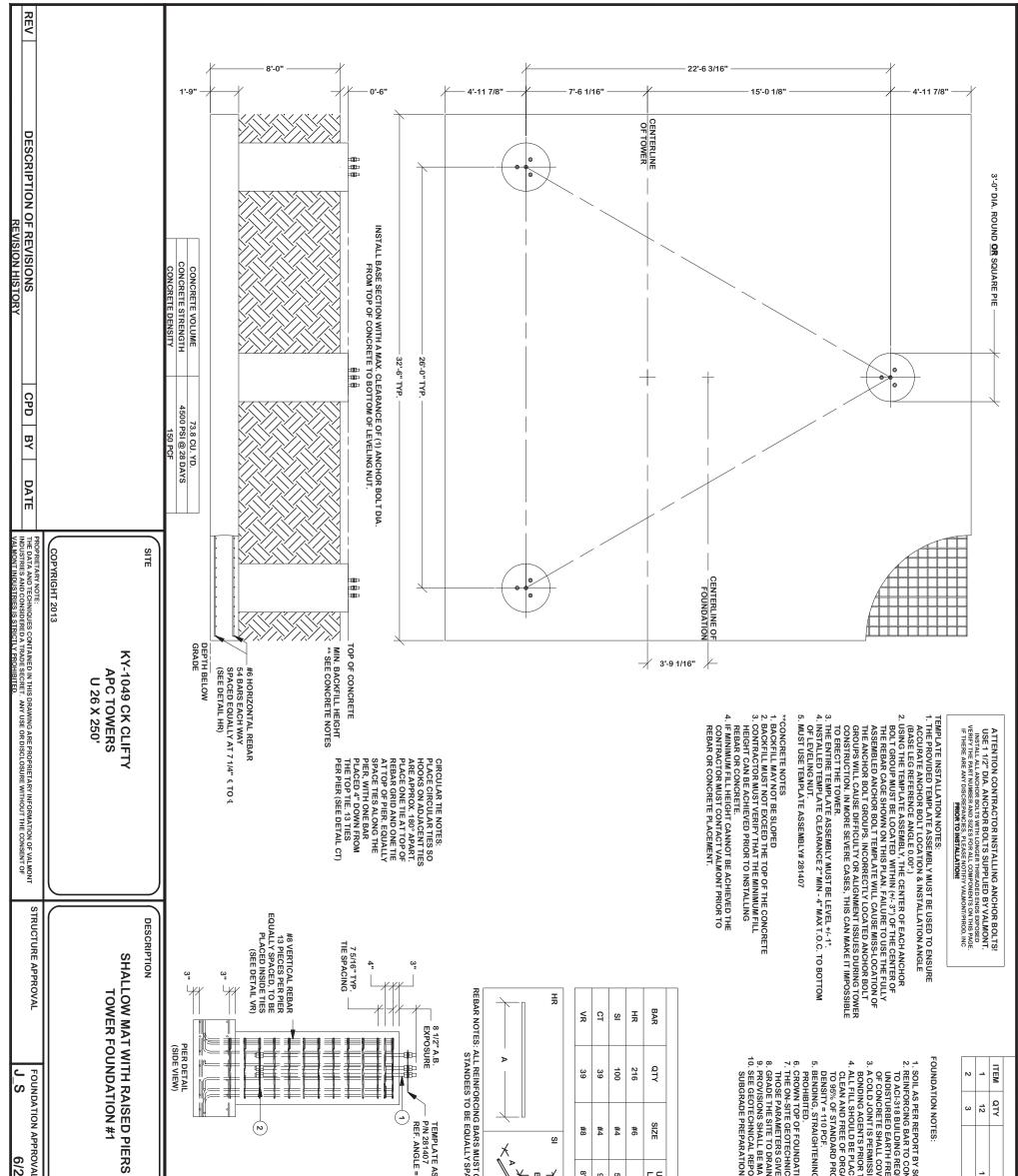
REV DESCRIPTION OF REVISIONS CPD BY DATE REVISIONS REVISIONS		the provide the pr					IOWARD BOTTOM OF TOWER
PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.	SITE KY-1049 CK CLIFTY APC TOWERS U 26 X 250'	- 4:0° - CONNECTION DETAL					
STRUCTURE APPROVAL FOUNDAT	SECTION V-4.0 (220' - 240' ELEVATION)			TPN 18 312504 LCB 6 222022 LCF 12 312282 ICI 6 310283	18	TP 3 209461 TPB 18 222016	FBS 1 246647
FOUNDATION APPROVAL DWG. NO.	ELEVATION) 1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR ENG. FILE NO. 55384		1-1/4"-71		1" GALVANIZED FLAT WASHER (F436) 13 1" GALVANIZED LOCKWASHER		
293342T	STRUCTURES		81 81,24 kg]	0.430 7.740 2.530 15.180 0.130 1.560 0.150 0.900	0.140 2.520 0.080 1.440	83.780 251.340 1.380 24.840	1190.590 1190.590

SAN 6/20/2022				REVISION HISTORY	
TURE APPR	PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INFORMATION CONSIGNED A TRADESCORT ANY USE OF DISCLOSUIDE MITHOLIT THE CONSENT OF	BY DATE	CPD	DESCRIPTION OF REVISIONS	REV
	COPYRIGHT 2013				
	APC TOWERS U 26 X 250'				
SECTION V-4.0 (240' - 250' ELEVATION	KY-1049 CK CLIFTY				
DESCRIPTION	SITE				





CTURE APPROVAL 6/20/2022	SCRIPTION SECTION V-4.0 (240' - 250' ELEVATION)	LCN	LCL	LCF	FBS	ITEM	
	01	6			6 1		
UNDATIO	250' ELI	312504	312223	312222	233466 222016	PART NO.	
FOUNDATION APPROVAL	EVATION)	1"-8 HOT DIPPED GALVANIZED NUT	1" GALVANIZED LOCKWASHER	1" GALVANIZED FLAT W/	#48 SECT W/ FOOTPADS		
DWG. NO. 293342T	Valmouth 1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR ENG. FILE NO. 553842		ASHER	ASHER (F436)	#48 SECT W/ FOOTPADS 1 1/4" LEG 3/4" BRACE 10'-0" 1"-8 X 4-3/4" A-325 BOLT WITH 1-3/4" THREAD	PART DESCRIPTION	PARTS LIST
			0.080	0.140	445.990	UNIT WT.	
)E 12 #GE	Jarli I	2.580	0.480	0.840	445.990 8.280	NET WT.	



IMADE TO PROTECT THE SUBGRADE FROM EXCESS MOISTURE. EPORT FOR ADDITIONAL CONSTRUCTION RECOMMENDATIONS, BACKFILL COMPACTION DETAIL, TON, ETC.	ACHICARAH JACOBS 22177 SIONAL ENGLISH 06-20-2022	HART-467-4763 Plymouth, IN 1-877-467-2751 Salem OR 1-800-547-2751 Salem OR 1-800-547-2751 Salem OR	S S S S S S S S S S S S S S S S S S S	REBAR A A 32' 1'-3 1/4" 2'-6" 7'-10 1/2" 7'-10 1/2" 2'-6" COASTM A615 4 4	CT C	ECIFICATIONS	T T T T T T T T T T T T T T T T T T T	A - A - C - A - C - A - C - A - C - A - C - C	NET WT. (LBS) 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	NT A B C DIAMETER UNIT WI. NET WI. 4" 1:31/4" 1' 1':51/4" 3:61 360.60 4" 2':6" 3" 7 1/4" 3" 6.36 247.98 4" 7':101/2" 1':4" 6" 23.97 935.00 C Image: Comparison of the comparis	Image: High A B C DIAMETER UNITY Ites (ILBN)	_	REBAR	DETAIL				
REBAR DETAIL	32' 1' 1'.5 1/4" 48.17 10405.32 4" 2'.6" 3" 7 1/4" 3" 6.36 247.98 4" 7'.10 1/2" 1'.4" 6" 23.97 935.00 4" 7'.10 1/2" 1'.4" 6" 23.97 935.00 4" 7'.10 1/2" 1'.4" 6" 23.97 935.00 4" 1'.4" 1'.4" 6" 23.97 935.00 4 1.35" 4 5 1.4" 1.4" 1.4" 0<	ar 13 1 1.5 14" 38 48.17 10405.33 ar 2.6" 3" 7 14" 3" 6.36 247.96 ar 7.10 12" 1'4" 3" 6.36 247.96 ar 7.10 12" 1'4" 3" 6.36 247.96 ar 135 45 7 14" 6" 23.97 935.00 or 135 47.96 VR 8 9 10 9 10 10	UNBENT		B	c	D DIAMETER	UNIT WT. (LBS)	NET WT. (LBS)
A B C DIAMETER (LBS) (LE	4" 1': 31/4" 1' 1'-51/4" 3.61 360.60 4" 2:6" 3" 71/4" 3" 6.36 247.98 4" 7:-101/2" 1'-4" 6" 23.97 935.00 4" 935 6 6 247.98 4" 1'-4" 6" 23.97 935.00 4" 935 6 9 935 4" 1'-4" 1'-4" 6" 23.97 935.00 0 0 0 0 0 0 0 4" 1'-4" 1'-4" 6" 23.97 935.00 0 10 10 10 10 10 10 0 31 10 10 17 11 86 0 31 10 11 86 11 86 11 86 37 11 86 11 86	ar 1:3 1/4" 1' 1:5 1/4" 3" 3.61 30.00 ar 2:6" 3" 1 1/4" 3" 6.36 247.98 ar 7:10 1/2" 1'4" 6" 23.97 93.00 ar 1.3" 6.36 247.98 vr 8.36 247.98 ar 1.3" 1.4" 6" 23.97 93.00 ar 1.3" 1.4" 6" 23.97 93.00 ar 1.3" 1.4" 6" 23.97 93.00 ar 1.3" 1.4" 1.4" 1.4" 1.4" 1.4" 1.4" ar 1.3" 1.3" 1.3" 1.4" <th1.4"< th=""> <th1.4"< th=""> <th1.4"< th=""></th1.4"<></th1.4"<></th1.4"<>	32'	32'				48.17	10405.32
REBAR DETAIL D UNIT WT. A B C DIAMETER (LBS) 32' 48.17 48.17	4" 2'.6" 3" 7 1/4" 3" 6.36 247.98 4" 7'.10 1/2" 1'.4" 6" 23.97 935.00 4" 7'.10 1/2" 1'.4" 6" 23.97 935.00 C B 135 6" 23.97 935.00 B 135 0 0 0 0 A 0 0 0 0 0 B 135 0 0 0 0 B 135 0 0 0 0 0 B 135 0 0 0 0 0 0 B 135 0 0 0 0 0 0 0 B 0 0 0 0 0 0 0 0 31 10 10 7 53 11 86	4" 2.6" 3" 1.4" 3" 6.36 247.98 4" 7.10.12" 1.4" 6" 23.97 35.00 C F 1.35 F 23.97 35.00 Demotion of the construction of the construle construction of the construction of the constructin	5'-4 3/4"	1'-3 1/4"	÷	1'-5 1/4"		3.61	360.60
REBAR DETAIL D UNIT WT. A B C DIAMETER (LBS) 32' J. J. J.5 1/4" 3.61	4" 7'-10 1/2" 1'-4" 6" 23.97 935.00 C (ITVPE 28) CT A VR D D B 135' B CD CD A VR D D ORM TO ASTM A615 GRADE GO SPECIFICATIONS Rebar Class B Splice Length A A A BETWEEN GRIDS - 3'-4 3/4" (TVP) Bar Size (in) Bar Size 61 3 10 77 3LY 5 31 10 77 53 11 86	Image: Weight of the second	9'-6 1/4"	2'-6"	3"	7 1/4"	3"	6.36	247.98
REBAR DETAIL DINIT WT. A B C DIAMETER UNIT WT. 32' J	C (TYPE 28) CT A VR B 135 0 0 0 0 ORM TO ASTIM AG15 GRADE 60 SPECIFICATIONS BETWEEN GRIDS - 3'-4 3/4" (TYP) Rebar Class B Splice Length Bar Size Im Bar Size (in) Bar Size (in) 31/Y 3 19 8 61 6 37 11 86	C (TYPE 26) CT B CT C C C C C C C C C C C C C	8'-11 3/4"	7'-10 1/2"	1'-4"		6"	23.97	935.00
REBAR DETAIL UNBENT LENGTH A B C DIAMETER UNIT WT. NET WT. 32' 32' 32' 32' 1' 1'.5'.4'.1' 10/.6''' 10/.6''' 10/.6''' 10/.6''' 10/.6''' 10/.6''' 10/.6'''' 10/.6'''' 10/.6''''' 10/.6''''' 10/.6'''' 10/.6''''' 10/.6''''''''''''''''''''''''''''''''''''		6-	ST CONFORM T SPACED BETW ASSEMBLY E =0.00°	EEN GRIDS - 3	GRADE 60 SP "-4 3/4" (TYP)	ECIFICATIONS		Class B Split (in) Bar 19 25 25 31 1 37 1 53 53	ze
	LATT-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR STRUCT			1-87	1-467-4763	Plymouth, II 1 Salem, OR	S O S	CC C I 06-20-	
$\begin{tabular}{ c c c c } \hline \end{tabular} \hline$	And the formation of th	FILE NO. 553842			NO.	Plymouth, II 1 Salem, OR 5538			

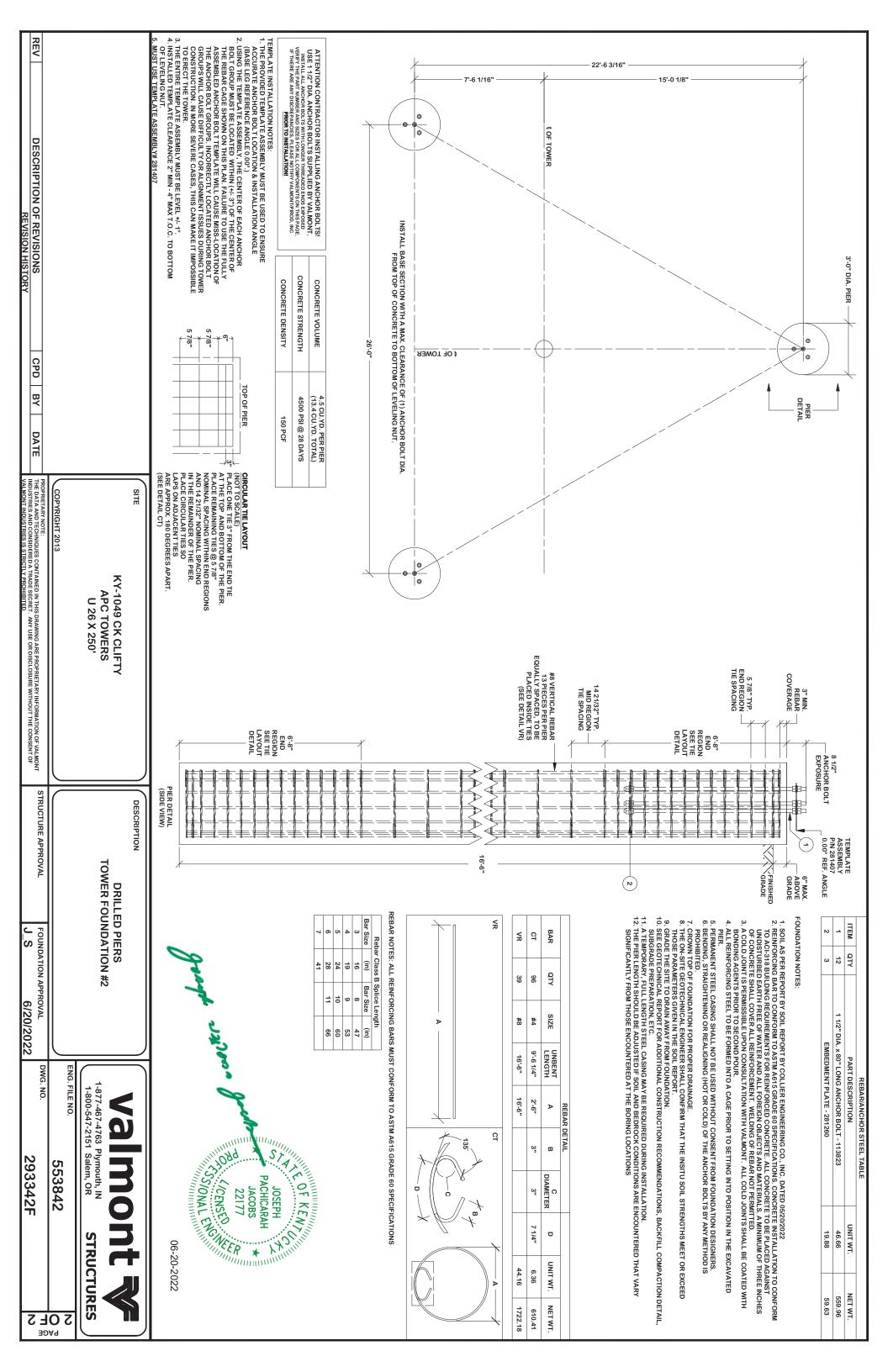
1 1/2" DIA. x 80" LONG ANCHOR BOLT - 113823 EMBEDMENT PLATE - 281260

PART DESCRIPTION

UNIT WT

NET WT. 559.96 59.63

46.66 19.88 PARTS LIST



APC Towers KY-1049 CK Clifty

Foundation Dimensions					
Pad width, W :	32.50	ft			
Depth, D :	8.00	ft			
Ext. above grade, E:	0.50	ft			
Pier diameter, d i:	3.00	ft			
Pad thickness, T :	1.75	ft			
Depth neglected, N:	8.00	ft			
Volume, V ₀:	73.76	су			

Reinforcement Design pad rebar qty., m 54 bars ' 6 size, **s** pier vertical qty, m c 13 verticals/pier 2.5' cage size, s c 8 Horizontal Rebar in top 6in of pier for temp. & per TIA-222-H 9. no shrinkage?: pier tie qty., m_t: 13 ties/pier size, s t 4 default hook

* Rebar to be equally spaced, both ways, top & bottom, for a total of 216 bars * Use standees to support top rebar above bottom rebar in mat

Tower Weight, Wt:

Soil Information Per: Soil Report by Collier Engineering Co., Inc. dated 05/20/2022

Soil Parameters		
Soil unit weight, y :	110	pcf
Ultimate Bearing, B _c :	10.000	ksf
Cohesion, C _o :	0.000	ksf
Friction angle, f :	0.0	degrees
Ult. Passive P., P _p :	0.110	pcf
Base sliding, µ:	0.20	
Seismic Design Cat.:	D	
Water at:	none	ft

UNIT BASE FOUNDATION SUMMARY

U- 26.0

A- 553842

Anchor Steel Sele	ction	
Part Number, P/N :	113823	Dia = 1.5 Length = 80"

73.00 kips

=

Material Drevertic

250

Material Properties	5	
Steel tensile str, F _y :	60000	psi
Conc. Comp. str, F' _c :	4500	psi
Conc. Density, δ :	150	pcf
Clear cover, cc:	3.00	in

V 4.7

Backfill Compaction	on	
Lift thickness:	9	in
Compaction:	95	%
Standard Proctor:	ASTM	D698

Tower design conforms to the following:

* International Building Code (IBC)

* ANSI TIA-222-H

* Building Code Requirements for Reinforced Concrete (ACI 318-14)

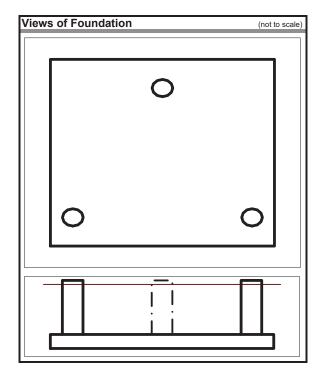


Foundation Loading stress ratio: 98.9% mark up: 1.1% 38.42 kips Shear (Per Leg), **S**I: 38.00 kips x 1.01 = Shear (total), S: 55.00 kips x 1.01 = 55.61 kips 9247.00 ft-kips x 1.01 = 9348.72 ft-kips Moment, M: 435.00 kips x 1.01 = 439.79 kips Compression/Leg, C: Uplift/Leg, U: 383.00 kips x 1.01 = 387.21 kips

73.00 kips



Digitally signed by Joseph P Jacobs Date: 2022-06-20 09:36-04:00



Additional Notes:

* No foundation modifications listed.

* See attached "Foundation Notes" for further information.

FOUNDATION NOTES

- 1 THE ON-SITE GEOTECHNICAL ENGINEER SHALL CONFIRM THAT THE INSITU SOIL STRENGTHS MEET OR EXCEED THOSE PARAMETERS GIVEN IN THE SOIL REPORT.
- 2 GRADE THE SITE TO DRAIN AWAY FROM FOUNDATION.
- 3 PROVISIONS SHALL BE MADE TO PROTECT THE SUBGRADE FROM EXCESS MOISTURE.
- 4 SEE GEOTECHNICAL REPORT FOR ADDITIONAL CONSTRUCTION RECOMMENDATIONS, BACKFILL COMPACTION DETAIL, SUBGRADE PREPARATION, ETC.

UNIT BASE FOUNDATION (DL - 1.2) U- 26.0 A- 553842

APC Tov	
KY-1049	CK Clifty

Shear (Per Leg), SI:

Compression / leg, C:

Shear (total), S: Moment, M:

Uplift / leg, **U**:

Tower weight, Wt:

38.00 kips 55.00 kips

9247.00 ft-kips

435.00 kips

383.00 kips

73.00 kips

Reactions

stress ratio	98.9%	mark up:	1.1%	
kips	x 1.01 =	38.42 ki	ps	Soil per: Soil Report by Collier
kips	x 1.01 =	55.61 ki	ps	Engineering Co., Inc. dated 05/20/2022
ft-kips	x 1.01 =	9348.72 ft-	-kips	00/20/2022

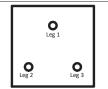
439.79 kips

387.21 kips

73.00 kips

x 1.01 =

x 1.01 =



V 4.7

250

Physical Parameters:					
Concrete volume:	V = T * W ² + 3 * (di ² / 4 * T	т) * (D + E - T)	V =	73.8	су
Concrete weight:	$W_c = V * \delta$		V =	298.7	kips
Soil weight:	$W_s = (D - T) * (W^2 - 3 * (di^2))$	² /4 * π)) * v	W _s =	711.6	kips
	P = Wc + Ws + Wt	/ + 11)) Y	P=	1083.33	kips
Total weight:			F =	1063.33	kips
Passive Pressure:					
Pp coefficient:	$K_p = TAN(45 + \phi / 2)^2$		K _p =	1.000	
	P _{pn} = Kp * γ * N + 2 * Co * γ		P _{pn} =	0.880	ksf
	$P_{pt} = Kp * \gamma * (D - T) + 2 * C$		P _{pt} =	0.688	ksf
	P _{pb} = Kp * γ * D + 2 * Co * γ		P _{pb} =	0.880	ksf
	$P_{ptop} = IF(N < (D - T), Ppt, Pp$	on)	P _{ptop} =	0.9	ksf
	Pp' = (Pptop + Ppb) / 2		Pp' =	0.880	ksf
Shear area:	$T_{pp} = 0$		$T_{pp} =$	0.0	ft
	$A_{pp} = Tpp * W$		$A_{pp} =$	0.00	ft ²
Shear Capacity:	$S_{actual} = (Pp' * App + \mu * P) * \phi$	r	S _{actual} =	162.499	kips
$\varphi r = 0.75$					
	Check	S _{actual} = 162.50 kips	>= S =	55.61	kips OK
Overturning Moment Resistanc	e at Toe:				
Wt of soil wedge:	W _{sw} = D * (D * TAN(φ)) / 2 *	W * Y	W _{sw} =	0.0	kips
Dist. from leg to edge:	O = (W - 0.866 * w') / 2		O =	4.992	ft
Additional offset of Wt:	O _a = W / 2 - (1 / 3 * 0.866 *	^r w' + O)	O _a =	3.753	ft
Resisting moments:	M _{rwt} = P * 0.9 * W / 2 - Wt * 7	1.2 * Oa	M _{rwt} =	15514.96	ft-kips
	M _{rp} = Pp' * App * (D - N) / 3	3*φr	M _{rp} =	0.00	ft-kips
	M _{rsw} = Wsw * (W + D * TAN(M _{rsw} =	0.00	ft-kips
Total resisting:	$M_{rt} = (Mrwt + Mrp + Mrsw)$	T)· -) T·	M _{rt} =	15514.96	ft-kips
$\varphi r = 0.75$			n		
Total overturning:	$M_{o} = M + S * (D + E)$		M _o =	9821.36	ft-kips
	Check	M _{rt} = 15514.96 ft-kips	>= M _o =	9821.36	ft-kips OK
Bearing Resistance due to Pres	sure Distribution				
Area of mat:	area = W ²		area =	1056.3	ft ²
	$SM = W^3 / 6$		SM =	5721.4	ft ³
Section modulus:		* 1 0	P' =	1285.4	
Factored total weight: Pressure exerted:	P' = (Wt / 1.2 + Wc + Ws) P _{pos} = P' / area + Mo / SM	1.2	P' = P _{max} =	2.934	kip ksf
riessule exerted:	$P_{pos} = P' / area + Mo / SM$ $P_{neg} = P' / area - Mo / SM$		P _{min} =	-0.500	ksf
Note: The	stress resultant is NOT within the	korn Bearing area has been a		-0.500	1/01
Load eccentricity:	e _c = Mo / P'	s Kern. Dearing dred has been at	e _c =	7.64	ft
	° .			1.04	
n Parallel Direction	$P_{odl} = 2 * P' / (3 * W * (W / 2))$	- ec))	P =	31	
	P _{adj} = 2 * P' / (3 * W * (W / 2		P _{adj} =	3.1 3.1	ksf ksf
In Parallel Direction In Diagonal Direction	P _{adj_diag} see Diagonal Bearing Sheet (a	attached)	P _{adj_diag} =	3.1	ksf
In Diagonal Direction Adj. applied pressure:	P _{adj_diag} see Diagonal Bearing Sheet (a q _a = IF(Pneg >= 0, Ppos, F	attached)	P _{adj_diag} = q _a =	3.1 3.063	ksf ksf
In Diagonal Direction Adj. applied pressure: Overburden Pressure: (factored)	P _{adj_diag} see Diagonal Bearing Sheet (a q _a = IF(Pneg >= 0, Ppos, F q _{obp} = D * γ	^{attached)} Padj)	P _{adj_diag} = q _a = q _{obp} =	3.1 3.063 0.880	ksf ksf ksf
In Diagonal Direction Adj. applied pressure: Overburden Pressure: (factored) $\varphi r = 0.75$ Concrete Shear Strenath:	$\begin{array}{c} P_{adj_diag} \text{ see Diagonal Bearing Sheet (i} \\ q_a = IF(Pneg >= 0, Ppos, F \\ q_{obp} = D \star \gamma \end{array}$	attached)	P _{adj_diag} = q _a =	3.1 3.063	ksf ksf
In Diagonal Direction Adj. applied pressure: Overburden Pressure: (factored) $\varphi r = 0.75$ Concrete Shear Strength: Dine way beam action at d, from towo Effective depth:	$\begin{array}{c} P_{adj_diag} \text{ see Diagonal Bearing Sheet (i} \\ q_a = IF(Pneg >= 0, Ppos, F \\ q_{obp} = D \star \gamma \end{array}$	^{attached)} Padj)	P _{adj_diag} = q _a = q _{obp} =	3.1 3.063 0.880	ksf ksf ksf
In Diagonal Direction Adj. applied pressure: Overburden Pressure: (factored) gr = 0.75 Concrete Shear Strength: Dire way beam action at d, from towe Effective depth: Distance from edge of pad to	$\begin{array}{c} P_{adj_diag} \text{ see Diagonal Bearing Sheet (a}\\ q_a = IF(Pneg >= 0, Ppos, F\\ q_{obp} = D * \gamma \end{array}$	^{attached)} Padj)	$P_{adj_{diag}} = q_a = q_{obp} =$ $<= B_c * \phi r =$	3.1 3.063 0.880 7.500	ksf ksf ksf OK
In Diagonal Direction Adj. applied pressure: Overburden Pressure: (factored) $\varphi r = 0.75$ Concrete Shear Strength: Dine way beam action at d, from towo Effective depth:	$\begin{array}{l} P_{ad_dlag} \mbox{ see Diagonal Bearing Sheet (a} \\ q_a = IF(Pneg >= 0, Ppos, F \\ q_{obp} = D \star \gamma \\ \hline \ \ \ \ \ \ \ \ \ \ \ \ \$	^{attached)} Padj)	$P_{ad_{d}dag} = q_{ag}$ $q_{a} = q_{obp} =$ $<= B_{c} * \phi r =$ $d_{c} =$	3.1 3.063 0.880 7.500 17.625	ksf ksf ksf OK
In Diagonal Direction Adj. applied pressure: Overburden Pressure: (factored) gr = 0.75 Concrete Shear Strength: Dre way beam action at d, from towe Effective depth: Distance from edge of pad to dc Distance from edge of pad to dc	$\begin{array}{c} P_{adj_diag} \ see \ Diagonal \ Bearing \ Sheet (a \\ q_a = IF(Pneg >= 0, \ Ppos, \ F \\ q_{obp} = D * \gamma \\ \hline \\ check \ d \\ er \\ \hline \\ d_c = T \ - cc \ - db_p \ / \ 2 \\ d' = O \ - di \ / \ 2 \\ d''' = d' \ - dc \end{array}$	^{attached)} Padj)	$P_{ad_{d}diag} = q_{a} = q_{obp} =$ $<= B_c * \varphi r =$ $d_c =$ $d' =$ $d'' =$	3.1 3.063 0.880 7.500 17.625 3.492 2.023	ksf ksf ksf OK in ft ft
n Diagonal Direction Adj. applied pressure: Overburden Pressure: (factored) gr = 0.75 Concrete Shear Strength: One way beam action at d , from towo Effective depth: Distance from edge of pad to pier face: Distance from edge of pad to dc Bearing Pressure Slop	$\begin{array}{c} P_{ad_diag} \ see \ Diagonal \ Bearing \ Sheet \ (a \\ q_a \ = \ IF(Pneg >= 0, \ Ppos, \ F \\ q_{obp} \ = \ D \ ^* \ \gamma \\ \hline \begin{array}{c} Check \ \ \ \ \ \ \ \ \ \ \ \ \ $	attached) Padj) q _a - q _{obp} = 2.183 ksf	$P_{ad_{d}dag} = q_{a} = q_{obp} =$ $<= B_c * \varphi r =$ $d_c =$ $d' =$ $d'' =$ $d'' =$ $q_{s} =$	3.1 3.063 0.880 7.500 17.625 3.492 2.023 0.119	ksf ksf ksf OK in ft ft kcf
n Diagonal Direction Adj. applied pressure: Overburden Pressure: (factored) gr = 0.75 Concrete Shear Strength: Dire way beam action at d, from towo Effective depth: Distance from edge of pad to dc Distance from edge of pad to dc Bearing Pressure Slop Required shear:	$\begin{array}{c} P_{ad_diag} \ \mbox{see Diagonal Bearing Sheet (a} \\ q_a = IF(Pneg >= 0, Ppos, F \\ q_{obp} = D * \gamma \\ \hline \\ d_{cbp} = D * \gamma \\ \hline \\ d_{c} = T - cc - db_p / 2 \\ d' = O - di / 2 \\ d'' = 0 - di / 2 \\ d''' = d' - dc \\ q_s = qa / Weff \\ V_{n1} = [(qa - d'' * qs)+(d'' * qs)] \\ \end{array}$	attached) ^p adj) g _a - q _{obp} = <u>2.183</u> ksf s /2)]*d"*W - [1.2*(D - T)*γ*d"*W]	$P_{ad_{d}diag} = q_{a} = q_{obp} =$ $<= B_c * \varphi r =$ $d_c =$ $d' =$ $d'' =$ $d'' =$ $q_s =$ $V_{nt} =$	3.1 3.063 0.880 7.500 17.625 3.492 2.023 0.119 139.25	ksf ksf Ksf OK in ft ft kcf kips
In Diagonal Direction Adj. applied pressure: Overburden Pressure: (factored) gr = 0.75 Concrete Shear Strength: One way beam action at d , from towo Effective depth: Distance from edge of pad to pier face: Distance from edge of pad to dc Bearing Pressure Slop	$\begin{array}{c} P_{ad_diag} \ see \ Diagonal \ Bearing \ Sheet (a \\ q_a = IF(Pneg >= 0, Ppos, F \\ q_{obp} = D * \gamma \\ \hline \\ \hline \\ er \\ \end{array}$	attached) ^p adj) g _a - q _{obp} = <u>2.183</u> ksf s /2)]*d"*W - [1.2*(D - T)*γ*d"*W]	$P_{ad_{d}dag} = q_{a} = q_{obp} =$ $<= B_c * \varphi r =$ $d_c =$ $d' =$ $d'' =$ $d'' =$ $q_{s} =$	3.1 3.063 0.880 7.500 17.625 3.492 2.023 0.119	ksf ksf ksf OK in ft ft kcf

	am action at d _i / 2 from tow	ver (ACI 22.6.5)-	Compression								
Eq. Sqi	uare Column (ACI 8.10.1.3 & 22.6.4.1.2)	d _{ea} =di /	2 * √π					deq =	31.90	in	
1	Mat effective width in bearing	W _{eff} = Mi	n (W, 3 * (W / 2 - e	ec))				W _{eff} =	25.83	ft	
	long side to short side of Pier		for square or roun					β =	1.00		
1000011	Length:		/ 2 + deq / 2 + (W	. ,				b ₁ =	63.76	in	
	Width:		c + deq + W - SIN(,				b ₂ =	84.66	in	
Critical	Perimeter:	b ₀ = b1		, .				b _o =	148.43	in	
Section	Centroid		1 * dc * b1 / 2) / (b1	* do + b2 *	dc)			c =	13.697	ft	
			eq + dc) / 2 - c		uc)				11.0680813		
1	Eccentricity: Polar MOI		. ,	1 * do/2 / 11)) + (b1 *)	10 * (b1 / 2 o	(100)	-	1.061E+06		
Moment	Folar MOI		lc * b1^3 / 12) + (b		<u>-) + (b1 + </u>) 2] 1 (01	U _C –			
Fraction	flexure:	$\gamma_f = 1$	/ (1 + 2 / 3 * √ (b1 /	b2))				$\gamma_f =$	0.63		
transferred by	eccentricity of shear:	$\gamma_v = 1$. vf					γ _v =	0.37		
	ressure Slope:	$q_s = q_s$	•					q _s =	0.119	kcf	
	ring Pressure:		Veff - b1) * qs + qa	1/2				q _{a.pl} =	2.748	ksf	
•	•		ven-bi) ys ya)/2							
	rce at Section:	V _{n_pier} 0	* (D. T. C) ·) /					V _{n_pier} =	336.777	kips ft tria a	
	Slab Moment:		* (D - T + E) + Vn_					M _{sc} =	569.94	ft-kips	
	Required shear: φs = 0.75	,					,		161.08	psi	
	Available shear: [A	$C[22.6.5.2] = \varphi$	s * MIN <u>(4*λ*√(Fc)</u>						201.246	psi	
14-	ant transformed:		Check	V _{c2} =	201.25	psi	>=	V _{n2} =	161.08	psi	ОК
моте	ent transfered: (Pier 1)	$M_{n1} = \gamma f$	* Msc					M _{n1} =	258.552	ft-kips	
Effective	Beam Width:		q + 1.5 * T + MIN(1.5 * T . (W	/ - w\ * SIN	(60) - dea)/	2)	w _{eff1} =	7.909	ft	
			n1 / (0.9 * Fy * dc)	, (.	. 51	,,//	,	A _{st p1} ' =	3.260	in ²	
			t_p1' * Fy / (β * F'c	* weff1)				a _{p1} =	0.555	in	
5	Required steel:		n1 / (Fy * (dc - ap1					$A_{st_p_{st_1}} =$	2.981	in ²	
										in ²	
	l in entire mat: ent transfered:	nst_p_ste1 = As	t_p_st1 * W / weff					A _{st_p_ste1} =	12.250		
	(Pier 2 or 3)	$M_{n2} = \gamma f$	* Msc (Controlling	Case: Corr	ner.)			M _{n2} =	361.054	ft-kips	
Effective	e Beam Width:	$W_{eff2} = de$	q + 1.5 * T + MIN(1.5 * T , (W	/ - w\ - dec	1)/2)		w _{eff2} =	7.204	ft	
		$A_{st_p2}' = Mi$	n2 / (0.9 * Fy * dc)					A _{st_p2} ' =	4.552	in ²	
		a _{p2} = As	st_p2' * Fy / (β * F'c	* weff2)				a _{p2} =	0.851	in	
F	Required steel:	A _{st p st2} = Mi	n2 / (Fy * (dc - ap2	/ 2))				$A_{st p st2} =$	4.198	in ²	
Required steel	l in entire mat:	A _{st p ste2} = As	st_p_st2 * W / weff2	2				A _{st p ste2} =	18.940	in ²	
		2-							trolling Case		Pier 2: Corne
Two way be	am action at d _i / 2 from tow	ver (ACI 22.6.5)-	Uplift								
Pier Rein	forcement Dia	di _T =di -	2*cc-2*db_t - 1*db	_c				di _T =	28.000	in	
Eq. Sq:	uare Column (ACI 8.10.1.3 &			_					04.04		
	22.6.4.1.2)	- ·	rebar / 2 * √π					d _{eq_T} =	24.81	in	
	ection Length:	$b_{1_T} = de$						b _{1_T} =		in	
Critical Secti	ion Perimeter:		* (deq + dc)					b _{o_T =}	169.76	in	
	Polar MOI	J _{c_T} = (b	1_T^3 * dc / 6)+ (b	1_T * d ^3 /	6)+(dc * b	o1_T * b2_T^2	2/2)	J _{c_T} =	936866.446	in"	
Shear For	rce at Section:	$V_{n_{pier_{T}}} = U$						V _{n_pier_T} =	387.213	kips	
	Required shear: φs = 0.75	[ACI 21.2.1] = (V	n_pier_T / b1_T * d	dc) + (γv * Ν	/lsc* c_T /	Jc_T)			157.610	psi	
	Available shear: [A	CI 22.6.5.2] ' = ¢	s * MIN(4*λ*√(Fc)	, (2+(4/β))*	λ*√(Fc) , (2+(αs*dc/bo))	*λ*√(Fc))		201.25	psi	
			Check	V _{t2} =	201.25	psi	>=	V _{nt2} =	157.61	psi	ОК
Column C	ompression Capacity:										
Jonanni C	ssion reaction:	$P_c = \phi c$	* 0.85 * F'c * (di² /	4 * π)				P _c =	2530.7	kips	
	φc = 0.65 [ACI 21.2.2.2]										
Compres			Check	P _c =	2530.69	kips	>=	C =	439.79	kips	ОК
Compres											
Compres	orcoment										
Compres Pier Reinfo	orcement:	A = di	* π / 4					Α =	1017 88	in ²	
Compres Pier Reinfo Cross-s	sectional area:	$A_g = di^2$						A _g =	1017.88		
Compres Pier Reinfo Cross-s Min. area	sectional area: of steel (pier):	A _g = di ² A _{st_c} =Ag						A _g = A _{st_c} =	1017.88 10.18	in ² in ²	
Compres Pier Reinfo Cross-s Min. area	sectional area:	A _{st_c} =Ag		db t				9			
Compres Pier Reinfo Cross-s Min. area	sectional area: of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle:	$A_{st_c} = Ag$ $d_o = di$	* 0.01	db_t		d _b _c =	1	$A_{st_c} =$ $d_o =$	10.18	in ²	
Compres Pier Reinfo Cross-s Min. area	sectional area: of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2]	$A_{st_c} = Ag$ $d_o = di$ $s_c = 8$	* 0.01	db_t		d _{b_c} = A _{b_c} =	1 0.79	A _{st_c} =	10.18	in ²	
Compres Pier Reinfo Cross-s Min. area	sectional area: of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle:	$A_{st_c} = Ag$ $d_o = di$ $s_c = 8$ $m_c = 13$	* 0.01 - 2 * cc - db_c - 2 *	db_t		d _{b_c} = A _{b_c} =	1 0.79	$A_{st_c} =$ $d_o =$ in in^2	10.18 28.00	in ²	
Compres Pier Reinfo Cross-s Min. area	sectional area: of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle:	$A_{st_c} = Ag$ $d_o = di$ $s_c = 8$ $m_c = 13$	* 0.01 - 2 * cc - db_c - 2 * o_c * m <u>_c</u>		10.27	A _{b_c} =	0.79	$A_{st_c} = d_o =$ in in ² $A_{s_c} =$	10.18 28.00 10.27	in ² in in ²	OK
Compres Pier Reinfic Cross-s Min. area	sectional area: of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle: Rebar:	$A_{st_c} = Ag$ $d_o = di$ $s_c = 8$ $m_c = 13$ $A_{s_c} = Ab$	* 0.01 - 2 * cc - db_c - 2 * o_c * m_c <i>Check</i>	db_t A _{s_c} =	10.27	-		$A_{st_c} = d_o =$ in in^2 $A_{s_c} =$ $A_{st_c} =$	10.18 28.00 10.27 10.18	in ² in in ² in ²	ОК
Compres Pier Reinfo Cross-s Min. area Min. area	sectional area: of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle: Rebar: ctual moment:	$A_{st_c} = Ag$ $d_o = di$ $s_c = 8$ $m_c = 13$ $A_{s_c} = At$ $M_{max} = (D)$	* 0.01 - 2 * cc - db_c - 2 * o_c * m_c Check - T + E) * S / 2	A_s_c =	10.27	A _{b_c} =	0.79	$A_{st_c} = $ $d_o = $ $in $ in^2 $A_{s_c} = $ $A_{st_c} = $ $M_{max} = $	10.18 28.00 10.27 10.18 187.67	in ² in in ² in ² ft-kips	ОК
Compres Pier Reinfo Cross-s Min. area Min. area	sectional area: of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle: Rebar:	$A_{st_c} = Ag$ $d_o = di$ $s_c = 8$ $m_c = 13$ $A_{s_c} = At$ $M_{max} = (D)$	* 0.01 - 2 * cc - db_c - 2 * 0_c * m_c - T + E) * S / 2 Maxmomnt.xls (see atta	A _{s_c} =		A _{b_c} =	0.79 >=	$A_{st_c} = \\ d_o = \\ in \\ in^2 \\ A_{s_c} = \\ A_{st_c} = \\ M_{max} = \\ M_{allow} = $	10.18 28.00 10.27 10.18 187.67 189.94	in ² in in ² ft-kips ft-kips	
Compres Pier Reinfo Cross-s Min. area Min. area At Pier mon	sectional area: of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle: Rebar: ctual moment: ment capacity:	$A_{st_c} = Ag$ $d_o = di$ $s_c = 8$ $m_c = 13$ $A_{s_c} = At$ $M_{max} = (D$ $M_{allow} per$	* 0.01 - 2 * cc - db_c - 2 * 0_c * m_c - T + E) * S / 2 Maxmomnt.xls (see atta Check	A_s_c =	10.27	A _{b_c} =	0.79	$A_{st_c} = $ $d_o = $ in in^2 $A_{s_c} = $ $M_{max} = $ $M_{allow} = $ $M_{max} = $	10.18 28.00 10.27 10.18 187.67 189.94 187.67	in ² in in ² ft-kips ft-kips ft-kips	ок
Compres Pier Reinft Cross-s Min. area Min. area At Pier mon	sectional area: of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle: Rebar: ctual moment:	$A_{st_c} = Ag$ $d_o = di$ $s_c = 8$ $m_c = 13$ $A_{s_c} = At$ $M_{max} = (D$ $M_{allow} per$	* 0.01 - 2 * cc - db_c - 2 * 0_c * m_c - T + E) * S / 2 Maxmomnt.xls (see atta	A _{s_c} =		A _{b_c} =	0.79 >=	$A_{st_c} = \\ d_o = \\ in \\ in^2 \\ A_{s_c} = \\ A_{st_c} = \\ M_{max} = \\ M_{allow} = $	10.18 28.00 10.27 10.18 187.67 189.94	in ² in in ² ft-kips ft-kips	

Two way beam action at d_i / 2 from tower (ACI 22.6.5)- Compression

Reinforcement location:	Ψ_{t_c} = if the space	under the re	ebar > 12 in	, use 1.3	s, else use	e 1.0	$\psi_{t_c} =$	1.3		
[ACI 25.4.2.4]	Ψ _{e c} = if epoxy-coa	tod hara ar	a not upod	upp 1 0:	but if ono	wu apatad	ψ _{ec} =	1.0		
Epoxy coating: [ACI 25.4.2.4]	φ _{e_c} – π epoxy-coa					•	Ψe_c -	1.0		
Max term:	$\Psi_t \Psi_{e,c} = \text{the product}$						ψ _t ψ _{ec} =	1.3		
[ACI 25.4.2.4]	+i+e_c allo produce	οι φι α φο,	nood not pt		angor anan		TITE_C			
Reinforcement size: [ACI 25.4.2.4]	ψ_{s_c} = if the bar size	e is 6 or les	s, then use	0.8, else	e use 1.0		ψ _{s_c} =	1		
Light weight concrete: [ACI 25.4.2.4]	$\lambda_{c} = \text{ if lightwiegh}$	λ_{c} = if lightwieght concrete is used, 0.75, else use 1.0								
Spacing/cover: [ACI 25.4.2.4]	c _c the smaller	$\mathbf{c}_{\mathbf{c}}$ the smaller of: half the bar spacing or the concrete edge distace							in	
Transverse bars: [ACI 25.4.2.3]	$k_{tr_c} = 0$ in (per	$k_{tr_{rc}} = 0$ in (per simplification)							in	
Max term: [ACI 25.4.2.3]	c_c' = MIN(2.5,	(c_c + ktr_c) / db_c)				c_c' =	2.500		
Excess reinforcement: [ACI 25.4.10.1]	R _c = 1		(exc	cess reinfor	cement redu	iction is not used)	R_c =	1.00		
Development (tensile): [ACI 25.4.2.2]	L _{dt_c} = (3 / 40) * (F	y/λ_c*√(F	'c)) * (ψtψe_	c*ψs_c*	R_c / c_c') * db_c	$L_{dt_c} =$	34.88	in	
Minimum length: [ACI 25.4.2.1]	$L_{d_{min}} = 12$ inches						$L_{d_{min}} =$	12.0	in	
Development length:	$L_{dt_c} = MAX(Ld_)$	min, Ldt'_c)				$L_{dt_c} =$	34.88	in	
onfining Reinforcement: [ACI 25.4.9.3]	$\Psi_{r_c} = 1$						$\psi_{r_c} =$	1.00		
Development (comp.): [ACI 25.4.9.2]	L _{dc} '_c = Fy *ψr_c *	db_c * R_0	c/(50 * λ_c	:* √(F'c)))		$L_{dc'_c} =$	17.89	in	
	$L_{dc}"_{c} = 0.0003 * c$	lb_c * Fy * ų	ur_c * R_c				$L_{dc}''_{c} =$	18.00	in	
Development length:	$L_{dc_c} = MAX(8, L$	dc'_c, Ldc"_	_c)				$L_{dc_c} =$	18.00	in	
Length available in pier:	$L_{vc} = D - T + E$	- CC					L _{vc} =	78.0	in	
		Check	L _{vc} =	78.0	in	>=	$L_{dt_c} =$	34.9	in	OK
		Check	$L_{vc} =$	78.0	in	>=	$L_{dc_c} =$	18.0	in	OK
Length available in pad:	L _{vp} = T - cc						L _{vp} =	18.0	in	
		Check	L _{vp} =	18.0	in	>=	L _{dt_c} =	34.9	in	HOO
		Check	L _{vp} =	18.0	in	>=	$L_{dc_c} =$	18.0	in	OK

Vertical Repar Hook Enulity.					
Bar size & clear cover: [ACI 25.4.3.2]	ψ_{t_h} = if the bar size <= 11 and side cc >= 2.5", use 0.7, else use 1.0	$\psi_{t_h} =$	0.7		
Epoxy coating: [ACI 25.4.3.1]	ψ_{e_h} = if epoxy-coated bars are used, use 1.2, else use 1.0	$\psi_{e_h} =$	1.0		
Light weight concrete: [ACI 25.4.3.1]	λ_h if lightwieght concrete is used, 0.75, else use 1.0	λ_h =	1.0		
Confining Reinforcement: [ACI 25.4.3.2]	$\Psi_{r_{\perp}h} = 1$	$\psi_{r_h} =$	1.00		
Development (hook): [ACI 25.4.3.1]	$L_{dh}' = (Fy * \psi t_h * \psi e_h * \psi r_h * R_c / (50 * \lambda_h * \sqrt{(F'c)})) * db_c$	L _{dh} ' =	12.5	in	
Minimum length: [ACI 25.4.3.1]	L_{dh_min} the larger of: 8 * db or 6 in	L _{dh_min} =	8.0	in	
Development length:	L _{dh} = MAX(Ldh_min, Ldh')	L _{dh} =	12.5	in	
	Check L _{vp} = 18.0 in >=	L _{dh} =	12.5	in	ок
Hook tail length:	L _{h_tail} 12 * db beyond the bend radius	L _{h_tail} =	16.0	in	
Length available in pad:	$L_{h_{pad}} = (W - w' - di) / 2$	L _{h_pad} =	21	in	
	Check L _{h pad} = 21.0 in >=	L _{dh_tail} =	16.0	in	ок

<u>er Ties:</u>										
Minimum size:	s_t_min =IF(s_c	<= 10, 3, 4)					s_t_min =	3		
[ACI 25.7.2.2]										
z factor:		e seismic zone	is less than	2, else 1.0		- 05	Z =	1		
Tie parameters:	$s_{t} = 4$ m _t = 13				d _{b_t} A _{b t}		in in ²			
Allowable tie spacing:	-				-					
per vertical rebar [ACI 25.7.2.1] & [ACI 18.4.3.3	$B_{s_t_max1} = 8 * db$	_c					$B_{s_t_max1} =$	8	in	
per tie size [ACI 25.7.2.1] & [ACI 18.4.3.3	$B_{s_t_max2} = 24 * c$	b_t					$B_{s_t_max2} =$	12	in	
per pier diameter [ACI 25.7.2.1] & [ACI 18.4.3.3	B _{s_t_max3} = di / 4						B _{s_t_max3} =	9	in	
per seismic zone [ACI 25.7.2.1] & [ACI 18.4.3.3	B _{s_t_max4} = 12" in	active seismic	zones, else	18"			B _{s_t_max4} =	12	in	
	$B_{s_t_max} = MIN($	Bs_t_max1, Bs	_t_max2, Bs	s_t_max3,	Bs_t_max	4)	B _{s_t_max} =	8	in	
	m_t_min = (D - T		ax + 2				$m_{t_{min}} =$	12.1		
		Check	m_t =	13.0		>=	m_t_min =	12.1		OK
nchor Steel:										
A/S parameters:	P _{as} = 11382 d _{as} = 1.5	3 in			L _{as} E _{as}		in in			
Development available:	L _{das} per Ancl	or Bolts (see attac	hed)				L _{das} =	61.63	in	
Required development:	L _{das_min} per Ancl	or Bolts (see attac	hed)				L _{das_min} =	34.88	in	
		Check	L _{das} =	61.63	in	>=	L _{das_min} =	34.88	in	OK
To bottom rebar grid:	E _{as_max} =D + E	- cc - 2 * db_p					E _{as_max} =	97.5	in	
		Check	E _{as} =	71.50	in	<=	E _{as_max} =	97.50	in	OK
To top rebar grid:	rebar @ = D + E				_		rebar @	84.00	in	
			84 + 6 in	>=	E _{as}	= 71.50	in or	<=	84 in	ОК
Min. cage dia:	d _{omin} perance	teel.xls (see attach					d _{o_min} =	24.25	in	
nd Reinforcement:		Check	^w 1	28.00		~=		24.25 ength in bearin	-	ft ft
nd Reinforcement:		-	d _o =	28.00		q ₂	Effective l	ength in bearin	g: 25.83	ft
		-	d _o =	28.00		q ₂	Effective l	ength in bearin	g: 25.83	ft
ection 1 Total Beam Length:	$A_{\frac{1}{2}}$	-	d _o =	28.00		q ₂	Effective le Effective le B _{L1_1} =	ength in bearin	g: 25.83	ft
ection 1	$A_{1} = 0$	-	d _o =	28.00		q ₂	Effective le Effective le B _{L1_1} = S _{L1_1} =	ength in bearin ngth not bearin 32.5 4.992	g: 25.83 g: 6.67 ft ft	ft
ection 1 Total Beam Length: Location of Left Support: cation of Right Support:	$A_{\frac{1}{2}}$	-	d _o =	28.00		q ₂	Effective le Effective le B _{L1_1} =	ength in bearin ngth not bearin 32.5	g: 25.83 g: 6.67 ft	ft
ection 1 Total Beam Length: Location of Left Support: ration of Right Support: ection 2	$B_{L_{1,1}} = W$ $S_{L_{1,1}} = O$ $S_{R_{1,1}} = W - O$	-	d _o =	28.00		q ₂	Effective let Effective let $B_{L1_1} = S_{L1_1} = S_{R1_1} = S_{$	ength in bearin ngth not bearin 32.5 4.992	g: 25.83 g: 6.67 ft ft	ft
ection 1 Total Beam Length: Location of Left Support: cation of Right Support:	$A_{1} = 0$		d _o =	28.00		q ₂	Effective le Effective le B _{L1_1} = S _{L1_1} =	angth in bearin ngth not bearin 32.5 4.992 27.51	g: 25.83 g: 6.67 ft ft ft	ft
ection 1 Total Beam Length: Location of Left Support: ration of Right Support: ection 2 Total Beam Length:	$B_{L_{1,1}} = W$ $B_{L_{1,1}} = W$ $S_{L_{1,1}} = O$ $S_{R_{1,1}} = W - O$ $B_{L_{1,2}} = W$	Check Image: Image of the second s	d _o =	28.00		q ₂	Effective le Effective les B _{L1_1} = S _{L1_1} = S _{R1_1} = B _{L1_2} =	ength in bearin ggth not bearin 32.5 4.992 27.51 32.5	g: 25.83 g: 6.67 ft ft ft	ft
ection 1 Total Beam Length: Location of Left Support: ection 2 Total Beam Length: Location of Left Support: eation of Right Support: D000 0 0 0 0 0 0 0 0 0 0 0 0	$B_{L_{1,1}} = W$ $B_{L_{1,1}} = W$ $B_{L_{1,2}} = W$ $B_{L_{1,2}} = W$ $S_{L_{1,2}} = (W - w)$ $S_{R_{1,2}} = S_{L_{1,2}} + w$ irrection 1	() / 2 W/ Moment (d _o =	600 400 200 -200 -400		q ₂	Effective I_{l} Effective let $B_{L1_1} = S_{L1_1} = S_{R1_1} = S_{L1_2} = S_{L1_2} = S_{R1_2} = Direction 2$	angth in bearin agth not bearin 32.5 4.992 27.51 32.5 3.25 29.25	g: 25.83 g: 6.67 ft ft ft ft ft ft	ft ft
ection 1 Total Beam Length: Location of Left Support: ection 2 Total Beam Length: Location of Left Support: cation of Right Support: DOD 0 0 0 0 0 0 0 0 0 0 0 0 0	$B_{L_{1,1}} = W$ $B_{L_{1,1}} = 0$ $B_{L_{1,2}} = W$ $S_{L_{1,2}} = W$ $S_{L_{1,2}} = (W - w$ $S_{R_{1,2}} = S_{L_{1,2}} + w$ irrection 1	() / 2 w) 25.00 30.00	d _o =	600 400 200 0 -200		q ₂	Effective le Effective le B _{L1_1} = S _{L1_1} = S _{L1_2} = S _{L1_2} = S _{R1_2} = Direction 2 15.00 2	ength in bearin rigth not bearin 32.5 4.992 27.51 32.5 3.25 29.25	g: 25.83 g: 6.67 ft ft ft ft ft moment	ft ft
ection 1 Total Beam Length: Location of Left Support: ection 2 Total Beam Length: Location of Left Support: eation of Right Support: D000 0 0 0 0 0 0 0 0 0 0 0 0	$B_{L1_{-1}} = W$ $B_{L1_{-1}} = W$ $S_{L1_{-1}} = O$ $S_{R1_{-1}} = W - O$ $B_{L1_{-2}} = W$ $S_{L1_{-2}} = (W - w$ $S_{R1_{-2}} = S_{L1_{-2}} + W$ interction 1 $15.00 20.00$ $M_{maxt_{-1}} = M_{maxt_{-1}}$	() / 2 () / 2	d _o =	600 400 200 -200 -400		q ₂	Effective le Effective le BL1_1= SL1_1= SL1_2= SL1_2= SR1_2= Direction 2 15.00 2 M _{max1_1} =	ength in bearin rigth not bearin 32.5 4.992 27.51 32.5 3.25 29.25 0.00 25. 697.36	g: 25.83 g: 6.67 ft ft ft ft ft ft ft ft ft ft ft ft ft	ft ft
ection 1 Total Beam Length: Location of Left Support: ection 2 Total Beam Length: Location of Right Support: cation of Right Support: D00 0 0 0 0 0 0 0 0 0 0 0 0	$B_{L1_{-1}} = W$ $B_{L1_{-1}} = W$ $S_{L1_{-1}} = O$ $S_{R1_{-1}} = W - O$ $B_{L1_{-2}} = W$ $S_{L1_{-2}} = (W - w$ $S_{R1_{-2}} = S_{L1_{-2}} + W$ interction 1 $15.00 20.00$ $M_{max1_{-1}} = M_{max1_{-2}}$	Check	d _o =	600 400 200 -200 -400		q ₂	Effective le Effective le BL1_1= SL1_1= SR1_2= SL1_2= SR1_2= Direction 2 15.00 2 M _{max1_1} = M _{max1_2} =	ength in bearin 32.5 4.992 27.51 32.5 3.25 29.25 0.00 25. 697.36 459.67	g: 25.83 g: 6.67 ft ft ft ft ft ft ft ft ft ft ft ft ft	ft ft
ection 1 Total Beam Length: Location of Left Support: ection 2 Total Beam Length: Location of Right Support: cation of Right Support: Direction 1: Direction 2: Direction 2: Direction 2: Diagonal :	$B_{L1_1} = W$ $B_{L1_1} = W$ $S_{L1_1} = O$ $B_{L1_2} = W$ $S_{L1_2} = (W - w$ $S_{R1_2} = S_{L1_2} + w$ interction 1 15.00 20.00 $M_{max1_1} = M_{max1_1}$ $M_{max1_1_clag} = M_{max1_1}$	Check	d _o =	600 400 200 0 -200 0.00		q ₂	Effective le Effective les BL1_1= SL1_1= SR1_1= BL1_2= SR1_2= SR1_2= Direction 2 15.00 2 Mmax1_1= Mmax1_1= Mmax1_1=	ength in bearin 32.5 4.992 27.51 32.5 3.25 29.25 0.00 25. 697.36 459.67 1536.81	g: 25.83 g: 6.67 ft ft ft ft ft ft ft ft ft ft ft ft ft	ft ft
ection 1 Total Beam Length: Location of Left Support: ection 2 Total Beam Length: Location of Right Support: cation of Right Support: D00 0 0 0 0 0 0 0 0 0 0 0 0	$B_{L1_1} = W$ $B_{L1_1} = W$ $S_{L1_1} = O$ $B_{L1_2} = W$ $S_{L1_2} = (W - w$ $S_{R1_2} = S_{L1_2} + w$ interction 1 15.00 20.00 $M_{max1_1} = M_{max1_1}$ $M_{max1_1_clag} = M_{max1_1}$	Check	d _o =	600 400 200 0 -200 0.00		q ₂	Effective le Effective le BL1_1= SL1_1= SR1_2= SL1_2= SR1_2= Direction 2 15.00 2 M _{max1_1} = M _{max1_2} =	ength in bearin 32.5 4.992 27.51 32.5 3.25 29.25 0.00 25. 697.36 459.67	g: 25.83 g: 6.67 ft ft ft ft ft ft ft ft ft ft ft ft ft	ft ft

Pad Reinforcement:

termoreennent.								
	b = IF(F'c <=	4000, 0.85, IF(F'c >= 8000, 0.65, 0.85	- (F'c - 4000) * 0.05))		b =	0.825		
Effective width:	$W_e = W$				$W_e =$	32.500	ft	
	$A_{st_p}' = Mn / (0)$	0.9 * Fy * dc)			A _{st_p} ' =	21.530	in ²	
	a _p = Ast_p'	* Fy / (β * F'c * We)			a _p =	0.89	in	
Required steel:	$A_{st_p_{st}} = Mn / (F$	y * (dc - ap / 2)) * (W / We)		A _{st_p_st} =	19.880	in ²		
Shrinkage:	r _{sh} = IF(Fy >	= 60000, 0.0018, 0.002)		r _{sh} =	0.0018			
	$A_{st_p_{sh}} = \rho sh * V$	V * T / 2			A _{st_p_sh} =	7.371	in ²	
	$A_{st_p} = MAX(A$.st_p_st, Ast_p_sh, Ast_p_ste1	I, Ast_p_ste2)		A _{st_p} =	19.880	in ²	
Rebar:	s_p = 6	Equally spaced, top and	d _{b_p} =	0.75	in			
	m_p = 54	bottom, both directions.	A _{b_p} =	0.44	in ²			
	A _{s_p} = Ab_p *	m_p			A _{s_p} =	23.76	in ²	
		Check A _{s_p} = 23	8.76 in ²	>=	A _{st_p} =	19.88	in ²	OK
Bar separation:	B _{s_p} = (W - 2	* cc - db_p) / (m_p - 1) - db_p			B _{s_p} =	6.48	in	
		Check 17.25 >	>= B _{s p} =	6.48	in	>=	4"	OK

<u>'ad Development Length:</u>					
Reinforcement location: [ACI 25.4.2.4]	$\psi_{t_{\text{up}}}$ = if the space under the rebar > 12 in, use 1.3, else use 1.0	$\psi_{t_p} =$	1.3		
Epoxy coating:	ψ_{e_p} = if epoxy-coated bars are not used, use 1.0; but if epoxy-coated	ψ _{e_p} =	1.0		
[ACI 25.4.2.4]	bars are used, then if Bs < 6 * db or cc < 3 * db, use 1.5, else 1.2				
Max term: [ACI 25.4.2.4]	$\psi_t\psi_{e,p}$ = the product of ψt & $\psi e,$ need not be taken larger than 1.7	$\psi_t \psi_{e_p} =$	1.3		
Reinforcement size: [ACI 25.4.2.4]	ψ_{s_p} = if the bar size is 6 or less, then use 0.8, else use 1.0	ψ _{s_p} =	0.8		
Light weight concrete: [ACI 25.4.2.4]	$\lambda_{_{_{\mathcal{D}}}}$ = if lightwieght concrete is used, 0.75, else use 1.0	λ_p =	1.0		
Spacing/cover: [ACI 25.4.2.4]	$\mathbf{c}_{_{\mathcal{P}}}$ the smaller of: half the bar spacing or the concrete edge distace	c_p =	3.38	in	
Transverse bars: [ACI 25.4.2.3]	$k_{tr_p} = 0$ in (per simplification)	k _{tr_p} =	0	in	
Max term: [ACI 25.4.2.3]	c_p' = MIN(2.5, (c_p + ktr_p) / db_p)	c_p' =	2.500		
Excess reinforcement: [ACI 25.4.10.1]	R_p = 1 (excess reinforcement reduction is not used)	R_p =	1.00		
Development (tensile): [ACI 25.4.2.2]	$L_{d} = (3 / 40) * (Fy / \lambda_{p} * \sqrt{(F'c)}) * \psi t \psi e_{p} * \psi s_{p} * R_{p} * db_{p} / c_{p}'_{u}$	L _{dp} ' =	20.9	in	
Minimum length: [ACI 25.4.2.1]	L _{d_min} = 12 inches	$L_{d_{min}} =$	12.0	in	
Development length:	L _{dp} = MAX(Ld_min, Ldp')	$L_{dp} =$	20.9	in	
Length available in pad:	L _{pad} = (W / 2 - w' / 2) - cc	L _{pad} =	36.0	in	
	Check L _{pad} = 36.00 in >=	$L_{dp} =$	20.93	in	ОК

UNIT BASE FOUNDATION (DL - 0.9)

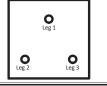
APC Towers KY-1049 CK Clifty

U- 26.0 A- 553842

250

Reactions stress ratio 98.9% mark up: 1.1% 38.00 kips 38.42 kips Shear (Per Leg), SI: x 1.01 = 55.00 kips 55.61 kips Shear (total), S: x 1.01 = Moment, M: 9247.00 ft-kips x 1.01 = 9348.72 ft-kips 435.00 kips Compression / leg, C: 439.79 kips x 1.01 = Uplift / leg, **U**: 383.00 kips x 1.01 = 387.21 kips Tower weight, Wt: 73.00 kips 73.00 kips =

Soil per: Soil Report by Collier Engineering Co., Inc. dated 05/20/2022



V 4.7

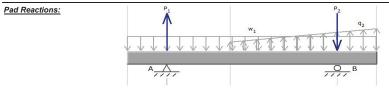
hysical Parameters:											
Concrete volume:		V = T * W ² +	3 * (di² / 4 * т	т) * (D + E -	- T)			V =	73.8	су	
Concrete weight:		W _c = V * δ	0 (u. /	.) (2 2	• ,			W _c =	298.7	kips	
Soil weight:		W _s = (D - T) * ((W ² - 3 * (di ²	/ 4 * π)) * v	,			W.s =	711.6	kips	
Total weight:		P = Wc + Ws		,,,,				P =	1083.33	kips	
										•	
Pressure: Pp coefficient:		K _p = TAN(45 +	⊦m / 2)²					K _p =	1.000		
r p coemcient.		$P_{pn} = Kp * \gamma * I$. ,	(Kn)				P _{pn} =	0.880	ksf	
		$P_{pt} = Kp * \gamma * (l)$,				P _{pt} =	0.688	ksf	
		$P_{pb} = Kp * \gamma * I$	-					P _{pb} =	0.880	ksf	
		$P_{ptop} = IF(N < (D = IF))$,				P _{ptop} =	0.9	ksf	
				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				Pp' =	0.880	ksf	
Shear area:		$Pp' = (Pptop + T_{pp} = 0$	Ρρο)/2						0.880	ft	
Siledi died.		$A_{pp} = 0$ $A_{pp} = Tpp * W$						T _{pp} = A _{pp} =	0.00	ft ²	
Ohaan Oanaaituu			n + u * D) * //						162.499		
Shear Capacity: φr = 0.75		S _{actual} = (Pp' * Ap	ρ+μ ⊢) ψ	1				S _{actual} =	102.499	kips	
			Check	S _{actual} =	162.50	kips	>=	S =	55.61	kips	ОК
verturning Moment I	Resistance at To	De:									
Wt of soil wedge:		W _{sw} = D * (D * T	ΓΑΝ(φ)) / 2 *	W * Y				W _{sw} =	0.0	kips	
Dist. from leg to edge:		O = (W - 0.86	6 * w') / 2					O =	4.992	ft	
Additional offset of Wt:		O _a = W / 2 - (1	/ 3 * 0.866 *	w' + O)				O _a =	3.753	ft	
Resisting moments:		M _{rwt} = P * 0.9 * 1						M _{rwt} =	15514.96	ft-kips	
		M _{rp} = Pp' * App	* (D - N) / 3	5*φr				M _{rp} =	0.00	ft-kips	
		M _{rsw} = Wsw * (W	V + D * TAN(φ)/3) *φr				M _{rsw} =	0.00	ft-kips	
Total resisting:		$M_{rt} = (Mrwt + N)$	/rp + Mrsw)					M _{rt} =	15514.96	ft-kips	
$\varphi r = 0.75$											
Total overturning:		M _o = M + S * (D + E)					M _o =	9821.36	ft-kips	
			Check	M _{rt} =	15514.96	ft-kips	>=	M _o =	9821.36	ft-kips	ок
Bearing Resistance di	ue to Pressure D	Distribution									
Area of mat:		area = W ²						area =	1056.3	ft ²	
Section modulus:								SM =		e 3	
		$SM = W^3 / 6$						SIVI =	5721.4	ft ³	
Factored total weight:			+ Wc + Ws)	* 0.9				5M =	5721.4 964.0		
Factored total weight: Pressure exerted:		P' = (Wt / 1.2	,	* 0.9				P' =	964.0	kip	
Factored total weight: Pressure exerted:			+ Mo / SM	* 0.9							
Pressure exerted:	Note: The stress	P' = (Wt / 1.2 P _{pos} = P' / area	+ Mo / SM - Mo / SM		ring area	has been ad	justed be	P' = P _{max} = P _{min} =	964.0 2.629	kip ksf	
Pressure exerted:	Note: The stress	P' = (Wt / 1.2 P _{pos} = P' / area P _{neg} = P' / area	+ Mo / SM - Mo / SM		ring area	has been ad,	justed be	P' = P _{max} = P _{min} =	964.0 2.629	kip ksf	
Pressure exerted:	Note: The stress	$P' = (Wt / 1.2)$ $P_{pos} = P' / area$ $P_{neg} = P' / area$ $s resultant is NO$ $e_{c} = Mo / P'$	+ Mo / SM - Mo / SM T within the	kern. Bea	ring area	has been adj	justed be	P' = P _{max} = P _{min} =	964.0 2.629 -0.804	kip ksf ksf	
Pressure exerted: Load eccentricity: n Parallel Direction		$P' = (Wt / 1.2)$ $P_{pos} = P' / area$ $P_{neg} = P' / area$ s resultant is NO $e_c = Mo / P'$ $P_{adj} = 2 * P' / (3)$	+ Mo / SM - Mo / SM I T within the	kern. Bea	ring area	has been ad,	justed be	$P' =$ $P_{max} =$ $P_{min} =$ $e_{c} =$ $P_{adj} =$	964.0 2.629 -0.804 10.19	kip ksf ksf ft	
Pressure exerted: Load eccentricity: n Parallel Direction n Diagonal Direction		$\begin{array}{l} P' = (Wt \ / \ 1.2 \\ P_{pos} = P' \ / \ area \\ P_{neg} = P' \ / \ area \\ s \ \textbf{resultant} \ \textbf{is} \ \textbf{NO} \\ e_{c} = Mo \ / \ P' \\ P_{ad} = 2^{\star} \ P' \ / \ (3 \\ ad_{adiag} \ see \ Diagonal \end{array}$	+ Mo / SM - Mo / SM T within the 3 * W * (W / 2 Bearing Sheet (kern. Bea :- ec)) attached)	ring area	has been ad,	justed be	$P' =$ $P_{max} =$ $P_{min} =$ $e_{c} =$ $P_{adj} =$ $P_{adj_diag} =$	964.0 2.629 -0.804 10.19 3.262	kip ksf ksf ft ksf	
Pressure exerted: Load eccentricity: a Parallel Direction a Diagonal Direction Adj. applied pressure:	Pį	$\begin{array}{l} P' = (Wt \ / \ 1.2 \\ P_{pos} = P' \ / \ area \\ P_{neg} = P' \ / \ area \\ s \ resultant \ is \ NO \\ e_{c} = Mo \ / \ P' \\ P_{adj} = 2 \ ^{e} P' \ / \ (3 \\ adj_{diag} \ see \ Diagonal \\ q_{a} = IF(Pneg = P) \\ \end{array}$	+ Mo / SM - Mo / SM T within the 3 * W * (W / 2 Bearing Sheet (kern. Bea :- ec)) attached)	ring area	has been adj	justed be	$P' =$ $P_{max} =$ $P_{min} =$ Now. $e_c =$ $P_{adj} =$ $P_{adj,diag} =$ $q_a =$	964.0 2.629 -0.804 10.19 3.262 3.530	kip ksf ksf ft ksf ksf	
Pressure exerted: Load eccentricity: a Parallel Direction a Diagonal Direction Adj. applied pressure: Overburden Pressure:	Pį	$\begin{array}{l} P' = (Wt \ / \ 1.2 \\ P_{pos} = P' \ / \ area \\ P_{neg} = P' \ / \ area \\ s \ \textbf{resultant} \ \textbf{is} \ \textbf{NO} \\ e_{c} = Mo \ / \ P' \\ P_{ad} = 2^{\star} \ P' \ / \ (3 \\ ad_{adiag} \ see \ Diagonal \end{array}$	+ Mo / SM - Mo / SM T within the ; * W * (W / 2 Bearing Sheet (>= 0, Ppos, F	<mark>kern. Beal</mark> - ec)) attached) [⊅] adj)	<i>ring area</i> 2.382	has been ad,	justed be	$P' =$ $P_{max} =$ $P_{min} =$ $e_{c} =$ $P_{adj} =$ $P_{adj_diag} =$	964.0 2.629 -0.804 10.19 3.262 3.530 3.262	kip ksf ksf ft ksf ksf ksf	ОК
Pressure exerted: Load eccentricity: n Parallel Direction n Diagonal Direction Adj. applied pressure: Overburden Pressure: φr = 0.75	P ₂ (factored)	$\begin{array}{l} P' = (Wt \ / \ 1.2 \\ P_{pos} = P' \ / \ area \\ P_{neg} = P' \ / \ area \\ s \ resultant \ is \ NO \\ e_{c} = Mo \ / \ P' \\ P_{adj} = 2 \ ^{e} P' \ / \ (3 \\ adj_{diag} \ see \ Diagonal \\ q_{a} = IF(Pneg = P) \\ \end{array}$	+ Mo / SM - Mo / SM T within the ; * W * (W / 2 Bearing Sheet (>= 0, Ppos, F	kern. Bea :- ec)) attached)				$P' =$ $P_{max} =$ $P_{min} =$ $P_{adj} =$ $P_{adj_diag} =$ $q_{ab} =$ $q_{obp} =$	964.0 2.629 -0.804 10.19 3.262 3.530 3.262 0.880	kip ksf ksf ft ksf ksf ksf ksf ksf ksf	ОК
Pressure exerted: Load eccentricity: a Parallel Direction a Diagonal Direction Adj. applied pressure: Overburden Pressure: φr = 0.75 Concrete Shear Strengt	P ₂ (factored) g <u>th:</u>	$\begin{array}{l} P' = (Wt \ / \ 1.2 \\ P_{pos} = P' \ / \ area \\ P_{neg} = P' \ / \ area \\ s \ resultant \ is \ NO \\ e_{c} = Mo \ / \ P' \\ P_{adj} = 2 \ ^{e} P' \ / \ (3 \\ adj_{diag} \ see \ Diagonal \\ q_{a} = IF(Pneg = P) \\ \end{array}$	+ Mo / SM - Mo / SM T within the ; * W * (W / 2 Bearing Sheet (>= 0, Ppos, F	<mark>kern. Beal</mark> - ec)) attached) [⊅] adj)				$P' =$ $P_{max} =$ $P_{min} =$ $P_{adj} =$ $P_{adj_diag} =$ $q_{ab} =$ $q_{obp} =$	964.0 2.629 -0.804 10.19 3.262 3.530 3.262 0.880	kip ksf ksf ft ksf ksf ksf ksf ksf ksf	ОК
Pressure exerted: Load eccentricity: a Parallel Direction a Diagonal Direction Adj. applied pressure: Overburden Pressure: φr = 0.75 Concrete Shear Strengt	P ₂ (factored) g <u>th:</u>	$\begin{array}{l} P' = (Wt \ / \ 1.2 \\ P_{pos} = P' \ / \ area \\ P_{neg} = P' \ / \ area \\ s \ resultant \ is \ NO \\ e_{c} = Mo \ / \ P' \\ P_{adj} = 2 \ ^{e} P' \ / \ (3 \\ adj_{diag} \ see \ Diagonal \\ q_{a} = IF(Pneg = P) \\ \end{array}$	+ Mo / SM - Mo / SM T within the * W * (W / 2 Bearing Sheet (>= 0, Ppos, F Check	<mark>kern. Beal</mark> - ec)) attached) [⊅] adj)				$P' =$ $P_{max} =$ $P_{min} =$ $P_{adj} =$ $P_{adj_diag} =$ $q_{ab} =$ $q_{obp} =$	964.0 2.629 -0.804 10.19 3.262 3.530 3.262 0.880	kip ksf ksf ft ksf ksf ksf ksf ksf ksf	ОК
Pressure exerted: Load eccentricity: In Parallel Direction In Diagonal Direction Adj. applied pressure: Overburden Pressure: $\varphi r = 0.75$ Concrete Shear Strem. One way beam action at d Effective depth: Distance from edge of pad to	P ₂ (factored) g <u>th:</u>	$P' = (Wt / 1.2$ $P_{pos} = P' / area$ $P_{neg} = P' / area$ s resultant is NO $e_c = Mo / P'$ $P_{adj} = 2 * P' / (3)$ $ad_{l.diag} see Diagonal$ $q_a = IF(Pneg z)$ $q_{obp} = D * \gamma$	+ Mo / SM - Mo / SM T within the * W * (W / 2 Bearing Sheet (>= 0, Ppos, F Check db_p / 2	<mark>kern. Beal</mark> - ec)) attached) [⊅] adj)				$P' =$ $P_{max} =$ $P_{min} =$ fow. $e_{c} =$ $P_{adj_diag} =$ $q_{a} =$ $q_{obp} =$ $B_{c} * \phi r =$	964.0 2.629 -0.804 10.19 3.262 3.530 3.262 0.880 7.500	kip ksf ft ksf ksf ksf ksf ksf ksf	ОК
Pressure exerted: Load eccentricity: In Parallel Direction In Diagonal Direction Adj. applied pressure: Overburden Pressure: $\varphi r = 0.75$ Concrete Shear Strem One way beam action at d Effective depth:	P ₂ (factored) g <u>th:</u>	$P' = (Wt / 1.2$ $P_{pos} = P' / area$ $P_{neg} = P' / area$ s resultant is NO $e_c = Mo / P'$ $P_{adj} = 2 * P' / (3)$ $adj_{diag} see Diagonal$ $q_a = IF(Pneg z)$ $q_{obp} = D * \gamma$ $d_c = T - cc - cc$ $d' = O - di / 2$	+ Mo / SM - Mo / SM T within the * W * (W / 2 Bearing Sheet (>= 0, Ppos, F Check db_p / 2	<mark>kern. Beal</mark> - ec)) attached) [⊅] adj)				$P' =$ $P_{max} =$ $P_{min} =$ fow. $e_c =$ $P_{adj} =$ $P_{adj_diag} =$ $q_{a} =$ $q_{obp} =$ $B_c * \phi r =$ $d_c =$ $d' =$	964.0 2.629 -0.804 10.19 3.262 3.530 3.262 0.880 7.500 17.625 3.492	kip ksf ksf ksf ksf ksf ksf ksf in ft	ОК
Pressure exerted: Load eccentricity: Parallel Direction a Diagonal Direction Adj. applied pressure: Overburden Pressure: $\varphi r = 0.75$ Concrete Shear Strem one way beam action at d Effective depth: Distance from edge of pad to Distance from edge of pad to action backstrements	P ₂ (factored) g <u>th:</u>	$P' = (Wt / 1.2$ $P_{pos} = P' / area$ $P_{neg} = P' / area$ s resultant is NO $e_c = Mo / P'$ $P_{adj} = 2 * P' / (3)$ $ad_{dag} see Diagonal$ $q_a = IF(Pneg z)$ $q_{obp} = D * \gamma$ $d_c = T - cc - c$ $d' = O - di / 2$ $d'' = O' - dc$	+ Mo / SM - Mo / SM T within the * W * (W / 2 Bearing Sheet (>= 0, Ppos, F Check db_p / 2	<mark>kern. Beal</mark> - ec)) attached) [⊅] adj)				$P' =$ $P_{max} =$ $P_{min} =$ fow. $e_c =$ $P_{adj} =$ $P_{adj_diag} =$ $q_{a} =$ $q_{obp} =$ $B_c * \phi r =$ $d_c =$ $d' =$ $d'' =$ $d'' =$	964.0 2.629 -0.804 10.19 3.262 3.530 3.262 0.880 7.500 17.625 3.492 2.023	kip ksf ksf ksf ksf ksf ksf ksf in ft	ОК
Pressure exerted: Load eccentricity: Parallel Direction Diagonal Direction Adj. applied pressure: Overburden Pressure: $\varphi r = 0.75$ Concrete Shear Strem ine way beam action at d Effective depth: Distance from edge of pad to per face: Distance from edge of pad to coc Bearing Pressure Slop	P ₂ (factored) g <u>th:</u>	$P' = (Wt / 1.2$ $P_{pos} = P' / area$ $P_{neg} = P' / area$ s resultant is NO $e_c = Mo / P'$ $P_{adj} = 2 * P' / (3)$ $ad_{dag} see Diagonal$ $q_a = IF(Pneg z)$ $q_{obp} = D * \gamma$ $d_{c} = T - cc - cc$ $d' = O - di / 2$ $d'' = O' - dc$ $q_s = qa / Weff$	+ Mo / SM - Mo / SM T within the * W * (W / 2 Bearing Sheet (>= 0, Ppos, F Check db_p / 2	kern. Bear (- ec)) attached) Padj) q _a - q _{obp} =	2.382	ksf		$P' =$ $P_{max} =$ $P_{min} =$ fow. $e_c =$ $P_{adj_diag} =$ $Q_{abp} =$ $B_c * \varphi r =$ $d_c =$ $d' =$ $d'' =$ $q_s =$	964.0 2.629 -0.804 10.19 3.262 3.530 3.262 0.880 7.500 17.625 3.492 2.023 0.1794	kip ksf ksf ksf ksf ksf ksf ksf in ft ft kcf	ОК
Pressure exerted: Load eccentricity: a Parallel Direction a Diagonal Direction Adj. applied pressure: Ør = 0.75 Concrete Shear Strem One way beam action at d Effective depth: Distance from edge of pad to Distance from edge of pad to Distance from edge of pad to Bearing Pressure Slop Required shear:	P ₂ (factored) g <u>th:</u>	$\begin{array}{l} {P}' = ({W}t/1.2\\ {P}_{{pos}} = {P}'/{area}\\ {P}_{{neg}} = {P}'/{area}\\ {s}{resultant}{is}{NO}\\ {e}_c = {Mo}/{P}'\\ {P}_{{adj}} = 2^*{P}'/(3\\ {adj}_{{d}}{gsee Diagonal}\\ {q}_{{n}} = {IF}({Pneg}{s}{c}{dadj}{mad}{gsee Diagonal}\\ {q}_{{n}} = {IF}({Pneg}{s}{s}{cd}{mad}{\mathsfmad}{\mathsfmad}}{\mathsfmad}$	+ Mo / SM - Mo / SM T within the * W * (W / 2 Bearing Sheet (>= 0, Ppos, F Check db_p / 2 * * qs)+(d" * qs	kern. Bear (- ec)) attached) Padj) $q_a - q_{obp} =$ (/2)]*d***W	2.382	ksf		$P' =$ $P_{max} =$ $P_{min} =$ $P_{adj} =$	964.0 2.629 -0.804 10.19 3.262 3.530 3.262 0.880 7.500 17.625 3.492 2.023 0.1794 161.88	kip ksf ksf ksf ksf ksf ksf ksf in ft ft kcf kips	ОК
Pressure exerted: Load eccentricity: a Parallel Direction b Diagonal Direction Adj. applied pressure: $\varphi r = 0.75$ Concrete Shear Strem Directed Shear Strem Distance from edge of pad to pler fact: Distance from edge of pad to pler fact: Distance from edge of pad to pler fact: Distance from edge of pad to pler fact: Adj. Bearing Pressure Slop Required shear: Available shear:	P ₂ (factored) g <u>th:</u>	$\begin{array}{l} {P}' = ({W}t/1.2\\ {P}_{{pos}} = {P}'/{area}\\ {p}_{{neg}} = {P}'/{area}\\ {s}{resultant}{is}{NO}\\ {e}_c = {Mo}/{P}'\\ {P}_{{adj}} = 2^*{P}'/(3\\ {adj}_{{adl}}{gal}{see}{Diagonal}\\ {q}_{{a}} = {IF}({Pneg}{se}{diag}{see}{Diagonal}\\ {q}_{{ad}} = {IF}({Pneg}{se}{diag}{see}{Diagonal}\\ {q}_{{abep}} = {D}^*{Y}\\ {d}_c = {T}-{ccc}{cc}\\ {d}' = {O}-{d}/{2}\\ {d}_c = {T}-{ccc}{cc}\\ {d}'' = {O}-{d}/{2}\\ {d}'' = {O}-{d}/{2}\\ {d}'' = {d}-{dcc}\\ {q}_{{a}} = {qa}/{Weff}\\ {V}_{{n1}} = [({qa}-{d}'''\\ {V}_{{c1}} = {qos}*2*\lambda}\\ {V}_{{c1}} = {qos}*2*\lambda}\\ \end{array} \right.$	+ Mo / SM - Mo / SM T within the * W * (W / 2 Bearing Sheet (>= 0, Ppos, F Check db_p / 2 * * qs)+(d" * qs	kern. Bear (- ec)) attached) Padj) $q_a - q_{obp} =$ (/2)]*d***W	2.382	ksf		$P' =$ $P_{max} =$ $P_{min} =$ fow. $e_c =$ $P_{adj_diag} =$ $Q_{abp} =$ $B_c * \varphi r =$ $d_c =$ $d' =$ $d'' =$ $q_s =$	964.0 2.629 -0.804 10.19 3.262 3.530 3.262 0.880 7.500 17.625 3.492 2.023 0.1794	kip ksf ksf ksf ksf ksf ksf ksf in ft ft kcf	ОК

	eam action at d _i / 2 from towe Square Column (ACI 8.10.1.3 &											
	22.6.4.1.2)	- 1	=di / 2 * √π						deq =	31.90	in	
	Mat effective width in bearing		= Min (W, 3							18.187075	ft	
Ratio o	f long side to short side of Pier		= 1 (for squa		• •				β =	1.00		
	Length:		= dc / 2 + de		,				b ₁ =	63.76	in	
Oritizal	Width:		= (dc + deq	+ W - SIN(6	0) * w\) / 2				b ₂ =	84.66	in	
Critical Section	Perimeter:	b _o	= b1 + b2						b _o =	148.43	in	
	Centroid	С	= (b1 * dc *	b1 / 2) / (b1*	' dc + b2 *	dc)			с =	13.697	ft	
	Eccentricity:	e _c	= (deq + dc)	/ 2 - c					e _c =	11.0680813	in	
	Polar MOI	J _c	= [(dc * b1^3	8 / 12) + (b1	* dc^3 / 12	:) + (b1 * d	lc * (b1 / 2 - c)^2] + (b1	J _c =	1.061E+06	in [*]	
Moment Fraction	flexure:	Yf	= 1 / (1 + 2 /	3 * √ (b1 / b	o2))				$\gamma_f =$	0.63		
ransferred by	eccentricity of shear:	Ŷv	= 1 - yf						γ _v =	0.37		
Bearing I	Pressure Slope:	q _s	= qa / Weff						q _s =	0.179	kcf	
	aring Pressure:		= ((Weff - b1	1) * ds + da)	12				q _{a.pl} =	2.785	ksf	
-	orce at Section:		= C - qa.pl *	, , , ,	. =				V _{n pier} =	335.357	kips	
enear r	Slab Moment:		= SI * (D - T	, ,	oier * e				M _{sc} =	568.64	ft-kips	
	Required shear: φs = 0.75					/ lc)			sc	160.46		
) . (* /)) *) *- /(F -))			psi	
	Available shear: [A	CI 22.6.5.2]	$= \phi s \sin (1)$	Check		201.25		>=	V _{n2} =	201.246 160.46	psi	ок
Mor	ment transfered:			Check	v _{c2} -	201.25	psi	~-	v n2 -	100.40	psi	UK
	(Pier 1)	M _{n1}	= γf * Msc						M _{n1} =	260.043	ft-kips	
Effecti	ve Beam Width:	W _{eff1}	= deq + 1.5	* T + MIN(1	.5 * T , (W	- w\ * SIN	l(60) - deq) /	2)	w _{eff1} =	7.909	ft	
		A _{st_p1} '	= Mn1 / (0.9	* Fy * dc)					A _{st_p1} ' =	3.279	in ²	
			= Ast_p1' * F		* weff1)				a _{p1} =	0.558	in	
	Required steel:		= Mn1 / (Fy		,				A _{st p st1} =	2.998	in ²	
	eel in entire mat:		= Ast_p_st1	· ·	//				A _{st p ste1} =	12.321	in ²	
	ment transfered:	· st_p_ster	/lot_p_ot/						· st_p_ster	12.021		
	(Pier 2 or 3)	M _{n2}	=γf*Msc (Controlling (Case: Corn	er.)			M _{n2} =	360.224	ft-kips	
Effectiv	ve Beam Width:	W _{eff2}	= deq + 1.5	* T + MIN(1	.5 * T , (W	- w\ - dec	1)/2)		w _{eff2} =	7.204	ft	
		A _{st_p2} '	= Mn2 / (0.9	* Fy * dc)					A _{st_p2} ' =	4.542	in ²	
		a _{p2}	= Ast_p2' * F		* weff2)				a _{p2} =	0.849	in	
	Required steel:	Ast_p_st2	= Mn2 / (Fy	* (dc - ap2 /	2))				$A_{st_p_{st_2}} =$	4.189	in ²	
Required st	eel in entire mat:	A _{st_p_ste2}	= Ast_p_st2	* W / weff2					A _{st_p_ste2} =	18.895	in ²	
									Cor	ntrolling Case		Pier 2: Corn
wo way b	eam action at d _i / 2 from towe	er (ACI 22.6	5)- Uplift									
Pier Rei	inforcement Dia		=di -2*cc-2*c	db_t - 1*db_	с				di _T =	28.000	in	
	quare Column (ACI 8.10.1.3 &	di _T			с							
Eq. S	Quare Column (ACI 8.10.1.3 & 22.6.4.1.2)	di _T d _{eq_T}	=dprebar / 2		с				d _{eq_T} =	24.81	in	
Eq. S Critical	quare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length:	di _T d _{eq_T} b _{1_T}	=dprebar / 2 = deq_T + d	 .* √π c	С				d _{eq_T} = b _{1_T} =	24.81 42.439	in in	
Eq. S Critical	quare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter:	di _T d _{eq_T} b _{1_T} b _{o_T}	=dprebar / 2 = deq_T + d = 4 * (deq +	 c dc)					d _{eq_T} = b _{1_T} = b _{o_T} =	24.81 42.439 169.76	in in in	
Eq. S Critical	quare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length:	di _T d _{eq_T} b _{1_T} b _{o_T} J _{c_T}	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 *	 c dc)		6)+(dc * b	1_T * b2_T^2	/ 2)	d _{eq_T} = b _{1_T} = b _{o_T} = J _{c_T} =	24.81 42.439	in in in	
Eq. S Critical Critical Se	quare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter:	di _T d _{eq_T} b _{1_T} b _{o_T}	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 *	 c dc)		6)+(dc * b	1_T * b2_T^2	/ 2)	d _{eq_T} = b _{1_T} = b _{o_T} =	24.81 42.439 169.76	in in in	
Eq. S Critical Critical Se	equare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI	di _T d _{eq_T} b _{1_T} b _{0_T} J _{c_T} V _{n_pier_T}	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U	 c dc) dc / 6)+ (b1_	_T * d ^3 /	, ,		/ 2)	d _{eq_T} = b _{1_T} = b _{o_T} = J _{c_T} =	24.81 42.439 169.76 936866.446	in in in in ⁴	
Eq. S Critical Critical Se	iquare Column (ACI 8.10.1.3 8 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section:	di _T d _{eq_T} b _{1_T} b _{0_T} J _{c_T} V _{n_pier_T} (ACI 21.2.1)	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier_	 c dc) dc / 6)+ (b1 T / b1T * dc	_T * d ^3 / c) + (yv * N	lsc* c_T /	Jc_T)		d _{eq_T} = b _{1_T} = b _{o_T} = J _{c_T} =	24.81 42.439 169.76 936866.446 387.213	in in in in ⁴ kips	
Eq. S Critical Critical Se	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: φs = 0.75	di _T d _{eq_T} b _{1_T} b _{0_T} J _{c_T} V _{n_pier_T} (ACI 21.2.1)	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier_	 c dc) dc / 6)+ (b1 T / b1T * dc	_T * d ^3 / c) + (γv * Μ (2+(4/β))*;	lsc* c_T /	 Jc_T) 2+(αs*dc/bo))		d _{eq_T} = b _{1_T} = b _{o_T} = J _{c_T} =	24.81 42.439 169.76 936866.446 387.213 157.610	in in in kips psi	ОК
Eq. S Critical Critical Sec Shear F	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: φs = 0.75	di _T d _{eq_T} b _{1_T} b _{0_T} J _{c_T} V _{n_pier_T} (ACI 21.2.1)	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier_	 dc) dc / 6)+ (b1 T / b1_T * dc (4*λ*√(Fc) ,	_T * d ^3 / c) + (γv * Μ (2+(4/β))*;	lsc* c_T / *√(Fc) , (Jc_T) 2+(αs*dc/bo))	*λ*√(Fc))	d _{eq_T} = b _{1_T} = b _{0_T} = J _{c_T} = V _{n_pier_T} =	24.81 42.439 169.76 936866.446 387.213 157.610 201.25	in in in ⁴ kips psi psi	ОК
Eq. S Critical Ser Shear F Column (iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: φs = 0.75 Available shear: [A	di _T d _{eq_T} b _{1_T} b _{0_T} J _{c_T} V _{n_pier_T} (ACI 21.2.1) CI 22.6.5.2)	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier_	 c dc) dc / 6)+ (b1_ T / b1_T * dc (<u>4*</u> λ*√(Fc), Check	_T * d ^3 / c) + (γv * M (2+(4/β))*, V _{t2} =	lsc* c_T / *√(Fc) , (Jc_T) 2+(αs*dc/bo))	*λ*√(Fc))	d _{eq_T} = b _{1_T} = b _{0_T} = J _{c_T} = V _{n_pier_T} =	24.81 42.439 169.76 936866.446 387.213 157.610 201.25	in in in ⁴ kips psi psi	ок
Eq. S Critical Ser Shear F Column (iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: qs = 0.75, Available shear: [A Compression Capacity:	di _T d _{eq_T} b _{1_T} b _{0_T} J _{c_T} V _{n_pier_T} (ACI 21.2.1) CI 22.6.5.2)	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier_ ' = φs * MIN_	 c dc) dc / 6)+ (b1_ T / b1_T * dc (<u>4*</u> λ*√(Fc), Check	_T * d ^3 / c) + (γv * M (2+(4/β))*/ V ₁₂ = 4 * π)	lsc* c_T / <u>*√(Fc) , (</u> 201.25	 Jc_T) <u>2+(αs*dc/bo))</u> psi	*λ*√(Fc))	$d_{eq_T} = b_{1_T} = b_{0_T} = J_{c_T} = V_{n_p per_T} = V_{n_p per_T} = V_{nt2} = 0$	24.81 42.439 169.76 936866.446 387.213 157.610 201.25 157.61	in in in ⁴ kips psi psi psi	ок
Eq. S Critical Ser Shear F Column (iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: φs = 0.75 Available shear: [A Compression Capacity: ession reaction:	di _T d _{eq_T} b _{1_T} b _{0_T} J _{c_T} V _{n_pier_T} (ACI 21.2.1) CI 22.6.5.2)	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier_ ' = φs * MIN_	 c dc) dc / 6)+ (b1_ T / b1_T * dc (<u>4*</u> λ*√(Fc), Check	_T * d ^3 / c) + (γv * M (2+(4/β))*/ V ₁₂ = 4 * π)	lsc* c_T / *√(Fc) , (Jc_T) <u>2+(αs*dc/bo))</u> psi	*λ*√(Fc))	$d_{eq_T} = b_{1_T} = b_{0_T} = J_{c_T} = V_{n_p per_T} = V_{n_p per_T} = V_{nt2} = 0$	24.81 42.439 169.76 936866.446 387.213 157.610 201.25 157.61	in in in ⁴ kips psi psi psi	ОК
Eq. S Critical Critical Sec Shear F <u>Column (</u> Compre	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: $\varphi s = 0.75$, Available shear: [A Compression Capacity: ession reaction: $\varphi c = 0.65$ [ACI 21.2.2.2]	di _T d _{eq_T} b _{1_T} b _{0_T} J _{c_T} V _{n_pier_T} (ACI 21.2.1) CI 22.6.5.2)	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier_ ' = φs * MIN_	c dc) dc / 6)+ (b1_ T / b1_T * dc (4*λ* $\sqrt{(Fc)}$, Check * F'c * (di ² / 4	_T * d ^3 / c) + (γv * M (2+(4/β))*/ V ₁₂ = 4 * π)	lsc* c_T / <u>*√(Fc) , (</u> 201.25	 Jc_T) <u>2+(αs*dc/bo))</u> psi	×λ*√(Fc)) >=	$d_{eq_{_T}T} = b_{1_{_T}T} = b_{0_{_T}T} = J_{0_{_T}T} = J_{0_{_T}T} = V_{n_{_P}per_{_T}T} = V_{n_{_P}per_{_T}T} = V_{n12} = P_c = 0$	24.81 42.439 169.76 936866.446 387.213 157.610 201.25 157.61 2530.7	in in in ⁴ kips psi psi kips	
Eq. S Critical Critical Sec Shear F Column (Compre Pier Rein	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: $\varphi = 0.75$, Available shear: [A Compression Capacity: ession reaction: $\varphi c = 0.65$ [ACI 21.2.2.2]	di _T d _{eq_T} b _{0_T} J _{c_T} V _{n_pier} (ACI 21.2.1) CI 22.6.5.2)	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier_' ' = φs * MIN = φc * 0.85 '	c dc) dc / 6)+ (b1_ T / b1_T * dc (4*λ* $\sqrt{(Fc)}$, Check * F'c * (di ² / 4	_T * d ^3 / c) + (γv * M (2+(4/β))*/ V ₁₂ = 4 * π)	lsc* c_T / <u>*√(Fc) , (</u> 201.25	 Jc_T) <u>2+(αs*dc/bo))</u> psi	×λ*√(Fc)) >=	$d_{eq_T} = b_{1T} = b_{0} = J_{c_T} = J_{c_T} = J_{c_T} = V_{n_pper_T} = V_{n12} = C_{c_T} = C$	24.81 42.439 169.76 936866.446 387.213 157.610 201.25 157.61 2530.7 439.79	in in in ⁴ kips psi psi kips kips	
Eq. S Critical Critical Sec Shear F Column (Compre Pier Rein Cross	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: $\varphi = 0.75$, Available shear: [A Compression Capacity: ession reaction: $\varphi c = 0.65$ [ACI 21.2.2.2] forcement: -sectional area:	di _T d _{eq_T} b ₁ J _{c_T} J _{c_T} V _{n_pier_T} (ACI 21.2.1) CI 22.6.5.2) P _c	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier_' ' = φs * MIN = φc * 0.85 '	c dc) dc / 6)+ (b1_ T / b1_T * dc (4*λ* $\sqrt{(Fc)}$, Check * F'c * (di ² / 4	_T * d ^3 / c) + (γv * M (2+(4/β))*/ V ₁₂ = 4 * π)	lsc* c_T / <u>*√(Fc) , (</u> 201.25	 Jc_T) <u>2+(αs*dc/bo))</u> psi	×λ*√(Fc)) >=	$d_{eq_T} =$ $b_{1T} =$ $b_{0} =$ $J_{c_T} =$ $V_{n_p p er_T} =$ $V_{nt2} =$ $P_c =$ $C =$ $A_g =$	24.81 42.439 169.76 936866.446 387.213 157.610 201.25 157.61 2530.7 439.79	in in in ⁴ kips psi psi kips kips	
Eq. S Critical Critical Sec Shear F Column (Compre Pier Rein Cross	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Parimeter: Polar MOI orce at Section: Required shear: $\varphi s = 0.75$, Available shear: [A Compression Capacity: ession reaction: $\varphi c = 0.65$ [ACI 21.2.2.2] forcement: -sectional area: a of steel (pier):	di _T d _{eq_T} b ₁ b ₀ J ₀ J ₀ (AC121.2.1) CI 22.6.5.2) P _c A _g A _{st_c}	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier_' ' = φs * MIN = φc * 0.85 '	c dc) dc / 6)+ (b1_ T / b1_T * dc (4*λ* $\sqrt{(Fc)}$, Check * F'c * (di ² / 4	_T * d ^3 / c) + (γv * M (2+(4/β))*/ V ₁₂ = 4 * π)	lsc* c_T / <u>*√(Fc) , (</u> 201.25	 Jc_T) <u>2+(αs*dc/bo))</u> psi	×λ*√(Fc)) >=	$d_{eq_T} = b_{1T} = b_{0} = J_{c_T} = J_{c_T} = J_{c_T} = V_{n_pper_T} = V_{n12} = C_{c_T} = C$	24.81 42.439 169.76 936866.446 387.213 157.610 201.25 157.61 2530.7 439.79	in in in ⁴ kips psi psi kips kips	
Eq. S Critical Critical Sec Shear F Column (Compre Pier Rein Cross	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: $\varphi s = 0.75$, Available shear: [A Compression Capacity: ession reaction: $\varphi c = 0.65$ [ACI 21.2.2.2] forcement: -sectional area: a of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2]	di _T b _{1_T} b _{0_T} J _{c_T} V _{n_pier_T} (ACI 21.2.1) CI 22.6.5.2) P _c A _g A _{st_c}	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier_ ' = φs * MIN_ = φc * 0.85 * [= di ² * π / 4 = Ag * 0.01	* √π c dc) (b1_T * dc (4 ² / [*] √(Fc), Check * F'c * (di ² / 4 Check		lsc* c_T / <u>*√(Fc) , (</u> 201.25	 Jc_T) <u>2+(αs*dc/bo))</u> psi	×λ*√(Fc)) >=	$d_{eq_T} = b_{1T} = b_{0}T = J_{cT} = J_{cT} = J_{cT} = V_{n_ppler_T} = V_{nt2} = P_c = C = C = C = C = A_g = A_{st_c} $	24.81 42.439 936866.446 387.213 157.610 201.25 157.61 2530.7 439.79 1017.88 10.18	in in in ⁴ kips psi psi psi kips kips	
Eq. S Critical Critical Sec Shear F Column (Compre Pier Rein Cross	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: φs = 0.75 Available shear: [A Compression Capacity: ession reaction: φc = 0.65 [ACI 21.2.2.2] forcement: -sectional area: a of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle:	di _T d _{eq_T} b ₁ T b ₀ T J _c T V _{n_pier_T} (ACI 21.2.1) CI 22.6.5.2) P _c A _g A _{st_c} d _o	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier_ ' = $\phi s * MIN_{-}$ = $\phi c * 0.85 ^{\circ}$ = $di^2 * \pi / 4$ = $Ag * 0.01$ = di - 2 * cc	* √π c dc) (b1_T * dc (4 ² / [*] √(Fc), Check * F'c * (di ² / 4 Check		lsc* c_T / <u>*√(Fc) , (</u> 201.25	Jc_T) 2+(as*dc/bo)) psi kips	*λ*√(Fc)) >= >=	$d_{eq_T} =$ $b_1 =$ $b_0 =$ $J_c =$ $J_c =$ $V_{n_p p e r_T} =$ $V_{nt2} =$ $P_c =$ $C =$ $A_g =$ $A_{st_c} =$ $d_o =$	24.81 42.439 169.76 936866.446 387.213 157.610 201.25 157.61 2530.7 439.79	in in in ⁴ kips psi psi kips kips	
Eq. S Critical Critical Sec Shear F Column (Compre Compre Pier Rein Cross	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: $\varphi s = 0.75$, Available shear: [A Compression Capacity: ession reaction: $\varphi c = 0.65$ [ACI 21.2.2.2] forcement: -sectional area: a of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2]	di _T b _{1_T} b _{0_T} J _{c_T} V _{n_pier_T} V <i>n_pier_T</i> (ACI 21.2.1) CI 22.6.5.2) P _c A _g A _{st_c} d _o S _c =	$= dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier' ' = \varphi * MIN' = \varphi c * 0.85 * [] = di^2 * \pi / 4 = Ag * 0.01 = di - 2 * cc = 8$	* √π c dc) (b1_T * dc (4 ² / [*] √(Fc), Check * F'c * (di ² / 4 Check		lsc* c_T / <u>*√(Fc) , (</u> 201.25	Jc_T) 2+(as*dc/bo)) psi kips d _{b_c} =	*\tak{\(Fc))} >= >=	$d_{eq_T} =$ $b_{1T} =$ $b_{o_T} =$ $J_{c_T} =$ $V_{n_pier_T} =$ $V_{nt2} =$ $P_c =$ $C =$ $C =$ $A_g =$ $A_{st_c} =$ $d_o =$ in	24.81 42.439 936866.446 387.213 157.610 201.25 157.61 2530.7 439.79 1017.88 10.18	in in in ⁴ kips psi psi psi kips kips	
Eq. S Critical Critical Sec Shear F Column (Compre Compre Pier Rein Cross	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: φs = 0.75 Available shear: [A Compression Capacity: ession reaction: φc = 0.65 [ACI 21.2.2.2] forcement: -sectional area: a of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle:	di _T d _{eq_T} b ₁ T b ₀ T J _c T V _{n_pier_T} (ACI 21.2.1) CI 22.6.5.2) P _c A _g A _{st_c} d _o	$= dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier' ' = \varphi * MIN' = \varphi c * 0.85 * [] = di^2 * \pi / 4 = Ag * 0.01 = di - 2 * cc = 8$	* √π c dc) (b1_T * dc (4 ² / [*] √(Fc), Check * F'c * (di ² / 4 Check		lsc* c_T / <u>*√(Fc) , (</u> 201.25	Jc_T) 2+(as*dc/bo)) psi kips	*λ*√(Fc)) >= >=	$d_{eq_T} =$ $b_1 =$ $b_0 =$ $J_c =$ $J_c =$ $V_{n_p p e r_T} =$ $V_{nt2} =$ $P_c =$ $C =$ $A_g =$ $A_{st_c} =$ $d_o =$	24.81 42.439 936866.446 387.213 157.610 201.25 157.61 2530.7 439.79 1017.88 10.18	in in in ⁴ kips psi psi kips kips kips in ² in	
Eq. S Critical Critical Sec Shear F Column (Compre Compre Pier Rein Cross	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: φs = 0.75 Available shear: [A Compression Capacity: ession reaction: φc = 0.65 [ACI 21.2.2.2] forcement: -sectional area: a of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle:	di _T b _{0-T} J _{0-T} J _{0-T} V _{n_pier_T} V _{n_pier_T} V _{n_pier_T} P _c P _c A _g A _{st_c} d _o S _{_c} = m _{_c} =	$= dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier' ' = \varphi * MIN' = \varphi c * 0.85 * [] = di^2 * \pi / 4 = Ag * 0.01 = di - 2 * cc = 8$	* √π c dc) dc / 6)+ (b1 T / b1_T * dc (4*λ*√(Fc), Check * F'c * (di ² / 4 Check		lsc* c_T / <u>*√(Fc) , (</u> 201.25	Jc_T) 2+(as*dc/bo)) psi kips db_c = Ab_c =	*\tak{\(Fc))} >= >=	$d_{eq_T} =$ $b_{1T} =$ $b_{o_T} =$ $J_{c_T} =$ $V_{n_pier_T} =$ $V_{nt2} =$ $P_c =$ $C =$ $C =$ $A_g =$ $A_{st_c} =$ $d_o =$ in	24.81 42.439 936866.446 387.213 157.610 201.25 157.61 2530.7 439.79 1017.88 10.18	in in in kips psi psi kips kips kips in ² in	
Eq. S Critical Critical Sec Shear F Column (Compre Compre Pier Rein Cross	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: φs = 0.75 Available shear: [A Compression Capacity: ession reaction: φc = 0.65 [ACI 21.2.2.2] forcement: -sectional area: a of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle:	di _T b _{0-T} J _{0-T} J _{0-T} V _{n_pier_T} V _{n_pier_T} V _{n_pier_T} P _c P _c A _g A _{st_c} d _o S _{_c} = m _{_c} =	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier_' = $\varphi s * MIN_{-}$ = $\varphi c * 0.85 *$ = di ² * π / 4 =Ag * 0.01 = di - 2 * cc - 8 13	* √π c dc) dc / 6)+ (b1 T / b1_T * dc (4*λ*√(Fc), Check * F'c * (di ² / 4 Check		lsc* c_T / <u>*√(Fc) , (</u> 201.25	Jc_T) 2+(as*dc/bo)) psi kips d _{b_c} =	*\tak{\(Fc))} >= >=	$d_{eq_T} =$ $b_{1T} =$ $b_{o_T} =$ $J_{c_T} =$ $V_{n_pier_T} =$ $V_{n_pier_T} =$ $P_c =$ $P_c =$ $C =$ $A_{g} =$ $A_{st_c} =$ $d_o =$ in in ²	24.81 42.439 169.76 936866.446 387.213 157.610 201.25 157.61 2530.7 439.79 1017.88 10.18 28.00	in in in ⁴ kips psi psi kips kips kips in ² in	
Eq. S Critical Sec Shear F Column C Compre Compre Conss Min. are	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: φs = 0.75 Available shear: [A Compression Capacity: ession reaction: φc = 0.65 [ACI 21.2.2.2] forcement: -sectional area: a of steel (pier): [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle:	di _T b ₁ T b ₀ T J ₀ T J ₀ T V _{n_pier_T} V _{n_pier_T} V _{n_pier_T} AG(21.2.1) Cl 22.6.5.2) P _c P _c A _{st_c} d ₀ S _{_c} = m _{_c} = A _{s_c}	=dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U = (Vn_pier_' = $\varphi s * MIN_{-}$ = $\varphi c * 0.85 *$ = di ² * π / 4 =Ag * 0.01 = di - 2 * cc - 8 13	<pre>* √π c dc) dc/6)+(b1 T/b1_T*dc (4*λ*√(Fc), Check * F'c*(di²/4 Check </pre>		lsc* c_T / A*√(Fc).(201.25 2530.69	Jc_T) 2+(as*dc/bo)) psi kips db_c = Ab_c =	*λ*√(Fc)) >= >= 1 0.79	$d_{eq_T} =$ $b_{1T} =$ $b_{0} =$ $J_{c_T} =$ $V_{n_pier_T} =$ $V_{n_pier_T} =$ $P_c =$ $P_c =$ $C =$ $C =$ $A_{g} =$ $A_{st_c} =$ $d_o =$ in in ² $A_{s_c} =$	24.81 42.439 169.76 936866.446 387.213 157.610 201.25 157.61 2530.7 439.79 1017.88 10.18 28.00	in in in kips psi psi kips kips kips in ² in	ОК
Eq. S Critical Sec Shear F Column C Compro Compro Pier Rein Cross Min. are	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: $\varphi = 0.75$, Available shear: [A Compression Capacity: ession reaction: $\varphi c = 0.65$ [ACI 21.2.2.2] forcement: 	di _T b ₁ T b ₀ T J ₀ T V _{n_pier_T} V _{n_pier_T} V _{n_pier_T} CI 22.6.5.2 P _c P _c A _g A _{st_c} d _o S _{_c} = m _{_c} = A _{s_c}	$= dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U)) = (Vn_pier_)^{-1} = \phi s * MIN_{1}$ $= \phi c * 0.85 * (C_1^3) = di^2 * \pi / 4 = Ag * 0.01$ $= di^2 * \pi / 4 = Ag * 0.01$ $= di - 2 * cc = 8$ $= Ab_c c * m_{1}$	* √π c dc) dc / 6)+ (b1 T / b1_T * dc (4*λ*√(Fc), Check * F'c * (di² / 4 Check Check c Check p * S / 2		lsc* c_T / A*√(Fc).(201.25 2530.69	Jc_T) 2+(as*dc/bo)) psi kips db_c = Ab_c =	*λ*√(Fc)) >= >= 1 0.79	$d_{eq_T} = d_{b_1T} $	24.81 42.439 169.76 936866.446 387.213 157.610 201.25 157.61 2530.7 439.79 439.79 1017.88 10.18 28.00 10.27 10.18	in in in in ⁴ kips psi psi kips kips kips in ² in	OK
Eq. S Critical Sec Shear F Column C Compro Compro Pier Rein Cross Min. are	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: $\varphi = 0.75$, Available shear: [A Compression Capacity: ession reaction: $\varphi c = 0.65$ [ACI 21.2.2.2] forcement: [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle: Rebar: Actual moment:	di _T b ₁ T b ₀ T J ₀ T V _{n_pier_T} V _{n_pier_T} V _{n_pier_T} CI 22.6.5.2 P _c P _c A _g A _{st_c} d _o S _{_c} = m _{_c} = A _{s_c}	$= dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U)) = (Vn_pier_)^{-1} = \phi s * MIN_{-1} = \phi s * MIN_{-1} = di^2 * \pi / 4 = Ag * 0.01 = di - 2 * cc + 8 = 13 = Ab_c * m_{-1} = (D - T + E_{-1}) = (D - $	* √π c dc) dc / 6)+ (b1 T / b1_T * dc (4*λ*√(Fc), Check * F'c * (di² / 4 Check Check c Check p * S / 2		lsc* c_T / A*√(Fc).(201.25 2530.69	Jc_T) 2+(as*dc/bo)) psi kips db_c = Ab_c =	*λ*√(Fc)) >= >= 1 0.79	$d_{eq_T} = d_{b_1T} $	24.81 42.439 169.76 936866.446 387.213 157.610 201.25 157.61 2530.7 439.79 439.79 1017.88 10.18 28.00 10.27 10.18 187.67	in in in kips psi psi psi kips kips kips in ² in in ft-kips	OK
Eq. S Critical Sec Shear F Column C Compro Compro Pier Rein Cross Min. are	iquare Column (ACI 8.10.1.3 & 22.6.4.1.2) Section Length: ction Perimeter: Polar MOI orce at Section: Required shear: $\varphi = 0.75$, Available shear: [A Compression Capacity: ession reaction: $\varphi c = 0.65$ [ACI 21.2.2.2] forcement: [ACI 10.6.1.1] & [ACI 10.3.1.2] Cage circle: Rebar: Actual moment:	di _T d _{eq_T} b ₁ b ₀ J ₀ J ₀ (AC121.2.1) C122.6.5.2) P _c P _c A _g A _{st_c} d _o s _{_c} = m _{_c} = A _{s_c} M _{max} M _{allow}	$= dprebar / 2 = deq_T + d = 4 * (deq + = (b1_T^3 * = U)) = (Vn_pier_)^{-1} = \phi s * MIN_{-1} = \phi s * MIN_{-1} = di^2 * \pi / 4 = Ag * 0.01 = di - 2 * cc + 8 = 13 = Ab_c * m_{-1} = (D - T + E_{-1}) = (D - $	* √π c dc) / 6)+ (b1 d / 6)+ (b1 <pd (b1<="" 6)+="" p=""> <p d<="" td=""><td></td><td>lsc* c_T / x*√(Fc) . (201.25 2530.69 10.27</td><td>$\begin{array}{c} - & - \\ Jc_{-}T) \\ 2+(\alpha s^{*}dc/bo)) \\ psi \\ \hline \\ kips \\ \\ kips \\ \\ d_{b_{-}c} = \\ A_{b_{-}c} = \\ in^{2} \\ \end{array}$</td><td>*λ*√(Fc)) >= >= 1 0.79 >=</td><td>$d_{eq_T} = d_{b_1T}$</td><td>24.81 42.439 169.76 936866.446 387.213 157.610 201.25 157.61 2530.7 439.79 439.79 439.79 1017.88 10.18 28.00 10.27 10.18 187.67 189.94</td><td>in in in kips psi psi psi kips kips kips in² in² in ft-kips</td><td>ОК</td></p></pd>		lsc* c_T / x*√(Fc) . (201.25 2530.69 10.27	$\begin{array}{c} - & - \\ Jc_{-}T) \\ 2+(\alpha s^{*}dc/bo)) \\ psi \\ \hline \\ kips \\ \\ kips \\ \\ d_{b_{-}c} = \\ A_{b_{-}c} = \\ in^{2} \\ \end{array}$	*λ*√(Fc)) >= >= 1 0.79 >=	$d_{eq_T} = d_{b_1T} $	24.81 42.439 169.76 936866.446 387.213 157.610 201.25 157.61 2530.7 439.79 439.79 439.79 1017.88 10.18 28.00 10.27 10.18 187.67 189.94	in in in kips psi psi psi kips kips kips in ² in ² in ft-kips	ОК

Reinforcement location:	ψ_{t_c} = if the space	e under the r	ebar > 12 in	, use 1.3	, else use	e 1.0	$\psi_{t_c} =$	1.3		
[ACI 25.4.2.4]	Ψ _{e c} = if epoxy-co	atad bara ar	a not used u	100	but if one	w/ apatod		1.0		
Epoxy coating:						•	ψ _{e_c} =	1.0		
[ACI 25.4.2.4]		sed, then if B						1.0		
Max term: [ACI 25.4.2.4]	$\Psi_t \Psi_{e_c} = \text{the product}$	ι οι ψι & ψe,	need not be	e taken ia	irger man	1.7	ψ _t ψ _{e_c} =	1.3		
Reinforcement size: [ACI 25.4.2.4]	$\psi_{s_c} = \text{ if the bar s}$	ize is 6 or les	s, then use	0.8, else	use 1.0		ψ _{s_c} =	1		
Light weight concrete: [ACI 25.4.2.4]	$\lambda_{c} = \text{ if lightwieg}$	ht concrete is	s used, 0.75	, else us	e 1.0		λ_c =	1.0		
Spacing/cover: [ACI 25.4.2.4]	$c_{_c}$ the smalle	r of: half the l	par spacing	or the co	ncrete ec	lge distace	c ^{_c} =	3.38	in	
Transverse bars: [ACI 25.4.2.3]	$k_{tr_c} = 0$ in (p	er simplificati	on)				k _{tr_c} =	0	in	
Max term: [ACI 25.4.2.3]	c_c' = MIN(2.5	, (c_c + ktr_c	c) / db_c)				c_c' =	2.500		
Excess reinforcement: [ACI 25.4.10.1]	R _c = 1		(exc	ess reinfor	cement red	uction is not used)	R_c =	1.00		
Development (tensile): [ACI 25.4.2.2]	$L_{dt_{c}} = (3 / 40) *$	Fy/λ_c*√(F	'c)) * (ψtψe_c	* ws_c *	R_c / c_c')	* db_c	L _{dt_c} =	34.88	in	
Minimum length: [ACI 25.4.2.1]	$L_{d_{min}} = 12$ inche	S					$L_{d_{min}} =$	12.0	in	
Development length:	$L_{dt_c} = MAX(Lc$	_min, Ldt'_c)				L _{dt_c} =	34.88	in	
onfining Reinforcement: [ACI 25.4.9.3]	$\Psi_{r_c} = 1$						$\psi_{r_c} =$	1.00		
Development (comp.): [ACI 25.4.9.2]	L _{dc} '_c = Fy *ψr_c	* db_c * R_	_c / (50 * λ_c	c * √(F'c))		L _{dc} '_c =	17.89	in	
	$L_{dc}''_{c} = 0.0003 *$	db_c * Fy * u	µr_c * R_c				$L_{dc}"_{c} =$	18.00	in	
Development length:	$L_{dc_c} = MAX(8)$	Ldc'_c, Ldc"	_c)				$L_{dc_c} =$	18.00	in	
Length available in pier:	$L_{vc} = D - T + E$	- cc					L _{vc} =	78.0	in	
		Check	L _{vc} =	78.0	in	>=	$L_{dt_c} =$	34.9	in	ОК
		Check	L _{vc} =	78.0	in	>=	$L_{dc_c} =$	18.0	in	ОК
Length available in pad:	$L_{vp} = T - cc$						L _{vp} =	18.0	in	
		Check	L _{vp} =	18.0	in	>=	L _{dt_c} =	34.9	in	HOOH
		Check	L _{vp} =	18.0	in	>=	L _{dc_c} =	18.0	in	OK
rtical Rebar Hook Ending Bar size & clear cover:	<u>:</u> ψ _{t_h} = if the bar s	ize <= 11 an	d side cc >=	2.5", us	e 0.7, els	e use 1.0	ψ _{t_h} =	0.7		
[ACI 25.4.3.2] Epoxy coating:	ψ _{e h} = if epoxy-co	ated bars are	e used, use	1.2, else	use 1.0		ψ _{e_h} =	1.0		
[ACI 25.4.3.1] Light weight concrete:	$\lambda_{\rm h}$ if lightwieg						λ _h =	1.0		
[ACI 25.4.3.1]			s useu, 0.75	, eise us	e 1.0					
Confining Reinforcement: [ACI 25.4.3.2]	$\Psi_{r_h} = 1$			(=0 +) -	- 10-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		ψ _{r_h} =	1.00		
Development (hook): [ACI 25.4.3.1]	L _{dh} ' = (Fy * ψt_			(50 * λ_h	^ √(F'c)))	^db_c	L _{dh} ' =	12.5	in	
Minimum length: [ACI 25.4.3.1]	L _{dh_min} the larger	of: 8 * db or 6	i in				L _{dh_min} =	8.0	in	
Development length:	L _{dh} = MAX(Lo	h_min, Ldh'					L _{dh} =	12.5	in	
		Check	L _{vp} =	18.0	in	>=	L _{dh} =	12.5	in	ОК
Hook tail length:	L _{h_tail} 12 * db be	yond the ben	d radius				L _{h_tail} =	16.0	in	
Length available in pad:	L _{h_pad} = (W - w' -						L _{h_pad} =	21	in	
		Check	L _{h pad} =	21.0	in	>=	L _{dh tail} =	16.0	in	ОК

Pier Ties:						
Minimum size:	s_t_min =IF(s_c <= 10, 3, 4)		s_t_min =	3		
[ACI 25.7.2.2]						
z factor:	z = 0.5 if the seismic zone is less than 2,	else 1.0	z =	1		
Tie parameters:	s_t = 4	d _{b_t} = 0.5	5 in			
	m_t = 13	$A_{b_t} = 0.2$	2 in ²			
Allowable tie spacing:						
per vertical rebar	$B_{s_t_max1} = 8 * db_c$		$B_{s_t_max1} =$	8	in	
[ACI 25.7.2.1] & [ACI 18.4.3.3]						
per tie size	$B_{s_t_max2} = 24 * db_t$		$B_{s_t_max2} =$	12	in	
[ACI 25.7.2.1] & [ACI 18.4.3.3]						
per pier diameter	$B_{s_t_max3} = di / 4$		$B_{s_t_max3} =$	9	in	
[ACI 25.7.2.1] & [ACI 18.4.3.3]						
per seismic zone	$B_{s_{t_{max4}}} = 12"$ in active seismic zones, else 18	3"	$B_{s_t_max4} =$	12	in	
[ACI 25.7.2.1] & [ACI 18.4.3.3]						
	B _{s_t_max} = MIN(Bs_t_max1, Bs_t_max2, Bs_t	t_max3, Bs_t_max4)	B _{s_t_max} =	8	in	
	m_t_min = (D - T + E) / Bs_t_max + 2		m_t_min =	12.1		
	Check m_t =	13.0 >=	= m_t_min =	12.1		ок

Anchor Steel:												
A/S parameters:	P _{as} = 11	13823					L _{as} =	80	in			
	d _{as} =	1.5	in				E _{as} =	71.50	in			
Development available:	L _{das} per	Anchor E	Bolts (see atta	ached)					L _{das} =	61.63	in	
Required development:	L _{das_min} per	Anchor E	Bolts (see atta	ached)					L _{das_min} =	34.88	in	
			Check	L _{das} =	61.63	in		>=	L _{das_min} =	34.88	in	ОК
To bottom rebar grid:	E _{as_max} =D	+ E - co	: - 2 * db_p)					E _{as_max} =	97.5	in	
			Check	E _{as} =	71.50	in		<=	E _{as_max} =	97.50	in	ОК
To top rebar grid:	rebar @ = D	+ E - T	+ cc						rebar @	84.00	in	
			Check	84 + 6 in	>=		E _{as} =	71.50	in or	<=	84 in	ОК
Min. cage dia:	d _{o_min} per	ancsteel.	.xls (see atta	ched)					d _{o_min} =	24.25	in	
			Check	d _o =	28.00	in		>=	d _{o_min} =	24.25	in	ОК



Effective length in bearing:18.19ftEffective length not bearing:14.31ft

Total Beam Length:	B _{L2_1} =W			B _{L2_1} =	32.5	ft
Location of Left Support:	S _{L2_1} =O			S _{L2_1} =	4.992	ft
ocation of Right Support:	S _{R2_1} =W-O			S _{R2_1} =	27.51	ft
IDSolids Geometry Input (Option 2)					
Total Beam Length:	$B_{L2_2} = W$			B _{L2_2} =	32.5	ft
Location of Left Support:	S _{L2_2} =(W - w\) / 2			S _{L2_2} =	3.25	ft
ocation of Right Support:	S _{R2_2} =S _{L1_2} + w∖			S _{R2_2} =	29.25	ft
1500	Direction 1 Moment	(ft*kips) 1500		Direction 2	-	Moment (ft*kips)
1000	\frown	1000		\frown		
500	\sim	500				~
0		0	\checkmark			~ ~
-500		-500				
0.00 5.00 10.0	0 15.00 20.00 25.00 30.0	0 35.00 0.00	5.00 10.00) 15.00 20.	00 25.	00 30.00 35

MDSolids Design Result

Direction 1:	M _{max2_1} =M _{max2_1}	M _{max2_1} =	949.57	ft*kips
Direction 2:	M _{max2_2} =M _{max2_2}	M _{max2_2} =	1050.79	ft*kips
Diagonal :	M _{max2_diag} =M _{max1_diag}	M _{max2_diag} =	1814.47	ft*kips
Max moment:	M _{maxp} =Max(Mmax2_1,Mmax2_2, Mmax2_diag)	M _{maxp} =	1814.47	ft*kips
Required moment:	M _n = Mmaxp / φt	M _n =	2016.08	ft*kips
φt = 0.9 [ACI 21.2.2.2]				

Pad Reinforcement:

Red Development Low

a nemore coment.									
	b = IF(F'c <= 4	000, 0.85, IF(F'c >= 8000, 0.6	5, 0.85 - (F'c - 4	000) * 0.05))		b =	0.825		
Effective width:	$W_e = W$		$W_e =$	32.500	ft				
	A _{st_p} ' = Mn / (0.9		A _{st_p} ' =	25.419	in ²				
	a _p = Ast_p' *	a _p = Ast p' * Fy / (β * F'c * We)						in	
Required steel:	A _{st_p_st} = Mn / (Fy	* (dc - ap / 2)) * (W / W	e)			A _{st_p_st} =	23.582	in ²	
Shrinkage:	r _{sh} = IF(Fy>=	r _{sh} =	0.0018						
	$A_{st_p_{sh}} = \rho sh * W$	A _{st_p_sh} =	7.371	in ²					
	A _{st_p} = MAX(Ast	A _{st_p} = MAX(Ast_p_st, Ast_p_sh, Ast_p_ste1, Ast_p_ste2)						in ²	
Rebar:	s_p = 6	Equally spaced, top and		d _{b_p} =	0.75	in			
	m_p = 54	bottom, both directions.		A _{b_p} =	0.44	in ²			
	A _{s_p} = Ab_p * n	1_р				A _{s_p} =	23.76	in ²	
		Check A _{s_p} =	23.76 i	1 ²	>=	A _{st_p} =	23.58	in ²	ОК
Bar separation:	B _{s_p} = (W - 2 *		db_p			B _{s_p} =	6.48	in	
		Check 17.25	>=	B _{s_p} =	6.48	in	>=	4"	ОК

ad Development Length:					
Reinforcement location: [ACI 25.4.2.4]	$\psi_{L,P}$ = if the space under the rebar > 12 in, use 1.3, else use 1.0	$\psi_{t_p} =$	1.3		
Epoxy coating: [ACI 25.4.2.4]	ψ_{e_p} = if epoxy-coated bars are not used, use 1.0; but if epoxy-coated bars are used, then if Bs < 6 * db or cc < 3 * db, use 1.5, else 1.2	ψ _{e_p} =	1.0		
Max term: [ACI 25.4.2.4]	$\psi_t\psi_{e_p}$ = the product of ψt & $\psi e,$ need not be taken larger than 1.7	$\psi_t \psi_{e_p} =$	1.3		
Reinforcement size: [ACI 25.4.2.4]	ψ_{s_P} = if the bar size is 6 or less, then use 0.8, else use 1.0	ψ _{s_p} =	0.8		
Light weight concrete: [ACI 25.4.2.4]	$\lambda_{_P}$ = if lightwieght concrete is used, 0.75, else use 1.0	λ_p =	1.0		
Spacing/cover: [ACI 25.4.2.4]	$\mathbf{c}_{_P}$ = the smaller of: half the bar spacing or the concrete edge distace	c_p =	3.38	in	
Transverse bars: [ACI 25.4.2.3]	$k_{tr_p} = 0$ in (per simplification)	k _{tr_p} =	0	in	
Max term: [ACI 25.4.2.3]	c _p ' = MIN(2.5, (c_p + ktr_p) / db_p)	c_p' =	2.500		
Excess reinforcement: [ACI 25.4.10.1]	R _p = 1 (excess reinforcement reduction is not used)	R_p =	1.00		
Development (tensile): [ACI 25.4.2.2]	$L_{d} = (3 / 40) * (Fy / \lambda_{p} * \sqrt{(F'c)}) * \psi t \psi e_{p} * \psi s_{p} * R_{p} * db_{p} / c_{p}'_{u}$	L _{dp} ' =	20.9	in	
Minimum length: [ACI 25.4.2.1]	L _{d_min} = 12 inches	L _{d_min} =	12.0	in	
Development length:	L _{dp} = MAX(Ld min, Ldp')	L _{dp} =	20.9	in	
Length available in pad:	$L_{pad} = (W / 2 - W / 2) - cc$	L _{pad} =	36.0	in	
	Check L _{pad} = 36.00 in >=	L _{dp} =	20.93	in	OK

UNIT BASE FOUNDATION DIAGONAL BEARING CHECK

APC Towers KY-1049 CK Clifty

U- 26.0 A- 553842

250

		Load Case -	Load Case -	1	Bearing - Diagonal Direction
		DL 1.2	DL 0.9		B c A
Moment of Inertia of Mat	MOI	92972.01	92972.01	ft ⁴	
Total Factored Weight	P'	1285.40	964.05	kips	
Load Eccentricity	e	7.64	10.19	ft	
Bearing at Corner A	B _{c_a}	3.64	3.34	ksf	
Bearing at Corner B	B _{c_b}	1.22	0.91	ksf	
Bearing at Corner C	B _{c_c}	-1.21	-1.51	ksf	
Bearing at Corner D	B _{c_d}	1.22	0.91	ksf	
Initial Location of Neutral Axis from C	NA_c_ini	11.46	14.34	ft	
Calculated Location of Neutral Axis from C	NA_c_cal	14.29	20.32	ft	
MOI for Effective Bearing Area	MOI	165780.47	71991.33	ft ⁴	
Distance to Point Load from NA	L _{p'}	16.33	12.84	ft	
Effective Length in Bearing along AB & AD	W _{eff}	32.50	32.50	ft	
Total Vol.	Vol _{tot}	1285.39	964.05	kips	C D
Difference		-0.0004	0.0000	kips	• 0.9DL-Ec •••••• 0.9DL-NA • 1.2DL-Ec
		ok	ok		
Adjusted Bearing at A	B _{c_a_adj}	4.0102	4.4098	ksf	1.2DL-NA Kern
Adjusted Bearing at B & D	$B_{c_bd_adj}$		0.46	ksf	1.2DE-WA Kelli
Overburden Pressure	q _{obp}		0.8800	ksf	
Maximum Diagonal Bearing Pressure	B _{c_dia_max}	3.1302	3.5298	ksf	
Bearing Available	B _c * φr	7.5000	7.5000	ksf	
Check		OK	OK		

THIS SPREADSHEET IS SET UP FOR A MAXIMUM OF 56 BARS. MAXIMUM FACTORED MOMENT OF A CIRCULAR SECTION

Lo	ading		1						
(negative fo	-	on)							
Axial load =		kips							
			-						
Four	ndation		1		Ма	terial Strength	s		1
			1	Concre		sive strength =	4500	psi	
Concrete				Rein	forcement y	ield strength =	60000	psi	
Pier diameter =	3.00	ft				of elasticity =	29000	ksi	
Pier area =	1017.9	in^2				t yield strain =	0.00207		(per ACI 10.3.5 - OK)
Deinforcement				Lin	niting compre	essive strain =	0.003		
Reinforcement Clear cover =	3.00	in	-			Seismic			1
Cage diameter =	2.33	ft				SDC =	D		-
Bar size =	8	it.			Are ho	oks required?	yes		
Bar diameter =	1.000	in		L			,		
Bar area =	0.785	in^2							
Number of bars =	13								
Minimum Area of St Required ar		- 10.10	in^2						
	ea of steel		in^2 in^2	ОК					
	ar spacing		in	UK					
Axial Loading	ai opaoling	0.20							
	oad factor	= 1.00							
Redu	ction factor	= 0.65575	(per ACI 9.3	.1 & 2)	0.655747	1			
Factored	axial load	= 387.21	kips						
Noutral Axia									
Neutral Axis	nce from ex	rtrama adaa	to neutral axis =	3.72	in				
Dista		-	on zone factor =			l 10.2.7.3)			
	•	•	extreme edge to	0.020	(poi / to				
			on zone factor =	3.07	in				
	Distance fr	om centroid	to neutral axis =	14.28	in				
Compression Zone	A			0.00					
۰ م			pression zone =		in^2				
Ũ			o intersection of id edge of pier =		deg				
equivale	-		n compression =		in^2	41.859912			
Force in concre			el in comp zone) =		kips	(per ACI 10.3	3.6.2)		
			cement forces =		kips		,		
		Facto	ored axial load =	387.21	kips				
		For	ce in concrete =	-160.11	kips				
	-			0.00	Liber a	01/			
	Su	m of the forc	es in concrete =	0.00	kips	OK			
Maximum Moment									
	Firs	t moment of	the concrete are	ea in compre	ession about	t the centoid =	676.84	in^3	
			roid of concrete				16.17	in	
Moment of co	ncrete in co	mpression =	2588.89	in-kips		-			
		nt moment =		in-kips					
Nominal mom	0			in-kips					
Factored mom	ent strength	of column =	2279.27	in-kips	189.94	ft-kips			
	May	imum allow	able moment o	f the nier -	= 189.94	ft-kips			
	IVIdX	mum allow	able moment o	n uie pier -	- 103.34	II-KIPS			

Individual Bars

			Distance			Area of		
	Angle	Distance	to	Distance to		steel in		
	from first	to	neutral	equivalent		compressi	Axial	
Bar	bar	centroid	axis	comp. zone	Strain	on	force	Moment
#	(deg)	(in)	(in)	(in)		(in^2)	(kips)	(in-kips)
1	0.00	0.00	-14.28	-14.93	-0.01152	0.00	-47.12	0.00
2	27.69	6.51	-7.78	-8.43	-0.00627	0.00	-47.12	-306.59
3	55.38	11.52	-2.76	-3.41	-0.00223	0.00	-47.12	-542.95
4	83.08	13.90	-0.38	-1.03	-0.00031	0.00	-7.06	-98.12
5	110.77	13.09	-1.19	-1.84	-0.00096	0.00	-21.90	-286.73
6	138.46	9.28	-5.00	-5.65	-0.00403	0.00	-47.12	-437.48
7	166.15	3.35	-10.93	-11.58	-0.00882	0.00	-47.12	-157.88
8	193.85	-3.35	-17.63	-18.28	-0.01423	0.00	-47.12	157.88
9	221.54	-9.28	-23.57	-24.22	-0.01902	0.00	-47.12	437.48
10	249.23	-13.09	-27.37	-28.02	-0.02209	0.00	-47.12	616.86
11	276.92	-13.90	-28.18	-28.83	-0.02274	0.00	-47.12	654.92
12	304.62	-11.52	-25.80	-26.45	-0.02082	0.00	-47.12	542.95
13	332.31	-6.51	-20.79	-21.44	-0.01677	0.00	-47.12	306.59

Foundation:	Pier diameter =	3.0	ft	Cover between side of pier and cage =	3.00 in.
	Cage diameter =	2.33	ft	Cover between top of pier and cage =	3.00 in.
	Rebar size =	8		Compressive strength of concrete =	4500 psi
	Number of bars =	13		Rebar yield strength =	60000 psi
	Clear spacing =	5.77	in.	, ,	
	Are there hooks?	n			
	Check Compression?	n			
Anchor Steel:	Part number:	113823			
	Embedment length =	71.5	in.		
	Bolt Diameter =	1.5			
Anchor Plate:	Part number:	281260			
	Plate width =	18.25	in.		
Required developm	ent length (compression) =	999.00	in.	Min. Anchor Bolt Embedment per TIA-222-H 9.6 =	15 in
Required deve	elopment length (tension) =	34.88	in.	Actual Anchor Bolt Embedment =	68.5 in
Avai	lable development length =	61.625	in.		
		OK			

The length available in the pier for the development of the vertical reinforcement exceeds the required length (ACI 318-14, section 25.4).

CHECK EMBEDMENT PLATE CLEARANCE IN THE PIER

Foundation:	Pier diameter = Cage diameter =			Cover between side of pier and cage = Minimum cover between A/S and cage =	3.00 in. 3.00 in.			
Anchor Steel:	Part number: Embedment length =	113823 71.5	in.	Angle of anchor steel in foundation =	0 degrees			
Anchor Plate:	Part number: Largest plate width = Bolt Diameter =	281260 18.25 1.5	in. in.					
	Minimum cage diameter = Actual cage diameter =	24.25 28	in. in.					
		OK						
The available space exceeds the minimum cage diameter required for anchor steel installed in the pier at an angle.								

SELF-SUPPORT TOWER FOUNDATION DESIGN SUMMARY

Soil Report by Collier Engineering Co., Inc.

15.000

39.167

3.327

D

3.00

none

ksf

kcf

ksf

ft

ft

Soil Information Per:

dated 05/20/2022

Site Parameters Ultimate Bearing, **B**_c:

Ult. Skin Friction, SF:

Seismic Design Cat.

Depth neglected, N:

Neglect bottom, N_b:

* No foundation modifications listed.

Additional Notes:

Ultimate Pp:

APC Towers KY-1049 CK Clifty

Anchor Bolts

Pier Dimensions		
Pier diameter, d _i :	3.00	ft
Depth, D:	16.5	ft
Ext. above grade, E:	0.50	ft
Bell diameter, b _d :	none	ft
Volume, V _o :	4.45	cy / leg

Reinforcement Design									
Rebar	m_ _:	13	verticals						
	size, s_ c:	8	equally spaced in 2.5' cage						
Ties	size, s_ t:	4	default hook						
	m_ t:	32	tie qty						
Horizontal Ret of pie	oar in top 6in r for temp. & shrinkage?:	NO	per TIA-222-H 9.6						
* Rebar quantites she	own above are per pi	er							

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250

V 2.6

Material Properties	S	
Steel tensile str, F _y :	60000	psi
Conc. Comp. str, F'c:	4500	psi
Conc. Density, δ:	150.0	pcf
Clear cover, cc :	3.00	in

Tower design conforms to the following:

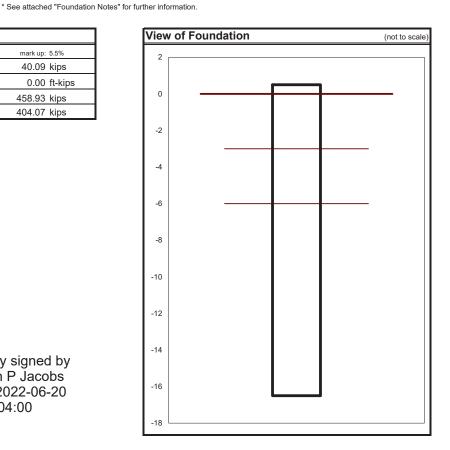
* International Building Code (IBC)

* ANSI TIA-222-H

* Building Code Requirements for Reinforced Concrete (ACI 318-14)

P/N:	113823	80" long, 1.5" diameter	
Foundation	Loading		
Max Corner	Reactions	stress ratio:	94.8%

Foundation Loading	J				
Max Corner Reactio	ons	stress	ratio: 94.8%	mark up: 5.5%	
Shear/Leg, S :	38.00	kips	x 1.055 =	40.09 kips	
Moment/Leg, M:	0.00	ft-kips	x 1.055 =	0.00 ft-kips	
Compression/Leg, C:	435.00	kips	x 1.055 =	458.93 kips	
Uplift/Leg, U :	383.00	kips	x 1.055 =	404.07 kips	





Digitally signed by Joseph P Jacobs Date: 2022-06-20 09:36-04:00

FOUNDATION NOTES

- 1 THE ON-SITE GEOTECHNICAL ENGINEER SHALL CONFIRM THAT THE INSITU SOIL STRENGTHS MEET OR EXCEED THOSE PARAMETERS GIVEN IN THE SOIL REPORT.
- 2 GRADE THE SITE TO DRAIN AWAY FROM FOUNDATION.
- 3 SEE GEOTECHNICAL REPORT FOR ADDITIONAL CONSTRUCTION RECOMMENDATIONS, BACKFILL COMPACTION DETAIL, SUBGRADE PREPARATION, ETC.
- 4 A TEMPORARY, FULL LENGTH STEEL CASING MAY BE REQUIRED DURING INSTALLATION.
- 5 THE PIER LENGTH SHOULD BE ADJUSTED IF SOIL AND BEDROCK CONDITIONS ARE ENCOUNTERED THAT VARY SIGNIFICANTLY FROM THOSE ENCOUNTERED AT THE BORING LOCATIONS

SST DRILLED PIER FOUNDATION

APC Towers KY-1049 CK Clifty

Maximum Loading

Max. Uplift, **U_**max: **404.07** kips/leg Max. Comp., C max: 461.69 kips/leg Max. Shear, S_max: 40.09 kips/leg

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250

Soil per: Soil Report by Collier Engineering Co., Inc. dated 05/20/2022

V 2.6

Design Summary		
Pier diameter:	3.00	ft
Design depth:	16.5	ft
Concrete volume:	4.45	cu.yd. each
Use #4 circular ties.		

Min. concrete compressive strength to be 4500 psi. Use anchor bolt p/n 135616

Ultimate bearing:	15.000	ksf
Ultimate S F (uplift):	3.327	ksf
Ultimate S F (comp.):	3.327	ksf

					Skin	friction by:	Given 💌				Uplift Re	sistance		Compr	ession Res	sistance
Layer	From	То	Cont. layer length	Pier diameter	Cohesion	Phi	Unit weight of soil	Overburden pressure	Average overburden pressure	Factored skin friction	Factored friction force	Factored concrete weight	Uplift Resist.	Factored skin friction	Factored friction force	Factored bearing capacity
#	(ft)	(ft)	(ft)	(ft)	(ksf)	(deg)	(pcf)	(ksf)	(ksf)	(ksf)	(kips)	(kips)	(kips)	(ksf)	(kips)	(ksf)
1	0.00	3.00	3.00	3.00	0.000	0.000	110.0	0.330	0.165	0.000	0.00	3.34	3.34	0.000	0.00	-
2	3.00	6.00	3.00	3.00	1.250	0.000	120.0	0.690	0.510	0.600	16.96	2.86	19.83	0.600	16.96	-
3	6.00	16.50	10.50	3.00	50.000	0.000	140.0	2.160	1.425	3.750	371.10	10.02	381.12	3.750	371.10	11.25
	Lateral	pressure of	oefficient =	0.7							Total Uplift Ca	pacity (kips) =	404.29	Total friction	capacity (kips) =	388.07
													OK	Factored Tip	capacity (kips) =	79.52
	Weighted Average Skin Friction uplift			3.327	ksf	Total Comp.	Capacity (kips) =									
										nate) =	compression	3.327	ksf			OK

Reint	forceme	nt De	sign:

Lateral Resist.	Minimum length			
(kcf) *	(ft) **			
39.167	4.38			
Minimum area of steel is OK				
	(kcf) * 39.167			

* see Broms method (attached)

*** see Maximum Factored Moment of a Circular Section (attached).

Minimum pier length is OK Rebar spacing is **OK**

Concrete Clear Cover (in) = 3.00

	Moment
	Check
	(ft-k)
Induced *	141.26
φ Capacity ***	176.73
	OK

ſ

Equivalent Weighted Average Cohesion

•			Layer			Weighted
Layer	From	То	Length	Neglect?	Cohesion	Cohesion
-	(ft)	(ft)	(ft)	-	(ksf)	(ksf)
1	0.00	3.00	0.00	у	0.000	0.00
2	3.00	6.00	3.00	n	1.250	3.75
3	6.00	16.50	10.50	n	50.000	525.00
4	16.50	16.50	0.00	n	50.000	0.00
5	16.50	16.50	0.00	n	50.000	0.00
6	16.50	16.50	0.00	n	50.000	0.00
7	16.50	16.50	0.00	n	50.000	0.00
8	16.50	16.50	0.00	n	50.000	0.00
9	16.50	16.50	0.00	n	50.000	0.00
10	16.50	16.50	0.00	n	50.000	0.00
11	16.50	16.50	0.00	n	50.000	0.00
12	16.50	16.50	0.00	n	50.000	0.00
13	16.50	16.50	0.00	n	50.000	0.00
14	16.50	16.50	0.00	n	50.000	0.00
15	16.50	16.50	0.00	n	50.000	0.00
16	16.50	16.50	0.00	n	50.000	0.00
17	16.50	16.50	0.00	n	50.000	0.00
18	16.50	16.50	0.00	n	50.000	0.00
19	16.50	16.50	0.00	n	50.000	0.00
20	16.50	16.50	0.00	n	50.000	0.00
Bell	16.50	16.50	0.00	n	50.000	0.00
	-	Total =	13.50		Total =	528.75
		101ai -	15.50	1	Total –	520.75

Weighted Average Equivalent Cohesion = 39.17 (ksf)

Broms Method for Laterall	y Load	ed Ca	issons ,Piles	or Pi	ers in C	lay
(Reference "Drilled Shafts: Construction Pro	-				L-4, August	1988
					rev	ised for LRFD
Diameter of pier, di:	3.00	ft			S/leg	M/leg
Extension above grade, E:	0.50	ft			(kips)	(k-ft)
Neglect at ground surface, N:	3.00	ft		Г		
Ultimate Passive Pressure, P _p :	39.167	kcf		LC	40.09	0
Reduction Factor, f:	0.75					
Nominal Passive Pressure (P_p*f), P_{pa} :	29.375	kcf				
# of pier dia. P _p acts over, N _d :	3.00					
Depth to F = S / ((N_d / 3) * 9 * P_p * d_i) Max. M, F LC (ft) 0.04 Solved $G_a = \sqrt{((S * (E + N + F / 2) + C_a) + C_a))}$	M) / ((N	. / 3) * 1	25 * P * d.))			
Brom's $G_a = \bigvee((S^{(a)}(E + N + F / 2) + Equation))$ for G_a (ft) 0.84		3, 0, 2	2.23 i _{pa} u _i //			
Minimum $L = E + N + F + G_a$ length ofLCpier, L (ft)4.38Minimum length req'd, L:	4.38	ft				
$\begin{array}{c} Max \\ induced \\ moment, \\ M_u (k-ft) \end{array} = S * (E + N + F) + M - (N + F) \\ LC \\ M_u (k-ft) \\ \hline 141.26 \end{array}$	l _d / 3 * 9	* P _{pa} *	d _i * F ² / 2)			

THIS SPREADSHEET IS SET UP FOR A MAXIMUM OF 56 BARS. MAXIMUM FACTORED MOMENT OF A CIRCULAR SECTION

Loading (negative for compression)							
Axial load = 404.07 kips							
	-						
Foundation	1		Ма	terial Strength	s		1
		Concre		sive strength =	4500	psi	
Concrete				ield strength =	60000	psi	
Pier diameter = 3.00 ft				s of elasticity =	29000	ksi	
Pier area = 1017.9 in^2				t yield strain =	0.00207		(per ACI 10.3.5 - OK)
Reinforcement		Lin	niting compre	essive strain =	0.003		
Clear cover = 3.00 in				Seismic			1
Cage diameter = 2.33 ft				SDC=	D		1
Bar size = 8			Are ho	ooks required?	yes		
Bar diameter = 1.000 in							_
Bar area = 0.785 in^2							
Number of bars = 13]						
Minimum Area of Steel							
Required area of steel = 10.18	in^2						
Actual area of steel = 10.21	in^2	OK					
Bar spacing = 6.25	in						
Axial Loading							
Load factor = 1.00		4.0.0					
Reduction factor = 0.65575 Factored axial load = 404.07	(per ACI 9.3 kips	.1&2)					
Factored axial load = 404.07	kips						
Neutral Axis							
Distance from extreme edge	to neutral axis =	3.56	in				
Equivalent compression		0.825	(per AC	l 10.2.7.3)			
Distance from e	•	2.04					
Equivalent compression Distance from centroid			in in				
Distance from centroid		14.44					
Compression Zone							
Area of steel in com	pression zone =	0.00	in^2				
Angle from centroid of pier to							
equivalent compression zone an			deg				
Area of concrete in Force in concrete = 0.85 * f c * (Acc - stee			in^2 king	(per ACI 10.3	26.2)		
	cement forces =		kips kips	(per ACI 10.0	5.0.2)		
	ored axial load =		kips				
	ce in concrete =		kips				
Sum of the force	es in concrete =	0.00	kips	OK			
Maximum Moment							
First moment of t	the concrete are	a in compre	ession abou	t the centoid =	638.86	in^3	
Distance between cent					16.24	in	
Moment of concrete in compression =		in-kips					
Total reinforcement moment =		in-kips					
Nominal moment strength of column =		in-kips					
Factored moment strength of column =	2120.77	in-kips	176.73	ft-kips			
Maximum allow	able moment o	f the nier =	= 176.73	ft-kips			
indxiniani anow		pier -		it inpo			

Individual Bars

			Distance			Area of		
	Angle	Distance	to	Distance to		steel in		
	from first	to	neutral	equivalent		compressi	Axial	
Bar	bar	centroid	axis	comp. zone	Strain	on	force	Moment
#	(deg)	(in)	(in)	(in)		(in^2)	(kips)	(in-kips)
1	0.00	0.00	-14.44	-15.06	-0.01215	0.00	-47.12	0.00
2	27.69	6.51	-7.93	-8.55	-0.00668	0.00	-47.12	-306.59
3	55.38	11.52	-2.91	-3.54	-0.00245	0.00	-47.12	-542.95
4	83.08	13.90	-0.54	-1.16	-0.00045	0.00	-10.32	-143.45
5	110.77	13.09	-1.35	-1.97	-0.00113	0.00	-25.81	-337.83
6	138.46	9.28	-5.15	-5.78	-0.00434	0.00	-47.12	-437.48
7	166.15	3.35	-11.09	-11.71	-0.00933	0.00	-47.12	-157.88
8	193.85	-3.35	-17.79	-18.41	-0.01497	0.00	-47.12	157.88
9	221.54	-9.28	-23.72	-24.34	-0.01997	0.00	-47.12	437.48
10	249.23	-13.09	-27.53	-28.15	-0.02317	0.00	-47.12	616.86
11	276.92	-13.90	-28.33	-28.96	-0.02385	0.00	-47.12	654.92
12	304.62	-11.52	-25.96	-26.58	-0.02185	0.00	-47.12	542.95
13	332.31	-6.51	-20.94	-21.57	-0.01763	0.00	-47.12	306.59

DEVELOPMENT LENGTH CHECK OF PIER REINFORCEMENT

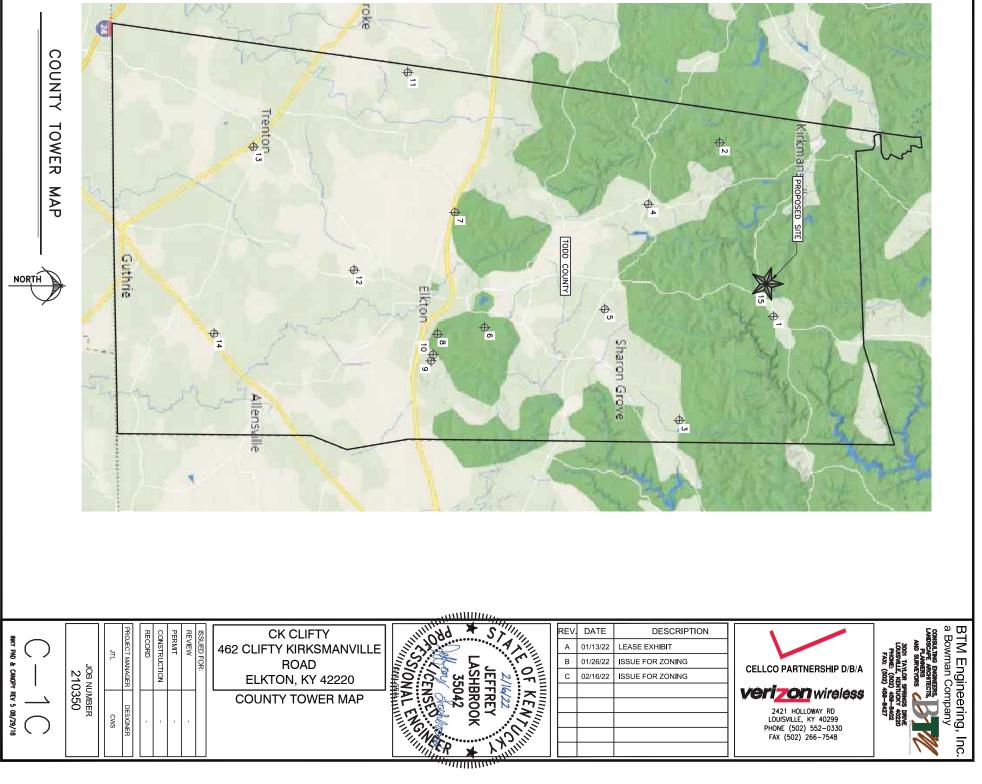
Foundation:	Pier diameter =	3.0	ft	Cover between side of pier and cage =	3.00 in.
	Cage diameter =	2.5	ft	Cover between top of pier and cage =	3.00 in.
	Rebar size =	8		Compressive strength of concrete =	4500 psi
	Number of bars =	13		Rebar yield strength =	60000 psi
	Clear spacing =	6.25	in.		
	Are there hooks?	n			
	Check Compression?	n			
Anchor Steel:	Part number:	113823			
	Embedment length =	71.5	in.		
	Bolt Diameter =	1.5			
Anchor Plate:	Part number:	281260			
	Plate width =	18.25	in.		
Required development length (compression) =		999.00	in.	Min. Anchor Bolt Embedment per TIA-222-H 9.6 =	15 in.
Required development length (tension) = Available development length =		26.83	in.	Actual Anchor Bolt Embedment = Int	terface!L65 in.
			in.		
		60.625	in.		
		ΟΚ			

The length available in the pier for the development of the vertical reinforcement exceeds the required length (ACI 318-14, section 25.4).

CHECK EMBEDMENT PLATE CLEARANCE IN THE PIER

Foundation:	Pier diameter = Cage diameter =	3.0 2.5	ft ft	Cover between side of pier and cage = Minimum cover between A/S and cage =		00 in. 00 in.
Anchor Steel:	Part number: Embedment length =	113823 71.5	in.	Angle of anchor steel in foundation =	0	degrees
Anchor Plate:	Part number:	281260	i			
	Largest plate width = Bolt Diameter =	18.25 1.5	in. in.			
	Minimum cage diameter =	24.25	in.			
	Actual cage diameter =	30	in.			
		OK				
The available spac	e exceeds the minimum cage	diameter r	equire	d for anchor steel installed in the pier at an angle.		

VERIZON WIRELESS	87°09'43.9" W	36°59'26.0" N		15
CELLCO PARTNERSHIP	87°07'44.2"W	36°41'48.4" N	1274279	14
AMERICAN TOWERS LLC	87° 15' 12.0" W	36°43'04.8" N	1290301	13
TILLMAN INFRASTRUCTURE, LLC	87° 10' 18.1" W	36°46'16.9" N	1317471	12
TILLMAN INFRASTRUCTURE, LLC	87° 18' 10.1" W	36°48'01.3"N	130577	11
GLOBAL TOWER, LLC. THRU AMERICAN TOWER, LLC	87°06'40.0"W	36°48'46.6" N	1240659	10
PENNYRILE RECC	87°06'42.0"W	36°48'48.0" N	1043533	9
EZELL'S COMMUNICATIONS	87°07'40.0"W	36°48'57.2" N	1206469	00
TILLMAN INFRASTRUCTURE, LLC	87°12'36.0" W	36°49'34.7" N	1319483	7
WILSON, PAUL D	87°07'59.0"W	36°50'29.0" N	1065292	б
TILLMAN INFRASTRUCTURE, LLC	87°08'42.4" W	36°54'23.2" N	1306716	თ
UNITI TOWERS LLC	87°12'55.7" W	36°55'44.4" N	1309970	4
UNITI TOWERS LLC	87°04'14.4"W	36°56'42.5" N	1311770	ъ
KY COMMONWEALTH OF DBA = KEWS	87° 15' 24.0" W	36°58'03.0"N	1044827	2
GLOBAL TOWER, LLC. THRU AMERICAN TOWER, LLC	87°08'24.4"W	36°59'46.4" N	1052933	-
TOWER OWNER	LONGITUDE	<u>LATITUDE</u>	ASR	TOWER
<u>SITES</u> <u>TY</u>)	FCC REGISTERED SITES (TODD COUNTY)	<u>FC(</u>		





Proposed Case for : 2022-ASO-8404-OE

For information only. This proposal has not yet been studied. Study outcomes will be posted at a later date. Public comments are not requested, and will not be considered at this time.

Overview								
Study (ASN): 2022-ASO-8404-OE	Received Date:	03/01/2022						
Prior Study:	Entered Date:							
Status: Work In Progress	Map:	View Map						
Construction Info	Structure Sur	Structure Summary						
Notice Of: CONSTR	Structure Type	Structure Type: Antenna Tower						
Duration: PERM (Months: 0 Days: 0)	Structure Name: CK CLIFTY - 16687080							
Work Schedule:	FCC Number:							
Structure Details	Height and El	evation						
Latitude (NAD 83): 36° 59' 26.09" N					Propos			
Longitude (NAD 83): 87° 09' 44.12" W	Site Elevation:				7			
Datum: NAD 83	Structure Heig	ht:			2			
City: Elkton	Total Height (#				10			
State: KY	Frequencies							
Nearest County: Todd								
	Low Freq	High Freq	Unit	ERP	Unit			
	6	7	GHz	55	dBW			
	6	7	GHz	42	dBW			
	10	11.7	GHz	55	dBW			
	10	11.7	GHz	42	dBW			
	17.7	19.7	GHz	55	dBW			
	17.7	19.7	GHz	42	dBW			
	21.2	23.6	GHz	55	dBW			
	21.2	23.6	GHz	42	dBW			
	614	698	MHz	2000	W			
	614	698	MHz	1000	W			
	698	806	MHz	1000	W			
	806	824	MHz	500	W			
	806	901	MHz	500	W			
	824	849	MHz	500	W			
	851	866	MHz	500	W			
	869	894	MHz	500	W			
	896	901	MHz	500	W			
	901	902	MHz	7	w			
	929	932	MHz	3500	w w			
	930	931 932	MHz	3500 3500	w			
	931 932	932 932.5	MHz MHz	3500	W dBW			
	932 935	932.5 940	MHz MHz	17 1000	dBW W			
	935	940	MHz	3500	W			
	1670	1675	MHz	500	w			
	1710	1755	MHz	500	w			
	1850	1910	MHz	1640	w			
	1850	1910	MHz	1640	w			
	1930	1990	MHz	1640	w			
	1990	2025	MHz	500	w			
	2110	2200	MHz	500	w			
	2305	2310	MHz	2000	w			
	2305	2360	MHz	2000	w			
	2345	2360	MHz	2000	w			
	2496	2690	MHz	500	w			
	3550	3700	MHz	47	dBm			
	3700	3980	MHz	3280	w			
	27500	28350	MHz	75	dBm			
	29100	29250	MHz	75	dBm			
	31000	31300	MHz	75	dBm			
	38600	40000	MHz	75	dBm			

Previous Back to Search Result Next



KENTUCKY TRANSPORTATION CABINET

KENTUCKY AIRPORT ZONING COMMISSION

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

JURISDICTION

602 KAR 50:030

- Section 1. The commission has zoning jurisdiction over that airspace over and around the public use and military airports within the Commonwealth which lies above the imaginary surface that extends outward and upward at one (1) of the following slopes:
 - (1) 100 to one (1) for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each public use airport and military airport with at least one (1) runway 3,200 feet or more in length; or
 - (2) fifty (50) to one (1) for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each public use and military airport with its longest runway less than 3,200 feet in length.
- Section 2. The commission has zoning jurisdiction over the use of land and structures within public use airports within the state.
- Section 3. The commission has jurisdiction from the ground upward within the limits of the primary and approach surfaces of each public use airport and military airport as depicted on airport zoning maps approved by the Kentucky Airport Zoning Commission.
- Section 4. The Commission has jurisdiction over the airspace of the Commonwealth that exceeds 200 feet in height above the ground.
- Section 5. The owner or person who has control over a structure which penetrates or will penetrate the airspace over which the Commission has Jurisdiction shall apply for a permit from the Commission in accordance with 602 KAR 50:090.

INSTRUCTIONS

- 1. "Alteration" means to increase or decrease the height of a structure or change the obstruction marking and lighting.
- 2. "Applicant" means the person who will own or have control over the completed structure.
- 3. "Certification by Applicant" shall be made by the individual who will own or control the completed structure; or a partner in a partnership; or the president or authorized officer of a corporation company, or association; or the authorized official of a body politic; or the legally designated representative of a trustee, receiver, or assignee.
- 4. Prepare the application and forward to the Kentucky Dept. of Aviation, ATTN: Airport Zoning Commission, 90 Airport Drive, Frankfort KY 40601. For questions, telephone 502-782-4043.
- 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

TC 55-2 Rev. 06/2020 Page 2 of 2

KENTUCKY AIRPORT ZONING COMMISSION

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE								
APPLICANT (name)		PHONE	FAX	KY AERONAUTIC	AL STUDY #			
Verizon Wireless		770-797-1233						
ADDRESS (street)		CITY		STATE	ZIP			
5055 North Point Parkwa	av	Alpharetta		GA	30022			
APPLICANT'S REPRESEN		PHONE FAX		-				
Crystal Swanson	• •	770-797-1233						
ADDRESS (street)		CITY		STATE	ZIP			
5055 North Point Parkwa		Alpharetta		GA	30022			
	New Construct		Existing					
DURATION Perma		porary (<i>months</i>	days)	Start End	-			
TYPE Crane								
Antenna Tower	J Building	MARKING/PAINTING/LIGHTING PREFERRED						
	iter Tank	=	dium intensity white					
		Other	high intensity white					
				DATUM 🛛 NAD83 🗌 NAD27				
36 ⁰ 59'26.09"		087 ⁰ 09'44.12"						
NEAREST KENTUCKY			Y PUBLIC USE OR M	ILITARY AIRPORT				
City Elkton County Todd		Muhlenberg County						
SITE ELEVATION (AMSL,			HEIGHT (AGL, feet)	CURRENT (FAA aeronautical study #)				
798		255						
OVERALL HEIGHT (site e	levation plus tot	al structure height, _.	feet)	PREVIOUS (FAA c	neronautical study #)			
1053								
-	: Kentucky public	c use or Military airport to structure) PREVIO			eronautical study #)			
14.12 NM								
DIRECTION (from neares	st Kentucky publi	ic use or Military air	port to structure)					
NE								
DESCRIPTION OF LOCAT	ION (Attach USC	GS 7.5 minute quadr	angle map or an air	port layout drawin	g with the precise site			
marked and any certified	d survey.)							
DESCRIPTION OF PROPO	JSAL							
Proposed 255' monopole	e. CK CLIFTY - 16	687080						
FAA Form 7460-1 (Has t	he "Notice of Co	nstruction or Altera	tion" been filed with	the Federal Aviati	on Administration?)			
	-	O-8404-OE curently	•		,			
	<u> </u>			. complete. and co	rrect to the best of			
CERTIFICATION (I hereby certify that all the above entries, made by me, are true, complete, and correct to the best of my knowledge and belief.)								
PENALITIES (Persons failing to comply with KRS 183.861 to 183.990 and 602 KAR 050 are liable for fines and/or								
imprisonment as set forth in KRS 183.990(3). Noncompliance with FAA regulations may result in further penalties.)								
	TITLE	SIGNATURE	, man i su regulation	DATE				
	Regulatory	rystal	Swanson	3/1/22				
	incention y			5/ 1/ 22				
COMMISSION ACTION		Chairperson						
		Administrat	or, KAZC					
Approved	SIGNATURE			DATE				
Disapproved								



May 20, 2022

Mr. Rodney Strong, P.E. BTM Engineering, Inc. (BTM) 3001 Taylor Springs Drive Louisville, KY 40220

Re: Geotechnical Report Proposed 250-foot Telecommunications Tower CK Clifty KY Site, Location Code 617103749 Elkton, KY

Dear Mr. Strong:

Collier Engineering Company, Inc. (Collier) has completed the geotechnical report for the above referenced project. Our services were performed in general accordance with our proposal dated March 8, 2022. This report presents the findings of the limited subsurface exploration and provides geotechnical recommendations for sitework and the design and construction of foundations for the proposed tower and ancillary structures.

The design parameters provided herein are suitable for the type of tower proposed and a constructed structural height that is within a tolerance of about a quarter of the planned tower height. If the tower design or type is different than the kind assumed / stated in this correspondence, Collier should be allowed to evaluate our geotechnical recommendations with respect to the modifications in design.

PROJECT INFORMATION

The following description is based on our review of the project construction drawings provided by BTM dated February 2022. The aspects of tower design, assumed parameters, and the project location are as follows:

- Site location: 462 Clifty Kirkmansville Road, Elkton, KY (see Exhibit 1)
- > Cell tower: 250-foot self-supporting lattice design with ancillary equipment structures
- Assumed tower loads: axial 600 kips; shear 80 kips; uplift 500 kips;
- Assumed pad loads / equipment weight (gravity load): 70 kips
- > Assumed grading: less than about 3 feet of cut or fill



Site and Subsurface Conditions

The project site includes open, near level terrain in a pasture adjacent to a greenhouse business. Based upon our perusal of the site plan included in the drawing set provided to us, less than about 3 feet of topographic relief is present across the area of proposed construction.

<u>Geology</u>

The *Geologic Map of the Allegre Quadrangle, Todd County, Kentucky* ¹ indicates the site is blanketed by Pennsylvanian Age sandstone of the Caseyville Formation. This unit is generally described as thin bedded to massive, commonly cross-bedded, and fine to coarse grained.

Typical Profile

Near-surface conditions at the site were assessed with three borings that were drilled at the approximate locations and to the depth shown by the attached boring location plan and logs (Exhibit 1 and 2, respectively). The drilling locations generally coincide with stipulated tower leg locations as oriented on project drawings. Our interpretations and descriptions of the recovered samples and core specimens are indicated on the appropriate horizons on the log. Brief descriptions of the materials encountered within the drilling depths are summarized below.

Layer	Approximate Depth to Bottom of Stratum (feet)	Description	Consistency/Density
Stratum 1	~1	Topsoil/root mat	NA
Stratum 2	7	Silty clay/lean clay	Soft to very stiff ¹
Stratum 3	19	Weathered sandstone	Rec 96-100%, RQD 58-61% ²

1. Based on standard penetration test (SPT) N-values ranging from 2 to 20 blows per foot (bpf). Two borings were advanced with flight augers and without sampling to ascertain soil thickness.

2. Rec = percentage of rock recovered in the coring run or interval; RQD = Rock Quality Designation; refer to the boring log in Exhibit 2 for details.

Auger refusal was encountered at a depth of about 7 feet. Below this depth, one boring was advanced into the refusal materials using a diamond bit attached to the outer barrel of a double core barrel. The inner barrel collected the cored material as the outer barrel was rotated at high speeds to cut the rock. The barrel was retrieved to the surface upon completion of each drill run. Once the core samples were retrieved, they were placed in a box and logged. The rock was later classified by an engineer and the "percent recovery" and rock quality designation (RQD) were determined.

The "percent recovery" is the ratio of the sample length retrieved to the drilled length expressed as a percent. An indication of the actual in-situ rock quality is provided by calculating

¹ As published on the *Kentucky Geological Survey* website, USGS Map GQ-446 (1965).





the sample's Rock Quality Designation (RQD) which is the ratio of the cumulative length of 4inch or longer cores (discounting mechanical breaks) to the drilled length. The percent recovery and RQD are related to rock soundness and quality as illustrated below:

Relation of RQD and In-situ Rock Quality							
RQD (%)	Rock Quality						
90 - 100	Excellent						
75 - 90	Good						
50 - 75	Fair						
25 - 50	Poor						
0 -25	Very Poor						

Groundwater

The boring was checked while drilling and after completion for groundwater. At these times and before coring operations commenced, the borehole was dry. Long term observations in piezometers or observation wells sealed from surface water are often required to define groundwater levels in this geologic setting. Groundwater level fluctuations occur due to seasonal rainfall, runoff, and other factors not evident at the time the borings were performed. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

RECOMMENDATIONS FOR DESIGN AND CONSTRUCTION

Geotechnical Considerations

Based on the drilling results, a drilled pier or a mat (buried) footing is suitable for support of the proposed tower. The lightly loaded equipment pads or ancillary structures can be built or supported on grade supported slabs with perimeter turn downs, shallow spread footings, or short piers. Foundation recommendations are presented in the following sections.

Foundation Recommendations

Drilled Pier

The proposed tower can be founded on straight shaft drilled piers whose design may be predicated upon the following parameters.





	Allo	wable values	for:		Intornal		
Approximate depth (feet) ^{1, 2}	skin friction (psf)	end bearing pressure (psf)	passive pressure (psf)	Cohesion (psf)	Internal friction angle (degrees)	Strain E ₅₀	Lateral subgrade modulus (pci)
0-3	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore
Silty lean clay 3 – 6	400	lgnore	1,250	1,250	-	0.008	100
Weathered sandstone 6 - 19	2,500	5,000	5,000	50,000	-	0.0001	3,000

1. The pier length should be adjusted if soil and bedrock conditions are encountered that vary significantly from those encountered at the boring location.

2. A total unit weight of 120 pcf can be assumed for the clay layer. The unit weight of sandstone bedrock may be taken as 140 pcf.

The above indicated cohesion, friction angle, lateral subgrade moduli, and strain values have no factors of safety, and the allowable skin friction and the passive resistances have a factor of safety of about 2. Listed parameters for cohesion, internal friction angle, lateral subgrade moduli, and strain values are approximate and are based on the boring results, published values, and our experience with similar soil and rock types. The allowable end bearing pressures are predicated on an approximate factor of safety of at least 3. If the drilled pier is designed using the above parameters, foundation settlement is not anticipated to exceed 1 inch.

The upper 3 feet of overburden should be ignored due to the potential negative effects of frost action and construction disturbance. To avoid decreases in lateral and uplift resistance caused by variable subsurface conditions, we recommend that drawings instruct the contractor to notify the engineer if subsurface conditions significantly different than encountered in our boring are disclosed during drilled pier installation. Under these circumstances, it may be necessary to adjust the overall length of the piers. To facilitate these adjustments and confirm that the piers are embedded in suitable materials, we recommended that a qualified geotechnical engineer observe the drilled pier excavations.

The drilled pier should be designed and constructed with a minimum shaft diameter of 30 inches to facilitate clean out and possible dewatering of the pier excavation. Temporary casing will be required during the pier excavation to control groundwater seepage and support the sides of the excavations in weak soil zones, through horizons of perched water, and below the water table, if encountered at the time of construction. The sides and bottom of the excavation should not be





disturbed during construction and the base of the shaft should be free of water, loose soil, and debris prior to placement of reinforcing steel and concrete.

We recommend a minimum concrete slump of at least 6 inches to facilitate removal of temporary casing. Casing may be extracted from a pier excavation during concrete placement provided that the concrete inside the casing is maintained at a sufficient level to resist any earth and hydrostatic pressures outside the casing during the entire casing removal procedure.

Shallow Mat (Buried) Foundation

If desired, a mat / shallow buried foundation bearing within or below the weathered bedrock interval (at or below a depth of about 8 feet) can be used to support the proposed tower. Any unsuitable conditions or materials encountered at the foundation contact elevation shall be removed and replaced with approved granular fill prior to foundation construction. The shallow footing can be designed using the following parameters.

\succ	Subgrade	bedrock
\succ	Net allowable bearing pressure ¹	5,000 psf
\succ	Allowable passive pressure ²	osf (below 3 feet)
\succ	Ultimate coefficient of sliding friction	0.55
\succ	Minimum embedment below finished grade for frost protection	24 inches

- 1. The recommended net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base.
- 2. The sides of the foundation excavation must be near-vertical and the concrete should be placed neat against these sidewalls for the passive earth pressure value to be valid. This parameter will be significantly reduced if the loaded side is sloped or benched and then backfilled. Lateral resistance due to friction at the footing base should be ignored where uplift occurs.

If the mat / buried foundation is designed using the above criteria and is constructed on an approved subgrade, total foundation settlement is expected to be 1 inch or less. The foundation settlement will depend upon the variations within the near surface rock profile, the structural loading conditions, the embedment depth of the footing, the thickness of compacted fill, and the quality of the earthwork operations.

A qualified geotechnical engineer should verify the character and integrity of the bedrock surface exposed at the planned footing subgrade prior to concrete placement. Any unsuitable conditions such as delaminated or detached bedrock intervals, clay layers, seams or slots, voids, etc., if encountered, should be undercut, and replaced, with approved engineered granular fill. The base of all foundation excavations should be free of water, debris, and loose rock fragments prior to placing concrete which should proceed as soon as practical after the excavation is opened. Should the subgrade at bearing level become disturbed, saturated, or





frozen, the affected material should be removed and replaced with compacted engineered fill prior to placing concrete.

Uplift forces can be resisted by the dead weight of the footing and the effective weight of any soil above the footing. A unit weight of soil not exceeding 115 pcf is appropriate for the on-site soils backfilled above the foundation assuming that it is compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D-698). A unit weight of 150 pcf could be used for mat foundation concrete. The ground surface should be sloped away from the foundation to avoid ponding of water and saturation of the backfill materials.

Foundations for Ancillary Structures

- Subgrade stiff natural soil or approved engineered fill
- Net allowable bearing pressure ¹......2,000 psf

- Minimum footing size: 2 feet by 2 feet
- 1. The recommended net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base.

If grade supported pads, shallow spread footings, short canopy-support piers, or turn down slabs are designed using the above criteria and are constructed on an approved subgrade, total foundation settlement is expected to be 1 inch or less. Foundation settlement will depend upon the variations within the subsurface soil profile, actual loads, embedment depth, the type and thickness of underlying compacted fill, and the quality of the earthwork operations.

A geotechnical engineer should verify footing subgrade prior to concrete placement. Any soft or unsuitable soils, if encountered, should be undercut, and replaced, with approved engineered granular fill.

Earthwork

Site preparation should begin with removal of topsoil, vegetation, organics, and any soft or otherwise unsuitable materials from the entire construction area. We recommend the actual stripping depth along with any soft soils that will require undercutting be evaluated by the geotechnical engineer at the time of construction.

Granular fill (sand, crushed stone, or well graded gravel) is recommended exclusively for engineered fill beneath buried or shallow foundations for the project. General engineered fill (exclusive of beneath / near foundations) may consist of approved native soil (clayey material) that is free of rocks greater than 3 inches, organic matter, and debris. Granular and clay soil fill should be spread in 9-inch-thick loose lifts and each layer should be compacted to at least 98% of the soil's standard Proctor maximum dry density. Moisture levels for granular fill should be





maintained at a level not only to achieve adequate density but that will afford the compacted material to demonstrate stability when subsequently proofrolled. The moisture content of soil fill should be controlled to within ±2% of the materials optimum moisture as determined by the Proctor test.

Engineered fill should be tested for moisture content and compaction during the placement operations. Areas represented by failing tests should be reworked and retested as required until the specified moisture and compaction requirements are achieved. A qualified geotechnical engineer should be retained during construction to perform necessary tests during site preparation and foundation construction.

Construction Considerations

Based on the available data, the upper soil subgrades are anticipated to be relatively unstable upon initial exposure. Unstable subgrade conditions could prevail during general construction operations particularly if the soils are wetted and / or subjected to repetitive construction traffic. Should unstable subgrade conditions persist, stabilization measures will need to be employed. Depending upon the site conditions as disclosed and as encountered at the time of grading / construction, stabilization might be accomplished at isolated locations or across widespread areas via scarification / recompaction, chemical additives (lime, kiln dust, cement, etc.), or crushed stone underlain by geotextiles (woven ground stabilization fabric or high modulus grid).

Construction traffic over completed and working soil subgrades should be avoided to the extent practical. The site should also be graded to prevent ponding and pooling of surface water on subgrades or in excavations. If subgrades should become frozen, desiccated, saturated, or disturbed, the affected material should be removed or these materials should be scarified, moisture conditioned, and recompacted to the criteria stated for engineered fill.

All excavations should comply with applicable local, state, and federal safety regulations, including the current OSHA Excavation and Trench Safety Standards.

Resistivity Analysis

Near-surface soil resistivity was field-measured using a resistivity meter and employing the Wenner Vertical Profiling Method. With this technique, potential electrodes are centered on a traverse line between the current electrodes and an equal "A" spacing between electrodes is maintained. Resistivity measurements were taken along the approximate traverse alignment shown on Exhibit 1. Individual resistivity values at the requested probe spacing are summarized on Page 8.





	ELECTRICAL RESISTIVITY READINGS											
Traverse alignment	"A" Spacing (ft.)	Resistivity (ohm-cm)										
E – W	21/2	11,825										
E – W	5	13,213										
E – W	10	16,928										
E – W	12½	20,801										
E – W	20	30,869										

CLOSING

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. This report does not reflect any variations which may occur across the site, or between/beyond the boring locations. The nature and extent of such variations may not become evident until construction. If variations appear evident, it will be necessary to reevaluate the recommendations of this report.

Excluded from our geotechnical services are any evaluation of the cultural and natural resource aspects of the subject site and surrounding areas. In addition, the scope of geotechnical services for this project does not include any environmental or biological assessment of the site, or adjacent property, nor identification or prevention of pollutants, hazardous materials, or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

The information presented in this report is based upon the data obtained from the exploration limits at the boring locations and from other information discussed in this report. If changes are proposed in the design or location of the project as assumed / noted in this report, the conclusions and recommendations contained in this report shall not be considered valid unless Collier reviews the changes / differences and either verifies or augments the recommendations of this report in writing. A qualified geotechnical engineer should be retained to provide observation and testing services during grading, excavation, foundation construction, and other earth-related construction phases of the project.





We appreciate the opportunity to be of service to you. If you have any questions concerning this correspondence, or if we may be of further service to you in any way, please do not hesitate to contact us.

Sincerely,

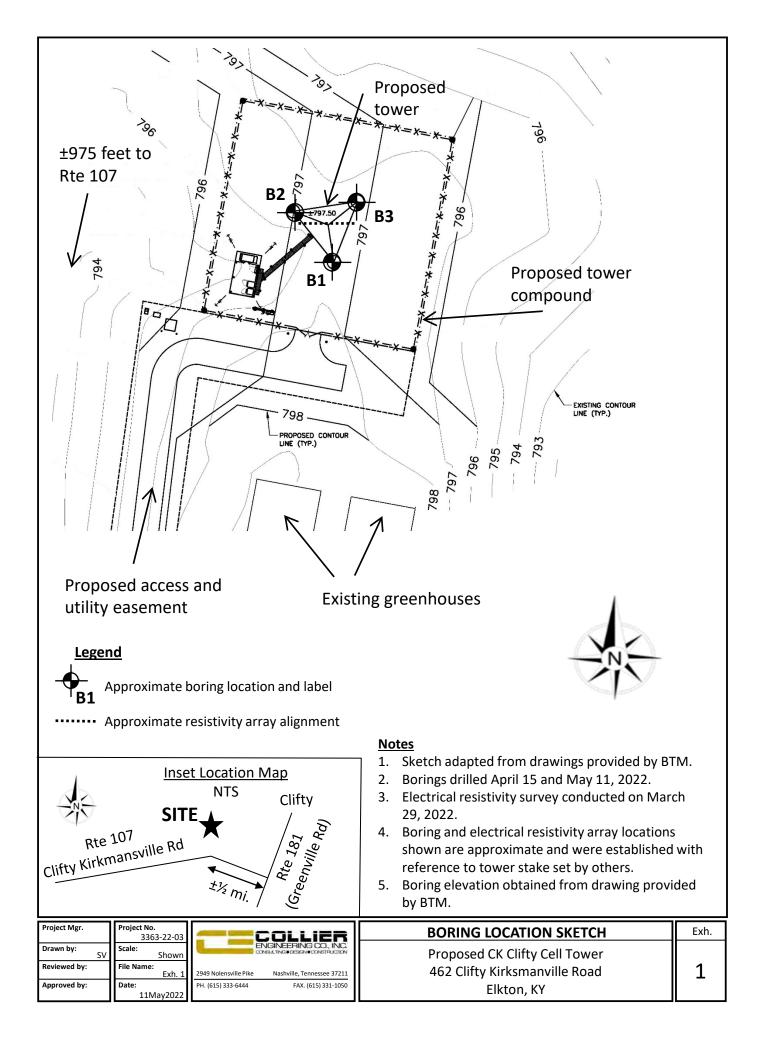
Collier Engineering Company, Inc.



J. Samuel Vance, P.E. Geotechnical Manager Kentucky PE #37122

Attachments:	Exhibit 1	Boring Location Plan
	Exhibit 2	Boring Logs (3 sheets)
	Exhibit 3	Supporting Notes





E					LC	OG OF BORI	NG B-1					
			Project Name/Site No	o.:		CK Clifty Tow	er, Site #	51710)3749			
<u></u>		ENGINEERING CO., INC.	Site Location:			462 Clifty Kirl				(Υ		
			Collier Project Numb	er:		3363-22-03						
2949	Nolens	ville Pike	Client:			BTM Enginee	ring Inc					
		I 37211	cheffe.			Louisville, KY	ing, inc.					
Nasiiv	me, m	5/211	Louisville, NT							Cheat 1 of 2		
										Sheet 1 of 3		
	t.)	Location: See Exhibit 1		L		% •	Laboratory hand oenetrometer (psf)	(%)		Atterberg Limits		
Depth (ft.)	Elevation (ft.)	*Curface Flourtiens 700		Groundwater	Sample type	SPT N-values (blows/foot)	Laboratory hand enetrometer (ps	Water content (%)	Unconfined compressive strength (psf)	LITTICS		
Ę	tiol	*Surface Elevation: 798 *Latitude/Longitude: 36° 59' 26.09" N / -8	AMSL 7° 09' 44 12" W	ndv	ple	N-va ws/t	itor me	cont	onfi pre: gth			
Jep	eva	*See remarks below	/ 09 44.12 VV	irou	àam	PT I	oora etrc	ter o	Unc com tren	LL-PL-PI		
	Ш	Material Description	Depth	0	0,	5	Lal pen	Wa	S. C			
		Topsoil/root mat	// Depth //									
					Х	0 (12")/2		24		27-18-9		
		Silty clay (CL), mottled tan/light grey, soft	3½									
5 —	793	Lean clay (CL), sandy with weathered sandstone	fragments,		${ imes}$	4-5-6 (11)		13				
		stiff to very stiff	7/6*		\times	4-6-14 (20)		22				
		Auger refusal at 7 feet in original hole		6 to	11 fe	eet: Recovery	= 96%, R	QD = !	58%;			
10 -	788	*Performed rock coring in an offset hole which re				sive strength						
	/88	Perjormed rock coring in an ojjset noie which re	ejuseu ul o jeel		•	-			•			
		Descriptions and photographs below		11 to	o 19	feet: Recover	v = 100%	RQD	= 61%			
15 —	783											
			19									
20	778	6 to 7.7 feet: sandstone, soft to moderately hard	l grev-brown thinly b	edde	ad ar	d iointed me	dium to f	ine gr	rained			
			, grey brown, thing b	cuuc	u ui	ia jointea, me		ine Bi	unicu			
		7.7 to 11 feet: sandstone, moderately hard, oran	nge brown/brown/tan	ı, thir	n to i	medium bedd	ed and jo	inted	, medium t	o fine		
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		11 to 19 feet: sandstone, moderately hard, orang	ge brown/brown/tan	thin	to m	edium bedde	d and ioir	nted	medium to	fine		
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Date started/completed: April 15, 2022 Remarks: The boring was positioned near the proposed tower center as reported	Exhibit 2										773 768 763 758 753	25 30 35 40 45 45 50		
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Borehole advanced by: Hollow stem auger stratification lines represent the inferred boundary between soil types. Insitu, the	tedly er the Exhibit 1. ive to the ed by BTM	ocation as prindicated or nation (relation provid d samples a	e leg lo tion is inform nforma	oproximat oring loca /longitude drawing in of the rec	nd at/near the ap e approximate b ion and latitude/ tained from the ual examination	or an n. The evati ns obt n visu	urveyo tation ace el n) wa sed o	staked by the project so postulated tower orien The stated ground surfa proposed tower locatic Engineering. Soil descriptions are ba	ence Engineering (ESE) e 7822	Earth Sci Geoprob : Autoham rilling: Dry	773 768 763 758 753 753 753 748 5tarted/o t by: g: ner type: : r while d	25		
Borehole abandoned by: Soil cuttings transition may be gradual.	tedly er the Exhibit 1. ive to the ed by BTM	ocation as prindicated or nation (relation provid d samples a	e leg lo tion is inform nforma	oproximat oring loca /longitude drawing in of the rec	nd at/near the ap e approximate b ion and latitude/ tained from the ual examination	or an n. The evati ns obt n visu	urveyo tation ace el n) wa sed o esent	staked by the project so postulated tower orien The stated ground surfa proposed tower locatic Engineering. Soil descriptions are ba stratification lines repro	ence Engineering (ESE) 2 7822 mer	Farth Sci Geoprob Autoham rilling: Dry ompletion: Dry	773 768 763 753 753 753 753 753 748 5tarted/o 1 by: ig: her type: c while d r upon co	25 30 35 40 45 50 Date s Drilled Drill ri, Hamm Driller Water Water		

Supporting Notes and Information

Standard Penetration Test (SPT)

Standard penetration resistance - the number of blows required to advance a standard 2-inch O.D. split-spoon sampler the last 12 inches of the total 18-inch penetration with a 140-pound safety hammer falling 30 inches (using a cathead and rope) is considered the "Standard Penetration" or "N-value". An automatic hammer was used, and the greater efficiency realized with this tool has been considered in the interpretation and analysis of the subsurface information for this report. The SPT field test procedure was performed in general accordance with ASTM D1586.

Lab Testing

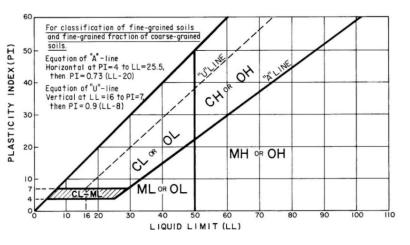
Selected SPT samples were subjected to laboratory testing to assess natural moisture content and Atterberg Limits. Samples not consumed by the testing will be stored and discarded after 60 days. A rock core specimen was tested for unconfined compressive strength.

Soil Strength Terms

RELATIVE DENSITY	OF COARSE-GRAINED SOILS	CONSISTENCY OF FINE-GRAINED SOILS									
,	ed by Standard Penetration Resistance		Consistency determined by laboratory shear strength testing, field visual-manua procedures, or standard penetration resistance								
Descriptive Term (Density)	Standard Penetration or N-Value (blows/ft.)	Descriptive Term (Consistency)	Correlated Unconfined Compressive Strength (psf)	Standard Penetration or N-Value (blows/ft.)							
Very loose	0-3	Very soft	Less than 500	<2							
Loose	4-9	Soft	500 to 1,000	2-4							
Medium dense	10-29	Firm/medium stiff	1,000 to 2,000	4-8							
Dense	30-50	Stiff	2,000 to 4,000	8-15							
Very dense	>50	Very stiff	4,000 to 8,000	15-30							
		Hard	>8,000	>30							

USCS Discussion and Plasticity Chart

Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their inplace relative density and fine-grained soils on the basis of their consistency.



Gra	in Size Terminology
Major component of sample	Range in particle size
Boulder	>12 inches (300 mm)
Cobble	3 to 12 inches (75 to 300 mm)
Gravel	#4 sieve to 3 inches (4.75 mm to 75 mm)
Sand	#200 sieve to #4 sieve (0.075 mm to 4.75 mm)
Silt or clay	Passing #200 sieve (<0.075 mm)



Directions to the Site

Head north on N. Main St. / KY181, continue 13 miles to KY107 / Clifty-Kirkmansville Road; turn left onto KY107 / Clifty-Kirkmansville, continue .5 mile; site is on the right.

Prepared by Elizabeth Bentz Williams, AICP 317-637-1321

VzW Site Name: CK Clifty Location Code: 706080 Atty: Coots Henke & Wheeler, P C : Daniel E. Coots

LAND LEASE AGREEMENT

This Land Lease Agreement (the "Agreement") made this <u>26</u> day of <u>April</u>, 20<u>22</u> between **Stevie and Brenda Powell**, husband and wife, and both Kentucky residents with a mailing address of 12160 Greenville Road, Elkton, Kentucky 42220, hereinafter collectively designated LESSOR and **Cellco Partnership d/b/a Verizon Wireless** with its principal offices at One Verizon Way, Mail Stop 4AW100, Basking Ridge, New Jersey 07920 (telephone number 866-862-4404), hereinafter designated LESSEE. LESSOR and LESSEE are at times collectively referred to hereinafter as the "Parties" or individually as the "Party."

WITNESSETH

In consideration of the mutual covenants contained herein and intending to be legally bound hereby, the Parties hereto agree as follows:

GRANT. In accordance with this Agreement, LESSOR hereby grants to LESSEE the right to 1. install, maintain and operate a telecommunications tower, facility, and equipment ("Use") upon the Premises (as hereinafter defined), which are a part of that real property owned, leased or controlled by LESSOR at approximately 462 Clifty Kirksmanville Road, Elkton, Kentucky 42220 (the "Property"). The Property is legally described on Exhibit "A" attached hereto and made a part hereof. The Premises are a portion of the Property including a portion of the parcel of land space (the "Land Space") consisting of approximately 100' x 100', or 10,000 square feet of land, as shown in detail on Exhibit "B" attached hereto and made a part hereof. LESSOR hereby grants permission to LESSEE to install, maintain and operate the telecommunications tower, facility, and equipment, antennas and appurtenances described in Exhibit "B" attached hereto. LESSEE reserves the right to replace the aforementioned equipment with similar and comparable equipment. In addition, LESSOR hereby grants to LESSEE a non-exclusive right (the "Easements") over the Property for access, ingress and egress, seven (7) days a week twenty-four (24) hours a day, on foot or motor vehicle, including trucks over or along a thirty foot (30') wide right-of-way extending from the nearest public right-of-way, Clifty Kirksmanville Road, to the Land Space, and for the installation and maintenance of utility wires, poles, cables, conduits, fiber, and pipes over, under, or along one or more rights of way from the Land Space, said Land Space and Rights of Way (hereinafter collectively referred to as the "Premises") being substantially as described herein in Exhibit "B" attached hereto and made a part hereof. The Property is also shown on the Tax Map of the City of Elkton, as Tax Map ID Number 050-21.

In the event any public utility is unable to use the Easements, the LESSOR hereby agrees to grant an additional right-of-way either to the LESSEE or to the public utility at no cost to the LESSEE.

LESSEE may survey the Premises and said survey shall then become Exhibit "C" which shall be attached hereto and made a part hereof, and shall control in the event of boundary and access discrepancies between it and Exhibit "B". Cost for such work shall be borne by the LESSEE.

2. <u>INITIAL TERM</u>. This Agreement shall be effective as of the date of execution by both Parties ("Effective Date"). The initial term of the Agreement shall be for five (5) years beginning on the Commencement Date (as hereinafter defined). The "Commencement Date" shall be the first (1st) day of the month after LESSEE begins construction of the telecommunications facility. LESSOR and LESSEE agree

VzW Site Name: CK Clifty Location Code: 706080 Atty Coots Henke & Wheeler, P.C.: Daniel E Coots that they shall acknowledge, in writing, the Commencement Date once construction of the telecommunications facility has commenced.

3. <u>EXTENSIONS</u>. This Agreement shall automatically be extended for 4 additional five (5) year terms unless LESSEE terminates it at the end of the then current term by giving LESSOR written notice of the intent to terminate at least three (3) months prior to the end of the then current term. The initial term and all extensions shall be collectively referred to herein as the "Term".

4. <u>RENTAL</u>.

(a). Rental payments shall begin on the Commencement Date and be due at a total annual rental of **Commencement of Commencement**, to be paid in equal monthly installments of **Commencement** and **Commence**

(b). For any party to whom rental payments are to be made, LESSOR or any successor in interest of LESSOR hereby agrees to provide to LESSEE (i) a completed, current version of internal Revenue Service Form W-9, or equivalent; (ii) complete and fully executed state and local withholding forms if required; and (iii) other documentation to verify LESSOR's or such other party's right to receive rental as is reasonably requested by LESSEE. Rental shall accrue in accordance with this Agreement, but LESSEE shall have no obligation to deliver rental payments until the requested documentation has been received by LESSEE. Upon receipt of the requested documentation, LESSEE shall deliver the accrued rental payments as directed by LESSOR.

(c). The rental amount shall increase by ten percent (10%) at the beginning of each 5 year renewal term from the Commencement Date, as defined herein.

(d). ADDITIONAL EXTENSIONS. If at the end of the fourth (4th) five (5) year extension term this Agreement has not been terminated by either Party by giving to the other written notice of an intention to terminate it at least three (3) months prior to the end of such term, this Agreement shall continue in force upon the same covenants, terms and conditions for a further term of five (5) years and for five (5) year terms thereafter until terminated by either Party by giving to the other written notice of its intention to so terminate at least three (3) months prior to the end of such term. Annual rental for each such additional five (5) year term shall be equal to the annual rental payable with respect to the immediately preceding five (5) year term. The initial term and all extensions shall be collectively referred to herein as the "Term".

5. <u>ACCESS</u>. LESSEE shall have the non-exclusive right of ingress and egress from a public right-of-way, 7 days a week, 24 hours a day, over the Property to and from the Premises for the purpose of installation, operation and maintenance of LESSEE's communications equipment over or along a thirty foot (30') right-of-way ("Easement"), which shall be depicted on Exhibit "B". LESSEE may use the Easement for the installation, operation and maintenance of wires, cables,

conduits and pipes for all necessary electrical, telephone, fiber and other similar support services. In the event it is necessary, LESSOR agrees to grant LESSEE or the provider the right to install such services on, through, over and/or under the Property, provided the location of such services shall be reasonably approved by LESSOR. Notwithstanding anything to the contrary, the Premises shall include such additional space sufficient for LESSEE's radio frequency signage and/or barricades as are necessary to ensure LESSEE's compliance with Laws (as defined in Paragraph 27).

6. <u>CONDITION OF PROPERTY</u>. LESSOR shall deliver the Premises to LESSEE in a condition ready for LESSEE's Use and clean and free of debris. Notwithstanding the foregoing, LESSEE shall be responsible for any tree clearing/site preparation associated with the Land Space and/or Easement areas. LESSOR represents and warrants to LESSEE that as of the Effective Date, the Premises is (a) in compliance with all Laws; and (b) in compliance with all EH&S Laws (as defined in Paragraph 24).

7. <u>IMPROVEMENTS</u>. The communications equipment including, without limitation, the tower, equipment shelters/platforms, antenna mounts, antennas, conduits, and other improvements shall be at LESSEE's expense and installation shall be at the discretion and option of LESSEE. LESSEE shall have the right to replace, repair, add or otherwise modify its communications equipment, antennas, conduits, fencing and other screening, or other improvements or any portion thereof and the frequencies over which the communications equipment operates, whether or not any of the communications equipment, antennas, conduits or other improvements are listed on any exhibit.

8. <u>GOVERNMENT APPROVALS</u>. LESSEE's Use is contingent upon LESSEE obtaining all of the certificates, permits and other approvals (collectively the "Government Approvals") that may be required by any Federal, State or Local authorities (collectively, the "Government Entities") as well as a satisfactory soil boring test, environmental studies, or any other due diligence LESSEE chooses that will permit LESSEE's Use. By signing this Agreement, LESSOR consents to LESSEE making all necessary applications with the appropriate zoning authority and shall cooperate with LESSEE in its effort to obtain such approvals. LESSOR shall take no action which would adversely affect the status of the Property with respect to LESSEE's Use.

9. <u>TERMINATION</u>. LESSEE may, unless otherwise stated, immediately terminate this Agreement upon written notice to LESSOR in the event that (i) any applications for such Government Approvals should be finally rejected; (ii) any Government Approval issued to LESSEE is canceled, expires, lapses or is otherwise withdrawn or terminated by any Government Entity; (iii) LESSEE determines that such Government Approvals may not be obtained in a timely manner; (iv) LESSEE determines any structural analysis is unsatisfactory; (v) LESSEE, in its sole discretion, determines the Use of the Premises is obsolete or unnecessary; (vi) with 3 months prior notice to LESSOR, upon the annual anniversary of the Commencement Date; or (vii) at any time before the Commencement Date for any reason or no reason in LESSEE's sole discretion.

10. <u>INDEMNIFICATION</u>. Subject to Paragraphs 11 and 12, each Party shall indemnify and hold the other harmless against any claim of liability or loss from personal injury or property damage resulting from or arising out of the negligence or willful misconduct of the indemnifying Party, its employees, contractors or agents, except to the extent such claims or damages may be due to or caused by the negligence or willful misconduct of the other Party, or its employees, contractors or agents. The indemnified Party will provide the indemnifying Party with prompt, written notice

VzW Site Name: CK Clifty Location Code: 706080

Atty Coots Henke & Wheeler, P.C : Daniel E. Coots

of any claim covered by this indemnification; provided that any failure of the indemnified Party to provide any such notice, or to provide it promptly, shall not relieve the indemnifying Party from its indemnification obligation in respect of such claim, except to the extent the indemnifying Party can establish actual prejudice and direct damages as a result thereof. The indemnified Party will cooperate appropriately with the indemnifying Party in connection with the indemnifying Party's defense of such claim. The indemnifying Party shall defend any indemnified Party, at the indemnified Party's request, against any claim with counsel reasonably satisfactory to the indemnified Party. The indemnifying Party shall not settle or compromise any such claim or consent to the entry of any judgment without the prior written consent of each indemnified Party and without an unconditional release of all claims by each claimant or plaintiff in favor of each indemnified Party.

11. INSURANCE. The LESSOR agrees that at its own cost and expense, LESSOR will maintain commercial liability insurance with limits not less than \$1,000,000 for injury to or death of one or more persons in any one occurrence and \$1,000,000 for damage or destruction in any one occurrence. The LESSEE agrees that at its own cost and expense, it will maintain commercial general liability insurance with limits not less than \$2,000,000 for injury to or death of one or more persons in any one occurrence and \$2,000,000 for damage or destruction in any one occurrence. The Parties agree to include the other Party as an additional insured. The Parties hereby waive and release any and all rights of action for negligence against the other which may hereafter arise on account of damage to the Premises or the Property, resulting from any fire, or other casualty which is insurable under "Causes of Loss - Special Form" property damage insurance or for the kind covered by standard fire insurance policies with extended coverage, regardless of whether or not, or in what amounts, such insurance is now or hereafter carried by the Parties, even if any such fire or other casualty shall have been caused by the fault or negligence of the other Party. These waivers and releases shall apply between the Parties and they shall also apply to any claims under or through either Party as a result of any asserted right of subrogation. All such policies of insurance obtained by either Party concerning the Premises or the Property shall waive the insurer's right of subrogation against the other Party.

12. <u>LIMITATION OF LIABILITY</u>. Except for indemnification pursuant to Paragraphs 10 and 24, a violation of Paragraph 30, or a violation of law, neither Party shall be liable to the other, or any of their respective agents, representatives, or employees for any lost revenue, lost profits, loss of technology, rights or services, incidental, punitive, indirect, special or consequential damages, loss of data, or interruption or loss of use of service, even if advised of the possibility of such damages, whether under theory of contract, tort (including negligence), strict liability or otherwise.

13. INTERFERENCE.

(a). LESSOR agrees that LESSOR and other occupants of the Property will not cause interference to LESSEE's equipment (that is measurable in accordance with industry standards to the then existing equipment of LESSEE).

(b). Without limiting any other rights or remedies, if interference occurs and continues for a period in excess of 48 hours following notice to the interfering party via telephone to LESSEE'S Network Operations Center (at (800) 224-6620/(800) 621-2622) or to LESSOR at (270) 604-5515, the interfering party shall or shall require any other user to reduce power or cease operations of the interfering equipment until the interference is cured.

(c). The Parties acknowledge that there will not be an adequate remedy at law for noncompliance with the provisions of this Paragraph and therefore the Parties shall have the right to equitable remedies such as, without limitation, injunctive relief and specific performance.

14. <u>REMOVAL AT END OF TERM</u>. Upon expiration or within ninety (90) days of earlier termination, LESSEE shall remove LESSEE's Communications Equipment (except footings) and restore the Premises to its original condition, reasonable wear and tear and casualty damage excepted. LESSOR agrees and acknowledges that the communications equipment shall remain the personal property of LESSEE and LESSEE shall have the right to remove the same at any time during the Term, whether or not said items are considered fixtures and attachments to real property under applicable laws. If such time for removal causes LESSEE to remain on the Premises after termination of the Agreement, LESSEE shall pay rent at the then existing monthly rate or on the existing monthly pro-rata basis if based upon a longer payment term, until the removal of the communications equipment is completed.

15. <u>HOLDOVER</u>. If upon expiration of the Term the Parties are negotiating a new lease or a lease extension, then this Agreement shall continue during such negotiations on a month to month basis at the rental in effect as of the date of the expiration of the Term. In the event that the Parties are not in the process of negotiating a new lease or lease extension and LESSEE holds over after the expiration or earlier termination of the Term, then LESSEE shall pay rent at the then existing monthly rate or on the existing monthly pro-rata basis if based upon a longer payment term, until the removal of the communications equipment is completed.

16. RIGHT OF FIRST REFUSAL. If at any time after the Effective Date, LESSOR receives an offer or letter of intent from any person or entity that is in the business of owning, managing or operating communications facilities or is in the business of acquiring landlord interests in agreements relating to communications facilities, to purchase fee title, an easement, a lease, a license, or any other interest in the Premises or any portion thereof or to acquire any interest in this Agreement, or an option for any of the foregoing, LESSOR shall provide written notice to LESSEE of said offer ("LESSOR's Notice"). LESSOR's Notice shall include the prospective buyer's name, the purchase price being offered, any other consideration being offered, the other terms and conditions of the offer, a description of the portion of and interest in the Premises and/or this Agreement which will be conveyed in the proposed transaction, and a copy of any letters of intent or form agreements presented to LESSOR by the third party offeror. LESSEE shall have the right of first refusal to meet any bona fide offer of sale or transfer on the terms and conditions of such offer or by effectuating a transaction with substantially equivalent financial terms. If LESSEE fails to provide written notice to LESSOR that LESSEE intends to meet such bona fide offer within thirty (30) days after receipt of LESSOR's Notice, LESSOR may proceed with the proposed transaction in accordance with the terms and conditions of such third party offer, in which event this Agreement shall continue in full force and effect and the right of first refusal described in this Paragraph shall survive any such conveyance to a third party. If LESSEE provides LESSOR with notice of LESSEE's intention to meet the third party offer within thirty (30) days after receipt of LESSOR's Notice, then if LESSOR's Notice describes a transaction involving greater space than the Premises, LESSEE may elect to proceed with a transaction covering only the Premises and the purchase price shall be pro-rated on a square footage basis. Further, LESSOR acknowledges and agrees that if LESSEE exercises this right of first refusal, LESSEE may require a reasonable period of time to conduct due diligence and effectuate the closing of a transaction on substantially equivalent financial terms of the third party offer. For purposes of this Paragraph, any transfer, bequest or devise of LESSOR's interest in the Property as a result of the death of LESSOR, whether by will or intestate succession, or any conveyance to LESSOR's family members by direct conveyance or by conveyance to a trust for the benefit of family members shall not be considered a sale for which LESSEE has any right of first refusal.

17. <u>RIGHTS UPON SALE</u>. Should LESSOR, at any time during the Term, decide (i) to sell or otherwise transfer all or any part of the Property, or (ii) to grant to a third party by easement or other legal instrument an interest in and to any portion of the Premises, such sale, transfer, or grant of an easement or interest therein shall be under and subject to this Agreement and any such purchaser or transferee shall recognize LESSEE's rights hereunder. In the event that LESSOR completes any such sale, transfer, or grant described in this Paragraph without executing an assignment of the Agreement whereby the third party agrees in writing to assume all obligations of LESSOR under this Agreement, then LESSOR shall not be released from its obligations to LESSEE under this Agreement, and LESSEE shall have the right to look to LESSOR and the third party for the full performance of the Agreement.

18. <u>LESSOR'S TITLE.</u> LESSOR covenants that LESSEE, on paying the rent and performing the covenants herein, shall peaceably and quietly have, hold and enjoy the Premises. LESSOR represents and warrants to LESSEE as of the Effective Date and covenants during the Term that LESSOR has full authority to enter into and execute this Agreement and that there are no liens, judgments, covenants, easements, restrictions or other impediments of title that will adversely affect LESSEE's Use.

19. <u>ASSIGNMENT</u>. Without any approval or consent of the other Party, this Agreement may be sold, assigned or transferred by either Party to (i) any entity in which the Party directly or indirectly holds an equity or similar interest; (ii) any entity which directly or indirectly holds an equity or similar interest; (ii) any entity directly or indirectly under common control with the Party. LESSEE may unilaterally assign this Agreement without the approval or consent of LESSOR to any third party tower company that agrees to construct and develop the Premises. LESSEE may also assign this Agreement to any entity which acquires all or substantially all of LESSEE's assets in the market defined by the FCC in which the Property is located by reason of a merger, acquisition or other business reorganization without approval or consent of LESSOR. As to other parties, this Agreement may not be sold, assigned or transferred without the written consent of the other Party, which such consent will not be unreasonably withheld, delayed or conditioned. No change of stock ownership, partnership interest or control of LESSEE or transfer upon partnership or corporate dissolution of either Party shall constitute an assignment hereunder. LESSEE may sublet the Premises in LESSEE's sole discretion.

20. <u>NOTICES</u>. Except for notices permitted via telephone in accordance with Paragraph 13, all notices hereunder must be in writing and shall be deemed validly given if sent by certified mail, return receipt requested or by commercial courier, provided the courier's regular business is delivery service and provided further that it guarantees delivery to the addressee by the end of the next business day following the courier's receipt from the sender, addressed as follows (or any other address that the Party to be notified may have designated to the sender by like notice):

VzW Site Name: CK Clifty Location Code: 706080 Atty: Coots Henke & Wheeler, P.C.: Daniel E. Coots

> LESSOR: Stevie and Brenda Powell 12160 Greenville Road Elkton, Kentucky 42220

LESSEE: Cellco Partnership d/b/a Verizon Wireless 180 Washington Valley Road Bedminster, New Jersey 07921 Attention: Network Real Estate

Notice shall be effective upon actual receipt or refusal as shown on the receipt obtained pursuant to the foregoing.

SUBORDINATION AND NON-DISTURBANCE. If applicable and within fifteen (15) days of the 21. Effective Date, LESSOR shall obtain a Non-Disturbance Agreement, as defined below, from its existing mortgagee(s), ground lessors and master lessors, if any, of the Property. At LESSOR's option, this Agreement shall be subordinate to any future master lease, ground lease, mortgage, deed of trust or other security interest (a "Mortgage") by LESSOR which from time to time may encumber all or part of the Property; provided, however, as a condition precedent to LESSEE being required to subordinate its interest in this Agreement to any future Mortgage covering the Property, LESSOR shall obtain for LESSEE's benefit a non-disturbance and attornment agreement for LESSEE's benefit in the form reasonably satisfactory to LESSEE, and containing the terms described below (the "Non-Disturbance Agreement"), and shall recognize LESSEE's rights under this Agreement. The Non-Disturbance Agreement shall include the encumbering party's ("Lender's") agreement that, if Lender or its successor-in-interest or any purchaser of Lender's or its successor's interest (a "Purchaser") acquires an ownership interest in the Property, Lender or such successor-in-interest or Purchaser will honor all of the terms of the Agreement. Such Non-Disturbance Agreement must be binding on all of Lender's participants in the subject loan (if any) and on all successors and assigns of Lender and/or its participants and on all Purchasers. In return for such Non-Disturbance Agreement, LESSEE will execute an agreement for Lender's benefit in which LESSEE (1) confirms that the Agreement is subordinate to the Mortgage or other real property interest in favor of Lender, (2) agrees to attorn to Lender if Lender becomes the owner of the Property and (3) agrees to accept a cure by Lender of any of LESSOR's defaults, provided such cure is completed within the deadline applicable to LESSOR. In the event LESSOR defaults in the payment and/or other performance of any mortgage or other real property interest encumbering the Property, LESSEE, may, at its sole option and without obligation, cure or correct LESSOR's default and upon doing so, LESSEE shall be subrogated to any and all rights, titles, liens and equities of the holders of such mortgage or other real property interest and LESSEE shall be entitled to deduct and setoff against all rents that may otherwise become due under this Agreement the sums paid by LESSEE to cure or correct such defaults.

22. <u>DEFAULT</u>. It is a "Default" if (i) either Party fails to comply with this Agreement and does not remedy the failure within thirty (30) days after written notice by the other Party or, if the failure cannot reasonably be remedied in such time, if the failing Party does not commence a remedy within the allotted thirty (30) days and diligently pursue the cure to completion within ninety (90) days after the initial written notice, or (ii) LESSOR fails to comply with this Agreement

and the failure substantially interferes with LESSEE's Use, in LESSEE's reasonable discretion, and LESSOR does not remedy the failure within five (5) days after written notice from LESSEE or, if the failure cannot reasonably be remedied in such time, if LESSOR does not commence a remedy within the allotted five (5) days and diligently pursue the cure to completion within fifteen (15) days after the initial written notice. The cure periods set forth in this Paragraph 22 do not extend the period of time in which either Party has to cure interference pursuant to Paragraph 13 of this Agreement.

23. <u>REMEDIES</u>. In the event of a Default, without limiting the non-defaulting Party in the exercise of any right or remedy which the non-defaulting Party may have by reason of such default, the non-defaulting Party may terminate this Agreement and/or pursue any remedy now or hereafter available to the non-defaulting Party under the Laws or judicial decisions of the state in which the Property is located. Further, upon a Default, the non-defaulting Party may at its option (but without obligation to do so), perform the defaulting Party's duty or obligation. The costs and expenses of any such performance by the non-defaulting Party shall be due and payable by the defaulting Party upon invoice therefor. If LESSEE undertakes any such performance on LESSOR's behalf and LESSOR does not pay LESSEE the full undisputed amount within thirty (30) days of its receipt of an invoice setting forth the amount due, LESSEE may offset the full undisputed amount is fully reimbursed to LESSEE.

24. ENVIRONMENTAL. LESSEE shall conduct its business in compliance with all applicable laws governing the protection of the environment or employee health and safety ("EH&S Laws"). LESSEE shall indemnify and hold harmless the LESSOR from claims to the extent resulting from LESSEE's violation of any applicable EH&S Laws or to the extent that LESSEE causes a release of any regulated substance to the environment. LESSOR shall indemnify and hold harmless LESSEE from all claims resulting from the violation of any applicable EH&S Laws by LESSOR or its employees, contractors or agents, or a release of any regulated substance to the environment caused by LESSOR, its employees, contractors or agents, except to the extent resulting from the activities of LESSEE. The Parties recognize that LESSEE is only leasing a small portion of LESSOR's property and that LESSEE shall not be responsible for any environmental condition or issue except to the extent resulting from LESSEE's specific activities and responsibilities. In the event that LESSEE encounters any hazardous substances that do not result from its activities, LESSEE may relocate its facilities to avoid such hazardous substances to a mutually agreeable location or, if LESSEE desires to remove at its own cost all or some the hazardous substances or materials (such as soil) containing those hazardous substances, LESSOR agrees to sign any necessary waste manifest associated with the removal, transportation and/or disposal of such substances.

25. <u>CASUALTY</u>. If a fire or other casualty damages the Property or the Premises and substantially impairs LESSEE's Use, in LESSEE's reasonable discretion, rent shall abate until LESSEE'S Use is restored. If LESSEE's Use is not restored within forty-five (45) days, LESSEE may terminate this Agreement.

26. <u>CONDEMNATION</u>. If a condemnation of any portion of the Property or Premises substantially impairs LESSEE's Use, in LESSEE's reasonable discretion, LESSEE may terminate this Agreement. LESSEE may on its own behalf make a claim in any condemnation proceeding involving the Premises for losses related to LESSEE's communications equipment, relocation costs

and, specifically excluding loss of LESSEE's leasehold interest, any other damages LESSEE may incur as a result of any such condemnation.

27. <u>APPLICABLE LAWS</u>. During the Term, LESSOR shall maintain the Property in compliance with all applicable laws, EH&S Laws, rules, regulations, ordinances, directives, covenants, easements, consent decrees, zoning and land use regulations, and restrictions of record, permits, building codes, and the requirements of any applicable fire insurance underwriter or rating bureau, now in effect or which may hereafter come into effect (including, without limitation, the Americans with Disabilities Act and laws regulating hazardous substances) (collectively "Laws"). LESSEE shall, in respect to the condition of the Premises and at LESSEE's sole cost and expense, comply with (i) all Laws relating solely to LESSEE's specific and unique nature of use of the Premises; and (ii) all building codes requiring modifications to the Premises due to the improvements being made by LESSEE in the Premises. It shall be LESSOR's obligation to comply with all Laws relating to the Property, without regard to specific use (including, without limitation, modifications required to enable LESSEE to obtain all necessary building permits).

28. <u>TAXES</u>.

(a). LESSOR shall invoice and LESSEE shall pay any applicable transaction tax (including sales, use, gross receipts, or excise tax) imposed on the LESSEE and required to be collected by the LESSOR based on any service, rental space, or equipment provided by the LESSOR to the LESSEE. LESSEE shall pay all personal property taxes, fees, assessments, or other taxes and charges imposed by any Government Entity that are imposed on the LESSEE and required to be paid by the LESSEE that are directly attributable to the LESSEE's equipment or LESSEE's use and occupancy of the Premises. Payment shall be made by LESSEE within sixty (60) days after presentation of a receipted bill and/or assessment notice which is the basis for such taxes or charges. LESSOR shall pay all ad valorem, personal property, real estate, sales and use taxes, fees, assessments or other taxes or charges that are attributable to LESSOR's Property or any portion thereof imposed by any Government Entity.

(b). LESSEE shall have the right, at its sole option and at its sole cost and expense, to appeal, challenge or seek modification of any tax assessment or billing for which LESSEE is wholly or partly responsible for payment. LESSOR shall reasonably cooperate with LESSEE at LESSEE's expense in filing, prosecuting and perfecting any appeal or challenge to taxes as set forth in the preceding sentence, including but not limited to, executing any consent, appeal or other similar document. In the event that as a result of any appeal or challenge by LESSEE, there is a reduction, credit or repayment received by the LESSOR for any taxes previously paid by LESSEE, LESSOR agrees to promptly reimburse to LESSEE the amount of said reduction, credit or repayment. In the event that LESSEE does not have the standing rights to pursue a good faith and reasonable dispute of any taxes under this paragraph, LESSOR will pursue such dispute at LESSEE's sole cost and expense upon written request of LESSEE.

29. <u>ACCESS TO TOWER</u>. LESSOR agrees the LESSEE shall have free access to the Tower at all times for the purpose of installing and maintaining the said equipment. LESSOR shall furnish LESSEE with necessary means of access for the purpose of ingress and egress to this site and Tower location. It is agreed, however, that only authorized engineers, employees or properly authorized contractors of LESSEE or persons under their direct supervision will be permitted to enter said premises.

30. <u>NON-DISCLOSURE</u>. The Parties agree this Agreement and any information exchanged between the Parties regarding the Agreement are confidential. The Parties agree not to provide copies of this Agreement or any other confidential information to any third party without the prior written consent of the other or as required by law. If a disclosure is required by law, prior to disclosure, the Party shall notify the other Party and cooperate to take lawful steps to resist, narrow, or eliminate the need for that disclosure.

31. <u>MOST FAVORED LESSEE</u>. LESSOR represents and warrants that the rent, benefits and terms and conditions granted to LESSEE by LESSOR hereunder are now and shall be, during the Term, no less favorable than the rent, benefits and terms and conditions for substantially the same or similar tenancies or licenses granted by LESSOR to other parties. If at any time during the Term LESSOR shall offer more favorable rent, benefits or terms and conditions for substantially the same or similar tenancies or licenses or licenses as those granted hereunder, then LESSOR shall, within thirty (30) days after the effective date of such offering, notify LESSEE of such fact and offer LESSEE the more favorable offering. If LESSEE chooses, the parties shall then enter into an amendment that shall be effective retroactively to the effective date of the more favorable offering, and shall provide the same rent, benefits or terms and conditions to LESSEE. LESSEE shall have the right to decline to accept the offering. LESSOR's compliance with this requirement shall be subject, at LESSEE's option, to independent verification.

32. MISCELLANEOUS. This Agreement contains all agreements, promises and understandings between the LESSOR and the LESSEE regarding this transaction, and no oral agreement, promises or understandings shall be binding upon either the LESSOR or the LESSEE in any dispute, controversy or proceeding. This Agreement may not be amended or varied except in a writing signed by all Parties. This Agreement shall extend to and bind the heirs, personal representatives, successors and assigns hereto. The failure of either party to insist upon strict performance of any of the terms or conditions of this Agreement or to exercise any of its rights hereunder shall not waive such rights and such party shall have the right to enforce such rights at any time. The performance of this Agreement shall be governed, interpreted, construed and regulated by the laws of the state in which the Premises is located without reference to its choice of law rules. Except as expressly set forth in this Agreement, nothing in this Agreement shall grant, suggest or imply any authority for one Party to use the name, trademarks, service marks or trade names of the other for any purpose whatsoever. LESSOR agrees to execute a Memorandum of this Agreement, which LESSEE may record with the appropriate recording officer. The provisions of the Agreement relating to indemnification from one Party to the other Party shall survive any termination or expiration of this Agreement.

[Signature page follows. The remainder of this page is intentionally blank.]

VzW Site Name CK Clifty Location Code: 706080 Atty Coots Henke & Wheeler, P.C., Daniel E Coots

IN WITNESS WHEREOF, the Parties hereto have set their hands and affixed their respective seals the day and year first above written.

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WITNESS

LESSOR:

Stevie Powell

Date: 3-18-2022

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WITNESS

NDD

Brenda Powell

Date: 3-18-2022

LESSEE:

CELLCO PARTNERSHIP d/b/a Verizon Wireless

By:

Its: Ed Maher___ **Director - Network Field Engineering** Date: ί.

WITNESS (Ball bigall

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VzW Site Name CK Clifty Location Code: 706080 Atty. Coots Henke & Wheeler, P.C. Daniel E. Coots

EXHIBIT "A"

DESCRIPTION OF PROPERTY

Property located in Todd County, Kentucky

A certain tract of land in Todd County, Kentucky, located on the North side of Ky. Hwy. No. 107 approximately 1.5 miles Southwest of Clifty, and further described from a survey by E. T. Riley, Land Surveyor, Ky. Reg. No. 128 on April 11, 1978, as follows.

Beginning at a stake in the North right of way line of Hwy. 107, a corner with Gilbert Francis; thence with Francis' line, passing just East of a well house, N 02" 51' W - 14 71 chains to a rock, a corner with same; thence with Francis' line N 14* 34' W - 5.77 chains to a stake in the center of an old road; thence with Francis' line along the old road N 44° 44' W - 4.63 chains to a stake, a corner with same; thence with Francis' line leaving the old road N 57° 02' W - 8.51 chains crossing the branch to a beach on the West side thereof, a corner with Francis and the Petrie Heirs; thence with the line of the Petrie Heirs 12 calls along a bluff crossing the branch N 20° 30' E - 5.71 chains to a point on the bluff, N 36° 04' E - 6.37 chains, S 28" 51' E - 2 80 chains, N 85° 14' E - 1.20 chains, S 42' 31' E - 1.63 chains, N 33° 41' E - 1.44 chains, N 79° 13' E - 2.14 chains, East - 7.00 chains, S 52° 53' E - 4.64 chains, S 11° 19' E - 8.67 chains, S 30° 15' W - 1.39 chains, S 86° 11' E - 3.01 chains to a waterfall, a corner with the Petric Heirs and William Carver; thence up the branch with Carver's line S 06° 20' E - 9.06 chains and S 11° 38' W - 2.78 chains to a point in the fork of the branch; thence with the Southwest fork along Carver's line \$ 31° 22' W - 4.80 chains and S 09° 3' E - 5.12 chains to an oak tree near the head of the branch, a corner with Carver; thence with the lines of Carver and Harold Shemwell S 09° 27' W - 4.69 chains to a rock on the East side of a gravel drive, said rock being 31 feet North of the North right of way line of Ky. Hwy. 107; thence along the North side of the old road N 85° 36' W - 5.99 chains to an oak tree in the North right of way line of Hwy. 107 at the lunction with the North side of the old road; thence with the said right of way line N 831 15' W - 3.92 chains and N 86° 51' W - 2.55 chains to the beginning point, containing 63,905 acres.

EXCEPTION There is excepted from the foregoing described property a certain tract conveyed therefrom by Huston McGehee, widower, to Morris B. McGehee and wife by Deed dated August 5, 1968, and recorded in Deed Book 85, Page 694, records of the Todd County Court Clerk's Office, and more fully described as follows:

Beginning at a stake in the North right of way line of Ky. Hwy. No. 107, 162 feet West of the Southeast corner of the Huston McGehee property, a new corner with said McGehee; thence on a new line with said McGehee N 9° E 190.4 feet to a stake, thence on a new line with McGehee N 78° W 132.0 feet to a stake; thence on a new line with McGehee S 9° W 197.9 feet to a stake in the North right of way line of Ky. Hwy. No. 107, a new corner with McGehee, thence with the North right of way line of said Hwy. S 81° E 133.5 feet, to the point of beginning, containing .59 acres.

The above description is according to a survey made by V. Glenn Hughes, Surveyor on August 3, 1968.

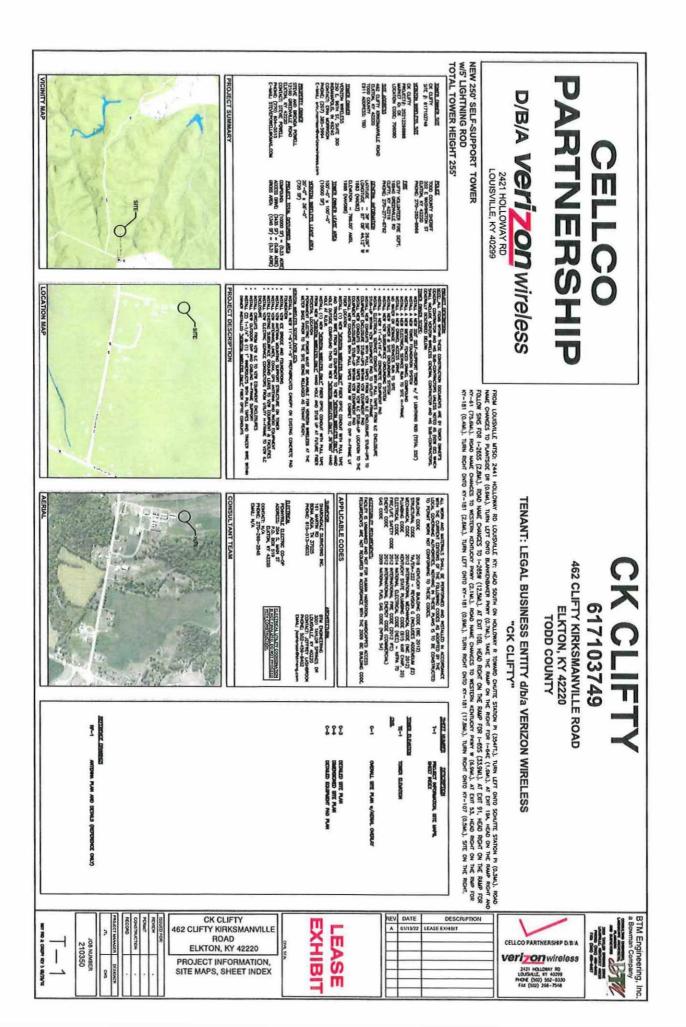
LESS AND EXCEPT that portion of property conveyed to Danan Micheel Ray and Shannon Denise Powell Ray from Stevie A. Powell and Brenda L. Powell by Deed of Conveyance dated February 22, 2016 and recorded February 23, 2016 in Deed Book 200, Page 366.

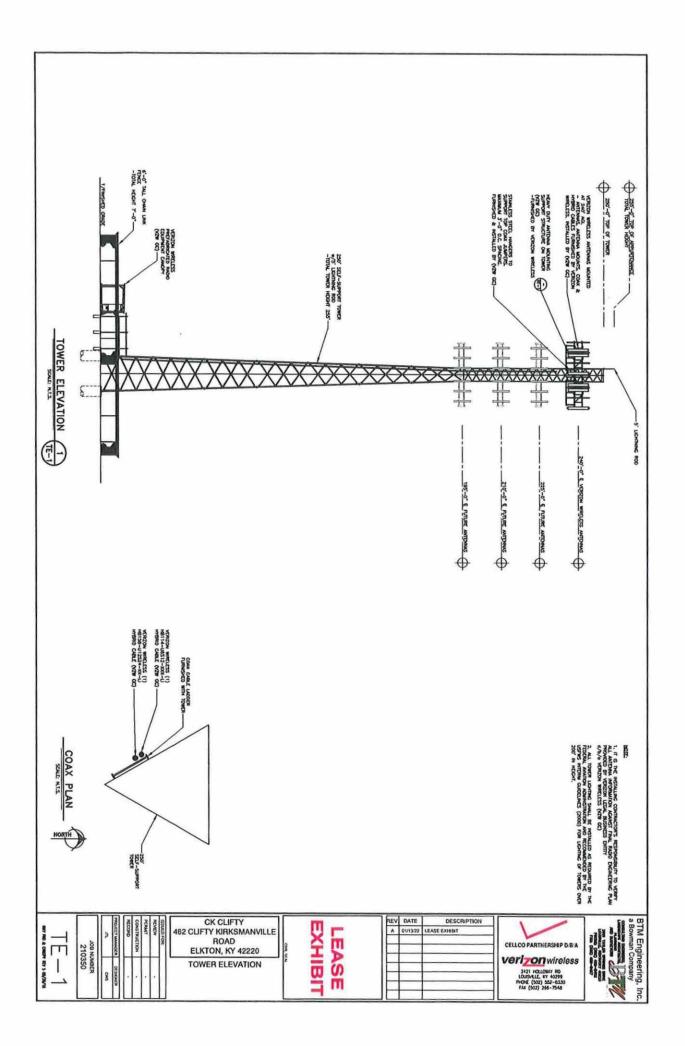
AND BEING the same property conveyed to Stevie A. Powell and Brenda L. Powell from Eleanor Frazier, George Frazier, Eula Adams, Junior McGehee, Patricia McGehee, Audrey Raulston, Ross Raulston, by Dorris McGehee and Morris McGehee, their joint attorney in fact, Dorris McGehee, Karlene McGehee, Morris McGehee, Louise McGehee, William McGehee and Verna McGehee by Deed of Conveyance dated July 25, 1978 and recorded July 25, 1978 in Deed Book 102, Page 489.

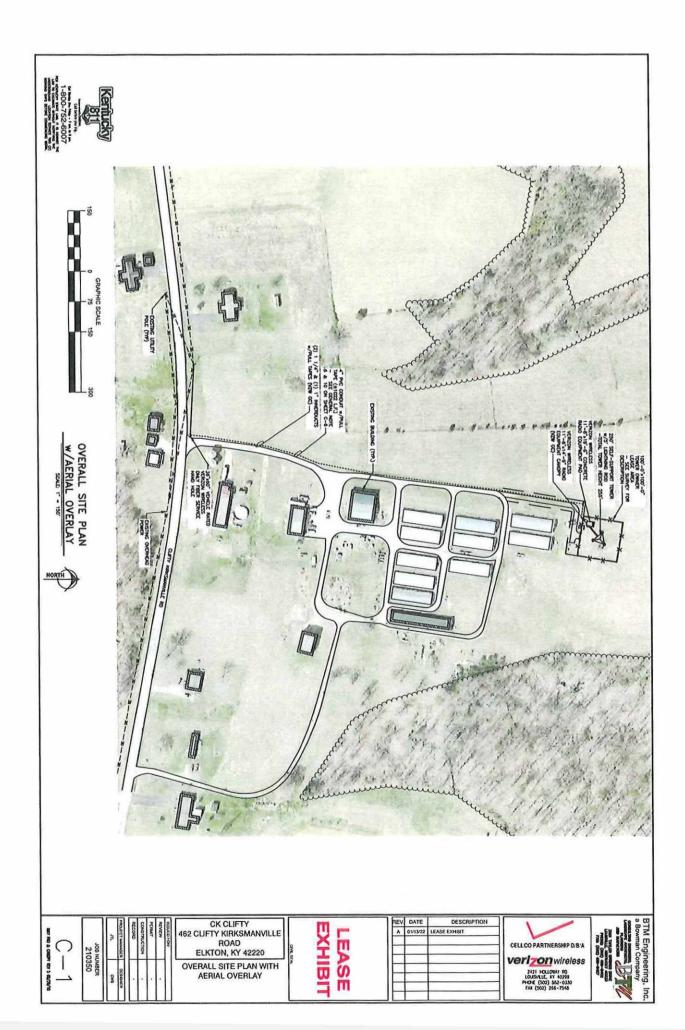
Tax Parcel No. 050-21

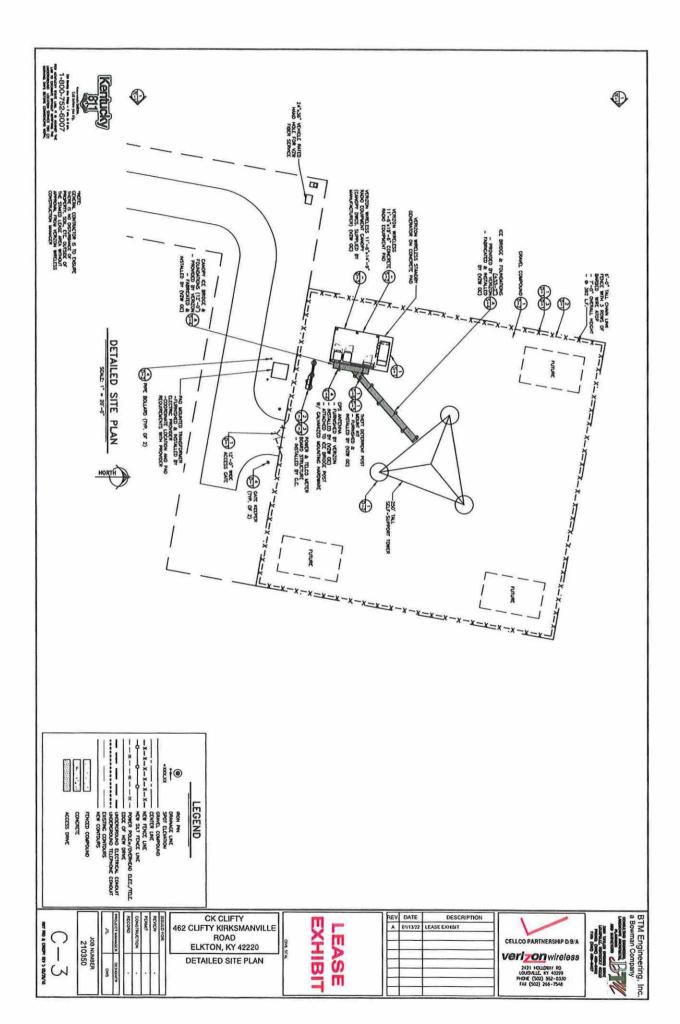
EXHIBIT "B"

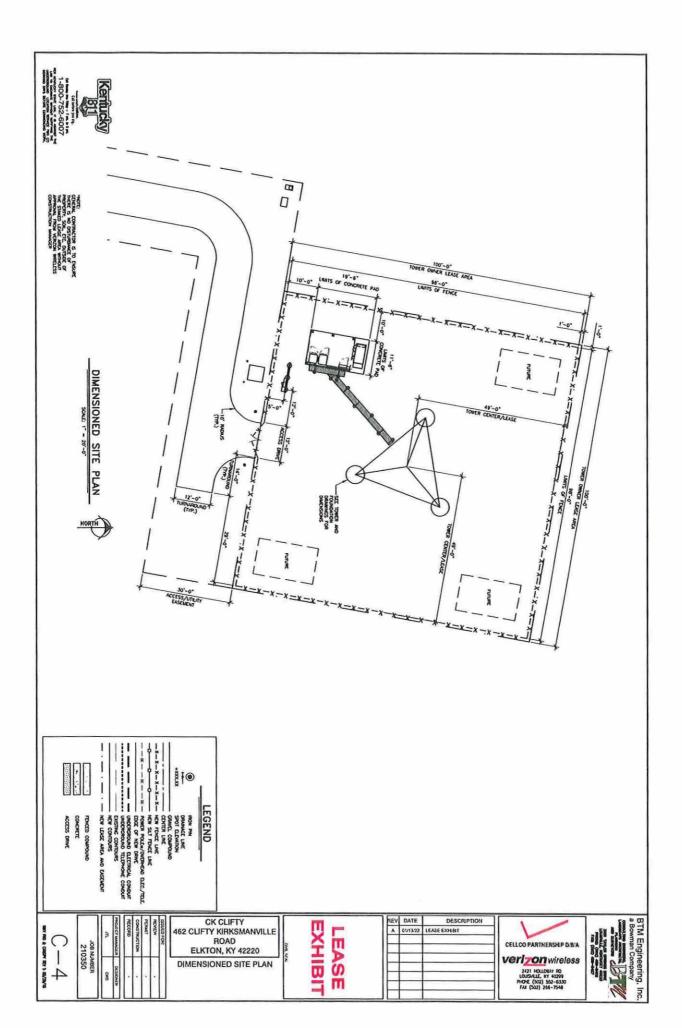
SITE PLAN OF THE PREMISES AND DESCRIPTION OF TOWER EQUIPMENT

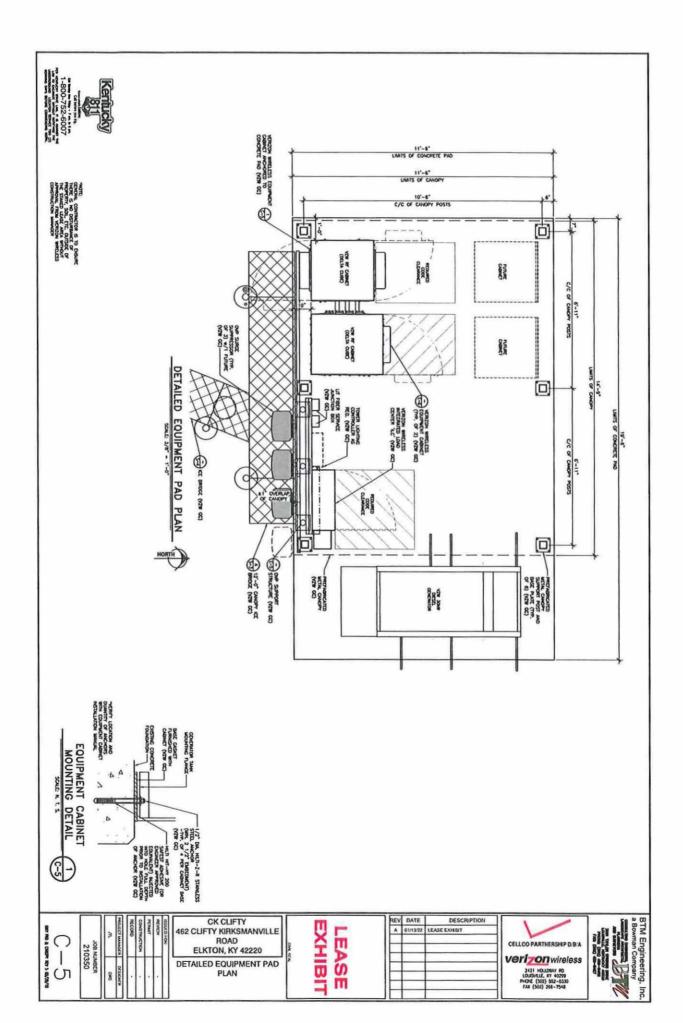


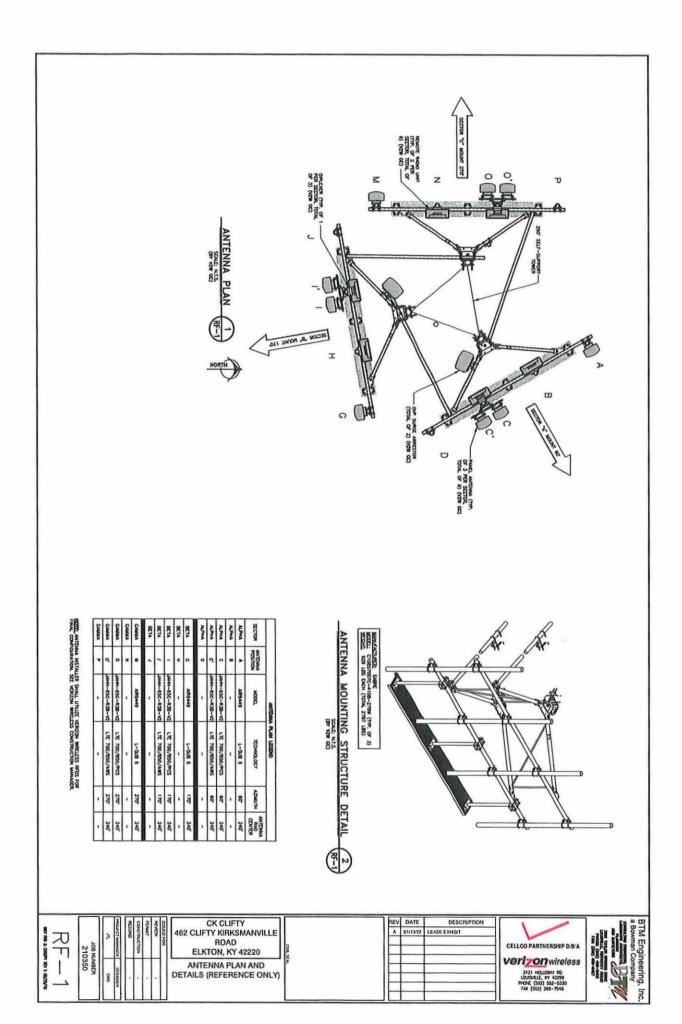












EE CPS input 12/6/2021 Add (3) Mount Add (4) OVP Add (2) Hybrid Add (5) Battery Add (2) Cabinets	Install 6 Jahh antennas Instal 3 air 6449's Install 4449's Install 8843's Install side by side mounts install diplexers Install 6630 and 6648 Install hybrids and ovps	RFDS Project Scope: New Build	Suffix:	eCIP-0: false	MPT Id:	Carrier Aggregation: true	FP Solution Type & Tech Type: MCR;4G_700,4G_850,4G_AWS3,4G_PCS	Additional Sector Carrier 5G: N/A	Additional Sector Carrier 4G: N/A	Designed Sector Carrier 5G: N/A	Designed Sector Carrier 4G: 18	Modification Type:	Project Type: Initial Build	Project Alt Name: CK CLIFTY - New Build STL WPZV472	Project Name: CK CLIFTY (STL - WPZV472)	FUZE Project ID: 16687080	Project Details	Snyder, Gordon - gordon.snyder2@v	EAST > Great Lakes > Michigan/	fuz	
		Longitude: -87.162222 / 87° 9' 43.9992" W	Latitude: 36.990556 / 36° 59' 26.0016" N	County: Todd	Zip Code: 42220	State: KY	City: Elkton	Street Address: 462 Clifty Kirksmanville Road	Site Sub Type: TRADITIONAL	Site Type: MACRO	Tower Type: Self Support (Lattice Tower)	Tower Owner:	Switch Name:	PSLC: 706080	E-NodeB ID: 2347999,234999	Site ID: 617103749	Location Information	Snyder, Gordon - gordon.snyder2@verizonwireless.com - 12/6/2021 15:31:2	EAST > Great Lakes > Michigan/Indiana/KY > Louisville > CK CLIFTY		izony

Proprietary and Confidential, Not for disclosure outside of Verizon.

Add (1) Électric Service Add (1) Generator Add (1) Fuel Tank

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Removed 700		LTE	Added 700
1900		LTE	1900
AWS		LTE	AWS
AWS3		LTE	AWS3
L-Sub6 Make	56		L-Sub6 Make
Make	ERICSSON	ANDREW	Mako
Model	AIR6449	JAHH-65C-R3B-V2	Model
Centerline	240	240	Centerline
Tip Height	241,3	244	Tip Height
Azimuth	60(0001) 170(0002) 270(0003)	60(01) 170(02) 270(03)	Azimuth
RET	faise	true	RET
4xRx	faise	true	4xRx
Inst. Type Quantity	PHYSICAL	PHYSICAL	Inst. Type Quantity
Quantity	ω	n	
ltem ID		JAHH-6SC-R3B-V2	Item ID

Retained 700 1900 AWS AWS3

L-Sub6 Make

Model

Centerline Tip Height Azimuth No data available. RET

4xRx Inst. Type Quantity Item ID

No data available.

Added: 9 Removed: 0 Retained: 0

Equipment Summary

Added

	Equipment Type	Location	700	1900	AWS	AWS3	L-Sut	L-Sub6 Make	Model	Cable Length Cable Size	Install Type Quantity	Quantity
new ITe Verte ITe Sector Commone Commone Tower Tower ITe ITe ITe Sector Sector<	Mount	Tower						Commscope	BSAMNT-SBS-2-2		PHYSICAL	ω
	Diplexer	Tower	LIE					Commscope	CBC78T-DS-43-2X		PHYSICAL	ω
Toure Toure I.T I.T I.T Second Second Second Toure I.T I.T I.T Second Second <td>RRU</td> <td>Tower</td> <td>LTE</td> <td></td> <td></td> <td></td> <td></td> <td>Ericsson</td> <td>4449</td> <td></td> <td>PHYSICAL</td> <td>ω</td>	RRU	Tower	LTE					Ericsson	4449		PHYSICAL	ω
	RRU	Tower		LTE	LTE	LTE		Ericsson	8843		PHYSICAL	ω
	OVP Box	Tower					SG	RFS	DB-C1-12C-24AB-0Z		PHYSICAL 1	-
IndexIntervent	OVP Box	Tower	IR	LIE	LTE	LIE		RFS	DB-C1-12C-24AB-0Z		PHYSICAL	-
fabelforforfue <thfue< th="">fuefuefuefuef</thfue<>	Hybrid Cable	Tower					56	RFS	HB114-U6S12-XXX-LI	180	PHYSICAL	-
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y Ground (Outdoor) Saft Ground (Outdoor) Westell	OVP Box	Ground (Outdoor)	LTE	LTE	LTE	LTE		RFS	DB-C1-12C-24AB-0Z		PHYSICAL 1	-
Ground (Outdoor) Westell	Battery	Ground (Outdoor)						Saft	TeLX 180 (5Strings)		PHYSICAL	U
		Ground (Outdoor)						Westell	RMX-4000		PHYSICAL 1	-

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		Equipment Type Location	Retained		Equipment Type Location	Removed
		Location			Location	
		700			700	
		1900			1900	
		AWS			AWS	
		AWS3			AWS3	
		L-Sub6 Make			L-Sub6 Make	
		Model			Model	
×	No data available,	Cable Length Cable Size Install Type Quantity		No data available.	Cable Length Cable Size Install Type Quantity	
		Item ID			Item ID	

Service Info

AWS3 LTE

Sector Azimuth Cell / ENode B ID Antenna Model

11519122 ATOLL_API	Ericsson 4449 4,4	ANDREW 240 4 244 848 848 5230 10 763.24	11520450 ATOLL_API 01 60 234999 JAHH-65C-R38-V2	Ericsson 8843 4,4	ANDREW 240 3 223.04 65986 10 1223.55	01 50 234999 JAHH-65C-R3B-V2
11519123 ATOLL_API	Ericsson 4449 4,4	ANDREW 240 4 244 84.8 5230 10 763.24	11520451 ATOLL_API 0002 02 170 234999 JAHH-65C-R38-V2	Ericsson 8843 4.4	ANDREW 240 3 244 223.04 66986 10 1223.55	0002 02 170 1234999 JAHH-65C-R3B-V2
11519125 ATOLL_API	Ericsson 4449 4.4	ANDREW 240 4 244 244 848 8230 5230 10 763.24	11520452 АТОЦ_АР 03 270 234999 ЈАНН-65С-R38-V2	Ericsson 8843 4.4	ANDREW 240 3 244 223,04 66986 10 1223,55	03 270 234999 JAHH-6SC-R3B-V2

700 MHZ LTE

Antenna Make Antenna Centerline(Ft) Mechanical Down-TittDeg.) Electrical Down-TittDeg.) Electrical Down-Titt Regulatory Power DLEARFCN Channel Bandwidth (NH2) Trotal EBP (W) Trutt Make RRU Made RRU Made Number of Tx, Rk Lines Position Antenna Make Antenna Make Antenna Make Antenna Centerline(Ft) Electrical Down-TittDeg.) Electrical Down-TittDeg. Electrical Down-TittDeg. DLEARFCN Channel Bandwidth(NH2) Trutt Regulatory Power DLEARFCN Channel Bandwidth(NH2) TMA Make TMA Make TMA Make TAN Make Antens Position Transmitter i Source

1900 MHZ LTE

Sector Asimuth Cell / ENode B ID Antenna Model Antenna Make Antenna Centerline(Ft) Mechanical Down-Titl Channel Bandwidth(MHz) Total EAP (W) TMA Model RRU Model RU Model RU Model RU MODE RU

11520447 11520448 ATOLL_API ATOLL_API	Ericsson 8843 8843 4,4 4,4	244 244 439.65 925 925		от од од 60 170 234999 234999 ЈАНН-65С-R38-V2 ЈАНН-65С-R38-V2
11520449 ATOLL_API	Ericsson 8843 4,4	244 439.65 925		03 270 234999 3-V2 JAHH-65C-R3B-V2

2100 MHZ LTE

Sector Azimuth Cell / ENode BD Antenna Model Antenna Centerline(Ft) Mechanical Down-Tit(Deg) Electrical Down-Tit(Deg) Electrical Down-Tit(Deg) Electrical Down-Tit(Deg) Electrical Down-Tit(Deg) Electrical Down-Tit(Deg) Electrical Down-Tit(Deg) Channel Bandwidth(MHz) Total ERP (W) ThAI Mise RRU Model RU MODE RU MODE

11520178 ATOLL_API	Ericsson 8843 4,4	ANDREW 240 9 3 224 223,04 235,04 235,0 10 10	11520444 ATOLL_API 02 170 234999 JAHH-65C-R3B-V2	Ericsson 8843 4,4	ANDREW 240 0 3 244 223,04 2100 10 1223,55	01 60 234999 ЈАНН-65С-R38-V2
11520446 ATOLL_API	Ericsson 8843 4,4	ANDREW 240 3 244 223.04 2100 10 1223.55	11520177 ATOLL_API 03 270 234999 234999 JAHH-65C-R38-V2	Ericsson 8843 4,4	ANDREW 240 9 244 223.04 223.04 2350 10 1223.55	0002 01 234999 ЈАНН-65С-R3B-V2
11520179 ATOLL_API	Ericsson 8843 4,4	ANDREW 240 3 224 223.04 2350 10 1223.55	11520445 ATOLL_API 03 270 234999 JAHH-65C-R3B-V2	Ericsson 8843 4,4	ANDREW 240 9 241 23 244 223.04 2100 10 1223.55	02 170 234999 JAHH-65C-R3B-V2

Page 8 of 11

11520453 ATOLL_API	AIR6449 2,2	60 11627.19	1244.96 648672	0 6 741 3	RICSSON 240	11R6449	60 60	
11520454 ATOLL_API	Ericsson AIR6449 2,2	60 21627,19	1244.96 648672	0 6	ERICSSON 240	2347999 AIR6449	170	0002
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Service Comments

Anterna Make Anterna Centerfine(Ft) Mechanical Down-Tit(Deg) Electrical Down-Tit Regulatory Power DLEARFCN DLEARFCN Channel Bandwidth(NHz) Total ERP (M) TAIA Model RRU Model RRU Model RRU Model Number of T., Rt. Lines Position Transmitter Id Source

Sector Azimuth Cell / ENode B ID Antenna Model

Callsigns Per Antenna

Antenna Model Ant CL Trp Azimuth Elec Mech Gain Height AGL Height (TN) Trilt Trilt Beam Regulatory Callsigns Width Power 700 850 1900 2100 28 GHz 31 GHz 39 GHz

Sector Antenna Make

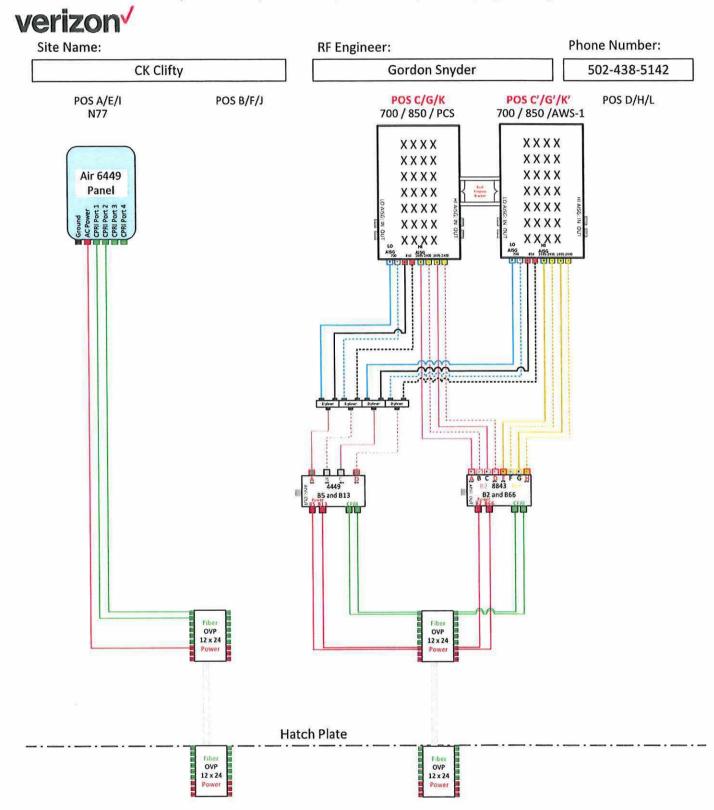
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Kentucky 3 - Meade	Bowling Green, KY	Bowling Green, KY	Bowling Green, KY	Bowling Green, KY	Bowling Green, KY	Bowling Green, KY	Bowling Green, KY	Bowling Green, KY	Bowling Green, KY	Bowling Green, KY	Kentucky 3 - Meade	Mississippi Valley	Nashville, TN-KY	Bowling Green, KY	Bowling Green, KY	Bowling Green, KY	Nashville, TN-KY	Nashville, TN-KY	Nashville	Mississippi Valley	Market									
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CMA445	PEA112	PEA112	PEA112	PEA112	PEA112	PEA112	PEA112	PEA112	PEA112	PEA112	PEA112	PEA112	PEA112	PEA112	PEA112	PEA112	PEA112	PEA112	PEA112	CMA445	REA004	BEA071	PEA112	PEA112	PEA112	BEA071	BEA071	MTA043	REA004	Market Number
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Cellco Partnership	Cellco Partnership	Cellco Partnership	Cellco Partnership	Cellco Partnership	Cellco Partnership	Cellco Partnership	Straight Path Spectrum, LLC	Cellco Partnership	Cellco Partnership	Cellco Partnership	Collco Partnership	Cellco Partnership	Cellco Partnership	Cellco Partnership	Cellco Partnership	Cellco Partnership	Licensee Name													
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Wholly Owned
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33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33,27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	33.27	i POPs /Sq Mi
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																					added	added	added	added	added	added	added	added	added	Action
Yes	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Approved for Insvc

Proprietary and Confidential, Not for disclosure outside of Venzon.

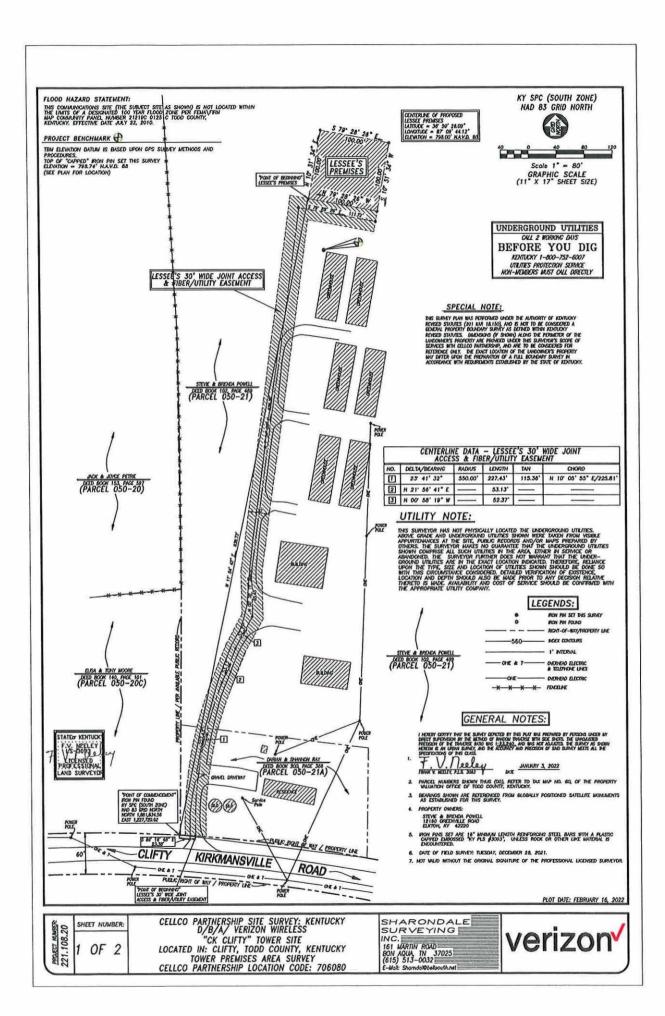
Confidential and proprietary materials for authorized Verizon Personnel and outside agencies only. Use, disclosure or distribution of this material is not permitted to any unauthorized persons or third parties except by written agreement.

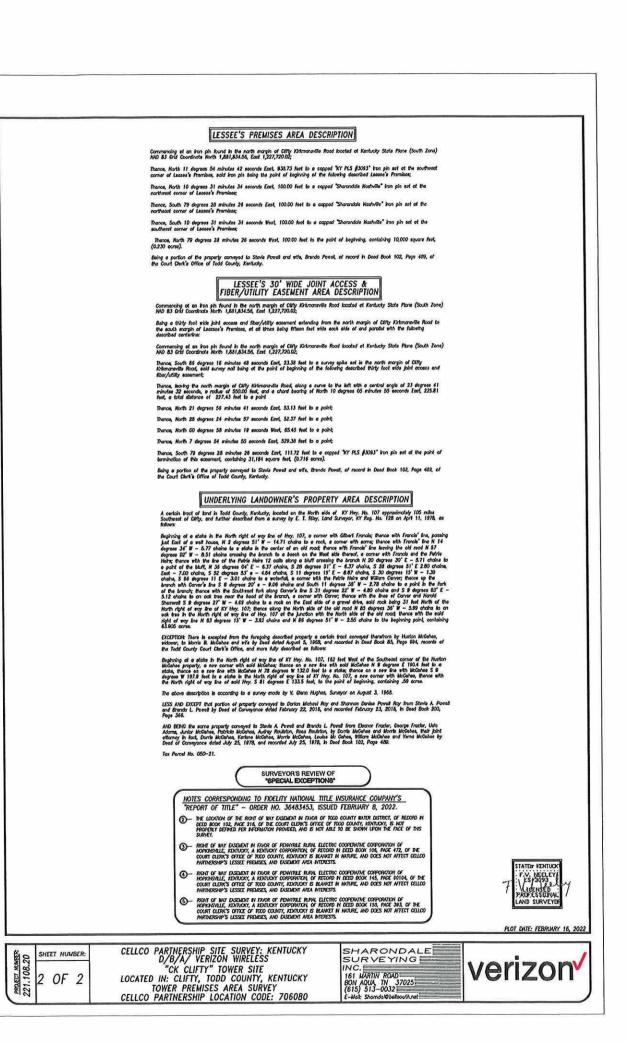


VzW Site Name: CK Clifty Location Code 706080 Atty: Coots Henke & Wheelei, P C. Daniel E. Coots

EXHIBIT "C"

SURVEY





Notification Listing

Stevie and Brenda Powell 12160 Greenville Road Elkton KY 42220

Jack and Joyce Petrie 714 Clifty Kirkmansville Road Elton KY 42220

Thomas C Strader 102 Dunnheath Drive Elton KY 42220

Travis and Terri Keeling 340 Clifty Kirkmansville Road Elton KY 42220

Darian and Shannon Ray 450 Clifty Kirkmansville Road Elton KY 42220

Jewel Cumbee, III PO Box 396 Clifty KY 42216

Elisa and Tony Moore PO Box 194 Clifty KY 42216 Garry and Linda Mallory PO Box 21 Clifty KY 42216

Keith and Lisa Settle PO Box 215 Elkton KY 42220



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

July 29, 2022

Notice of Proposed Construction of Wireless Communications Facility Site Name: Clifty

Cellco Partnership, d/b/a Verizon Wireless has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at 462 Clifty-Kirkmansville Road, Elkton, 42220 (North Latitude: (36° 59' 26.09", West Longitude 87° 09' 44.12"). The proposed facility will include a 250-foot tall antenna tower, plus a 5-foot lightning arrestor, for a total height of 255 feet with related ground facilities. 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 2022-00230 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/jdj enclosure



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

July 29, 2022

Via Certified Mail, Return Receipt Requested

Hon. Todd Mansfield P.O. Box 355 Elkton, KY 42220

RE: Notice of Proposal to Construct Wireless Communications Facility Kentucky Public Service Commission Docket No. 2022-00230 Site Name: Tompkinsville

Dear Judge Mansfield:

Cellco Partnership, d/b/a Verizon Wireless has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located 462 Clifty-Kirkmansville Road, Elkton, 42220 (North Latitude: (36° 59' 26.09", West Longitude 87° 09' 44.12"). The proposed facility will include a 250-foot tall antenna tower, plus a 5-foot lightning arrestor, for a total height of 255 feet with 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 2022-0030 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

Attorney for Applicant RLB/mnw enclosure

SITE NAME: Clifty 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.

Cellco Partnership, d/b/a Verizon Wireless propose 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 2022-00230 in your correspondence.

Cellco Partnership, d/b/a Verizon Wireless propose 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 2022-00230 in your correspondence.



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: <u>classifieds@newsdemocratleader.com</u>

News Democrat & Leader 120 SW Park Sq. Russellville, KY 42276

July 28, 2022

RE: Legal Notice Advertisement Site Name: Clifty

To Whom it May Concern:

Please publish the following legal notice advertisement in the next available edition of the *News Democrat Leader:*

NOTICE

Cellco Partnership, d/b/a Verizon Wireless has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at 462 Clifty-Kirkmansville Road, Elkton, KY 42220 (North Latitude: (36° 59' 26.09", West Longitude 87° 09' 44.12"). 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 2022-00230 in any correspondence sent in connection with this matter.

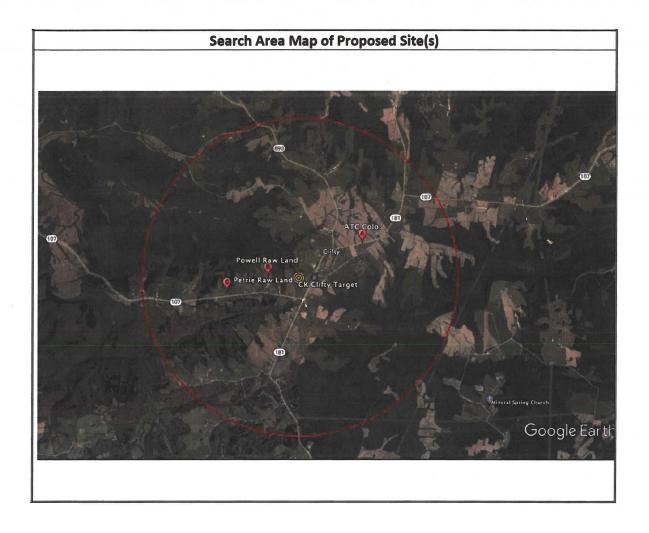
Please let me know how you would like to handle payment. We are happy to pay by credit card, once you have calculated the cost. After this advertisement has been published, please forward a tearsheet copy, affidavit of publication, and invoice to Clark, Quinn, Moses, Scott & Grahn, LLC, 320 N. Meridian Street, Indianapolis, IN 46204 or by email to ebw@clarkquinnlaw.com. Please call me es at (317) 637-1321 if you have any questions. Thank you for your assistance.

Sincerely

Élizabeth Bentz Williams Clark, Quinn, Moses, Scott & Grahn, LLC

Land Use Consultant Elizabeth Bentz Williams, AICP

> *Also admitted in Montana [†]Also admitted in Kentucky **Registered Civil Mediator





March 15, 2022

RE: Proposed Verizon Wireless Communications Facility Site Name: CK Clifty

To Whom It May Concern:

As a radio frequency engineer for Verizon Wireless, I am providing this letter to state the need for the Verizon Wireless site called Clifty and its compliance to RF emission standards as set by FCC. The Clifty cell site is necessary to achieve coverage and capacity needs in the Clifty area, along Clifty-Kirkamansville Rd, Greenvillw Rd and to the surrounding residential areas. This site is necessary to provide this coverage and capacity that cannot be established in any other manner. This new tower is required as there is no other means of providing this service in this area.

Whenever possible, Verizon Wireless seeks out colocation opportunities. Colocation allows Verizon Wireless to increase capacity, coverage and services in a targeted area in a more timely manner and at less cost than building a new raw land site.

The height for the Clifty site was determined through in-depth terrain modeling as well as signal propagation modeling. Due to the rising and falling terrain combine with the dense wooded area, it was determined that a centerline height of 240 feet was necessary to provide adequate coverage in the area. A lower height would greatly reduce coverage and result in the inability of the Clifty site to operate properly in the Verizon Network.

The site will provide the quality coverage our customers expect and rely on; Customers will experience access to mobile voice and wireless data services previously unavailable, and support Homeland Security through enhanced 911 services.

This cell site has been designed, and will 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.

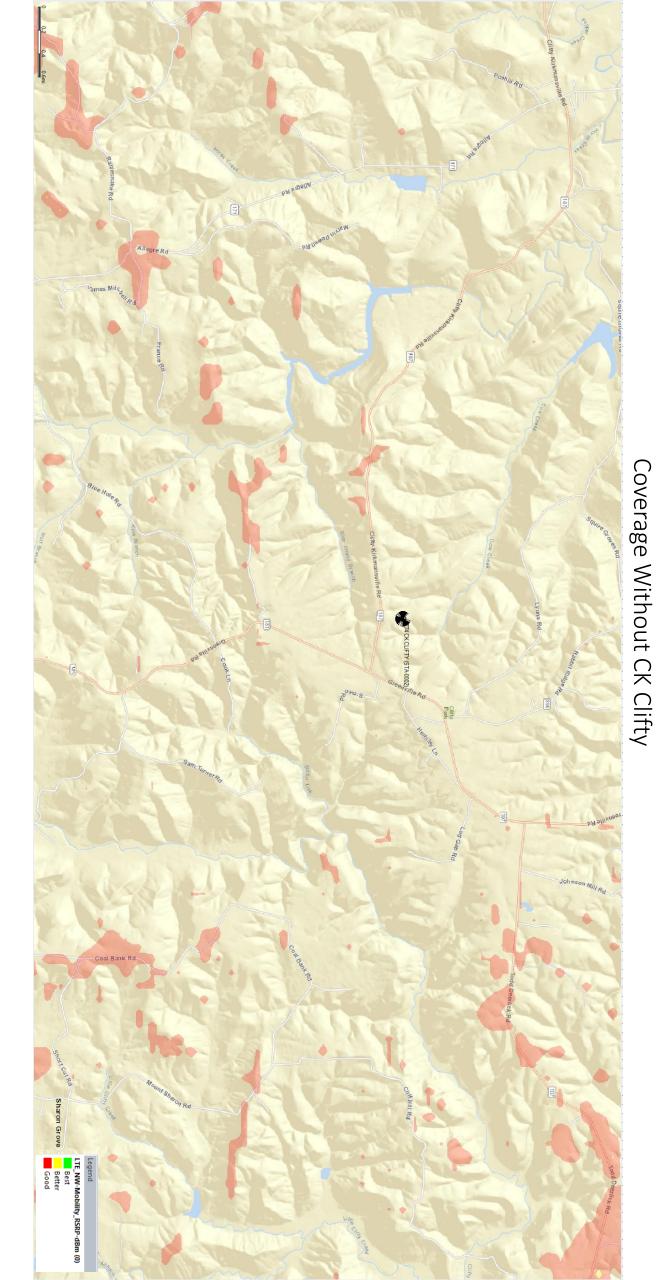
RF emission readings at this site in the accessible areas would be well below the applicable limits for FCC Uncontrolled/General Population and FCC Controlled/Occupational environments as outlined in 47 CFR 1.1301 through 1.1319. The site would carry appropriate RF emission signage to the public entering the site area.

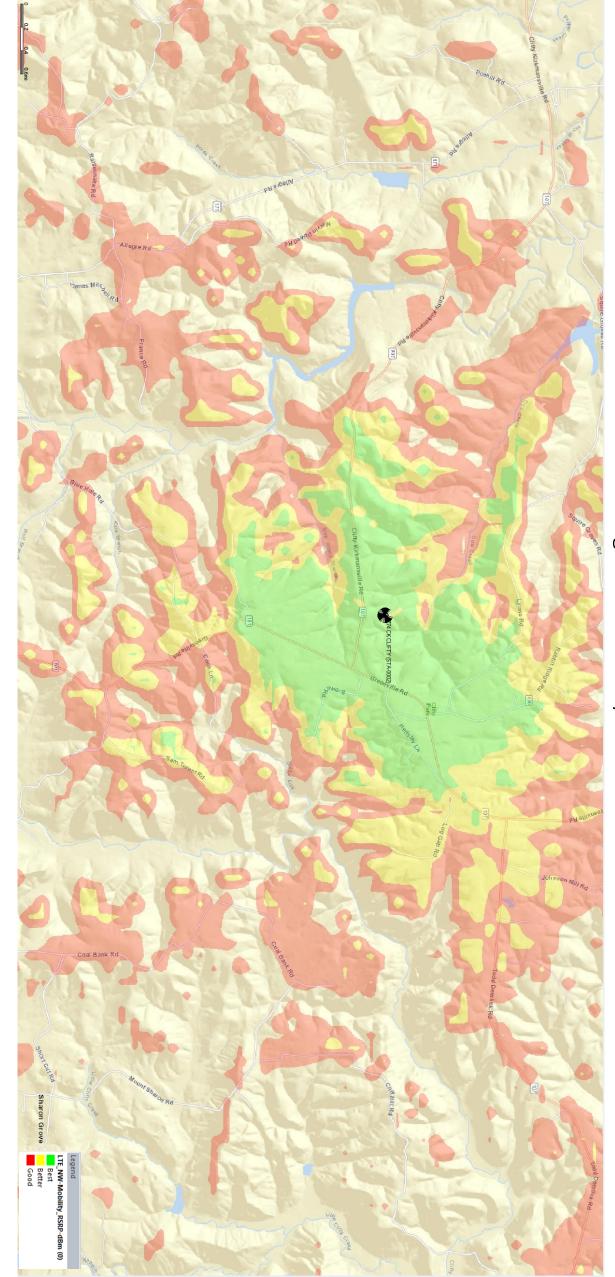
This site would transit frequencies within the licensed frequency bands and the power limitations set by FCC regulatory authority. The site would go through the complete rigorous regulatory process before it comes on-air to provide service to our customers.

Sincerely,

or

Gordon Snyder RF Engineer, Verizon Wireless





Coverage With CK Clifty

Exhibit R List and Identity and Qualifications of Professionals

F. V. Neeley Professional Land Surveyor Kentucky License 3093 Sharondale Surveying, Inc. 161 Martin Road Bon Aqua, TN 37025

Jeffrey Lashbrook Professional Engineer Kentucky License 35042 BTM Engineering. Inc. 3001 Taylor Springs Road Louisville, KY 40220

J. Samuel Vance Professional Engineer Geotechnical Manager Kentucky License 31722 Collier Engineering Co, Inc. 2949 Nolensville Pike Nashville, TN 37211

Joseph P. Jacobs Professional Engineer Kentucky License 22177 Saber Communications Corporation 1545 Pidco Dr. Plymouth, IN 46563

Larry Rhoads Construction Manager Verizon Wireless 2421 Holloway Road Louisville, KY 40299

Gordan Snyder RF Engineer Verizon Wireless 2421 Holloway Road Louisville, KY 40299