DEC 18 2018

## COMMONWEALTH OF KENTUCKY BEFORE THE PUBLIC SERVICE COMMISSION

PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF NEW CINGULAR WIRELESS PCS, LLC, A DELAWARE LIMITED LIABILITY COMPANY, D/B/A AT&T MOBILITY	
FOR ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A WIRELESS COMMUNICATIONS FACILITY	) CASE NO.: 2018-00384 ) )
IN THE COMMONWEALTH OF KENTUCKY IN THE COUNTY OF LEE	)

SITE NAME: OLD LANDING

\*\*\*\*\*

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

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility ("Applicant"), by counsel, pursuant to (i) KRS §§ 278.020, 278.040, 278.650, 278.665, and other statutory authority, and the rules and regulations applicable thereto, and (ii) the Telecommunications Act of 1996, respectfully submits this Application requesting issuance of a Certificate of Public Convenience and Necessity ("CPCN") from the Kentucky Public Service Commission ("PSC") to construct, maintain, and operate a Wireless Communications Facility ("WCF") to serve the customers of the Applicant with wireless communications services.

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

- 1. The complete name and address of the Applicant: New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility, having a local address of Meidinger Tower, 462 S. 4<sup>th</sup> Street, Suite 2400, Louisville, Kentucky 40202.
- 2. Applicant proposes construction of an antenna tower for communications services, which is to be located in an area outside the jurisdiction of a planning commission, and Applicant submits this application to the PSC for a certificate of public convenience and necessity pursuant to KRS §§ 278.020(1), 278.040, 278.650, 278.665, and other statutory authority.
- 3. The Certificate of Authority filed with the Kentucky Secretary of State for the Applicant entity was attached to a prior application and is part of the case record for PSC case number 2011-00473 and is hereby incorporated by reference.
- 4. The Applicant operates on frequencies licensed by the Federal Communications Commission ("FCC") pursuant to applicable FCC requirements. A copy of the Applicant's FCC licenses to provide wireless services are attached to this Application or described as part of **Exhibit A**, and the facility will be constructed and operated in accordance with applicable FCC regulations.
- 5. The public convenience and necessity require the construction of the proposed WCF. The construction of the WCF will bring or improve the Applicant's services to an area currently not served or not adequately served by the Applicant by increasing coverage or capacity and thereby enhancing the public's access to innovative and competitive wireless communications services. The WCF will provide a necessary link in the Applicant's communications network that is designed to meet the increasing demands

for wireless services in Kentucky's wireless communications service area. The WCF is an integral link in the Applicant's network design that must be in place to provide adequate coverage to the service area.

- 6. To address the above-described service needs, Applicant proposes to construct a WCF at 400 Evelyn Road, Beattyville, Kentucky 41311 (37°37'53.58" North latitude, 83°48'31.51" West longitude), on a parcel of land located entirely within the county referenced in the caption of this application. The property on which the WCF will be located is owned by Larry Joe Estes pursuant to a Deed recorded at Deed Book 140, Page 295 in the office of the County Clerk. The proposed WCF will consist of a 355-foot tall tower, with an approximately 15-foot tall lightning arrestor attached at the top, for a total height of 370-feet. The WCF will also include concrete foundations and a shelter or cabinets to accommodate the placement of the Applicant's radio electronics equipment and appurtenant equipment. The Applicant's equipment cabinet or shelter will be approved for use in the Commonwealth of Kentucky by the relevant building inspector. The WCF compound will be fenced and all access gate(s) will be secured. A description of the manner in which the proposed WCF will be constructed is attached as Exhibit B and Exhibit C.
- 7. A list of utilities, corporations, or persons with whom the proposed WCF is likely to compete is attached as **Exhibit D**.
- 8. The site development plan and a vertical profile sketch of the WCF signed and sealed by a professional engineer registered in Kentucky depicting the tower height, as well as a proposed configuration for the antennas of the Applicant has also been included

### as part of Exhibit B.

- 9. Foundation design plans signed and sealed by a professional engineer registered in Kentucky and a description of the standards according to which the tower was designed are included as part of **Exhibit C**.
- 10. Applicant has considered the likely effects of the installation of the proposed WCF on nearby land uses and values and has concluded that there is no more suitable location reasonably available from which adequate services can be provided, and that there are no reasonably available opportunities to co-locate Applicant's antennas on an existing structure. When suitable towers or structures exist, Applicant attempts to co-locate on existing structures such as communications towers or other structures capable of supporting Applicant's facilities; however, no other suitable or available co-location site was found to be located in the vicinity of the site.
- 11. A copy of the Determination of No Hazard to Air Navigation issued by the Federal Aviation Administration ("FAA") is attached as **Exhibit E**.
- 12. A copy of the Kentucky Airport Zoning Commission ("KAZC") Approval to construct the tower is attached as **Exhibit F**.
- 13. A geotechnical engineering firm has performed soil boring(s) and subsequent geotechnical engineering studies at the WCF site. A copy of the geotechnical engineering report, signed and sealed by a professional engineer registered in the Commonwealth of Kentucky, is attached as **Exhibit G**. The name and address of the geotechnical engineering firm and the professional engineer registered in the Commonwealth of Kentucky who supervised the examination of this WCF site are included as part of this

exhibit.

- 14. Clear directions to the proposed WCF site from the County seat are attached as **Exhibit H**. The name and telephone number of the preparer of **Exhibit H** are included as part of this exhibit.
- 15. Applicant, pursuant to a written agreement, has acquired the right to use the WCF site and associated property rights. A copy of the agreement or an abbreviated agreement recorded with the County Clerk is attached as **Exhibit I**.
- 16. Personnel directly responsible for the design and construction of the proposed WCF are well qualified and experienced. The tower and foundation drawings for the proposed tower submitted as part of **Exhibit C** bear the signature and stamp of a professional engineer registered in the Commonwealth of Kentucky. All tower designs meet or exceed the minimum requirements of applicable laws and regulations.
- 17. The Construction Manager for the proposed facility is Don Murdock and the identity and qualifications of each person directly responsible for design and construction of the proposed tower are contained in **Exhibits B & C**.
- 18. As noted on the Survey attached as part of **Exhibit B**, the surveyor has determined that the site is not within any flood hazard area.
- 19. **Exhibit B** includes a map drawn to an appropriate scale that shows the location of the proposed tower and identifies every owner of real estate within 500 feet of the proposed tower (according to the records maintained by the County Property Valuation Administrator). Every structure and every easement within 500 feet of the proposed tower or within 200 feet of the access road including intersection with the public street system is

#### illustrated in Exhibit B.

- 20. Applicant has notified every person who, according to the records of the County Property Valuation Administrator, owns property which is within 500 feet of the proposed tower or contiguous to the site property, by certified mail, return receipt requested, of the proposed construction. Each notified property owner has been provided with a map of the location of the proposed construction, the PSC docket number for this application, the address of the PSC, and has been informed of his or her right to request intervention. A list of the notified property owners and a copy of the form of the notice sent by certified mail to each landowner are attached as **Exhibit J** and **Exhibit K**, respectively.
- 21. Applicant has notified the applicable County Judge/Executive by certified mail, return receipt requested, of the proposed construction. This notice included the PSC docket number under which the application will be processed and informed the County Judge/Executive of his/her right to request intervention. A copy of this notice is attached as **Exhibit L**.
- 22. Notice signs meeting the requirements prescribed by 807 KAR 5:063, Section 1(2) that measure at least 2 feet in height and 4 feet in width and that contain all required language in letters of required height, have been posted, one in a visible location on the proposed site and one on the nearest public road. Such signs shall remain posted for at least two weeks after filing of the Application, and a copy of the posted text is attached as **Exhibit M**. A legal notice advertisement regarding the location of the proposed facility has been published in a newspaper of general circulation in the county in which the WCF is proposed to be located. A copy of the newspaper legal notice advertisement is attached

#### as part of Exhibit M.

- 23. The general area where the proposed facility is to be located is mountainous and heavily wooded.
- 24. The process that was used by the Applicant's radio frequency engineers in selecting the site for the proposed WCF was consistent with the general process used for selecting all other existing and proposed WCF facilities within the proposed network design area. Applicant's radio frequency engineers have conducted studies and tests in order to develop a highly efficient network that is designed to handle voice and data traffic in the service area. The engineers determined an optimum area for the placement of the proposed facility in terms of elevation and location to provide the best quality service to customers in the service area. A radio frequency design search area prepared in reference to these radio frequency studies was considered by the Applicant when searching for sites for its antennas that would provide the coverage deemed necessary by the Applicant. A map of the area in which the tower is proposed to be located which is drawn to scale and clearly depicts the necessary search area within which the site should be located pursuant to radio frequency requirements is attached as **Exhibit N**.
- 25. The tower must be located at the proposed location and proposed height to provide necessary service to wireless communications users in the subject area. In addition to expanding and improving voice and data service for AT&T mobile customers, this site will also provide wireless local loop ("WLL") broadband internet service in the subject area. As a participant in the FCC's Connect America Fund Phase II (CAF II) program, AT&T is aggressively deploying WLL service infrastructure to bring expanded

internet access to residential and business customers in rural and other underserved areas. WLL will support internet access at the high speeds required to use and enjoy the most current business, education and entertainment technologies. Broadband service via WLL will be delivered from the tower to a dedicated antenna located at the home or business receiving service and will support downloads at 10 Mbps and uploads at 1 Mbps.

- 26. All Exhibits to this Application are hereby incorporated by reference as if fully set out as part of the Application.
- 27. All responses and requests associated with this Application may be directed to:

David A. Pike
Pike Legal Group, PLLC
1578 Highway 44 East, Suite 6
P. O. Box 369
Shepherdsville, KY 40165-0369
Telephone: (502) 955-4400

Telefax:

(502) 543-4410

Email:

dpike@pikelegal.com

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

Respectfully submitted,

David A. Pike

Pike Legal Group, PLLC

1578 Highway 44 East, Suite 6

Pavid a Pelse

P. O. Box 369

Shepherdsville, KY 40165-0369

Telephone: (502) 955-4400 Telefax:

(502) 543-4410

Email: dpike@pikelegal.com

Attorney for New Cingular Wireless PCS, LLC

d/b/a AT&T Mobility

### LIST OF EXHIBITS

A - FCC License Documentation

B - Site Development Plan:

500' Vicinity Map Legal Descriptions

Flood Plain Certification

Site Plan

Vertical Tower Profile

C - Tower and Foundation Design

D - Competing Utilities, Corporations, or Persons List

E - FAA

F - Kentucky Airport Zoning Commission

G - Geotechnical Report

H - Directions to WCF Site

Copy of Real Estate Agreement

J - Notification Listing

K - Copy of Property Owner Notification

L - Copy of County Judge/Executive Notice

M - Copy of Posted Notices and Newspaper Notice Advertisement

N - Copy of Radio Frequency Design Search Area

# EXHIBIT A FCC LICENSE DOCUMENTATION

#### REFERENCE COPY

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



#### **Federal Communications Commission**

#### Wireless Telecommunications Bureau

#### RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: LESLIE WILSON NEW CINGULAR WIRELESS PCS, LLC 208 S AKARD ST., RM 1016 DALLAS, TX 75202

Call Sign KNLF251	File Number
Radio	Service
CW - PCS	Broadband

FCC Registration Number (FRN): 0003291192

<b>Grant Date</b> 06-02-2015	Effective Date 08-31-2018	Expiration Date 06-23-2025	Print Date
Market Number MTA026	Chann	el Block	Sub-Market Designator 15
	<b>Market</b> Louisville-Lexin	gton-Evansvill	
t Build-out Date 06-23-2000	2nd Build-out Date 06-23-2005	3rd Build-out Date	4th Build-out Date

#### Waivers/Conditions:

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

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

#### Conditions:

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

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

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNLF251 File Number: Print Date:

This authorization is subject to the condition that the remaining balance of the winning bid amount will be paid in accordance with Part 1 of the Commission's rules, 47 C.F.R. Part 1.

This license is conditioned upon compliance with the provisions of Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation For Consent to Transfer Control of Licenses and Authorizations, Memorandum Opinion and Order, FCC 04-255 (rel. Oct. 26, 2004).

Spectrum Lease Associated with this License. See Spectrum Leasing Arrangement Letter dated 12/06/2004 and File # 0001918512.

Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

Licensee Name:	<b>NEW</b>	<b>CINGULAR</b>	WIREL	ESS	PCS.	LLC
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Call Sign: KNLF251 File Number: Print Date:

700 MHz Relicensed Area Information:

Market Market Name Buildout Deadline Buildout Notification Status

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## **Federal Communications Commission**

Wireless Telecommunications Bureau

#### RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: CECIL J MATHEW NEW CINGULAR WIRELESS PCS, LLC 208 S AKARD ST., RM 1015 DALLAS, TX 75202

Call Sign KNLH398	File Number
	Service
CW - PCS	Broadband

FCC Registration Number (FRN): 0003291192

Grant Date 04-14-2017	Effective Date 08-31-2018	Expiration Date 04-28-2027	Print Date
Market Number BTA252	D	el Block	Sub-Market Designator
	Market Lexingto		
st Build-out Date 04-28-2002	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

#### Waivers/Conditions:

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

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

#### Conditions:

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

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Licensee Name: NEW CINGULAR WIR	ELESS PCS, LLC
---------------------------------	----------------

Call Sign: KNLH398

File Number:

**Print Date:** 

700 MHz Relicensed Area Information:

Market

**Market Name** 

**Buildout Deadline** 

**Buildout Notification** 

Status

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## **Federal Communications Commission**

#### Wireless Telecommunications Bureau

#### RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: CECIL J MATHEW NEW CINGULAR WIRELESS PCS, LLC 208 S AKARD ST., RM 1015 DALLAS, TX 75202

Call Sign WPOI255	File Number
Radio	Service
CW - PCS	Broadhand

FCC Registration Number (FRN): 0003291192

Grant Date 05-27-2015	Effective Date 08-31-2018	Expiration Date 06-23-2025	Print Date
Market Number MTA026	Chann	nel Block	Sub-Market Designator 19
	<b>Market</b> Louisville-Lexin		
st Build-out Date 06-23-2000	2nd Build-out Date 06-23-2005	3rd Build-out Date	4th Build-out Date

#### Waivers/Conditions:

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

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

#### Conditions:

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

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Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: WPOI255 File Number: Print Date:

This authorization is subject to the condition that the remaining balance of the winning bid amount will be paid in accordance with Part 1 of the Commission's rules, 47 C.F.R. Part 1.

This license is conditioned upon compliance with the provisions of Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation For Consent to Transfer Control of Licenses and Authorizations, Memorandum Opinion and Order, FCC 04-255 (rel. Oct. 26, 2004).

Spectrum Lease Associated with this License. See Spectrum Leasing Arrangement Letter dated 12/06/2004 and File # 0001918558.

The Spectrum Leasing Arrangement, which became effective upon approval of application file number 0001918558, was terminated on 04/14/2005. See file number 0002135370.

Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

Licensee Name:	NEW	<b>CINGULAR</b>	WIREL	ESS	PCS.	LLC	3
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Call Sign: WPOI255 File Number: Print Date:

700 MHz Relicensed Area Information:

Market Name Buildout Deadline Buildout Notification Status

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## Federal Communications Commission

#### Wireless Telecommunications Bureau

#### RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: LESLIE WILSON NEW CINGULAR WIRELESS PCS, LLC 208 S AKARD ST., RM 1016 DALLAS, TX 75202

Call Sign WQGA823	File Number
Radio S	Service
AW - AWS (1710	)-1755 MHz and
2110-215	5 MHz)

FCC Registration Number (FRN): 0003291192

Grant Date 11-29-2006	Effective Date 08-31-2018	Expiration Date 11-29-2021	Print Date
Market Number CMA452	Chann A	el Block	Sub-Market Designator
	Market Kentucky 1		
st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

#### Waivers/Conditions:

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

#### Conditions:

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

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

Licensee Name:	NEW	CINGULAR	WIRE	ESS	PCS.	LLC
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Call Sign: WQGA823 File Number:

**Print Date:** 

700 MHz Relicensed Area Information:

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

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## Federal Communications Commission

#### Wireless Telecommunications Bureau

#### RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: CECIL J MATHEW NEW CINGULAR WIRELESS PCS, LLC 208 S AKARD ST., RM 1015 DALLAS, TX 75202

Call Sign WQGD755	File Number
	Service
	10-1755 MHz and 55 MHz)

FCC Registration Number (FRN): 0003291192

Grant Date 12-18-2006	Effective Date 08-31-2018	Expiration Date 12-18-2021	Print Date
Market Number BEA047	Chann	el Block	Sub-Market Designator
	Market Lexington, KY	-TN-VA-WV	
st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Dat

#### Waivers/Conditions:

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

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

#### Conditions:

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

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

Licensee Name:	NEW	CINGULAR	WIREI	LESS	PCS,	LLC
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Call Sign: WQGD755 File Number: Print Date:

700 MHz Relicensed Area Information:

Market Market Name Buildout Deadline Buildout Notification Status

### **EXHIBIT B**

### **SITE DEVELOPMENT PLAN:**

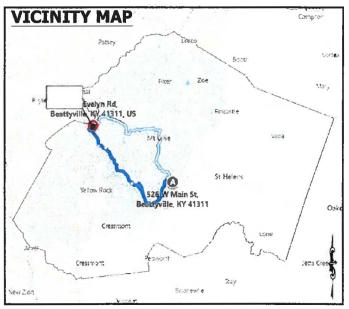
500' VICINITY MAP
LEGAL DESCRIPTIONS
FLOOD PLAIN CERTIFICATION
SITE PLAN
VERTICAL TOWER PROFILE



SITE NAME:

## **OLD LANDING**

## PROPOSED RAW LAND SITE WITH PROPOSED 355' SELF-SUPPORT **TOWER WITH A 15' LIGHTNING ARRESTOR AND INSTALLATION** OF A 80" x 80" WALK IN CABINET AND GENERATOR



### **DIRECTIONS**

DEPART 526 W MAIN STREET, BEATTYVILLE, KY 41311 DEPART KY-52 / BEATTYVILLE RD TOWARD SHORT ST - 0.4MI TURN LEFT ONTO WHITE ASH RD - 4.9MI

TURN RIGHT ONTO KY-399 - 3.3MI

TURN LEFT ONTO WILLOW CREEK RD - 0.6MI TURN RIGHT ONTO BEECH TIMBER RD - 1.4MI TURN RIGHT ONTO EVELYN RD - 0.6MI

## PROJECT SCOPE OF WORK

ZONING DRAWINGS FOR: CONSTRUCTION OF A PROPOSED UNMANNED TELECOMMUNICATIONS

SITE WORK: PROPOSED TOWER, UNMANNED EQUIPMENT SHELTER AND GENERATOR ON A CONCRETE FOUNDATIONS, AND UTILITY

## **PROJECT INFORMATION**

D/B/A AT&T MOBILITY

LATITUDE: LONGITUDE:

### **DRAWING INDEX**

- T-1 TITLE SHEET & PROJECT INFORMATION
- B-1 SITE SURVEY
- B-2 500' RADIUS & ABUTTER'S MAP

**CONTACT INFORMATION** 

<u>FIRE DEPARTMENT:</u> BEATTYVILLE & LEE COUNTY FIRE DEPARTMENT

**BUILDING CODES AND STANDARDS** 

CONTRACTOR'S WORK SHALL COMPLY WITH ALL APPICABLE NATIONAL, STATE AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING

CONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE

TELECOMMUNICATIONS INDUSTRY ASSOCIATION TIA-222 STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS. THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN.

\*\*\*CAUTION\*\*\*

FOR EMERGENCIES CALL: 911

AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STEEL

COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR

Know what's below.

Call before you dig.

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS IEEE-81,

ANSI T1.311, FOR TELECOM - DC POWER SYSTEMS - TELECOM,

- OVERALL SITE LAYOUT
- C-2 ENLARGED COMPOUND LAYOUT
- C-3 TOWER ELEVATION

PHONE: 606-464-5030 POLICE DEPARTMENT

ELECTRIC COMPANY: JACKSON ENERGY

PHONE: 800-262-7480

ELEPHONE COMPANY:

HONE: 800-288-2020

FOLLOWING STANDARDS:

**TELECOMMUNICATIONS** 

2014 NEC

IEEE 1100, IEEE C62.41

ENVIRONMENTAL PROTECTION

CONSTRUCTION

JURISDICTION FOR THE LOCATION.

SUPPORTING STRUCTURES TIA-601

2014 KENTUCKY BUILDING CODE

AMERICAN CONCRETE INSTITUTE 318

T&T

EE COUNTY SHERIFF'S OFFICE PHONE: 606-464-4140







**ZONING DRAWINGS** NOT FOR CONSTRUCTION

DRAWN BY: CHECKED BY

EV	DATE	DESCRIPTION
0	12/13/18	ISSUED FOR ZONING
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	i .	
-		
_		
_		

## Milliam Hardater State OF KEN 111 SE OF KENTULL SONAL ET 12/13/2018

ENG. PERMIT # 4363

13800702 SITE# KYL06083 SITE NAME: **OLD LANDING** SITE ADDRESS: 400 EVELYN ROAD BEATTYVILLE, KY 41311

> SHEET TITLE **TITLE SHEET &** PROJECT INFORMATION

> > SHEET NUMBER

T-1

COUNTY: LEE COUNTY

SITE ADDRESS: 400 EVELYN ROAD

NEW CINGULAR WIRELESS PCS, LLC, APPLICANT:

MEIDINGER TOWER

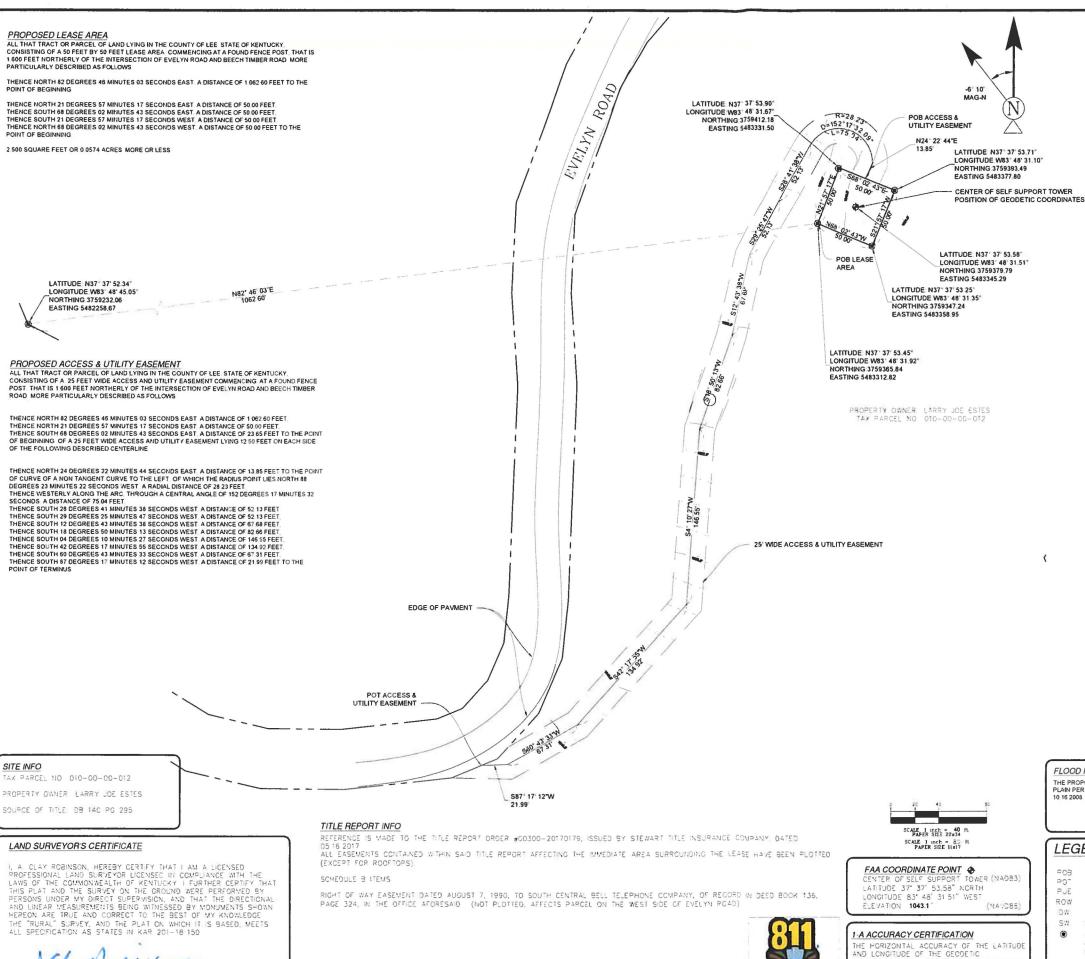
462 S. 4TH ST. SUITE 2400 LOUISVILLE, KY 40202

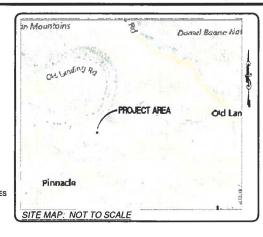
-83' 48' 31.51"

BEATTYVILLE, KY 41311

A DELAWARE LIMITED LIABILITY COMPANY.

37' 37' 53 58'





#### RENCHMARK

ELE /ATON ESTAB SHED FROM GPS OBSERVATIONS CONSTRAINED TO CPUS SOLUTIONS, APPLYING GEOI 124 SEPARATIONS NAVDEB DATUM.

#### BASIS OF BEARINGS

BEARINGS SHOWED HEREON, ARE BASED UPON U.S. STATE PLANE NADB3 COORDINATE SYSTEM KENTUCKY SINGLE ZONE US FOOT, DETERMINE BY GPS OBSERVATIONS, COMPLETED ON 8.13.17

#### UTILITY NOTES

SURVEYOR DOES NOT GUARANTEE THAT ALL THE ARE SHOWN OR THEIR LOCATIONS IT S THE RESPONSIBILITY OF THE CONTRACTOR AND ELL CONTRACT LOCAL BIT AND ANY OTHER NOTICE OF THE CONTRACT LOCAL BIT AND ANY OTHER NOTICE OF THE LOCATE ALL UTILITIES PROR TO CONSTRUCTION. REMOVAL, RELOCATION AND/ M REPLACEMENT RESPONSIBILITY OF THE CONTRACTOR.

#### SURVEYOR NOTES

NO SEARLH OF PUBLIC RECORDS HAS BEEN ML IC DETERMINE ANY DEFECTS AND/OR AMBIGUTE IN TO THE OF THE PARENT PARCEL

THIS SURVEY S FOR THE PROPOSED LEASE AREA AN PROPOSED ACCESS AND UTILITY EASEMENT ONLY, AN A PARTIAL BO NDARY SURVEY OF THE PARENT TPACT A

THIS PROPERTY S SUBJECT TO ANY RE ORD EASEM-NI AND/OR PIGHT F WAY SHOWN HERECN OR NOT

THIS SUP /EY NOT INTENDED FOR LAND TRANSFER

SURVEYOR HAS NOT PERFORMED A SEARCH TUB RECORDS TO DETERMINE ANY DEFECT N TITLE 'S FO THE BOUNDARY SHOWN HEREON IS PLOT TO FIR M PF INFORMATION AND DOES NOT CONSTITUTE A B NDARY SURVEY OF THE PROPERTY

THIS SURVEY PLAN WAS PERF RME TU DER THE A THE OF KENTUCKS REDIZED THAT TES (2 1 KENT A THE OF KENTUCKY RETURN A CHIRDLE OF THE CARREST OF THE CARREST STREET STREET OF THE CARREST STREET DIMENSIONS (IF SHOWN ALONG THE PIRMETE LANDOWNER'S PROPERTY ARE PROVIDED UNDER T CANDOWNES SHOPERTY ARE PROVIDED VIDEO SURVEYOR'S SCOPE OF SERVICES M. A TAT AN . CONSIDERED FOR REFERENC ONLY THE EXA THE LANDOWNER'S PROPERTY MAY HERE P. A. T. PREPARATION OF A FULL B UNDARY SURVEY N. A. WITH THE PECUIREMEN'S ESTABLISHED BY FACENTUCKY. 17108

THIS SURVEY WAS PERFORMED WITH A CAPLS N.R. x5+ DUAL FREQUENCY, REAL TIME KINEMATIC OF BALLPHIT MING SYSTEM ROYER AND BASE STATION H/W B16-3 14-701133 & 516330147501128 SER L. N. MSERS REDUNDANT AND REPETITIVE MEASUREMENTS WERE TAKENTON IN THE CORRE T POSITIONS OF ALL DATA PONTS A TOLERAN - F 0.04"

THE PROPOSED LEASE AREA SHOWN HEREON IS NOT LOCATED IN A 100-YEAR FLOOD PLAIN PER FLOOD HAZARD BOUNDARY MAP COMMUNITY-PANEL NO 21129C0025D DATED 10 16 2008 THE PROPOSED LEASE AREA IS LOCATED IN ZONE "X

#### LEGEND

POR POINT OF BEGINNING

SET 1/2" x24" R CAPPED: #32"9 OR FOUND AS NOTED

POST N OF GEODETIC CO R INA ES 4 MATER JONTR "A -FPE HYDPANT POMER POLE E ECTRIC MANH F TE CO MANHOLE

SPOT ELEVAT N

COCRDINATES FALL WITHIN TWENTY (20) FEET THE ELEVATIONS (NAVDBB) OF THE GROUND AND FIXTURES FALL WITHIN THREE (3) FEET

Know what's **below.**Call before you dig.







DRAWN BY MD CHECKED BY JC/ACR

REV	DATE	DESCRIPTION	
Α	8.30.17	REVIEW	



13800702 KYL06083 SITE NAME **OLD LANDING** S TE ADDRESS 400 EVELYN ROAD BEATTYVILLE, KY 41311 LEE COUNTY

> **TOPOGRAPHIC** SITE SURVEY

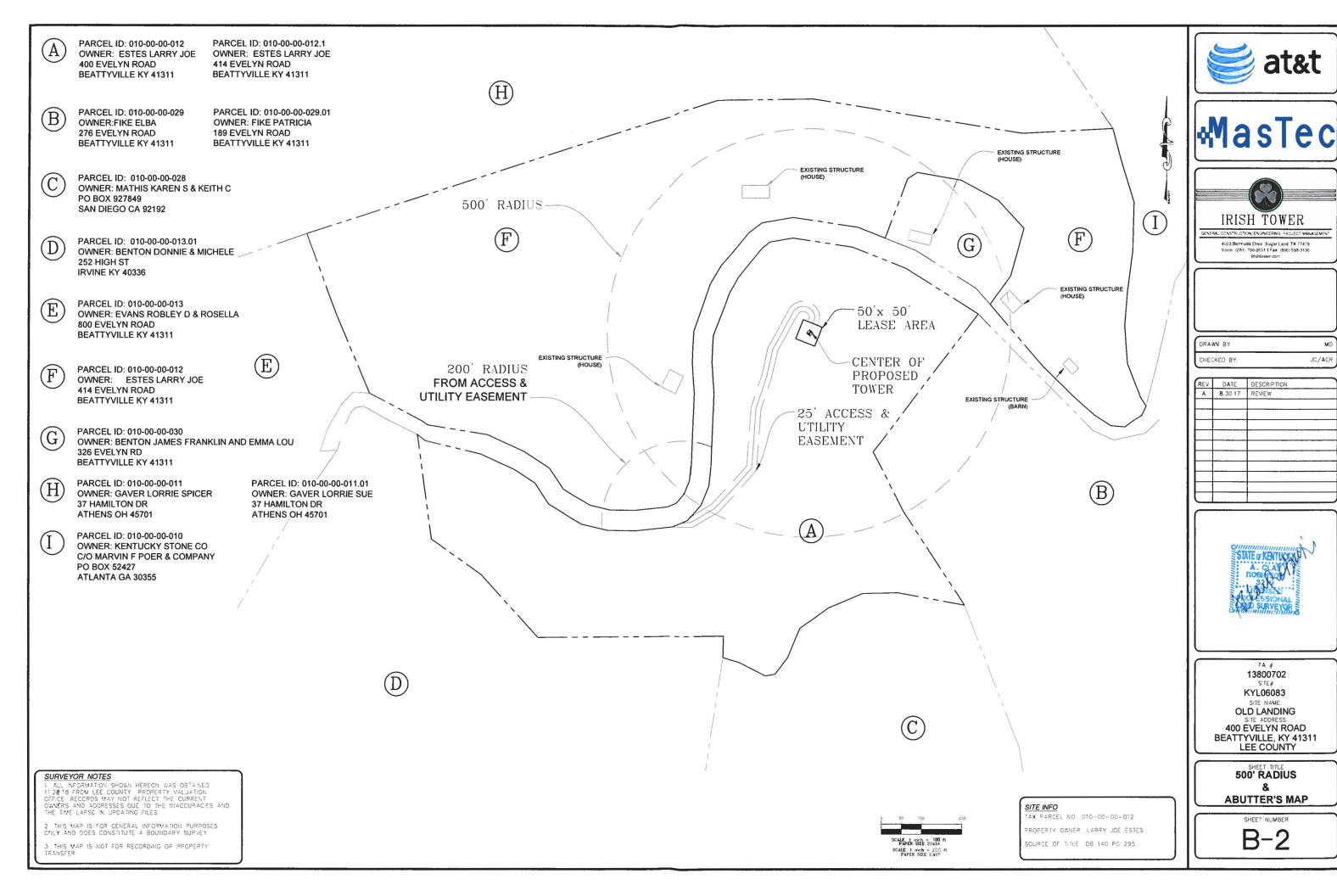
SHEET NUMBER

B-1

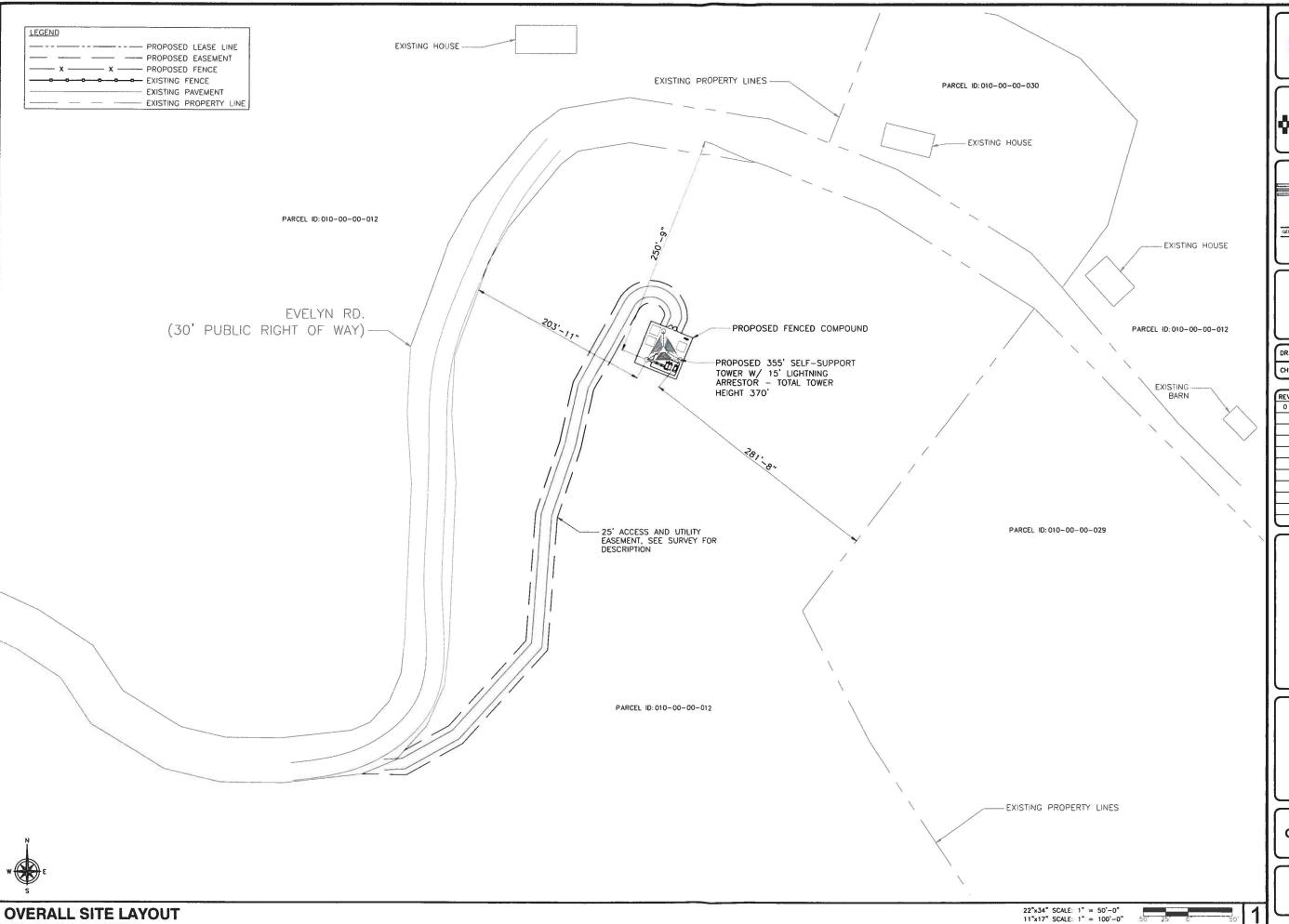


22	1 OHAT OF SEGUATIO	
0-	POINT OF TERMINUS	
JE	PUBLIC UTLITY EASEMENT	
WC	RIGHT OF WAY	
177	DRIVEWAY	
191	SDEWALK	
-	CONTRACTOR OF THE CONTRACTOR	

OVERHEAD ELECTRIC PROPERTY LINE BARBED WIRE FENCE



JC/ACR





**MasTec** 



4503 Bermuda Drive Sugar Land TX 77479

4603 Bermuda Drive Sugar Land TX 77479 Voice (281) 796-2651 I Fax. (866) 598-3136 Irrishtower.com

ZONING DRAWINGS NOT FOR CONSTRUCTION

1	DRAWN BY:	AMC
	CHECKED BY	JRG

REV	DATE	DESCRIPTION
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ENG. PERMIT # 4363

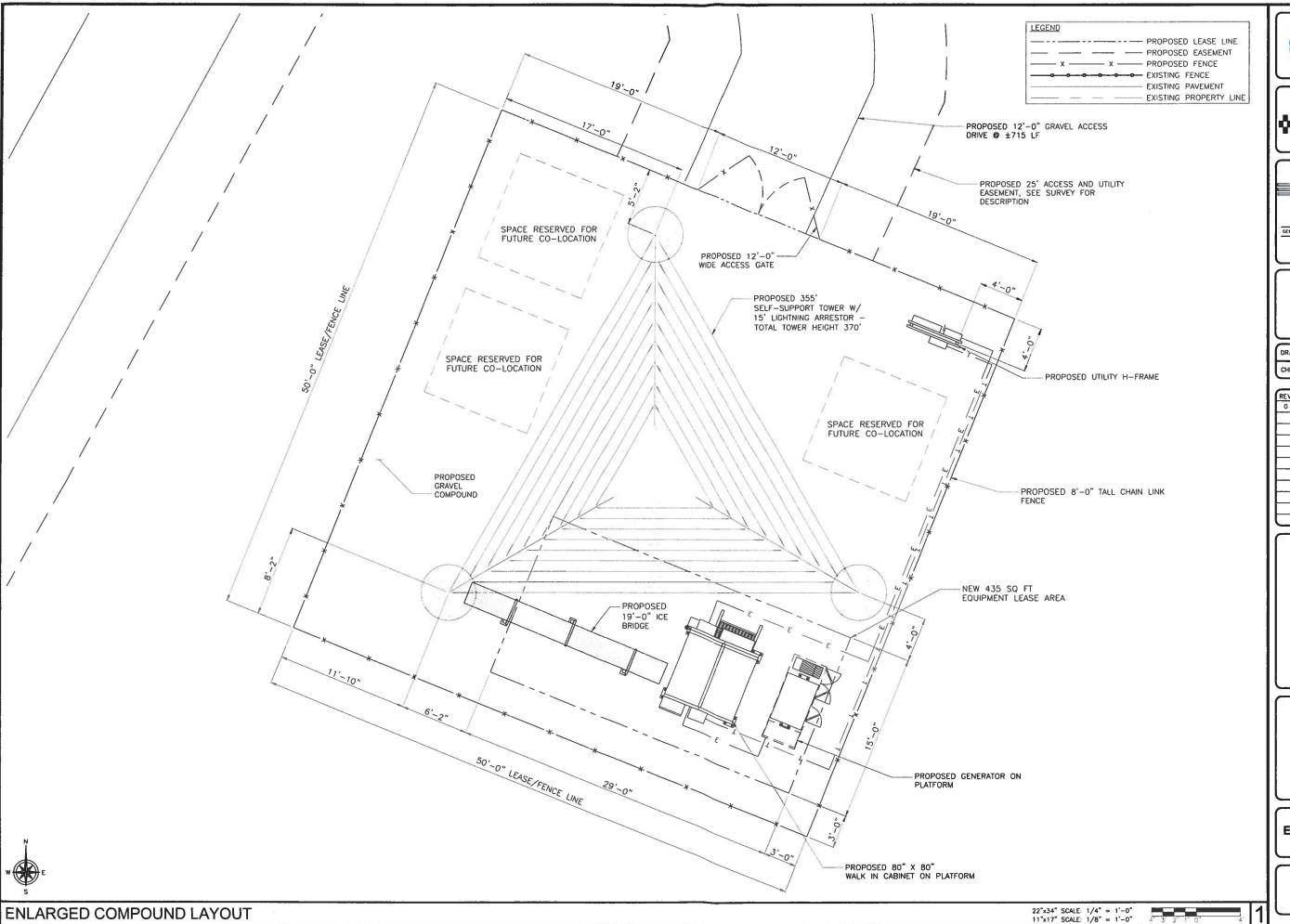
FA # 13800702
SITE#
KYL06083
SITE NAME:
OLD LANDING
SITE ADDRESS:
400 EVELYN ROAD
BEATTYVILLE, KY 41311

SHEET TITLE

**OVERALL SITE LAYOUT** 

SHEET NUMBER

C-1









ALCONSTRUCTION ENGINEERING PROJECT MANAGE
4603 Bermuda Drive Sugar Land TX 77479
Voice (281) 796-2651 Fax (866) 598-3136
Inshlower.com

ZONING DRAWINGS
NOT FOR CONSTRUCTION

DRAWN BY: AMC
CHECKED BY: JRG

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ENG. PERMIT # 4363

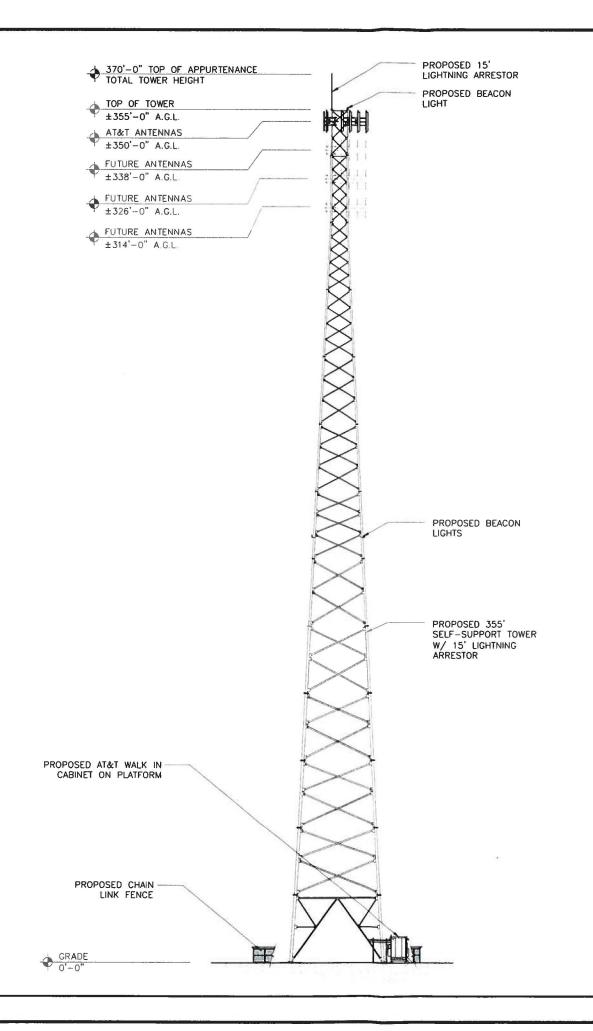
FA #
13800702
SITE#
KYL06083
SITE NAME:
OLD LANDING
SITE ADDRESS:
400 EVELYN ROAD
BEATTYVILLE, KY 41311

SHEET TITLE

ENLARGED COMPOUND LAYOUT

SHEET NUMBER

C-2





**MasTec** 



4603 Bermuda Drive Sugar Land TX 77479 Voice (281) 796-2651 Fax (866) 598-3136 Inshtower.com

NOT FOR CONSTRUCTION

**ZONING DRAWINGS** 

DRAWN BY:	AMC
CHECKED BY:	JRG

REV	DATE	DESCRIPTION
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ENG. PERMIT # 4363

FA # 13800702 SITE# KYL06083 SITE NAME: OLD LANDING SITE ADDRESS: 400 EVELYN ROAD BEATTYVILLE, KY 41311

SHEET TITLE

**TOWER ELEVATION** 

C-3

# EXHIBIT C TOWER AND FOUNDATION DESIGN



November 7<sup>th</sup>, 2018 Kentucky Public Service Commission 211 Sower Blvd. P.O. Box 615 Frankfort, KY 40602-0615

RE: Site Name – Old Landing Proposed Cell Tower 37° 37′ 53.58″ North Latitude, 83° 48′ 31.51″ West Longitude

#### **Dear Commissioners:**

The Project / Construction Manager for the proposed new communications facility will be Don Murdock. His contact information is (615) 207-8280 or <a href="mailto:Don.Murdock@mastec.com">Don.Murdock@mastec.com</a>

Don has been in the industry completing civil construction and constructing towers since 2009. He has worked at Mastec Network Solutions since 2009 completing project and construction management on new site build projects.

Thank you,

Don Murdock, Sr. Project Manager - Tennessee/Kentucky Market

MasTec Network Solutions

(615) 207-8280



## **Structural Design Report**

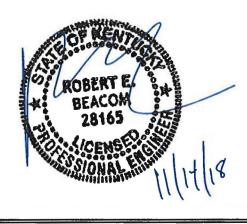
355' S3TL Series HD1 Self-Supporting Tower Site: Old Landing, KY

Prepared for: AT&T by: Sabre Towers & Poles TM

Job Number: 422008

November 13, 2018

Tower Profile	1-2
Foundation Design Summary (Option 1)	3
Foundation Design Summary (Option 2)	4
Maximum Leg Loads	5
Maximum Diagonal Loads	6
Maximum Foundation Loads	7
Calculations	8-26



regs	14.0	8	14.00 OD X .500	٥				=	12.75 OD X	.500	Н		10.75 OD X .500	0 X .500		8	8.625 OD X .500	8	٨	В	S	٥
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Horizontals	0	Ь	I	Ь	-	Ь	-	۵	σ						NONE					1	NONE M	Z
Internals	~	Ъ	٦	Ь	7	۵	œ	Ь	Я						-	NONE						
Sub-Diagonals	٦	Ь	S	Ь	æ	Ь	ж	Ь	æ						-	NONE						
Sub-Horizontals	s	۵	s	Ь	α	Ь	œ	۵	ч							NONE						
Brace Bolts					(2) 3/4"	3/4				(2) 5/8"				(1) 3/4"					(1) 5/8"	.8.		
Top Face Width	35,		33.	3:	31,	_	29,	'n	27.	25. 2	23.	21.	19,	17:	15'	13.	11,	ŏ	7		ù	
Panel Count/Height	⊢	5	H	n	⊢	Э	-	2	n			12 @ 10'	10,				9 @ 6.6667"			15 @ 5'	55.	
Section Weight	11102	Ş	10149	49	9209	60	8503	93	8275	7543 68	6864	6207	8509	5685	5592	4444	4007	3759	2785	2167	1757	595
	0' -	20'		40'	40	90	60°		80'	120°	140	160	180		200	220	240	260	280	300	340	355
37" - 0"	$\rightarrow$		$\rightarrow$		$\rightarrow$		$\rightarrow$ $\leftarrow$															

#### Design Criteria - ANSI/TIA-222-G

Ultimate Wind Speed (No Ice)	115 mph
Wind Speed (Ice)	30 mph
Design Ice Thickness	0.75 in
Structure Class	11
Risk Category	II II
Exposure Category	c
Topographic Category	1

#### **Base Reactions**

Total For	ındation	Individual F	Individual Footing		
Shear (kips)	140.56	Shear (kips)	86.21		
Axial (kips)	383.68	Compression (kips)	955		
Moment (ft-kips)	28846	Uplift (kips)	824		
Torsion (ft-kips)	-63,88				

#### **Material List**

Display	Value
Α	5,563 OD X .500
В	5.563 OD X .375
С	4.000 OD X .318
D	2.375 OD X .154
Ε	L 6 X 4 X 3/8
F	L 5 X 5 X 3/8
G	L 5 X 3 1/2 X 5/16 (SLV)
Н	L 4 X 4 X 3/8
1	L 4 X 4 X 5/16
J	L 3 1/2 X 3 1/2 X 1/4
K	L 3 1/2 X 3 X 1/4 (SLV)
L	L2X2X1/4
М	L 2 X 2 X 5/16
N	L2X2X1/8
0	L 5 X 5 X 5/16
Р	NONE
Q	L 4 X 3 1/2 X 5/16 (SLV)
R	L 3 X 3 X 1/4
S	L 3 X 3 X 5/16
Т	1 @ 13.333'
U	1 @ 6.667'

#### Notes

- 1) All legs are A500 (50 ksi Min. Yield).
- 2) All braces are A572 Grade 50.
- 3) All brace bolts are A325-X.
- 4) The tower model is S3TL Series HD1.
- Transmission lines are to be attached to standard 12 hole waveguide ladders with stackable hangers.
- 6) Azimuths are relative (not based on true north).
- 7) Foundation loads shown are maximums.
- 8) All unequal angles are oriented with the short leg vertical.
- 9) Weights shown are estimates. Final weights may vary.
- 10) This tower design and, if applicable, the foundation design(s) shown on the following page(s) also meet or exceed the requirements of the 2012 International Building Code.
- 11) Tower Rating: 99.72%



Sabre Communications Corporation 7101 Southbridge Drive P.O. Box 658 Sioux City, IA 51102-0658 Phone (712) 258-6690 Fax (712) 279-0814

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422008
Customer: AT&T
Site Name: Old Landing, KY

Description 355' S3TL

84 000

#### **Designed Appurtenance Loading**

Elev	Description	Tx-Line
360	(1) Extendible Lightning Rod	
350	(1) 278 sq. ft, EPA 6000# (no Ice)	(18) 1 5/8"
338	(1) 208 sq. ft, EPA 4000# (no ice)	(18) 1 5/8"

Elev	Description	Tx-Line
326	(1) 208 sq. ft. EPA 4000# (no ice)	(18) 1 5/8"
314	(1) 208 sq. ft. EPA 4000# (no ice)	(18) 1 5/8"

Sabre Communications Corporation
7101 Southbridge Drive
P.O. Box 658
Sioux City, 1A 51102-0658
Phome (7/2) 258-6890
Fax (7/2) 279-0814
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Job 422008 Customer T&TA

Site Name Old Landing, KY Description 355' S3TL

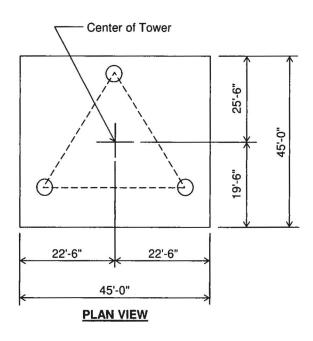


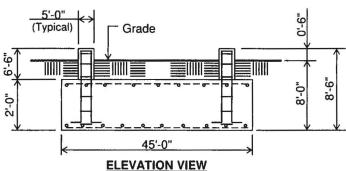
No.: 422008

Date: 11/13/18 By: REB

#### Customer: AT&T Site: Old Landing, KY

355 ft. Model S3TL Series HD1 Self Supporting Tower





(164.2 cu. yds.) (1 REQD.; NOT TO SCALE)

CAUTION: Center of tower is not in center of slab.

#### Notes:

- Concrete shall have a minimum 28-day compressive strength of 4,500 psi, in accordance with ACI 318-11.
- 2) Rebar to conform to ASTM specification A615 Grade 60.
- 3) All rebar to have a minimum of 3" concrete cover.
- 4) All exposed concrete corners to be chamfered 3/4".
- 5) The foundation design is based on the geotechnical report by ECS project no. 26:3125-R2, dated: 9/28/18
- See the geotechnical report for compaction requirements, if specified.
- 7) The foundation is based on the following factored loads:
  Factored download (kips) = 164.84
  Factored overturn (kip-ft) = 28,845.61
  Factored shear (kips) = 140.56
- 8) 6' of soil cover is required over the entire area of the foundation slab.
- The bottom anchor bolt template shall be positioned as closely as possible to the bottom of the anchor bolts.

	Rebar Schedule per Mat and per Pier
Pier	(28) #8 vertical rebar w/ hooks at bottom w/ #4 rebar ties, two (2) within top 5" of pier then 7" C/C
Mat	(84) #10 horizontal rebar evenly spaced each way top and bottom. (336 total)
	Anchor Bolts per Leg
(6) 1.7	5" dia. x 87" F1554-105 on a 19" B.C. w/ 10.5"

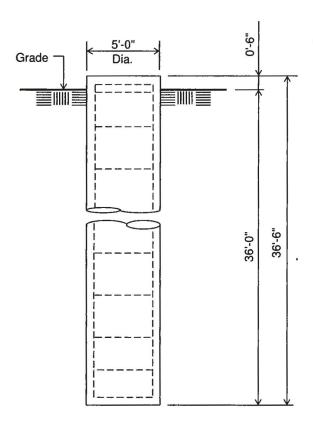


No.: 422008

Date: 11/13/18 By: REB

## Customer: AT&T Site: Old Landing, KY

355 ft. Model S3TL Series HD1 Self Supporting Tower



#### **ELEVATION VIEW**

(26.5 cu. yds.) (3 REQUIRED; NOT TO SCALE)

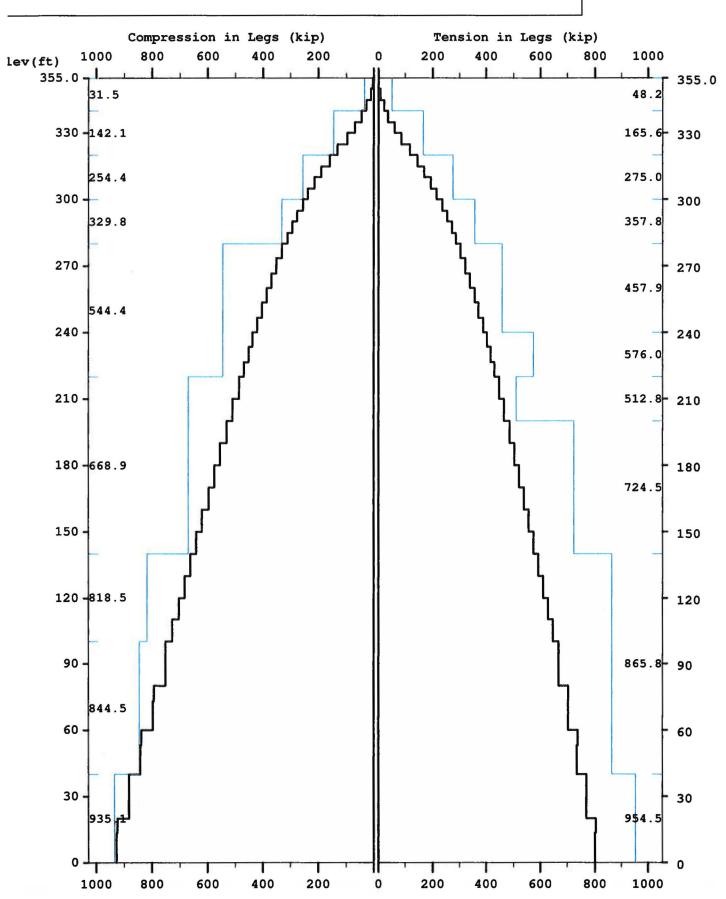
#### Notes:

- 1) Concrete shall have a minimum 28-day compressive strength of 4,500 psi, in accordance with ACI 318-11.
- 2) Rebar to conform to ASTM specification A615 Grade 60.
- 3) All rebar to have a minimum of 3" concrete cover.
- 4) All exposed concrete corners to be chamfered 3/4".
- 5) The foundation design is based on the geotechnical report by ECS project no. 26:3125-R2, dated: 9/28/18
- 6) See the geotechnical report for drilled pier installation requirements, if specified.
- 7) The foundation is based on the following factored loads: Factored uplift (kips) = 824.00 Factored download (kips) = 955.00 Factored shear (kips) = 86.00
- 8) The bottom anchor bolt template shall be positioned as closely as possible to the bottom of the anchor bolts.

	Rebar Schedule per Pier
Pier	(24) #9 vertical rebar w/ #4 rebar ties, two (2) within top 5" of pier then 7" C/C
	Anchor Bolts per Leg
(6) 1.7	5" dia. x 87" F1554-105 on a 19" B.C. w/ 10.5"

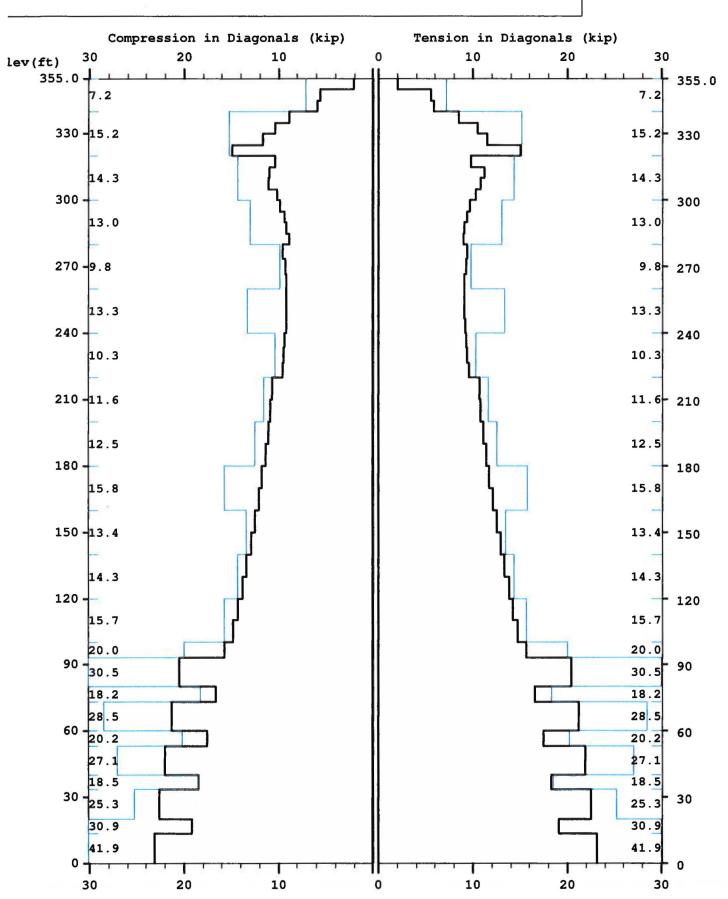
icensed to: Sabre Towers and Poles

Maximum



icensed to: Sabre Towers and Poles

Maximum



RAWFORCE Ver 2.2 (c) Guymast Inc. 2006-2009 Phone: (416) 736-7453

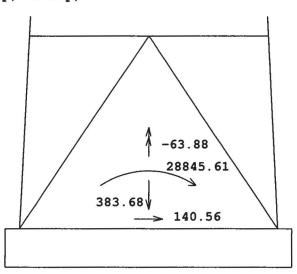
16:58:44

13 nov 2018

icensed to: Sabre Towers and Poles

Maximum

TOTAL FOUNDATION LOADS (kip, ft-kip)



## INDIVIDUAL FOOTING LOADS (kip)

A 86.21 **→** 74.24

\_\_\_\_\_\_\_

Latticed Tower Analysis (Unguyed) Processed under license at:

(c)2015 Guymast Inc. 416-736-7453

Sabre Towers and Poles

on: 13 nov 2018 at: 16:58:44 

#### MAST GEOMETRY ( ft ) \_\_\_\_

PANEL TYPE	NO.OF LEGS	ELEV.AT BOTTOM	ELEV.AT TOP	F.WAT BOTTOM	F.WAT TOP	TYPICAL PANEL HEIGHT
× × × × × × × × × × × × × × × × × × ×	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	350.00 340.00 335.00 320.00 315.00 300.00 280.00 240.00 220.00 200.00 160.00 140.00 120.00 93.33 80.00 73.33 60.00 53.33	355.00 350.00 340.00 335.00 315.00 300.00 280.00 240.00 220.00 180.00 140.00 120.00 120.00 133.33 80.00 73.33 60.00 53.33	5.00 5.00 5.00 5.50 7.00 9.00 11.00 13.00 17.00 21.00 23.00 27.00 27.67 29.00 29.67 31.00 31.67 33.00	5.00 5.00 5.00 5.00 5.50 7.00 9.00 11.00 13.00 17.00 19.00 21.00 23.00 27.67 29.00 29.67 31.00	HEIGHT  5.00 5.00 5.00 5.00 5.00 5.00 6.67 6.67 10.00 10.00 10.00 10.00 10.33 6.67 13.33 6.67 13.33
V	3	33.33 20.00	40.00	33.67 35.00	33.00 33.67	6.67
A V	3	13.33	20.00	35.67	35.00	6.67
Α	3	0.00	13.33	37.00	35.67	13.33

#### MEMBER PROPERTIES

MEMBER TYPE	BOTTOM ELEV ft	TOP ELEV ft	X-SECTN AREA in.sq	RADIUS OF GYRAT in	ELASTIC MODULUS ksi	THERMAL EXPANSN /deg
LE LE LE LE DI	340.00 320.00 300.00 280.00 220.00 140.00 0.00 340.00 320.00 260.00 220.00 220.00 180.00 93.33 80.00 73.33 60.00 53.33	355.00 340.00 320.00 300.00 280.00 220.00 40.00 355.00 340.00 320.00 220.00 220.00 220.00 200.00 180.00 93.33 80.00 73.33 60.00 53.33	1.075 3.678 6.111 7.952 12.763 16.101 19.242 21.206 0.484 1.152 0.938 0.902 1.688 1.938 2.402 2.559 2.402 2.559 2.559	0.787 0.787 0.787 0.787 0.787 0.787 0.626 0.626 0.626 0.626 0.626 0.626 0.626 0.626 0.626	29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000.	0.0000117 0.0000117
DI DI DI HO HO	33.33 20.00 13.33 0.00 350.00 335.00	40.00 33.33 20.00 13.33 355.00 340.00	2.859 2.559 3.609 3.609 0.484 1.152	0.626 0.626 0.626 0.626 0.626 0.626	29000. 29000. 29000. 29000. 29000.	0.0000117 0.0000117 0.0000117 0.0000117 0.0000117 0.0000117

				4220	800
НО	315.00	320.00	0.938	0.626	29000. 0.0000117
HO	80.00	93.33	2.246	0.626	29000. 0.0000117
HO	60.00	73.33	2.402	0.626	29000. 0.0000117
но	40.00	53.33	2.402	0.626	29000. 0.0000117
НО	20.00	33.33	2.859	0.626	29000. 0.0000117
НО	0.00	13.33	3.027	0.626	29000. 0.0000117
BR	80.00	93.33	1.438	0.000	29000. 0.0000117
BR	60.00	73.33	1.438	0.000	29000. 0.0000117
BR	40.00	53.33	1.688	0.000	29000. 0.0000117
BR	20.00	33.33	1.688	0.000	29000. 0.0000117
BR	0.00	13.33	1.688	0.000	29000. 0.0000117

#### FACTORED MEMBER RESISTANCES \_\_\_\_\_\_

воттом	TOP		EGS	Company Control of Control	ONALS		ONTALS		BRACING
ELEV ft	ELEV ft	COMP kip	TENS kip	COMP kip	TENS kip	COMP kip	TENS kip	COMP kip	TENS kip
		200	3.00 mm	2000	100 400 000				
350.0	355.0	31.48	48.15	7.16	7.16	5.82	5.82	0.00	0.00
340.0 335.0	350.0 340.0	31.48 142.05	48.15 165.60	7.16 15.19	7.16 15.19	0.00 13.39	0.00 13.39	0.00	0.00
320.0	335.0	142.05	165.60	15.19	15.19	0.00	0.00	0.00	0.00
315.0	320.0	254.38	274.95	14.32	14.32	10.95	10.95	0.00	0.00
300.0	315.0	254.38	274.95	14.32	14.32	0.00	0.00	0.00	0.00
280.0	300.0	329.84	357.75	13.03	13.03	0.00	0.00	0.00	0.00
260.0	280.0	544.40	457.90	9.84	9.84	0.00	0.00	0.00	0.00
240.0 220.0	260.0 240.0	544.40 544.40	457.90 576.00	13.34 10.34	13.34 10.34	$0.00 \\ 0.00$	0.00	0.00	0.00
200.0	220.0	668.86	512.85	11.62	11.62	0.00	0.00	0.00	0.00
180.0	200.0	668.86	724.50	12.53	12.53	0.00	0.00	0.00	0.00
160.0	180.0	668.86	724.50	15.77	15.77	0.00	0.00	0.00	0.00
140.0	160.0	668.86	724.50	13.43	13.43	0.00	0.00	0.00	0.00
120.0	140.0	818.52	865.80	14.31	14.31	0.00	0.00	0.00	0.00
100.0	120.0	818.52	865.80	15.70	15.70	0.00	0.00	0.00	0.00
93.3 80.0	100.0 93.3	844.46 844.46	865.80 865.80	20.02 30.51	20.02 30.51	0.00 16.12	0.00 16.12	0.00 7.41	0.00 7.41
73.3	80.0	844.46	865.80	18.24	18.24	0.00	0.00	0.00	0.00
60.0	73.3	844.46	865.80	28.50	28.50	17.32	17.32	6.59	6.59
53.3	60.0	844.46	865.80	20.16	20.16	0.00	0.00	0.00	0.00
40.0	53.3	844.46	865.80	27.07	27.07	15.58	15.58	9.00	9.00
33.3	40.0	935.10	954.45	18.47	18.47	0.00	0.00	0.00	0.00
20.0 13.3	33.3	935.10 935.10	954.45 954.45	25.28 30.93	25.28 30.93	16.75 0.00	16.75 0.00	8.14 0.00	8.14 0.00
0.0	13.3	935.10	954.45	41.90	41.90	25.86	25.86	7.39	7.39

## 

115 mph Ultimate wind with no ice. Wind Azimuth: 0+

#### MAST LOADING =========

LOAD TYPE	ELEV ft	APPLYLO RADIUS ft	ADAT AZI	LOAD AZI	FORCE HORIZ kip	S DOWN kip	MOMI VERTICAL ft-kip	ENTS TORSNAL ft-kip
c c c c	360.0 350.0 338.0 326.0 314.0	0.00 0.00 0.00 0.00 0.00	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.30 10.74 7.97 7.91 7.85	0.15 7.20 4.80 4.80 4.80	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
0 0 0 0 0 0	355.0 350.0 350.0 340.0 340.0 335.0 335.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	180.0 180.0 42.0 42.0 63.7 63.7 76.5 76.5	0.0 0.0 0.0 0.0 0.0 0.0	0.07 0.07 0.14 0.14 0.18 0.18 0.18	0.04 0.04 0.06 0.06 0.15 0.15 0.14	0.00 0.00 0.06 0.06 0.06 0.06	0.00 0.00 0.11 0.11 0.12 0.12 0.13

<sup>\*</sup> Only 3 condition(s) shown in full
\* Some wind loads may have been derived from full-scale wind tunnel testing

	330.0 325.0 325.0 320.0 315.0 315.0 315.0 300.0 280.0 220.0 240.0 220.0 170.0 170.0 140.0 120.0 120.0 120.0 120.0 120.0 133.3 80.0 93.3 80.0 93.3 80.0 93.3 80.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	80.5 80.5 102.0 102.0 103.3 103.3 104.8 180.0 18		0.19 0.19 0.21 0.223 0.224 0.225 0.226 0.227 0.228 0.228 0.228 0.331 0.332 0.332 0.332 0.332 0.332 0.332 0.332 0.333 0.332 0.333 0.332 0.333 0.332 0.333 0.332 0.333 0.332 0.333 0.332 0.333 0.334 0.335 0.3	422008 0.15 0.15 0.17 0.20 0.20 0.21 0.22 0.32 0.32 0.32 0.32 0.32 0.40 0.41 0.47 0.50 0.47 0.51 0.48 0.57 0.48 0.57 0.48 0.59 0.52 0.61 0.61	0.06 0.06 0.05 0.05 0.04 0.04 0.00 0.00 0.00 0.00	0.12 0.12 0.07 0.07 0.07 0.06 0.06 0.05 0.05 0.05 0.05 0.05 0.05
D D	33.3 33.3	0.00	180.0 180.0	0.0	0.26 0.31	0.55 0.67	0.00	0.04
_								

115 mph Ultimate wind with no ice. Wind Azimuth: 00

## MAST LOADING

ft         ft         kip         kip         ft-kip         ft-kip           C         360.0         0.00         0.0         0.30         0.12         0.00         0.00           C         350.0         0.00         0.0         10.74         5.40         0.00         0.00           C         338.0         0.00         0.0         0.0         7.97         3.60         0.00         0.00           C         326.0         0.00         0.0         7.91         3.60         0.00         0.00           C         314.0         0.00         0.0         7.85         3.60         0.00         0.00           D         355.0         0.00         180.0         0.0         0.07         0.03         0.00         0.00           D         350.0         0.00         180.0         0.0         0.07         0.03         0.00         0.00           D         350.0         0.00         180.0         0.0         0.07         0.03         0.00         0.00           D         350.0         0.00         14         0.04         0.04         0.11           D         340.0         0.00         42.0	=====	======							
C 350.0 0.00 0.0 0.0 10.74 5.40 0.00 0.00 C 338.0 0.00 0.0 0.0 7.97 3.60 0.00 0.00 C 326.0 0.00 0.0 0.0 7.91 3.60 0.00 0.00 C 314.0 0.00 0.0 0.0 7.85 3.60 0.00 0.00 0.0			RADIUS			HORIZ	DOWN	VERTICAL	TORSNAL ft-kip
D 350.0 0.00 180.0 0.0 0.07 0.03 0.00 0.00 D 350.0 0.00 42.0 0.0 0.14 0.04 0.04 0.11 D 340.0 0.00 42.0 0.0 0.14 0.04 0.04 0.11 D 340.0 0.00 63.7 0.0 0.18 0.11 0.04 0.12 D 330.0 0.00 76.5 0.0 0.18 0.11 0.05 0.13 D 330.0 0.00 80.5 0.0 0.19 0.11 0.04 0.12 D 325.0 0.00 80.5 0.0 0.19 0.11 0.04 0.12 D 325.0 0.00 102.0 0.0 0.21 0.13 0.03 0.07 D 320.0 0.00 102.0 0.0 0.21 0.13 0.03 0.07 D 320.0 0.00 103.3 0.0 0.23 0.15 0.03 0.07 D 315.0 0.00 103.3 0.0 0.23 0.15 0.03 0.07 D 315.0 0.00 104.8 0.0 0.23 0.15 0.03 0.07	C C C	350.0 338.0 326.0	0.00 0.00 0.00	0.0 0.0 0.0	0.0 0.0 0.0	10.74 7.97 7.91	5.40 3.60 3.60	0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
	D D D D D D D D D D D	350.0 350.0 340.0 340.0 330.0 330.0 325.0 325.0 320.0 315.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	180.0 42.0 42.0 63.7 76.5 80.5 102.0 103.3 103.3	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.07 0.14 0.14 0.18 0.18 0.19 0.19 0.21 0.21 0.23 0.23	0.03 0.04 0.04 0.11 0.11 0.11 0.13 0.13 0.15	0.00 0.04 0.04 0.05 0.04 0.03 0.03 0.03	0.00 0.00 0.11 0.11 0.12 0.13 0.12 0.07 0.07 0.07

						422008		
D	280.0	0.00	180.0	0.0	0.25	0.19	0.00	0.05
D	280.0	0.00	180.0	0.0	0.26	0.23	0.00	0.06
D	260.0	0.00	180.0	0.0	0.26	0.23	0.00	0.05
D	260.0	0.00	180.0	0.0	0.27	0.24	0.00	0.05
D	240.0	0.00	180.0	0.0	0.28	0.24	0.00	0.05
D	240.0	0.00	180.0	0.0	0.28	0.24	0.00	0.05
D	220.0	0.00	180.0	0.0	0.29	0.25	0.00	0.05
D	220.0	0.00	180.0	0.0	0.28	0.28	0.00	0.05
D	170.0	0.00	180.0	0.0	0.30	0.30 0.31	0.00	0.05
D	170.0 140.0	0.00	180.0 180.0	0.0	0.31 0.31	0.31	0.00	0.05 0.05
D D	140.0	0.00	180.0	0.0	0.31	0.35	0.00	0.05
D	120.0	0.00	180.0	0.0	0.32	0.35	0.00	0.05
D	120.0	0.00	180.0	0.0	0.32	0.38	0.00	0.05
Ď	100.0	0.00	180.0	0.0	0.32	0.38	0.00	0.05
Ď	100.0	0.00	180.0	0.0	0.29	0.36	0.00	0.05
D	93.3	0.00	180.0	0.0	0.29	0.36	0.00	0.05
D	93.3	0.00	180.0	0.0	0.34	0.43	0.00	0.05
D	80.0	0.00	180.0	0.0	0.34	0.43	0.00	0.05
D	80.0	0.00	180.0	0.0	0.28	0.36	0.00	0.04
D	73.3	0.00	180.0	0.0	0.28	0.36	0.00	0.04
D	73.3	0.00	180.0	0.0	0.33	0.44	0.00	0.04
D	60.0	0.00	180.0	0.0	0.33	0.44	0.00	0.04
D	60.0	0.00	180.0	0.0	0.27 0.27	0.39	0.00	0.04
D	53.3 53.3	$0.00 \\ 0.00$	180.0 180.0	0.0	0.27	0.39 0.46	0.00	0.04 0.04
D D	40.0	0.00	180.0	0.0	0.32	0.46	0.00	0.04
D	40.0	0.00	180.0	0.0	0.26	0.42	0.00	0.04
D	33.3	0.00	180.0	0.0	0.26	0.42	0.00	0.04
D	33.3	0.00	180.0	0.0	0.31	0.50	0.00	0.04
Ď	20.0	0.00	180.0	0.0	0.31	0.50	0.00	0.04
D	20.0	0.00	180.0	0.0	0.24	0.46	0.00	0.03
D	13.3	0.00	180.0	0.0	0.24	0.46	0.00	0.03
D	13.3	0.00	180.0	0.0	0.29	0.55	0.00	0.03
D	0.0	0.00	180.0	0.0	0.29	0.55	0.00	0.03

30 mph wind with 0.75 ice. Wind Azimuth: 0♦

# MAST LOADING

LOAD	ELEV	APPLYLO	ADAT	LOAD	FORCE	S	MOME	
TYPE	ft	RADIUS ft	AZI	AZI	HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
c c c	360.0 350.0 338.0 326.0 314.0	0.00 0.00 0.00 0.00 0.00	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.05 1.35 1.64 1.62 1.61	0.31 18.60 12.37 12.34 12.32	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
	355.0 350.0 340.0 340.0 335.0 335.0 335.0 325.0 320.0 315.0 310.0 310.0 300.0 300.0 280.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	180.0 180.0 42.0 42.0 68.9 86.3 86.3 88.3 102.0 103.3 104.8 180.0 180.0 180.0 180.0 217.0		0.01 0.01 0.01 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.03 0.02 0.03 0.04 0.05	0.18 0.26 0.26 0.43 0.42 0.42 0.44 0.51 0.59 0.61 0.63 0.63 0.67 0.75	0.00 0.00 0.22 0.22 0.21 0.23 0.23 0.21 0.13 0.13 0.13 0.02 0.02 0.00 0.00	0.00 0.01 0.01 0.01 0.01 0.01 0.01 0.01
D D D	260.0 260.0 240.0	0.00 0.00 0.00	180.0 180.0 180.0	0.0 0.0 0.0	0.03 0.03 0.03	0.76 0.79 0.81	0.00 0.00 0.00	0.00 0.00 0.00

000000000000000000000000000000000000000	240.0 220.0 190.0 190.0 160.0 140.0 140.0 100.0 93.3 80.0 73.3 80.0 73.3 73.3 60.0 60.0 53.3 53.3 53.3 50.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	202.5 202.3 194.3 193.9 204.1 190.1 180.3 191.1 186.6 189.0 196.1 196.1 195.8 188.3 190.1 194.3 194.3 190.7 189.1	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03	422008 0.82 0.84 0.86 0.89 0.90 0.95 0.96 0.97 1.03 1.09 1.00 1.27 1.27 1.01 1.30 1.30 1.30 1.30 1.30 1.30 1.31 1.32 1.32 1.32 1.32 1.32 1.32 1.33 1.32 1.33 1.34 1.35 1.36 1.37 1.38 1.30	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0

# MAXIMUM TENSION IN MAST MEMBERS (kip)

MAXIMUM	1 EN2 TON	IN MASI	WEMBEK2	(KIP)
=======			=======	=====

ELEV ft	LEGS	DIAG		HORIZ	BRACE
355.0				1.29 A	0.00 A
350.0	0.91 S	2.06	G	0.21 G	0.00 A
345.0	5.32 M	5.56	Н	0.27 I	0.00 A
	19.89 M	5.85	T	0.46 Y	0.00 A
340.0	35.23 M	8.51	М		
335.0	59.36 M	10.54	В	0.32 A	0.00 A
330.0	84.94 M	11.49	т	0.06 s	0.00 A
325.0	116.27 M	15.02		0.34 A	0.00 A
320.0				0.61 U	0.00 A
315.0	144.73 M	9.84	М	0.31 A	0.00 A
310.0	169.33 M	11.16	Н	0.06 A	0.00 A
	192.61 M	10.84	T	0.26 A	0.00 A
305.0	215.92 M	10.32	Н		
300.0	235.48 M	9.71	N	0.08 A	0.00 A
295.0	254.46 M	9.43	н	0.17 A	0.00 A
290.0	271.09 M	9.07		0.09 A	0.00 A
285.0				0.14 A	0.00 A
280.0	287.32 M	8.94		0.08 A	0.00 A
273.3	304.16 M	9.44	Т	0.13 A	0.00 A
266.7	322.90 M	9.29	В	0.08 A	0.00 A
	339.99 M	9.14	т		
260.0	356.59 M	9.13	т	0.11 A	0.00 A
253.3	372.11 M	9.12		0.07 A	0.00 A
246.7		9.20		0.09 A	0.00 A
	387.33 M	9.20	IA		

			4	22008
240.0	401.82 M	9.28 T	0.06 A	0.00 A
233.3			0.13 A	0.00 A
226.7	416.08 M	9.41 N	0.06 A	0.00 A
220.0	429.86 M	9.55 N	0.11 A	0.00 A
210.0	446.57 M	10.65 N	0.10 A	0.00 A
200.0	466.13 M	10.83 N	0.10 A	0.00 A
	485.26 M	11.07 T		
190.0	503.95 M	11.36 N	0.09 A	0.00 A
180.0	522.39 M	11.71 T	0.09 A	0.00 A
170.0	540.57 M	12.09 N	0.08 A	0.00 A
160.0	558.63 M	12.49 T	0.06 A	0.00 A
150.0			0.07 A	0.00 A
140.0	576.52 M	12.90 N	0.06 A	0.00 A
130.0	594.31 M	13.34 T	0.05 A	0.00 A
120.0	611.95 M	13.80 N	0.04 0	0.00 A
110.0	629.56 M	14.28 T	0.08 s	0.00 A
	647.03 M	14.74 N		
100.0	667.71 M	15.61 T	0.35 A	0.00 A
93.3	666.36 M	20.45 T	1.20 Q	0.00 I
80.0	702.29 M	16.53 T	0.30 A	0.00 A
73.3	700.91 M	21.19 T	1.18 M	0.00 V
60.0	736.75 M	17.44 T	0.30 A	0.00 A
53.3			1.14 Q	0.00 J
40.0	735.30 M	21.91 T	0.27 A	0.00 A
33.3	770.86 M	18.30 T	1.07 U	0.00 T
20.0	769.28 M	22.55 T	0.09 A	0.00 T
13.3	804.38 M	19.08 T	1.00 U	0.00 R
	802.64 M	23.11 T		
0.0			0.00 A	0.00 A

# MAXIMUM COMPRESSION IN MAST MEMBERS (kip)

ELEV ft	LEGS	DIAG	HORIZ	BRACE
355.0	-1.09 A	-2.04 A	-1.30 G	0.00 A
350.0			-0.20 M	0.00 A
345.0	-9.86 G	-5.58 B	-0.20 o	0.00 A
340.0	-24.66 G	-5.95 H	-0.17 s	0.00 A
335.0	-41.85 G	-8.90 G	-0.25 s	0.00 A
330.0	-68.51 G	-10.33 T	-0.08 A	0.00 A
325.0	-94.86 G	-11.66 B	-0.27 s	0.00 A
320.0	-129.58 G	-14.95 T	-0.76 C	0.00 A
315.0	-158.27 G	-10.34 G	-0.26 s	0.00 A

			422	2008
310.0	-186.77 G	-11.00 T	-0.06 s	0.00 A
305.0	-211.00 G	-11.03 н	-0.23 s	0.00 A
300.0	-235.60 G	-10.22 T	-0.07 s	0.00 A
295.0	-255.81 G	-9.84 н	-0.15 s	0.00 A
290.0	-276.01 G	-9.36 T	-0.08 s	0.00 A
	-293.46 G	-9.17 н		0.00 A
285.0	-310.87 G	-8.90 T	-0.13 s	
280.0	-328.86 G	-9.53 B	-0.07 S	0.00 A
273.3	-349.35 G	-9.27 T	-0.11 S	0.00 A
266.7	-367.95 G	-9.21 H	-0.07 s	0.00 A
260.0	-386.29 G	-9.12 N	-0.09 s	0.00 A
253.3	-403.45 G	-9.18 в	-0.06 s	0.00 A
246.7	-420.47 G	-9.20 T	-0.08 s	0.00 A
240.0	-436.67 G	-9.33 B	-0.06 s	0.00 A
233.3	-452.77 G	-9.42 н	-0.11 s	0.00 A
226.7	-468.36 G	-9.59 B	-0.05 s	0.00 A
220.0	-487.51 G	-10.69 B	-0.10 s	0.00 A
210.0	-510.14 G		-0.09 s	0.00 A
200.0			-0.09 s	0.00 A
190.0	-532.43 G	-11.12 B	-0.08 s	0.00 A
180.0	-554.33 G	-11.42 H	-0.07 s	0.00 A
170.0	-576.07 G	-11.75 B	-0.07 s	0.00 A
160.0	-597.62 G	-12.14 B	-0.06 s	0.00 A
150.0	-619.16 G	-12.53 B	-0.06 s	0.00 A
140.0	-640.58 G	-12.95 B	-0.05 s	0.00 A
130.0	-662.09 G	-13.39 B	-0.04 s	0.00 A
120.0	-683.61 G	-13.86 н	-0.04 I	0.00 A
110.0	-705.30 G	-14.31 B	-0.09 A	0.00 A
100.0	-726.96 G		-0.32 s	0.00 A
93.3	-751.49 G	-15.71 G	-1.41 G	0.00 D
80.0	-753.28 G	-20.51 B	-0.27 s	0.00 A
73.3	-795.00 G	-16.70 G	-1.40 G	0.00 F
60.0	-796.85 G	-21.27 B	-0.26 s	0.00 A
53.3	-838.76 G	-17.56 B	-1.36 G	0.00 E
40.0	-840.69 G	-21.98 в	-0.23 s	0.00 A
33.3	-882.53 G	-18.42 B	-1.30 K	0.00 0
20.0	-884.64 G	-22.62 B	-0.08 s	0.00 0
13.3	-926.48 G	-19.17 B	-1.25 C	0.00 в
0.0	-928.80 G	-23.16 в	0.00 A	0.00 A
0.0			5.00 A	3.55 A

	LE	G COMPRE			LEG TENS	
MAST ELEV	MAX	COMP	FORCE/ RESIST	MAX	TENS	FORCE/ RESIST
ft	COMP	RESIST	RATIO	TENS	RESIST	RATIO
355.00	1.09	31.48	0.03	0.91	48.15	0.02
350.00	9.86	31.48	0.31	5.32	48.15	0.11
345.00	24.66	31.48	0.78	19.89	48.15	0.41
340.00	41.85	142.05	0.29	35.23	165.60	0.21
335.00	68.51	142.05	0.48	59.36	165.60	0.36
330.00	94.86	142.05	0.67	84.94	165.60	0.51
325.00	129.58	142.05	0.91	116.27	165.60	0.70
320.00	158.27	254.38	0.62	144.73	274.95	0.53
315.00		254.38	0.02	169.33	274.95	0.62
310.00	186.77					
305.00	211.00	254.38	0.83	192.61	274.95	0.70
300.00	235.60	254.38	0.93	215.92	274.95	0.79
295.00	255.81	329.84	0.78	235.48	357.75	0.66
290.00	276.01	329.84	0.84	254.46	357.75	0.71
285.00	293.46	329.84	0.89	271.09	357.75	0.76
280.00	310.87	329.84	0.94	287.32	357.75	0.80
273.33	328.86	544.40	0.60	304.16	457.90	0.66
266.67	349.35	544.40	0.64	322.90	457.90	0.71
260.00	367.95	544.40	0.68	339.99	457.90	0.74
253.33	386.29	544.40	0.71	356.59	457.90	0.78
246.67	403.45	544.40	0.74	372.11	457.90	0.81
	420.47	544.40	0.77	387.33	457.90	0.85
240.00	436.67	544.40	0.80	401.82	576.00	0.70
233.33	452.77	544.40	0.83	416.08	576.00	0.72
226.67	468.36	544.40	0.86	429.86	576.00	0.75
220.00	487.51	668.86	0.73	446.57	512.85	0.87
210.00	510.14	668.86	0.76	466.13	512.85	0.91
200.00	532.43	668.86	0.80	485.26	724.50	0.67
190.00	554.33	668.86	0.83	503.95	724.50	0.70
180.00	576.07	668.86	0.86	522.39	724.50	0.72
170.00	597.62	668.86	0.89	540.57	724.50	0.75
160.00	619.16	668.86	0.93	558.63	724.50	0.77
150.00	640.58	668.86	0.96	576.52	724.50	0.80
140.00	662.09			594.31		
130.00		818.52	0.81		865.80	0.69
120.00	683.61	818.52	0.84	611.95	865.80	0.71
110.00	705.30	818.52	0.86	629.56	865.80	0.73
100.00	726.96	818.52	0.89	647.03	865.80	0.75
	751.49	844.46	0.89	667.71	865.80	0.77

02.22						422008
93.33	753.28	844.46	0.89	666.36	865.80	0.77
80.00	795.00	844.46	0.94	702.29	865.80	0.81
73.33	796.85	844.46	0.94	700.91	865.80	0.81
60.00	838.76	844.46	0.99	736.75	865.80	0.85
53.33	840.69	844.46	1.00	735.30	865.80	0.85
40.00	882.53	935.10	0.94	770.86	954.45	0.81
33.33	884.64	935.10	0.95	769.28	954.45	0.81
20.00	926.48	935.10	0.99	804.38	954.45	0.84
13.33	928.80	935.10	0.99	802.64	954.45	0.84
0.00						

# FORCE/RESISTANCE RATIO IN DIAGONALS

MAST		G COMPRE	FORCE/		DIAG TEN	FORCE/
ELEV ft	COMP	COMP RESIST	RESIST RATIO	MAX TENS	TENS RESIST	RESIST RATIO
355.00	2.04	7.16	0.28	2.06	7.16	0.29
350.00	5.58	7.16	0.78	5.56	7.16	0.78
345.00	5.95	7.16	0.83	5.85	7.16	0.82
340.00	8.90	15.19	0.59	8.51	15.19	0.56
335.00						
330.00	10.33	15.19	0.68	10.54	15.19	0.69
325.00	11.66	15.19	0.77	11.49	15.19	0.76
320.00	14.95	15.19	0.98	15.02	15.19	0.99
315.00	10.34	14.32	0.72	9.84	14.32	0.69
310.00	11.00	14.32	0.77	11.16	14.32	0.78
305.00	11.03	14.32	0.77	10.84	14.32	0.76
	10.22	14.32	0.71	10.32	14.32	0.72
300.00	9.84	13.03	0.76	9.71	13.03	0.75
295.00	9.36	13.03	0.72	9.43	13.03	0.72
290.00	9.17	13.03	0.70	9.07	13.03	0.70
285.00	8.90	13.03	0.68	8.94	13.03	0.69
280.00	9.53	9.84	0.97	9.44	9.84	0.96
273.33	9.27	9.84	0.94	9.29	9.84	0.94
266.67	9.21	9.84	0.94	9.14	9.84	0.93
260.00	9.12	13.34	0.68	9.13	13.34	0.68
253.33	9.18	13.34	0.69	9.12	13.34	0.68
246.67	9.20	13.34	0.69	9.20	13.34	0.69
240.00						
233.33	9.33	10.34	0.90	9.28	10.34	0.90
226.67	9.42	10.34	0.91	9.41	10.34	0.91
220.00	9.59	10.34	0.93	9.55	10.34	0.92
210.00	10.69	11.62	0.92	10.65	11.62	0.92
	10.88	11.62	0.94	10.83	11.62	0.93

200 00						422008
200.00	11.12	12.53	0.89	11.07	12.53	0.88
190.00	11.42	12.53	0.91	11.36	12.53	0.91
180.00	11.75	15.77	0.75	11.71	15.77	0.74
170.00	12.14	15.77	0.77	12.09	15.77	0.77
160.00	12.53	13.43	0.93	12.49	13.43	0.93
150.00	12.95	13.43	0.96	12.90	13.43	0.96
140.00						
130.00	13.39	14.31	0.94	13.34	14.31	0.93
120.00	13.86	14.31	0.97	13.80	14.31	0.96
	14.31	15.70	0.91	14.28	15.70	0.91
110.00	14.79	15.70	0.94	14.74	15.70	0.94
100.00	15.71	20.02	0.78	15.61	20.02	0.78
93.33	20.51	30.51	0.67	20.45	30.51	
80.00						0.67
73.33	16.70	18.24	0.92	16.53	18.24	0.91
	21.27	28.50	0.75	21.19	28.50	0.74
60.00	17.56	20.16	0.87	17.44	20.16	0.87
53.33	21.98	27.07	0.81	21.91	27.07	0.81
40.00	18.42	18.47	1.00	18.30	18.47	0.99
33.33						
20.00	22.62	25.28	0.89	22.55	25.28	0.89
13.33	19.17	30.93	0.62	19.08	30.93	0.62
	23.16	41.90	0.55	23.11	41.90	0.55
0.00						
MAXIMUM		AL FOUND			ip)	
======	=========		======	: <b>==</b> ====	===	
NOR	 ХТН	LOAD EAST	-COMPONE	NTS	UPLIFT	

	LOADC	OMPONENTS		TOTAL
NORTH	EAST	DOWN	UPLIFT	SHEAR
86.21 G	74.24 K	955.16 G	-824.32 M	86.21 G

#### MAXIMUM TOTAL LOADS ON FOUNDATION : (kip & kip-ft)

 NORTH	ORIZONTA EAST (	TOTAL 0.0	DOWN	NORTH	OVERTURNING EAST	TOTAL @ 0.0	TORSION
140.6	133.6	140.6	383.7	28845.6	-27631.2	28845.6	-63.9
S		S	e	G	D	G	R

Latticed Tower Analysis (Unguyed) (c)2015 Guymast Inc. 416-736-7453 Processed under license at: on: 13 nov 2018 at: 16:59:37 Sabre Towers and Poles \_\_\_\_\_\_

\* 

\_\_\_\_\_ 

60 mph wind with no ice. Wind Azimuth: 0♦

## MAST LOADING

LOAD TYPE	ELEV ft	APPLYLO RADIUS ft	ADAT AZI	LOAD AZI	HORIZ	DOWN	VERTICAL	NTS TORSNAL ft-kip
_			0.0	0.0	kip	kip	ft-kip	The second secon
C C	360.0 350.0	0.00	0.0	$0.0 \\ 0.0$	0.09 3.05	0.13 6.00	0.00 0.00	0.00 0.00
C C	338.0 326.0	0.00	0.0	$0.0 \\ 0.0$	2.27 2.25	4.00	0.00	0.00 0.00
č	314.0	0.00	0.0	0.0	2.23	4.00	0.00	0.00
D	355.0	0.00	180.0	0.0	0.02	0.03	0.00	0.00
D D	350.0 350.0	0.00	180.0 42.0	$0.0 \\ 0.0$	0.02 0.04	0.03 0.05	0.00 0.05	0.00 0.03
D D	340.0 340.0	0.00	42.0 65.8	$0.0 \\ 0.0$	0.04 0.05	0.05 0.12	0.05 0.05	0.03 0.03
D	325.0	0.00	81.3	0.0	0.05	0.12	0.05	0.03
D D	325.0 320.0	0.00	102.0 102.0	0.0	0.06	0.14	0.04	0.02
D D	320.0 315.0	0.00	103.3 103.3	0.0	0.07 0.07	0.17 0.17	0.04 0.04	0.02 0.02
D D	315.0 300.0	0.00	104.8 180.0	0.0	0.07 0.07	0.18	0.00	0.02
D	300.0	0.00	180.0	0.0	0.07	0.20	0.00	0.02
D D	280.0 280.0	0.00	180.0 180.0	$0.0 \\ 0.0$	0.07 0.07	0.21	0.00 0.00	0.02 0.02
D D	260.0 260.0	0.00	180.0 180.0	0.0	0.08 0.08	0.25	0.00	0.02 0.02
D	240.0	0.00	180.0	0.0	0.08	0.27	0.00	0.02
D D	240.0 220.0	0.00	$180.0 \\ 180.0$	$0.0 \\ 0.0$	0.08 0.08	0.27 0.27	0.00 0.00	0.02 0.02
D D	220.0 170.0	0.00	180.0 180.0	0.0	0.08 0.09	0.31 0.34	$0.00 \\ 0.00$	0.02 0.01
D D	170.0 140.0	0.00	180.0 180.0	0.0	0.09	0.34	0.00	$0.01 \\ 0.01$
D	140.0	0.00	180.0	0.0	0.09	0.39	0.00	0.01
D D	120.0 120.0	0.00	180.0 180.0	0.0	0.09 0.09	0.39	0.00	$\substack{\textbf{0.01}\\\textbf{0.01}}$
D D	100.0	0.00	180.0 180.0	0.0	0.09	0.42	0.00	$0.01 \\ 0.01$
D	93.3	0.00	180.0	0.0	0.08	0.40	0.00	0.01
D D	93.3 80.0	0.00	$180.0 \\ 180.0$	$0.0 \\ 0.0$	$\substack{\textbf{0.10}\\\textbf{0.10}}$	0.48 0.48	0.00 0.00	$\substack{0.01\\0.01}$
D D	80.0 73.3	0.00	180.0 180.0	0.0	0.08 0.08	0.40 0.40	0.00 0.00	$0.01 \\ 0.01$
D	73.3	0.00	180.0	0.0	0.09	0.49	0.00	0.01 0.01
D D	60.0 60.0	0.00	180.0 180.0	0.0	0.09 0.08	0.43	0.00	0.01
D D	53.3 53.3	0.00	180.0 180.0	$0.0 \\ 0.0$	0.08 0.09	0.43 0.51	0.00 0.00	$\substack{0.01\\0.01}$
D D	40.0	0.00	180.0 180.0	0.0	0.09 0.07	0.51	0.00	0.01 0.01
D	33.3	0.00	180.0	0.0	0.07	0.46	0.00	0.01
D D	33.3	0.00	$180.0 \\ 180.0$	$0.0 \\ 0.0$	0.09 0.09	0.56 0.56	0.00 0.00	$\substack{\textbf{0.01}\\\textbf{0.01}}$
D D	20.0	0.00	180.0 180.0	0.0	0.07 0.07	0.51 0.51	0.00	$\substack{\textbf{0.01}\\\textbf{0.01}}$
D	13.3	0.00	180.0	0.0	0.08	0.61	0.00	0.01
D	0.0	0.00	180.0	0.0	0.08	0.61	0.00	0.01

\_\_\_\_\_\_\_

MAXIMUM MAST DISPLACEMENTS: \_\_\_\_\_\_\_

> -----DEFLECTIONS (ft)---NORTH EAST DOWN ELEV ft --TILTS (DEG)---TWIST NORTH EAST DEG

<sup>\*</sup> Only 1 condition(s) shown in full
\* Some wind loads may have been derived from full-scale wind tunnel testing

422008

40.0 0.018 G 0.017 J 0.003 K 0.044 G 0.042 J -0.002 J 33.3 0.014 G 0.013 J 0.002 J 0.037 G 0.036 J 0.002 J 0.005 G -0.005 D 0.001 L 0.022 G 0.021 J 0.001 J 13.3 0.002 G -0.002 D 0.001 J 0.015 G 0.014 J 0.001
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# MAXIMUM TENSION IN MAST MEMBERS (kip)

ELEV ft	LEGS	DIAG	HORIZ	BRACE
355.0	0.21 G	0.60 G	0.37 A	0.00 A
350.0	0.21 G	0.00 G	0.06 G	0.00 A
345.0	0.00 A	1.58 н	0.10 I	0.00 A
	4.10 A	1.65 H		
340.0	7.91 A	2.32 A	0.21 A	0.00 A
335.0			0.12 A	0.00 A
330.0	14.01 A	3.07 H	0.01 G	0.00 A
	21.16 A	3.23 B		
325.0	29.03 A	4.30 H	0.12 A	0.00 A
320.0	37.17 A	2.66 A	0.11 I	0.00 A
315.0		2.00 A	0.10 A	0.00 A
310.0	42.89 A	3.22 B	0.02 A	0.00 A
	49.24 A	3.01 B		
305.0	55.51 A	 2.97 н	0.09 A	0.00 A
300.0			0.02 A	0.00 A
	60.94 A	2.72 B		

				422008
295.0	66.01 A	2.71 H	0.06 A	0.00 A
290.0	70.56 A	2.55 н	0.03 A	0.00 A
285.0	74.89 A	2.57 B	0.05 A	0.00 A
280.0			0.03 A	0.00 A
273.3	79.42 A	2.67 B	0.04 A	0.00 A
266.7	84.32 A	2.67 в	0.02 A	0.00 A
260.0	88.83 A	2.59 B	0.03 A	0.00 A
253.3	93.14 A	2.62 B	0.02 A	0.00 A
246.7	97.18 A	2.60 в	0.03 A	0.00 A
240.0	101.09 A	2.65 в	0.02 A	0.00 A
233.3	104.83 A	2.65 н	0.04 A	0.00 A
	108.47 A	2.71 B	0.02 A	0.00 A
226.7	112.00 A	2.74 B		
220.0	116.20 A	3.05 B	0.04 A	0.00 A
210.0	121.06 A	3.10 в	0.03 A	0.00 A
200.0	125.76 A		0.03 A	0.00 A
190.0	130.32 A	3.24 B	0.03 A	0.00 A
180.0	134.78 A	3.34 в	0.03 A	0.00 A
170.0	134.78 A 	3.44 н	0.03 A	0.00 A
160.0	143.47 A	3.56 н	0.02 A	0.00 A
150.0	147.73 A	3.67 H	0.02 A	0.00 A
140.0	151.90 A	3.80 B	0.02 A	0.00 A
130.0	155.99 A	3.92 B	0.02 A	0.00 A
120.0			0.01 C	0.00 A
110.0	160.01 A		0.02 G	0.00 A
100.0	163.96 A		0.12 A	0.00 A
93.3	169.03 A		0.30 A	0.00 I
80.0	167.53 A	5.81 B	0.10 A	0.00 A
73.3	176.67 A		0.30 I	0.00 L
60.0	175.13 A	6.02 н	0.10 A	0.00 A
53.3	184.18 A	4.93 B	0.28 E	0.00 I
40.0	182.57 A	6.22 H	0.09 A	0.00 A
33.3	191.49 A	5.17 в 	0.26 I	0.00 I
20.0	189.73 A	6.40 B	0.03 A	0.00 I
13.3	198.38 A	5.40 H	0.24 I	0.00 c
0.0	196.45 A	6.56 н	0.00 A	0.00 A
5.0			J. 00 A	3.00 A

# MAXIMUM COMPRESSION IN MAST MEMBERS (kip)

355.0	-0.37 A	-0.58 A	-0.38 G	0.00 A
350.0	-4.22 G	-1.61 H	-0.05 A	0.00 A
345.0	-8.48 G	-1.73 H	-0.03 C	0.00 A
340.0	-13.92 G		0.00 A	0.00 A
335.0			-0.04 G	0.00 A
330.0	-22.25 G 	-2.88 В  -3.38 н	-0.03 A	0.00 A
325.0			-0.05 G	0.00 A
320.0	-40.78 G	-4.24 B	-0.26 C	0.00 A
315.0	-48.93 G	-3.07 G	-0.06 G	0.00 A
310.0	-58.17 G	-3.07 B	-0.01 G	0.00 A
305.0	-65.28 G	-3.20 н 	-0.05 G	0.00 A
300.0	-72.60 G	-2.87 B	-0.02 G	0.00 A
295.0	-78.48 G	-2.85 H	-0.03 G	0.00 A
290.0	-84.53 G	-2.65 H	-0.02 G	0.00 A
285.0	-89.68 G	-2.65 H	-0.03 G	0.00 A
280.0	-94.93 G	-2.53 B	-0.02 G	0.00 A
273.3	-100.32 G	-2.76 B	-0.03 G	0.00 A
266.7	-106.59 G	-2.65 B	-0.02 G	0.00 A
260.0	-112.26 G	-2.66 в	-0.02 G	0.00 A
253.3	-117.92 G	-2.62 B	-0.02 G	0.00 A
246.7	-123.21 G	-2.65 в	-0.02 G	0.00 A
240.0	-128.51 G	-2.65 н	-0.01 G	0.00 A
233.3	-133.54 G	-2.70 B	-0.03 G	0.00 A
226.7	-138.57 G	-2.72 H	-0.01 G	0.00 A
220.0	-143.45 G	-2.78 B	-0.02 G	0.00 A
210.0	-149.50 G	-3.09 B	-0.02 G	0.00 A
200.0	-156.69 G	-3.15 B	-0.02 G	0.00 A
190.0	-163.80 G	-3.21 B	-0.02 G	0.00 A
180.0	-170.79 G	-3.30 B	-0.02 G	0.00 A
170.0	-177.75 G	-3.39 н	-0.02 G	0.00 A
160.0	-184.67 G	-3.50 в	-0.01 G	0.00 A
150.0	-191.59 G	-3.60 н	-0.01 G	0.00 A
140.0	-198.48 G	-3.72 н	-0.01 G	0.00 A
130.0	-205.44 G	-3.84 H	-0.01 G	0.00 A
120.0	-212.44 G	-3.98 н	-0.01 I	0.00 A
110.0	-219.53 G	-4.10 H	-0.03 A	0.00 A
100.0	-226.64 G	-4.24 B	-0.07 G	0.00 A
93.3	-234.38 G	-4.52 H	-0.43 G	0.00 L
80.0	-235.88 G	-5.87 н	-0.06 G	0.00 A
73.3	-248.77 G	-4.80 G	-0.43 G	0.00 G
, , , ,		and the second s	0.15	0.00 3

			42	2008
60.0	-250.31 G	-6.09 н	-0.06 G	0.00 A
	-263.29 G	-5.04 B		
53.3	-264.90 G	-6.29 в	-0.42 G	0.00 C
40.0		-0.23 B	-0.05 G	0.00 A
33.3	-277.91 G	-5.29 н	-0.41 K	0.00 в
33.3	-279.66 G	-6.47 B	-0.41 K	0.00 B
20.0	202 70 6		-0.02 G	0.00 B
13.3	-292.79 G	-5.49 B	-0.40 C	0.00 I
	-294.72 G	-6.62 B		
0.0			0.00 A	0.00 A

# MAXIMUM INDIVIDUAL FOUNDATION LOADS: (kip)

	TOTAL			
NORTH	EAST	DOWN	UPLIFT	SHEAR
26.32 G	22.67 K	303.09 G	-201.65 A	26.32 G

# MAXIMUM TOTAL LOADS ON FOUNDATION : (kip & kip-ft)

H	ORIZONTA	L	DOWN		-OVERTURNING	;	TORSION
NORTH	EAST	TOTAL		NORTH	EAST	TOTAL	
	@	0.0				@ 0.0	
40.1 G	-38.1 D	40.1 G	137.4 D	8244.8 G	7899.7 J	8244.8 G	18.1 L

## MAT FOUNDATION DESIGN BY SABRE TOWERS & POLES

Tower Description 355' S3TL Series HD1
Customer AT&T
Project Number 422008

Date 11/13/2018

Engineer REB

## **Overall Loads:**

Overall Loads:			
Factored Moment (ft-kips)	28845.61		
Factored Axial (kips)	383.68		
Factored Shear (kips)	140.56		
Individual Leg Loads:		Tower eccentric from mat (ft):	= 3
Factored Uplift (kips)	824.00		
Factored Download (kips)	955.00		
Factored Shear (kips)	86.00		
Width of Tower (ft)	37	Allowable Bearing Pressure (ksf)	4.00
Ultimate Bearing Pressure	8.00	Safety Factor	2.00
Bearing Φs	0.75	•	
3			
Bearing Design Strength (ksf)	6	Max. Factored Net Bearing Pressure (ksf)	3.32
Water Table Below Grade (ft)	999	, ,	
Width of Mat (ft)	45	Minimum Mat Width (ft)	44.67
Thickness of Mat (ft)	2	(-4	
Depth to Bottom of Slab (ft)	8		
Bolt Circle Diameter (in)	19		
Top of Concrete to Top			
of Bottom Threads (in)	72.625		
Diameter of Pier (ft)	5	Minimum Pier Diameter (ft)	2.92
Ht. of Pier Above Ground (ft)	0.5	Equivalent Square b (ft)	4.43
Ht. of Pier Below Ground (ft)	6		
Quantity of Bars in Mat	84		
Bar Diameter in Mat (in)	1.27		
Area of Bars in Mat (in²)	106.41		
Spacing of Bars in Mat (in)	6.42	Recommended Spacing (in)	6 to 12
Quantity of Bars Pier	28		0 10 12
Bar Diameter in Pier (in)	10/21		
Tie Bar Diameter in Pier (in)	0.5		
Spacing of Ties (in)	7		
Area of Bars in Pier (in <sup>2</sup> )	21.99	Minimum Pier A <sub>s</sub> (in <sup>2</sup> )	14.14
Spacing of Bars in Pier (in)	5.82	Recommended Spacing (in)	5 to 12
f'c (ksi)	4.5	riocommonada opacing (iii)	0 (0 .2
fy (ksi)	60		
Unit Wt. of Soil (kcf)	0.11		
	0.15		
Unit Wt. of Concrete (kcf)			
Volume of Concrete (yd3)	164.18		

## MAT FOUNDATION DESIGN BY SABRE TOWERS & POLES (CONTINUED)

Two-Way Shea	r:
--------------	----

ino may oncur.			
Average d (in)	19.73		
$\phi v_c$ (ksi)	0.228	v <sub>u</sub> (ksi)	0.227
$\phi V_c = \phi (2 + 4/\beta_c) f'_c^{1/2}$	0.342		
$\phi v_c = \phi(\alpha_s d/b_o + 2) f'_c^{1/2}$	0.317		
$\phi V_c = \phi 4 f'_c^{1/2}$	0.228		
Shear perimeter, b <sub>o</sub> (in)	221.24		
$eta_{ extsf{c}}$	1		
Stability:			

Overturning Design Strength (ft-k)	41776.8	Factored Overturning Moment (ft-k)	30040.4
One-Way Shear:		•	
φV <sub>c</sub> (kips)	1215.0	V <sub>u</sub> (kips)	903.7
Pier Design:			
Design Tensile Strength (kips)	1187.5	Tu (kips)	824.0
φV <sub>n</sub> (kips)	274.3	V <sub>u</sub> (kips)	86.0
$\phi V_c = \phi 2(1 + N_u/(500A_g))f'_c^{1/2}b_w d$	137.0		
V <sub>s</sub> (kips)	161.6	*** $V_s$ max = 4 $f'_c^{1/2}b_wd$ (kips)	772.8
Maximum Spacing (in)	7.81	(Only if Shear Ties are Required)	
Actual Hook Development (in)	18.46	Req'd Hook Development I <sub>dh</sub> (in)	10.86
		*** Ref. ACI 11.5.5.8.11.5.6.3	

### Anchor Bolt Pull-Out:

Alichor Bolt Pull-Out.			
$\phi P_c = \phi \lambda (2/3) f'_c^{1/2} (2.8 A_{SLOPE} + 4 A_{FLAT})$	426.0	P <sub>u</sub> (kips)	824.0
Pier Rebar Development Length (in)	53.13	Required Length of Development (in)	31.03
Flexure in Slab:			

8654.8

Flexure in Slab:		
φM <sub>n</sub> (ft-kips)	8707.4	M <sub>u</sub> (ft-kips)
a (in)	3.09	
Steel Ratio	0.00999	
$\beta_1$	0.825	
Maximum Steel Ratio (ρ <sub>t</sub> )	0.0197	
Minimum Steel Ratio	0.0018	
Rebar Development in Pad (in)	129.42	Required Development in Page

Rebar Development in Pad (in)	129.42	Required Development in Pad (in)	14.59
-------------------------------	--------	----------------------------------	-------

Condition	1 is OK, 0 Fails
Minimum Mat Width	1
Maximum Soil Bearing Pressure	1
Pier Area of Steel	1
Pier Shear	1
Two-Way Shear	1
Overturning	1
Anchor Bolt Pull-Out	1
Flexure	1
Steel Ratio	1
Length of Development in Pad	1
Interaction Diagram Visual Check	1
One-Way Shear	1
Hook Development	1
Minimum Mat Depth	1

## **DRILLED STRAIGHT PIER DESIGN BY SABRE TOWERS & POLES**

Tower Description 355' S3TL Series HD1
Customer Name AT&T
Job Number 422008
Date 11/13/2018
Engineer REB

Factored Uplift (kips)	824		
Factored Download (kips)	955		
Factored Shear (kips)	86		
Ultimate Bearing Pressure	16		
Bearing Φs	0.75		
Bearing Design Strength (ksf)	12		
Water Table Below Grade (ft)	999		
Bolt Circle Diameter (in)	19		
Top of Concrete to Top			
of Bottom Threads (in)	72.625		
Pier Diameter (ft)	5	Minimum Pier Diameter (ft)	2.92
Ht. Above Ground (ft)	0.5		
Pier Length Below Ground (ft)	36		
Quantity of Bars	24		
Bar Diameter (in)	1.128		
Tie Bar Diameter (in)	0.5		
Spacing of Ties (in)	7		
Area of Bars (in <sup>2</sup> )	23.98	Minimum Area of Steel (in <sup>2</sup> )	14.14
Spacing of Bars (in)	6.79		
f'c (ksi)	4.5		
fy (ksi)	60		
Unit Wt. of Concrete (kcf)	0.15		
Download Friction Φs	0.75		
Uplift Friction Фs	0.75		
Volume of Concrete (yd3)	26.54		
Skin Friction Factor for Uplift		Length to Ignore Download (ft)	
Ignore Bottom Length in Download?		0	
Daniel at Datton of Laure (6)	Title Older Entertain (Ind)	/I Ha Oldin Entation \t/I In the Entation	1. (1.06)

19.10.10 = 0.11.01.11 = 0.11.11.01.01.11			
Depth at Bottom of Layer (ft)	Ult. Skin Friction (ksf)	(Ult. Skin Friction)*(Uplift Factor)	γ (kcf)
5	0.00	0.00	0.11
17.5	1.50	1.50	0.11
36	3.00	3.00	0.11
0	0.00	0.00	0
0	0.00	0.00	0
0	0.00	0.00	0
0	0.00	0.00	0
0	0.00	0.00	0
0	0.00	0.00	0
0	0.00	0.00	0

## Download:

Factored Net Weight of Concrete (kips)
Bearing Design Strength (kips)
Skin Friction Design Strength (kips)
Download Design Strength (kips)

35.7	
235.6	
874.7	
1110.4	35211

Factored Net Download (kips)

990.7

## **DRILLED STRAIGHT PIER DESIGN BY SABRE TOWERS & POLES (CONTINUED)**

**Uplift:** 

Nominal Skin Friction (kips)	1166.3
Wc, Weight of Concrete (kips)	107.5
W <sub>R</sub> , Soil Resistance (kips)	2437.9
ФsWr+0.9Wc (kips)	1925.2
Uplift Design Strength (kips)	971.5

Jplift Design Strength (kips)	971.5	Factored Uplift (kips)	824.0
Pier Design:			

772.8

Pier Design:			
Design Tensile Strength (kips)	1295.1	Tu (kips)	824.0
φV <sub>n</sub> (kips)	274.3	V <sub>u</sub> (kips)	86.0
$bV_c = \phi 2(1 + N_c)/(500A_c))f_c^{1/2}b_w d$ (kips)	137.0		

V <sub>s</sub> (kips)	161.6	*** $V_s max = 4 f'_c^{1/2} b_w d (kips)$
Maximum Spacing (in)	7.81	(Only if Shear Ties are Required)
		*** Ref. ACI 11.5.5 & 11.5.6.3

**Anchor Bolt Pull-Out:** 

$\phi P_c = \phi \lambda (2/3) f'_c^{1/2} (2.8 A_{SLOPE} + 4 A_{FLAT})$	426.0	P <sub>u</sub> (kips)	824.0
Rebar Development Length (in)	53.19	Required Length of Development (in)	32.10

Condition	1 is OK, 0 Fails
Download	1
Uplift	1
Area of Steel	1
Shear	1
Anchor Bolt Pull-Out	1
Interaction Diagram Visual Check	1

EXHIBIT D
COMPETING UTILITIES, CORPORATIONS, OR PERSONS LIST

## KY Public Service Commission

## Master Utility Search

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

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

**Utility ID** 

**Utility Name** 

Address/City/Contact Utility Type

Status

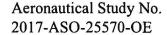
▼ Active

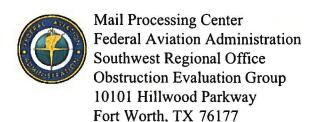
	13111 24	A. B. grad				
View	4111300	2600Hz, Inc. dba ZSWITCH	Cellular	С	San Francisco	CA
View	·	365 Wireless, LLC	Cellular	D	Atlanta	GA
View	41	Access Point, Inc.	Cellular	D	Cary	NC
View	4108300	Air Voice Wireless, LLC	Cellular	Α	Bloomfield Hill	MI
View	4110650	Alliant Technologies of KY, L.L.C.	Cellular	D	Morristown	NJ
View	44451184	Alltel Communications, LLC	Cellular	Α	Basking Ridge	NJ
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	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
View	4105500	BullsEye Telecom, Inc.	Cellular	D	Southfield	MI
View	4100700	Cellco Partnership dba Verizon Wireless	Cellular	Α	Basking Ridge	NJ
View	4106600	Cintex Wireless, LLC	Cellular	D	Rockville	MD
View	4111150	Comcast OTR1, LLC	Cellular	D	Philadelphia	PA
View	4101900	Consumer Cellular, Incorporated	Cellular	Α	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	Α	Elizabethtown	KY
View	4111200	Dynalink Communications, Inc.	Cellular	С	Brooklyn	NY
View	4101000	East Kentucky Network, LLC dba Appalachian Wireless	Cellular	Α	Ivel	KY
THE STREET		Easy Telephone Service Company dba Easy Wireless	Cellular	D	Ocala	FL
View	4109500	Enhanced Communications Group, LLC	Cellular	D	Bartlesville	OK
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	Α	Mountain View	CA
View	33350363	Granite Telecommunications, LLC	Cellular	D	Quincy	MA
View	4106000	GreatCall, Inc. d/b/a Jitterbug	Cellular	Α	San Diego	CA
View	10630	GTE Wireless of the Midwest dba Verizon Wireless	Cellular	Α	Basking Ridge	NJ
View	4103100	i-Wireless, LLC	Cellular	Α	Newport	KY
View	4109800	IM Telecom, LLC d/b/a Infiniti Mobile	Cellular	D	Tulsa	OK
View		KDDI America, Inc.	Cellular	D	New York	NY
View	10872	Kentucky RSA #1 Partnership	Cellular	Α	Basking Ridge	NJ
View	10680	Kentucky RSA #3 Cellular General	Cellular	Α	Elizabethtown	-

Utility Master Information - Search

			Oliky Master (Morntalion - Senior					
	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	NJ	
	View	4110900	Lunar Labs, Inc.	Cellular	D	Detroit	MI	
	View	4107300	Lycamobile USA, Inc.	Cellular	D	Newark	NJ	
	View	4108800	MetroPCS Michigan, LLC	Cellular	Α	Bellevue	WA	
	View	4109650	Mitel Cloud Services, Inc.	Cellular	D	Mesa	AZ	
	View	4202400	New Cingular Wireless PCS, LLC dba AT&T Mobility, PCS	Cellular	Α	San Antonio	TX	
Total San P	View	10900	New Par dba Verizon Wireless	Cellular	Α	Basking Ridge	NJ	
	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	Α	Detroit	MI	
	View	4110750	Onvoy Spectrum, LLC	Cellular	D	Plymouth	MN	
i	View	4109050	Patriot Mobile LLC	Cellular	D	Southlake	TX	
-	View	4110250	Plintron Technologies USA LLC	Cellular	D	Bellevue	WA	
-	View	33351182	PNG Telecommunications, Inc. dba PowerNet Global	Cellular	D	Cincinnati	ОН	
1	View	4202100	Powertel/Memphis, Inc. dba T-Mobile	Cellular	Α	Bellevue	WA	
	View		Puretalk Holdings, LLC	Cellular	Α	Covington	GA	
	View		Q LINK MOBILE LLC	Cellular	С	Dania Beach	FL	
77.98	View		Q Link Wireless, LLC	Cellular	В	Dania	FL	
	View		Ready Wireless, LLC	Cellular	В	Hiawatha	IA	
5	View		Republic Wireless, Inc.	Cellular	D	Raleigh	NC	
i	View		ROK Mobile, Inc.	Cellular	C	Culver City	CA	
	View	110	Rural Cellular Corporation	Cellular	A	Basking Ridge		
	View	**************************************	Sage Telecom Communications, LLC dba TruConnect	Cellular	D	Los Angeles	CA	
1	View		SelecTel, Inc. d/b/a SelecTel Wireless	Cellular	D	Freemont	NE	
1	View		SI Wireless, LLC	Cellular	A	Carbondale	IL	
	View		Spectrotel, Inc. d/b/a Touch Base Communications	Cellular	D	Neptune	NJ	
	View		Sprint Spectrum, L.P.	Cellular	A	Atlanta	GA	
	View		SprintCom, Inc.	Cellular	A	Atlanta	GA	
	View		Stream Communications, LLC	Cellular	D	Dallas	TX	
	View		which the property of the contract of the cont	Cellular	D	Red Bluff	CA	
	-Arms		T C Telephone LLC d/b/a Horizon Cellular T-Mobile Central, LLC dba T-Mobile	Cellular	A	Bellevue	WA	
	View		And the second s	Cellular	D	Carrollton	TX	
	View	4002500	TAG Mobile, LLC	Cellular	U	South	1.	
-			Telecom Management, Inc. dba Pioneer Telephone	Cellular	D	Portland	ME	
			Telefonica USA, Inc.	Cellular	D	Miami	FL	
		-	Telrite Corporation	Cellular	D	Covington	GA	
	<b>公司</b> 机中心电子		Tempo Telecom, LLC	Cellular	D	Atlanta	GA	
	O COURT	-	The People's Operator USA, LLC	Cellular	D	New York	NY	
1	S EIL MORO		Ting, Inc.	Cellular	Α	Toronto	ON	
- See			Torch Wireless Corp.	Cellular	D	Jacksonville	FL	
		2 46	Touchtone Communications, Inc.	Cellular	D	Whippany	NJ	
			TracFone Wireless, Inc.	Cellular	D	Miami	FL	
	View		Truphone, Inc.	Cellular	D	Durham	NC	
	View		UVNV, Inc. d/b/a Mint Mobile	Cellular	D	Costa Mesa	CA	
	View		Virgin Mobile USA, L.P.	Cellular	Α	Atlanta	GA	
			Visible Service LLC	Cellular	D	Lone Tree	CO	
			WiMacTel, Inc.	Cellular	D	Palo Alto	CA	
	View	4110950	Wing Tel Inc.	Cellular	D	New York	NY	

# EXHIBIT E FAA





Issued Date: 12/28/2017

Dave Cundiff - Dana Irvin AT&T Mobility 208 S. Akard St., 1012.4 Dallas, TX 75202

### \*\* 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 Old Landing

Location:

Beattyville, KY

Latitude:

37-37-53.58N NAD 83

Longitude:

83-48-31.51W

Heights:

1044 feet site elevation (SE)

370 feet above ground level (AGL)

1414 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 1, 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, P	art 2)

This determination expires on 06/28/2019 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 does not constitute authority to transmit on the frequency(ies) identified in this study. The proponent is required to obtain a formal frequency transmit license from the Federal Communications Commission (FCC) or National Telecommunications and Information Administration (NTIA), prior to on-air operations of these frequency(ies).

This determination of No Hazard is granted provided the following conditional statement is included in the proponent's construction permit or license to radiate:

Upon receipt of notification from the Federal Communications Commission that harmful interference is being caused by the licencee's (permittee's) transmitter, the licensee (permittee) shall either immediately reduce the power to the point of no interference, cease operation, or take such immediate corrective action as is necessary to eliminate the harmful interference. This condition expires after 1 year of interference-free operation.

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.

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 (202) 267-0105, or j.garver@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-ASO-25570-OE.

# Signature Control No: 351292995-352028595 Jay Garver

Specialist

Attachment(s)
Frequency Data Map(s)

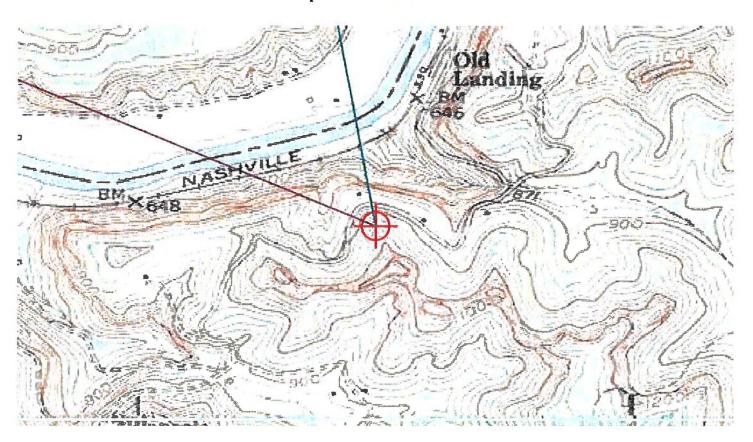
cc: FCC

(DNE)

# Frequency Data for ASN 2017-ASO-25570-OE

LOW	HIGH	FREQUENCY		ERP
FREQUENCY	FREQUENCY	UNIT	ERP	UNIT
6	7	CH-	5.5	Wat
6	7 7	GHz	55	dBW
6		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

# Verified Map for ASN 2017-ASO-25570-OE



# EXHIBIT F KENTUCKY AIRPORT ZONING COMMISSION



### KENTUCKY AIRPORT ZONING COMMISSION

MATTHEW BEVIN Governor

421 Buttermilk Pike Covington, KY 41017 www.transportation.ky.gov 859-341-2700

February 14, 2018

APPROVAL OF APPLICATION

APPLICANT: John Monday John Monday 3300 E. Renner Rd B3132 Richardson, TX 75082

SUBJECT: AS-065-I50-2018-007

STRUCTURE:

Antenna Tower

LOCATION:

Beattyville, KY

COORDINATES: 37° 37' 53.58" N / 83° 48' 31.51" W

HEIGHT:

370' AGL/1414'AMSL

The Kentucky Airport Zoning Commission has approved your application for a permit to construct 370'AGL/1414'AMSL Antenna Tower near Beattyville, KY 37° 37' 53.58" N / 83° 48' 31.51" W.

This permit is valid for a period of 18 Month(s) from its date of issuance. If construction is not completed within said 18-Month period, this permit shall lapse and be void, and no work shall be performed without the issuance of a new permit.

A copy of the approved application is enclosed for your files.

Medium Dual Obstruction Lighting is required in accordance with 602 KAR 50:100.

John Houlihan Administrator





## **KENTUCKY AIRPORT ZONING COMMISSION**

MATTHEW BEVIN Governor

421 Buttermilk Pike Covington, KY 41017 www.transportation.ky.gov 859-341-2700

#### CONSTRUCTION/ALTERATION STATUS REPORT

February 14, 2018

AERONAUTICIAL STUDY NUMBER: AS-065-I50-2018-007

John Monday John Monday 3300 E. Renner Rd B3132 Richardson, TX 75082

This concerns the permit which was issued to you by the Kentucky Airport Zoning Commission on February 14, 2018. This permit is valid for a period of 18 Month(s) from its date of issuance. If construction is not completed within the said 18-Month period, this permit shall lapse and be void, and no work shall be performed without the issuance of a new permit. When appropriate, please indicate the status of the project in the place below and return this letter to John Houlihan, Administrator, Kentucky Airport Zoning Commission, 421 Buttermilk Pike, Covington, KY, 41017. 859-341-2700.

ST	RU	IC	TI	ΓR	F.
$\mathbf{v}$	1//	$\sim$	4	"	

Antenna Tower

LOCATION:

Beattyville, KY

COORDINATES:

37° 37' 53.58" N / 83° 48' 31.51" W

HEIGHT:

370' AGL/1414'AMSL

C	ONSTRUCTION/ALTERATION	STATUS	
1.	The project ( ) is abandoned. (	) is not abando	ned.
2.	Construction status is as follows:		
	Structure reached its greatest heigh	ght of	_ ft. AGL
	ft. AMSL on		(date).

Date construction was completed.

Type of obstruction marking/painting.

Type of obstruction lighting.

As built coordinates.

Miscellaneous Information.

DATE

SIGNATURE/TITLE



2018-007



## **KENTUCKY TRANSPORTATION CABINET**

TC 55-2 Rev. 06/2016 Page 2 of 2

## KENTUCKY AIRPORT ZONING COMMISSION

## **APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE**

Artecanonion						
APPLICANT (name) John Monday	PHONE 855-699-7073	FAX 972-907-1131	KY AERONAUTICAL AS-065-IS	.STUDY# 0-21/8-007		
ADDRESS (street) 3300 E. Renner Road, B3132	CITY Richardson		STATE TX	ZIP 75082		
		[max	110	/3002		
APPLICANT'S REPRESENTATIVE (name) Roy Johnson	PHONE 502-445-2475	FAX 502-222-4266				
ADDRESS (street)	CITY		STATE	ZIP		
3605 Mattingly Road	Buckner		KY	40010		
APPLICATION FOR X New Construc		Existing	WORK SCHEDULE			
	porary (months	days )	Start End	TBD		
TYPE Crane Building	MARKING/PAINTIN	G/LIGHTING PREFE	RRED			
X Antenna Tower	-	int White-med		Vhite- high intensity		
Power Line Water Tank		dium intensity white				
Landfill Other	Other			g		
LATITUDE	LONGITUDE		DATUM X NAD	83 NAD27		
37° 37′ 53.58 ″		1.51 "	Other	03		
NEAREST KENTUCKY		Y PUBLIC USE OR M	Total Control of the			
City Beattyville County Lee	150 Stanton	T POBLIC OSL OR IVI	ILITANI AINPONI			
SITE ELEVATION (AMSL, feet)	TOTAL STRUCTURE	HEIGHT (AGL. feet)	CURRENT (FAA aeronautical study #)			
1044	370	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	2017-ASO-25570-OE			
OVERALL HEIGHT (site elevation plus to	tal structure height,	feet)	PREVIOUS (FAA ae	ronautical study #)		
1414			•			
DISTANCE (from nearest Kentucky publi 13.19 NM	c use or Military airp	ort to structure)	PREVIOUS (KY aero	nautical study #)		
DIRECTION (from nearest Kentucky pub South	lic use or Military air	port to structure)				
<b>DESCRIPTION OF LOCATION (Attach US</b>	GS 7.5 minute quadr	angle map or an air	port layout drawing	with the precise site		
marked and any certified survey.)				Î		
1A a	nd Quad attached					
DESCRIPTION OF PROPOSAL						
AT&T proposes to construct a 355' cell tower with a 15' lightning rod for an overall height of 370'.						
FAA Form 7460-1 (Has the "Notice of Construction or Alteration" been filed with the Federal Aviation Administration?)  No   X   Yes, when? 12/14/17						
CERTIFICATION (I hereby certify that all the above entries, made by me, are true, complete, and correct to the best of						
my knowledge and belief.)						
PENALITIES (Persons failing to comply with KRS 183.861 to 183.990 and 602 KAR 050 are liable for fines and/or						
imprisonment as set forth in KRS 183.990(3). Noncompliance with FAA regulations may result in further penalties.)						
NAME TITLE	CICALATIAN	2	DATE			
Michelle Ward Sr. Real Estate M		Lana Wind	DATE 12/28/17			
COMMISSION ACTION Chairperson, KAZC						
	Administrat	or, KAZC	A.	10		
Approved SIGNATURE	IN		DATE 2-14.			
Disapproved	У					

# EXHIBIT G GEOTECHNICAL REPORT

Geotechnical • Construction Materials • Environmental • Facilities

September 28, 2018

Mr. Jacob Goralski, P.E. Irish Tower, LLC 4603 Bermuda Drive, Sugar Land, TX 77479

ECS Project No. 26:3125-R2

Reference:

Report of Subsurface Exploration and Geotechnical Engineering Services

Old Landing Tower 400 Evelyn Road Beattyville, KY

Dear Mr. Goralski:

ECS Southeast, LLP (ECS) has completed the subsurface exploration for the proposed construction of a self-supporting tower located at 400 Evelyn Road, in Beattyville, Kentucky, approximately 3,000 feet northeast of the intersection with Beech Timber Road. The purpose of these services was to explore the subsurface soil and groundwater conditions at the site, and to develop geotechnical recommendations pertaining to foundation support of the structures. This report explains our understanding of the project, documents our findings, and presents our conclusions and geotechnical engineering recommendations to serve as an aid during the design and construction of the project.

### PROJECT INFORMATION AND PROPOSED CONSTRUCTION

The project will consist of the construction of a new 355+/-foot tall self-supporting tower with a 15-foot lightning arrestor and fenced equipment compound. The proposed tower site is located in a grassy area. See the attached Site Location Diagram (Figure 1) and Boring Location Diagram (Figure 2). We have received preliminary site plans showing the site boundaries and proposed tower location. No loading information was provided for the tower. Based on information provided from the client, the current ground surface elevation at the center of the tower is approximately 1003 feet MSL. To achieve the proposed grading at the tower site, we anticipate that no necessary cut and fill will be required. We do not anticipate that any significant stormwater management (SWM) facilities or site retaining walls will be required for this project.

# **EXPLORATION PROCEDURES**

The site subsurface conditions were explored on October 16, 2018, completing three Standard Penetration Test (SPT) borings drilled 35 feet from the staked center of the tower location. The borings were drilled to depths of approximately 8 to 17 ½ feet (depth of auger refusal). The approximate boring locations are shown on the attached Boring Location diagram (Figure 2). The boring locations were based on a survey stake-out that was performed by others. Prior to drilling, underground utilities were cleared through the Kentucky 811 system.

A CME 45 truck-mounted drill rig was utilized to complete the SPT boring. The drill rig utilized 3-1/4 inch hollow stem augers to advance the boreholes. Representative soil samples were secured by means of conventional split-barrel sampling procedures (ASTM D1586). In this procedure, a 2-inch O.D., split-barrel sampler is driven into the soil a distance of 18 inches by a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler

through the final 12-inch interval, after initial setting of 6 inches, is termed the Standard Penetration Test (SPT) value or N-value, and is indicated for each sample on the attached boring logs.

The SPT values can be used as a qualitative indication of the in-place relative density of cohesionless soils, and as a relative indication of consistency in cohesive soils. This indication is qualitative, since many factors can affect the standard penetration resistance value and prevent a direct correlation between drill crews, drill rigs, drilling procedures, and hammer-rod-sampler assemblies. The drill rig utilized an automatic hammer to drive the sampler.

Field logs of the soils encountered at the boring locations were maintained by the drilling crew. After recovery, each soil sample was removed from the sampler and visually classified by the driller. Representative portions of each soil sample were then sealed in plastic bags and transported to our laboratory in Nashville (Franklin), Tennessee, for further visual observation and classification. Observations for groundwater were made during sampling and upon completion of the drilling operations. After completion of the drilling operations, the boreholes were backfilled with auger cuttings and excess soil was mounded at the surface.

# **CLASSIFICATION AND LABORATORY TESTING PROCEDURES**

A geotechnical engineer classified each soil sample on the basis of texture and plasticity in accordance with the Unified Soil Classification System (ASTM D 2487). The group symbols for each soil type are indicated in parentheses following the soil descriptions on the boring logs. A brief explanation of the Unified Soil Classification System (USCS) is included with this report. The engineer grouped the various soil types into the major zones noted on the boring logs. The stratification lines designating the interfaces between materials on the exploration records are approximate; in situ, the transitions may be gradual.

The soil samples will be retained in our laboratory for a period of 60 days, after which, they will be discarded unless other instructions are received as to their disposition.

# SITE GEOLOGY

The USGS Geologic Map of the Cobhill Quadrangle (1976) indicates this particular site is underlain by the Breathitt Formation. This formation is typically consists of large sequences of gray siltstone and shale and coal. The Breathitt Formation is as much as 3,700 ft thick in the Black Mountain area in southeastern Kentucky but is as thin as 550 ft in northeastern Kentucky.

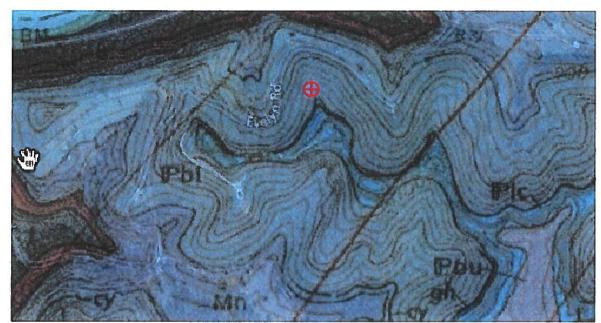


Figure 1 - USGS Geologic Map of the Cobhill Quadrangle (approximate site location highlighted)

# **SUBSURFACE CONDITIONS**

The subsurface conditions discussed in the following paragraphs, and those shown on the boring logs, represent an estimate of the subsurface conditions based on interpretation of the exploration data using normally accepted geotechnical engineering judgments. It should be noted that the transition between different soil strata is often less distinct than what is shown on the exploration records.

Surficial material (e.g. topsoil) was not encountered in our boring locations; however, it was likely removed during the clearing process. In general, out SPT borings encountered lean clay extending to depths of approximately 3 to 5 feet below the ground surface. Below the clay, weathered shale with numerous clay seams was encountered extending to the depths of approximately 8 to 17 ½ feet. SPT N-values for the clay materials varied from 6 to 10 blows per foot (bpf). SPT N-values for the weathered shale materials varied from 21 bpf to 50 hits of the hammer with the spoon advancing 2 inches. The encountered conditions are shown on the attached boring logs.

Groundwater was not encountered at the time of our exploration. It should be noted that groundwater can vary on a seasonal basis due to precipitation, evaporation, surface run-off, area stream levels and other factors not immediately apparent at the time of this exploration. It is also possible for groundwater to exist in a perched condition within the soil overburden or at the soil/rock interface.

# **ANALYSIS AND RECOMMENDATIONS**

### General

The following recommendations have been developed on the basis of the previously described project information and subsurface conditions identified during this study. If there are any changes to the project characteristics, or if differing subsurface conditions are encountered

during construction, ECS should be consulted so that the recommendations of this report can be reviewed and revised, as necessary.

# **Subgrade Preparation**

Vegetation, and all other soft, unsuitable, or deleterious material should be removed from the existing ground surface at the foundation areas. These operations should extend at least 5 feet beyond the edge of planned structures, where practical. After examining the exposed soils, loose and yielding areas should be identified by proofrolling with an approved piece of equipment, such as a loaded dump truck, having an axle weight of at least 10 tons. Unsuitable or unstable subgrade materials may require moisture conditioning, in-place densification, or removal and replacement with new engineered fill.

# **Engineered Fill**

The first layer of fill should be placed in a relatively uniform horizontal lift and be adequately keyed into the stripped and scarified subgrade soils. Fill materials should be free of organics, wet/frozen materials, or other deleterious materials. Engineered fill materials should consist of low to moderately plastic clays and silts, or coarse grained material such as sand and gravel. Engineered fill should have a maximum Liquid Limit no greater than 50, and a maximum Plasticity Index no greater than 30. In general, we recommend material to be used as engineered fill have a Standard Proctor maximum dry density of at least 90 pcf. Engineered soil fill should be placed in maximum loose lifts of 8 inches and compacted to at least 95 percent of the Standard Proctor (ASTM D698) maximum dry density. Soil engineered fill should be compacted within 3 percentage points of the optimum moisture content determined by the Standard Proctor method. Soil fill should not contain rock material greater than 4 inches in diameter.

Fill operations should be observed on a full-time basis by an experienced engineering technician to check that the required degree of compaction is being achieved. We recommend a minimum of one compaction test per 2,500 square-foot area be performed for each lift of engineered fill for structural areas, and that at least one test per lift per 100 linear feet of utility trench backfill.

# **Equipment Shelter Foundations**

Based upon our findings, the equipment shelter may be supported by a turned-down monolithic slab-on-grade with foundation elements bearing on the undisturbed natural residual soils, weathered bedrock, or properly-compacted engineered fill. These foundations can be designed for a maximum net allowable soil bearing pressure of up to 2,000 psf.

For footings constructed in accordance with the requirements outlined in this report, maximum total settlement is expected to be less than 1 inch (plus any consolidation settlement from new fill loads). Maximum differential settlement is expected to be half the total settlement. Shallow foundations should be designed to bear at least 24 inches below the final exterior grades. The slab-on-grade may be designed using a modulus of subgrade reaction of 100 pounds per cubic inch (pci). A layer of free draining gravel may be used underlying the slab to serve as a leveling pad and provide a capillary break. All slab and foundation subgrades should be evaluated immediately prior to concrete placement by ECS to verify that the exposed subgrades are capable of satisfactorily supporting the design loads.

# **Self-support Tower Foundation**

The proposed tower can be supported on drilled shaft (caisson) or a pad and pier foundation. Based on previous experience with tower structures, we anticipate that wind loading, associated uplift resistance, and lateral loading may control the sizing and depth of the tower foundation. We have provided estimated soil parameters at various depths to aid in drilled shaft foundation design in the attached Geotechnical Data Form.

Uplift forces can be resisted by the factored weight of the shaft and the side shear along the circumference of the shaft (skin friction). The compression forces can be resisted by the side shear along the circumference of the shaft and the end bearing capacity. In determining the dimensions of the drilled shafts, we recommend that a minimum factor of safety of 1.25 with regard to the weight of the concrete should be used in conjunction with the presented allowable side shear values. For uplift and compression, we recommend no contribution to resisting loads be considered from side shear within 5 feet of the ground surface, soft clay or from potentially liquefiable zones.

Casing of the excavation is not expected, but may be required, depending on the condition of the soils and the ground water elevation at the time of construction. Once the bearing level is reached, all loose materials and any accumulated water seepage should be removed prior to placement of drilled shaft reinforcing cage and concrete. Up to 1 inch of water standing in the base of the shaft excavation is acceptable at the time concrete is placed, and an inflow rate of 1 inch per 5 minutes is also acceptable. Higher inflow rates, which could likely be encountered, may require additional control such as temporary casing or that drilled shaft concrete be placed by tremie method. The drilled shaft contractor should be prepared to handle such a condition and to ensure suitable end bearing conditions.

The drilled shaft concrete should be placed in intimate contact with undisturbed natural soil/rock. To reduce the potential for arching, we recommend the drilled shaft concrete mix be designed for a slump of 5 to 7 inches. Provided water seepage is minimal, our experience and current research in the field indicates that the drilled shafts can be constructed by "free fall" placement of concrete without affecting the strength and quality of concrete. The concrete should "free fall" without hitting the sides of the casing or reinforcing steel. The use of a hopper or other suitable device is recommended to control concrete placement and direct it toward the center of the shaft. The placement of concrete in the cased shaft should proceed until the concrete level is above the external fluid level and should be maintained above this level throughout casing removal, if required. However, if significant seepage is present within the excavation or if slurry is used, it will be necessary to place the concrete by tremie method, and we recommend a concrete slump of 7 to 9 inches for this method of concrete placement.

The shaft design and construction procedures should be reviewed with the foundation contractor prior to the start of construction. If you desire, we would be pleased to review the plans and specifications for the project once they are completed so we may have the opportunity to comment on the impact of the soil/rock and groundwater conditions on the final design.

<u>Pad and Pier Recommendations:</u> A pad and pier foundation approach would also be reasonable. We recommend that the foundation be excavated down to bedrock and can be designed for a net allowable bearing capacity of 4,000 psf for the weathered shale. Base friction and passive earth pressures can be used to resist lateral loads. The friction coefficient between the foundation bottom and underlying rock can be assumed to be 0.45. Passive earth pressures along the edge of the foundation can be calculated using a fluid equivalent of 300 pcf. Passive

resistant should only be used where the soils adjacent to the foundation will not be eroded or removed in the future.

The foundation design and construction procedures should be reviewed with the foundation contractor prior to the start of construction. If you desire, we would be pleased to review the plans and specifications for the project once they are completed so we may have the opportunity to comment on the impact of the soil/rock and groundwater conditions on the final design.

# **Seismic Site Classification**

Based on our interpretation of the International Building Code (IBC) 2012, it is our opinion that a Seismic Site Class "C" is appropriate for this site. In accordance with IBC 2012 and United States Geological Survey's (USGS) Seismic Hazard Curves and Uniform Hazard Response Spectra program, the following parameters may be used in design:

- Latitude: 37.63155, Longitude: 83.808753
- $S_s = 0.198$ ,  $S_t = 0.090$
- $S_{MS} = 0.238$ ,  $S_{M1} = 0.153$
- $S_{DS} = 0.159, S_{D1} = 0.102$ 
  - \*Spectral accelerations were determined from USGS National Seismic Hazard Maps

### **General Construction Considerations**

Positive site drainage should be maintained during earthwork operations, which should help maintain the integrity of the soil. Placement of fill on the near surface soils which have become wet may be difficult. When wet, these soils will degrade quickly with disturbance from contractor operations and will be difficult to stabilize for fill placement.

The surficial soils are considered moderately erodible. All erosion and sedimentation shall be controlled in accordance with Best Management Practices and current County requirements. At the appropriate time, we would be pleased to provide a proposal for NPDES monitoring and construction materials testing related services.

# **CLOSING**

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. ECS is not responsible for the conclusions, opinions, or recommendations made by others based on these data. No third party is given the right to rely on this report without express written permission.

The scope of services for this study does not include environmental assessment or investigation for the presence or absence of wetlands, hazardous or toxic materials in the soil or groundwater within or beyond the site studied. Any statements in this report regarding odors, staining of soils, or other unusual conditions observed are strictly for the information of our client.

We appreciate this opportunity to be of service to you during the design phase of this project. If you have any questions with regard to the information and recommendations presented in this report, please do not hesitate to contact us.

Mark D. Luskin, P.E.

**Engineering Manager** 

Respectfully,

**ECS SOUTHEAST, LLP** 

Eric M. Gasiecki

Geotechnical Department Manager

Attachments: Figure 1: Site Location Map

Figure 2: Boring Location Diagrams

Geotechnical Data Form

SPT Boring Logs (B-1 through B-3) Reference Notes for Boring Logs

**USGS Summary Report** 

I:\D3 - Geotechnica\D3 Projects\3100-3199\26-3125 Irish Tower\26-3125-C2 Old Landing, KY\Report\26-3125-C2 Old Canding\26-3125-C2 Old Canding\

# GEOTECHNICAL DATA FORM

#### **Background Information**

Client: Irish Tower, LLC Project: Old Landing

Location: 400 Evelyn Road, Beattyville, KY

ECS Project No.: 26:3125-R2 Type:

Selfsupport

Height:

355'+/-



#### Subsurface Conditions

Depth (feet)	Soil Behavior Type	Average N (spt)	Relative Density/Consistency	USCS Classificati on
0 - 3	Lean Clay	7	Medium Stiff	CL
3 - 17.5	Weathered Shale	28	- 20	
17.5+	Shale Bedrock	50 0		*

#### Estimated Soil Parameters for LPILE

Depth	LPILE Soil			φ*	K*	E <sub>50</sub> *	
(feet)	Туре	(pcf)	(psi)	(°)	(pci)		
0 - 3	Medium Stiff Clay	110	750		100	0.01	
3 - 17.5	Weathered Shale	115	1500	4	150	0.007	
14+	Shale Bedrock	130	5000+		1500	0.001	

γ= In situ Soil Density

Su= Undrained Shear Strength

φ'= Effective Friction Angle

K= Horizontal Subgrade Reaction

# Foundation Recommendations

For Drilled Shaft Foundations\*\*

Depth (ft)	Allowable End Bearing (KSF)
0 - 3	2
8 - 17.5	4
17,5+	8

Depth Interval	Allowable Average Side Friction (PSF)
0 - 5	-
5 - 17.5	750
17.5+	1,500

<sup>&</sup>quot;Ignore in top 5 feet in design, minimum embedment depth of 10% tower height applies.

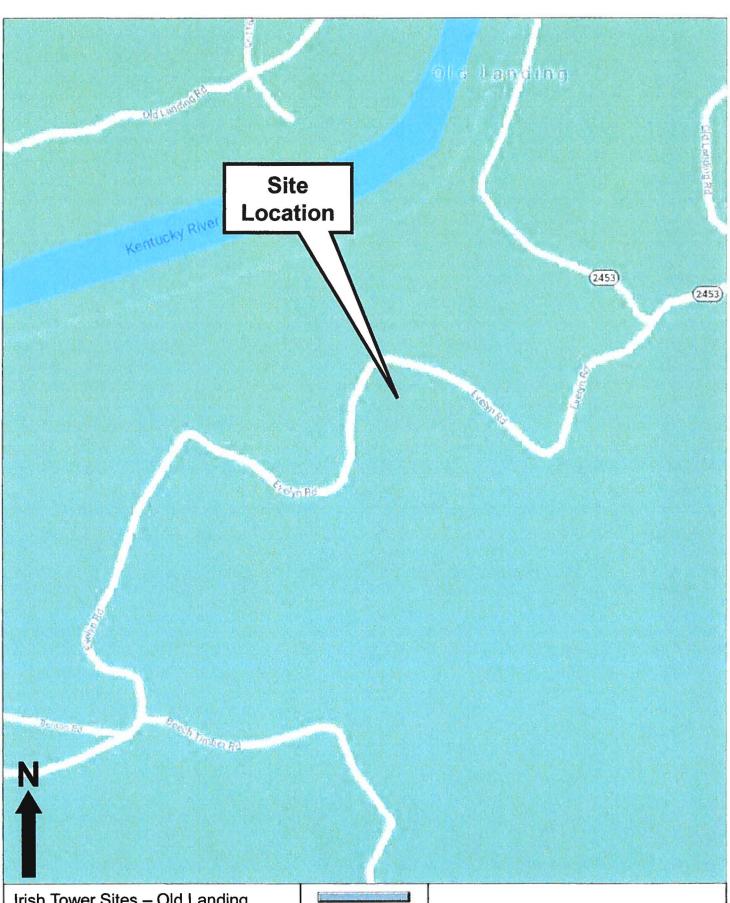
# Construction Criteria

- 1) Proofroll site prior to construction to detect unsuitable soil near the surface.

- 2) Compact building pads/roadway subgrade and each 8 inch lift of approved fill to 95% maximum dry density in accordance with ASTM D698 standard proctor.
   3) Approved fill materials are soils with less than 3% organics, less than 50 liquid limit and less than 30 plastic index.
   4) Foundation construction should be observed by Geotechnical Engineer.
   5) Drilled shaft foundations should be installed in accordance with the requirements of the Deep Foundation Institute and monitored by the Geotechnical Engineer.

<sup>\*</sup>Parameters estimated from values suggested in LPILE user manual.

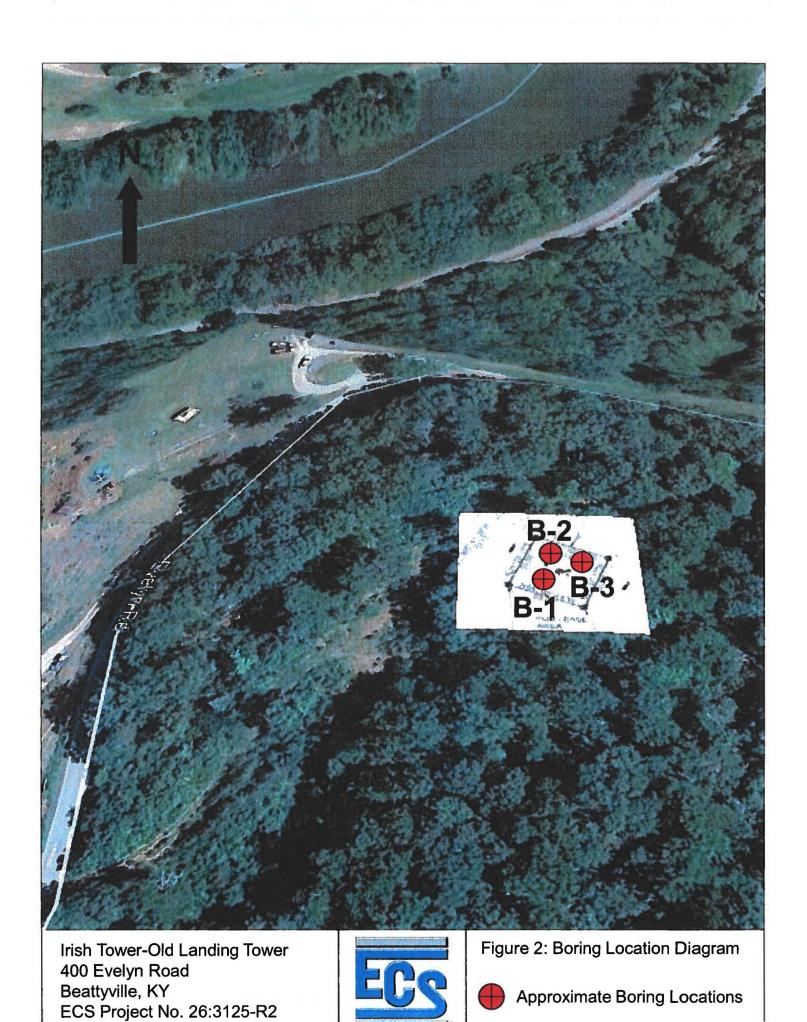
<sup>\*</sup>Paramaters were increased with embedment depth due to anticipated increase in bedrock quality

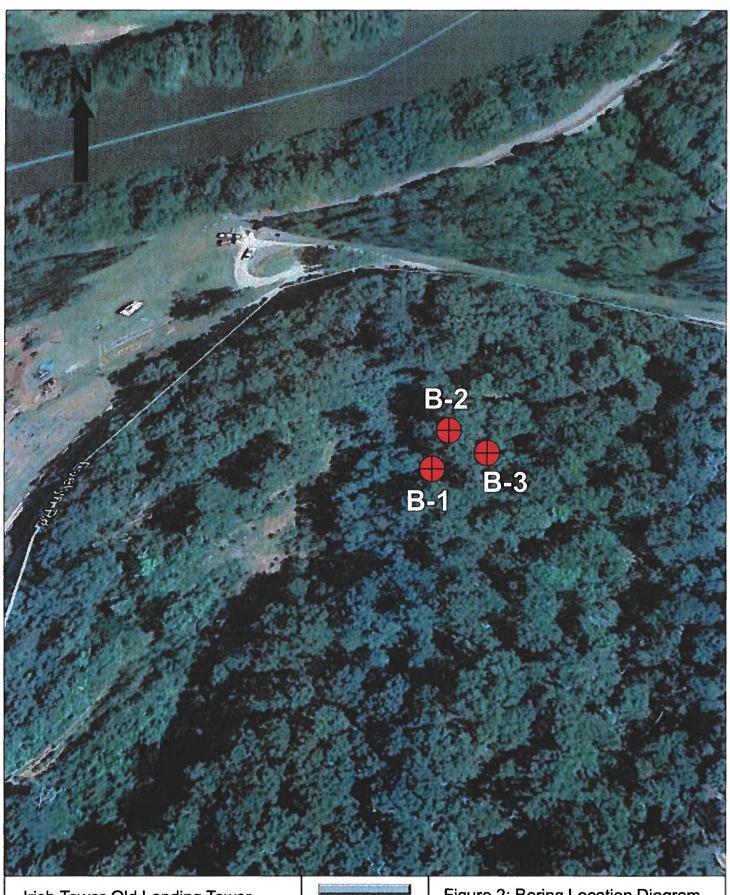


Irish Tower Sites – Old Landing Evelyn Road Beattyville, KY ECS Project No. 26:3125-R2



Figure 1: Site Location Diagram





Irish Tower-Old Landing Tower 400 Evelyn Road Beattyville, KY ECS Project No. 26:3125-R2



Figure 2: Boring Location Diagram



**Approximate Boring Locations** 



# REFERENCE NOTES FOR BORING LOGS

MATERIAL1	,2	
	ASPH.	ALT
	CONC	RETE
80 80 6 5	GRAV	EL
	TOPS	OIL
	VOID	
丑丑	BRICK	
80000	AGGR	EGATE BASE COURSE
R Port a	FILL <sup>3</sup>	MAN-PLACED SOILS
4	GW	WELL-GRADED GRAVEL gravel-sand mixtures, little or no fines
	GP	POORLY-GRADED GRAVEL gravel-sand mixtures, little or no fines
	GM	SILTY GRAVEL gravel-sand-silt mixtures
144	GC	CLAYEY GRAVEL gravel-sand-clay mixtures
	SW	WELL-GRADED SAND gravelly sand, little or no fines
	SP	POORLY-GRADED SAND gravelly sand, little or no fines
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SM	SILTY SAND sand-silt mixtures
1. 1. 1. 1. 1.	SC	CLAYEY SAND sand-clay mixtures
	ML	SILT non-plastic to medium plasticity
	МН	ELASTIC SILT high plasticity
1///	CL	LEAN CLAY low to medium plasticity
17,	СН	FAT CLAY high plasticity
	OL	ORGANIC SILT or CLAY non-plastic to low plasticity
The second secon	ОН	ORGANIC SILT or CLAY high plasticity
1000	PT	PEAT

	DRILLING SAMPLIN	G SYMB	OLS & ABBREVIATIONS	
SS	Split Spoon Sampler	PM	Pressuremeter Test	
ST	Shelby Tube Sampler	RD	Rock Bit Drilling	
WS	Wash Sample	RC	Rock Core, NX, BX, AX	
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %	
PA	Power Auger (no sample)	RQD	Rock Quality Designation %	
HSA	Hollow Stem Auger			

		PARTICLE SIZE IDENTIFICATION			
DESIGNA	TION	PARTICLE SIZES			
Boulders	3	12 inches (300 mm) or larger			
Cobbles		3 inches to 12 inches (75 mm to 300 mm)			
Gravel:	Coarse	3/4 inch to 3 inches (19 mm to 75 mm)			
	Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)			
Sand:	Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)			
Medium		0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)			
	Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)			
Silt & Cla	ay ("Fines")	<0.074 mm (smaller than a No. 200 sieve)			

COHESIV	E SILTS &	CLAYS
UNCONFINED COMPRESSIVE STRENGTH, Qp4	SPT <sup>5</sup> (BPF)	CONSISTENCY <sup>7</sup> (COHESIVE)
<0.25	<3	Very Soft
0.25 - < 0.50	3 - 4	Soft
0.50 - <1.00	5 - 8	Medium Stiff
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

RELATIVE AMOUNT	COARSE GRAINED (%) <sup>8</sup>	FINE GRAINED (%) <sup>8</sup>
Trace	<u>&lt;</u> 5	<u>≤</u> 5
Dual Symbol (ex: SW-SM)	10	10
With	15 - 20	15 - 25
Adjective (ex: "Silty")	<u>≥</u> 25	≥30

GRAVELS, SANDS & NON-COHESIVE SILTS					
SPT <sup>5</sup>	DENSITY				
<5	Very Loose				
5 - 10	Loose				
11 - 30	Medium Dense				
31 - 50	Dense				
>50	Very Dense				

WATER LEVELS <sup>6</sup>								
Ţ	WL	Water Level (WS)(WD)						
		(WS) While Sampling						
		(WD) While Drilling						
齑	SHW	Seasonal High WT						
Ā	ACR	After Casing Removal						
<u>v</u>	SWT	Stabilized Water Table						
	DCI	Dry Cave-In						
	WCI	Wet Cave-In						

highly organic soils

<sup>&</sup>lt;sup>1</sup>Classifications and symbols per ASTM D 2488-09 (Visual-Manual Procedure) unless noted otherwise.

<sup>&</sup>lt;sup>2</sup>To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.

<sup>&</sup>lt;sup>3</sup>Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-FILL)].

<sup>&</sup>lt;sup>4</sup>Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).

Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf).

<sup>&</sup>lt;sup>6</sup>The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.

<sup>&</sup>lt;sup>7</sup>Minor deviation from ASTM D 2488-09 Note 16.

<sup>&</sup>lt;sup>8</sup>Percentages are estimated to the nearest 5% per ASTM D 2488-09.

IENT							Job#:	BORIN	NG#		SHEET	Constant	en la compani
rish 7	owe	er, L	LC				26:3125-R2		B-1		1 OF 1	5	Pa
							ARCHITECT-ENGINEER						62
ish T	OWE	er Si	tes ·	- Old	d Landing						-()- CALIBRATED	DENETDOME	TER TONIS
00 E	vely	n Ro	oad,	Bea	attyville, Lee, l	<Υ							
ORTHIN	G			EASTII	NG	STATION					ROCK QUALITY D RQD%		
			<u>S</u>	î	DESCRIPTION OF M	ATERIAL	ENGLISH	UNITS	S E			WATER CONTENT%	LIQU LIMIT
(F)	N O	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	BOTTOM OF CASING	G <b>3</b>	LOSS OF CIRCULATION	N 2003	WATER LEVELS	.9/9	X	•	
ОЕРТН (FT)	SAMPLE NO.	SAMPL	SAMPL	RECOV	SURFACE ELEVATION	N			WATER	BLOWS/6"		ARD PENETRA BLOWS/FT	TION
0					(CL) LEAN CL.	AY, trace sand	light reddish						į
_	S-1	ss	18	18	biowii, moist, c	AIII				2 4 6	10		
_					SHALE, Highly	Weathered				14			
5—	S-2	SS	8	8						50/2			50/2
										5			1
_	S-3	SS	18	18						6	14		
				_						9		30	
10	S-4	SS	18	18						13		9	
_												:\	1
_												. \ .	
	S-5	ss	18	18						16 18		39	
15 —				"						21	: :		
	i)				AUGER REFU	SAL @ 17.5'		*****					
=													
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# **USGS** Design Maps Detailed Report

2012/2015 International Building Code (37.63155°N, 83.80875°W)

Site Class D - "Stiff Soil", Risk Category I/II/III

# Section 1613.3.1 — Mapped acceleration parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain  $S_{\text{B}}$ ) and 1.3 (to obtain  $S_{\text{L}}$ ). Maps in the 2012/2015 International Building Code are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 1613.3.3.

# From Figure 1613.3.1(1)[1]

 $S_s = 0.198 g$ 

# From Figure 1613.3.1(2) [2]

 $S_1 = 0.090 g$ 

# Section 1613.3.2 — Site class definitions

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class D, based on the site soil properties in accordance with Section 1613.

# 2010 ASCE-7 Standard – Table 20.3-1 SITE CLASS DEFINITIONS

Site Class	$\overline{v}_s$	$\overline{N}$ or $\overline{N}_{ch}$	- <b>S</b> u	
A. Hard Rock	>5,000 ft/s	N/A	N/A	
B. Rock	2,500 to 5,000 ft/s	N/A	N/A	
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf	
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf	
E. Soft clay soil	<600 ft/s	<15	<1,000 psf	

Any profile with more than 10 ft of soil having the characteristics:

- Plasticity index PI > 20,
- Moisture content w ≥ 40%, and
- Undrained shear strength  $\bar{s}_{c} < 500 \text{ psf}$

F. Soils requiring site response analysis in accordance with Section 21.1

See Section 20.3.1

For SI:  $1ft/s = 0.3048 \text{ m/s} 1lb/ft^2 = 0.0479 \text{ kN/m}^2$ 

# Section 1613.3.3 — Site coefficients and adjusted maximum considered earthquake spectral response acceleration parameters

TABLE 1613.3.3(1)
VALUES OF SITE COEFFICIENT F,

Site Class	Mapped Spectral Response Acceleration at Short Period						
	S <sub>s</sub> ≤ 0.25	S <sub>s</sub> = 0.50	S <sub>s</sub> = 0.75	S <sub>s</sub> = 1.00	S <sub>s</sub> ≥ 1.25		
А	0.8	0.8	0.8	0.8	0.8		
В	1.0	1.0	1.0	1.0	1.0		
С	1.2	1.2	1.1	1.0	1.0		
D	1.6	1.4	1.2	1.1	1.0		
Е	2.5	1.7	1.2	0.9	0.9		
F	See Section 11.4.7 of ASCE 7						

Note: Use straight-line interpolation for intermediate values of  $S_{\epsilon}$ 

For Site Class = D and  $S_s = 0.198 g$ ,  $F_s = 1.600$ 

TABLE 1613.3.3(2) VALUES OF SITE COEFFICIENT F<sub>v</sub>

Site Class	Mapped Spectral Response Acceleration at 1–s Period						
	S₁ ≤ 0.10	$S_1 = 0.20$	S; = 0.30	S <sub>1</sub> = 0.40	S; ≥ 0.50		
Α	0.8	0.8	0.8	0.8	0.8		
В	1.0	1.0	1.0	1.0	1.0		
С	1.7	1.6	1.5	1.4	1.3		
D	2.4	2.0	1.8	1.6	1.5		
E	3.5	3.2	2.8	2.4	2.4		
F	See Section 11.4.7 of ASCE 7						

Note: Use straight-line interpolation for intermediate values of S

For Site Class = D and  $S_1 = 0.090$  g,  $F_v = 2.400$ 

**Equation (16-37):**  $S_{MS} = F_a S_s = 1.600 \times 0.198 = 0.317 g$ 

Equation (16-38):  $S_{M1} = F_{\nu}S_{1} = 2.400 \times 0.090 = 0.217 \text{ g}$ 

Section 1613.3.4 — Design spectral response acceleration parameters

Equation (16-39):  $S_{DS} = \frac{1}{3} S_{MS} = \frac{1}{3} \times 0.317 = 0.211 g$ 

Equation (16-40):  $S_{Di} = \frac{1}{3} S_{MI} = \frac{1}{3} \times 0.217 = 0.144 g$ 

# Section 1613.3.5 — Determination of seismic design category

TABLE 1613.3.5(1)
SEISMIC DESIGN CATEGORY BASED ON SHORT-PERIOD (0.2 second) RESPONSE ACCELERATION

VALUE OF C	RISK CATEGORY					
VALUE OF S <sub>DS</sub>	I or II	III	IV			
S <sub>os</sub> < 0.167g	Α	Α	А			
0.167g ≤ S <sub>os</sub> < 0.33g	В	В	С			
$0.33g \le S_{os} < 0.50g$	С	С	D			
0.50g ≤ S <sub>ps</sub>	D	D	D			

For Risk Category = I and  $S_{os} = 0.211$  g, Seismic Design Category = B

TABLE 1613.3.5(2)
SEISMIC DESIGN CATEGORY BASED ON 1-SECOND PERIOD RESPONSE ACCELERATION

VALUE OF 6	RISK CATEGORY					
VALUE OF S <sub>D1</sub>	I or II	III	IV			
S <sub>01</sub> < 0.067g	Α	А	А			
$0.067g \le S_{D1} < 0.133g$	В	В	С			
0.133g ≤ S <sub>D1</sub> < 0.20g	С	С	D			
0.20g ≤ S <sub>D1</sub>	D	D	D			

For Risk Category = I and  $S_{D1}$  = 0.144 g, Seismic Design Category = C

Note: When  $S_i$  is greater than or equal to 0.75g, the Seismic Design Category is  ${\bf E}$  for buildings in Risk Categories I, II, and III, and  ${\bf F}$  for those in Risk Category IV, irrespective of the above.

Seismic Design Category  $\equiv$  "the more severe design category in accordance with Table 1613.3.5(1) or 1613.3.5(2)" = C

Note: See Section 1613.3.5.1 for alternative approaches to calculating Seismic Design Category.

### References

- 1. Figure 1613.3.1(1): https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(1).pdf
- 2. Figure 1613.3.1(2): https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(2).pdf

# **Important Information About Your**

# Geotechnical Engineering Report

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

The following information is provided to help you manage your risks.

# Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one - not even you -* should apply the report for any purpose or project except the one originally contemplated.

# **Read the Full Report**

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

# A Geotechnical Engineering Report is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- · not prepared for you,
- · not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

 the function of the proposed structure, as when it's changed from a parking garage to an office building, or from alight industrial plant to a refrigerated warehouse,

- elevation, configuration, location, orientation, or weight of the proposed structure,
- · composition of the design team, or
- project ownership.

As a general rule, always inform your geotechnical engineer of project changes - even minor ones - and request an assessment of their impact. Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.

# **Subsurface Conditions Can Change**

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

# Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ-sometimes significantly from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

# A Report's Recommendations Are Not Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.

# A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

# **Do Not Redraw the Engineer's Logs**

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should never be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

# Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, but preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. Be sure contractors have sufficient time to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

# **Read Responsibility Provisions Closely**

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led

to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely*. Ask questions. Your geotechnical engineer should respond fully and frankly.

# **Gecenvironmental Concerns Are Not Covered**

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures*. If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.* 

# **Obtain Professional Assistance To Deal with Mold**

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the express purpose of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in-this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveved in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.

# Rely on Your ASFE-Member Geotechnical Engineer For Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your ASFE-member geotechnical engineer for more information.



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# EXHIBIT H DIRECTIONS TO WCF SITE

# **Driving Directions to Proposed Tower Site**

- 1. Beginning at 256 Main Street, Beattyville, KY, head northwest (toward Walnut Street) and travel approximately 0.4 miles.
- 2. Turn left onto KY-52 W / W Main Street and travel approximately 8.7 miles.
- 3. Turn left onto State Hwy 2453 and travel approximately 2.1 miles.
- 4. Continue onto Evelyn Road and travel approximately 0.5 miles.
- 5. The site is on the left at 400 Evelyn Road, Beattyville, Kentucky. The site coordinates are
  - a. North 37 deg 37 min 53.58 sec
  - b. West 83 deg 48 min 31.51 sec



Prepared by: Aaron Roof Pike Legal Group PLLC 1578 Highway 44 East, Suite 6 P.O. Box 369 Shepherdsville, KY 40165-3069

Telephone: 502-955-4400 or 800-516-4293

# EXHIBIT I COPY OF REAL ESTATE AGREEMENT

Market Lexington Cell Site Number KYI 06083 Cell Site Name Old Lendrig Fixed Asset Number 1380,7702

#### OPTION AND LEASE AGREEMENT

THIS OPTION AND LEASE AGREEMENT ("Agreement"), dated as of the latter of the signature dates below (the "Effective Date"), is entered into by Larry Joe Estes, a single man, having a mailing address of 414 Evelyn Road, Beattyville, KY 41311 ("Landlord") and New Cingular Wireless PCS, LLC, a Delaware limited liability company, having a mailing address of 575 Morosgo Drive NE, Atlanta, GA 30324 ("Tenant").

### BACKGROUND

Landlord owns or controls that certain plot, parcel or tract of land, as described on Exhibit 1, together with all rights and privileges arising in connection therewith, located at 400 Evelyn Road, Beattyville, KY 41311, in the County of Lee, State of Kentucky (collectively, the "Property"). Fenant desires to use a portion of the Property in connection with its federally licensed communications business. Landlord desires to grant to Fenant the right to use a portion of the Property in accordance with this Agreement.

The parties agree as follows:

# 1. OPTION TO LEASE.

- ta) Landlord grants to Tenant an option (the "Option") to lease a certain portion of the Property containing approximately 10,000 square feet including the air space above such ground space, as described on attached Exhibit 1 (the "Premises"), for the placement of Tenant's Communication Facility.
- (b) During the Option Term, and during the term of this Agreement, Tenant and its agents, engineers, surveyors and other representatives will have the right to enter upon the Property to inspect, examine, conduct soil borings, drainage testing, material sampling, radio frequency testing 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 loss by casualty or other causes beyond Tenant's control excepted.
- (c) In consideration of Landlord granting Tenant the Option, Tenant agrees to pay Landlord the sum of within forty five (45) business days of the Effective Date. The Option will be for an initial term of one (1) year commencing on the Effective Date (the "Initial Option Term") and may be renewed by Tenant for an additional one (1) year (the "Renewal Option Term") upon written notification to Landlord and the payment of an additional no later than five (5) days prior to the expiration date of the Initial Option Term. The Initial Option Term and any Renewal Option Term are collectively referred to as the "Option Term."
- (d) The Option may be sold, assigned or transferred at any time by Tenant to an Affiliate (as that term is hereinafter defined) of Tenant or to any third party agreeing to be subject to the terms hereof. Otherwise, the Option may not be sold, assigned or transferred without the written consent of Landlord, such consent not to

be unreasonably withheld, conditioned or delayed. From and after the date the Option has been sold, assigned or transferred by Tenant to an Affiliate or a third party agreeing to be subject to the terms hereof, Tenant shall immediately be released from any and all liability under this Agreement, including the payment of any rental or other sums due, without any further action.

- (e) 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 Tenant subject to the terms and conditions of this Agreement. If Tenant does not exercise the Option during the Initial Option Term or any extension thereof, this Agreement will terminate and the parties will have no further liability to each other.
- (f) If during the Option Term, or during the term of this Agreement the Option is exercised, Landlord decides to subdivide, sell, or change the status of the zoning of the Premises, Property or any of Landlord's contiguous, adjoining or surrounding property (the "Surrounding Property,") or in the event of foreclosure, Landlord shall immediately notify Tenant in writing. Landlord agrees that during the Option Term, or during the Term of this Agreement if the Option is exercised. Landlord shall not initiate or consent to any change in the zoning of the Premises, Property or Surrounding Property or impose or consent to any other use or restriction that would prevent or limit Tenant from using the Premises for the Permitted Use. Any and all terms and conditions of this Agreement that by their sense and context are intended to be applicable during the Option Term shall be so applicable.
- 2. PERMITTED USE. Tenant may use the Premises for the transmission and reception of communications signals and the installation, construction, maintenance, operation, repair, replacement and upgrade of its communications fixtures and related equipment, cables, accessories and improvements, which may include a suitable support structure, associated antennas, equipment shelters or cabinets and fencing and any other items necessary to the successful and secure use of the Premises (collectively, the "Communication Facility"), as well as the right to test, survey and review title on the Property; Tenant further has the right but not the obligation to add, modify and/or replace equipment in order to be in compliance with any current or future federal, state or local mandated application, including, but not limited to, emergency 911 communication services, at no additional cost to Tenant or Landlord (collectively, the "Permitted Use"). Landlord and Tenant agree that any portion of the Communication Facility that may be conceptually described on Exhibit 1 will not be deemed to limit Tenant's Permitted Use. If Exhibit 1 includes drawings of the initial installation of the Communication Facility, Landlord's execution of this Agreement will signify Landlord's approval of Exhibit 1. For a period of ninety (90) days following the start of construction, Landlord grants Tenant, its subtenants, licensees and sublicensees, the right to use such portions of Landlord's contiguous, adjoining or Surrounding Property as described on Exhibit 1 as may reasonably be required during construction and installation of the Communication Facility. Tenant has the right to install and operate transmission cables from the equipment shelter or cabinet to the antennas, electric lines from the main feed to the equipment shelter or cabinet and communication lines from the Property's main entry point to the equipment shelter or cabinet, and to make other improvements, alterations, upgrades or additions appropriate for Tenant's Permitted Use, including the right to construct a fence around the Premises and undertake any other appropriate means to secure the Premises at Tenant's expense. Tenant has the right to modify, supplement, replace, upgrade, expand the equipment, increase the number of antennas or relocate the Communication Facility within the Premises at any time during the term of this Agreement. Tenant will be allowed to make such alterations to the Property in order to ensure that Tenant's Communication Facility complies with all applicable federal, state or local laws, rules or regulations. In the event Tenant desires to modify or upgrade the Communication Facility, in a manner that requires an additional portion of the Property (the "Additional Premises") for such modification or ungrade, Landlord agrees to lease to Tenant the Additional Premises, upon the same terms and conditions set forth herein, except that the Rent shall increase, in conjunction with the lease of the Additional Premises by the amount equivalent to the then-current per square foot rental rate charged by Landlord to Tenant times the square footage of the Additional Premises. Landlord agrees to take such actions and enter into and deliver to Tenant such documents as Tenant reasonably requests in order to effect and memorialize the lease of the Additional Premises to Tenant.

# 3. TERM.

- (a) The initial lease term will be five (5) years (the "Initial Term"), commencing on the effective date of written notification by Tenant to Landlord of Tenant's exercise of the Option (the "Term Commencement Date"). The Initial Term will terminate on the fifth (5<sup>th</sup>) anniversary of the Term Commencement Date.
- (b) This Agreement will automatically renew for four (4) additional five (5) year term(s) teach five (5) year term shall be defined as an "Extension Term"), upon the same terms and conditions unless Tenant notifies Landlord in writing of Tenant's intention not to renew this Agreement at least sixty (60) days prior to the expiration of the Initial Term or then-existing Extension Term.
- (c) Unless (i) Landlord or Tenant notifies the other in writing of its intention to terminate this Agreement at least six (6) months prior to the expiration of the final Extension Term, or (ii) the Agreement is terminated as otherwise permitted by this Agreement prior to the end of the final Extension Term, then upon the expiration of the final Extension Term, this Agreement shall continue in force upon the same covenants, terms and conditions for a further term of one (1) year, and for annual terms thereafter ("Annual Term") until terminated by either party by giving to the other written notice of its intention to so terminate at least six (6) months prior to the end of any such Annual Term. Monthly rental during such Annual Terms shall be equal to the Rent paid for the last month of the final Extension Term. If Tenant remains in possession of the Premises after the termination of this Agreement, then Tenant will be deemed to be occupying the Premises on a month-to-month basis (the "Holdover Term"), subject to the terms and conditions of this Agreement.
- (d) The Initial Term, any Extension Terms, any Annual Terms and any Holdover Term are collectively referred to as the Term (the "Term").

# 4. RENT.

- (a) Commencing on the first day of the month following the date that Tenant commences construction (the "Rent Commencement Date"). Tenant will pay Landlord on or before the firth (5th) day of each calendar month in advance (the "Rent"), at the address set forth above. In any partial month occurring after the Rent Commencement Date, Rent will be prorated. The initial Rent payment will be forwarded by Tenant to Landlord within forty-five (45) days after the Rent Commencement Date.
  - (b) In year one (1) of each Extensior. Term, the monthly Rent will increase by over the Rent paid during the previous five (5) year term.
- (c) All charges payable under this Agreement such as utilities and taxes shall be billed by Landlord within one (1) year from the end of the calendar year in which the charges were incurred; any charges beyond such period shall not be billed by Landlord, and shall not be payable by Tenant. The foregoing shall not apply to monthly Rent which is due and payable without a requirement that it be billed by Landlord. The provisions of this subsection shall survive the termination or expiration of this Agreement.

# 5. APPROVALS.

- (a) Landlord agrees that Tenant's ability to use the Premises is contingent upon the suitability of the Premises and Property for Tenant's Permitted Use and Tenant's ability to obtain and maintain all Government Approvals. Landlord authorizes Tenant to prepare, execute and file all required applications to obtain Government Approvals for Tenant's Permitted Use under this Agreement and agrees to reasonably assist Tenant with such applications and with obtaining and maintaining the Government Approvals.
- (b) Tenant has the right to obtain a title report or commitment for a leasehold title pelicy from a title insurance company of its choice and to have the Property surveyed by a surveyor of its choice.
- (c) Tenant may also perform and obtain, at Tenant's sole cost and expense, soil borings, percolation tests, engineering procedures, environmental investigation or other tests or reports on, over, and under the Property, necessary to determine if Tenant's use of the Premises will be compatible with Tenant's engineering specifications, system, design, operations or Government Approvals.
- 6. **TERMINATION.** This Agreement may be terminated, without penalty or further liability, as follows:

- (a) by either party on thirty (30) days prior written notice, if the other party remains in default under Section 15 of this Agreement after the applicable cure periods;
- (b) by Tenant upon written notice to Landlord, if Fenant is unable to obtain or maintain, any required approval(s) or the issuance of a license or permit by any agency, board, court or other governmental authority necessary for the construction or operation of the Communication Facility as now or hereafter intended by Tenant; or if Tenant determines, in its sole discretion that the cost of or delay in obtaining or retaining the same is commercially unreasonable;
- (c) by Tenant, upon written notice to Landlord, if Tenant determines, in its sole discretion, due to the title report results or survey results, that the condition of the Premises is unsatisfactory for its intended uses:
- (d) by Tenant upon written notice to Landlord for any reason or no reason, at any time prior to commencement of construction by Tenant; or
- (e) by Tenant upon sixty (60) days' prior written notice to I andlord for any reason or no reason, so long as Tenant pays Landlord a termination fee equal to three (3) months' Rent, at the then-current rate, provided, however, that no such termination fee will be payable on account of the termination of this Agreement by Tenant under any termination provision contained in any other Section of this Agreement, including the following: 5 Approvals, 6(a) Termination, 6(b) Termination, 6(c) Termination, 6(d) Termination, 11(d) Environmental, 18 Condemnation, or 19 Casualty.

# 7. INSURANCE.

(a) During the Term. Tenant will carry, at its own cost and expense, the following insurance: (i) workers' compensation insurance as required by law; and (ii) commercial general liability (CGL) insurance with respect to its activities on the Property, such insurance to afford protection of up to per occurrence and general aggregate, based on Insurance Services Office (ISO) Form CG 00 01 or a substitute form providing substantially equivalent coverage. Tenant's CGL insurance shall contain a provision including Landlord as an additional insured. Such additional insured coverage:

- (i) shall be limited to bodily injury, property damage or personal and advertising injury eaused, in whole or in part, by Tenant, its employees, agents or independent contractors;
- (ii) shall not extend to claims for punitive or exemplary damages arising out of the acts or omissions of Landlord, its employees, agents or independent contractors or where such coverage is prohibited by law or to claims arising out of the gross negligence of Landlord, its employees, agents or independent contractors; and
  - (iii) shall not exceed Tenant's indemnification obligation under this Agreement, if any.
- (b) Notwithstanding the foregoing. Tenant shall have the right to self-insure the coverages required in subsection (a). In the event Tenant elects to self-insure its obligation to include Landlord as an additional insured, the following provisions shall apply (in addition to those set forth in subsection (a)):
  - (i) Landlord shall promptly and no later than thirty (30) days after notice thereof provide Tenant with written notice of any claim, demand, lawsuit, or the like for which it seeks coverage pursuant to this Section and provide Tenant with copies of any demands, notices, summonses, or legal papers received in connection with such claim, demand, lawsuit, or the like.
  - (ii) Landlord shall not settle any such claim, demand, lawsuit, or the like without the prior written consent of Tenant, and
  - (iii) Landlord shall fully cooperate with Tenant in the defense of the claim, demand, lawsuit, or the like.

## 8. INTERFERENCE.

- (a) Prior to or concurrent with the execution of this Agreement, Landlord has provided or will provide Tenant with a list of radio frequency user(s) and frequencies used on the Property as of the Effective Date. Tenant warrants that its use of the Premises will not interfere with those existing radio frequency uses on the Property, as long as those existing radio frequency user(s) operate and continue to operate within their respective frequencies and in accordance with all applicable laws and regulations.
- (b) Landlord will not grant, after the date of this Agreement, a lease, license or any other right to any third party, if the exercise of such grant may in any way adversely affect or interfere with the Communication Facility, the operations of Tenant or the rights of Tenant under this Agreement. Landlord will notify Tenant in writing prior to granting any third party the right to install and operate communications equipment on the Property.
- (c) Landlord will not, nor will Landlord permit its employees, tenants, licensees, invitees, agents or independent contractors to, interfere in any way with the Communication Facility, the operations of Tenant or the rights of Tenant under this Agreement. Landlord will cause such interference to cease within twenty-four (24) hours after receipt of notice of interference from Tenant. In the event any such interference does not cease within the aforementioned cure period, Landlord shall cease all operations which are suspected of causing interference (except for intermittent testing to determine the cause of such interference) until the interference has been corrected.
- (d) For the purposes of this Agreement, "interference" may include, but is not limited to, any use on the Property or Surrounding Property that causes electronic or physical obstruction with, or degradation of, the communications signals from the Communication Facility.

### 9. INDEMNIFICATION.

- (a) Tenant agrees to indemnify, defend and hold Landlord harmless from and against any and all injury, loss, damage or liability (or any claims in respect of the foregoing), costs or expenses (including reasonable attorneys' fees and court costs) arising directly from the installation, use, maintenance, repair or removal of the Communication Facility or Tenant's breach of any provision of this Agreement, except to the extent attributable to the negligent or intentional act or omission of Landlord, its employees, agents or independent contractors.
- (b) Landlord agrees to indemnify, defend and hold Tenant harmless from and against any and all injury, loss, damage or liability (or any claims in respect of the foregoing), costs or expenses (including reasonable attorneys' fees and court costs) arising directly from the actions or failure to act of Landlord, its employees or agents, or Landlord's breach of any provision of this Agreement, except to the extent attributable to the negligent or intentional act or omission of Tenant, its employees, agents or independent contractors.
- (c) The indemnified party: (i) shall promptly provide the indemnifying party with written notice of any claim, demand, lawsuit, or the like for which it seeks indemnification pursuant to this Section and provide the indemnifying party with copies of any demands, notices, summonses, or legal papers received in connection with such claim, demand, lawsuit, or the like: (ii) shall not settle any such claim, demand, lawsuit, or the like without the prior written consent of the indemnifying party; and (iii) shall fully cooperate with the indemnifying party in the defense of the claim, demand, lawsuit, or the like. A delay in notice shall not relieve the indemnifying party of its indemnity obligation, except (1) to the extent the indemnifying party can show it was prejudiced by the delay; and (2) the indemnifying party shall not be liable for any settlement or litigation expenses incurred before the time when notice is given.

### 10. WARRANTIES.

- (a) Tenant and Landlord each acknowledge and represent that it is duly organized, validly existing and in good standing and has the right, power and authority to enter into this Agreement and bind itself hereto through the party set forth as signatory for the party below.
- (b) Landlord represents, warrants and agrees that: (i) Landlord solely owns the Property as a legal lot in fee simple, or controls the Property by lease or license; (ii) the Property is not and will not be encumbered by any liens, restrictions, mortgages, covenants, conditions, easements, leases, or any other agreements of record or not of record, which would adversely affect Tenant's Permitted Use and enjoyment of the Premises under this

Agreement; (iii) as long as Tenant is not in default then Landlord grants to Tenant sole, actual, quiet and peaceful use, enjoyment and possession of the Premises without hindrance or ejection by any persons lawfully claiming under Landlord; (iv) Landlord's execution and performance of this Agreement will not violate any laws, ordinances, covenants or the provisions of any mortgage, lease or other agreement binding on Landlord; and (v) if the Property is or becomes encumbered by a deed to secure a debt, mortgage or other security interest, Landlord will provide promptly to Tenant a mutually agreeable subordination, non-disturbance and attornment agreement executed by Landlord and the holder of such security interest.

# 11. ENVIRONMENTAL.

- (a) Landlord represents and warrants that, except as may be identified in Exhibit 11 attached to this Agreement, (i) the Property, as of the date of this Agreement, is free of hazardous substances, including asbestos-containing materials and lead paint, and (ii) the Property has never been subject to any contamination or hazardous conditions resulting in any environmental investigation, inquiry or remediation. Landlord and Tenant agree that each will be responsible for compliance with any and all applicable governmental laws, rules, statutes, regulations, codes, ordinances, or principles of common law regulating or imposing standards of liability or standards of conduct with regard to protection of the environment or worker health and safety, as may now or at any time hereafter be in effect, to the extent such apply to that party's activity conducted in or on the Property.
- (b) Landlord and Tenant agree to hold harmless and indemnify the other from, and to assume all duties, responsibilities and liabilities at the sole cost and expense of the indemnifying party for, payment of penalties, sanctions, forfeitures, losses, costs or damages, and for responding to any action, notice, claim, order, summons, citation, directive, litigation, investigation or proceeding ("Claims"), to the extent arising from that party's breach of its obligations or representations under Section 11(a). Landlord agrees to hold harmless and indemnify Tenant from, and to assume all duties, responsibilities and liabilities at the sole cost and expense of Landlord for, payment of penalties, sanctions, forfeitures, losses, costs or damages, and for responding to any Claims, to the extent arising from subsurface or other contamination of the Property with hazardous substances prior to the Effective Date of this Agreement or from such contamination caused by the acts or omissions of Landlord during the Term. Tenant agrees to hold harmless and indemnify Landlord from, and to assume all duties, responsibilities and liabilities at the sole cost and expense of Tenant for, payment of penalties, sanctions, forfeitures, losses, costs or damages, and for responding to any Claims, to the extent arising from hazardous substances brought onto the Property by Tenant.
- (c) The indemnifications of this Section 11 specifically include reasonable costs, expenses and fees incurred in connection with any investigation of Property conditions or any clean-up, remediation, removal or restoration work required by any governmental authority. The provisions of this Section 11 will survive the expiration or termination of this Agreement.
- (d) In the event Tenant becomes aware of any hazardous substances on the Property, or any environmental, health or safety condition or matter relating to the Property, that, in Tenant's sole determination, renders the condition of the Premises or Property unsuitable for Tenant's use, or if Tenant believes that the leasing or continued leasing of the Premises would expose Tenant to undue risks of liability to a government agency or other third party. Tenant will have the right, in addition to any other rights it may have at law or in equity, to terminate this Agreement upon written notice to Landlord.
- ACCESS. At all times throughout the Term of this Agreement, and at no additional charge to Tenant, Tenant and its employees, agents, and subcontractors, will have twenty-four (24) hour per day, seven (7) day per week pedestrian and vehicular access ("Access") to and over the Property, from an open and improved public road to the Premises, for the installation, maintenance and operation of the Communication Facility and any utilities serving the Premises. As may be described more fully in Exhibit 1, Landlord grants to Tenant an easement for such Access and Landlord agrees to provide to Tenant such codes, keys and other instruments necessary for such Access at no additional cost to Tenant. Upon Tenant's request, Landlord will execute a separate recordable easement evidencing this right. Landlord shall execute a letter granting Tenant Access to the Property substantially in the form attached as Exhibit 12; upon Tenant's request, Landlord shall execute additional letters during the Term. Landlord acknowledges that in the event Tenant cannot obtain Access to the

Premises. Tenant shall incur significant damage. If Landlord fails to provide the Access granted by this Section 12, such failure shall be a default under this Agreement. In connection with such default, in addition to any other rights or remedies available to Tenant under this Agreement or at law or equity, Landlord shall pay Tenant, as liquidated damages and not as a penalty.

In consideration of Tenant's damages until Landlord cures such default. Landlord and Tenant agree that Tenant's damages in the event of a denial of Access are difficult, it not impossible, to ascertain, and the liquidated damages set forth above are a reasonable approximation of such damages.

13. REMOVAL/RESTORATION. All portions of the Communication Facility brought onto the Property by Tenant will be and remain Tenant's personal property and, at Tenant's option, may be removed by Tenant at any time during or after the Term. I andlord covenants and agrees that no part of the Communication Facility constructed, creeted or placed on the Premises by Tenant will become, or be considered as being affixed to or a part of, the Property, it being the specific intention of Landlord that all improvements of every kind and nature constructed, creeted or placed by Tenant on the Premises will be and remain the property of Tenant and may be removed by Tenant at any time during or after the Term. Tenant will repair any damage to the Property resulting from Tenant's removal activities. Any portions of the Communication Facility that Tenant does not remove within one hundred twenty (120) days after the later of the end of the Term and cessation of Tenant's operations at the Premises shall be deemed abandoned and owned by Landlord. However, to the extent required by law, Tenant will remove the above-ground portions of the Communications Facility within such one hundred twenty (120) day period. Notwithstanding the foregoing, Tenant will not be responsible for the replacement of any trees, shrubs of other vegetation.

### 14. MAINTENANCE/UTILITIES.

- (a) Tenant will keep and maintain the Premises in good condition, reasonable wear and tear and damage from the elements excepted. Landlord will maintain and repair the Property and access thereto and all areas of the Premises where Tenant does not have exclusive control, in good and tenantable condition, subject to reasonable wear and tear and damage from the elements. Landlord will be responsible for maintenance of landscaping on the Property, including any landscaping installed by Tenant as a condition of this Agreement or any required permit.
- Tenant will be responsible for paying on a monthly or quarterly basis all utilities charges for electricity, telephone service or any other utility used or consumed by Tenant on the Premises. In the event Tenant cannot secure its own metered electrical supply. Tenant will have the right, at its own cost and expense, to submeter from Landlord. When submetering is required under this Agreement, Landlord will read the meter and provide Tenant with an invoice and usage data on a monthly basis. Landlord agrees that it will not include a markup on the utility charges. Landlord further agrees to provide the usage data and invoice on forms provided by Tenant and to send such forms to such address and/or agent designated by Tenant. Tenant will remit payment within forty-five (45) days of receipt of the usage data and required forms. As noted in Section 4(c) above, any utility fee recovery by Landlord is limited to a twelve (12) month period. If Tenant submeters electricity from Landlord, Landlord agrees to give Tenant at least twenty-four (24) hours advance notice of any planned interruptions of said electricity. Landford acknowledges that Tenant provides a communication service which requires electrical power to operate and must operate twenty-four (24) hours per day, seven (7) days per week. If the interruption is for an extended period of time, in Tenant's reasonable determination, Landlord agrees to allow Tenant the right to bring in a temporary source of power for the duration of the interruption. Landlord will not be responsible for interference with, interruption of or failure, beyond the reasonable control of Landlord, of such services to be furnished or supplied by Landlord.
- (c) Landlord hereby grants to any company providing utility or similar services, including electric power and telecommunications, to Tenant an easement over the Property, from an open and improved public road to the Premises, and upon the Premises, for the purpose of constructing, operating and maintaining such lines, wires, circuits, and conduits, associated equipment cabinets and such appurtenances thereto, as such companies may from time to time require in order to provide such services to the Premises. Upon Tenant's or the service company's request. Landlord will execute a separate recordable easement evidencing this grant, at no cost to Tenant or the service company.

## 15. DEFAULT AND RIGHT TO CURE.

- (a) The following will be deemed a default by Tenant and a breach of this Agreement: (i) non-payment of Rent if such Rent remains unpaid for more than thirty (30) days after written notice from Landlord of such failure to pay; or (ii) Tenant's failure to perform any other term or condition under this Agreement within forty-five (45) days after written notice from Landlord specifying the failure. No such failure, however, will be deemed to exist if Tenant has commenced to cure such default within such period and provided that such efforts are prosecuted to completion with reasonable diligence. Delay in curing a default will be excused if due to causes beyond the reasonable control of Tenant. If Tenant remains in default beyond any applicable cure period, Landlord will have the right to exercise any and all rights and remedies available to it under law and equity.
- (b) The following will be deemed a default by Landlord and a breach of this Agreement: (i) Landlord's failure to provide Access to the Premises as required by Section 12 of this Agreement within twenty-four (24) hours after written notice of such failure; (ii) Landlord's failure to cure an interference problem as required by Section 8 of this Agreement within twenty-four (24) hours after written notice of such failure; or (iii) Landlord's failure to perform any term, condition or breach of any warranty or covenant under this Agreement within forty-five (45) days after written notice from Tenant specifying the failure. No such failure, however, will be deemed to exist if Landlord has commenced to cure the default within such period and provided such efforts are prosecuted to completion with reasonable diligence. Delay in curing a default will be excused if due to causes beyond the reasonable control of Landlord. If Landlord remains in default beyond any applicable cure period, Tenant will have: (i) the right to cure Landlord's default and to deduct the costs of such cure from any monies due to Landlord from Tenant, and (ii) any and all other rights available to it under law and equity.
- 16. <u>ASSIGNMENT/SUBLEASE</u>. Tenant will have the right to assign this Agreement or sublease the Premises and its rights herein, in whole or in part, without Landlord's consent. Upon notification to Landlord of such assignment. Tenant will be relieved of all future performance, liabilities and obligations under this Agreement to the extent of such assignment.

17. NOTICES. All notices, requests and demands hereunder will be given by first class certified or registered mail, return receipt requested, or by a nationally recognized overnight courier, postage prepaid, to be effective when properly sent and received, refused or returned undelivered. Notices will be addressed to the parties as follows:

If to Tenant:

New Cingular Wireless PCS, LLC

Attn: Network Real Estate Administration

Re: Cell Site #: KYL06083; Cell Site Name: Old Landing (KY)

Fixed Asset No.: 13800702 575 Morosgo Drive NF. Atlanta, GA 30324

With a copy to:

New Cingular Wireless PCS, LLC

Attn.: Legal Department

Re: Cell Site #: KYL06083; Cell Site Name: Old Landing (KY)

Fixed Asset No.: 13800702

208 S. Akard Street Dallas, TX 75202-4206

The copy sent to the Legal Department is an administrative step which alone does not constitute legal notice.

If to Landlord:

Larry Joe Estes 414 Evelyn Road Beattyville, KY 41311

Either party hereto may change the place for the giving of notice to it by thirty (30) days' prior written notice to the other as provided herein.

- 18. CONDEMNATION. In the event Landlord receives notification of any condemnation proceedings affecting the Property, Landlord will provide notice of the proceeding to Tenant within forty-eight (48) hours. If a condemning authority takes all of the Property, or a portion sufficient, in Tenant's sole determination, to render the Premises unsuitable for Tenant, this Agreement will terminate as of the date the title vests in the condemning authority. The parties will each be entitled to pursue their own separate awards in the condemnation proceeds, which for Tenant will include, where applicable, the value of its Communication Facility, moving expenses, prepaid Rent, and business dislocation expenses. Tenant will be entitled to reimbursement for any prepaid Rent on a prorata basis.
- Property within forty-eight (48) hours of the casualty or other harm. If any part of the Communication Facility or Property is damaged by casualty or other harm as to render the Premises unsuitable, in Tenant's sole determination, then Tenant may terminate this Agreement by providing written notice to Landlord, which termination will be effective as of the date of such casualty or other harm. Upon such termination, Tenant will be entitled to collect all insurance proceeds payable to Tenant on account thereof and to be reimbursed for any prepaid Rent on a prorata basis. Landlord agrees to permit Tenant to place temporary transmission and reception facilities on the Property, but only until such time as Tenant is able to activate a replacement transmission facility at another location; notwithstanding the termination of the Agreement, such temporary facilities will be governed by all of the terms and conditions of this Agreement, including Rent. If Landlord or Tenant undertakes to rebuild or restore the Premises and/or the Communication Facility, as applicable, Landlord agrees to permit Tenant to place temporary transmission and reception facilities on the Property at no additional Rent until the reconstruction of the Premises and/or the Communication Facility is completed. If Landlord

determines not to rebuild or restore the Property, Landlord will notify Tenant of such determination within thirty (30) days after the casualty or other harm. If Landlord does not so notify Tenant, and Tenant decides not to terminate under this Section, then Landlord will promptly rebuild or restore any portion of the Property interfering with or required for Tenant's Permitted Use of the Premises to substantially the same condition as existed before the casualty or other harm. Landlord agrees that the Rent shall be abated until the Property and/or the Premises are rebuilt or restored, unless Tenant places temporary transmission and reception facilities on the Property.

20. WAIVER OF LANDLORD'S LIENS. Landlord waives any and all lien rights it may have, statutory or otherwise, concerning the Communication Facility or any portion thereof. The Communication Facility shall be deemed personal property for purposes of this Agreement, regardless of whether any portion is deemed real or personal property under applicable law; Landlord consents to Tenant's right to remove all or any portion of the Communication Facility from time to time in Tenant's sole discretion and without Landlord's consent.

# 21. TAXES.

- (a) Landlord shall be responsible for timely payment of all taxes and assessments levied upon the lands, improvements and other property of Landlord, including any such taxes that may be calculated by the taxing authority using any method, including the income method. Tenant shall be responsible for any taxes and assessments attributable to and levied upon Tenant's leasehold improvements on the Premises if and as set forth in this Section 21. Nothing herein shall require Tenant to pay any inheritance, franchise, income, payroll, excise, privilege, rent, capital stock, stamp, documentary, estate or profit tax, or any tax of similar nature, that is or may be imposed upon Landlord.
- (b) In the event Landlord receives a notice of assessment with respect to which taxes or assessments are imposed on Tenant's leasehold improvements on the Premises, Landlord shall provide Tenant with copies of each such notice immediately upon receipt, but in no event later than thirty (30) days after the date of such notice of assessment. If Landlord does not provide such notice or notices to Tenant within such time period. Landlord shall be responsible for payment of the tax or assessment set forth in the notice, and Landlord shall not have the right to reimbursement of such amount from Tenant. If Landlord provides a notice of assessment to Tenant within such time period and requests reimbursement from Tenant as set forth below, then Tenant shall reimburse Landlord for the tax or assessments identified on the notice of assessment on Tenant's leasehold improvements, which has been paid by Landlord. If Landlord seeks reimbursement from Tenant, Landlord shall, no later than thirty (30) days after Landlord's payment of the taxes or assessments for the assessed tax year, provide Tenant with written notice including evidence that Landlord has timely paid same, and Landlord shall provide to Tenant any other documentation reasonably requested by Tenant to allow Tenant to evaluate the payment and to reimburse Landlord.
- (c) For any tax amount for which Tenant is responsible under this Agreement, Tenant shall have the right to contest, in good faith, the validity or the amount thereof using such administrative, appellate or other proceedings as may be appropriate in the jurisdiction, and may defer payment of such obligations, pay same under protest, or take such other steps as Tenant may deem appropriate. This right shall include the ability to institute any legal, regulatory or informal action in the name of Landlord, Tenant, or both, with respect to the valuation of the Premises. Landlord shall cooperate with respect to the commencement and prosecution of any such proceedings and will execute any documents required therefor. The expense of any such proceedings shall be borne by Tenant and any refunds or rebates secured as a result of Tenant's action shall belong to Tenant, to the extent the amounts were originally paid by Tenant. In the event Tenant notifies Landlord by the due date for assessment of Tenant's intent to contest the assessment, Landlord shall not pay the assessment pending conclusion of the contest, unless required by applicable law.
- (d) Landlord shall not split or cause the tax parcel on which the Premises are located to be split, bifurcated, separated or divided without the prior written consent of Tenant.

- (e) Tenant shall have the right but not the obligation to pay any taxes due by Landlord hereunder if Landlord fails to timely do so, in addition to any other rights or remedies of Tenant. In the event that Tenant exercises its rights under this Section 21(e) due to such Landlord default, Tenant shall have the right to deduct such tax amounts paid from any monies due to Landlord from Tenant as provided in Section 15(b), provided that Tenant may exercise such right without having provided to Landlord notice and the opportunity to cure per Section 15(b).
- (f) Any tax-related notices shall be sent to Tenant in the manner set forth in Section 17 and, in addition, of a copy of any such notices shall be sent to the following address. Promptly after the Effective Date of this Agreement, Landlord shall provide the following address to the taxing authority for the authority's use in the event the authority needs to communicate with Tenant. In the event that Tenant's tax addresses changes by notice to Landlord, Landlord shall be required to provide Tenant's new tax address to the taxing authority or authorities.

New Cingular Wireless PCS, LLC

Attn: Network Real Estate Administration -- Taxes

Re: Cell Site #: KYL06083; Cell Site Name: Old Landing (KY)

Fixed Asset No: 13800702 575 Morosgo Drive NE Atlanta, GA 30324

(g) Notwithstanding anything to the contrary contained in this Section 21. Tenant shall have no obligation to reimburse any tax or assessment for which the Landlord is reimbursed or rebated by a third party.

# 22. SALE OF PROPERTY

- (a) Landlord shall not be prohibited from the selling, leasing or use of any of the Property or the Surrounding Property except as provided below.
- (b) If Landlord, at any time during the Term of this Agreement, decides to rezone or sell, subdivide or otherwise transfer all or any part of the Premises, or all or any part of the Property or Surrounding Property, to a purchaser other than Tenant, Landlord shall promptly notify Tenant in writing, and such rezoning, sale, subdivision or transfer shall be subject to this Agreement and Tenant's rights hereunder. In the event of a change in ownership, transfer or sale of the Property, within ten (10) days of such transfer, Landlord or its successor shall send the documents listed below in this subsection (b) to Tenant. Until Tenant receives all such documents, Tenant shall not be responsible for any failure to make payments under this Agreement and reserves the right to hold payments due under this Agreement.
  - i. Old deed to Property
  - ii. New deed to Property
  - iii. Bill of Sale or Transfer
  - iv. Copy of current Tax Bill
  - v. New IRS Form W-9
  - vi. Completed and Signed AT&T Payment Direction Form
  - vii. Full contact information for new Landlord including phone number(s)
- (c) Landlord agrees not to sell, lease or use any areas of the Property or Surrounding Property for the installation, operation or maintenance of other wireless communications facilities if such installation, operation or maintenance would interfere with Tenant's Permitted Use or communications equipment as determined by radio propagation tests performed by Tenant in its sole discretion. Landlord or Landlord's prospective purchaser shall reimburse Tenant for any costs and expenses of such testing. If the radio frequency propagation tests demonstrate levels of interference unacceptable to Tenant, Landlord shall be prohibited from selling, leasing or using any areas of the Property or the Surrounding Property for purposes of any installation, operation or maintenance of any other wireless communications facility or equipment.

- (d) The provisions of this Section shall in no way limit or impair the obligations of Landlord under this Agreement, including interference and access obligations.
- 23. RENTAL STREAM OFFER. If at any time after the date of this Agreement, Landlord receives a bona fide written offer from a third party seeking an assignment or transfer of Rent payments associated with this Agreement ("Rental Stream Offer"), Landlord shall immediately furnish Tenant with a copy of the Rental Stream Offer. Tenant shall have the right within twenty (20) days after it receives such copy to match the Rental Stream Offer and agree in writing to match the terms of the Rental Stream Offer. Such writing shall be in the form of a contract substantially similar to the Rental Stream Offer. If Tenant chooses not to exercise this right or fails to provide written notice to Landlord within the twenty (20) day period, Landlord may assign the right to receive Rent payments pursuant to the Rental Stream Offer, subject to the terms of this Agreement. If Landlord attempts to assign or transfer Rent payments without complying with this Section, the assignment or transfer shall be void. Tenant shall not be responsible for any failure to make payments under this Agreement and reserves the right to hold payments due under this Agreement until Landlord complies with this Section.

### 24. MISCELLANEOUS.

- (a) Amendment/Waiver. This Agreement cannot be amended, modified or revised unless done in writing and signed by Landlord and Tenant. No provision may be waived except in a writing signed by both parties. The failure by a party to enforce any provision of this Agreement or to require performance by the other party will not be construed to be a waiver, or in any way affect the right of either party to enforce such provision thereafter.
- (b) Memorandum/Short Form Lease. Contemporaneously with the execution of this Agreement, the parties will execute a recordable Memorandum or Short Form of Lease substantially in the form attached as Exhibit 24b. Either party may record this Memorandum or Short Form of Lease at any time during the Term, in its absolute discretion. Thereafter during the Term of this Agreement, either party will, at any time upon fifteen (15) business days' prior written notice from the other, execute, acknowledge and deliver to the other a recordable Memorandum or Short Form of Lease.
- (e) Limitation of Liability. Except for the indemnity obligations set forth in this Agreement, and otherwise notwithstanding anything to the contrary in this Agreement, Tenant and Landlord each waives any claims that each may have against the other with respect to consequential, incidental or special damages, however caused, based on any theory of liability.
- (d) Compliance with Law. Tenant agrees to comply with all federal, state and local laws, orders, rules and regulations ("Laws") applicable to Tenant's use of the Communication Facility on the Property. Landlord agrees to comply with all Laws relating to Landlord's ownership and use of the Property and any improvements on the Property.
- (e) **Bind and Benefit**. The terms and conditions contained in this Agreement will run with the Property and bind and inure to the benefit of the parties, their respective heirs, executors, administrators, successors and assigns.
- (f) Entire Agreement. This Agreement and the exhibits attached hereto, all being a part hereof, constitute the entire agreement of the parties hereto and will supersede all prior offers, negotiations and agreements with respect to the subject matter of this Agreement. Exhibits are numbered to correspond to the Section wherein they are first referenced. Except as otherwise stated in this Agreement, each party shall bear its own fees and expenses (including the fees and expenses of its agents, brokers, representatives, attorneys, and accountants) incurred in connection with the negotiation, drafting, execution and performance of this Agreement and the transactions it contemplates.
- (g) Governing Law. This Agreement will be governed by the laws of the state in which the Premises are located, without regard to conflicts of law.
- (h) Interpretation. Unless otherwise specified, the following rules of construction and interpretation apply: (i) captions are for convenience and reference only and in no way define or limit the construction of the terms and conditions hereof; (ii) use of the term "including" will be interpreted to mean "including but not limited to"; (iii) whenever a party's consent is required under this Agreement, except as otherwise stated in this Agreement or as same may be duplicative, such consent will not be unreasonably

withheld, conditioned or delayed; (iv) exhibits are an integral part of this Agreement and are incorporated by reference into this Agreement; (v) use of the terms "termination" or "expiration" are interchangeable; (vi) reference to a default will take into consideration any applicable notice, grace and cure periods; (vii) to the extent there is any issue with respect to any alleged, perceived or actual ambiguity in this Agreement, the ambiguity shall not be resolved on the basis of who drafted the Agreement; (viii) the singular use of words includes the plural where appropriate and (ix) if any provision of this Agreement is held invalid, illegal or unenforceable, the remaining provisions of this Agreement shall remain in full force if the overall purpose of the Agreement is not rendered impossible and the original purpose, intent or consideration is not materially impaired.

- (i) Affiliates. All references to "Tenant" shall be deemed to include any Affiliate of New Cingular Wireless PCS, LLC using the Premises for any Permitted Use or otherwise exercising the rights of Tenant pursuant to this Agreement. "Affiliate" means with respect to a party to this Agreement, any person or entity that (directly or indirectly) controls, is controlled by, or under common control with, that party. "Control" of a person or entity means the power (directly or indirectly) to direct the management or policies of that person or entity, whether through the ownership of voting securities, by contract, by agency or otherwise.
- (j) Survival. Any provisions of this Agreement relating to indemnification shall survive the termination or expiration hereof. In addition, any terms and conditions contained in this Agreement that by their sense and context are intended to survive the termination or expiration of this Agreement shall so survive.
- (k) W-9. As a condition precedent to payment, Landlord agrees to provide Tenant with a completed IRS Form W-9, or its equivalent, upon execution of this Agreement and at such other times as may be reasonably requested by Tenant, including, any change in Landlord's name or address.
- (l) Execution/No Option. The submission of this Agreement to any party for examination or consideration does not constitute an offer, reservation of or option for the Premises based on the terms set forth herein. This Agreement will become effective as a binding Agreement only upon the handwritten legal execution, acknowledgment and delivery hereof by Landlord and Tenant. This Agreement may be executed in two (2) or more counterparts, all of which shall be considered one and the same agreement and shall become effective when one or more counterparts have been signed by each of the parties. All parties need not sign the same counterpart.
- (m) Attorneys' Fees. In the event that any dispute between the parties related to this Agreement should result in litigation, the prevailing party in such litigation shall be entitled to recover from the other party all reasonable fees and expenses of enforcing any right of the prevailing party, including without limitation, reasonable attorneys' fees and expenses. Prevailing party means the party determined by the court to have most nearly prevailed even if such party did not prevail in all matters. This provision will not be construed to entitle any party other than Landlord, Tenant and their respective Affiliates to recover their fees and expenses.
- (n) WAIVER OF JURY TRIAL. EACH PARTY, TO THE EXTENT PERMITTED BY LAW, KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVES ITS RIGHT TO A TRIAL BY JURY IN ANY ACTION OR PROCEEDING UNDER ANY THEORY OF LIABILITY ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR THE TRANSACTIONS IT CONTEMPLATES.

[SIGNATURES APPEAR ON NEXT PAGE]

IN WITNESS WHEREOF, the parties have caused this Agreement to be effective as of the last date written below.

### "LANDLORD"

Larry Joe Estes

By: The same of the Print Name: Land Joe Estes

Its: Owner
Date: 6 - 19 - 17

### LANDLORD ACKNOWLEDGMENT

STATE OF KENTUCKY	)
COUNTY OF LEE	) ss: )
acknowledged under oath, that he/sl	2017 before me, personally appeared Larry Joe Estes, who ne they is are the person officer named in the within instrument, and that their stated capacity as the voluntary act and deed of the Landlord for
	Notary Public: SWON VPC V My Commission Expires: 1-17-18

#### "TENANT"

New Cingular Wireless PCS, LLC, a Delaware limited liability company By: AT&T Mobility Corporation

Its: Manager

Print Name: Bryan Coleman Its: Area Manager - TN/KY Date: /d/) / C

### TENANT ACKNOWLEDGMENT

STATE	OF AI	.ABAMA	
			١

COUNTY OF JEFFERSON

On the day of City 2017, before me personally appeared Bryan Coleman, and acknowledged under oath that he is the Area Manager - TN/KY of AT&T Mobility Corporation, the Manager of New Cingular Wireless PCS, LLC, the Tenant named in the attached instrument, and as such was authorized to execute this instrument on behalf of the Tenant.



Notary Public: Kathy U. M. Ga velilly
My Commission Expires: 10 26 3030

#### EXHIBIT 1

#### DESCRIPTION OF PREMISES

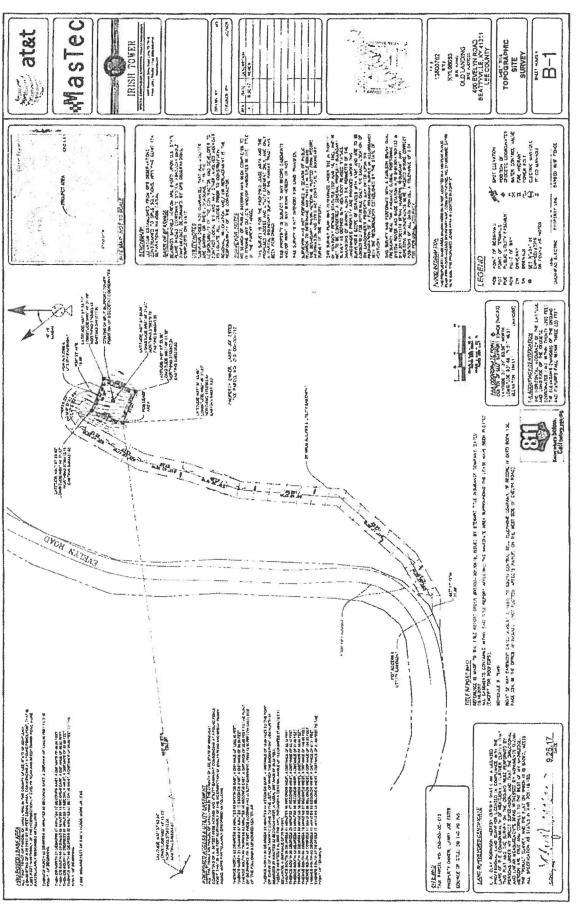
Page 1 of 🔏

to the Option and Lease Agreement dated Litcher 9. 2017, by and between Larry Joe Estes, a single man, as Landlord, and New Cingular Wireless PCS, LLC, a Delaware limited liability company, as Tenant.

The Property is legally described as follows: DB 93, PG 222

BEGINNING at a pine attemp on the top of the Sand Stone cliff; thence running with the senter of the dliff to the end of the cliff; thence with the divide of the ridge to where the old gate stood; thence with the top of the ridge to the linestone cliff; thence with the linestone cliff; thence with the linestone cliff to black oak on the top of the linestone cliff; thence a straight line to a beech tree at the sand stone cliff; thence east to a pine stoop, the place of beginning.

Seing the same property conveyed to the party of the first part by deed from the First National Bank dated June 25, 1952 and recorded in Deed Book 21 at cage P51. Lee County Court clerk's foffice.



Sandowner Signature: X Larry Joe Ext

### EXHIBIT 11

### ENVIRONMENTAL DISCLOSURE

Landlord represents and warrants that the Property, as of the date of this Agreement, is free of hazardous substances except as follows:

I. NONE.

# EXHIBIT 12 STANDARD ACCESS LETTER [FOLLOWS ON NEXT PAGE]

### [Landlord Letterhead]

DATE

Building Staff / Security Staff Landlord, Lessee, Licensee Street Address City, State, Zip

Re: Authorized Access granted to AT&T

Dear Building and Security Staff,

Please be advised that we have signed a lease with AT&T permitting AT&T to install, operate and maintain telecommunications equipment at the property. The terms of the lease grant AT&T and its representatives, employees, agents and subcontractors ("representatives") 24 hour per day, 7 day per week access to the leased area.

To avoid impact on telephone service during the day, AT&T representatives may be seeking access to the property outside of normal business hours. AT&T representatives have been instructed to keep noise levels at a minimum during their visit.

Please grant the bearer of a copy of this letter access to the property and to leased area. Thank you for your assistance.

Landford Signature

### EXHIBIT J NOTIFICATION LISTING

### Old Landing - Notice List

Estes Larry Joe 414 Evelyn Road Beattyville, KY 41311

Estes Larry Joe 400 Evelyn Road Beattyville, KY 41311

Estes Larry J 414 Evelyn Road Beattyville, KY 41311

Fike Patricia A 189 Evelyn Rd Beattyville, KY 41311

Fike Patricia 189 Evelyn Road Beattyville, KY 41311

Fike Elba 276 Evelyn Road Beattyville, KY 41311

Mathis Karen S & Keith C 6124 Kantor St. San Diego, CA 92192

Mathis Karen S & Keith C PO Box 927849 San Diego, CA 92192

Evans Robley D & Rosella 800 Evelyn Road Beattyville, KY 41311

Benton Donnie & Michele 252 High St. Irvine, KY 40336

Gaver Lorrie Spicer 37 Hamilton Dr Athens, OH 45701

Gaver Lorrie Sue 37 Hamilton Dr Hamilton, OH 45701 Gaver Lorrie Sue 37 Hamilton Dr Athens, OH 45701

Benton James Franklin and Emma Lou 326 Evelyn Rd Beattyville, KY 41311

Kentucky Stone Co c/o Marvin F. Poer & Company PO Box 52427 Atlanta, GA 30355

### EXHIBIT K COPY OF PROPERTY OWNER NOTIFICATION



1578 Highway 44 East, Suite 6 P.O. Box 369 Shepherdsville, KY 40165-0369 Phone (502) 955-4400 or (800) 516-4293 Fax (502) 543-4410 or (800) 541-4410

## Notice of Proposed Construction of Wireless Communications Facility Site Name: Old Landing

#### Dear Landowner:

New Cingular Wireless PCS, LLC, a Delaware Limited Liability Company, d/b/a AT&T Mobility has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at 400 Evelyn Road, Beattyville, Kentucky 41311 (37°37'53.58" North latitude, 83°48'31.51" West longitude). The proposed facility will include a 355-foot tall antenna tower, plus a 15-foot lightning arrestor and related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

This notice is being sent to you because the County Property Valuation Administrator's records indicate that you may own property that is within a 500' radius of the proposed tower site <u>or</u> contiguous to the property on which the tower is to be constructed. You have a right to submit testimony to the Kentucky Public Service Commission ("PSC"), either in writing or to request intervention in the PSC's proceedings on the application. You may contact the PSC for additional information concerning this matter at: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2018-00384 in any correspondence sent in connection with this matter.

In addition to expanding and improving voice and data service for AT&T mobile customers, this site will also provide wireless local loop ("WLL") broadband internet service to homes and businesses in the area. WLL will support internet access at the high speeds required to use and enjoy the most current business, education and entertainment technologies.

We have attached a map showing the site location for the proposed tower. Applicant's radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the area. Please feel free to contact us toll free at (800) 516-4293 if you have any comments or questions about this proposal.

Sincerely, David A. Pike Attorney for Applicant

enclosure

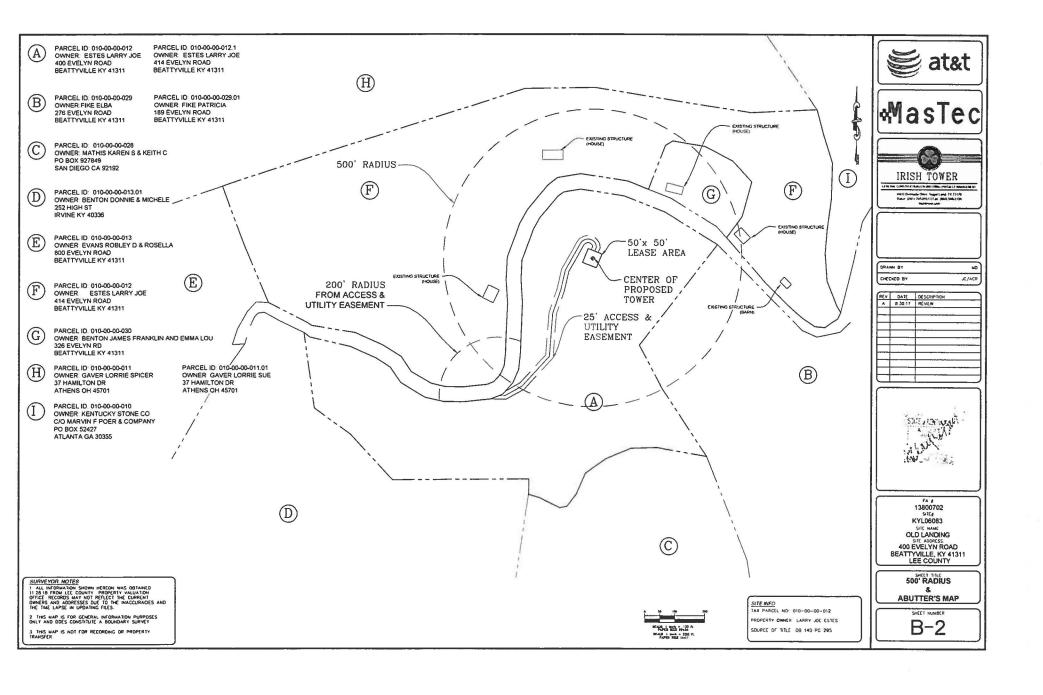
### **Driving Directions to Proposed Tower Site**

- 1. Beginning at 256 Main Street, Beattyville, KY, head northwest (toward Walnut Street) and travel approximately 0.4 miles.
- 2. Turn left onto KY-52 W / W Main Street and travel approximately 8.7 miles.
- 3. Turn left onto State Hwy 2453 and travel approximately 2.1 miles.
- 4. Continue onto Evelyn Road and travel approximately 0.5 miles.
- 5. The site is on the left at 400 Evelyn Road, Beattyville, Kentucky. The site coordinates are
  - a. North 37 deg 37 min 53.58 sec
  - b. West 83 deg 48 min 31.51 sec



Prepared by:
Aaron Roof
Pike Legal Group PLLC
1578 Highway 44 East, Suite 6
P.O. Box 369

Shepherdsville, KY 40165-3069 Telephone: 502-955-4400 or 800-516-4293



### EXHIBIT L COPY OF COUNTY JUDGE/EXECUTIVE NOTICE



1578 Highway 44 East, Suite 6 P.O. Box 369 Shepherdsville, KY 40165-0369 Phone (502) 955-4400 or (800) 516-4293 Fax (502) 543-4410 or (800) 541-4410

### **VIA CERTIFIED MAIL**

Steve Mays
County Judge Executive
P.O. Box G
Beattyville, KY 41311

RE:

Notice of Proposal to Construct Wireless Communications Facility

Kentucky Public Service Commission Docket No. 2018-00384

Site Name: Old Landing

### Dear Judge Mays:

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at 400 Evelyn Road, Beattyville, Kentucky 41311 (37°37'53.58" North latitude, 83°48'31.51" West longitude). The proposed facility will include a 355-foot tall antenna tower, plus a 15-foot lightning arrestor and related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

You have a right to submit comments to the PSC or to request intervention in the PSC's proceedings on the application. You may contact the PSC at: Executive Director, Public Service Commission, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2018-00384 in any correspondence sent in connection with this matter.

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We have attached a map showing the site location for the proposed tower. AT&T Mobility's radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the area. Please feel free to contact us with any comments or questions you may have.

Sincerely, David A. Pike Attorney for Applicant enclosures

### **Driving Directions to Proposed Tower Site**

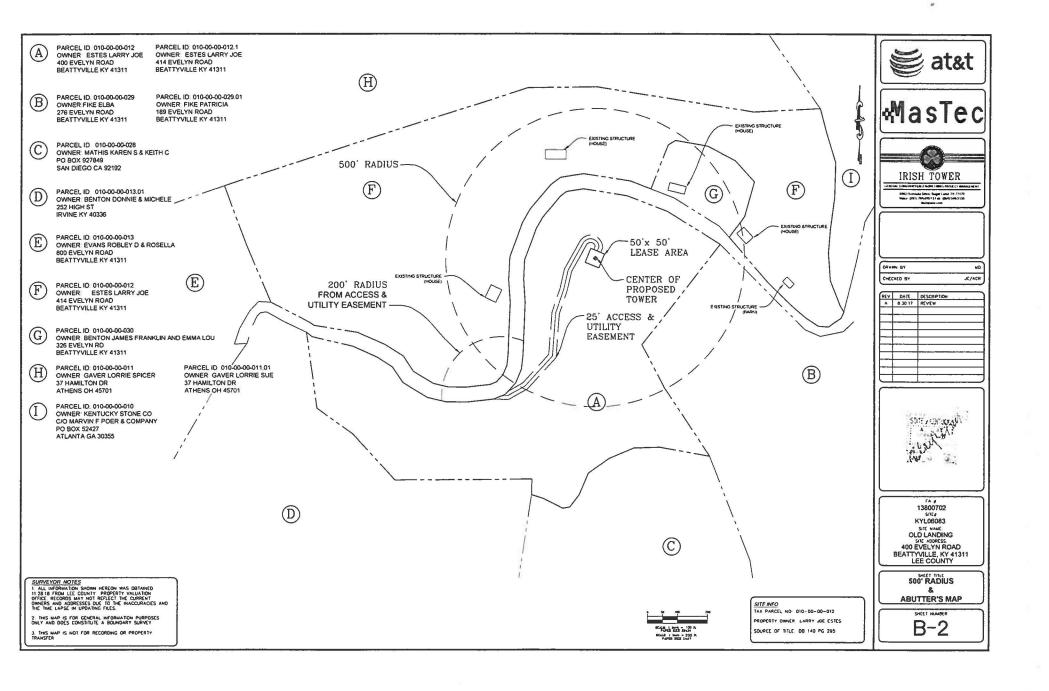
- 1. Beginning at 256 Main Street, Beattyville, KY, head northwest (toward Walnut Street) and travel approximately 0.4 miles.
- 2. Turn left onto KY-52 W / W Main Street and travel approximately 8.7 miles.
- 3. Turn left onto State Hwy 2453 and travel approximately 2.1 miles.
- 4. Continue onto Evelyn Road and travel approximately 0.5 miles.
- 5. The site is on the left at 400 Evelyn Road, Beattyville, Kentucky. The site coordinates are
  - a. North 37 deg 37 min 53.58 sec

b. West 83 deg 48 min 31.51 sec



Prepared by:
Aaron Roof
Pike Legal Group PLLC
1578 Highway 44 East, Suite 6
P.O. Box 369
Shepherdsville, KY 40165-3069

Telephone: 502-955-4400 or 800-516-4293



# EXHIBIT M COPY OF POSTED NOTICES AND NEWSPAPER NOTICE ADVERTISEMENT

### SITE NAME: OLD LANDING NOTICE SIGNS

The signs are at least (2) feet by four (4) feet in size, of durable material, with the text printed in black letters at least one (1) inch in height against a white background, except for the word "tower," which is at least four (4) inches in height.

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility proposes to construct a telecommunications **tower** on this site. If you have questions, please contact Pike Legal Group, PLLC, P.O. Box 369, Shepherdsville, KY 40165; telephone: (800) 516-4293, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2018-00384 in your correspondence.

New Cingular Wireless PCS, LLC, a Delaware limited liability company, d/b/a AT&T Mobility proposes to construct a telecommunications **tower** near this site. If you have questions, please contact Pike Legal Group, PLLC, P.O. Box 369, Shepherdsville, KY 40165; telephone: (800) 516-4293, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2018-00384 in your correspondence.

**VIA TELEFAX: 606-464-8858** 

The Beattyville Enterprise
Attn: Public Notice Ad Placement
203 Main Street #6
PO Box 126
Beattyville, KY 41311

RE: Legal Notice Advertisement

Site Name: Old Landing

Dear Legal Notice Contact:

Please publish the following legal notice advertisement in the next edition of *The Beattyville Enterprise*:

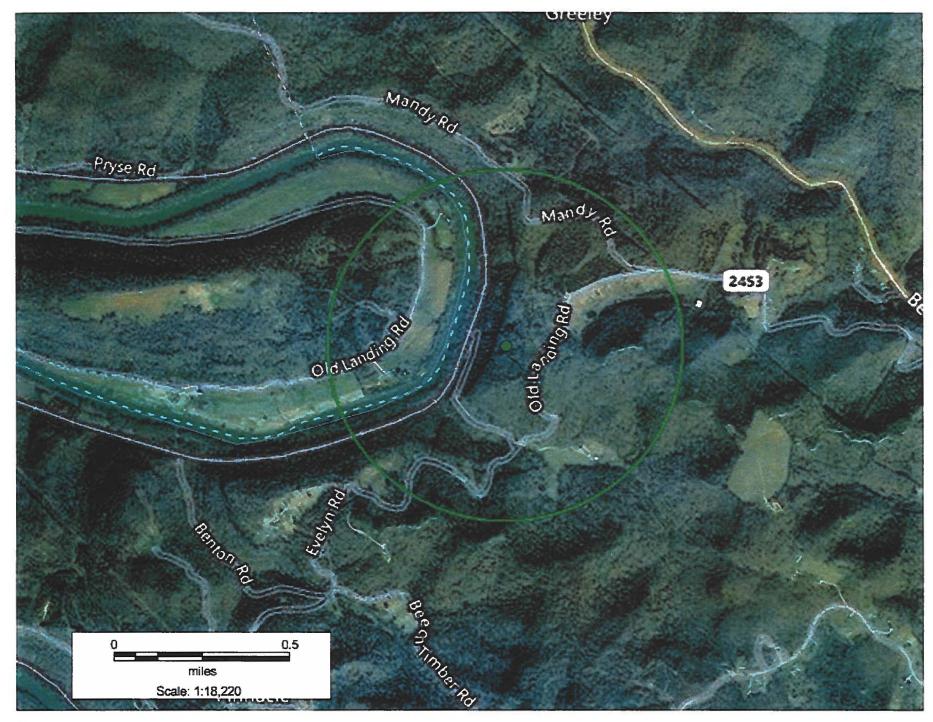
### NOTICE

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After this advertisement has been published, please forward a tearsheet copy, affidavit of publication, and invoice to Pike Legal Group, PLLC, P. O. Box 369, Shepherdsville, KY 40165. Please call me at (800) 516-4293 if you have any questions. Thank you for your assistance.

Sincerely, Aaron L. Roof Pike Legal Group, PLLC

### EXHIBIT N COPY OF RADIO FREQUENCY DESIGN SEARCH AREA



Lat: 37.636997 Lon: -83.804681 Radius: .5 miles

**Old Landing Search Area**