COMMONWEALTH OF KENTUCKY BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

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DEC 0 5 2018

PUBLIC SERVICE COMMISSION

CASE NO.: 2018-00402

SITE NAME: HV1326 LV I-64 AND US 60

THE APPLICATION OF HORVATH

TOWERS V, LLC FOR ISSUANCE OF

AND NECESSITY TO CONSTRUCT A WIRELESS COMMUNICATIONS FACILITY IN THE COMMONWEALTH OF KENTUCKY

IN THE COUNTY OF MONTGOMERY

A CERTIFICATE OF PUBLIC CONVENEINCE

APPLICATION FOR CERTIFICATE OF PUBLIC CONVENEINCE AND NECESSITY FOR CONSTRUCTION OF A WIRELESS COMMUNCIATIONS FACILITY

Horvath Towers V, LLC, a Delaware limited liability company ("Applicant"), by counsel, pursuant to KRS 278.020, 278.040, 278.650, 278.665, and other statutory authority, and the rules and regulations applicable thereto, and pursuant to 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 cellular tower facility ("Facility") to serve the customers of Verizon Wireless with wireless communications services.

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

The complete name and address of the Applicant is Horvath Towers V, LLC,
 a Delaware limited liability company, having an address of 312 West Colfax Avenue,
 South Bend, Indiana 46601.

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2. Applicant proposes construction of a self-supporting tower for communications services, which is to be located in an area outside of the jurisdiction of a planning commission. Thus, Applicant submits the instant application.

3. The Certificate of Formation for Horvath Towers V, LLC is attached hereto as **Exhibit A**. The Applicant is in good standing in the state of Delaware and is authorized to transact business in the Commonwealth of Kentucky.

4. Verizon Wireless operates on frequencies licensed by the Federal Communications Commission ("FCC") pursuant to applicable FCC requirements. A copy of Verizon Wireless' FCC license to provide wireless service is attached to this Applicant or described as part of **Exhibit A**, and the facility will be constructed and operated in accord with the applicable FCC regulations. Horvath Towers V, LLC will build, own, and manage the tower and tower compound where Verizon Wireless will place its equipment, building, antennas, and equipment.

5. The public convenience and necessity require the construction of the proposed Facility. The construction of the Facility will improve Verizon Wireless' services to an area currently not served or inadequately served by Verizon Wireless by increasing coverage and capacity, and thus enhancing access to wireless communication. The Facility will link with other Verizon Wireless sites in and around the general area, and will provide continuous coverage to other existing network sites, as well as provide an offload for the existing network, and would give Verizon Wireless an opportunity to grow their network and provide consistent coverage in and around Montgomery County.

6. To accommodate the needs and opportunities described, *supra*, the Applicant proposes to construct a Facility on Owingsville Road in Montgomery County,

Kentucky (coordinates 38° 05' 25.25" N, 83° 53' 55.87" W) on land located wholly within Montgomery County. The property where the Facility is to be located is owned by William Michael and Sherrie Ellen Colliver, pursuant to a Deed recorded in Deed Book 266, Page 272 in the office of Montgomery County Clerk. The Facility will consist of a 265-foot tall, self-supporting tower, with an approximately 10-foot tall lightning arrestor on the top of the Facility, for a total height of 275 feet. The Facility will also include concrete foundations and a shelter or cabinets to accommodate the placement of Verizon Wireless' equipment. Such shelter or cabinet will be inspected by the relevant authorities and certified for use prior to occupancy. The Facility will be fenced and all access to the Facility secured. A description of the manner in which the Facility will be constructed is attached hereto as **Exhibit B**.

7. A list of utilities, corporations, or persons with whom the proposed Facility is likely to compete is attached hereto as **Exhibit C**.

8. The site development plan and a vertical profile sketch of the Facility, signed and sealed by a professional engineer registered in Kentucky, depicting the tower, its height, and its proposed configuration for the antennas is attached hereto as **Exhibit D**. This Facility has been designed to permit future co-location.

9. Foundation and design plans sealed by a professional engineer registered in Kentucky and a description of the standards according to which the Facility has been designed are included with **Exhibit D**.

10. The Applicant has considered the likely effects of the installation of the proposed Facility on nearby land uses and values and have 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 Verizon Wireless' antennas on an existing structure. No suitable or available co-location site was found to be located in the vicinity of the proposed Facility.

11. A copy of the Determination of No Hazard to Air Navigation issued by the Federal Aviation Administration is attached hereto as **Exhibit E**.

12. A copy of the Kentucky Airport Zoning Commission Application is attached hereto as **Exhibit F**. We anticipate a prompt decision from KAZC and will supplement our application with its approval as soon as it is available.

13. A geotechnical engineering firm has performed soil boring and subsequent geotechnical engineering studies at the Facility site. A copy of the geotechnical engineering report, signed and sealed by a professional engineer registered in the Commonwealth of Kentucky, along with the identifying information for the engineer, is attached hereto as **Exhibit G**.

14. Clear directions to the proposed Facility from the County seat, along with the name and telephone number of the preparer, are attached hereto as **Exhibit H**.

15. The Applicant, pursuant to a written agreement with the landowner, have acquired the right to use the Facility site and associated property rights. A copy of this agreement is attached hereto as **Exhibit I**.

16. Personnel directly responsible for the design and construction of the proposed Facility are qualified and experienced. The tower design and drawings bear the stamp of a professional engineer registered in the Commonwealth of Kentucky. All tower designs meet or exceed the minimum requirements of applicable law.

17. The Construction Manager for the Facility is Jeff Delauder, and the identity and qualifications of each person directly responsible for design and construction of the tower are included in **Exhibit B**.

18. The Facility is not located within any flood hazard area.

19. A map drawn to appropriate scale that shows the location of the proposed tower and identifies every owner of real estate located within 500 feet of the proposed Facility (according to records maintained by the Calloway County Property Valuation Administrator). Every structure and every easement within 500 feet of the proposed Facility or within 200 feet of the access road, including intersection with the public street system, is illustrated in **Exhibit B**.

20. The Applicant has notified every person who, according to the records maintained by the Calloway County Property Valuation Administrator, owns property which is within 500 feet of the proposed Facility 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 telephone number and address of the PSC, and has been informed of her or his right to request intervention in this matter. A list of the notified property owners is attached hereto as **Exhibit J**. A copy of the form of the notice sent by certified mail is attached hereto as **Exhibit K**.

21. Applicants have notified the Montgomery County Judge/Executive by certified mail, return receipt requested, of the proposed construction. The notice included the PSC docket number under which the application will be processed and informed the

Judge/Executive of his right to request intervention. A copy of this notice is attached as **Exhibit L**.

22. Notice signs meeting the requirements of 807 KAR 5:063 Section 1 that measure at least 2 feet in height and 4 feet in width and that contain all required verbiage in letters of the required size and 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 this Application, and a copy of the text of these signs is attached hereto as **Exhibit M**. Notice of the location of the proposed facility has been published in a newspaper of general circulation in Calloway County.

23. The general area where the facility is to be located is adjacent to Interstate 64 at Exit 113, and is located near industrial businesses.

24. The process that was used by Verizon Wireless' radio frequency ("RF") engineers in selecting the site for the Facility was consistent with the general process used for selecting all other existing and proposed Facilities within the proposed network design area. Verizon Wireless' RF engineers have conducted studies and tests in order to develop an appropriate network 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. An RF design search area prepared in reference to these RF studies was considered by the Applicant when searching for sites for its antennas that would provide the coverage deemed necessary by Verizon Wireless. 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 RF requirements is attached hereto as **Exhibit N**.

25. The tower must be located at the proposed location and proposed height to provide necessary service in the area.

26. All Exhibits are hereby incorporated by reference as if fully set forth herein as part of the Application.

27. Any and all responses and requests related to or associated with this Application may be directed to:

W. Brent Rice Jacob C. Walbourn McBrayer, McGinnis, Leslie & Kirkland, PLLC 201 East Main Street, Suite 900 Lexington, Kentucky 40507 (859) 231-8780 (phone) (859) 231-6518 (fax) brice@mmlk.com jwalbourn@mmlk.com WHEREFORE, the Applicant respectfully requests that the PSC accept this Application for filing, and having met all relevant legal requirements, grant a Certificate of Public Convenience and Necessity to construct and operate the Facility at the location described herein.

Respectfully submitted,

W. Brent Rice Jacob C. Walbourn McBrayer, McGinnis, Leslie & Kirkland, PLLC 201 East Main Street, Suite 900 Lexington, Kentucky 40507 (859) 231-8780 (phone) (859) 231-6518 (fax) brice@mmlk.com jwalbourn@mmlk.com

LIST OF EXHIBITS

- Exhibit A Corporate Documents and FCC Licenses
- Exhibit B Site Plan/Construction Detail
- Exhibit C Likely Competitors
- Exhibit D Structural Design Report
- Exhibit E FAA No Hazard Letter
- Exhibit F KAZC Application
- Exhibit G Geotechnical Report
- Exhibit H Directions from County Seat
- Exhibit I Memorandum of Lease Option
- Exhibit J Property Owner Notice List Documents
- Exhibit K Copies of Notice Letters
- Exhibit L Copy of Letter to Judge-Executive
- Exhibit M Notice Sign Language
- Exhibit N SARF/Search Ring and Need Documentation

EXHIBIT



Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "HORVATH TOWERS V, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE FIFTEENTH DAY OF SEPTEMBER, A.D. 2016.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "HORVATH TOWERS V, LLC" WAS FORMED ON THE TWENTY-FIRST DAY OF JUNE, A.D. 2016.



Authentication: 203000063 Date: 09-15-16

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You may verify this certificate online at corp.delaware.gov/authver.shtml

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FCC MARKET NAME	Legacy Company	FCC Radio Service Code	FCC Market Number	FCC Channel Block	FCC Call Sign
Mississippi Valley		AW	REA004	F	WQGA718
Paducah, KY-IL	SpectrumCo-Leap-Cox	AW	BEA072	В	WQGA960
Kentucky 1 - Fulton	W KY Rural TelCo	CL	CMA443	В	KNKQ306
Louisville-Lexington-Evansville	Alltel	CW	MTA026	Α	WQBT313
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Paducah-Murray-Mayfield, KY	TMO 7.0	CW	BTA339	D	KNLH404
Mississippi Valley	Auction 73	WU	REA004	C	WOJQ692

Licensee Name	Is Licensee Wholly Owned	Is Partnership Signature Required	Type of Entity	FRN
Cellco Partnership	Yes	No	General Partnership	0003290673
Cellco Partnership	Yes	No	General Partnership	0003290673
Kentucky RSA No. 1 Partnership	No	No	General Partnership	0001836709
Alltel Communications, LLC	Yes	No	Limited Liability Company	0018437624
Alltel Communications, LLC	Yes	No	Limited Liability Company	0018437624
Cellco Partnership	Yes	No	General Partnership	0003290673
Cellco Partnership	Yes	No	General Partnership	0003290673

Expired Date	State of Market	VZW Market	VZW Submarket	County State	County FIPS	County Name	Pops per County	Total MHz
Nov 29, 2021 12:00:00 AM		South East	Florida	KY	21035	Calloway	37191	20
Nov 29, 2021 12:00:00 AM	KY			KY	21035	Calloway	37191	20
Oct 1, 2021 12:00:00 AM	KY	Great Lakes	Michigan/Indiana/KY	KY	21035	Calloway	37191	25
Jun 23, 2025 12:00:00 AM	KY	Great Lakes	Michigan/Indiana/KY	KY	21035	Calloway	37191	20
Jun 23, 2025 12:00:00 AM	KY	Great Lakes	Michigan/Indiana/KY	KY	21035	Calloway	37191	10
Apr 28, 2027 12:00:00 AM	KY	Great Lakes	Michigan/Indiana/KY	KY	21035	Calloway	37191	10
Jun 13, 2019 12:00:00 AM				KY	21035	Calloway	37191	22

Frequencies(1)	Frequencies(2)	Frequencies(3)	Frequencies(4)	Comments	Config >50 sq mi Unlic
1745-1755 / 2145-2155	0-0 / 0-0	0-0 / 0-0	0-0/0-0		
1720-1730 / 2120-2130	0-0 / 0-0	0-0 / 0-0	0-0 / 0-0		
835-845 / 880-890	846.5-849 / 891.5-894	0-0 / 0-0	0-0 / 0-0	SCR34995	No
1850-1860 / 1930-1940	0-0 / 0-0	0-0/0-0	0-0 / 0-0	1	
1860-1865 / 1940-1945	0-0/0-0	0-0 / 0-0	0-0 / 0-0		
1865-1870 / 1945-1950	0-0 / 0-0	0-0 / 0-0	0-0 / 0-0	PEND583 prior to close.	
746-757 / 776-787	0-0 / 0-0	0-0 / 0-0	0-0 / 0-0		

EXHIBIT

B





LEGAL DESCRIPTIONS

PROPOSED LEASE AREA

THE FOLLOWING IS A DESCRIPTION OF A PROPOSED LEASE AREA TO BE LEASED FROM THE PROPERTY CONVEYED TO WILLIAM MICHAEL COLLIVER AND SHERRIE ELLEN COLLIVER AS DESCRIBED IN DEED BOOK 266, PAGE 772, PARCEL ID: 030-00-00-029.01 / 2809. WHICH IS MORE PARTICULARLY DESCRIBED AS FOLLOWS

BEARING DATUM USED HEREIN IS BASED UPON KENTUCKY STATE PLANE COORDINATE SYSTEM, SINGLE ZONE, NAD 83, FROM A REAL TIME KINEMATIC GLOBAL POSITIONING SYSTEM OBSERVATION USING THE KENTUCKY TRANSPORTATION CABINET REAL TIME GPS NETWORK COMPLETED ON AUGUST 9, 2018.

COMMENCING AT A FOUND 1/2" REBAR IN THE NORTHEASTERN MOST BOUNDARY CORNER OF THE RARCEL CONVEYED TO WILLIAM COMMERCING AT A FOUND 1/2 REDAR IN THE NORTHEASTERN MOST BOOMDARY CONNER OF THE PARCEL CONVETED TO WILLIAM MICHAEL COLLIVER AND SHERRIE ELLEN COLLIVER AS DESCRIBED IN DEED BOOK 266, PAGE 772, PARCEL ID: 030-00-00-029.01 / 2809, SAID POINT BEING THE WEST RIGHT OF WAY LINE OF U.S. HIGHWAY 60 AND SOUTH RIGHT OF WAY LINE OF THE FRONTAGE ROAD PATTERSON, PLS #3136 DATED AUGUST 9, 2018.

PROPOSED 30' ACCESS & UTILITY EASEMENT

THE FOLLOWING IS A DESCRIPTION OF A PROPOSED 30' ACCESS & UTILITY EASEMENT TO BE GRANTED FROM THE PROPERTY CONVEYED TO WILLIAM MICHAEL COLLIVER AND SHERRIE ELLEN COLLIVER AS DESCRIBED IN DEED BOOK 266, PAGE 772, PARCEL ID: 030-00-029.01 / 2809, WHICH IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEARING DATUM USED HEREIN IS BASED UPON KENTUCKY STATE PLANE COORDINATE SYSTEM, SINGLE ZONE, NAD 83, FROM A REAL TIME KINEMATIC GLOBAL POSITIONING SYSTEM OBSERVATION USING THE KENTUCKY TRANSPORTATION CABINET REAL TIME GPS NETWORK COMPLETED ON AUGUST 9, 2018.

NEE WORK CUMPLELED ON AUGUST 9, 2018. COMMENCING AT A FOUND 1/2" REBAR IN THE NORTHEASTERN MOST BOUNDARY CORNER OF THE PARCEL CONVEYED TO WILLIAM MICHAEL COLLIVER AND SHERRIE ELLEN COLLIVER AS DESCRIED IN DEED BOOK 366, PAGE 772, PARCEL ID: 030-00-00-29 01 / 2809, SaDP POINT BEING THE WEST RIGHT OF WAY LINE OF U.S. HIGHWAY 60 AND SOUTH RIGHT OF WAY LINE OF THE FRONTAGE RAD (CHANDLER LAME); THENCE ALONG THE WEST RIGHT OF WAY LINE OF U.S. HIGHWAY 60, DAVERSING ACROSS THE LAND OF COLLIVER 256.40°, SAD POINT BEING REFERENCED BY FOUND P.K. NAIL REMNANTS AND DRILLE HOLLE IN CONCRETE BASE OF FENCE 51872700°W POST, THENCE LEAVING THE WEST RIGHT OF WAY LINE OF U.S. HIGHWAY 60, TRAVERSING ACROSS THE LAND OF COLLIVER AFOREMENTIONED, DSS37312°W 311.51° TO ASET 1/2" REBAR CAPPED "PATTERSON PUS 3136", HERAFTER REFERRED TO AS A "SET IPC", IN THE NORTHEAST CORNER OF THE PROPOSED LEASE AREA AND BEING THE TRUE POINT OF BEGINNING; THENCES ALONG THE NORTH LINE OF SADL LEASE AREA, NS370"AT WIDD.00° TO A SET 1/C" INTE EAST RIGHT OF WAY LINE OF THE FRONTAGE ROAD (CHANDLER LANE); THENCE ALONG THE COMMON LINE OF COLLIVER AND THE RIGHT OF WAY LINE OF THE FRONTAGE ROAD (CHANDLER LANE); THENCE ALONG THE COMMON LINE OF COLLIVER AND THE RIGHT OF WAY LINE OF THE FRONTAGE ROAD (CHANDLER LANE); THENCE ALONG THE COMMON LINE OF COLLIVER AND THE RIGHT OF WAY LINE OF THE FRONTAGE ROAD (CHANDLER LANE); THENCE ALONG THE COMMON LINE OF COLLIVER AND THE RIGHT OF WAY LINE OF THE FRONTAGE ROAD (CHANDLER LANE); THENCE ALONG THE COMMON LINE OF COLLIVER AND THE RIGHT OF WAY LINE OF THE FRONTAGE ROAD (CHANDLER LANE); THENCE ALONG THE COMMON LINE OF COLLIVER AND THE RIGHT OF WAY LINE OF THE FRONTAGE ROAD (CHANDLER LANE); THENCE ALONG THE COMMON LINE OF COLLIVER AND THE RIGHT OF WAY LINE OF THE FRONTAGE ROAD (CHANDLER LANE); THENCE ALONG THE COMMON LINE OF COLLIVER AND THE RIGHT OF WAY LINE OF THE FRONTAGE ROAD (CHANDLER LANE); THENCE ALONG THE COMMON LINE OF COLLIVER AND THE RIGHT OF WAY LINE OF THE FRONTAGE ROAD (CHANDLER LANE); THENCE AL

PARENT PARCEL LEGAL DESCRIPTION DEED BOOK 266, PAGE 772 (NOT FIELD SURVEYED)

BEING ALL OF TRACT NO. 4 AS MORE PARTICULARLY SHOWN AND DESCRIBED ON THE RECORD PLAT OF BEING ALL OF INAL AS MORE PARTICULARIS SHOWN AND DESCRIBED ON THE RECOMPORTION AND LONGWOOD FARM, MONTGOMERY COUNTY, KENTUCKY, WHICH PLAT IS OF RECORD IN PLAT CABINET A, 49A, MONTGOMERY COUNTY COURT CLERK'S OFFICE, TO WHICH PLAT REFERENCE IS HEREBY MADE FOR A PARTICULAR DESCRIPTION OF THE PROPERTY HEREBY CONVEYED. A SLIDE

TITLE OF COMMITMENT

THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY POD GROUP, LLC. AND AS SUCH WE ARE NOT RESPONSIBLE FOR THE INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTURE COVENANTS, OWNERSHIP THE EVIDENCE, UNRECORDE DEASEMENTS, AUGMENTING EASEMENTS, IMPLIED OR PRESCRIPTIVE EASEMENTS, OR ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE AND THIS SURVEY WAS COMPLETED WITH THE AID OF TITLE WORK PREPARED BY U.S. TITLE SOLUTIONS FILE NO. 61248-W1808-0030, REFERENCE NUMBER HV1326, DATED OCTOBER 8, 2018. THE FOLLOWING COMMENTS ARE IN REGARD TO SAID REPORT

SCHEDULE B

L TAXES, TAX LIENS, TAX SALES, WATER RATES, SEWER AND ASSESSMENTS SET FORTH IN SCHEDULE (NOT A LAND SURVEYING MATTER, THEREFORE POD GROUP, LLC DID NOT ADDRESS OR EXAMINE THIS ITEM.)

2. MORTGAGES RETURNED HEREIN (1). SEE SEPARATE MORTGAGE SCHEDULE BELOW

3. ANY STATE OF FACTS WHICH AN ACCURATE SURVEY MIGHT SHOW OR SURVEY EXCEPTIONS SET FORTH HEREIN, (POD GROUP, LLC DID NOT PERFORM A BOUNDARY SURVEY OF THE PARENT PARCEL, THEREFORE WE DID NOT ADDRESS THIS ITEM.)

4. RIGHTS OF TENANTS OR PERSON IN POSSESSION. (RIGHTS ARE NOT A LAND SURVEYING MATTER, THEREFORE POD GROUP, LLC DID NOT EXAMINE OR ADDRESS THESE ITEM.)

(JUDGMENTS, LIENS AND UCC)

5. (NONE WITHIN PERIOD SEARCHED)

(COVENANTS/RESTRICTIONS)

6. (NONE WITHIN PERIOD SEARCHED)

(EASEMENTS AND RIGHTS OF WAY)

7. RIGHT OF WAY BY BY GAGER GATEWOOD AND SARAH B. GATEWOOD TO SOUTH CENTRAL BELL TELEPHONE COMPANY, DATED 8/4/1977 RECORDED 8/4/1977 IN BOOK 138 PAGE 451. [EASEMENT AS DESCRIBED IN BOOK 138, PAGE 451 DOES NOT ARFECT THE PARENT PARCEL, THE PROPOSED LEASE AREA AND THE PROPOSED ACCESS & UTILITY EASEMENT.

(MORTGAGE SCHEDULE)

1 MORTGAGE MADE BY WILLIAM MICHAEL COLLIVER AND SHERRIE FILEN COLLIVER. HIS WIFE TO PEOPLES EXCHANCE BANK IN THE SUM OF 575, 296.00 DATED AS OF 9/8/2005 RECORDED 9/92005 IN BOOK 352, PAGE 1. (MORTGAGE AS DESCRIBED IN BOOK 352, PAGE 1 HAS A MATURITY DATE OF SPETEMBER 8, 2006, MODIFIED MARCH 15, 2018 BY MS51, PAGE 859 WHICH EXTENDS THE MATURITY DATE TO MARCH 15, 2021, THEREFORE SAID MORTGAGE AFFECTS THE PARENT PARCEL, THE PROPOSED LASEA REAR AND THE PROPOSED ACCESS & UTILITY EASEMENT.)

LAND SURVEYOR'S CERTIFICATE

Mark Patterson, 45 #3136

LICENSED PROFESSIONAL LAND SURVEYOR LICENSED IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF KENTLICKY I FURTHER CERTIFY THAT THIS PLAT AND THE SURVEY ON THE GROUND WERE PERFORMED BY PERSONS UNDER MY DIRECT SUPERVISION, AND THAT THE DIRECTIONAL AND LINEAR MEASUREMENTS BEING WITNESSED BY MONUMENTS SHOWN HEREON ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. THE "URBAN" SURVEY, AND THE PLAT ON WHICH IT IS BASED, MEETS ALL SPECIFICATIONS AS STATED IN KAR 201 18:150



I MARK F. PATTERSON, HEREBY CERTIFY THAT I AM A



POWER OF DESIG 11490 BLUEGRASS PARKWAY LOUISVILLE, KY 40299 502-437-5252

TORVATH

312 WEST COLFAX AVE

SOUTH BEND, IN 46601 574,237,0464

SURVEY

DESCRIPTION

PRELIMINARY ISSU

TITLE REVIEW

ISSUED AS FINAL

EV. DATE

A 8.13.18

10 19 18

11.19.18

SITE NUMBER HV1326 VERIZON WIRELESS SITE NAM

LV I-64 AND US 60 POD NUMBER 18-2663 DRAWN BY: TMD CHECKED BY: MEP SURVEY DATE: 8.09.18

8.13.18

SHEET TITLE SITE SURVEY THIS DOES NOT REPRESENT A

PLAT DATE:

11/19/2018

DATE

BOUNDARY SURVEY OF THE PARENT PARCEL SHEET NUMBER: (2 pages)

B-1.1

DocuSign Envelope ID: 1702C5B6-D6BD-46CD-BB95-F89DDA287260









DocuSign Envelope ID: 1702C5B6-D6BD-46CD-BB95-F89DDA287260



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DocuSign Envelope ID: 1702C5B6-D6BD-46CD-BB95-F89DDA287260



EXHIBIT

С

LIKELY COMPETITORS FOR PROPOSED FACILITY

Note: Competitors are identified as those owning towers in general vicinity.

Entity	Reason
Montgomery County Fire Department	Owns tower in Montgomery County
Global Tower, LLC	Owns tower in Montgomery County
American Towers, LLC	Owns tower in Montgomery County
Commonwealth of Kentucky	Owns tower in Montgomery County
CCATT, LLC	Owns towers (3) in Montgomery County
City of Mt. Sterling Police Dept.	Owns tower in Montgomery County
Garrett Communications, Inc.	Owns tower in Montgomery County
Gateway Radio Works, Inc.	Owns tower in Montgomery County
Crown Communications, LLC	Owns tower in Montgomery County
Crown Castle PT, Inc.	Owns tower in Bath County near Montgomery County line
Cellco Partnership	Owns tower in Montgomery County
SBA Towers III, LLC	Owns tower in Montgomery County

PSC Home

KY Public Service Commission

Master Utility Search

 Search for the utility of interest by using any single or combination of criteria.
 Utility ID Utility Name

Address/City/Contact Utility Type

Status

Active

 Enter Partial names to return the closest match for Utility Name and Address/City/Contact entries.

Search

				r	1	1
	Utility ID	Utility Name	Utility Type	Class	City	State
View	4111300	2600Hz, Inc. dba ZSWITCH	Cellular	С	San Francisco	CA
View	4107900	365 Wireless, LLC	Cellular	D	Atlanta	GA
View	4109300	Access Point, Inc.	Cellular	D	Cary	NC
View	4108300	Air Voice Wireless, LLC	Cellular	A	Bloomfield Hill	MI
View	4110650	Alliant Technologies of KY, L.L.C.	Cellular	D	Morristown	L
View	44451184	Alltel Communications, LLC	Cellular	A	Basking Ridge	СИ
View	4110850	AltaWorx, LLC	Cellular	D	Fairhope	AL
View	4107800	American Broadband and Telecommunications Company	Cellular	D	Toledo	он
View	4108650	AmeriMex Communications Corp.	Cellular	D	Dunedin	FL
View	4105100	AmeriVision Communications, Inc. d/b/a Affinity 4	Cellular	D	Virginia Beach	VA
View	4110700	Andrew David Balholm dba Norcell	Cellular	D	Clayton	WA
View	4108600	BCN Telecom, Inc.	Cellular	D	Morristown	NJ
View	4110550	Blue Casa Mobile, LLC	Cellular	D	Santa Barbara	CA
View	4108750	Blue Jay Wireless, LLC	Cellular	С	Carrollton	ΤХ
View	4111050	BlueBird Communications, LLC	Cellular	С	New York	NY
View	4202300	Bluegrass Wireless, LLC	Cellular	Α	Elizabethtown	KY
View	4107600	Boomerang Wireless, LLC	Cellular	В	Hiawatha	IA

https://psc.ky.gov/utility_master/mastersearch.aspx

Utility Master Information -- Search

View	4105500	BullsEye Telecom, Inc.	Cellular	D	Southfield	MI
View	4100700	Cellco Partnership dba Verizon Wireless	Cellular	A	Basking Ridge	U)
View	4106600	Cintex Wireless, LLC	Cellular	D	Rockville	MD
View	4111150	Comcast OTR1, LLC	Cellular	D	Philadelphia	PA
View	4101900	Consumer Cellular, Incorporated	Cellular	A	Portland	OR
View	4106400	Credo Mobile, Inc.	Cellular	В	San Francisco	CA
View	4108850	Cricket Wireless, LLC	Cellular	D	San Antonio	TX
View	10640	Cumberland Cellular Partnership	Cellular	A	Elizabethtown	KY
View	4111200	Dynalink Communications, Inc.	Cellular	С	Brooklyn	NY
View	4101000	East Kentucky Network, LLC dba Appalachian Wireless	Cellular	A	Ivel	КΥ
View	4002300	Easy Telephone Service Company dba Easy Wireless	Cellular	D	Ocala	FL
View	4109500	Enhanced Communications Group, LLC	Cellular	D	Bartlesville	ОК
View	4110450	Excellus Communications, LLC	Cellular	D	Chattanooga	TN
View	4105900	Flash Wireless, LLC	Cellular	С	Concord	NC
View	4104800	France Telecom Corporate Solutions L.L.C.	Cellular	D	Oak Hill	VA
View	4109350	Global Connection Inc. of America	Cellular	D	Norcross	GA
View	4102200	Globalstar USA, LLC	Cellular	В	Covington	LA
View	4109600	Google North America Inc.	Cellular	A	Mountain View	CA
View	33350363	Granite Telecommunications, LLC	Cellular	D	Quincy	MA
View	4106000	GreatCall, Inc. d/b/a Jitterbug	Cellular	A	San Diego	CA
View	10630	GTE Wireless of the Midwest dba Verizon Wireless	Cellular	A	Basking Ridge	ĽΝ
View	4103100	i-Wireless, LLC	Cellular	A	Newport	KY
View	4109800	IM Telecom, LLC d/b/a Infiniti Mobile	Cellular	D	Tulsa	ок
View	22215360	KDDI America, Inc.	Cellular	D	New York	NY
View	10872	Kentucky RSA #1 Partnership	Cellular	A	Basking Ridge	ΓN
View	10680	Kentucky RSA #3 Cellular General	Cellular	A	Elizabethtown	КY
View	10681	Kentucky RSA #4 Cellular General	Cellular	A	Elizabethtown	КY
View	4109750	Konatel, Inc. dba telecom.mobi	Cellular	D	Johnstown	PA
View	4111250	Liberty Mobile Wireless, LLC	Cellular	с	Sunny Isles Beach	
View	4111400	Locus Telecommunications, LLC	Cellular	С	Fort Lee	LΝ
View	4110900	Lunar Labs, Inc.	Cellular	D	Detroit	MI
View	4107300	Lycamobile USA, Inc.	Cellular	D	Newark	ŊĴ
View	4108800	MetroPCS Michigan, LLC	Cellular	A	Bellevue	WA

Utility Master Information -- Search

View	4109650	Mitel Cloud Services, Inc.	Cellular	D	Mesa	AZ
View	4202400	New Cingular Wireless PCS, LLC dba AT&T Mobility, PCS	Cellular	A	San Antonio	тх
View	10900	New Par dba Verizon Wireless	Cellular	A	Basking Ridge	τ
View	4000800	Nextel West Corporation	Cellular	D	Overland Park	KS
View	4001300	NPCR, Inc. dba Nextel Partners	Cellular	D	Overland Park	KS
View	4001800	OnStar, LLC	Cellular	A	Detroit	MI
View	4110750	Onvoy Spectrum, LLC	Cellular	D	Plymouth	MN
View	4109050	Patriot Mobile LLC	Cellular	D	Southlake	ТΧ
View	4110250	Plintron Technologies USA LLC	Cellular	D	Bellevue	WA
View	33351182	PNG Telecommunications, Inc. dba PowerNet Global Communications	Cellular	D	Cincinnati	ОН
View	4202100	Powertel/Memphis, Inc. dba T- Mobile	Cellular	A	Bellevue	WA
View	4107700	Puretalk Holdings, LLC	Cellular	A	Covington	GA
View	4111350	Q LINK MOBILE LLC	Cellular	С	Dania Beach	FL
View	4106700	Q Link Wireless, LLC	Cellular	В	Dania	FL
View	4108700	Ready Wireless, LLC	Cellular	В	Hiawatha	IA
View	4110500	Republic Wireless, Inc.	Cellular	D	Raleigh	NC
View	4111100	ROK Mobile, Inc.	Cellular	С	Culver City	CA
View	4106200	Rural Cellular Corporation	Cellular	A	Basking Ridge	LΝ
View	4108550	Sage Telecom Communications, LLC dba TruConnect	Cellular	D	Los Angeles	CA
View	4109150	SelecTel, Inc. d/b/a SelecTel Wireless	Cellular	D	Freemont	NE
View	4106300	SI Wireless, LLC	Cellular	A	Carbondale	IL
View	4110150	Spectrotel, Inc. d/b/a Touch Base Communications	Cellular	D	Neptune	L
View	4200100	Sprint Spectrum, L.P.	Cellular	A	Atlanta	GA
View	4200500	SprintCom, Inc.	Cellular	A	Atlanta	GA
View	4109550	Stream Communications, LLC	Cellular	D	Dallas	ТΧ
View	4110200	T C Telephone LLC d/b/a Horizon Cellular	Cellular	D	Red Bluff	CA
View	4202200	T-Mobile Central, LLC dba T- Mobile	Cellular	A	Bellevue	WA
View	4002500	TAG Mobile, LLC	Cellular	D	Carrollton	TX
View	4109700	Telecom Management, Inc. dba Pioneer Telephone	Cellular	D	South Portland	ME
View	4107200	Telefonica USA, Inc.	Cellular	D	Miami	FL
View	4108900	Telrite Corporation	Cellular	D	Covington	GA
View	4108450	Tempo Telecom, LLC	Cellular	D	Atlanta	GA
View	4109950	The People's Operator USA, LLC	Cellular	D	New York	NY
View	4109000	Ting, Inc.	Cellular	A	Toronto	ON
[1]	

Utility Master Information -- Search

View	4110400	Torch Wireless Corp.	Cellular	D	Jacksonville	FL
View	4103300	Touchtone Communications, Inc.	Cellular	D	Whippany	τ
View	4104200	TracFone Wireless, Inc.	Cellular	D	Miami	FL
View	4002000	Truphone, Inc.	Cellular	D	Durham	NC
View	4110300	UVNV, Inc. d/b/a Mint Mobile	Cellular	D	Costa Mesa	CA
View	4105700	Virgin Mobile USA, L.P.	Cellular	A	Atlanta	GA
View	4110800	Visible Service LLC	Cellular	D	Lone Tree	СО
View	4106500	WiMacTel, Inc.	Cellular	D	Palo Alto	CA
View	4110950	Wing Tel Inc.	Cellular	D	New York	NY
View	4109900	Wireless Telecom Cooperative, Inc. dba theWirelessFreeway	Cellular	D	Louisville	КY



EXHIBIT

D



1 Fairholm Avenue Peoria, IL 61603 USA Phone 309-566-3000 FAX 309-566-3079

November 30, 2018

Horvath Communications Attn: Jeff Delauder 312 N Colfax Ave South Bend, IN 46601

Reference: 265 FT RT SELF SUPPORT TOWER HV1326 I-64 & US 60, KENTUCKY

File Number: 228456

Enclosed, please find the following for your use:

Copies	Drawing Number	Description
1	228456-01-D1	Design Drawing Sealed for the State of KENTUCKY
1	228456-01-F1	Foundation

Email Only: jdelauder@horvathcommunications.com

Sincerely,

Jim Nieukirk JD Long

jd

Products for a Growing World of Technology®


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

DATE: NOVEMBER 30, 2018

PURCHASER: HORVATH COMMUNICATIONS

PROJECT: 265 FT RT SELF SUPPORT TOWER HV 1326 I-64 & US 60, KENTUCKY

FILE NUMBER: 228456

DRAWINGS: 228456-01-D1, 228456-01-F1

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

	111	OF KENT
CERTIFIED BY:	1441	HABIB JIRJI
DATE:	11/30/18	AZOURI 20322
		STONAL ET

Products for a Growing World of Technology®



				FILE NO.		
——			·	1 	228456	
<u> </u>		TOWER DESIGN LOADING		REV	DESCRIPTION	DWN CHX APP
ASC BAS DES STRI EXPO TOP EAR THIS	E 7-16 ULTIMATE WIN IC WIND SPEED (ICE) IGN ICE THICKNESS = UCTURE CLASS = II DSURE CATEGORY = C OGRAPHIC CATEGORY THQUAKE SPECTRAL R TOWER IS DESIGNED	D SPEED (NO ICE) = 106 MPH = 30 MPH PER ASCE 7-16 1.50 IN PER ASCE 7-16 = 1 ESPONSE ACCELERATION: SS = 0.194, S TO SUPPORT THE FOLLOWING LOADS:	1 = 0.093			
EL	EVATION (FT)	ANTENNA TYPE	LINE SIZE (NOM)			
	265	BEACON & LR	(1) 3/4" COAX]		
	260	208 SQFT MAX EPA LOAD	(12) 1 5/8"	11		
	250	SD8ft TIA w/o radome (AZ. 0 DEG) [6 G	Hz] (1) 1 5/8"			
	240	165 SQFT MAX EPA	(12) 1 5/8"]]		
	230	165 SQFT MAX EPA	(12) 1 5/8"] [
	220	165 SQFT MAX EPA	(12) 1 5/8"] [
				1		
	SECI	ION MAIN MEMBER SCHEDULE				
IN	LEG	TON MAIN MEMBER SCHEDULE DIAGONAL	HORIZONTALS			
IN	SECT LEG PIPE 3.500x0.216	ION MAIN MEMBER SCHEDULE DIAGONAL L1 3/4x1 3/4x3/16 (1)	HORIZONTALS		Pou	
IN A	SEC1 LEG PIPE 3.500x0.216 PIPE 3.500x0.216	ION MAIN MEMBER SCHEDULE DIAGONAL L1 3/4x1 3/4x3/16 (1) L1 3/4x1 3/4x3/16 (4)	HORIZONTALS	-	ROH	
	SECT LEG PIPE 3.500x0.216 PIPE 3.500x0.216 PIPE 3.500x0.216	ION MAIN MEMBER SCHEDULE DIAGONAL L1 3/4x1 3/4x3/16 (1) L1 3/4x1 3/4x3/16 (4) L2x2x1/4 (4)	HORIZONTALS L1 3/4x1 3/4x3/16 (1) N/A N/A		PO BOX	
	SECT LEG PIPE 3.500x0.216 PIPE 3.500x0.216 PIPE 3.500x0.216 PIPE 4.500x0.337	ION MAIN MEMBER SCHEDULE DIAGONAL L1 3/4x1 3/4x3/16 (1) L1 3/4x1 3/4x3/16 (4) L2x2x1/4 (4) L2 1/2x2 1/2x1/4 (3)	HORIZONTALS L1 3/4x1 3/4x3/16 (1) N/A N/A N/A		PO BOX 593 PEORIA, IL 5160 TOLL FREE 800-72	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	LEG PIPE 3.500x0.216 PIPE 3.500x0.216 PIPE 3.500x0.216 PIPE 3.500x0.216 PIPE 4.500x0.337 PIPE 5.563x0.375	ION MAIN MEMBER SCHEDULE DIAGONAL L1 3/4x1 3/4x3/16 (1) L1 3/4x1 3/4x3/16 (4) L2 1/2x21/4 (4) L3 1/2x21/2x1/4 (3) L3x3x3/16 (3) 1 3/2x1/4 (2)	HORIZONTALS L1 3/4x1 3/4x3/16 (1) N/A N/A N/A N/A	TIUS (REPRODU	PO BOS 59 PO BOS 59 PO BOS 59 PO BOS 4 TOLL FREE BOO-73 ANWING 15 THE ROPERTY OF COMPEND OF LARGE IN W	02 15599 17-ROHN ROHN, 15 PART WITHOUT ROHN, 15 PART WITHOUT
	LEG PIPE 3.500x0.216 PIPE 3.500x0.216 PIPE 3.500x0.216 PIPE 4.500x0.337 PIPE 5.563x0.375 PIPE 5.563x0.375	ION MAIN MEMBER SCHEDULE DIAGONAL L1 3/4x1 3/4x3/16 (1) L1 3/4x1 3/4x3/16 (4) L2 1/2x21/4 (4) L3 x3x3/16 (3) L3 x3x1/4 (3) L3 x3x1/4 (3)	HORIZONTALS L1 3/4x1 3/4x3/16 (1) N/A N/A N/A N/A N/A N/A	YIES A REPROTA	PO BOX 59 PEORIA, IL 6160 TOLL FREE BOA-25 ANNIHIG IS THE FROM THE COMMUNICATION COMMUNICATION OF THE DATA WHITTEN COMMUNICATION HOD VALUE FOR COMMUNICATION	1 1 1 1 1 1 1 1
	LEG PIPE 3.500×0.216 PIPE 3.500×0.216 PIPE 3.500×0.216 PIPE 3.500×0.216 PIPE 4.500×0.337 PIPE 5.563×0.375 PIPE 5.563×0.375 PIPE 5.662×0.432	Link Member Schedule DIAGONAL 1.1.3/4x13/4x3/16 (1) L1.3/4x13/4x3/16 (1) 1.1.2.2.2.1/4 (1) L2.1/2x1/4 (4) 1.2.2.2.1/4 (3) L3.33x1/4 (3) 1.3.3.3.1/4 (3) L3.1/2x3.1/2x1/4 (2) 1.3.1/2x3.1/2(2)	HORIZONTALS L1 3/4x1 3/4x3/16 (1) N/A N/A N/A N/A N/A N/A N/A	THES REPROTA	PC BOX 57 PEORIA, IL SIG TOLL FREE BOO-7. SAVANICI FREE BOO-7. OLI WATTER CO HORVATH COMMUL DESIGN PRC	N orts LLC 99 17-ROHN ROHN IT SHOT TO BE ROH ANT WITHOUT SHOT: VICATIONS FILE

N/A

L3 1/2x3 1/2x1/4 (1)

2L3x3x3/16 (2)

2L3 1/2x3 1/2x1/4 (2)

RTT22

RTT26

RTT30

RTT34

TO THE STRESS ANALYSIS.

PIPE 8.625x0.375

PIPE 8.625×0.500

PIPE 8.625x0.500

PIPE 8.625x0.500

L4x4x1/4 (3)

L4x4x5/16 (3)

2L3 1/2x3 1/2x1/4 (2)

2L3 1/2x3 1/2x1/4 (2)

NOTE: SECTION NUMBERS ARE FOR REFERENCE ONLY. FOR NOMINAL FACE WIDTH DIMENSIONS, REFER

THE NUMBERS SHOWN IN PARENTHESES INDICATE THE NUMBER OF BAYS FROM TOP TO BOTTOM.

265 FT RT TOWER HV 1326 I-64 & US 60- KY DWN: CHX'D DATE Nov/30/18 RCS нΔ ENG'R SHEET #: HA 1 QF 1 PRJ. ENG'R: PRJ. MANG'R: RCS DRAWING NO: REV: 0 228456-01-D1





File: W:\Jobs\2018\228456\228456.out Contract: 228456 Project: 265 FT RT TOWER Date and Time: 11/30/2018 10:44:02 AM

DESIGN SPECIFICATION

Design Standard: ANSI/TIA-222-G-2005 Add.2 Ultimate Design Wind Speed (No Ice) = 106.0 (mph) Nominal Design Wind Speed (No Ice) = 82.1 (mph) Basic Wind Speed (With Ice) = 30.0 (mph) Design Ice Thickness = 0.75 (in) Structure Class = II Exposure Category = C Topographic Category = 1

Sct	Length (ft)	Top W. (in)	Bot Width (in)
1	30.00	373.97	421.97
2	30.00	325.97	373.97
3	30.00	277.97	325.97
4	30.00	229.97	277.97
5	20.00	204.24	229.97
6	20.00	180.24	204.24
7	20.00	155.32	180.24
8	20.00	131.32	155.32
9	20.00	106.40	131.32
10	20.00	81.53	106.40
11	20.00	81.53	81.53
12	5 00	81 53	81 53

MAXIMUM BASE REACTIONS

Download (Kips)	452.1
Uplift (Kips)	366.4
Shear (Kips)	50.6
O.T.M. (Ft-Kips)	12,684.15

1



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Revision: 0 Site: I-64 & US 60- KY Engineer: RCS



(18 TOTAL)



File: W:\Jobs\2018\228456\228456.out Contract: 228456 Project: 265 FT RT TOWER Date and Time: 11/30/2018 10:44:02 AM

Section A: PROJECT DATA

Project Title:	265 FT RT TOWER	
Customer Name:	HORVATH COMMUNICATIONS	
Site:	I-64 & US 60- KY	
Contract No.:	228456	
Revision:	0	
Engineer:	RCS	
Date:	Nov 30 2018	
Time:	10:22:03 AM	
Design Standard:	ANSI/TIA-222-G-2005 Addendum	2

Design Standard:

GENERAL DESIGN CONDITIONS

Start wind direction: End wind direction: Increment wind direction: Increment wind direction: Elevation above ground: Gust Response Factor Gh: Structure class: Exposure category: Topographic category: Material Density: Young's Modulus: Poisson Ratio: Weight Multiplier: Minimum Bracing Resistance as per 4.4.1

WIND ONLY CONDITIONS: Ultimate Design Wind Speed (No Ice): Nominal Design Wind Speed (No Ice): Directionality Factor Kd: Importance Factor I: Wind Load Factor: Dead Load Factor: Dead Load Factor for Uplift:

WIND AND ICE CONDITIONS: Basic Wind Speed (With Ice): Directionality Factor Kd: Wind Load Importance Factor Iw: Ice Thickness Importance Factor Ii: Ice Thickness: Ice Density: Wind Load Factor: Dead Load Factor: Ice Load Factor:

WIND ONLY SERVICEABILITY CONDITIONS: Serviceability Wind Speed: Directionality Factor Kd: Importance Factor I: Wind Load Factor: Dead Load Factor:

EARTHQUAKE CONDITIONS: Site class definition: D Site class definition: Spectral response acceleration Ss: Spectral response acceleration S1: Accelaration-based site coefficient Fa: Velocity-based site coefficient Fv: Design spectral response acceleration Sds: 0.194 0.083 1.600 2.400 0.207

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Revision: 0 Site: I-64 & US 60- KY Engineer: RCS

Page A 1

0.00 (Deg) 330.00 (Deg) 30.00 (Deg)

0.00(ft) 0.85 II

490.1(lbs/ft^3)

29000.0(ksi)

106.00(mph) 82.11 (mph) 0.85 1.00

30.00(mph) 0.85

C

0.30

1.25

1.60 1.20 0.90

1.00

1.00

1.00

1.00 1.00

1.00

0.75(in)

60.00(mph) 0.85

56.19(lbs/ft^3)



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RAHN

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Design spectral response acceleration Sdl:0.133Seismic analysis method:1Fundamental frequency of structure fl:0.794Total seismic shear Vs (Kips) :3.16

Analysis performed using: Robot Millenium Finite Element Analysis Software (by Robobat)





Revision: 0

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Site: I-64 & US 60- KY Engineer: RCS

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Section B: STRUCTURE GEOMETRY

TOWER GEOMETRY

Cross Section	Height	Tot Height	# of Section	Bot Width	Top Width
Triangular	(ft) 265.00	(ft) 2 65 ,00	12	(in) 421.97	(in) 81.53
iriangular	205.00	265.00	12	421.97	61.33

SECTION GEOMETRY

Sec	Sec. 1	Name	Elevat.	ion	Widt	ths				Masses			Brcq.
# 12 11 10 9 8 7 6 5 4 3 2 1 1 10ta]	RTS06 RTT08 RTT10 RTT12 RTT14 RTT18 RTT18 RTT18 RTT22 RTT26 RTT26 RTT30 RTT34	* * *	Bottom (ft) 260.00 240.00 220.00 180.00 160.00 140.00 120.00 90.00 60.00 30.00 0.00	Top (ft) 265.00 240.00 220.00 200.00 180.00 140.00 140.00 140.00 90.00 60.00 30.00	Botton (in) 82 106 131 155 180 204 230 278 326 374 422	<pre>n Top (in) 82 82 106 131 155 180 204 230 278 326 374</pre>	Legs (1bs) 142 569 570 1127 1562 2150 2151 3727 4899 4899 4899 2825	Brc. (1b) 187 534 892 108 114 170 163 178 348 483 523 670 292	g. Sec s) (1) 0 9 C 2 C 8 0 0 0 4 0 0 0 1 0 9 11 0 16 16 27	.Brc Int. bs) (lb 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Brc Sect. s) (1bs) 129 1103 1462 2216 2704 3270 3780 3934 7207 10009 11939 14108 62062	Databas (1bs) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	e Clear. (in) 0.787 0.787 0.787 0.787 0.787 0.787 0.787 0.787 0.787 0.787 0.787
PANEI	GEOM	ETRY											
Sect	Pnl#	Туре	SecBro	cg Mid. Cont	Horiz inuous	Horiz	Height	Bottom Width	Top Width	Plan Bracing	Hip Bracing	Gusset Plate	Gusset Plate Meight
							(ft)	(in)	(in)			(ft^2)	(lbs)
12	1	Х	(None)		Yes	5.0	81.5	81.5	(None)	(None)	0.300	0.00
11	4	X	(None))		None	5.0	81.5	81.5	(None)	(None)	0.300	0.00
11	2	x	(None)		None	5.0	81.5	81.5 91.5	(None)	(None)	0.300	0.00
11	í	x	(None)		None	5.0	81 5	81.5	(None)	(None)	0.300	0.00
10	4	x	(None)		None	5.0	87.7	81 5	(None)	(None)	0.300	0.00
10	3	X	(None	, }		None	5.0	94.0	87.7	(None)	(None)	0.300	0.00
10	2	Х	(None)		None	5.0	100.2	94.0	(None)	(None)	0.300	0.00
10	1	х	(None)		None	5.0	106.4	100.2	(None)	(None)	0.300	0.00
9	3	Х	(None)		None	6.7	114.7	106.4	(None)	(None)	0.300	0.00
9	2	X	(None)		None	6.7	123.0	114.7	(None)	(None)	0.300	0.00
9	1	X	(None)		None	6.7	131.3	123.0	(None)	(None)	0.300	0.00
8	5	X	(None)		None	6./	1.19.5	131.3	(None)	(None)	0.300	0.00
0		x	(None)		None	0.1	147.5	139.3	(None)	(None)	0.300	0.00
7	3	X	(None)) \		None	67	163 6	155 2	(None)	(None)	0.300	0.00
÷.	2	X	(None)		None	6.7	171 9	163 6	(None)	(None)	0.300	0.00
7	1	x	(None)		None	6.7	180.2	171.9	(None)	(None)	0.300	0.00
6	2	Х	(None	ĵ		None	10.0	192.2	180.2	(None)	(None)	0.300	0.00
6	1	Х	(None)		None	10.0	204.2	192.2	(None)	(None)	0.300	0.00
5	2	Х	(None)		None	10.0	217.1	204.2	(None)	(None)	0.300	0.00
5	1	Х	(None))		None	10.0	230.0	217.1	(None)	(None)	0.300	0.00
1	3	Х	(None))		None	10.0	246.0	230.0	(None)	(None)	0.300	0.00
4	2	X	(None)		None	10.0	262.0	246.0	(None)	(None)	0.300	0.00
4	1	X	(None)		None	10.0	2/8.0	262.0	(None)	(None)	0.300	0.00
י ר	2	~	(None)	,		NODE	10.0	294.0	2/8.0	(None)	(None)	0.300	0.00
د ۲	1	ĸ	(None)	/ \		None	10.0	326 0	234.0	(None) 2-subdite	(NODE)	0.300	0.00
2	2	ĸ	2-Sub	/ div.		Yes	15 0	350 0	326 0	2-Subdiv	(None)	0.300	0.00
2	ĩ	ĸ	2-Sub	div.		Yes	15.0	374.0	350.0	2-Subdiv	(None)	0.300	0.00
1	2	к	2-Sub	div.		Yes	15.0	398.0	374.0	2-Subdiv	(None)	0.300	0.00
											•		

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1	1 K	2-Subdi	<i>v</i> .	Yes	15.0	422.0	398.0	2-Subdiv.	(None)	0.30	0 0.00	0
MEMBE	R PROPER	TIES										
Sec/ Membe	Туре r	Description	Steel	Conn.	Bolt	Boit	End	Eque	Gusset	Gusse	t Bolt	Dble
Pnl Spaci	ng		Grade	Туре	∦-Size	Grad	le Dist	. Dist.	Thick.	Grade	Space	Mem
Stite	h											
Bolt					(in)		(in)	(in)	(ín)		(in)	(in)
(ft) 12/1 12/1	Leg Diag	PIPE 3.500x0.216 L1 3/4x1 3/4x3/16	A500 gr. A529 gr.	CSTension 50Bolted	4-0.750 1-0.625) A325 5 A325	5X 5X 1.50	0 0,875	0.250	A572	gr.50	
12/1	Horiz	L1 3/4x1 3/4x3/16	A529 gr.	50Bolted	1-0.625	5 A325	5X 1.50	0 0.875	0.250	А572	2,000 gr.50 2,000	0
11/4 11/4	Leg Diag	PIPE 3.500×0.216 L1 3/4×1 3/4×3/16 .	A500 gr. A529 gr.	CSTension 50Bolted	4-0,750 1-0,625	D A325 D A325	5X 5X 1.50	0,870	0.250	A572	gr.50 2.00	0
11/3 11/3	Leg Diag	PIPE 3.500x0.216 L1 3/4x1 3/4x3/16	A500 gr. A529 gr.	CSTension 50Bolted	4-0.750 1-0.625	D A325 5 A325	5X 1.50	0.870	0.250	A572	gr.50 2.00	0
11/2 11/2	Leg Diag	PIPE 3.500×0.216 L1 3/4×1 3/4×3/16	A500 gr. A529 gr.	CSTension 50Bolted	4-0.750 1-0.625) A325 5 A325	5X 5X 1.50	0.870	0.250	A572	gr.50	0
11/1 11/1	Leg Diag	PIPE 3.500×0.216 L1 3/4×1 3/4×3/16	A500 gr. A529 gr.	CSTension 50Bolted	4-0.750 1-0.625	0 A325 5 A325	5x 5x 1.50	0.870	0.250	A572	gr.50 2.00	0
10/4 10/4	Leg Diag	PTPE 3.500x0.216 L2x2x1/4	A500 gr. A529 gr.	CSTension 50Bolted	5-0.87 1-0.623	5 A325 5 A325	5X 5X 1.50	000.1 00	0.250	۸572	gr.50	0
10/3 10/3	Leg Diag	PIPE 3.500x0.216 L2x2x1/4	A500 gr. A529 gr.	.CSTension .50Bolted	5-0.879 1-0.629	5 A325 5 A325	5X 5X 1.50	00 1.000	0,250	A572	gr.50	n
10/2 10/2	Leg Diag	PIPE 3.500×0.216 L2×2×1/4	A500 gr. A529 gr.	CSTension 50Bolted	5-0.879 1-0.629	5 A325 5 A325	5 X 5X 1.50	0 1.000	0.250	A572	gr.50	0
10/1 10/1	Leg Diag	PIPE 3.500x0.216 L2x2x1/4	A500 gr. A529 gr.	CSTension 50Bolted	5 0.879 1-0.625	5 A325 5 A325	5X 5X 1.50	0 1.000	0.250	ħ572	gr.50 2.00	0
9/3 9/3	Leg Diag	PIPE 4.500×0.337 L2 1/2×2 1/2×1/4	A500 gr. A529 gr.	CSTension 50Bolted	5-1.000 1-0.629	0 A325 5 A325	5X 5X 1.56	0 1.250	0.250	A572	gr.50	0
9/2 9/2	Leg Diag	PIPE 4.500×0.337 L2 1/2×2 1/2×1/4	A500 gr. A529 gr.	CSTension 50Bolted	5-1.000 1-0,623	0 A325 5 A325	5X 5X 1.50	00 1.250	0.250	A572	gr.50	٥ ٥
9/1 9/1	Leg Diag	PIPE 4.500x0.337 L2 1/2x2 1/2x1/4	A500 gr. A529 gr.	CSTension .50Bolted	5-1.000 1-0.629	D A325 5 A325	5X 5X 1.50	00 1.250	0.250	A572	gr.50 2.00	0
8/3 8/3	Leg Diag	PIPE 5.563x0.375 L3x3x3/16	A500 gr. A529 gr.	CSTension 50Bolted	5-1.000 1-0.62	0 A325 5 A325	5X 5X 1.50	00 1.620	0.250	A572	gr.50 2.00	0
8/2 8/2	Leg Diag	PIPE 5.563x0.375 L3x3x3/16	A500 gr. A529 gr.	CSTension 50Bolted	5-1.000 1-0.625	0 A323 5 A325	5 X 5X 1,50	00 1.620	0.250	A572	gr.50 2.00	0
8/1 8/1	Leg Diag	PIPE 5.563x0.375 L3x3x3/16	A500 gr. A529 gr.	CSTension 50Bolted	5-1.000 1-0.625	0 A329 5 A329	5X 5X 1.50	00 1.620	0.250	A572	gr.50 2.00	0
1/3 773	Leg Diag	PIPE 5.563x0.375 L3x3x1/4	A500 gr. A529 gr.	CSTension 50Bolted	6-1.000 1-0.629	0 A325 5 A325	5X 5X 1.50	00 1.500	0.250	A572	gr.50 2.00	0

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772 772	Leg Diag	PIPE 5.563x0.375 L3x3x1/4	A500 gr.CSTension A529 gr.50Bolted	6-1.000 1-0.625	A325X A325X	1.500	1.500	0.250	A572	gr.50
7/1 7/1	Leg` Diag	PIPE 5.563×0.375 L3×3×1/4	A500 gr.CSTension A529 gr.50Bolted	6-1.000 1-0.625	A325X A325X	1.500	1.500	0.250	۸572	2.000 g1.50 2.000
6/2 6/2	Leg Diag	PIPE 6.625x0.432 L3 1/2x3 1/2x1/4	A500 gr.CSTension A529 gr.50Bolted	6-1.000 1-0.625	A325X A325X	1.500	1.750	0.250	A572	gr.50 2 000
6/1 6/1	Leg Diag	PIPE 6.625x0.432 L3 1/2x3 1/2x1/4	A500 gr.CSTension A529 gr.50Bolted	6-1.000 1-0.625	A325X A325X	1.500	1.750	0.250	A572	gr.50 2.000
5/2 5/2	Leg Díag	PIPE 6.625x0.432 L3 1/2x3 1/2x1/4	A500 gr.CSTension A529 gr.50Bolted	6-1.500 1-0.625	A325X A325X	1.500	2.000	0.250	A572	gr.50 2.000
5/1 5/1	Leg Diag	PIPE 6.625×0.432 L3 1/2×3 1/2×1/4	A500 gr.CSTension A529 gr.50Bolted	6-1.500 1-0.625	A325X A325X	1.500	2.000	0.250	A572	gr.50 2.000
4/3 4/3	Leg Diag	PIPE 8.625x0.375 L4x4x1/4	A500 gr.CSTension A529 gr.50Bolted	6-1.500 1-0.625	A325X A325X	1.500	2.500	0.250	A572	gr.50 2.000
4/2 4/2	Leg Diag	PIPE 8.625x0.375 L4x4x1/4	A500 gr.CSTension A529 gr.50Bolted	6-1.500 1-0.625	A325X A325X	1.500	2.500	0.250	A572	gr.50
4/1 4/1	Leg Diag	PIPE 8.625x0.375 L4x4x1/4	A500 gr.CSTension A529 gr.50Bolted	6-1.500 1·0.625	A325X A325X	1.500	2.500	0.250	A572	gr.50 2.000
3/3 3/3	Leg Diag	PIPE 8.625x0.500 L4x4x5/16	A500 gr.CSTension A529 gr.50Bolted	6-1.500 2-0.625	A325X A325X	1,500	2.000	0.375	A572	gr.50 2.000
3/2 3/2	Leg Diag	PIPE 8.625x0.500 L4x4x5/16	A500 gr.CSTension A529 gr.50Bolted	6 1.500 2-0.625	A325X A325X	1,500	2.000	0.375	A572	gr.50
3/1 3/1	Leg Diag	PIPE 8.625x0.500 14x4x5/16	A500 gr.CSTension A529 gr.50Bolted	6-1.500 2 0.625	A325X A325X	1.500	2.000	0.375	A572	9r.50
3/1	Horiz	L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2 0.625	A325X	1.500	2.000	0.250	A572	gr.50
3/1	PlanH1	L3 1/2x3 1/2x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	2.000	0.250	A572	gr,50 2.000
2/2 2/2	Leg Diaģ	PIPE 8.625x0.500 213 1/2x3 1/2x1/4	A500 gr.CSTension A529 gr.50Bolted	6-1.500 2-0.625	A325X A325X	1.500	2.000	0.375	A572	gr.50 2.000
0.313 2/2	5.00 Horiz	2L3x3x3/16	A529 gr.50Bolted	2-0.625	A325X	1.500	1.620	0.375	A572	gr.50
0.313 2/2	0.00 SecDl	L3x3x3/16	A529 gr.50Bolted	1-0.625	A325X	1,500	1.620	0.250	A572	gr.50
2/2	SecH1	L3x3x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	1.620	0.250	A572	gr.50
2/2	PlanH1	L4×4×1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	2.500	0.250	A572	gr.50
2/1 2/1	Leg Diag	PIPE 8.625×0.500 2L3 1/2×3 1/2×1/4	λ500 gr.CSTension A529 gr.50Bolted	6-1.500 2-0.625	A325X A325X	1.500	2.000	0.375	۸ 57 2	gr.50
0,313. 2/1	5.00 Horiz	2L3x3x3/16	A529 gr.50Bolted	2-0.625	A325X	1.500	1.620	0.375	A572	gr.50
0.313 2/1	0.00 SecDl	L3x3x3/16	A529 gr.50Bolted	1-0.625	A325X	1,500	1.620	0.250	A572	gr. 50
2/1	SecHl	L3x3x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	1.620	0.250	A572	gr.50

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2/1	PlanHl	L4×4×1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	2.500	0.250	A572	2.000 gr.50 2.000	
1/2 1/2	Leg Diag	PIPE 8.625x0.500 2L3 1/2x3 1/2x1/4	A500 gr.CSTension A529 gr.50Bolted	6-1.500 2-0.625	A325X A325X	1.500	2.000	0,375	A572	gr.50	
0.375 1/2	5.00 Horiz	2L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2-0.625	A325X	1.500	2.000	0.375	A572	gr.50 2.000	
0.375 1/2	0.00 SecDl	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.620	0.250	A572	gr.50	
1/2	SecH1	L3x3x1/4	A529 gr.50Bolted	1-0.625	л325x	1.500	1,620	0.250	A572	gr.50	
1/2	PlanH1	2L3x3x3/16	A529 gr.50Bolted	1 0.625	A325X	1.500	1.620	0.250	A572	gr.50 2.000	
0.313 1/1 1/1	5.00 Leg Diag	PIPE 8.625x0.500 2L3 1/2x3 1/2x1/4	A500 gr.CSTension A529 gr.50Bolted	6-1.500 2-0.625	A325X A325X	1.500	2.000	0.375	A572	gr.50	
0.375 1/1	5.00 Horiz	2L3 1/2x3 1/2x1/4	A529 gr.50Bolted	2-0,625	A325X	1,500	2.000	0.375	A572	gr.50	
0.375 1/1	0.00 SecDl	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.620	0.250	A572	gr.50	
1/1	SecHl	L3x3x1/4	A529 gr.50Bolted	1-0.625	A325X	1.500	1.620	0.250	A572	gr.50	
1/1	PlanH1	2L3x3x3/16	A529 gr.50Bolted	1-0.625	A325X	1.500	1,620	0.250	A572	gr.50 2.000	
0.313	5.00										

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TOWERSOFT WARE

TSTower - v 5.6.1 Tower Analysis Program (c) 1997-2016 TowerSoft www.TSTower.com



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Section C: ANTENNA DATA

Structure Azimuth from North: 0

ANTENNAS

Ant Elev. No. (ft)	Antenna (#) Type		Ant. Moun Azim. Radin (ft)	. Mount Ty is	үре	Mount T: Azim. (#)	x Line)Type	Moun Size (in)	ting Pipe Length (ft) Full Shield	Ka ed
1 250.00	(1) SD8ft	TIA w/o rad	ome			<u>^</u>				1 0 0
			0 1.25			0				1.00
	Vert. Offs	et 0.00 (f	t) ·							
ANTENNA AND	MOUNT WIND	AREAS AND	WEIGHTS							
Ant Antenna	/Mount	Frontal	Lateral	Frontal	Lateral	Weight	Weight	Frequency	Allowable G	h Mount
No.		Bare Area	Bare Area	Iced Area	Iced Area	Bare	Iced	• •	Signal	Ka
		(ft)^2	(ft)^2	(ft)^2	(ft)^2	(lbs)	(lbs)	GHz	Loss dB	
1 SD8ft T	IA w/o rado	me								
		77,95	2.12	77,95	2.12	260.00	1328.60	6.00	10 0.	85
								/		







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Revision: 0 Site: I-64 & US 60- KY Engineer: RCS

Section D: TRANSMISSION LINE DATA

Transmission Lines Position

No.		Bot El (ft)	Top El (ft)	Desc.	Kadius (ft)	Az.	Orient.	No.	No. c Rows	of S	Vert.	Antenna	User Ka
1		0.00	265.00	3/8 CABLE	20.00	0.00	0.00	1	1		Yes		
2		0.00	265,00	RC0.75-Cnd	17.70	60.00	5.00	1	1		No		
3		0.00	265.00	TX Ladder	11.72	60.00	30.00	Ŧ	1		No		
4		240.00	260,00	LDF7P-50A	2.26	60.00	30,00	12	2	~	No		
5		240.00	250,00	LDF7P-50A	2.26	60,00	30.00	13	2	-	No		
6		0,00	240.00	LDF7P-50A	11.72	60.00	30.00	25	2		No		
7		0.00	240.00	TX Ladder	11.72	180.00	150.00	1	1		No		
8		220.00	230.00	LDF7P-50A	2.96	180.00	150,00	12	2		No		
9	/	0.00	220.00	LDF7P-50A	11.72	180.00	150.00	24	2	/	No		

Transmission Lines Details

1

No.	Desc.	Width (in)	Depth (in)	Unit Mass (lb/ft)	Line Spacing (in)	Row Spacing (in)
1 .	3/8 CABLE	0.38	0.38	1.00	2.750	2,750
2	RC0.75-Cnd	1.05	1.05	1.09	2,750	2.750
3	TX Ladder	4.70	1.50	4.00	2.750	2.750
4	LDF7P-50A	2.01	2.01	0.92	2.250	2.750
5	LDF7P-50A	2.01	2,01	0.92	2,250	2.750
6	LDF7P-50A	2.01	2.01	0.92	2.250	2.750
7	TX Ladder	4.70	1,50	1.00	2.750	2.750
8	LDF7P-50A	2.01	2.01	0.92	2.250	2.750
9	LDF7P-50A	2.01	2.01	0.92	2.250	2.750

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Section F: POINT LOAD DATA

Structure Azimuth from North:0.00

POINT LOADS

No. Description Elev. Radius Azim. Orient. Vertical Tx Line Comments Offset (ft) / 265.00 260.00 , 240.00 (Deg) (ft) 0.00 0.00 (Deg) (ft) BEACON & LR 208 SQFT MAX EPA LOAD

 265.00
 1.00

 260.00
 1.00

 240.00
 1.00

 230.00
 1.00

 220.00
 1.00

 0.0 0.0 1 2 3 CARRIER 0.0 0.00 CARRIER CARRIER 4 5 0.0 0.0 0.00 1 0.0 0.0 0.00

POINT LOADS WIND AREAS AND WEIGHTS

No.	Description	Frontal	Lateral	Frontal	Lateral	Weight	Weight	Gh
		Bare Area	Bare Area	Iced Area	Iced Area	Bare	fced	
		(ft^2)	(ft^2)	(ft^2)	(ft^2)	(Kips)	(Kips)	
1	BEACON & LR	5.00	5.00	10.00	10.00	0.25	0.50	0.85
2	208 SQFT MAX EPA LOAD	208.00 🖌	208.00	416.00	416.00	5.00	10.00	0.85
3	CARRIER	165.00	165.00 🖌	330.00	330.00	3.00	6.00	0.85
4	CARRIER	165.00	165,00	330.00	330.00	3.00	6.00	0.85
5	CARRIER	165.00	165.00	330,00	330.00	3.00	6.00	0.85





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Section	н:	STRUCTURE	DISPLACEMENT	data
Load Com	oina	tion	Max En	velope

Node Elev. (ft) N-S Disp (in) W-E Disp (in) Vert.Disp (in) N-S Rot (Deg) W-E Rot (Deg) Twis (Deg) 114 265.0 33.6 31.2 -0.5 1.34 1.25 0.36 111 260.0 32.2 29.9 -0.5 1.42 1.32 -0.5 108 255.0 30.8 28.5 -0.5 1.31 1.23 0.27 105 250.0 29.4 27.3 -0.5 1.43 1.33 -0.5 102 245.0 27.9 25.9 -0.5 1.25 1.17 0.24 99 240.0 26.6 24.6 -0.5 1.38 1.29 -0.24 26 235.0 25.1 23.3 -0.5 1.15 1.07 0.26	st eg) 33 7 32 4 31
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 33 7 32 4 31
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3 3 227 7 23 1 11 1 9 10 7 0 6 0 4 0 3 0 3 0 2 0
26 60.0 1.4 1.3 -0.2 0.18 0.16 0.02 20 45.0 0.9 -0.8 -0.1 0.14 0.12 -0.4	2 01
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	01 0
3 0.0 0.0 0.0 0.00 0.00 Load Combination Wind Only - Serviceability	0

Wind	Directio	2n	Ma	Maximum displacements					
Node	Elev. (ft)	N-S Disp (in)	W-E Disp (in)	Vert.Disp (in)	N-S Rot (Deg)	W-E Rot (Deg)	Twist (Deg)		
114 111 108 105 102 99 96 93 90	265.0 260.0 255.0 250.0 245.0 240.0 235.0 235.0 230.0	11.5 11.0 10.5 10.0 9.5 9.0 8.5 8.1 7.7	10.5 10.1 9.6 9.2 8.7 8.3 7.9 7.5 7.1	-0.2 -0.2 0.2 0.2 -0.2 -0.2 -0.2 -0.2	0.46 0.49 0.45 0.49 0.43 0.47 0.39 0.45 0.26	0.42 0.45 0.41 0.45 0.39 0.44 0.36 0.41	$\begin{array}{c} 0.10 \\ -0.11 \\ 0.09 \\ -0.11 \\ 0.08 \\ -0.10 \\ 0.07 \\ 0.09 \\ 0.09 \end{array}$		
90 87 84 81 78 75 75 72 69	225.0 220.0 213.3 206.7 200.0 193.3 186.7 180.0	7.3 6.7 6.3 5.8 5.3 4.9 4.5	7.1 6.7 6.2 5.8 5.3 4.9 4.5 4.1	-0.1 -0.1 -0.1 -0.1 -0.1 -0.1 -0.1 -0.1	0.36 0.40 0.33 0.36 0.30 0.32 0.28 0.29	0.33 0.37 0.31 0.33 0.28 0.30 0.26 0.27	0.06 -0.08 0.05 -0.06 0.04 -0.05 0.03 -0.03		

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66	173.3	4.1	3.8	···0.1	0.24	0.23	0.02
63	166.7	3.8	3.5	-0.1	0.25	0.23	-0.03
60	160.0	3.4	3.1	-0.1	0.21	0.20	0.02
57	150.0	3.0	2.7	-0.1	0.20	0.19	-0.02
54	140.0	2.5	2.3	-0.1	0.18	0.17	0.01
51	130.0	2.2	2.0	-0.1	0.16	0.15	-0.01
48	120.0	1.8	1.7	-0.1	0.14	0.13	0.01
45	110.0	1.5	1.4	-0.1	0.13	0.12	-0.ül
42	100.0	1.3	1.1	-0.1	0.11	0,10	0.01
39	90.0	1.0	0.9	-0.1	0.10	0.09	-0.01
36	80.0	0.8	0.7	-0,1	0.08	0,08	0.01
32	70.0	0.6	0.6	-0.1	0.07	0.07	-0.01
26	60.0	0.5	0.4	0.0	0.06	0.06	0.01
20	45.0	0.3	-0.3	0.0	0.05	0.04	0.00
14	30.0	0.1	-0.1	0.0	0.03	-0.03	0.00
8	15.0	0.1	0.0	0.0	0.02	-0.01	0.00
з	0.0	0.0	0.0	0.0	0.00	0.00	0.00

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Section J: ANTENNA DISPLACEMENT DATA Load Combination Wind Only - Serviceability

Wind Direction			Maximum displacements								
Ant.	Elev. (ft)	N-S Disp (in)	W-E Disp (in)	Vert.Disp (in)	N-S Rot (Deg)	W-E Rot (Deg)	Twist Tot (Deg)	Allow. (Deg)			
1	250.00	10.0	9.2	-0.2	0.49	0.45	-0.11	1.11			
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Section L: STRENGTH ASSESSMENT SORTED DATA Load Combination Max Envelope Wind Direction Maximum

Sec I	Pnl	Elev. (ft)	МТүре	Desc.	Len (ft)	ki/r	Gov. comp. cap. (Kips)	Gov. tens. cap. (Kips)	Max Compr. (Kips)	Háx Tens. (Kips)	ASSC5. Ratio
12 11 11 11 10 10 10 10 10 10 9 9 8 8 8 7 7 6 6 5 5 4 4 3 3 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	14321432132132132121213213212121	260.00 255.00 245.00 235.00 235.00 223.00 223.00 223.00 223.00 220.00 220.00 220.00 220.00 220.00 220.00 193.33 186.67 180.00 173.33 186.67 180.00 173.33 186.67 160.00 130.00 140.00 140.00 140.00 140.00 140.00 140.00 140.00 140.00 140.00 140.00 15.00 0.00	Leg Leg Leg Leg Leg Leg Leg Leg Leg Leg	PIPE $3,500\times0.216$ PIPE $3,500\times0.216$ PIPE $3,500\times0.216$ PIPE $3,500\times0.216$ PIPE $3,500\times0.216$ PIPE $3,500\times0.216$ PIPE $3,500\times0.216$ PIPE $3,500\times0.216$ PIPE $4,500\times0.337$ PIPE $4,500\times0.337$ PIPE $4,500\times0.337$ PIPE $5,563\times0.375$ PIPE $6,625\times0.432$ PIPE $6,625\times0.432$ PIPE $8,625\times0.375$ PIPE $8,625\times0.375$ PIPE $8,625\times0.375$ PIPE $8,625\times0.375$ PIPE $8,625\times0.500$ PIPE $8,625\times0.500$ PIPE $8,625\times0.500$ PIPE $8,625\times0.500$ PIPE $8,625\times0.500$	S = 00 S = 00 S = 00 S = 00 S = 01 S =	51.7751.7751.751.751.751.51.51.51.51.51.51.51.51.51.51.551.5	82.5 3.04.3 3.86.3 3.86.3 5.05.4 5.34.4 5.34.4 5.34.4 5.34.4	100.4 100.4 100.4 100.4 100.4 100.4 100.4 100.4 100.4 198.4 198.4 198.4 198.4 198.4 198.4 275.0	2.1 8.1 12.1 22.4 29.2 41.7 52.5 64.2 77.8 92.3 113.9 128.7 147.4 161.0 177.9 1205.7 217.5 205.7 217.5 205.7 217.5 235.4 252.7 272.4 288.4 303.9 317.2 329.7 342.9 355.6 363.2 376.7 396.4 416.0 435.7	1.9 3.0 7.4 16.5 23.0 32.6 42.6 52.1 65.1 77.3 96.8 110.6 127.2 139.7 154.6 166.0 179.2 189.6 204.9 219.9 236.5 250.0 262.7 272.8 282.6 292.3 301.7 305.9 314.7 328.2 341.3 354.0	0.03 0.10 0.15 0.27 0.35 0.64 0.78 0.94 0.58 0.71 0.80 0.67 0.74 0.86 0.91 0.77 0.85 0.90 0.95 0.95 0.95 0.95 0.95 0.95 0.9
12 11 11 11 10 10 10 9 9 9 8 8 8 7 7 7 6 5 5	143214321321321321212121	260.00 255.00 245.00 245.00 235.00 235.00 225.00 225.00 225.00 220.00 193.33 186.67 180.00 173.33 166.67 160.00 150.00 140.00 130.00	Diag Diag Diag Diag Diag Diag Diag Diag	L1 3/4x1 3/4x3/16 L1 3/4x1 3/4x3/16 L1 3/4x1 3/4x3/16 L1 3/4x1 3/4x3/16 L1 3/4x1 3/4x3/16 L2x2x1/4 L2x2x1/4 L2x2x1/4 L2x2x1/4 L2 1/2x2 1/2x1/4 L2 1/2x2 1/2x1/4 L2 1/2x2 1/2x1/4 L3x3x3/16 L3x3x3/16 L3x3x1/4 L3x3x1/4 L3 1/2x3 1/2x1/4 L3 1/2x3 1/2x1/4 L3 1/2x3 1/2x1/4	8.44 8.44 8.44 8.65 9.07 11.94 12.52 13.10 13.68 14.27 14.87 15.49 16.12 18.46 19.31 20.21 20.14	$\begin{array}{c} 133.3\\ 133.3\\ 133.3\\ 133.3\\ 133.3\\ 123.8\\ 130.6\\ 137.5\\ 144.5\\ 131.4\\ 138.6\\ 145.9\\ 125.7\\ 131.7\\ 131.7\\ 131.7\\ 131.7\\ 131.7\\ 144.2\\ 150.6\\ 157.1\\ 154.4\\ 162.0\\ 170.2\\ 178.5\\ \end{array}$	7.9 7.9 7.9 7.9 13.9 12.4 11.2 10.2 15.2 14.0 12.6 13.0 12.6 13.0 13.2 14.2 13.2 14.2 13.2 14.2 13.2 14.2 13.2 14.2 13.2 14.2 13.2 14.2 13.2 14.2 13.2 14.2 13.2 14.2 13.2 14.2 13.2 14.2 13.2	10.7 10.6 10.6 10.6 15.2 15.2 15.2 15.2 15.2 15.2 14.7 14.7 15.2	3.7 4.0 4.3 5.2 6.1 6.4 6.6 7.8 11.3 10.1 10.3 9.5 10.0 9.2 9.6 8.9 9.4 10.2 10.6 9.8 10.2 10.6 9.8 10.2 10.6 9.8 10.2 10.6 9.8 10.2 10.5 10.2 10.5 10.2 10.5 10.2 10.2 10.5 10.2 10.5 10.2 10.5 10.2 10.5	3.4 4.0 5.7 5.6 6.2 8.1 10.8 9.8 10.0 9.8 10.0 9.8 10.0 9.0 9.0 9.0 10.4 9.9 9.9	C.47 O.50 O.54 O.66 O.77 O.46 O.76 O.76 O.76 O.76 O.74 O.72 O.81 O.68 O.70 O.71 O.63 O.62 O.72 O.73 O.73 O.74 O.73 O.74 O.73 O.74 O.73 O.74 O.73 O.74 O.73 O.74 O.74 O.74 O.75 O.77 O.83 O.77 O.83 O.77 O.83 O.77 O.83 O.77 O.83 O.77 O.73 O.74 O.74 O.75 O.77 O.83 O.77 O.83 O.77 O.73 O.74 O.74 O.77 O.83 O.77 O.74 O.77 O.77 O.83 O.77 O.74 O.77 O.77 O.77 O.76 O.77 O.77 O.76 O.77 O.76 O.77 O.77 O.76 O.77 O.77 O.76 O.77 O.77 O.76 O.77 O.77 O.77 O.77 O.77 O.76 O.77

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L1 3/4x1 3/4x3/16

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218.7 9.2

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8.29 168.6 11.4 10.82 220.0 6.7

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22.21	161.4	15.2	$15.2 \\ 15.2 \\ 15.2 \\ 30.4 \\ 30.4 \\ 30.4 \\ 55.3 \\ $	7.9	7.7	0.52
23.41	170.5	15.1		8.0	8.1	0.53
24.62	179.7	13.6		8.5	8.3	0.62
25.85	173.5	18.0		8.6	8.7	0.62
27.08	180.7	16.6		9.1	8.9	0.55
16.87	188.1	15.3		11.1	11.1	0.72
20.93	171.6	25.9		13.6	13.6	0.52
21.64	176.4	24.5		13.8	13.8	0.56
22.37	179.4	23.7		14.0	14.0	0.59
23.12	184.3	22.5		14.1	14.1	0.63
5.79	216.0	3.0	10.7	2.7	2,9	0.90
12.92	177.6	12.1	30.4	8.9	8,9	0.74
13.58	165.3	18.0	48.4	9.6	9,4	0.53
14.58	178.1	15.5	48.4	10.1	9,9	0.65

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Section M: SECTION PROPERTIES DATA

Sec	Pan	Метр. Туре	Stoel Grade	Conn. Type	Bolts Bolts	Bolt Size (in)	Bolt End Grade Dist. (in)	Gusset Thick. (in)	kl/r	Comp Cap. (Kips)	Tons Cap. (Kips)	Bolt Cap. (Kips)	Boai. Cap. (Kips)	Block Shear (Kips)
12 12 12	1 1 1	Leg Diag Horiz	A500 gr.CS A529 gr.S0 A529 gr.50	Tensior Bolted Bolted	1 1 1	0.750 0.625 0.625	A325X 0.938 A325X 1.500 A325X 1.500	N/A 0.250 . 0.250	51.7 133,3 216.0	82.5 7. 9 3.0	100.4 17.4 17.4	121.7r 15.2s 15.2s	N/A 14.7 14.7	N/A 10.7 10.7
11 11 11 11 11 11 11	4 3 3 2 2 1 1	Leg Diag Leg Diag Leg Diag Leg Diag	A500 gr.Cs A529 gr.50 A500 gr.Cs A529 gr.50 A500 gr.Cs A529 gr.50 A500 gr.Cs A529 gr.50	Tension Bolted Tension Bolted Tension Bolted Tension Bolted	1 4 1 1 4 1 1 4 1 1 1 1	0.750 0.625 0.750 0.625 0.750 0.625 0.750 0.625 0.750	A325X 1.125 A325X 1.500 A325X 1.125 A325X 1.500 A325X 1.125 A325X 1.500 A325X 1.500 A325X 1.125 A325X 1.500	N/A 0.250 N/A 0.250 N/A 0.250 N/A 0.250	51.7 133.3 51.7 133.3 51.7 133.3 51.7 133.3	82,5 7.9 82.5 7.9 82.5 7.9 82.5 7.9 82.5 7.9	100.4 17.4 100.4 17.4 100.4 17.4 100.4 17.4	121.7T 15.2S 121.7T 15.2S 121.7T 15.2S 121.7T 15.2S	N/A 14.7 N/A 14.7 N/A 14.7 N/A 14.7	N/A 10.6 N/A 10.6 N/A 10.6 N/A 10.6
10 10 10 10 10 10 10	4 3 3 2 2 1 1	Leg Diag Leg Diag Leg Diag Leg Diag	A500 gr.CS A529 gr.50 A500 gr.CS A529 gr.50 A500 gr.CS A529 gr.50 A500 gr.CS A529 gr.50	Tension Bolted Tension Bolted Tension Bolted Bolted	15 15 15 15 15 1 15 1	0.875 0.625 0.875 0.625 0.875 0.625 0.875 0.625 0.875 0.625	A325X 1,313 A325X 1,500 A325X 1,313 A325X 1,500 A325X 1,500 A325X 1,313 A325X 1,500 A325X 1,313 A325X 1,500	N/A 0.250 N/A 0.250 N/A 0.250 N/A 0.250	51.8 123.8 51.8 130.6 51.8 137.5 51.8 144.5	82.5 13.9 82.5 12.4 82.5 11.2 82.5 10.2	100.4 27.3 100.4 27.3 100.4 27.3 100.4 27.3	209.9T 15.2S 209.9T 15.2S 209.9T 15.2S 209.9T 15.2S	N/A 19.5 N/A 19.5 N/A 19.5 N/A 19.5	N/A 15.7 N/A 15.7 N/A 15.7 N/A 15.7
9 9 9 9 9 9 9 9 9 9 9 9 9 9	3 2 2 1 1	Leg Diag Leg Diag Leg Diag	A500 gr.CS A529 gr.50 A500 gr.CS A529 gr.50 A500 gr.CS A529 gr,50	Tension Bolted Tension Bolted Tension Bolted	n 5 1 5 1 5 1 5 1	1.000 0.625 1.000 0.625 1.000 0.625	A325X 1.250 A325X 1.500 A325X 1.250 A325X 1.250 A325X 1.500 A325X 1.250 A325X 1.500	N/A 0.250 N/A 0.250 N/A 0.250	54.2 131.4 54.2 138.6 54.2 145.9	160.1 15.6 160.1 14.0 160.1 12.6	198.4 36.5 198.4 36.5 198.4 36.5	275.3T 15.2S 275.3T 15.2S 275.3T 15.2S	N/A 19.5 N/A 19.5 N/A 19.5	N/A 18,7 N/A 18.7 N/A 18.7
8 8 8 8 8 8	3 3 2 2 1 1	Leg Diag Leg Diag Leg Diag	A500 gr.CS A529 gr.50 A500 gr.CS A529 gr.50 A500 gr.CS A529 gr.50	Tensio Bolted Tensio Bolted Tensio Bolted	n 5 1 n 5 1 n 5 1	$\begin{array}{c} 1.000 \\ 0.625 \\ 1.000 \\ 0.625 \\ 1.000 \\ 0.625 \\ 0.625 \end{array}$	A325X 1.500 A325X 1.500 A325X 1.500 A325X 1.500 A325X 1.500 A325X 1.500 A325X 1.500	N/A 0.250 N/A 0.250 N/A 0.250	43.6 125.7 43.6 131.7 43.6 137.8	239.4 15.6 239.4 14.2 239.4 13.0	275.0 34.6 275.0 34.6 275.0 34.6 34.6	275.3T 15.2S 275.3T 15.2S 275.3T 15.2S	N/A 14.7 N/A 14.7 N/A 14.7	N/A 17.5 N/A 17.5 N/A 17.5
7 7 7 7 7 7	3 3 2 2 1 1	Leg Diag Leg Diag Leg Diag	A500 gr.CS A529 gr.50 A500 gr.CS A529 gr.50 A500 gr.CS A529 gr.50	Tension Bolted Tension Bolted Tension Bolted	n 6 1 n 6 1 n 6 1	1.000 0.625 1.000 0.625 1.000 0.625	A325X 1.500 A325X 1.500 A325X 1.500 A325X 1.500 A325X 1.500 A325X 1.500 A325X 1.500	N/A 0.250 N/A 0.250 N/A 0.250	43.6 144.2 43.6 150.6 43.6 157.1	239.3 15.6 239.3 14.3 239.3 13.2	275.0 45.6 275.0 45.6 275.0 45.6	330.3T 15.2S 330.3T 15.2S 330,3T 15.2S	N/A 19.5 N/A 19.5 N/A 19.5	N/A 21.8 N/A 21.8 N/A 21.9
6 6 6	2 2 1 1	Leg Diag Leg Diag	N500 gr.CS A529 gr.50 A500 gr.CS A529 gr.50	Tension Bolted Tension Bolted	n 6 1 n 6 1	1.000 0.625 1.000 0.625	A325X 1.500 A325X 1.500 A325X 1.500 A325X 1.500 A325X 1.500	N/A 0.250 N/A 0.250	54.6 154.4 54.6 162.0	304.3 16.0 304.3 14.6	378.5 54.8 378.5 54.8	330.3T 15.2S 330.3T 15.2S	N/A 19.5 N/A 19.5	N/A 24.8 N/A 24.8
5 5 5 5	2 2 1 1	Leg Diag Leg Diag	A500 gr.CS A529 gr.50 A500 gr.CS A529 gr.50	Tensio Bolted Tensio Bolted	n 6 1 n 6 1	1.500 0.625 1.500 0.625	A325X 2.250 A325X 1.500 A325X 2.250 A325X 1.500	N/A 0.250 N/A 0.250	54.6 170.2 54.6 178.5	304.2 13.2 304.2 12.0	378.5 54.8 378.5 54.8	765.3T 15.2S 765.3T 15.2S	N/A 19.5 N/A 19.5	N/A 27.9 N/A 27.9
시 4 4 4 4	3 3 2 2 1	Leg Diag Leg Diag Leg	A500 gr.CS A529 gr.50 A500 gr.CS A529 gr.50 A500 gr.CS	Tensio Bolted Tensio Bolted Tensio	n 6 1 n 6 1 n 6	1.500 0.625 1.500 0.625 1.500	A325X 2.250 A325X 1.500 A325X 2.250 A325X 2.250 A325X 1.500 A325X 2.250	N/A 0.250 N/A 0.250 N/A	41.2 161.4 41.2 170.5 41.2	386.3 16.8 386.3 15.1 386.3	437.4 63.9 437.4 63.9 437.4	765.3T 15.2S 765.3T 15.2S 765.3T	N/A 19.5 N/A 19.5 N/A	N/A 31.0 N/A 34.0 N/A

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Revisi	ion: 0			
Site:	I-64 &	US	60~	ΚY
Engine	er: RC	s		

4	1	Diag	A529	gr.50	Bolted	1	0.625	A325X	1.500	0.250	179.7 13.6	63.9	15.25	19.5	34.0
33333333	3 2 2 1 1 1 1	Leg Díag Leg Diag Leg Diag Horiz PlanH1	A500 A529 A500 A529 A500 A529 A529 A529	gr.CS gr.50 gr.CS gr.50 gr.CS gr.50 gr.50 gr.50	Tension Bolted Tension Bolted Tension Bolted Bolted Bolted	6 2 6 2 6 2 6 2 1	1,300 0,625 1,500 0,625 1,500 0,625 0,625 0,625	A325X A325X A325X A325X A325X A325X A325X A325X A325X	2.250 1.500 2.250 1.500 2.250 1.500 1.500 1.500	N/A 0.375 N/A 0.375 N/A 0.375 0.250 0.250	41.8 505.4 173.5 18.0 41.8 505.4 180.7 16.6 41.8 505.4 188.1 15.3 177.6 12.1 224.6 7.6	574.2 79.0 574.2 79.0 574.2 79.0 54.8 54.8	765.3T 30.4S 765.3T 30.4S 765.3T 30.4S 30.4S 30.4S 15.2S	N/A 18.8 N/A 48.8 N/A 48.8 39.0 19.5	N/A 46.2 N/A 46.2 N/A 46.2 36.9 27.9
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2 2 2 2 2 2 2 1 1 1 1 1 1	Leg Diag Horiz SecHl SecDl PlanHl Leg Diag Horiz SecHl SecDl PlanHl	A500 A529 A529 A529 A529 A529 A500 A529 A529 A529 A529 A529	gr.CS gr.50 gr.50 gr.50 gr.50 gr.50 gr.50 gr.50 gr.50 gr.50 gr.50	Tension Bolted Bolted Bolted Bolted Tension Bolted Bolted Bolted Bolted	6 2 1 1 1 6 2 2 1 1 1 1	$\begin{array}{c} 1.500\\ 0.625\\ 0.625\\ 0.625\\ 0.625\\ 1.500\\ 0.625\\ 1.500\\ 0.625\\ 0.625\\ 0.625\\ 0.625\\ 0.625\\ 0.625\\ 0.625\\ 0.625\\ 0.625\\ \end{array}$	A325X A325X A325X A325X A325X A325X A325X A325X A325X A325X A325X A325X A325X	$\begin{array}{c} 2.250\\ 1.500\\ 1.$	N/A 0.375 0.250 0.250 0.250 0.250 N/A 0.375 0.375 0.250 0.250 0.250	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c} \cdot & 574.2 \\ 109.5 \\ 69.1 \\ 34.6 \\ 63.9 \\ 574.2 \\ 109.5 \\ 69.1 \\ 34.6 \\ 34.6 \\ 34.6 \\ 34.6 \\ 63.9 \end{array}$	765.3T 60.7S 15.2S 15.2S 15.2S 15.2S 765.3T 60.7S 60.7S 15.2S 15.2S 15.2S	N/A 58.5 58.5 14.7 14.7 19.5 N/A 58.5 58.5 14.7 14.7 19.5	N/A 55.3 48.4 17.5 34.0 N/A 55.3 48.4 17.5 17.5 34.0
	2 2 2 2 2 2 1 1 1 1 1	Leg Diag Horiz SecH1 SecD1 PlanH1 Leg Diag Horiz SecH1 SecD1 SecD1	A500 A529 A529 A529 A529 A529 A529 A529 A529	gr.CS gr.50 gr.50 gr.50 gr.50 gr.50 gr.50 gr.50 gr.50 gr.50	Tension Bolted Bolted Bolted Tension Bolted Bolted Bolted Bolted Bolted	6 2 1 1 6 2 2 1 1 1 6 2 2 1 1	$\begin{array}{c} 1.500\\ 0.625\\ 0.625\\ 0.625\\ 0.625\\ 1.500\\ 0.625\\ 1.500\\ 0.625\\ 0.625\\ 0.625\\ 0.625\\ 0.625\\ 0.625\\ 0.625\end{array}$	A325X A325X A325X A325X A325X A325X A325X A325X A325X A325X A325X A325X	2.250 1.500 1.500 1.500 1.500 1.500 1.500 1.500 1.500 1.500	N/A 0.375 0.250 d.250 d.250 N/A 0.375 0.375 0.250 0.250	31.3 534.4 179.4 23.7 164.6 28.2 158.5 13.0 212.8 7.2 198.9 12.4 31.3 534.4 184.3 22.5 175.6 24.8 168.6 11.4 220.0 6.7	574.2 109.5 109.5 45.6 69.1 574.2 109.5 109.5 45.6 45.6 45.6	765.3T 60.7S 60.7S 15.2S 30.4S 765.3T 60.7S 60.7S 15.2S 15.2S	N/A 58.5 19.5 19.5 19.5 N/A 58.5 58.5 19.5 19.5	N/A 55.3 55.3 23.2 23.2 23.2 N/A 55.3 23.2 23.2 23.2 23.2

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TOWErSoft ENGINEERING SOFTWARE

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TSTower - v 5.6.1 Tower Analysis Program (c) 1997-2016 TowerSoft www.TSTower.com



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Revision: 0 Site: I-64 & US 60- KY Engineer: RCS

File: W:\Jobs\2018\228456\228456.out Contract: 228456 Project: 265 FT RT TOWER Date and Time: 11/30/2018 10:44:02 AM

Section N: LEG R Load Combination Wind Direction	EACTION	DATA Max Env Maximum	elope	
Force-Y Download (Kips)	Force-Y Uplift (Kips)	Shear-X (Kips)	Shear-Z (Kips)	Max Shear (Kips)
452.08	366.36			50.60







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File: W:\Jobs\2018\228456\228456.out Contract: 228456 Project: 265 FT RT TOWER Date and Time: 11/30/2018 10:44:02 AM

Revision: 0 Site: I-64 & US 60- KY Engineer: RCS

Section Load Com Wind Dire	O: TOWER bination action	FOUNDATI	ON DATA Max Enve Maximum	elope			
Axıal Load (Kips)	Shear Load X (Kips)	Shear Load Z (Kips)	Total Shear (Kipş)	Moment-X (Kipsft)	Moment-Y (Kipsft)	Moment-Z (Kipsft)	Total Moment (Kipsft)
81.01 81.01	41.94 41.94	68.63 68.63	80.43 80.43	10730.97 10730.97	-21.77 -21.77	-6762.69 -6762.69	12684.15 12684.15

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File no : 2284 By: RCS Chk:	56 D	Customer: escription:	HORVATH CO 265' RT TOW HV 1326 I-64	DMMUNICA ER & US 60, K	<u>ATONS</u>	Date Page 1 Ver 11/16/	11/30/18 ′01
FACTORED REACTIONS / LE	G					1	
COMPRESSION = UPLIFT = SHEAR =	452.11 k 366.34 k 50.28 k	1	$\begin{pmatrix} 6 \\ f'_c = \\ f_v = \end{pmatrix}$	- 1.5 " c 4,500 ps 60,000 ps	lia A.B. ii	oer leg	
SOIL PARAMETERS A) Depth neglected for skin frid B) Average ultimate skin sheat 6.5 ft to 13.5 ft depth = 330 psf, and 1 23.5 ft to 28.5 ft depth = 1650 psf, and C) Average ultimate skin sheat 6.5 ft to 13.5 ft depth = 330 psf, and 1 23.5 ft to 28.5 ft depth = 1650 psf, and D) Ultimate net end bearing at E) Groundwater table below for	ction = Top 6.5 r for uplift: 3.5 ft to 18.5 ft deg d 28.5 ft to 30.0 ft of r for download: 3.5 ft to 18.5 ft deg d 28.5 ft to 30.0 ft of 30.0 ft = 34.00 pundation depth	ft depth = 610 psi depth = 2040 depth = 610 psi depth = 2040 ksf. I.	f, and 18.5 ft to 23.) psf. f, and 18.5 ft to 23.) psf.	5 ft depth = 1 5 ft depth = 1	870 psf, a 870 psf, a	nd	
USE	5'- 0" DIAME H 0'- 6" CAP	TER AND	30'- 0" DEEP I ERROR - Min	DRILLED P	IER Diamet	er = 9,999	9.0 ft
Perimeter =	15.71 ft			Area =	19.63	ft ²	
Total Download = =	452.11 +[1. 506.0 k	2 x 0.15 -	0.75 x 0.120] x	30 x 19.63	=		
Tension Capacity = 19.6 15.71 x (0.330 x 7.0 + 0.610 x 5.0 + 1	3 x (30.5 x 0.15 .870 x 5.0 + 1.650 80.8	5 + 0.0 x 0 x 5.0 + 2.04 +	.09) x 0.90 + 0 x 1.5) x 0.75 = 306.6 387.4	= >=	387.4 366.34	k OK	_
Comp. Capacity = 19.6 15.71 x (0.330 x 7.0 + 0.610 x 5.0 + 1	3 x 34.00 x 0.7 .870 x 5.0 + 1.650 500.6	5 + x 5.0 + 2.04 +	0 x 1.5) x 0.75 = 306.6 807.2	= >=	807.2 506.0	k OK	-
May M -	619 39 ft-k	113 031110		66 37 k			
REINFORCEMENT - SEE AT	TACHED SHAL	FT PROG	RAM	00.07 K			
USE CONCRETE VOLUME = 19.6	20 # 4 {51.0 3 x 30.5 / 27 =	+ - 12) in Cage D	4 9 BA TIES AT 6" IN 2 " IN REST OF iameter} 22.2 cu	NRS VERTI I TOP 7.0 F PIER yds / pier	CAL WI	ГН АТ	
FILE NO 228456 ENGR RCS DESCR HOEVATH COMMUNICATO	** DETI ** AI ****** Ver. 2.1	**** ERMINE MAXI ND MAXIMUM A DRILI **** Fri No 3 NT	MIGGINS METHOD MUM LATERAL SO MOMENT IN THE S FC PIER FOUNDAT SO 30 09:33:45 2	LL PRESSURE SHAFT FOR FION 2018 ******			

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FC	DRMULAS USED		1 2
6*P*(1+N) S1 = D*L*(1-N)*(1-N)	$L = (M\Lambda/P) + R + E$		R V
$S2 = \frac{(N+3)*(N+3)*S1}{8*(N+1)*(N+2)}$	NL = (MA/P) + R + G		\ \ / G / \ V
1- (N*N) K *	N - NL / L		
$Y = \frac{I \cdot (1 - K) - NI}{2}$	SPI = SI / F.		V < 52
M = P*(NL+5/8*Y)	SP2 = S2 / (Y+G)		
V = Sl*D*K*L / 2. or P whichever is grea	iter	V Г	< D 51
Diameter of Pier = D = Projection Above Grade = R = Embedment Depth = E = Depth of Soil Ignored = G =	5.00 ft .50 ft 30.00 ft 6.50 ft	Equivalent Length of Pier Length tor NO Soil Resistance Applied Moment at Top of Pier Shear at Top of Fier	= L = JU.10 tt = NL = 1.00 tt = MA = .00 tt-k = P = 50.28 klps
4	MAXIMUM LATERAL SOIL PRESSURES	MAXIMUM VALUES IN SHAFT	
K = .2125 S.I = Y = 8.51 ft S2 =	= 4.097 ksf SP1 = 137 psf/1 = 1.949 ksf SP2 = 130 psf/1	ft M = 619.39 ft-k ft V = 66.37 kips	
	**************************************	**************************************	228456 HORVATH COMMUNICATOR
BROMS> PHT = DENSITY = Max. M = Max. V = Ls =	SAND 30.0 degrees 100.00 pcf 22.07 ft 5/6.05 ft-k 1/5.15 kips 14.156 ft	CLAY C == 1.00 ksl E == 18.76 ft. Max. M == 458.42 lt-k. Max. V == 101.56 kips	
EIA REV. E NORMAL SOIL	> E = 13	.01 ft	
ETA REV. F NORMAL SOIL	> E = 16	.44 ft	
•618DNAME: RCS	FILE NO. 228456 SHAFT REINFORCING PROGRAM N	PAGE NO. 1 VER. 91.7	
DESIGNED BY: RCS ENG. FILE NO.: 22845 DATE: 11/30/18	56		
CUSTOMER: HORVATH CON DESCRIPTION: 265' RT	MUNICATONS TOWERI-64 & US 60, KY		
	INPUT DATA		
C - 452.11 Kips	Vc = 66.37 Kips	Mc = 619.39 Ft-K	
T = 366.34 Kips	Vt = 66.37 Kips	Mt = 619.39 Ft-K	
Fy = 60.00 Ksi	Fyt = 60.00 Ksi	L.F. = 1.00	
H = 60.00 Tn.	Ds = 48.00 In.	F'c = 4.50 Ksi	

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0 = 1.00 Irs = 1

· · · SHAFT CROSS SECTION IS ROUND · · ·

SUMMARY OF ANALYSIS

Minimum	area	of	steel	req'd	• =	16,93	sq.in.	(Rhomin	12	0.0060)
Maximum	steel	ar	ea li	mit =		226.20	sg.in.	(Rhomax	=	0.0800)

CIRCULAR TIE DATA

Vu <.85*Vc/2, shear reinforcement is not required.

Use maximum tie spacing specified in A.C.I. 318 Section 7.10.5 for compression reinforcement.

DEVELOPMENT LENGTH MODIFIERS FOR TENSION AND COMPRESSION BAR DEVELOPMENT

DLMT = MODIFIER FOR TENSION DEVELOPMENT = 1.000 DLMC = MODIFIER FOR COMPRESSION DEVELOPMENT = .313 REQUIRED Ld = MODIFIER * BASIC Ld * ACI 318 MODIFIERS (12 in. min.) DLMT = MODIFIER FOR TENSION DEVELOPMENT = 1.000 DLMC = MODIFIER FOR COMPRESSION DEVELOPMENT = .339 REQUIRED Ld = MODIFIER * BASIC Ld * ACI 318 MODIFIERS (12 in. min.) EXHIBIT

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

Issued Date: 10/02/2018

Shauna Adair Horvath Towers V 312 W Colfax Ave. South Bend, IN 46601

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

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

Structure:	Antenna Tower HV1326 I-64 & US 60
Location:	Mt. Sterling, KY
Latitude:	38-05-25.25N NAD 83
Longitude:	83-53-55.87W
Heights:	1000 feet site elevation (SE)
-	230 feet above ground level (AGL)
	1230 feet above mean sea level (AMSL)

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

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

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

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

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

This determination expires on 04/02/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.

(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

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

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

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

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

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

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

If we can be of further assistance, please contact our office at (718) 553-2611, or angelique.eersteling@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-ASO-18307-OE.

Signature Control No: 382657113-386490936 Angelique Eersteling Technician (DNE)

Attachment(s) Frequency Data Map(s)

cc: FCC

Frequency Data for ASN 2018-ASO-18307-OE

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



EXHIBIT

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November 15, 2018

Kentucky Airport Zoning Commission 200 Mero Street Frankfort, KY 40601

RE: Application for Permit to Construct or Alter a Structure HV1326 I-64 & US 60

To Whom It May Concern:

Enclosed is the Application for Permit to Construct or Alter a Structure and all required documents. If you should have any questions, please contact Shauna Adair at 574.237.0464 or <u>sadair@horvathcommunications.com</u>.

Sincerely,

Shauna Adair Regulatory & Compliance Manager



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 Airport Zoning Commission, 421 Buttermilk Pike, Covington, KY 41017. For questions, telephone 859-341-2700.
- 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. 05/2017 Page 2 of 2

KENTUCKY	AIRPORT	ZONING	COMMISSION	
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APPLICANT (name) PHONE FAX KY AERONAUTICAL STUDY # Horvath Communications 574-286-5432 574-217-4357 2018-ASO-18307-OE ADDRESS (street) CITY STATE ZIP APPLICANT'S REPRESENTATIVE (name) FAX 574-217-4357 STATE ZIP Shauna Adair 574-237-0464 574-217-4357 STATE ZIP ADDRESS (street) CITY South Bend IN 46601 APPLICATION FOR New Construction Alteration Existing WORK SCHEDULE Start 5/12/1%Ind 6/30/19 Type Creat Bartistic Start 5/12/1%Ind 6/30/19 Start 5/12/1%Ind 6/30/19 Type Creat Building MARKING/PAINTING/LIGHTING PREFERED Start 5/12/1%Ind 6/30/19 Antenna Tower Red Lights & Paint White- medium intensity White- high intensity Landfill Other Dual-red & medium intensity white Dual-red & medium intensity Dual-red & high intensity Start Starts So 3 55.87 OTIUM XINASO NAD83 NAD27 38 5 / 5 .25 "OTIA STRUCKY PUBLIC USE OR MILITARY AIRPORT NEXAST KENTUCKY NEAREST KENTUCKY PUBL	APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE							
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COMMISSION ACTION Administrator, KAZC Approved SIGNATURE Disapproved DATE			Chairperson	, KAZC				
Approved SIGNATURE DATE	COMMISSION ACTION		Administrat	or, KAZC				
	Approved	SIGNATURE			DATE			
Disupproved	Disapproved							



August 13, 2018

POD Project #: 18-26636

HORVATH COMMUNICATIONS

1A Letter

Site Name:	I-64 & US 60
Site Number:	HV1326
Site Address:	Owingsville Road
	Mt Sterling, KY 40353
County:	Montgomery County
USGS Quad Map:	Mount Sterling

Site Coordinates:

NAD 83 (2011)

Latitude:	38°	05'	25.25"
Longitude:	83°	53'	55.87"

Site Elevation (NAVD88): 1000'± AMSL

The horizontal coordinates are per the North American Datum of 1983 (2011) Kentucky State Plane Single Zone. Coordinates are shown as degrees, minutes and seconds which were derived from KDOT VRS RTK Network.

The vertical elevations are per the North American Vertical Datum of 1988, which were derived from KDOT VRS RTK Network.

I hereby certify that the horizontal and vertical locations are accurate to within 1A reporting requirements ($20'\pm$ horizontally and $3'\pm$ feet vertically). The type of GPS survey utilized was network adjusted real time kinematic (KDOT VRS RTK Network) with the orthometric height computed using GEOID12A.

The above-mentioned coordinates were established using "Spectra Precision Epoch 50 receivers" and are tied to the National Geodetic Reference System established by the National Geodetic Survey.

Consultant

Mark E. Patterson, PLS Power of Design Group, LLC 11490 Bluegrass Parkway Louisville, KY 40299



11490 Bluegrass Parkway | Louisville, Kentucky 40299 | 502.437.5252 POWER OF DESIGN GROUP, LLC




LEGAL DESCRIPTIONS

THE FOLLOWING IS A DESCRIPTION OF A PROPOSED LEASE AREA TO BE LEASED FROM THE PROPERTY CONVEYED TO WILLIAM MICHAEL COLLIVER AND SHERRIE ELLEN COLLIVER AS DESCRIBED IN DEED BOOK 266, PAGE 772, PARCEL ID: 030-00-00-029.01 / 2809, WHICH IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEARING DATUM USED HEREIN IS BASED UPON KENTUCKY STATE PLANE COORDINATE SYSTEM, SINGLE ZONE, NAD 83, FROM A REAL TIME KINEMATIC GLOBAL POSITIONING SYSTEM OBSERVATION USING THE KENTUCKY TRANSPORTATION CABINET REAL TIME GPS NETWORK COMPLETED ON AUGUST 9, 2018.

COMMENCING AT A FOUND 1/2" REBAR IN THE NORTHEASTERN MOST BOUNDARY CORNER OF THE PARCEL CONVEYED TO WILLIAM

PROPOSED 30' ACCESS & UTILITY EASEMENT

PROPOSED LEASE AREA

THE FOLLOWING IS A DESCRIPTION OF A PROPOSED 30' ACCESS & UTILITY EASEMENT TO BE GRANTED FROM THE PROPERTY CONVEYED TO WILLIAM MICHAEL COLLIVER AND SHERRIE ELLEN COLLIVER AS DESCRIBED IN DEED BOOK 266, PAGE 772, PARCEL ID: 030-00-00-201 / 2809, WHICH IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEARING DATUM USED HEREIN IS BASED UPON KENTUCKY STATE PLANE COORDINATE SYSTEM, SINGLE ZONE, NAD 83, FROM A REAL TIME KINEMATIC GLOBAL POSTIONING SYSTEM OBSERVATION USING THE KENTUCKY TRANSPORTATION CABINET REAL TIME GPS NETWORK COMPLETED ON AUGUST 9, 2018.

COMMENCING AT A FOUND 1/2" REBAR IN THE NORTHEASTERN MOST BOUNDARY CORNER OF THE PARCEL CONVEYED TO WILLIAM

PARENT PARCEL LEGAL DESCRIPTION DEED BOOK 266, PAGE 772 (NOT FIELD SURVEYED)

BEING ALL OF TRACT NO. 4 AS MORE PARTICULARLY SHOWN AND DESCRIBED ON THE RECORD PLAT OF LONGWOOD FARM, MONTGOMERY COUNTY, KATUCKY, WILCH PLAT IS OF RECORD IN THE RECORD PLAT OF 49A, MONTGOMERY COUNTY COURT CLERK'S OFFICE, TO WHICH PLAT IS OF RECORD IN FLAT CABINET A, SLIDE 4PARTICULAR DESCRIPTION OF THE PROPERTY HEREBY CONVEYED.

POWER OF DESIG 11490 BLUEGRASS PARKWAY LOUISVILLE, KY 40299 502-437-5252 ORVATH 312 WEST COLFAX AVE SOUTH BEND, IN 46601 574.237.0464 SURVEY REV. DATE DESCRIPTION A 8.13.18 PRELIMINARY ISSUE SITE INFORMATION I-64 & US 60 OWINGSVILLE ROAD MT STERLING, KY 40353 MONTGOMERY COUNTY TAX PARCEL NUMBER: 030-00-00-029.01 / 2809 PROPERTY OWNER WILLIAM MICHAEL COLLIVER AND SHERRIE ELLEN COLLIVER 1300 COUNTRY MEADOWS MT STERLING, KY 40353 SOURCE OF TITLE: DEED BOOK 266, PAGE 772 SITE NUMBER HV1326 VERIZON WIRELESS SITE NAME IV1-64 AND US 60 POD NUMBER 18-2663 I, MARK E. PATTERSON, HEREBY CERTIFY THAT I AM A DRAWN BY TMD LICENSED PROFESSIONAL LAND SURVEYOR LICENSED IN CHECKED BY MEP COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH SURVEY DATE: OF KENTUCKY. I FURTHER CERTIFY THAT THIS PLAT AND 8.09.18 PLAT DATE: 8.13.18 THE SURVEY ON THE GROUND WERE PERFORMED BY PERSONS UNDER MY DIRECT SUPERVISION, AND THAT THE SHEET TITLE: SITE SURVEY WITNESSED BY MONUMENTS SHOWN HEREON ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. THE THIS DOES NOT REPRESENT A "URBAN" SURVEY, AND THE PLAT ON WHICH IT IS BASED, MEETS ALL SPECIFICATIONS AS STATED IN KAR 201 18:150. BOUNDARY SURVEY OF THE PARENT PARCEL SHEET NUMBER: (O pages) B-1.1 DATE

LAND SURVEYOR'S CERTIFICATE

MARK PATTERSON, PLS #3136

DIRECTIONAL AND LINEAR MEASUREMENTS BEING

EXHIBIT

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GEOTECHNICAL INVESTIGATION REPORT

November 27, 2018

Prepared For:

TRILEAF



I-64 & US 60 HV1326 Proposed 230-Foot Self-Supporting Tower Owingsville Road, Mt Sterling (Montgomery County), Kentucky 40353 Latitude N 38° 05' 25.3" Longitude W 83° 53' 55.9"

> Delta Oaks Group Project GEO18-03532-08 **Revision** 0

Performed By:

Reviewed By:

Erin Ben

Joseph V. Borrelli, Jr., P.E.



Erin Benson, E.I.



INTRODUCTION

This geotechnical investigation report has been completed for the proposed 230-foot self-supporting tower located at Owingsville Road in Mt Sterling (Montgomery County), Kentucky. The purpose of this investigation was to provide engineering recommendations and subsurface condition data at the proposed tower location. A geotechnical engineering interpretation of the collected information was completed and utilized to suggest design parameters regarding the adequacy of the structure's proposed foundation capacity under various loading conditions. This report provides the scope of the geotechnical investigation; geologic material identification; results of the geotechnical laboratory testing; and design parameter recommendations for use in the design of the telecommunication facility's foundation and site development.

SITE CONDITION SUMMARY

The proposed tower and compound are located in a grassy lot exhibiting a generally flat topography across the tower compound and subject property.

REFERENCES

- Preliminary Survey, prepared by Power of Design, dated August 13, 2018
- TIA Standard (TIA-222-G), dated August 2005

SUBSURFACE FIELD INVESTIGATION SUMMARY

The subsurface field investigation was conducted through the advancement of five mechanical soil test borings to termination depths ranging from 10.5 to 31.0 feet bgs. Samples were obtained at selected intervals in accordance with ASTM D 1586. The sampling was conducted at the staked centerline of the proposed tower. Soil samples were transported to our laboratory and classified by a geotechnical engineer in accordance with ASTM D 2487. A detailed breakdown of the material encountered in our subsurface field investigation can be found in the boring logs presented in the Appendix of this report.

A boring plan portraying the spatial location of the boring in relation to the proposed tower, tower compound and immediate surrounding area can be found in the Appendix.



SUBSURFACE CONDITION SUMMARY

The following provides a general overview of the site's subsurface conditions based on the data obtained during our field investigation.

FILL

Fill material was encountered during the subsurface field investigation from the existing ground surface to a depth ranging from 4.0 to 10.5 feet bgs. The fill material included sandy clay, silty sand, clayey sand, and clayey gravel.

SOIL

The residual soil encountered in the subsurface field investigation began at a depth ranging from 4.0 to 10.5 feet bgs in the boring and consisted of sandy clay. The materials ranged from a firm to hard cohesion.

Auger advancement refusal was encountered during the subsurface field investigation at a depth of 31.0 feet bgs in boring B-5. Auger refusal was not encountered in soil borings B-1 through B-4.

ROCK

Rock was not encountered during the subsurface field investigation.

SUBSURFACE WATER

At the time of drilling, subsurface water was not encountered during the subsurface investigation. However, subsurface water elevations can fluctuate throughout the year due to variations in climate, hydraulic parameters, nearby construction activity and other factors.

FROST PENETRATION

The frost penetration depth for Montgomery County, Kentucky is 30 inches (2.5 feet).

CORROSIVITY

Soil resistivity testing was performed in accordance with ASTM G57. Test results can be found in the Appendix of this report.



FOUNDATION DESIGN SUMMARY

In consideration of the provided tower parameters and the determined soil characteristics, Delta Oaks Group recommends utilizing a drilled shaft foundation for the proposed structure due to the presence of fill material. The strength parameters presented in the following sections can be utilized for design of the foundation.

GENERAL SUBSURFACE STRENGTH PARAMETERS

Boring	Depth (bgs)	USCS	Moist/Buoyant Unit Weight (pct)	Phi Angle (degrees)	Cohesion (psf)
B-1	0.0 - 10.5	FILL	105	-	-

Boring	Depih (bgs)	USCS	Moist/Buoyant Unit Weight (pcf)	Phi Angle (degrees)	Cohesion (pst)
	0.0 - 4.0	FILL	105	-	-
B-2	4.0 - 6.5	CL	110	0	1250
	6.5 - 10.5	CL	105	0	750

Boring	Depth (bgs)	USCS	Moist/Buoyant Unit Weight (pct)	Phi Angle (degrees)	Cohesion (pst)
В-З	0.0 - 10.5	FILL	105	-	-

Boring	Depth (bgs)	USCS	Moist/Buoyant Unit Weight (pcf)	Phi Angle (degrees)	Cohesion (psf)
B-4	0.0 – 10.5	FILL	105	-	-



Boring	Depth (bgs)	USCS	Moist/Buoyant Unit Weight (pcf)	Phi Angle (degrees)	Cohesion (psf)
	0.0 - 6.5	FILL	105	-	-
	6.5 – 13.5	CL	105	0	600
0.5	13.5 - 18.5	CL	105	0	1000
R-2	18.5 - 23.5	CL	120	0	3500
	23.5 - 28.5	CL	120	0	3000
	28.5 - 31.0	CL	130	0	4000

 The unit weight provided assumes overburden soil was compacted to a minimum of 95% of the maximum dry density as obtained by the standard Proctor method (ASTM D 698) and maintained a moisture content within 3 percent of optimum

The values provided for phi angle and cohesion should be considered ultimate.



Net Ultimate **Ultimate Skin Friction** -**Ultimate Skin Friction** -Boring Depth (bgs) **Bearing Capacity** Compression (psf) Uplift (psf) (psf) 0.0 - 6.5---6.5 - 13.5 6,070 330 330 13.5 - 18.524,080 610 610 B-5 26,760 1,870 18.5 - 23.51,870 23.5 - 28.532,270 1,650 1,650 28.5-31.0 34,810 2,045 2,045

<u>SUBSURFACE STRENGTH PARAMETERS –</u> DRILLED SHAFT TOWER AND SUPPORT STRUCTURE FOUNDATIONS

- The top 6.5 feet of soil should be ignored due to the frost penetration, the potential soil disturbance during construction, and the presence of fill material.
- The bearing capacity can be increased by 1/3 for transient loading.
- The values presented assume the concrete is cast-in-place against earth walls and any casing utilized during construction of the foundation was removed.
- Delta Oaks Group recommends an appropriate factor of safety be utilized for the design of the foundation.



CONSTRUCTION

SITE DEVELOPMENT

The proposed access road and tower compound should be evaluated by a Geotechnical Engineer, or their representative, after the removal or "cutting" of the areas to design elevation but prior to the placement of any structural fill material to verify the presence of unsuitable or weak material. Unsuitable or weak materials should be undercut to a suitable base material as determined by a Geotechnical Engineer, or their representative. Backfill of any undercut area(s) should be conducted in accordance with the recommendations provided in the STRUCTURAL FILL PLACEMENT section of this report.

Excavations should be sloped or shored in accordance and compliance with OSHA 29 CFR Part 1926, Excavation Trench Safety Standards as well as any additional local, state and federal regulations.

STRUCTURAL FILL PLACEMENT

Structural fill materials should be verified, prior to utilization, to have a minimum unit weight of 110 pcf (pounds per cubic foot) when compacted to a minimum of 95% of its maximum dry density and within plus or minus 3 percentage points of optimum moisture. Materials utilized should not contain more than 5 percent by weight of organic matter, waste, debris or any otherwise deleterious materials. The Liquid Limit should be no greater than 40 with a Plasticity Index no greater than 20. Structural fill material should contain a maximum particle size of 4 inches with 20 percent or less of the material having a particle size between 2 and 4 inches. Backfill should be placed in thin horizontal lifts not to exceed 8 inches (loose) in large grading areas and 4 inches (loose) where small handheld or walk-behind compaction equipment will be utilized. The potential suitability of on-site materials to be utilized as fill should be evaluated by a Geotechnical Engineer, or their representative just prior to construction.

During construction structural fill placement should be monitored and tested. This should include at minimum, visual observation as well as a sufficient amount of in-place field density tests by a Geotechnical Engineer, or their representative. Materials should be compacted to a minimum of 95% of the maximum dry density as determined by ASTM D 698 (standard Proctor method). Moisture contents should be maintained to within plus or minus 3 percentage points of the optimum moisture content.

DRILLED SHAFT FOUNDATIONS

Drilled shaft foundations (caissons) are typically installed utilizing an earth auger to reach the design depth of the foundation. Specialized roller bits or core bits can be utilized to penetrate boulders or rock. The equipment utilized should have cutting teeth to result in an excavation with little or no soil smeared or caked on the excavation sides with spiral-like corrugated walls. The drilled shaft design diameter should be maintained throughout the excavation with a plumbness tolerance of 2 percent of the length and an eccentricity tolerance of 3 inches from plan location. A removable steel casing can be installed in the shaft to prevent caving of the excavation sides due to soil relaxation. Upon completion of the drilling and casing placement, loose soils and subsurface water greater than 3-inches in depth should be removed from the bottom of the excavation for the "dry" installation method. The drilled shaft installation should be evaluated by a Geotechnical Engineer, or their representative, to verify suitable end bearing conditions, design diameter and bottom cleanliness. The

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evaluation should be conducted immediately prior to as well as during concrete placement operations.

The drilled shaft should be concreted as soon as reasonably practical after excavation to reduce the deterioration of the supporting soils to prevent potential caving and water intrusion. A concrete mix design with a slump of 6 to 8 inches employed in conjunction with the design concrete compressive strength should be utilized for placement. Super plasticizer may be required to obtain the recommended slump range. During placement, the concrete may fall freely through the open area in the reinforcing steel cage provided it does not strike the reinforcing steel and/or the casing prior to reaching the bottom of the excavation. The removable steel casing should be extracted as concrete is placed. During steel casing removal a head of concrete should be maintained above the bottom of the casing to prevent soil and water intrusion into the concrete below the bottom of the casing.

If subsurface water is anticipated and/or weak soil layers are encountered drilled shafts are typically installed utilizing the "wet" method by excavating beneath a drilling mud slurry. The drilling mud slurry is added to the drilled shaft excavation after groundwater has been encountered and/or the sides of the excavation are observed to be caving or sloughing. Additional inspection by a Geotechnical Engineer, or their representative, during the "wet" method should consist of verifying maintenance of sufficient slurry head, monitoring the specific gravity, pH and sand content of the drilling slurry, and monitoring any changes in the depth of the excavation between initial approval and just prior to concreting.

Concrete placement utilizing the "wet" method is conducted through a tremie pipe at the bottom of the excavation with the drilling mud slury level maintained at a minimum of 5 feet or one shaft diameter, whichever is greater, above the ground water elevation. The bottom of the tremie should be set one tremie pipe diameter above the excavation. A closure flap at the bottom of the tremie or a sliding plug introduced into the tremie before the concrete is recommended to reduce the potential contamination of the concrete by the drilling mud slury. The bottom of the tremie must be maintained in the concrete during placement. Additional concrete should be placed through the tremie causing the slury to overflow from the excavation in order to reduce the potential for the development of "slury pockets" remaining in the drilled shaft.



QUALIFICATIONS

The design parameters and conclusions provided in this report have been determined in accordance with generally accepted geotechnical engineering practices and are considered applicable to a rational degree of engineering certainty based on the data available at the time of report preparation and our practice in this geographic region. All recommendations and supporting calculations were prepared based on the data available at the time of report preparation and knowledge of typical geotechnical parameters in the applicable geographic region.

The subsurface conditions used in the determination of the design recommendations contained in this report are based on interpretation of subsurface data obtained at specific boring locations. Irrespective of the thoroughness of the subsurface investigation, the potential exists that conditions between borings will differ from those at the specific boring locations, that conditions are not as anticipated during the original analysis, or that the construction process has altered the soil conditions. That potential is significantly increased in locations where existing fill materials are encountered. Additionally, the nature and extent of these variations may not be evident until the commencement of construction. Therefore, a geotechnical engineer, or their representative, should observe construction practices to confirm that the site conditions do not differ from those conditions anticipated in design. If such variations are encountered, Delta Oaks Group should be contacted immediately in order to provide revisions and/or additional site exploration as necessary

Samples obtained during our subsurface field investigation will be retained by Delta Oaks Group for a period of 30 days unless otherwise instructed by Trileaf. No warranty, expressed or implied, is presented.

Delta Oaks Group appreciates the opportunity to be of service for this Geotechnical Investigation Report. Please do not hesitate to contact Delta Oaks Group with any questions or should you require additional service on this project.



APPENDIX

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Field Resitivity Data Sheet ASTM G57-06

DOG Project #:	GEO18-03532-08	Tested By:	JSS	Date:	11/12/2018
Site Name:	I-64 & US 60	Checked By:	JVB	Date:	11/12/2018
Site ID:	HV1326	Gnd Elevation:	1002 ft		
Location:	Mt Sterling, KY				

Direction	Spacing (feet)	Spacing (cm)	Resistance (ohms)	Resistivity (ohm-cm)
	10	3050	1.4	26829
NE-SW	15	4575	1.2	34495
	20	6100	1.1	42160
	10	3050	1.85	35453
E-W	15	4575	1.2	34495
	20	6100	1.1	42160
			Average	35932



PROJECT NAME I-64 & US 60 (HV1326)

CLIENT TRILEAF

Boring No.: B-1

PAGE 1 OF 1

PROJECT NUMBER GEO18-03532-08

PROJECT LOCATION Owingsville Road, Mt Sterling (Montgomery County), Kentucky

DATE DRILLED : 11/20/2018 GROUND WATER LEVELS: DRILLING METHOD : Hollow Stem Auger ∇ AT TIME OF DRILLING : --- Not Encountered **GROUND ELEVATION :** Y AT END OF DRILLING : --- Not Encountered V BORING DEPTH (ft): 10.5 AFTER DRILLING : --- Not Encountered Pocket Penetrometer (tsf) MATERIAL CLASSIFICATION SAMPLE TYPE BLOWS 2nd 1st BLOWS 3rd N VALUE DEPTH (ft) BLOWS 1 ▲ SPT N VALUE ▲ MATERIAL DESCRIPTION 0 10 20 30 40 50 60 70 80 90 4 6 8 14 FILL: black, brown, green, SANDY CLAY, with gravel, moist 28 11 15 26 12 2 6 6 5 5 3 4 7 -- light gray, SILTY SAND, with trace fine gravel 10 2 50/5" 100 Bottom of borehole at 10.5 feet. 15 20 25 30 35 40 45 50



PROJECT NAME I-64 & US 60 (HV1326)

CLIENT TRILEAF

Boring No.: B-2

PAGE 1 OF 1

PROJECT NUMBER GEO18-03532-08

PROJECT LOCATION Owingsville Road, Mt Sterling (Montgomery County), Kentucky

DRILLING METHOD: Hollow Stem Auger GROUND ELEVATION: TIME OF DRILLING: Not Encountered ATEN OF D	DAT	DATE DRILLED : 11/20/2018			OUNDW	ATER	LEV	ELS:											+
GROUND LEEVATION : Y A TEND OF DRILLING : Not Encountered BORING DEPTH (ft) : 10.5 AFTER DRILLING : Not Encountered Line brown, solution of borehole at 10.5 feet. Bottom of borehole at 10.5 feet. Bottom of borehole at 10.5 feet. Bottom of borehole at 10.5 feet. Bottom of borehole at 10.5 feet. Bottom of borehole at 10.5 feet. Bottom of borehole at 10.5 feet. Bottom of borehole at 10.5 feet. Bottom of borehole at 10.5 feet.	DRI	LING METHOD : Hollow Stem Auger		$\overline{\Delta}$	AT TI	ME OF	DRI	LLING	G: -	Not	Enc	count	ered						
BORNA DEPTH (ft): 10.5 AFTER DRILLING: - NOTE CONTINUE: - NOTE	GRO	DUND ELEVATION :		Ţ	ATE	ND OF	DRIL	LING	:	- Not	Not Encountered								
Haterual Description We find the properties of the properise of the properties of the properties of the proper	BOF	RING DEPTH (ft): 10.5		Ā	AFTE	R DRI		G: -	No	t Enco	ounte	ered							
FILL: black, brown, green, SANDY CLAY, with gravel, moist 3 8 5 13 5 Stiff, olive brown, SANDY CLAY, with trace fine gravel, moist CL 4 5 6 11 10 2 3 4 7 11 11 11 11 10 3 4 4 8 11 <td>o DEPTH (ft)</td> <td>MATERIAL DESCRIPTION</td> <td>SAMPLE TYPE</td> <td></td> <td>MATERIAL CLASSIFICATION</td> <td>Pocket Penetrometer (tsf)</td> <td>BLOWS 1st</td> <td>BLOWS 2nd</td> <td>BLOWS 3rd</td> <td>N VALUE</td> <td>10</td> <td>0 20</td> <td>▲ S</td> <td>6PT 1</td> <td>V VAI</td> <td>-UE</td> <td>•</td> <td>0.9</td> <td>_</td>	o DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE		MATERIAL CLASSIFICATION	Pocket Penetrometer (tsf)	BLOWS 1st	BLOWS 2nd	BLOWS 3rd	N VALUE	10	0 20	▲ S	6PT 1	V VAI	-UE	•	0.9	_
5 Stiff, olive brown, SANDY CLAY, with trace fine gravel, moist CL 4 5 6 11 10 3 4 4 8		FILL: black, brown, green, SANDY CLAY, with gravel, moist	X				3 6	8 9	5 11	13 20									
10 3 4 4 8 Bottom of borehole at 10.5 feet. 3 4 8 4 15 3 4 8 4 8 20 3 4 8 4 8 4 20 3 4 8 4 8 4 20 3 4 8 4 8 4 20 3 4 8 4 8 4 20 3 4 8 4 8 4 20 3 4 8 4 8 4 30 3 4 8 4 8 4 33 4 8 4 8 4 8 4 40 4 4 4 4 4 4 4 4 40 4	5	- Stiff, olive brown, SANDY CLAY, with trace fine gravel, moist			CL		4	5	6	11	1								
Bottom of borehole at 10.5 feet.	10	-	Х				3	4	4	8					-	-	_		
		Bottom of borehole at 10.5 feet.																	



PROJECT NAME I-64 & US 60 (HV1326)

CLIENT TRILEAF

Boring No.: B-3

PAGE 1 OF 1

PROJECT NUMBER GEO18-03532-08

PROJECT LOCATION Owingsville Road, Mt Sterling (Montgomery County), Kentucky

DATE DRILLED : 11/20/2018			0.00		ATER	1.00		_										+
DRI	LING METHOD: Hollow Stem Auger				MEOF		ELS:		NI-4	Fr	in the second							
GRO			¥					. .	Not	End	counte	red						
BOR			V	ALE		URIL	LING	Not	- NOT	Enc	bunter	ea						
(ff) (ff)	MATERIAL DESCRIPTION	SAMPLE TYPE		MATERIAL CLASSIFICATION	ocket Penetrometer (tsf)	BLOWS 1st	BLOWS 2nd	BLOWS 3rd	N VALUE	Junte	area	▲ SP	PT N	VAL	UE 🔺			
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5	with cobbles					4	5	4	9									
10		\bigcirc	\otimes							_	_	-			_	-	-	
	Bottom of borehole at 10.5 feet.																	
<u>35</u> 							×											

- A DELTA OAKS

PROJECT NAME I-64 & US 60 (HV1326)

CLIENT TRILEAF

PROJECT NUMBER GEO18-03532-08

Boring No.: B-4

PAGE 1 OF 1

PROJECT LOCATION Owingsville Road, Mt Sterling (Montgomery County), Kentucky

DAT	E DRILLED: 11/20/2018		GR	OUND W	ATER	LEV	ELS:											t
DRI	LLING METHOD : Hollow Stem Auger	AT TIME OF DRILLING : Not Encountered																
GRO	DUND ELEVATION :	AT END OF DRILLING : Not Encountered																
BOF	RING DEPTH (ft): 10.5	AFTER DRILLING : Not Encountered																
o DEPTH (ff)	MATERIAL DESCRIPTION	SAMPLE TYPE		MATERIAL CLASSIFICATION	Pocket Penetrometer (tsf)	BLOWS 1st	BLOWS 2nd	BLOWS 3rd	N VALUE	1	0 20	▲ S	PT N	VALI	UE ▲	90		
	FILL: black, CLAYEY SAND, with gravel, moist light gray, with clay seams	X				9 9	15 43	11 24	26 67							00	30	
5	brown, SILTY SAND, with trace fine gravel	X	\bigotimes			9	28	20	48		_	_				_		
	yellowish brown, CLAYEY GRAVEL, wet	X	\bigotimes			2	6	21	27									
10		\mathbf{X}	\bigotimes			9	11	13	24									
	Bottom of borehole at 10.5 feet.	\sim	××										-		-	-	-	-
15																		
20	-																	
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25	-																	
30																		
35																		
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40	-																	
[-																		
45	-																	
50																		

DELTA OAKS

PROJECT NAME I-64 & US 60 (HV1326)

CLIENT TRILEAF

Boring No.: B-5

PAGE 1 OF 1

PROJECT NUMBER GEO18-03532-08

PROJECT LOCATION Owingsville Road, Mt Sterling (Montgomery County), Kentucky

DATE DRILLED : 11/20/2018 GROUND WATER LEVELS: DRILLING METHOD : Hollow Stem Auger ∇ AT TIME OF DRILLING : --- Not Encountered **GROUND ELEVATION :** Ţ AT END OF DRILLING : --- Not Encountered V BORING DEPTH (ft): 31 AFTER DRILLING : --- Not Encountered Pocket Penetromete (tsf) MATERIAL CLASSIFICATION SAMPLE TYPE BLOWS 2nd 1st BLOWS 3rd N VALUE DEPTH (ft) BLOWS . ▲ SPT N VALUE ▲ MATERIAL DESCRIPTION 0 10 20 30 40 50 60 70 80 90 25 18 12 30 FILL: black, brown, green, SANDY CLAY, with gravel, moist 8 8 25 33 -- gray, SILTY SAND, with trace fine gravel 7 8 6 13 5 2 3 CL Firm, olive brown, SANDY CLAY, with trace fine gravel, moist 10 0 3 3 6 -- stiff 4 3 6 9 15 -- very stiff 12 13 14 27 20 8 10 12 22 25 50/4" 100 -- hard 2 4 30 Refusal at 31.0 feet. Bottom of borehole at 31.0 feet. 35 40 45 50

EXHIBIT

Η

DIRECTIONS TO CELL TOWER SITE

Directions prepared by:

Jacob C. Walbourn McBrayer, McGinnis, Leslie & Kirkland, PLLC 201 East Main Street, Suite 900 Lexington, Kentucky 40507 (859) 231-8780

From the Montgomery County Courthouse (One Court Street, Mt. Sterling, Kentucky 40353):

- 1. Travel South on Broadway Street for 223 feet.
- 2. Turn left (East) on to West Main Street/US-60.
- 3. Continue on US-60 for 3.8 miles.
- 4. Turn left onto Chandler Lane.
- 5. Travel approximately 230 feet.
- 6. The site is on the left, in the area between Chandler Lane and US-60.

EXHIBIT

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OPTION AND LEASE AGREEMENT

This Option and Lease Agreement ("Agreement" or "Lease") is made and entered into this 25^{4} day of 0c+pBEP, 2018 by and between William Michael Colliver and Sherrie Ellen Colliver, his wife, having a mailing address of 539 E Main Street, Mt. Sterling, Kentucky 40353 ("Landlord"), and HORVATH TOWERS V, LLC, a Delaware limited liability company, having an address of 312 W. Colfax Ave., South Bend, Indiana 46601 ("Tenant").

I

OPTION TO LEASE

(a) Landlord owns certain real property described on Exhibit A attached hereto and made a part herof (the "Property"). In consideration of the sum of (the "Commitment Deposit"), to be paid by Tenant to Landlord upon full execution of this Agreement, Landlord grants to Tenant for a term of thirty-six (36) months (the "Option Term") an option to lease (the "Option") a portion of the Property measuring approximately 100' x 100' for a total of 10000 square feet and located at ±Owingsville Road, Mt.Sterling, Kentucky 40353 (38° 5' 25.68" / -85° 53' 54.64") for the purpose of constructing and operating a communications facility (the "Equipment") together with the unrestricted access, and the construction and maintenance of a route for such unrestricted access, for Tenant's uses from the nearest public right-of-way along the Property to the Premises as described on the attached Exhibit B (collectively, the "Premises").

Upon notification to Landlord, during the Option Term and during the term of this Agreement, Tenant and (b) its agents, engineers, surveyors and other representatives will have the right to enter upon the Property to inspect, examine, conduct soil, drainage testing, material sampling, and other geological or engineering tests or studies of the Property (collectively, the "Tests"), to apply for and obtain licenses, permits, approvals, or other relief required of or deemed necessary or appropriate at Tenant's sole discretion for its use of the Premises and include, without limitation, applications for zoning variances, zoning ordinances, amendments, special use permits, and construction permits (collectively, the "Government Approvals"), initiate the ordering and/or scheduling of necessary utilities, and otherwise to do those things on or off the Property that, in the opinion of Tenant, are necessary in Tenant's sole discretion to determine the physical condition of the Property, the environmental history of the Property, Landlord's title to the Property and the feasibility or suitability of the Property for Tenant's Permitted Use, all at Tenant's expense. Tenant will not be liable to Landlord or any third party on account of any pre-existing defect or condition on or with respect to the Property, whether or not such defect or condition is disclosed by Tenant's inspection. Tenant will restore the Property to its condition as it existed at the commencement of the Option Term, reasonable wear and tear and casualty not caused by Tenant excepted. In addition, Tenant shall indemnify, defend and hold Landlord harmless from and against any and all injury, loss, damage or claims arising directly out of Tenant's Tests. Upon completion of construction of the Equipment, Tenant no longer needs to notify Landlord of access to Premises.

(c) During the Option Term, Landlord will not (i) enter into a lease with a Competitor of Tenant of property owned or controlled by Landlord within a two (2) square mile radius of the Premises, for the purpose of constructing and operating a communications facility; or (ii) sell to a Competitor of Tenant or to any third-party property owned or controlled by Landlord within a two (2) square mile radius of the Premises for the purpose of constructing and operating a communications facility.

(d) During the Option Term, Tenant may exercise the Option by notifying Landlord in writing. If Tenant exercises the Option then Landlord leases the Premises to the Tenant subject to the terms and conditions of this Agreement. If Tenant does not exercise the Option, this Agreement will terminate and the parties will have no further liability to each other.

II TERM

(a) The initial term of this Lease shall be Ten (10) years commencing on the date of written notification by Tenant to Landlord of Tenant's exercise of the option or the date Tenant commences construction whichever occurs first (the "Commencement Date"), and terminating at midnight on the last day of the initial term (the "Initial Term"). Tenant may terminate this Lease at anytime it deems necessary.

(b) Tenant shall have the right to extend this Lease for Eight (8) additional, Five (5) year terms (each a "Renewal Term"). This Lease shall automatically renew for each successive Renewal Term unless Tenant notifies Landlord, in writing, of Tenant's intention not to renew this Lease, at least sixty days (60) days prior to the expiration of the Initial Term or any Renewal Term. If Tenant shall remain in possession of the Premises at the expiration of this Lease or any Renewal Term without a written agreement, such tenancy shall be deemed a month-to-month tenancy under the same terms and conditions of this Lease.

III RENT

IV RIGHTS AND OBLIGATIONS OF TENANT

(a) <u>Right of Access</u>. Tenant shall, during the Term of this Agreement, have the right of ingress to and egress from the Premises over an access road, as shown in Exhibit B, attached hereto and incorporated herein by reference, for the purpose of installing, operating, maintaining and/or removing the Equipment, however such right is limited to authorized employees, subtenants, licensees, invitees, assignees, or agents of Tenant and/or other persons under Tenant's supervision. The parties agree that Exhibit B will be replaced by a final survey once said survey is complete. Landlord and Tenant shall cooperate with each other to determine a mutually acceptable access route.

(b) <u>Removal of Equipment</u>. Upon expiration or termination of this Agreement, Tenant shall remove all of the Equipment installed on the Premises without damage to Landlord's property, and shall restore the Premises, as is reasonable, to its original condition immediately prior to the commencement of this Agreement, with the exception of (i) plants, trees or similar vegetation removed from the Premises and/or topographical changes to the Premises in order to fulfill the transaction contemplated by this Agreement; and/or (ii) ordinary wear and tear. Title to all Equipment, whether or not such is considered real or personal property, and whether or not such is considered as being affixed to the property, shall be and remain vested in Tenant (or its subtenants and licensees, as applicable).

(c) <u>Utilities</u>. During the Term of this Agreement, Tenant shall pay for its own separately metered utilities. Tenant shall, during the Term of this Agreement, have the right to order, construct and maintain utilities along the route shown in Exhibit B, attached hereto and incorporated herein by reference. Such utility location and installation method shall be mutually agreed upon by the utility companies and the Tenant. Landlord agrees to comply with each utility company to provide a separate easement for utilities, if additional easements are necessary.

(d) <u>Maintenance</u>. Tenant shall be responsible for maintaining the Equipment. Tenant shall have no other maintenance responsibilities with respect to the Premises other than those expressly set forth herein.

(e) <u>Taxes</u>. Tenant shall be responsible for any taxes, including real estate and personal property taxes that may be incurred as a result of the installation or operation of the Equipment at the Premises. Landlord shall promptly pay all real estate taxes and assessments against the Property when due and shall avoid any delinquencies with respect thereto. Tenant shall promptly pay Landlord only upon receipt of such invoice and all other reasonable documentation as requested of Landlord by Tenant to evidence such increase in taxable amounts resulting from the installation or operation of the Equipment at the Premises. Landlord shall also pay promptly, when due, any other amounts or sums due and owing with respect to its ownership and operation of the Property, including, without limitation, judgments, liens, mortgage payments and other similar encumbrances. If Landlord fails to make any payments required under this Lease, such as the payment of real estate taxes and assessments, or breaches any other obligation or covenant under this Lease, Tenant may (without obligation), after providing ten (10) days written notice to Landlord, make such payment or perform such obligation on behalf of Landlord. The full amount of any costs so incurred by Tenant (including any attorneys' fees incurred in connection with Tenant performing such obligation) shall be paid by Landlord to Tenant with interest at the statutory rate thereon.

(f) <u>Subleases.</u> Landlord hereby grants Tenant the right to sublease or license all or any part of the Premises and any such subtenant or licensee shall have the right to use any and all easements granted hereunder pursuant to the terms hereof.

V RIGHTS & OBLIGATIONS OF LANDLORD

Landlord shall not interfere with the installation or cause any interference with the operation of the Equipment or with Tenant's (or its subtenant's or licensee's) use of the Premises as contemplated herein.

VI INDEMNIFICATION

(a) <u>Indemnification by Tenant</u>. Tenant shall indemnify and hold harmless Landlord from any claim which may arise against Landlord by any reason or occurrence attributable to (i) the installation, operation or maintenance of the Equipment on the Premises; (ii) is due to Tenant's failure to perform any material obligation hereunder; or (iii) is due to any misrepresentation or breach of warranty by Tenant hereunder. Tenant shall not be liable for, and shall have no obligation to indemnify or defend Landlord or any third-party and will not hold Landlord or any third-party harmless from any claims or damages that may have arisen or may arise due to a pre-existing condition or defect, including but not limited to, any claims arising out of contamination by, or storage of, any hazardous substance(s).

(b) <u>Indemnification by Landlord</u>. Landlord shall indemnify and hold harmless Tenant from any claim which may arise against Tenant by any reason or occurrence attributable to (i) Landlord's use or occupation of the Premises; (ii) Landlord's failure to perform any material obligation hereunder; (iii) any misrepresentation or breach of warranty by Landlord hereunder or (iv) all pre-existing conditions or defects in the Premises and Property, including, but not limited to, any claims arising out of contamination by, or storage of, any regulated and/or hazardous substances(s).

(c) Environmental Indemnification by Landlord. Landlord shall indemnify and hold Tenant harmless from any claims, costs, and/or liabilities that may arise, including but not limited to, claims of personal injury, death, pollution, contamination, and property damage, incurred as a result of the negligent or intentional storage, dumping, leaking, or use of any regulated and/or hazardous substances, as that term is defined by federal and state law, by Landlord, its employees, agents, servants, invitees, visitors or any other person under Landlord's control or supervision, whether or not Tenant is adjudged to have been comparatively negligent. Landlord shall indemnify Tenant for any and all costs incurred as a result of having to answer and defend any claims set forth above, including without limitation reasonable attorney's fees and court costs. Landlord agrees to immediately notify Tenant of any known regulated and/or hazardous waste conditions, including without limitation, complaints or reports that may be or have been filed against Landlord or the property or served upon Landlord, its agents, servants, employees or other representative.

VII ASSIGNMENT

(a) <u>Tenant May Assign At Any Time</u>. This Agreement may, at any time, be assigned by the Tenant. Tenant shall provide notice to Landlord by certified mail within a reasonable amount of time after assignment. Upon reasonable request by Tenant, Landlord shall execute an Estoppel Certificate, Acknowledgment of Rights, or similar document, as set forth in (Article VIII, Section B) hereof, in connection with such assignment.

(b) <u>Assignment by Landlord</u>. This Lease may, at any time, be assigned by the Landlord, who shall provide notice to Tenant by certified mail of such assignment to Tenant within a reasonable amount of time. The assignee shall be bound by the terms of this Agreement and shall not modify the Premises or the associated utility and access easements in any way which would adversely affect Tenant's use of the Premises.

(c) <u>Effect of Assignment</u>. All of the covenants, provisions, terms, agreements, and conditions of this Agreement shall be construed as running with the land and shall inure to the benefit of and be binding upon the respective successors and assigns of the parties hereto. Upon written notification to Landlord of any assignment of this lease by Tenant (together with a copy of such assignee's written assumption of Tenant's obligations hereunder), Landlord shall look solely to such assignee for the satisfaction of Tenant's obligations hereunder, and Tenant shall be released from any further obligations under this lease. As used herein, the term "Tenant" means the holder, from time to time, of the leasehold estate under this Agreement and the term "Landlord" means the holder, from time to time, of the reversionary estate under this Agreement.

VIII RIGHTS OF TENANT TO MORTGAGE

(a) <u>Right of Tenant to Mortgage Leasehold Interest</u>. Landlord acknowledges that Tenant has the right, without the necessity of obtaining Landlord's consent, at any time to: (i) encumber its leasehold estate by mortgage or other encumbrance or lien; and (ii) grant security interests in or place liens upon any and all improvements, including but not limited to, the Equipment (whether or not such is considered real or personal property).

(b) Estoppel Certificates, Landlord's Acknowledgment of Rights, and other Similar Documents. Landlord agrees that it will from time to time, within ten (10) days after request by Tenant, execute and deliver an Estoppel Certificate, Landlord's Acknowledgement of Rights, or other similar statement, in a form that is reasonably acceptable to both Landlord and Tenant and which is recordable in the Land Records of the jurisdiction in which the Premises are located certifying that (i) this Agreement is unmodified and in full force and effect (or if there have been modifications, that the same is in full force and effect as so modified); (ii) stating the dates to which rent and other charges payable hereunder have been paid; (iii) stating that Tenant is not in default hereunder (or if Landlord alleges a default stating the nature of such alleged default); and (iv) acknowledging the rights of Tenant and Tenant's mortgagee as set forth above in Section A above, and further stating such other matters as Tenant or Tenant's mortgagee shall reasonably require.

(c) <u>Waiver of Lien Rights by Landlord</u>. Landlord waives any lien rights it may have concerning the Equipment, whether or not such are deemed Tenant's personal property or fixtures. Landlord acknowledges that Tenant may enter into financing arrangements which, among other things, may provide that the Equipment shall serve as collateral. In connection therewith, Landlord disclaims any interest in the Equipment, whether fixtures or otherwise, and agrees that the Equipment shall be exempt from execution, foreclosure, sale, levy, attachment or distress for any rent due or to become due and that the Equipment may be removed at any time without recourse to legal proceedings.

IX COVENANTS & WARRANTIES

(a) <u>Quiet Enjoyment</u>. Landlord covenants that Tenant, upon performance of the terms set forth herein, shall peaceably and quietly hold and enjoy the Premises during the Term of this Agreement without hindrance or interruption by Landlord or any other person, including other tenants or subtenants of Landlord's. Landlord acknowledges (i) that any

interference with the Equipment caused by Landlord may cause irreparable harm to Tenant and would constitute a breach of the covenant of quiet enjoyment set forth herein, (ii) that the cessation of such interference is material to the Agreement; and therefore (iii) that Tenant shall have upon any such interference, the right to enjoin any such interference or to terminate this Agreement.

(b) Landlord Owns Premises in Fee Simple. Landlord represents and warrants that Landlord owns the Premises in fee simple and has full power and authority to lease the Premises as well as to grant all easements and right of ways contemplated hereunder without the consent of any other party. Landlord further represents and warrants that the Premises are free and clear of any encumbrances, other than liens of record such as mortgages or others as specifically set forth herein. In the event that it is determined that Landlord has breached its representation and warranty under this Section and Tenant is unable to use the Premises for the purposes contemplated herein and/or to utilize the easements granted herein for the stated purposes, Tenant shall have a right to terminate this Agreement without further obligation to Landlord and seek all other damages available to it at law and in equity, which shall include, without limitation, the right to receive damages in an amount equal to all direct and indirect costs incurred by Tenant as a result of such breach. Landlord agrees to assist Tenant in curing any defects in title.

(c) <u>Environmental</u>. To best of Landlord's knowledge, Landlord represents and warrants that there are no existing regulated and/or hazardous waste conditions on the Premises and that no regulated and/or hazardous substances were or are being stored on said Premises or within the associated easement areas. Landlord shall indemnify and hold Tenant harmless for any claims and/or damages arising from Landlord's breach of this representation and warranty.

X INSURANCE

Tenant shall carry, during the Option Term and the Initial Term of this Agreement, the following insurance, with customary coverages and exclusions:

Bodily Injury:

Five Hundred Thousand Dollars (\$500,000) for injury to any person, and One Million Dollars (\$1,000,000) for all injuries sustained by more than one person in any one occurrence.

Property Damage:

One Million Dollars (\$1,000,000) per damage as the result of any one accident.

Tenant will increase amount of insurance coverage during the Renewal Terms to reflect current economic conditions and to comply with industry standards for maintaining adequate coverage. Tenant shall, upon Landlord's request, furnish to Landlord Certificates of Insurance certifying that Tenant has the above described insurance and naming Landlord as an additional insured on Tenant's policy as it relates to the Premises.

XI

DEFAULT

(a) <u>Default by Landlord</u>. If Landlord defaults in the performance or observance of any provision of this Agreement on its part to be performed and does not commence to cure such default within forty-five (45) days after written notice thereof or does not thereafter diligently complete the cure, if such default is capable of cure, or make, in good faith, progress toward such cure, then, in addition to any other remedies provided in this Lease, shall have the option to terminate this Agreement upon thirty (30) days' notice without further obligation or liability. Tenant reserves the right to withhold Rent as remedy for material breaches of this Agreement, including, but not limited to (i) refusal to execute any documents specified in Section VII, Section VIII and Section XIII, (ii) failure to pay property taxes; (iii) failure to provide Tenant with access to the Property.

(b) <u>Default by Tenant</u>. If Tenant defaults in the performance or observance of any provision of this Agreement on its part to be performed and does not commence to cure such default within forty-five (45) days after written notice thereof or does not thereafter diligently complete the cure, if such default is capable of cure, or make, in good faith, progress toward such cure, then, in addition to any other remedies provided in this Lease, shall have the option to terminate this Agreement upon thirty (30) days' notice without further obligation or liability, subject, however, to the cure rights of any leasehold mortgagee as set forth herein.

(c) <u>Termination by Landlord</u>. The termination by Landlord of this Agreement as aforesaid shall be Landlord's sole and exclusive remedy for any default by Tenant hereunder and Landlord shall not be entitled to any money judgment against Tenant (or any decree for specific performance that would require the payment or expenditure of money by Tenant to or on behalf of Landlord) in connection with this Agreement or on account of a default in any covenant of this Agreement on Tenant's part to be performed or observed. Upon termination of this Agreement as aforesaid, Tenant shall, within forty-five (45) days of such termination, or soon thereafter as weather permits, remove all Equipment from the Premises pursuant to the terms of Section IV, paragraph 2.

XII

NOTICE

It is understood and agreed between the parties hereto that written notice delivered by an overnight delivery service or by certified mail, return receipt requested, postage prepaid to a party's offices as specified herein, shall constitute notice to that party sufficient to comply with the terms of this Agreement. Addresses are as follows:

To Landlord:

William Michael Colliver and Sherrie Ellen Colliver, his wife 539 E Main Street Mt. Sterling, Kentucky 40353 ATTN: Michael Colliver

Landlord's Payee: William Michael and Sherrie Ellen Colliver 539 E. Main Street Mt. Sterling, Kentucky 40353

To Tenant:

HORVATH TOWERS V, LLC 312 W. Colfax Ave. South Bend, IN 46601 ATTN: Lease Administration Office: (574) 237-0464 Fax: (574) 217-4357

XIII GENERAL PROVISIONS

1. Contingencies.

(a) <u>Permits, Approvals, Utilities, Rights of Way</u>. This Agreement is contingent upon Tenant's obtaining and maintaining any permits, licenses, or approvals required by any federal, state or local authority, including without limitations the Federal Communications Commission, the Federal Aviation Authority, and any local zoning authority, as well as obtaining all necessary utilities and any and all easements and rights of way necessary to access the Premises.

(b) <u>Technical Analysis and Environmental Studies</u>. This Agreement is further contingent upon (i) the satisfactory completion of technical analyses which will be performed to verify that acceptable microwave

communication is possible from the tower to be constructed on the Premises to other communications facilities operated, or planned, by Tenant in the surrounding area and/or (ii) a satisfactory environmental/geological report indicating that the Premises are suitable and/or economically viable for Tenant's intended use. Such analyses shall be completed within the applicable Option Term of this Agreement.

(c) <u>Non-Disturbance</u>. The Landlord shall obtain for the benefit of the Tenant and its subtenants a commercially reasonable non-disturbance and attornment agreement (a "Non-Disturbance Agreement") from each holder of a mortgage, deed of trust, deed to secure debt or other similar instrument now or hereafter encumbering the Premises (a "Mortgage"), confirming that the Tenant's right to quiet possession of the Premises during the term of this Agreement, including any extensions hereof, shall not be disturbed as long as the Tenant is not in default hereunder. No such subordination shall be effective unless the holder of such Mortgage shall, either in the Mortgage itself or in a separate agreement with the Tenant and its subtenants, agree that in the event of a foreclosure or conveyance in lieu of foreclosure of the Landlord's interest in the Premises, such holder shall recognize and confirm the validity and existence of this Lease and the related rights of the Tenant and its subtenants hereunder, and this Agreement shall continue in full force and effect and the Tenant shall have the right to continue its use and occupancy of the Premises in accordance with the provisions of this Agreement as long as the Tenant is not in default of this Agreement beyond applicable notice and cure periods. The Landlord shall execute in a timely manner whatever instruments may reasonably be required to evidence the provisions of this paragraph and shall use its best efforts to cause the holder of any Mortgage to do the same.

2. <u>Landlord's Assistance with Various Applications and Permits</u>. Landlord shall join in and consent to any applications or petitions filed by Tenant with any governmental, public or judicial agency in connection with the use, development or occupancy of the Premises and which may require the joinder and consent of Landlord, including, but not limited to, building permits, applications for reclassifications, special exceptions and variances under the zoning laws, demolition of improvements, construction or alteration of improvements, erection and maintenance of signs, connections to utility facilities, public works agreements, subdivision applications, and licenses or minor privileges; but Tenant shall bear all costs and fees with respect to such applications. All costs associated with the above instruments are the sole responsibility of the Tenant.

3. <u>Recordation and Memorandum of Agreement</u>. Simultaneously with the execution of this Agreement, Landlord shall execute a memorandum of option, a form of which is attached and incorporated herein as **Exhibit C**, and a memorandum of lease, a form of which is attached and incorporated herein as **Exhibit D**, both in recordable form for recording among the appropriate Office of Land Records. Such memoranda shall contain a description of the Premises and its associated access, utility, and guy anchor easements and set forth the term of this Agreement and any other provisions hereof as may be necessary or desirable. Tenant shall pay for all document recording fees.

4. First Right of Refusal. In the event Landlord shall receive a bonafide offer from a third party to purchase or if Landlord intends to communicate to a third party an offer to sell, (a) all or any portion of the Premises, (b) any adjoining or adjacent property subject to an easement hereunder or (c) this Agreement or any rights hereunder (in each case, the "Sale Assets"), Landlord shall first communicate the terms of such offer to Tenant, provide a copy of the bonafide offer to Tenant and offer to sell such property to Tenant upon the same terms and conditions, including any financing terms. Tenant shall have thirty (30) days from receipt of said notice from Landlord to accept said offer in writing. If Tenant accepts Landlord's offer within thirty (30) days, Landlord shall be bound to sell the Sale Assets to Tenant, and Tenant shall be bound to purchase the Sale Assets from Landlord, in accordance with the bonafide offer. If Tenant purchases the Sale Assets pursuant to this paragraph, any easements granted from Landlord to Tenant for the benefit of the Premises shall become permanent easements without further consideration. If Tenant fails to exercise such right of first refusal within the stated time. Landlord may sell the Sale Assets subject to any and all terms and conditions of this Lease; provided, however, that if the terms of sale change and if Landlord has not sold or transferred title to such property within ninety (90) days of the date of Landlord's written notice to Tenant, any such sale and transfer of title shall again be subject to Tenant's said right of first refusal. Tenant's right of first refusal shall continue in effect as to any subsequent proposed sale by the current landlord or by any transferee.

5. <u>Non-Competition</u>. During the Term and for the two (2) year period commencing on the effective date of termination of this Lease, Landlord will not (i) enter into a lease with a Competitor of Tenant of property owned or

controlled by Landlord within a two (2) square mile radius of the Premises, for the purpose of constructing and operating a communications facility; or (ii) sell to a Competitor of Tenant or to any third-party property owned or controlled by Landlord within a two (2) square mile radius of the Premises for the purpose of constructing and operating a communications facility. For purposes of this Lease, the term "Competitor" means any person or entity engaged in the business of (i) building wireless communication facilities for the purpose of broadcasting and/or receiving wireless transmissions licensed by the Federal Communications Commission of the United States (the "FCC"), or (ii) subletting wireless communication facilities to any third-party for the purpose of broadcasting/receiving wireless transmissions licensed by the FCC. The parties agree that the terms of this Agreement, generally, and in particular this Section XIII.5, are reasonable and should be valid and enforceable in order to protect the legitimate business interest of Tenant. Landlord acknowledges and agrees that any violation of Section XIII.5 hereof would cause Tenant irreparable damage and that Tenant's remedy at law for any breach of Landlord's obligations under this Agreement would be inadequate. Landlord specifically agrees that if it violates or threatens to violate such restrictions, Tenant shall be entitled to injunctive relief against Landlord, without the necessity of proof of actual damage or the posting of a bond, in addition to any other remedies available under this Agreement at law or in equity.

6. <u>Invalidity of Certain Provisions</u>. In the event that any provision of this Agreement is invalid or unenforceable, the remainder of this Agreement shall not be affected, and a suitable and equitable provision shall be substituted for the invalid or unenforceable provision in order to carry out, as far as may be valid and enforceable, the intent and purpose of such invalid or unenforceable provision.

7. <u>No Partnership</u>. Notwithstanding any obligation from one party to the other herein, the parties hereto state that they have not created and do not intend to create by this Agreement a Joint Venture or Partnership relation between them.

8. <u>Entire Understanding</u>. This Agreement contains the entire understanding of the parties with respect to the subject matter hereof and supersedes any and all other oral or written agreements or understandings between, the parties. Neither party has made nor relied on any promise, understanding, warranty or representation other than as specifically set forth herein. This Agreement may not be changed, modified, or amended except by a written instrument signed by both parties hereto. Both parties have had the opportunity to review this Agreement prior to execution, and in its final form, the Agreement reflects the understanding of both parties and shall not be construed against any one party.

9. <u>Condemnation</u>. If a condemning authority takes all of the Property, or a portion sufficient in Tenant's determination, to render the Property in the opinion of Tenant unsuitable for the use which Tenant was then making of the Property, this Lease shall terminate as of the date the title vests in the condemning authority. Landlord and Tenant shall share in the condemnation proceeds in proportion to the values of their respective interests in the Property which for Tenant shall include, where applicable, prepaid Rent). A sale of all or part of the Property to a purchaser with the power of eminent domain in the face of the exercise of eminent domain power shall be treated as a taking by condemnation for the purposes of this paragraph.

10. <u>Choice of Law</u>. The validity of this Agreement, the terms of this Agreement, and all duties, obligations and rights arising from this Agreement shall be governed by and interpreted in accordance with the laws of the State of Indiana.

11. <u>Jurisdiction</u>. The parties agree to be subject to personal jurisdiction in Indiana with respect to any legal action concerning the validity or enforcement of this Agreement, and further agree that such legal action may be brought only in the United States District Court for the Northern District of Indiana, South Bend Division, or in a state court in St. Joseph County, Indiana. If such legal action is initiated in any other court, then Tenant and Landlord will voluntarily agree to have such action transferred to or re-filed in the United States District Court for the Northern District of Indiana, South Bend Division, or in a state court in St. Joseph County, Indiana.

12. <u>Enforcement</u>. If Tenant finds it necessary or appropriate to initiate legal proceedings to enforce its rights under this Agreement, and if Tenant is the prevailing party in such proceedings, Landlord agrees to reimburse Tenant for all expenses thereby incurred, including court costs, reasonable attorney and expert witness fees, and other litigation expenses.

- 8 -

{Signatures to follow}

IN WITNESS WHEREOF, this Agreement is hereby executed as of the first date written above.

LANDLORD William Michael Colliver and Sherrie Ellen Colliver, his wife

Willer Michon By:

Print Name: William Michael Colliver

Date: 10 22/18

By:

Print Name: Sherrie Ellen Colliver

Date: 1º/22/18

TENANT HORVATH TOWERS V, LLC A DELAWARE LIMITED LIABILITY COMPANY

Signed:	Aulin	
Print Name:	Erin Moskwinski	
Title:	Vice President CMO	~
Date:	10.75.18	

Exhibit A

Description of Property

PARENT PARCEL

PARCEL NO.: 030-00-00-029.01

PROPERTY ADDRESS: Owingsville Road, Mt.Sterling, Kentucky 40353

PARENT PARCEL LEGAL DESCRIPTION DEED BOOK 266, PAGE 772 (NOT FIELD SURVEYED)

BEING ALL OF TRACT NO. 4 AS MORE PARTICULARLY SHOWN AND DESCRIBED ON THE RECORD PLAT OF LONGWOOD FARM, MONTGOMERY COUNTY, KENTUCKY, WHICH PLAT IS OF RECORD IN PLAT CABINET A, SLIDE 49A, MONTGOMERY COUNTY COURT CLERK'S OFFICE, TO WHICH PLAT REFERENCE IS HEREBY MADE FOR A PARTICULAR DESCRIPTION OF THE PROPERTY HEREBY CONVEYED. .

Exhibit B

Site Sketch/Survey of Leased Premises

SEE ATTACHED

.




Exhibit C

Form of Memorandum of Option

MEMORANDUM OF OPTION

This Memorandum of Option is entered into on this ______ day of ______, 20____, by and between INSERT NAME OF LANDLORD, INSERT ENTITY STATE AND TYPE, having a mailing address of INSERT LANDLORD'S MAILING ADDRESS ("Landlord"), and HORVATH TOWERS V, LLC, a Delaware limited liability company, having an address of 312 W. Colfax Ave., South Bend, Indiana 46601 ("Tenant").

- Landlord and Tenant entered into a certain Option and Lease Agreement ("Agreement") dated ______, 20___, regarding certain real property of Landlord described on Exhibit A attached hereto and made a part herof (the "Property"). [Attach description of Landlord's entire parcel this note is for reference only – please delete]
- 2. The Agreement grants to Tenant for a period of [eightern [18]) months] commencing on the ______ day of ______ 20 an option (the "Option" htp Base a portion of the Property measuring approximately 100' x 100' (10,000) solare feet and located at ±INSERT APPROXIMATE ADDRESS OF SHEE UNSERT COORDINATES OF SIFE) for the purpose of constructing and operating a communications facility ogened with unrestricted access for (constructions is uses from the nearest public right of the property to the Property to the Property.
- 3. During the term of the Option, Tenant shall have the right to to enter upon the Property to inspect, examine, conduct soil, drainage testing, material sampling, and other renormed or engineering tests of sudies of the Property, to apply for and obtain licenses, permits, approvals, or other relief required of or deemed necessary or appropriate at Tenant's sole discretion for its use of the Premises and include, without limitation, applications for zoning variances, zoning ordinances, amendments, special use permits, and construction permits (collectively, the, initiate the ordering and or scheduling of necessary utilities, and otherwise to do those things on or off the Property that, in the opinion of Tenant, are necessary in Tenant's sole discretion to determine the physical condition of the Property, the environmental history of the Property, Landlord's title to the Property and the feasibility or suitability of the Property for Tenant's Permitted Use, all at Tenant's expense.
- 4. Tenant shall have the sole right in its discretion to exercise the Option, whereupon the Option shall become a Lease, and Tenant shall record a memorandum of lease.
- 5. The Agreement shall be binding upon and inure to the benefit of the parties and their respective heirs, successors, and assigns, subject to the provisions of the Agreement.
- 6. This Memorandum is prepared for the purpose of recordation and does not modify the provisions of the Agreement. The Agreement is incorporated herein by reference. If there are any conflicts between the Agreement and this Memorandum, the provisions of the Agreement shall prevail.

{END OF MEMORANDUM}

{SIGNATURES AND ACKNOWLEDGEMENTS FOLLOW}



This Instrument Was Prepared By :

Nancy Benjamin HORVATH TOWERS V, LLC 312 W. Colfax Ave. South Bend, IN 46601 I affirm, under the penaltics for perjury, that I have taken reasonable care to redact each Social Security number in this document, unless required by law. Nancy Benjamin When Recorded, Return to:

HORVATH TOWERS V, LLC 312 W. Colfax Ave. South Bend, IN 46601 (574) 237-0464 IN WITNESS WHEREOF, the parties have executed this Memorandum of Option as of the day and year first above written.

LANDLORD INSERT LANDLORD NAME INSERT ENTITY TYPE AND STATE IF APPLICABLE

Signature	ONLY MO
Print Name:	CONDA MAGO
Title:	
Date:	
TEXALILIE A	
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$DO ^{\mu}$	
TENANT HORVATH TOWERS V. LLC	
A DELAWARE LIMITED LIABILITY COMPANY	č – – – – – – – – – – – – – – – – – – –

Signature

Title:

Date: _____

Site Name: HV1326 I-64 & US60

LANDLORD ACKNOWLEDGMENT

STATE OF)
) ss:
COUNTY OF)

On the day of ______, 20___ before me personally appeared INSERT NAME OF SIGNATORY, INSERT TITLE OF SIGNATORY, who being duly sworn on his/her oath, deposed and made proof to my satisfaction that he/she signed and delivered the same as his/her voluntary act and deed.

OTALLE AQ
Notary Putilia
MyClopemission Expires:
Notary Seal
TENANT A CONTRACTOR TO THE
TENANI ACANOWEEDGMENI
STATE OF INDIANA
COUNTY OF ST. JOSEPH) SS
I CERTIFY that an (day) of, 20, personally came before me and acknowledged under
oath that she:
(c) is the of HORVATH TOWERS V, LLC, the limited liability company named in the attached instrument,

(d) was authorized to execute this instrument on behalf of the company, and

(c) executed the instrument as the act of the company.

Notary Public

My Commission Expires:

Notary Seal

Site Name: <u>HV1326 I-64 & US60</u>

Exhibit D

Form of Memorandum of Lease

MEMORANDUM OF LEASE

This Memorandum of Lease is entered into on this ______ day of ______, 20___, by and between INSERT NAME OF LANDLORD, INSERT ENTITY STATE AND TYPE IF APPLICABLE, having a mailing address of INSERT LANDLORD'S MAILING ADDRESS ("Landlord"), and HORVATH TOWERS V, LLC, a Delaware limited liability company, having an address of 312 W. Colfax Ave., South Bend, Indiana 46601 ("Tenant").

- Landlord and Tenant entered into a certain Option and Lease Agreement ("Agreement") dated ______, 20___, for the purpose of installing, operating and maintaining a communications facility and other improvements. All of the foregoing are set forth in the Agreement.
- 2. The initial term of the Agreement is for (n) years commencing on the _____ day of _____, 20 for commencement Date. The initial term is subject to [6 (six) additional 5-year[extension periods].
- 3. The portion of the fand being leased to Lessed (the "fremises") is described in Exhibit A annexed bevelo
- 4. During the frem of the Agreement, Tenant shall have the continuing first right to purchase (a) all or any portion of the Premises, (b) any policining or adjacent property subject to an easement hercunder or (c) the Agreement or any rights thereunder in accordance with and subject to the provision sand conditions of the Lease.
- 5. The Agreement shall be binding upon and inure to the benefit of the parties and their respective heirs, successors, and assisters, subject to the provisions of the Agreement.
- 6. This Memorandum is prepared for the purpose of recordation and does not modify the provisions of the Agreement. The Agreement is incorporated herein by reference. If there are any conflicts between the Agreement and this Memorandum of Lease, the provisions of the Agreement shall prevail.

{END OF MEMORANDUM}

{SIGNATURES AND ACKNOWLEDGEMENTS FOLLOW}

IN WITNESS WHEREOF, the parties have executed this Memorandum of Option and Agreement as of the day and year first above written.



TENANT HORVATH TOWERS V, LLC A DELAWARE LIMITED LIABILITY COMPANY

Signature

Title: _____

Date:

Site Name: HV1326 I-64 & US60

LANDLORD ACKNOWLEDGMENT

STATE OF _____)
SS:
COUNTY OF }

On the _____ day of _____, 20___ before me personally appeared INSERT NAME OF SIGNATORY, INSERT TITLE OF SIGNATORY IF APPLICABLE, who being duly swom on his/her oath, deposed and made proof to my satisfaction that he/she signed and delivered the same as his/her voluntary act and deed.



Site Name: HV1326 I-64 & US60

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EXHIBIT A TO THE MEMORANUM

DESCRIPTION OF PREMISES

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The Premises are described and/or depicted as follows:

A Complete Survey will be attached prior to recording.

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EXHIBIT

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. . .

DocuSign Envelope ID: 1702C5B6-D6BD-46CD-BB95-F89DDA287260



EXHIBIT

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MEBRAYER

201 EAST MAIN STREET, SUITE 900 LEXINGTON, KY 40507 859.231.8780 EXT. 102

December 4, 2018

Via Certified Mail

William M. and Sherrie E. Colliver 1300 Country Meadows Mt. Sterling, KY 40353

> Re: Notice of Horvath Towers V, LLC ("Applicant") to Adjacent Landowners of its Application before the Kentucky Public Service Commission to Construct a Cellular Tower Facility at Owingsville Road, Mt. Sterling, Montgomery County, Kentucky

Dear Property Owner:

Horvath Towers V, LLC has applied to the Kentucky Public Service Commission to construct a 265' self-support tower and an approximately 10-foot tall lighting arrestor and related improvements, to be located at Owingsville Road, Mt. Sterling, Montgomery County, Kentucky. The proposed Facility will, on its installation, allow for co-location of multiple carriers, which will eliminate the need for additional facilities in the area. A map showing the location of the proposed new facility is enclosed. This notice is forwarded to you because you own property within fivehundred feet (500') of the proposed facility, or property contiguous to it.

There is a crucial need to upgrade wireless cell services for existing covered customers in this area, and to expand capacity to serve future customers. Additionally, this facility is crucial to providing wireless communications ability, including the ability to contact emergency services, for users living in or travelling in this area. Our client's representatives have attempted to select a site that addresses the service deficit while minimizing the impact on adjacent properties.

Your comments regarding the proposed application are invited by the Public Service Commission, as well as the Applicant. You may submit comments or request intervention in the PSC's consideration of the application. You may contact the PSC by contacting Executive Director, Public Service Commission, PO Box 615, Frankfort, Kentucky 40602. Please refer to the Docket No. 2018-00402 in any correspondence. You may contact the undersigned if we can assist in any way.

Sincerely,

McBrayer, MgGinnis, Leslie & Kirkland, PLLC

Jacob C. Walbourn W. Brent Rice Counsel for Horvath Towers V, LLC

Enclosure

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MEBRAYER

201 EAST MAIN STREET, SUITE 900 LEXINGTON, KY 40507 859.231.8780 EXT. 102

December 4, 2018

Via Certified Mail

Sarah Ratliff Ford Ratliff Family Disclaimer Trust 108 Griffith Avenue Owensboro, KY 42301

> Re: Notice of Horvath Towers V, LLC ("Applicant") to Adjacent Landowners of its Application before the Kentucky Public Service Commission to Construct a Cellular Tower Facility at Owingsville Road, Mt. Sterling, Montgomery County, Kentucky

Dear Property Owner:

Horvath Towers V, LLC has applied to the Kentucky Public Service Commission to construct a 265' self-support tower and an approximately 10-foot tall lighting arrestor and related improvements, to be located at Owingsville Road, Mt. Sterling, Montgomery County, Kentucky. The proposed Facility will, on its installation, allow for co-location of multiple carriers, which will eliminate the need for additional facilities in the area. A map showing the location of the proposed new facility is enclosed. This notice is forwarded to you because you own property within fivehundred feet (500') of the proposed facility, or property contiguous to it.

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Sincerely,

McBrayer, McGinnis, Leslie & Kirkland, PLLC

Jacob C. Walbourn W. Brent Rice Counsel for Horvath Towers V, LLC

Enclosure

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201 EAST MAIN STREET, SUITE 900 LEXINGTON, KY 40507 859.231.8780 EXT. 102

December 4, 2018

<u>Via Certified Mail</u> Robert Gatewood c/o Angie Beavers 1193 Veterans Memorial Hwy SW Mableton, GA 30126

Re: Notice of Horvath Towers V, LLC ("Applicant") to Adjacent Landowners of its Application before the Kentucky Public Service Commission to Construct a Cellular Tower Facility at Owingsville Road, Mt. Sterling, Montgomery County, Kentucky

Dear Property Owner:

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Sincerely,

McBrayer, McGinnis, Leslie & Kirkland, PLLC.

Jacob C. Walbourn W. Brent Rice Counsel for Horvath Towers V, LLC

Enclosure

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MEBRAYER

201 EAST MAIN STREET, SUITE 900 LEXINGTON, KY 40507 859.231.8780 EXT. 102

December 4, 2018

Via Certified Mail

Pilot Travel Centers LLC Store #041 PO Box 54470 Lexington, KY 40555

> Re: Notice of Horvath Towers V, LLC ("Applicant") to Adjacent Landowners of its Application before the Kentucky Public Service Commission to Construct a Cellular Tower Facility at Owingsville Road, Mt. Sterling, Montgomery County, Kentucky

Dear Property Owner:

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Sincerely,

McBrayer, McGianis, Leslie & Kirkland, PLLC

Jacob C. Walbourn W. Brent Rice Counsel for Horvath Towers V, LLC

Enclosure

4818-6478-2947, v. 1

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MGBRAYER

201 EAST MAIN STREET, SUITE 900 LEXINGTON, KY 40507 859.231.8780 EXT. 102

December 4, 2018

Via Certified Mail

Robert C. Gatwood and Anne Leaf and RCG-MS Prop LLC 2708 Frankfort Ave Louisville, KY 40206

> Re: Notice of Horvath Towers V, LLC ("Applicant") to Adjacent Landowners of its Application before the Kentucky Public Service Commission to Construct a Cellular Tower Facility at Owingsville Road, Mt. Sterling, Montgomery County, Kentucky

Dear Property Owner:

Horvath Towers V, LLC has applied to the Kentucky Public Service Commission to construct a 265' self-support tower and an approximately 10-foot tall lighting arrestor and related improvements, to be located at Owingsville Road, Mt. Sterling, Montgomery County, Kentucky. The proposed Facility will, on its installation, allow for co-location of multiple carriers, which will eliminate the need for additional facilities in the area. A map showing the location of the proposed new facility is enclosed. This notice is forwarded to you because you own property within fivehundred feet (500') of the proposed facility, or property contiguous to it.

There is a crucial need to upgrade wireless cell services for existing covered customers in this area, and to expand capacity to serve future customers. Additionally, this facility is crucial to providing wireless communications ability, including the ability to contact emergency services, for users living in or travelling in this area. Our client's representatives have attempted to select a site that addresses the service deficit while minimizing the impact on adjacent properties.

Your comments regarding the proposed application are invited by the Public Service Commission, as well as the Applicant. You may submit comments or request intervention in the PSC's consideration of the application. You may contact the PSC by contacting Executive Director, Public Service Commission, PO Box 615, Frankfort, Kentucky 40602. Please refer to the Docket No. 2018-00402 in any correspondence. You may contact the undersigned if we can assist in any way.

Sincerely,

McBrayer, McGianis, Leslie & Kirkland, PLLC

Jacob C. Walbourn W. Brent Rice Counsel for Horvath Towers V, LLC

Enclosure

4818-6478-2947, v. 1

MGBRAYER

201 EAST MAIN STREET, SUITE 900 LEXINGTON, KY 40507 859.231.8780 EXT. 102

December 4, 2018

Via Certified Mail

Peak Property Development LLC c/o Robert Jarrett 100 Chandler Lane Mt. Sterling, KY 40353

> Re: Notice of Horvath Towers V, LLC ("Applicant") to Adjacent Landowners of its Application before the Kentucky Public Service Commission to Construct a Cellular Tower Facility at Owingsville Road, Mt. Sterling, Montgomery County, Kentucky

Dear Property Owner:

Horvath Towers V, LLC has applied to the Kentucky Public Service Commission to construct a 265' self-support tower and an approximately 10-foot tall lighting arrestor and related improvements, to be located at Owingsville Road, Mt. Sterling, Montgomery County, Kentucky. The proposed Facility will, on its installation, allow for co-location of multiple carriers, which will eliminate the need for additional facilities in the area. A map showing the location of the proposed new facility is enclosed. This notice is forwarded to you because you own property within fivehundred feet (500') of the proposed facility, or property contiguous to it.

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201 EAST MAIN STREET, SUITE 900 LEXINGTON, KY 40507 859.231.8780 EXT. 102

December 4, 2018

Via Certified Mail

Stop N Shop LLC PO Box 97 Winchester, KY 40391

> Re: Notice of Horvath Towers V, LLC ("Applicant") to Adjacent Landowners of its Application before the Kentucky Public Service Commission to Construct a Cellular Tower Facility at Owingsville Road, Mt. Sterling, Montgomery County, Kentucky

Dear Property Owner:

Horvath Towers V, LLC has applied to the Kentucky Public Service Commission to construct a 265' self-support tower and an approximately 10-foot tall lighting arrestor and related improvements, to be located at Owingsville Road, Mt. Sterling, Montgomery County, Kentucky. The proposed Facility will, on its installation, allow for co-location of multiple carriers, which will eliminate the need for additional facilities in the area. A map showing the location of the proposed new facility is enclosed. This notice is forwarded to you because you own property within fivehundred feet (500') of the proposed facility, or property contiguous to it.

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McBraver, McGimpis, Leslie & Kirkland, PLLC

Jacob C. Walbourn W. Brent Rice Counsel for Horvath Towers V, LLC

Enclosure

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12/4/2018

Google Maps 38°05'25.3"N 83°53'55.9"W



Imagery ©2018 Google, Map data ©2018 Google 200 ft

EXHIBIT

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201 EAST MAIN STREET, SUITE 900 LEXINGTON, KY 40507 859.231.8780 EXT. 102

December 4, 2018

Via Certified Mail

Judge-Executive Wally Johnson 44 West Main Street Mt. Sterling, Kentucky 40353

> Re: Notice of Horvath Towers V, LLC ("Applicant") to Judge-Executive of its Application before the Public Service Commission to Construct a Cellular Tower Facility at Owingsville Road, Mt. Sterling, Kentucky

Dear Judge Johnson:

Horvath Towers V, LLC has applied to the Kentucky Public Service Commission to construct a 265' self-support tower and an approximately 10-foot tall lighting arrestor and related improvements, to be located at Owingsville Road, Mt. Sterling, Kentucky, near the US-60 and I-64 interchange. The proposed Facility will, on its installation, allow for co-location of multiple carriers. A map showing the location of the proposed new facility is enclosed.

There is a crucial need to upgrade wireless cell services for existing covered customers in this area, and to expand capacity to serve future customers. Additionally, this facility is crucial to providing wireless communications ability, including the ability to contact emergency services, for residents and travelers in the area. Our client's representatives have attempted to select a site that addresses the service deficit while minimizing the impact on Montgomery County residents.

Your comments regarding the proposed application are invited by the Public Service Commission, as well as the Applicant. You may submit comments or request intervention in the PSC's consideration of this application. You may contact the PSC by contacting the Executive Director, Public Service Commission, PO Box 615, Frankfort, Kentucky 40602. Please refer to Docket No. 2018-00402 in any correspondence related to this application.

Please do not hesitate to contact me if I can provide any additional assistance with this matter.

Sincerely.

Jácob C. Walbourn W. Brent Rice Counsel for Horvath Towers V, LLC

Enclosure

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201 EAST MAIN STREET, SUITE 900 LEXINGTON, KY 40507 859.231.8780 EXT. 102

December 4, 2018

Via Certified Mail

Montgomery County Fiscal Court 44 West Main Street Mt. Sterling, Kentucky 40353

> Re: Notice of Horvath Towers V, LLC ("Applicant") to Fiscal Court of its Application before the Public Service Commission to Construct a Cellular Tower Facility at Owingsville Road, Mt. Sterling, Kentucky

Dear Commissioners:

Horvath Towers V, LLC has applied to the Kentucky Public Service Commission to construct a 265' self-support tower and an approximately 10-foot tall lighting arrestor and related improvements, to be located at Owingsville Road, Mt. Sterling, Kentucky, near the US-60 and I-64 interchange. The proposed Facility will, on its installation, allow for co-location of multiple carriers. A map showing the location of the proposed new facility is enclosed.

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Please do not hesitate to contact me if I can provide any additional assistance with this matter.

Sincerely,

Jacob C. Walbourn W. Brent Rice Counsel for Horvath Towers V, LLC

Enclosure

completed to evaluate Freedom (Granning Masterger, D.C.

EXHIBIT

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Horvath Towers V, LLC proposed to construct a telecommunications tower near this site.

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If you have questions, please contact: Hovath Towers V, LLC 312 W Colfax Ave, South Bend, IN 46601

or the Executive Director, Public Service Commission, PO Box 615 Frankfort, KY 40602

Please refer to Docket No. 2018-00402 in any correspondence.

Horvath Towers V, LLC proposed to construct a telecommunications tower at this site.

If you have questions, please contact: Hovath Towers V, LLC 312 W Colfax Ave, South Bend, IN 46601

or the Executive Director, Public Service Commission, PO Box 615 Frankfort, KY 40602

Please refer to Docket No. 2018-00402 in any correspondence.

EXHIBIT

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verizon

Thursday, November 29th, 2018

RE: Proposed Cellco Partnership d/b/a Verizon Wireless Communications Facility Site Name: I-64 and US 60 Type of Tower: 275' Self Support Location: near HV1326 Owingsville Road, Mt Sterling, KY 40353.

To Whom It May Concern:

As a radio frequency engineer for Verizon Wireless, I am providing this letter to state the need for a Verizon Wireless site called I-64 AND US 60.

The I-64 AND US 60 site is proposed with the below objectives:

- 1 Offload 4G traffic from busy site to the West.
- 2 Improve 4G throughput to existing heavy data users.
- 3 Improve 4G network reliability by increasing the amount of time our customers operate on 4G instead of 3G.

Currently the area is experiencing high demand for wireless high-speed data. Growth forecasts have triggered the need for an additional site in the area. The tower is needed to provide all Verizon customers in the area with the best experience on their 4G wireless devices.

Raw Land – Design plans for a new tower would provide tower height of **275'** with a Verizon Wireless Centerline of **260'**. The new structure height was decided upon to best cover the offload area and interact with the existing Verizon sites. If we are limited to building a structure less than the proposed height, another tower would be needed in the vicinity in the near future. In addition, building a structure that is too short can cause existing taller sites to shoot over the proposed site and building a site that is too tall can cause the proposed site to shoot over existing sites. Both situations create a poor experience from a user perspective. The new structure will be placed near the center of the area with high traffic demand and offload the surrounding sites greatly. The new tower design meets stated objectives.

Verizon Wireless cares about the communities as well as the environment and prefers to collocate on existing structures when available. It can be noticed from any map that Verizon Wireless is currently collocated on many existing structures in the area. We prefer collocation due to reduced construction costs, faster deployment, and environment protection. However, Verizon Wireless was unable to find a suitable structure within the center of demand area to collocate the proposed I-64 AND US 60 site.

Crown Castle (FCC ID: 1059771) –Site is located too far north west of the demand area. Therefore Verizon does not feel this site meets our customer's needs and is not viable. Crown Castle (FCC ID: 1220054) –This existing tower too far west of the demand area and next to offloading existing Verizon Site LV Mt. Sterling(FCC ID: 1255637). Therefore Verizon does not feel this site meets our customer's needs and is not viable.

Page 1 of 2

Dec. 3. 2018 3:00PM

No. 0423 P. 2

verizon[√]

Garrett Communications Inc (FCC ID: 1207538). Site is located too far South West of demand search area. Therefore Verizon does not feel this site meets our customer's needs and is not viable.

Verizon Wireless design engineers establish search area criteria in order to effectively meet coverage objectives as well as offload existing Verizon cell sites. When met, the criterion also reduces the need for a new site to cover the area in the immediate future. Each cellular site covers a limited area, depending on site configuration and the surrounding terrain. Cell sites are built in an interconnected network; which means each cell site must be located so that their respective coverage areas are contiguous. This provides uninterrupted communications throughout the coverage area.

Since collocation is generally the most cost-effective means for prompt deployment of new facilities, Verizon Wireless makes every effort to investigate the feasibility for using existing towers or other tall structures for collocation when designing a new site or system expansion. However, collocation on an existing tower or tall structure is not always feasible due to location of existing cell sites. Cell sites are placed in a way so they provide smooth hand off to each other and are placed at some distance from each other to eliminate too much overlap. Too much overlap may result in a waste of resources and raise a system capacity overload concern.

This cell site has been designed, and shall be constructed and operated in a manner that satisfies regulations and requirements of all applicable governmental agencies that have been charged with regulating tower specifications, operation, construction, and placement, including the FAA and FCC.

Sincerely, Falz Mohemmed.

RF Engineer, Verizon Wireless

STATE OF KENTUCKY COUNTY OF

Subscribed and sworn to before me this

3rd day of December, 2018.

Notary Public

Signature Printed

County of Residence

AMY J. HARPER NOTARY PUBLIC Kentucky, State AI Large I.D. # 535982 My Commission Expires 6/16/2019

Page 2 of 2

Current Coverage without LV I-64 AND US 60



Coverage with the Proposed LV I-64 AND US 60 Site





Proposed: Lat Lon 38.09034722 -83.89885278

Objective : Capacity Offload from LV Stepstone G Sector 3 and LV MT. Sterling Sector 1 & 2

