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AUG 29 2017

PUBLIC SERVICE
COMMISSION

) CASE NO.: 2017-00332

* * * * *

**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 601 West Chestnut Street, Louisville, Kentucky 40203.

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 14900 Hopkinsville Road, Princeton, KY (37°03'25.36" North latitude, 87°46'06.77" 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 Jimmy Sanderson pursuant to a Deed recorded at Deed Book 164, Page 206 in the office of the Caldwell County Clerk. The proposed WCF will consist of a 305-foot tall tower, with an approximately 15-foot tall lightning arrestor attached at the top, for a total height of 320-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**. Notice of the location of the proposed facility has also been published in a newspaper of general circulation in the county in which the WCF is proposed to be located.

23. The general area where the proposed facility is to be located is rural with

large parcels. No residential structures are located within a 500-foot radius of the proposed tower location.

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.

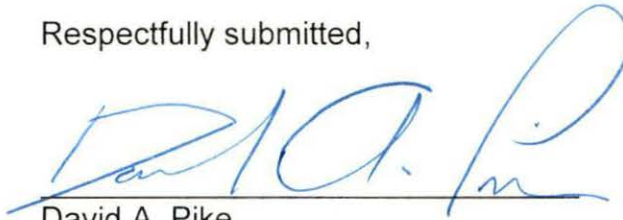
26. All Exhibits to this Application are hereby incorporated by reference as if fully set out as part of the Application.

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: dpik@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
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
- I - 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
- 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 A. WILSON
 NEW CINGULAR WIRELESS PCS, LLC
 3300 E. RENNER ROAD, B3132
 RICHARDSON, TX 75082

Call Sign KNLF460	File Number 0007445661
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0003291192

Grant Date 08-31-2016	Effective Date 02-28-2017	Expiration Date 09-17-2026	Print Date 03-22-2017
Market Number BTA083	Channel Block C	Sub-Market Designator 3	
Market Name Clarksville, TN-Hopkinsville,			
1st Build-out Date 09-17-2001	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.

This authorization is conditioned upon the full and timely payment of all monies due pursuant to Sections 1.2110 and 24.711 of the Commission's Rules and the terms of the Commission's installment plan as set forth in the Note and Security Agreement executed by the licensee. Failure to comply with this condition will result in the automatic cancellation of this authorization.

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: KNLF460

File Number: 0007445661

Print Date: 03-22-2017

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).

Reference Copy



Federal Communications Commission
Wireless Telecommunications Bureau

Spectrum Leasing Arrangement

ATTN: REGINALD YOUNGBLOOD
NEW CINGULAR WIRELESS PCS LLC
3300 E RENNER ROAD, B3132
RICHARDSON, TX 75082

Date: 08/23/2017
Reference Number:

This approval allows the Lessee to lease spectrum from the Licensee pursuant to the provisions and requirements of Subpart X of Part 1 of the Commission's Rules, 47 C.F.R. Part 1, and as described in the associated spectrum leasing application or notification.

Type of Lease Arrangement	Lease Term	Lease Identifier
Spectrum Manager Lease	Short Term	L000023592

Lease Grant/Accepted Date	Lease Commencement Date	Lease Expiration Date
03/01/2017	10/01/2016	04/28/2017

Call Sign	Radio Service
WQQQ250	CW - PCS Broadband

Lessee Information

0003291192
NEW CINGULAR WIRELESS PCS LLC
Attn: REGINALD YOUNGBLOOD
3300 E RENNER ROAD, B3132
RICHARDSON, TX 75082

Licensee Information

0003291192
NEW CINGULAR WIRELESS PCS, LLC
Attn: LESLIE WILSON
208 S AKARD ST., RM 1016
DALLAS, TX 75202

Geographically-Licensed Services		
Market Number	Market Name	Channel Block
BTA083	Clarksville, TN-Hopkinsville,	F

Condition:

This lease may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum associated with this leasing agreement, 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.

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Federal Communications Commission
Wireless Telecommunications Bureau

Spectrum Leasing Arrangement

ATTN: REGINALD YOUNGBLOOD
NEW CINGULAR WIRELESS PCS LLC
3300 E RENNER ROAD, B3132
RICHARDSON, TX 75082

Date: 08/23/2017
Reference Number:

This approval allows the Lessee to lease spectrum from the Licensee pursuant to the provisions and requirements of Subpart X of Part 1 of the Commission's Rules, 47 C.F.R. Part 1, and as described in the associated spectrum leasing application or notification.

Type of Lease Arrangement	Lease Term	Lease Identifier
Spectrum Manager Lease	Short Term	L000023550

Lease Grant/Accepted Date	Lease Commencement Date	Lease Expiration Date
03/01/2017	10/01/2016	09/19/2017

Call Sign	Radio Service
WQXA289	CW - PCS Broadband

Lessee Information

0003291192
NEW CINGULAR WIRELESS PCS LLC
Attn: REGINALD YOUNGBLOOD
3300 E RENNER ROAD, B3132
RICHARDSON, TX 75082

Licensee Information

0003291192
NEW CINGULAR WIRELESS PCS, LLC
Attn: LESLIE WILSON
208 S AKARD ST., RM 1016
DALLAS, TX 75202

Geographically-Licensed Services		
Market Number	Market Name	Channel Block
MTA043	Nashville	B

Condition:

This lease may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum associated with this leasing agreement, 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.

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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 WQXA289	File Number
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0003291192

Grant Date 11-02-2015	Effective Date 06-14-2017	Expiration Date 06-23-2025	Print Date
Market Number MTA043	Channel Block B	Sub-Market Designator 8	
Market Name Nashville			
1st Build-out Date	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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Federal Communications Commission
Wireless Telecommunications Bureau

Spectrum Leasing Arrangement

ATTN: REGINALD YOUNGBLOOD
NEW CINGULAR WIRELESS PCS, LLC
5601 LEGACY DRIVE, MS:A-3
PLANO, TX 75024

Date: 08/23/2017
Reference Number:

This approval allows the Lessee to lease spectrum from the Licensee pursuant to the provisions and requirements of Subpart X of Part 1 of the Commission's Rules, 47 C.F.R. Part 1, and as described in the associated spectrum leasing application or notification.

Type of Lease Arrangement	Lease Term	Lease Identifier
Spectrum Manager Lease	Short Term	L000010243

Lease Grant/Accepted Date	Lease Commencement Date	Lease Expiration Date
12/20/2012	01/01/2013	08/20/2013

Call Sign	Radio Service
KNLH417	CW - PCS Broadband

Lessee Information

0003291192
NEW CINGULAR WIRELESS PCS, LLC
Attn: REGINALD YOUNGBLOOD
5601 LEGACY DRIVE, MS:A-3
PLANO, TX 75024

Licensee Information

0003291192
NEW CINGULAR WIRELESS PCS, LLC
Attn: LESLIE WILSON
208 S AKARD ST., RM 1016
DALLAS, TX 75202

Geographically-Licensed Services		
Market Number	Market Name	Channel Block
BTA083	Clarksville, TN-Hopkinsville,	E

Condition:

This lease may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum associated with this leasing agreement, 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.

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Federal Communications Commission
Wireless Telecommunications Bureau

Spectrum Leasing Arrangement

ATTN: REGINALD YOUNGBLOOD
NEW CINGULAR WIRELESS PCS, LLC
5601 LEGACY DRIVE, MS:A-3
PLANO, TX 75024

Date: 08/23/2017
Reference Number:

This approval allows the Lessee to lease spectrum from the Licensee pursuant to the provisions and requirements of Subpart X of Part 1 of the Commission's Rules, 47 C.F.R. Part 1, and as described in the associated spectrum leasing application or notification.

Type of Lease Arrangement	Lease Term	Lease Identifier
Spectrum Manager Lease	Short Term	L000010242

Lease Grant/Accepted Date	Lease Commencement Date	Lease Expiration Date
12/20/2012	01/01/2013	08/20/2013

Call Sign	Radio Service
KNLH416	CW - PCS Broadband

Lessee Information

0003291192
NEW CINGULAR WIRELESS PCS, LLC
Attn: REGINALD YOUNGBLOOD
5601 LEGACY DRIVE, MS:A-3
PLANO, TX 75024

Licensee Information

0003291192
NEW CINGULAR WIRELESS PCS, LLC
Attn: LESLIE WILSON
208 S AKARD ST., RM 1016
DALLAS, TX 75202

Geographically-Licensed Services		
Market Number	Market Name	Channel Block
BTA083	Clarksville, TN-Hopkinsville,	D

Condition:

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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 WPOI256	File Number
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0003291192

Grant Date 06-02-2015	Effective Date 06-14-2017	Expiration Date 06-23-2025	Print Date
Market Number MTA043	Channel Block B	Sub-Market Designator 2	
Market Name Nashville			
1st 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: WPOI256

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).

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).

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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 KNKN674	File Number
Radio Service CL - Cellular	
Market Number CMA444	Channel Block A
Sub-Market Designator 0	

FCC Registration Number (FRN): 0003291192

Market Name Kentucky 2 - Union				
Grant Date 08-30-2011	Effective Date 06-13-2017	Expiration Date 10-01-2021	Five Yr Build-Out Date	Print Date

Site Information:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
2	37-13-06.1 N	087-26-55.2 W	190.8	74.7	1232468

Address: 2837 Mortons Gap Road (76132)

City: Nortonville **County:** HOPKINS **State:** KY **Construction Deadline:**

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	119.600	113.700	121.000	115.700	97.100	96.400	79.600	108.500
Transmitting ERP (watts)	11.049	36.274	32.141	6.281	0.353	0.100	0.101	0.947
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	119.600	113.700	121.000	115.700	97.100	96.400	79.600	108.500
Transmitting ERP (watts)	0.148	0.151	2.758	31.484	73.890	34.411	3.370	0.147
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	119.600	113.700	121.000	115.700	97.100	96.400	79.600	108.500
Transmitting ERP (watts)	12.714	0.940	0.099	0.100	0.397	5.201	29.662	38.742

Conditions:

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

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKN674

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
6	37-26-08.9 N	087-59-07.1 W	211.2	95.7	1043416

Address: 614 Rosebud Church Road (76137)

City: STURGIS County: CRITTENDEN State: KY Construction Deadline:

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	181.700	184.800	184.200	171.500	143.100	138.000	160.700	151.100
Transmitting ERP (watts)	140.061	182.986	201.464	78.939	26.872	10.497	13.914	31.520
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	181.700	184.800	184.200	171.500	143.100	138.000	160.700	151.100
Transmitting ERP (watts)	0.244	15.054	52.062	103.948	68.767	110.549	40.818	28.256
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	181.700	184.800	184.200	171.500	143.100	138.000	160.700	151.100
Transmitting ERP (watts)	90.126	27.369	33.582	15.535	16.134	77.108	101.371	97.219

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
11	37-39-06.2 N	087-55-17.8 W	189.6	103.6	1043419

Address: 190 ED RICKETTS ROAD (76131)

City: MORGANFIELD County: UNION State: KY Construction Deadline:

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	165.200	160.200	158.600	145.000	166.800	157.700	167.000	160.800
Transmitting ERP (watts)	1.622	2.069	2.213	0.865	0.145	0.100	0.105	0.346
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	165.200	160.200	158.600	145.000	166.800	157.700	167.000	160.800
Transmitting ERP (watts)	0.510	5.501	44.360	185.434	245.411	184.244	37.569	15.212
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	165.200	160.200	158.600	145.000	166.800	157.700	167.000	160.800
Transmitting ERP (watts)	107.554	32.662	40.122	18.648	19.229	91.715	121.062	115.484

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

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Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
12	36-48-32.0 N	087-56-12.0 W	164.6	78.0	1020835

Address: 7220 Canton Road (76143)

City: CANTON County: TRIGG State: KY Construction Deadline:

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.900	96.900	82.100	74.200	105.800	97.600	103.000	117.500
Transmitting ERP (watts)	83.428	280.249	199.164	28.014	3.586	0.574	1.287	6.142
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.900	96.900	82.100	74.200	105.800	97.600	103.000	117.500
Transmitting ERP (watts)	0.327	20.152	69.995	141.328	92.475	148.542	55.193	37.997
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.900	96.900	82.100	74.200	105.800	97.600	103.000	117.500
Transmitting ERP (watts)	60.723	6.432	2.249	0.857	1.966	43.153	209.513	282.936

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
16	37-38-32.0 N	087-31-16.3 W	117.3	128.3	1215065

Address: 2600 U S HIGHWAY 41 NORTH (76145)

City: ROBARDS County: WEBSTER State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.000	79.900	83.900	94.200	79.700	65.300	76.600	84.400
Transmitting ERP (watts)	74.559	254.016	181.766	25.285	3.250	0.514	1.146	5.470
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.000	79.900	83.900	94.200	79.700	65.300	76.600	84.400
Transmitting ERP (watts)	0.604	0.911	15.830	126.137	297.959	109.909	11.178	2.898
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.000	79.900	83.900	94.200	79.700	65.300	76.600	84.400
Transmitting ERP (watts)	55.266	5.851	2.046	0.760	1.729	38.513	188.055	257.777

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
18	37-14-55.1 N	088-20-42.2 W	175.8	108.8	1231318

Address: 708 Mitchell Road (76153)

City: Burna County: LIVINGSTON State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	103.700	135.300	134.600	160.200	145.200	154.500	135.200	128.600
Transmitting ERP (watts)	45.066	148.806	105.252	14.601	1.889	0.303	0.684	3.302
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	103.700	135.300	134.600	160.200	145.200	154.500	135.200	128.600
Transmitting ERP (watts)	0.360	0.556	9.612	74.944	174.640	62.865	6.468	1.670
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	103.700	135.300	134.600	160.200	145.200	154.500	135.200	128.600
Transmitting ERP (watts)	64.517	19.549	24.038	11.103	11.663	54.460	72.252	68.527

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
19	36-55-26.0 N	087-49-59.4 W	145.1	86.6	1244917

Address: 699 BUSH ROAD (76154)

City: CADIZ County: TRIGG State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.300	79.700	74.700	83.600	83.700	107.800	90.100	68.300
Transmitting ERP (watts)	178.878	232.715	257.641	101.135	34.491	13.229	17.593	39.790
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.300	79.700	74.700	83.600	83.700	107.800	90.100	68.300
Transmitting ERP (watts)	0.637	0.967	16.790	133.407	314.491	113.888	11.612	3.032
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.300	79.700	74.700	83.600	83.700	107.800	90.100	68.300
Transmitting ERP (watts)	57.732	6.107	2.140	0.804	1.870	40.392	196.166	269.783

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
20	37-11-26.3 N	087-33-12.6 W	152.1	77.4	1246381

Address: Gilliland Street (76156)

City: St. Charles County: HOPKINS State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	85.000	86.700	95.000	78.400	73.600	76.700	86.700	87.100
Transmitting ERP (watts)	203.086	265.427	293.723	115.336	39.266	15.161	20.131	44.941
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	85.000	86.700	95.000	78.400	73.600	76.700	86.700	87.100
Transmitting ERP (watts)	0.343	21.692	75.219	151.412	99.682	160.909	59.465	41.743
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	85.000	86.700	95.000	78.400	73.600	76.700	86.700	87.100
Transmitting ERP (watts)	141.930	28.758	15.209	5.387	9.463	101.790	279.413	329.510

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
22	36-50-58.2 N	087-50-48.6 W	153.9	79.2	1267262

Address: 80 Old Dover St (104037)

City: Cadiz County: TRIGG State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.800	82.800	93.000	77.800	59.600	77.800	101.200	79.100
Transmitting ERP (watts)	18.872	58.121	45.266	7.066	0.416	0.117	0.138	1.803
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.800	82.800	93.000	77.800	59.600	77.800	101.200	79.100
Transmitting ERP (watts)	0.725	1.296	23.184	191.272	358.769	140.039	7.340	1.443
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.800	82.800	93.000	77.800	59.600	77.800	101.200	79.100
Transmitting ERP (watts)	68.359	2.979	0.698	0.700	4.214	57.185	271.670	319.705

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
23	37-03-22.7 N	088-26-49.1 W	128.9	110.9	1039771

Address: 1229 US Highway 60 (101020)

City: LEDBETTER County: LIVINGSTON State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	102.900	82.200	104.500	91.900	96.800	102.300	107.600	103.500
Transmitting ERP (watts)	54.977	122.838	60.144	6.545	0.429	0.247	0.264	7.232
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	102.900	82.200	104.500	91.900	96.800	102.300	107.600	103.500
Transmitting ERP (watts)	0.173	0.486	7.193	42.880	59.119	18.759	1.594	0.210
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	102.900	82.200	104.500	91.900	96.800	102.300	107.600	103.500
Transmitting ERP (watts)	35.020	2.113	0.624	0.665	7.469	90.508	311.698	261.190

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
24	37-38-13.3 N	087-38-10.0 W	159.1	79.2	1267707

Address: 465 State Rt 56 East (106265)

City: Sebree County: WEBSTER State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	105.000	105.100	116.800	107.900	101.900	98.200	108.100	108.900
Transmitting ERP (watts)	84.996	250.740	177.382	18.902	1.480	0.503	0.510	7.043
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	105.000	105.100	116.800	107.900	101.900	98.200	108.100	108.900
Transmitting ERP (watts)	0.535	0.947	17.057	141.483	263.966	103.686	5.459	1.065
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	105.000	105.100	116.800	107.900	101.900	98.200	108.100	108.900
Transmitting ERP (watts)	50.859	2.208	0.517	0.516	3.059	41.748	201.613	236.408

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
25	37-25-05.2 N	087-29-33.7 W	157.6	91.4	1218437

Address: 700 Sunset Road (76139)

City: Hanson County: HOPKINS State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	101.000	117.900	109.900	106.600	89.000	96.000	86.200	96.100
Transmitting ERP (watts)	226.434	210.842	258.284	142.431	66.542	42.878	39.508	78.904
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	101.000	117.900	109.900	106.600	89.000	96.000	86.200	96.100
Transmitting ERP (watts)	0.317	1.779	10.365	29.781	29.842	34.388	7.949	2.571
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	101.000	117.900	109.900	106.600	89.000	96.000	86.200	96.100
Transmitting ERP (watts)	196.098	76.485	83.392	29.118	37.964	175.475	241.895	220.669

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
26	36-55-17.0 N	088-05-48.0 W	178.0	154.6	1044000

Address: 9659 Trace Rd (112832)

City: GRAND RIVERS County: LYON State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	126.900	129.300	134.100	138.000	120.200	146.100	139.600	133.300
Transmitting ERP (watts)	111.221	324.639	227.876	24.201	1.923	0.650	0.675	9.306
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	126.900	129.300	134.100	138.000	120.200	146.100	139.600	133.300
Transmitting ERP (watts)	0.698	1.253	22.511	183.957	343.394	132.128	7.021	1.377
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	126.900	129.300	134.100	138.000	120.200	146.100	139.600	133.300
Transmitting ERP (watts)	65.053	2.841	0.672	0.676	4.089	54.516	261.799	304.293

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
27	37-16-31.3 N	088-13-54.9 W	182.9	78.9	1276270

Address: Baker Road (109705)

City: Salem County: LIVINGSTON State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	114.600	84.000	79.200	116.200	139.200	133.000	101.800	118.000
Transmitting ERP (watts)	38.924	137.255	114.557	20.344	0.969	0.273	0.287	2.696
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	114.600	84.000	79.200	116.200	139.200	133.000	101.800	118.000
Transmitting ERP (watts)	0.142	0.151	2.797	30.883	70.740	32.393	3.173	0.142
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	114.600	84.000	79.200	116.200	139.200	133.000	101.800	118.000
Transmitting ERP (watts)	42.248	2.712	0.290	0.346	1.143	17.493	109.449	141.842

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
29	37-45-39.9 N	087-56-10.8 W	122.2	78.3	1277118

Address: 2400 Hill Top Rd (113354)

City: Uniontown County: UNION State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	89.600	89.400	80.800	71.800	68.700	71.100	83.600	91.500
Transmitting ERP (watts)	85.207	249.259	175.535	18.698	1.475	0.504	0.518	7.133
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	89.600	89.400	80.800	71.800	68.700	71.100	83.600	91.500
Transmitting ERP (watts)	0.535	0.954	17.190	141.670	263.404	102.884	5.438	1.063
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	89.600	89.400	80.800	71.800	68.700	71.100	83.600	91.500
Transmitting ERP (watts)	19.637	1.846	0.193	0.291	1.262	14.269	70.022	83.440

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKN674

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
30	37-41-42.3 N	087-51-18.4 W	132.6	94.5	1267058

Address: 3220 US HWY 60E (103405)

City: Morganfield County: UNION State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	109.100	100.100	100.700	96.600	86.100	88.700	99.300	108.400
Transmitting ERP (watts)	106.976	314.584	221.567	23.581	1.860	0.633	0.650	8.963
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	109.100	100.100	100.700	96.600	86.100	88.700	99.300	108.400
Transmitting ERP (watts)	0.820	0.863	29.715	214.060	407.322	155.955	10.552	1.090
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	109.100	100.100	100.700	96.600	86.100	88.700	99.300	108.400
Transmitting ERP (watts)	49.939	3.203	0.746	0.511	3.999	39.761	205.788	245.836

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
32	37-31-26.3 N	087-30-04.9 W	154.8	61.0	

Address: 415 GOWER ROAD (76133)

City: SLAUGHTERS County: WEBSTER State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	80.400	78.200	79.800	87.100	73.300	56.800	62.000	81.500
Transmitting ERP (watts)	145.839	137.853	173.595	96.532	34.529	25.525	31.352	46.907
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	80.400	78.200	79.800	87.100	73.300	56.800	62.000	81.500
Transmitting ERP (watts)	0.401	2.488	19.967	61.274	71.719	69.254	13.936	4.590
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	80.400	78.200	79.800	87.100	73.300	56.800	62.000	81.500
Transmitting ERP (watts)	187.925	53.508	38.931	14.790	21.959	144.147	284.024	296.932

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKN674

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
33	37-12-46.3 N	087-39-41.5 W	175.0	80.8	1044198

Address: 4669 DAYLIGHT ROAD (76138)

City: DAWSON SPRINGS County: HOPKINS State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	117.600	117.800	86.400	106.700	97.300	102.300	104.900	117.000
Transmitting ERP (watts)	163.523	304.158	300.409	80.103	19.811	4.884	7.700	23.633
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	117.600	117.800	86.400	106.700	97.300	102.300	104.900	117.000
Transmitting ERP (watts)	0.534	28.458	124.093	251.295	156.234	243.121	99.933	75.450
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	117.600	117.800	86.400	106.700	97.300	102.300	104.900	117.000
Transmitting ERP (watts)	65.084	6.858	2.416	0.901	2.074	45.621	222.646	303.964

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
34	36-52-21.8 N	087-45-00.6 W	171.6	40.2	

Address: 5101 HOPKINSVILLE RD (76142)

City: CADIZ County: TRIGG State: KY Construction Deadline: 12-13-2014

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	61.300	39.800	55.100	58.400	63.600	61.500	78.600	58.600
Transmitting ERP (watts)	409.684	153.393	15.491	4.017	0.835	1.293	21.975	176.498
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	61.300	39.800	55.100	58.400	63.600	61.500	78.600	58.600
Transmitting ERP (watts)	0.605	18.273	97.570	290.196	262.860	286.449	82.832	46.273
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	61.300	39.800	55.100	58.400	63.600	61.500	78.600	58.600
Transmitting ERP (watts)	15.711	4.011	0.818	1.252	22.618	178.234	399.146	153.157

Control Points:

Control Pt. No. 1

Address: 1650 Lyndon Farms Court

City: LOUISVILLE County: State: KY Telephone Number: (502)329-4700

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKN674

File Number:

Print Date:

Waivers/Conditions:

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).

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).

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	File Number
KNLH417	
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0003291192

Grant Date 04-13-2017	Effective Date 06-14-2017	Expiration Date 04-28-2027	Print Date
Market Number BTA083	Channel Block E	Sub-Market Designator 0	
Market Name Clarksville, TN-Hopkinsville,			
1st 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.

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: KNLH417

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.

Reference Copy

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	File Number
KNLH416	
Radio Service	
CW - PCS Broadband	

FCC Registration Number (FRN): 0003291192

Grant Date 04-10-2017	Effective Date 06-14-2017	Expiration Date 04-28-2027	Print Date
Market Number BTA083	Channel Block D	Sub-Market Designator 0	
Market Name Clarksville, TN-Hopkinsville,			
1st 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).

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Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNLH416

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.

Reference Copy

EXHIBIT B

SITE DEVELOPMENT PLAN:

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



at&t

SITE NAME:

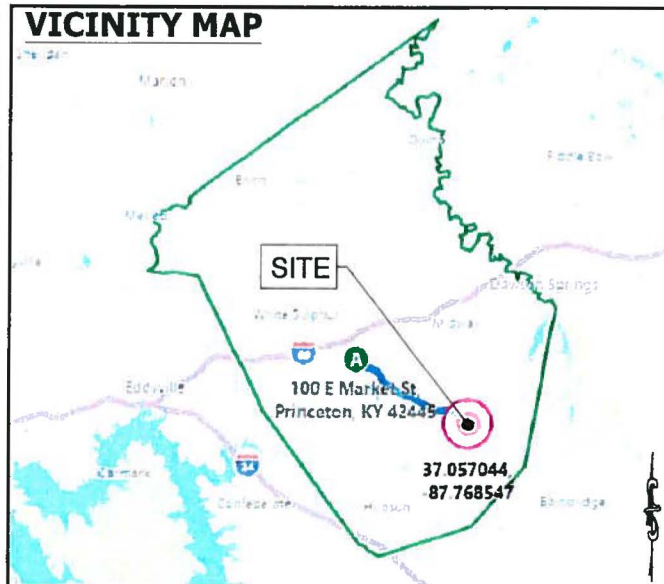
BATTLE CREEK

SITE NUMBER:

KYL03256

PROPOSED RAW LAND SITE WITH PROPOSED 305' SELF-SUPPORT TOWER WITH A 15' LIGHTNING ARRESTOR AND INSTALLATION OF A 12'-0" x 12'-0" CONCRETE SHELTER AND GENERATOR

VICINITY MAP



DIRECTIONS

- FROM 100 E MARKET ST, PRINCETON, KY 42445
1. DEPART US-62 E / E MARKET ST TOWARD US-62 / KY-293 / N JEFFERSON ST 49 FT
 2. ROAD NAME CHANGES TO US-62 W / KY-293 S / W MARKET ST 98 FT
 3. TURN LEFT ONTO KY-91 S / KY-293 S / W COURT SQ, AND THEN IMMEDIATELY TURN LEFT ONTO US-62 E / KY-91 S / KY-139 S / KY-293 S / W MAIN ST 443 FT
 4. KEEP STRAIGHT ONTO KY-91 S / E MAIN ST 0.1 MI
 5. KEEP RIGHT TO STAY ON KY-91 / HOPKINSVILLE ST 7.5 MI
 6. ARRIVE AT KY-91 / 14900 HOPKINSVILLE RD ON THE RIGHT

PROJECT SCOPE OF WORK

ZONING DRAWINGS FOR:
CONSTRUCTION OF A PROPOSED UNMANNED TELECOMMUNICATIONS FACILITY.
SITE WORK: PROPOSED TOWER, UNMANNED EQUIPMENT SHELTER AND GENERATOR ON A CONCRETE FOUNDATIONS, AND UTILITY INSTALLATIONS.

PROJECT INFORMATION

COUNTY: CALDWELL

SITE ADDRESS: 14900 HOPKINSVILLE ROAD
PRINCETON, KY 42445

APPLICANT: NEW CINGULAR WIRELESS PCS, LLC,
A DELAWARE LIMITED LIABILITY COMPANY,
D/B/A AT&T MOBILITY
601 WEST CHESTNUT ST.
LOUISVILLE, KY 40203

LATITUDE: 37° 03' 25.36"
LONGITUDE: -87° 46' 06.77"

DRAWING INDEX

- T-1 TITLE SHEET & PROJECT INFORMATION
- B-1 SITE SURVEY
- B-2 500' RADIUS & ADJUTER'S MAP
- C-1 OVERALL SITE LAYOUT
- C-2 ENLARGED COMPOUND LAYOUT
- C-3 TOWER ELEVATION

CONTACT INFORMATION

FIRE DEPARTMENT:
PRINCETON FIRE DEPARTMENT
PHONE: 270-365-2041

POLICE DEPARTMENT:
PRINCETON CITY POLICE DEPARTMENT
PHONE: 270-365-2041

ELECTRIC COMPANY:
PRINCETON ELECTRIC PLANT BOARD
PHONE: 270-365-2031

TELEPHONE COMPANY:
AT&T
PHONE: 800-991-0500

BUILDING CODES AND STANDARDS

CONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION FOR THE LOCATION.

CONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

- AMERICAN CONCRETE INSTITUTE 318
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STEEL CONSTRUCTION
- TELECOMMUNICATIONS INDUSTRY ASSOCIATION TIA-222
- STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND SUPPORTING STRUCTURES TIA-601
- COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
- INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS IEEE-81, IEEE 1100, IEEE C62.41
- ANSI T1.311, FOR TELECOM - DC POWER SYSTEMS - TELECOM, ENVIRONMENTAL PROTECTION
- 2014 KENTUCKY BUILDING CODE
- 2014 NEC

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

*** CAUTION ***

THE UTILITIES SHOWN HEREON ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

FOR EMERGENCIES CALL: 911



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IRISH TOWER

GENERAL CONSTRUCTION/ENGINEERING/PROJECT MANAGEMENT
4033 Bermuda Drive Sugar Land TX 77479
Voice: (281) 796-2511 Fax: (281) 796-3135
info@irishtower.com

ZONING DRAWINGS
NOT FOR CONSTRUCTION

DRAWN BY: DL

CHECKED BY: JRG

REV	DATE	DESCRIPTION
0	02/23/2017	ISSUED FOR ZONING
1	08/28/2017	ISSUED FOR ZONING



ENG. PERMIT # 4363

FA #

13800776

SITE #

KYL03256

SITE NAME:

BATTLE CREEK

SITE ADDRESS:

14900 HOPKINSVILLE ROAD
PRINCETON, KY 42445

SHEET TITLE
TITLE SHEET &
PROJECT
INFORMATION

SHEET NUMBER

T-1

PROPOSED LEASE AREA

ALL THAT TRACT OR PARCEL OF LAND LYING IN THE COUNTY OF CALDWELL, STATE OF KENTUCKY, CONSISTING OF A 100 FEET BY 100 FEET LEASE AREA, COMMENCING AT A FOUND PK NAIL THAT IS AT THE INTERSECTION OF (KY91) HOPKINSVILLE ROAD AND FRIENDSHIP ROAD, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THENCE SOUTH 87 DEGREES 37 MINUTES 23 SECONDS WEST A DISTANCE OF 471.07 FEET TO THE POINT OF BEGINNING;

THENCE SOUTH 48 DEGREES 36 MINUTES 30 SECONDS WEST A DISTANCE OF 100.00 FEET;

THENCE NORTH 41 DEGREES 23 MINUTES 13 SECONDS WEST A DISTANCE OF 100.00 FEET;

THENCE NORTH 48 DEGREES 36 MINUTES 30 SECONDS EAST A DISTANCE OF 100.00 FEET;

THENCE SOUTH 41 DEGREES 23 MINUTES 13 SECONDS EAST A DISTANCE OF 100.00 FEET TO THE POINT OF BEGINNING.

10,000 SQUARE FEET OR 0.2295 ACRES, MORE OR LESS

PROPOSED ACCESS & UTILITY EASEMENT

ALL THAT TRACT OR PARCEL OF LAND LYING IN THE COUNTY OF CALDWELL, STATE OF KENTUCKY, CONSISTING OF A 25 FEET WIDE ACCESS AND UTILITY EASEMENT COMMENCING AT A FOUND PK NAIL THAT IS AT THE INTERSECTION OF (KY91) HOPKINSVILLE ROAD AND FRIENDSHIP ROAD, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THENCE SOUTH 87 DEGREES 37 MINUTES 23 SECONDS WEST A DISTANCE OF 471.07 FEET;

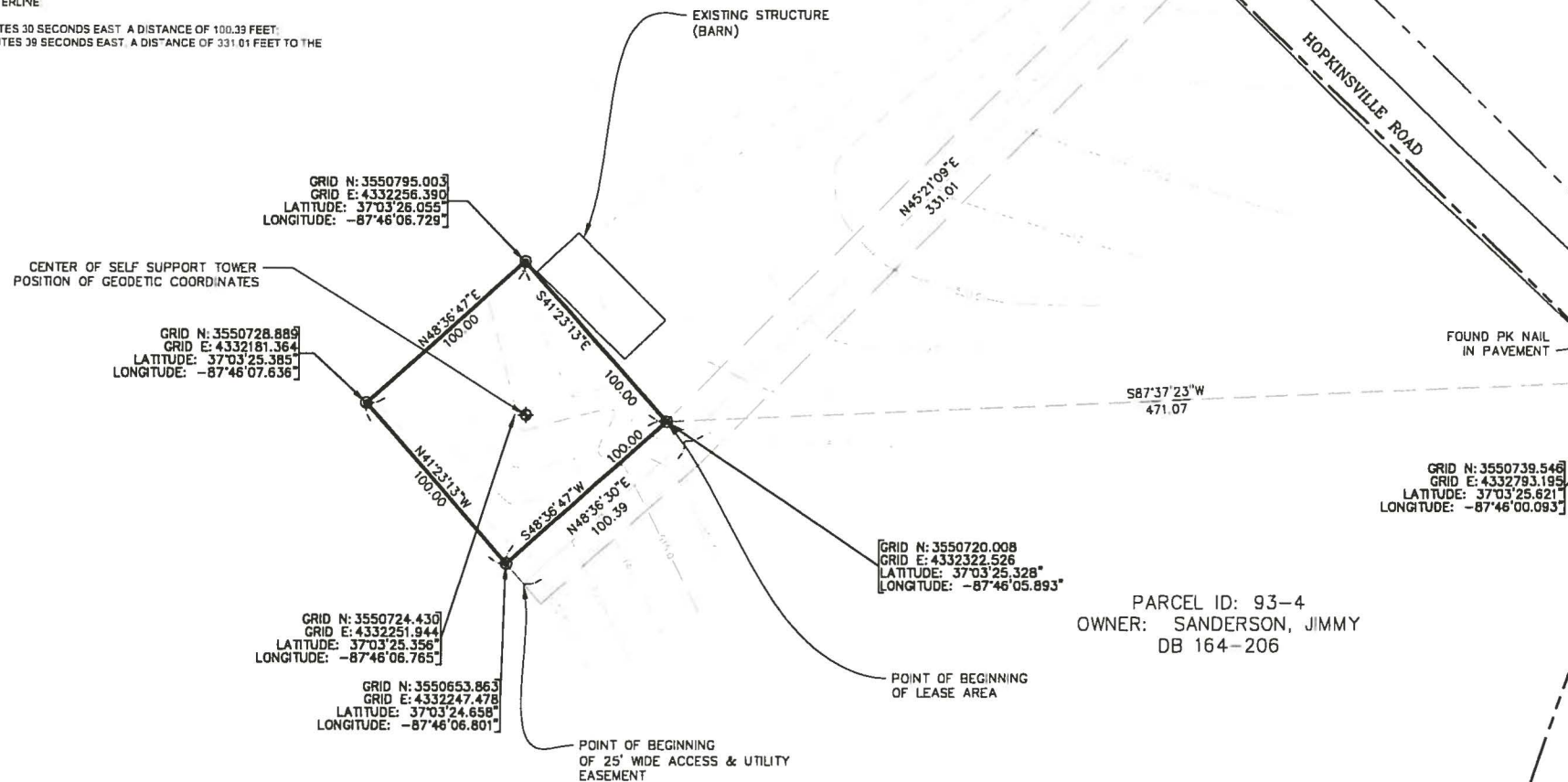
THENCE SOUTH 48 DEGREES 36 MINUTES 30 SECONDS WEST A DISTANCE OF 100.00 FEET;

THENCE SOUTH 41 DEGREES 23 MINUTES 13 SECONDS EAST A DISTANCE OF 12.50 FEET TO THE POINT OF BEGINNING, OF A 25 FEET WIDE ACCESS AND UTILITY EASEMENT LYING 12.50 FEET ON EACH SIDE

OF THE FOLLOWING DESCRIBED CENTERLINE

THENCE NORTH 48 DEGREES 36 MINUTES 30 SECONDS EAST A DISTANCE OF 100.39 FEET;

THENCE NORTH 45 DEGREES 21 MINUTES 39 SECONDS EAST A DISTANCE OF 331.01 FEET TO THE POINT OF TERMINUS.



PARCEL ID: 93-4
OWNER: SANDERSON, JIMMY
DB 164-206

SITE INFO

TAX PARCEL NO: 93-4

PROPERTY OWNER: SANDERSON, JIMMY

SOURCE OF TITLE: DB 164 PG 206

LAND SURVEYOR'S CERTIFICATE

I, A. CLAY ROBINSON, HEREBY CERTIFY THAT I AM A LICENSED PROFESSIONAL LAND SURVEYOR LICENSED IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF KENTUCKY. I FURTHER CERTIFY THAT THIS PLAT AND THE SURVEY ON THE GROUND WERE PERFORMED BY PERSONS UNDER MY DIRECT SUPERVISION, AND THAT THE DIRECTIONAL AND LINEAR MEASUREMENTS BEING WITNESSED BY MONUMENTS SHOWN HEREON ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. THE "RURAL" SURVEY, AND THE PLAT ON WHICH IT IS BASED, MEETS ALL SPECIFICATION AS STATES IN KAR 201-18-150.

SIGNED: *A. Clay Robinson*

2.9.2017

DATE

TITLE REPORT INFO

REFERENCE IS MADE TO THE TITLE REPORT ORDER #55821-KY1611-5034, ISSUED BY US TITLE SOLUTIONS INSURANCE COMPANY, DATED 11.9.2016. ALL EASEMENTS CONTAINED WITHIN SAID TITLE REPORT AFFECTING THE IMMEDIATE AREA SURROUNDING THE LEASE HAVE BEEN PLOTTED (EXCEPT FOR ROOFTOPS).

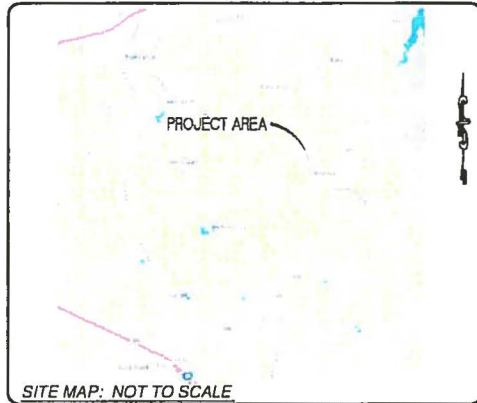
SCHEDULE B ITEMS:

7. EASEMENT BY JIMMY SANDERSON AND LOUISE SANDERSON, HUSBAND & WIFE TO THE CALDWELL COUNTY WATER DISTRICT, DATED 6/25/1992 RECORDED 10/1/1992 IN BOOK 187 PAGE 52. (EASEMENT IS LIMITED TO AN EXISTING WATERLINE, NOTHING WAS WITNESSED AT THE TIME OF THE SURVEY, NOT ABLE TO PLOT)



FAA COORDINATE POINT
CENTER OF SELF SUPPORT TOWER (NAD83)
LATITUDE 37° 03' 25.36" NORTH
LONGITUDE 87° 46' 06.77" WEST
ELEVATION 514.9' (NAVD88)

1" ACCURACY CERTIFICATION
THE HORIZONTAL ACCURACY OF THE LATITUDE AND LONGITUDE OF THE GEODETIC COORDINATES FALL WITHIN TWENTY (20) FEET. THE ELEVATIONS (NAVD88) OF THE GROUND AND FIXTURES FALL WITHIN THREE (3) FEET.



SITE MAP: NOT TO SCALE

BENCHMARK

ELEVATION ESTABLISHED FROM GPS OBSERVATIONS CONstrained TO OPUS SOLUTIONS, APPLYING GEOID 12A SEPARATIONS NAVD88 DATUM.

BASIS OF BEARINGS

BEARINGS SHOWN HEREON ARE BASED UPON U.S. STATE PLANE NAD83 COORDINATE SYSTEM KENTUCKY SINGLE ZONE US FOOT, DETERMINED BY GPS OBSERVATIONS, COMPLETED ON 1.19.17

UTILITY NOTES

SURVEYOR DOES NOT GUARANTEE THAT ALL UTILITIES ARE SHOWN OR THEIR LOCATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND DEVELOPER TO CONTACT LOCAL 811 AND ANY OTHER INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. REMOVAL, RELOCATION AND/OR REPLACEMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.

SURVEYOR NOTES

NO SEARCH OF PUBLIC RECORDS HAS BEEN COMPLETED TO DETERMINE ANY DEFECTS AND/OR AMBIGUITIES IN THE TITLE OF THE PARENT PARCEL.

THIS SURVEY IS FOR THE PROPOSED LEASE AREA AND THE PROPOSED ACCESS AND UTILITY EASEMENT ONLY, AND ONLY A PARTIAL BOUNDARY SURVEY OF THE PARENT TRACT HAS BEEN PERFORMED

THIS PROPERTY IS SUBJECT TO ANY RECORD EASEMENTS AND/OR RIGHT OF WAY SHOWN HEREON OR NOT.

THIS SURVEY IS NOT INTENDED FOR LAND TRANSFER

SURVEYOR HAS NOT PERFORMED A SEARCH OF PUBLIC RECORDS TO DETERMINE ANY DEFECT IN TITLE ISSUED. THE BOUNDARY SHOWN HEREON IS PLOTTED FROM RECORD INFORMATION AND DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE PROPERTY.

THIS SURVEY PLAN WAS PERFORMED UNDER THE AUTHORITY OF KENTUCKY REVISED STATUTES (201 KAR 18, 150), AND IS NOT TO BE CONSIDERED A GENERAL PROPERTY BOUNDARY SURVEY AS DEFINED WITH KENTUCKY REVISED STATUTES DIMENSIONS (IF SHOWN) ALONG THE PERIMETER OF THE LANDOWNER'S PROPERTY ARE PROVIDED UNDER THIS SURVEYOR'S SCOPE OF SERVICES WITH AT&T AND ARE TO BE CONSIDERED FOR REFERENCE ONLY. THE EXACT LOCATION OF THE LANDOWNER'S PROPERTY MAY DIFFER UPON THE PREPARATION OF A FULL BOUNDARY SURVEY IN ACCORDANCE WITH THE REQUIREMENTS ESTABLISHED BY THE STATE OF KENTUCKY.

THIS SURVEY WAS PERFORMED WITH A TRIMBLE R8 DUAL FREQUENCY, REAL TIME KINEMATIC GLOBAL POSITIONING SYSTEM ROVER AND BASE STATION 4531154139 & 4624117200 SERIAL NUMBERS. REDUNDANT AND REPETITIVE MEASUREMENTS WERE TAKEN TO INSURE CORRECT POSITIONS OF ALL DATA POINTS. A TOLERANCE OF 0.04' FOR POSITIONAL ACCURACY.

FLOOD INFORMATION

THE PROPOSED LEASE AREA SHOWN HEREON IS NOT LOCATED IN A 100-YEAR FLOOD PLAIN PER FLOOD HAZARD BOUNDARY MAP, COMMUNITY-PANEL NO. 21033C0275C, DATED 10/16/2008. THE PROPOSED LEASE AREA IS LOCATED IN ZONE "X".

LEGEND

POB	POINT OF BEGINNING	SPOT ELEVATION
POT	POINT OF TERMINUS	POSITION OF GEODETIC COORDINATES
PUE	PUBLIC UTILITY EASEMENT	WATER CONTROL VALVE
ROW	RIGHT OF WAY	FIRE HYDRANT
DW	DRIVEWAY	POWER POLE
SW	SIDEWALK	ELECTRIC MANHOLE
SET	SET 1/2"x24" IR	TELCO MANHOLE
CAPPED	CAPPED #3219	
OR FOUND	OR FOUND AS NOTED	
OVERHEAD ELECTRIC	PROPERTY LINE	BARBED WIRE FENCE



IRISH TOWER

GENERAL CONSTRUCTION ENGINEERING PROJECT MANAGEMENT

4003 Bermuda Drive Sugar Land TX 77479
Voice (281) 796 2651 Fax (866) 538 3136
info@tower.com



13800776

KYL03256

BATTLE CREEK

14900 HOPKINSVILLE ROAD
PRINCETON, KY 42445
CALDWELL COUNTY

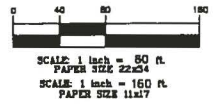
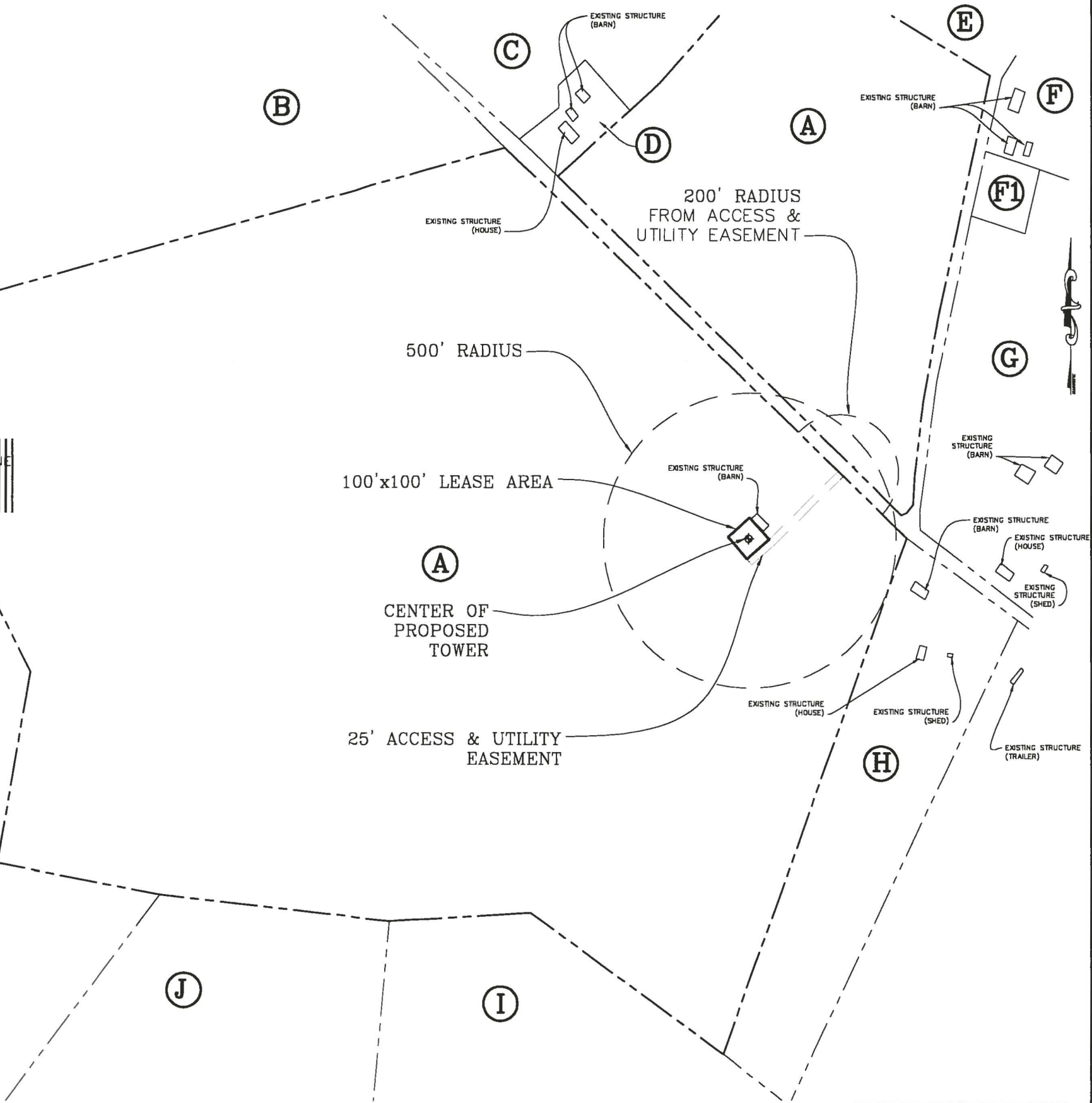
TOPOGRAPHIC
SITE
SURVEY

B-1

- A** PARCEL ID: 93-4
OWNER: SANDERSON, JIMMY
14869 SUGAR CREEK ROAD
CERULEAN KY 42215
DB 164-206
- B** PARCEL ID: 93-3
OWNER: BRUMMETT, DEMPSEY & CONNIE
14664 HOPKINSVILLE ROAD
PRINCETON KY 42445
DB 142-136
- C** PARCEL ID: 92-33
OWNER: WOODWARD PROPERTIES LLC
4763 ROSEBUD LANE
NEWBURGH IN 47630
DB 304-73
- D** PARCEL ID: 92-33C
OWNER: EVERY, ROBERT & TINA
14829 HOPKINSVILLE ROAD
PRINCETON KY 42445
DB 311-137
- E** PARCEL ID: 92-33B
OWNER: WOODWARD PROPERTIES LLC
4763 ROSEBUD LANE
NEWBURGH IN 47630
DB 305-606
- F** PARCEL ID: 93-5
OWNER: DENHAM ROBERT WAYNE
634 FRIENDSHIP ROAD
PRINCETON KY 42445
DB 241-173
- G** PARCEL ID: 93-6
OWNER: COLEMAN CHARLES R & GLORIA JEAN COLEMAN
15227 HOPKINSVILLE ROAD
PRINCETON KY 42445
DB 157/8
- H** PARCEL ID: 93-7
OWNER: O'DONNELL PATRICK L & LINDA G
15186 HOPKINSVILLE ROAD
PRINCETON KY 42445
DB 141-419
- I** PARCEL ID: 93-9
OWNER: ADAMS DAVID & KAREN
1232 CADIZ ROAD
PRINCETON KY 42445
DB 206-619
- J** PARCEL ID: 93-10
OWNER: BATTLEFIELD FARM LLC C/O J TODD PPOOL
337 BATTLECREEK ROAD
PRINCETON KY 42445
DB 310-202
- K** PARCEL ID: 93-11B
OWNER: PPOOL DAVID & ANDREA
4000 DRIPPING SPRINGS RD
PRINCETON KY 42445
DB 212-039
- L** PARCEL ID: 93-2
OWNER: MORSE ROBERT N & JOYCE L
4674 DRIPPING SPRINGS ROAD
PRINCETON KY 42445
DB 300-356

F1 PARCEL ID: 93-5A
OWNER: DENHAM ROBERT WAYNE
634 FRIENDSHIP ROAD
PRINCETON KY 42445
DB 241-173

SURVEYOR NOTES
1. ALL INFORMATION SHOWN HEREON WAS OBTAINED AT THE TIME OF THE FIELD SURVEY 1.19.17, FROM CALDWELL COUNTY PROPERTY VALUATION OFFICE. RECORDS MAY NOT REFLECT THE CURRENT OWNERS AND ADDRESSES DUE TO THE INACCURACIES AND THE TIME LAPSE IN UPDATING FILES.
2. THIS MAP IS FOR GENERAL INFORMATION PURPOSES ONLY AND DOES CONSTITUTE A BOUNDARY SURVEY.
3. THIS MAP IS NOT FOR RECORDING OR PROPERTY TRANSFER.



SITE INFO
TAX PARCEL NO: 93-4
PROPERTY OWNER: SANDERSON, JIMMY
SOURCE OF TITLE: DB 164 PG 206



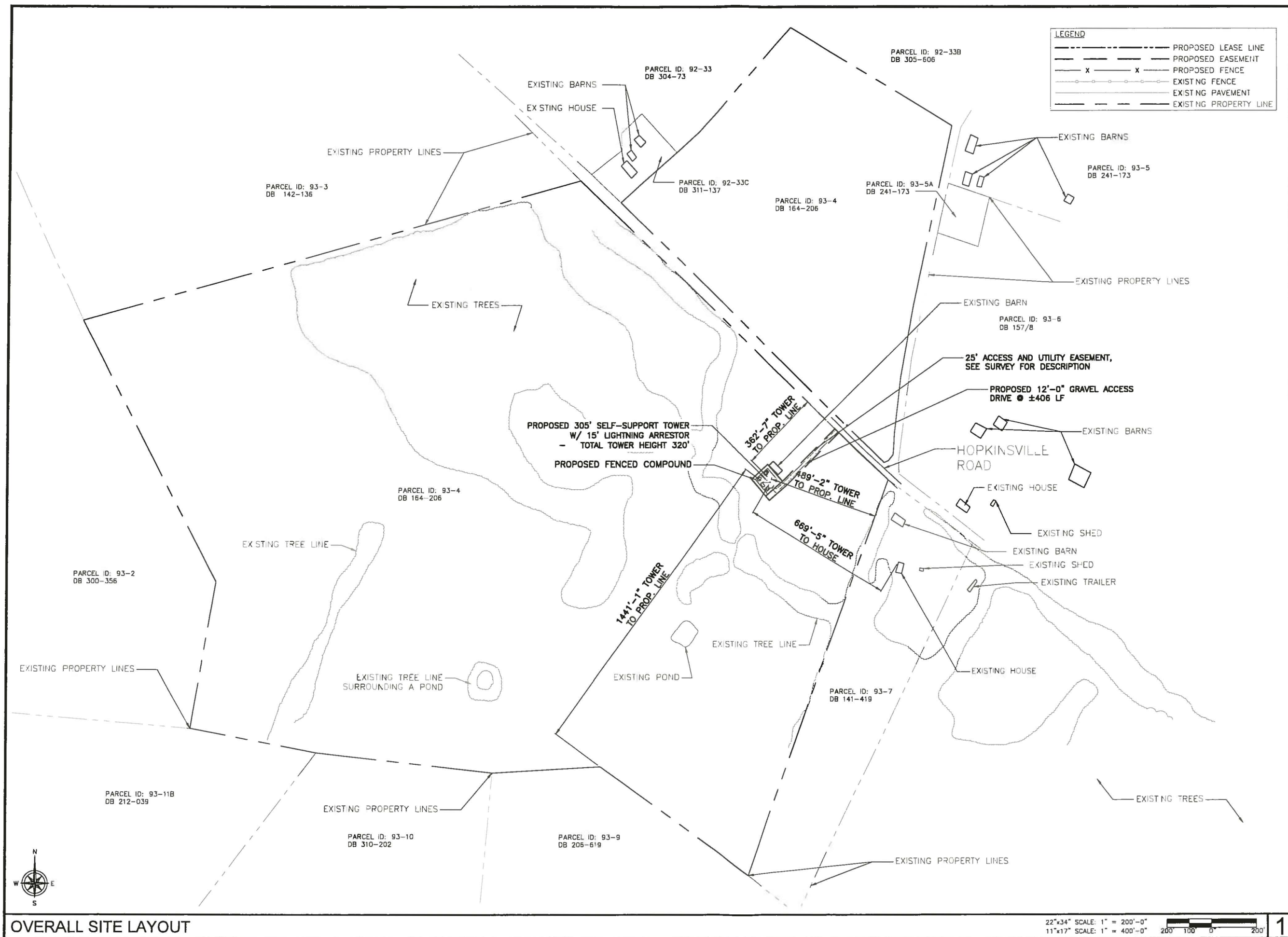
IRISH TOWER
GENERAL CONSTRUCTION ENGINEERING PROJECT MANAGEMENT
4003 Bermuda Drive Sugar Land TX 77479
Voice: (281) 796-2511 Fax: (856) 998-3136
info@tower.com



13800776
KYL03256
BATTLE CREEK
14900 HOPKINSVILLE ROAD
PRINCETON, KY 42445
CALDWELL COUNTY

**500' RADIUS
&
ABUTTER'S MAP**

B-2



OVERALL SITE LAYOUT

22"x34" SCALE: 1" = 200'-0"
11"x17" SCALE: 1" = 400'-0"



IRISH TOWER
GENERAL CONSTRUCTION | ENGINEERING | PROJECT MANAGEMENT
4603 Bermuda Drive, Sugar Land, TX 77479
Voice: (281) 799-2551 | Fax: (866) 598-3136
IrishTower.com

ZONING DRAWINGS
NOT FOR CONSTRUCTION

DRAWN BY: DL
CHECKED BY: JRG

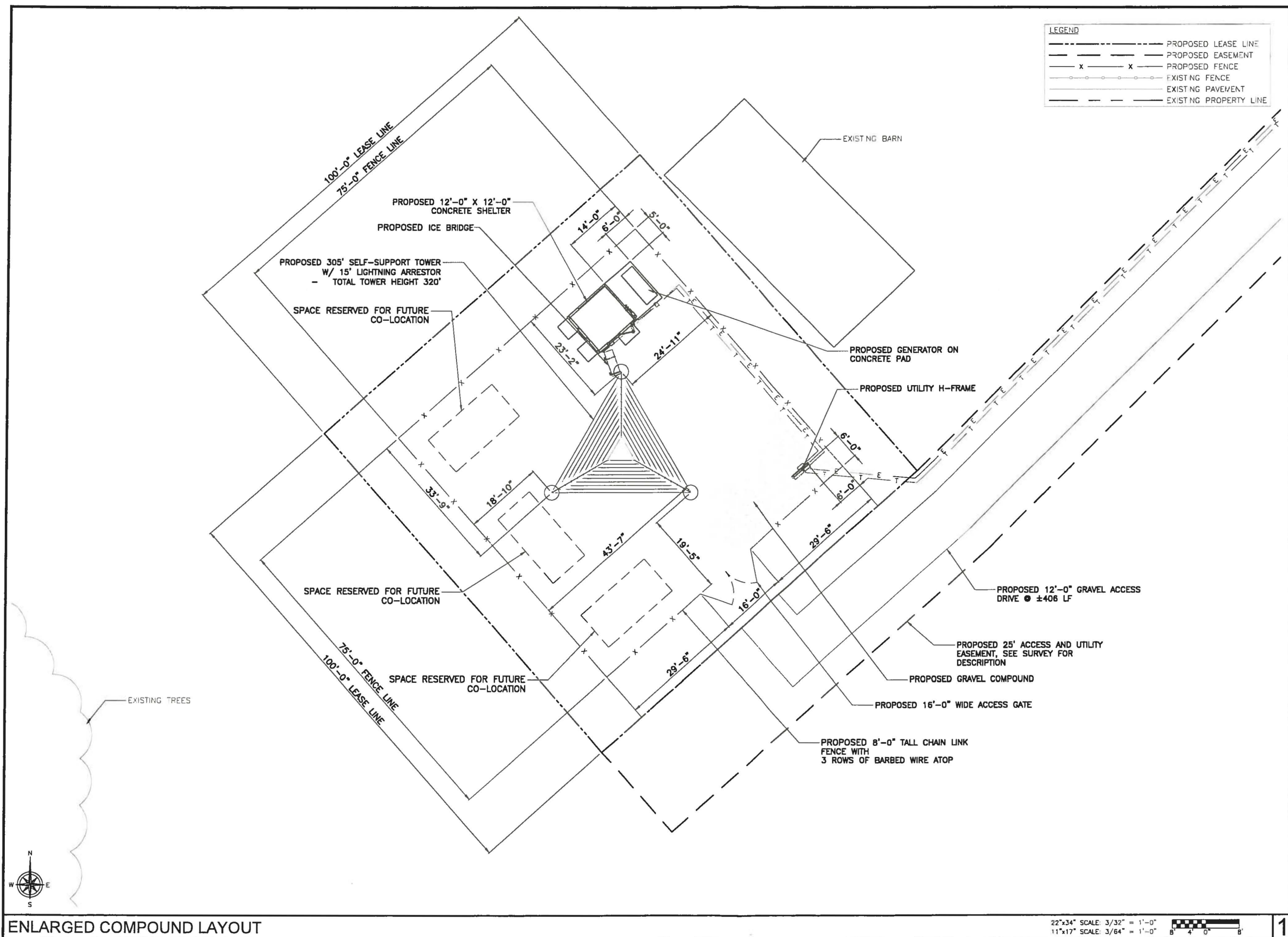
REV	DATE	DESCRIPTION
0	02/23/2017	ISSUED FOR ZONING
1	08/28/2017	ISSUED FOR ZONING

Jacob Goralski
STATE OF KENTUCKY
JACOB GORALSKI
30896
LICENSED PROFESSIONAL ENGINEER
8/28/2017
ENG. PERMIT # 4363

FA #
13800776
SITE #
KYL03256
SITE NAME:
BATTLE CREEK
SITE ADDRESS:
14900 HOPKINSVILLE ROAD
PRINCETON, KY 42445

SHEET TITLE
OVERALL SITE LAYOUT

SHEET NUMBER
C-1



LEGEND

---	PROPOSED LEASE LINE
---	PROPOSED EASEMENT
-x-x-	PROPOSED FENCE
-o-o-	EXISTING FENCE
---	EXISTING PAVEMENT
---	EXISTING PROPERTY LINE



IRISH TOWER

GENERAL CONSTRUCTION ENGINEERING / PROJECT MANAGEMENT
4503 Bermuda Drive, Sugar Land, TX 77479
Voice: (281) 795-2651 | Fax: (866) 508-3136
IrishTower.com

ZONING DRAWINGS
NOT FOR CONSTRUCTION

DRAWN BY: DL

CHECKED BY: JRG

REV	DATE	DESCRIPTION
0	02/23/2017	ISSUED FOR ZONING
1	08/28/2017	ISSUED FOR ZONING



ENG. PERMIT # 4363

FA # 13800776
SITE # KYL03256
SITE NAME: BATTLE CREEK
SITE ADDRESS: 14900 HOPKINSVILLE ROAD
PRINCETON, KY 42445

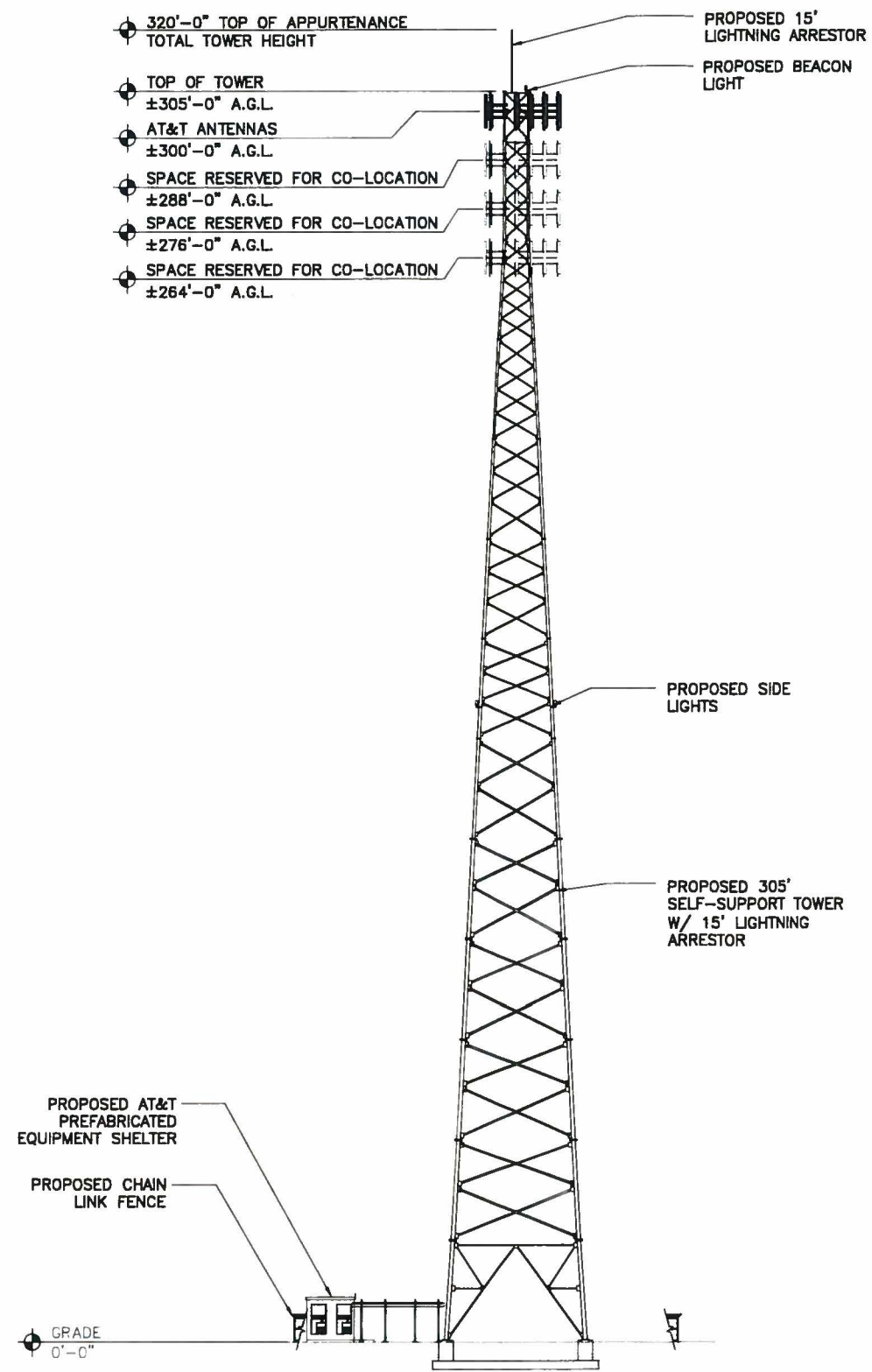
SHEET TITLE
ENLARGED COMPOUND LAYOUT

SHEET NUMBER
C-2



ENLARGED COMPOUND LAYOUT

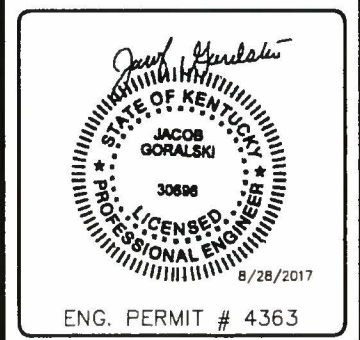
22"x34" SCALE: 3/32" = 1'-0"
11"x17" SCALE: 3/64" = 1'-0"
8' 4' 0' 8'



ZONING DRAWINGS
NOT FOR CONSTRUCTION

DRAWN BY: DL
CHECKED BY: JRG

REV	DATE	DESCRIPTION
0	02/23/2017	ISSUED FOR ZONING
1	08/28/2017	ISSUED FOR ZONING



FA # 13800776
SITE # KYL03256
SITE NAME: BATTLE CREEK
SITE ADDRESS: 14900 HOPKINSVILLE ROAD
PRINCETON, KY 42445

SHEET TITLE
TOWER ELEVATION

SHEET NUMBER
C-3

EXHIBIT C
TOWER AND FOUNDATION DESIGN



Structural Design Report

305' S3TL Series HD1 Self-Supporting Tower

Site: Battle Creek, KY

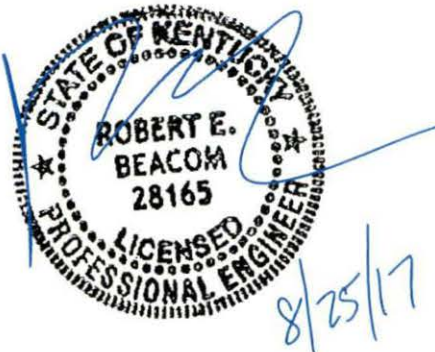
Site Number: KYL03256

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

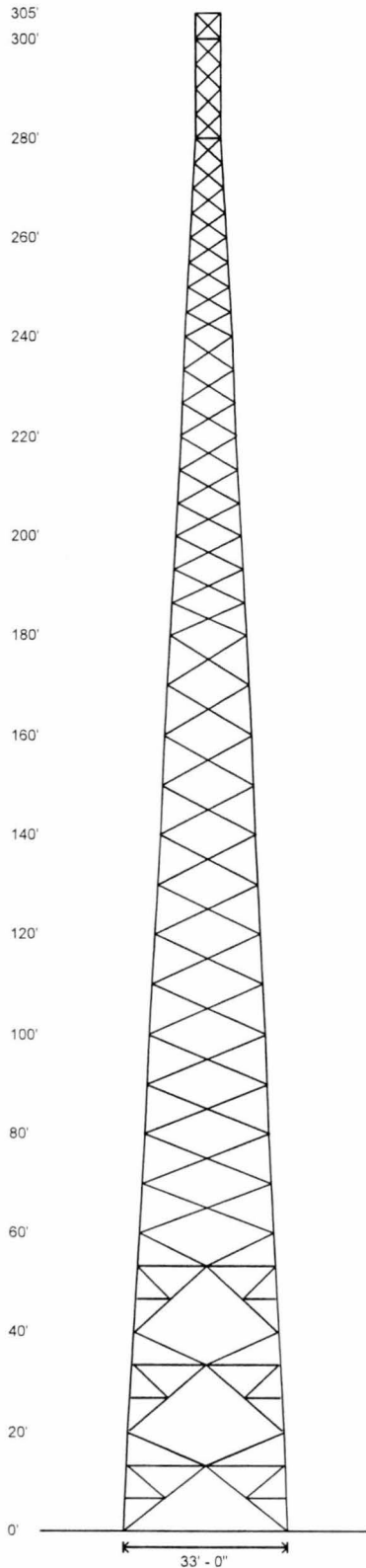
Job Number: 169279

August 24, 2017

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.....	8-22



F	E	D	C	B	A	J	K	L	M	N	O
8.625 OD X .500	10.75 OD X .500	12.75 OD X .500	L 4 X 4 X 1/4	L 4 X 4 X 5/16	L 4 X 4 X 1/4	L 4 X 4 X 1/4	L 4 X 4 X 1/4	L 4 X 4 X 1/4	L 4 X 4 X 1/4	L 4 X 4 X 1/4	L 4 X 4 X 1/4
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
(1) 5/8"	(1) 3/4"	(2) 5/8"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"	(2) 3/4"
11'	13'	15'	17'	19'	21'	23'	25'	27'	29'	31'	33'
9 @ 6.667'	12 @ 10'	6058	4830	4305	4135	3083	2979	2227	1840	1175	V
Section Weight	8684	8503	8158	7543	6864	6207	6058	4830	4305	4135	3083
Top Face Width	27'	29'	31'	33'	35'	37'	39'	41'	43'	45'	47'
Panel Count/Height	T	U	T	U	T	U	T	U	T	U	T



Base Reactions

Total Foundation		Individual Footing	
Shear (kips)	117.43	Shear (kips)	71.86
Axial (kips)	312.87	Compression (kips)	793
Moment (ft-kips)	21403	Uplift (kips)	689
Torsion (ft-kips)	49.2		

Material List

Display	Value
A	8.625 OD X .322
B	5.563 OD X .500
C	5.563 OD X .375
D	4.500 OD X .337
E	2.875 OD X .276
F	2.375 OD X .154
G	L 5 X 3 1/2 X 1/4 (SLV)
H	L 4 X 4 X 5/16
I	L 5 X 3 1/2 X 5/16 (SLV)
J	L 3 1/2 X 3 1/2 X 1/4
K	L 3 1/2 X 3 X 1/4 (SLV)
L	L 2 1/2 X 2 1/2 X 1/4
M	L 2 1/2 X 2 1/2 X 3/16
N	L 2 X 2 X 3/16
O	L 2 X 2 X 1/8
P	NONE
Q	L 4 X 4 X 1/4
R	L 2 X 2 X 1/4
S	L 3 X 3 X 1/4
T	1 @ 13.333'
U	1 @ 6.667'
V	249

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.
- 5) 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) (6) 1 3/4" dia. F1554 grade 105 anchor bolts per leg. Minimum 65.5" embedment from top of concrete to top of nut.
- 9) All unequal angles are oriented with the short leg vertical.
- 10) Weights shown are estimates. Final weights may vary.
- 11) This tower was designed for a basic wind speed of 89 mph with 0" of radial ice, and 30 mph with 3/4" of radial ice, in accordance with ANSI/TIA-222-G, Structure Class II, Exposure Category C, Topographic Category 1.
- 12) The foundation loads shown are factored loads.
- 13) The tower design meets the requirements for an Ultimate Wind Speed of 115 mph (Risk Category II), in accordance with the 2012 International Building Code.
- 14) Tower Rating: 98.94%

Sabre Industries
Towers and Poles

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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Job: 169279
Customer: AT&T
Site Name: Battle Creek, KY KYL03256
Description: 305' S3TL
Date: 08/24/2017 By: DJH

Designed Appurtenance Loading

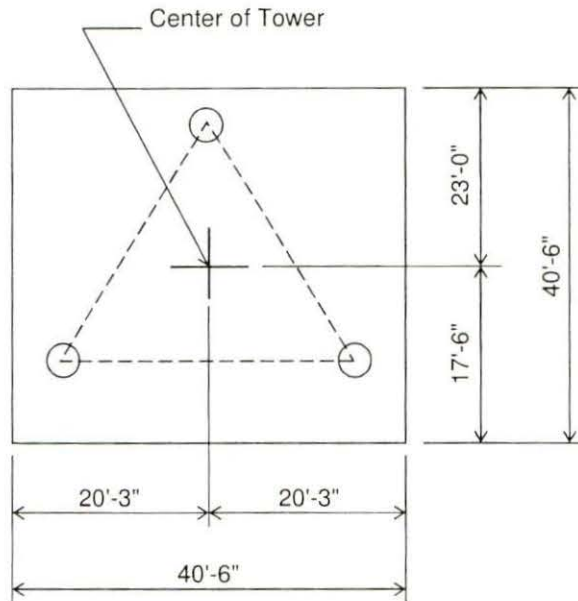
Elev	Description	Tx-Line
310	(1) Extendible Lightning Rod	
300	(1) 278 Sq. FT. EPA /6000# (No Ice)	(18) 1 5/8"
288	(1) 208 sq. ft. EPA 4000# (no ice)	(18) 1 5/8"

Elev	Description	Tx-Line
276	(1) 208 sq. ft. EPA 4000# (no ice)	(18) 1 5/8"
264	(1) 208 sq. ft. EPA 4000# (no ice)	(18) 1 5/8"

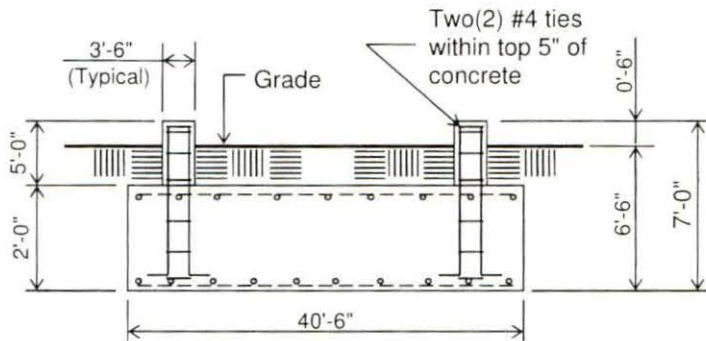
 <p>Sabre Industries Towers and Poles</p>	<p>Sabre Communications Corporation 7101 Southbridge Drive P.O. Box 658 Sioux City, IA 51102-0658 Phone (712) 258-6600 Fax (712) 279-0814</p>	<p>Job: 169279</p> <p>Customer: AT&T</p> <p>Site Name: Battle Creek, KY KYL03256</p> <p>Description: 305' S3TL</p> <p>Date: 08/24/2017 By: DJH</p>
<p>Information contained herein is the sole property of Sabre Communications Corporation, constitutes a trade secret as defined by Iowa Code Ch. 550 and shall not be reproduced, copied or used in whole or part for any purpose whatsoever without the prior written consent of Sabre Communications Corporation.</p>		

Customer: AT&T
Site: Battle Creek, KY KYL03256

305 ft. Model S3TL Series HD1 Self Supporting Tower At
89 mph Wind with no ice and 30 mph Wind with 0.75 in. Ice per ANSI/TIA-222-G.
Antenna Loading per Page 1



PLAN VIEW



ELEVATION VIEW

(126.85 Cu. Yds.)
(1 REQD.; NOT TO SCALE)

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

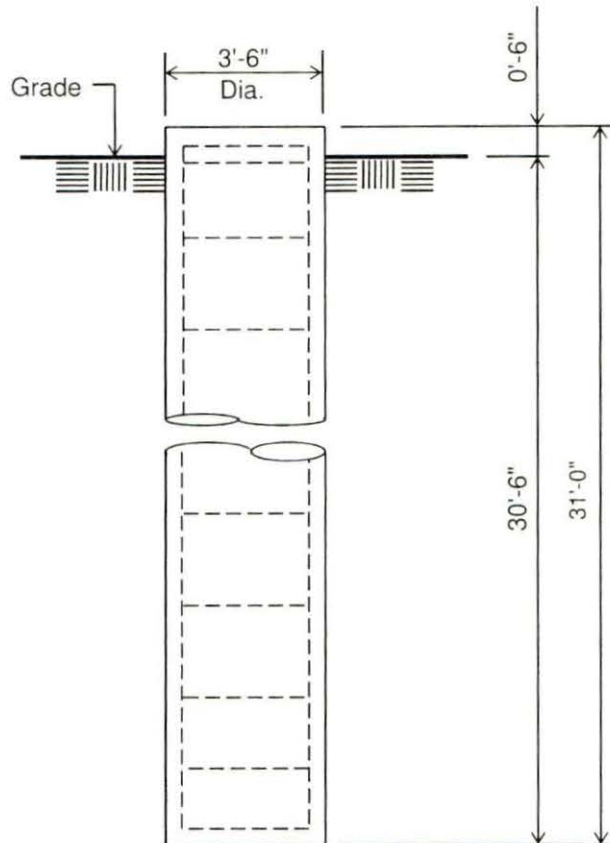
Notes:

- 1). Concrete shall have a minimum 28-day compressive strength of 4500 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 Southeast, LLP; project# 26:3125-L; dated March 29, 2017.
- 6). See the geotechnical report for compaction requirements, if specified.
- 7). The foundation is based on the following factored loads:
Factored download (kips) = 131.17
Factored overturn (kip-ft) = 21403.43
Factored shear (kips) = 117.43
- 8). 4.5 ft of soil cover is required over the entire area of the foundation slab.

Rebar Schedule per Mat and per Pier	
Pier	(16) #10 vertical rebar w/ hooks at bottom w/ #4 Rebar ties, two (2) within top 5" of pier then 9" C/C
Mat	(69) #10 horizontal rebar evenly spaced each way top and bottom. (276 total)

Customer: AT&T
Site: Battle Creek, KY KYL03256

305 ft. Model S3TL Series HD1 Self Supporting Tower At
89 mph Wind with no ice and 30 mph Wind with 0.75 in. Ice per ANSI/TIA-222-G.
Antenna Loading per Page 1



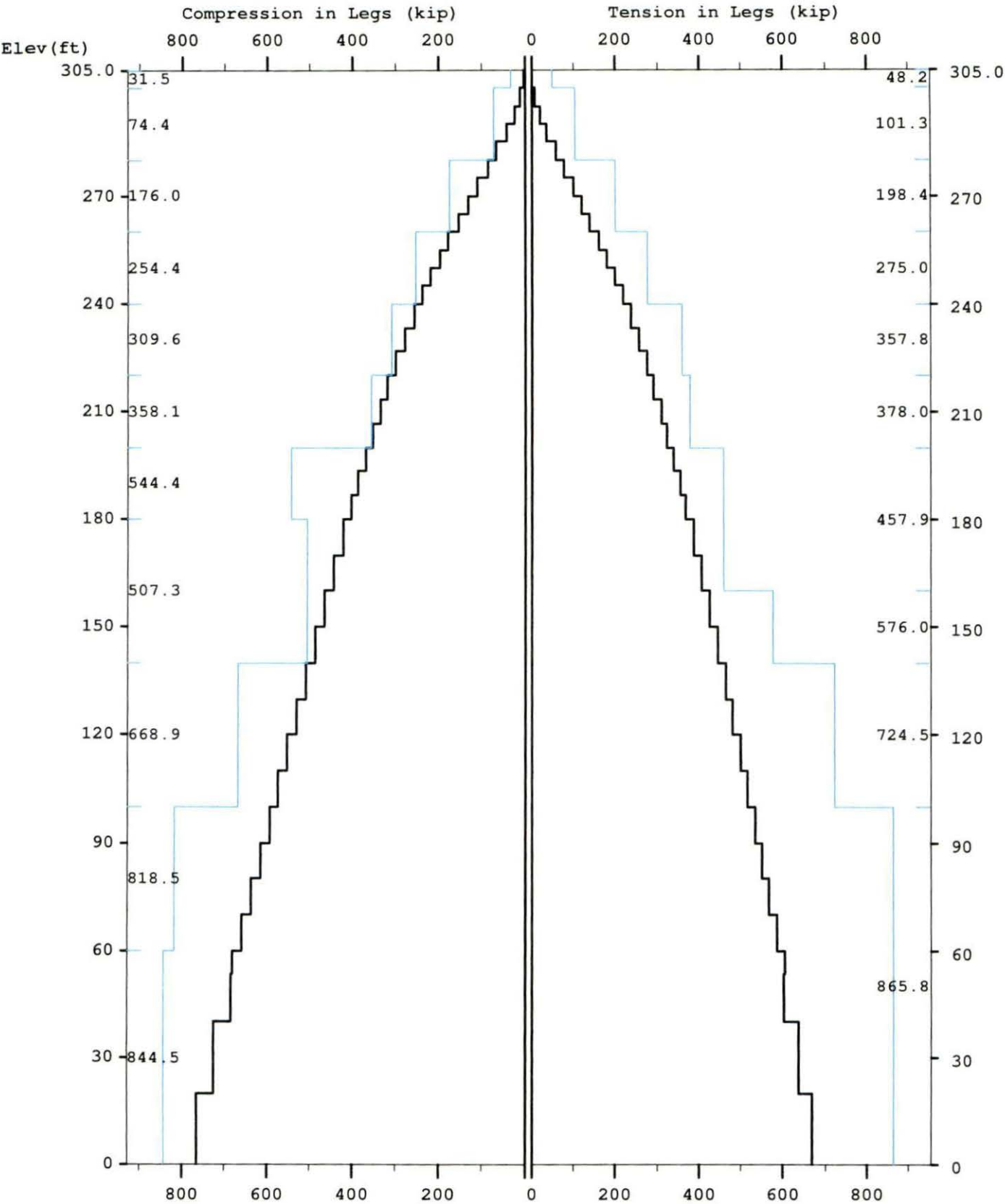
ELEVATION VIEW
(11.05 Cu. Yds. each)
(3 REQUIRED; NOT TO SCALE)

Notes:

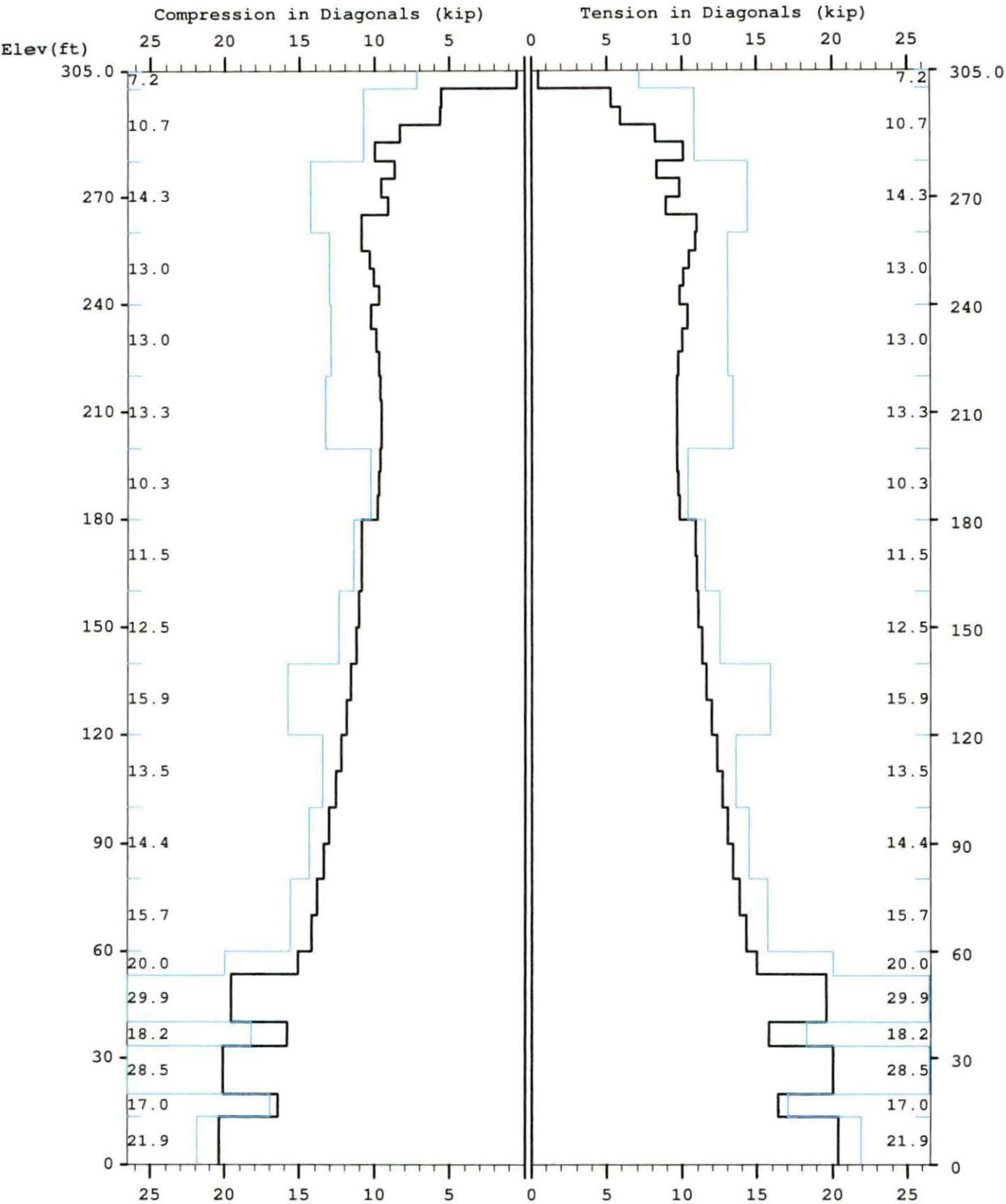
- 1). Concrete shall have a minimum 28-day compressive strength of 4500 PSI, in accordance with ACI 318-11.
- 2). Rebars to conform to ASTM specification A615 Grade 60.
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- 4). All exposed concrete corners to be chamfered 3/4".
- 5). The foundation design is based on the geotechnical report by ECS Southeast, LLP; project# 26:3125-L; dated March 29, 2017.
- 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) = 689
Factored download (kips) = 793
Factored shear (kips) = 72

Rebar Schedule per Pier	
Pier	(16) #11 vertical rebar w/#4 ties, two (2) within top 5" of pier then 9" C/C

Maximum

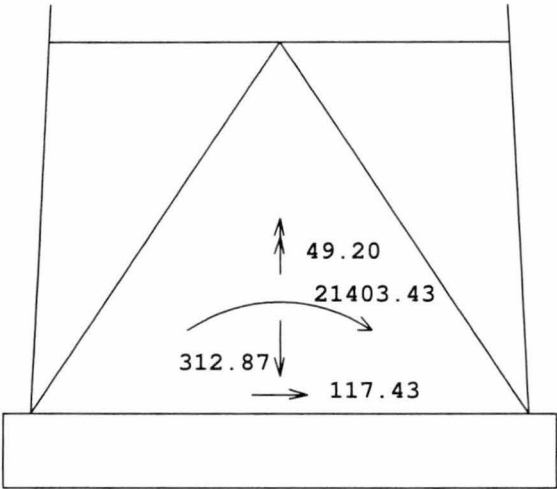


Maximum

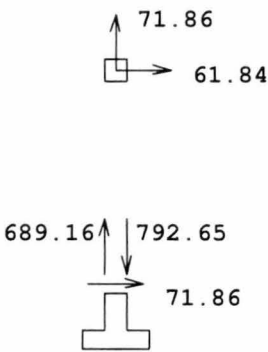


Maximum

TOTAL FOUNDATION LOADS (kip, ft-kip)



INDIVIDUAL FOOTING LOADS (kip)



=====

Latticed Tower Analysis (Unguyed)
 Processed under license at:

(c)2013 Guymast Inc. 416-736-7453

Sabre Towers and Poles

on: 24 aug 2017 at: 16:24:56

=====

MAST GEOMETRY (ft)

=====

PANEL TYPE	NO.OF LEGS	ELEV.AT BOTTOM	ELEV.AT TOP	F.W..AT BOTTOM	F.W..AT TOP	TYPICAL PANEL HEIGHT
X	3	300.00	305.00	5.00	5.00	5.00
X	3	295.00	300.00	5.00	5.00	5.00
X	3	280.00	295.00	5.00	5.00	5.00
X	3	275.00	280.00	5.50	5.00	5.00
X	3	260.00	275.00	7.00	5.50	5.00
X	3	240.00	260.00	9.00	7.00	5.00
X	3	220.00	240.00	11.00	9.00	6.67
X	3	200.00	220.00	13.00	11.00	6.67
X	3	180.00	200.00	15.00	13.00	6.67
X	3	160.00	180.00	17.00	15.00	10.00
X	3	140.00	160.00	19.00	17.00	10.00
X	3	120.00	140.00	21.00	19.00	10.00
X	3	100.00	120.00	23.00	21.00	10.00
X	3	80.00	100.00	25.00	23.00	10.00
X	3	60.00	80.00	27.00	25.00	10.00
V	3	53.33	60.00	27.67	27.00	6.67
A	3	40.00	53.33	29.00	27.67	13.33
V	3	33.33	40.00	29.67	29.00	6.67
A	3	20.00	33.33	31.00	29.67	13.33
V	3	13.33	20.00	31.67	31.00	6.67
A	3	0.00	13.33	33.00	31.67	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	300.00	305.00	1.075	0.787	29000.	0.0000117
LE	280.00	300.00	2.254	0.787	29000.	0.0000117
LE	260.00	280.00	4.407	0.787	29000.	0.0000117
LE	240.00	260.00	6.111	0.787	29000.	0.0000117
LE	220.00	240.00	7.952	0.787	29000.	0.0000117
LE	200.00	220.00	8.399	0.787	29000.	0.0000117
LE	140.00	200.00	12.763	0.787	29000.	0.0000117
LE	100.00	140.00	16.101	0.787	29000.	0.0000117
LE	0.00	100.00	19.242	0.787	29000.	0.0000117
DI	300.00	305.00	0.484	0.626	29000.	0.0000117
DI	280.00	300.00	0.715	0.626	29000.	0.0000117
DI	260.00	280.00	0.938	0.626	29000.	0.0000117
DI	240.00	260.00	0.902	0.626	29000.	0.0000117
DI	220.00	240.00	1.188	0.626	29000.	0.0000117
DI	180.00	220.00	1.090	0.626	29000.	0.0000117
DI	160.00	180.00	1.562	0.626	29000.	0.0000117
DI	140.00	160.00	1.688	0.626	29000.	0.0000117
DI	80.00	140.00	1.938	0.626	29000.	0.0000117
DI	53.33	80.00	2.402	0.626	29000.	0.0000117
DI	40.00	53.33	2.559	0.626	29000.	0.0000117
DI	33.33	40.00	2.402	0.626	29000.	0.0000117
DI	20.00	33.33	2.559	0.626	29000.	0.0000117
DI	13.33	20.00	2.402	0.626	29000.	0.0000117
DI	0.00	13.33	2.062	0.626	29000.	0.0000117
HO	300.00	305.00	0.484	0.626	29000.	0.0000117
HO	295.00	300.00	0.715	0.626	29000.	0.0000117
HO	275.00	280.00	0.938	0.626	29000.	0.0000117
HO	40.00	53.33	1.938	0.626	29000.	0.0000117
HO	20.00	33.33	2.402	0.626	29000.	0.0000117
HO	0.00	13.33	2.402	0.626	29000.	0.0000117
BR	40.00	53.33	1.438	0.000	29000.	0.0000117
BR	20.00	33.33	1.438	0.000	29000.	0.0000117
BR	0.00	13.33	1.688	0.000	29000.	0.0000117

FACTORED MEMBER RESISTANCES

=====

BOTTOM ELEV ft	TOP ELEV ft	LEGS		DIAGONALS		HORIZONTALS		INT	BRACING
		COMP kip	TENS kip	COMP kip	TENS kip	COMP kip	TENS kip	COMP kip	TENS kip
300.0	305.0	31.48	48.15	7.16	7.16	5.73	5.73	0.00	0.00
295.0	300.0	74.39	101.25	10.74	10.74	8.38	8.38	0.00	0.00

280.0	295.0	74.39	101.25	10.74	10.74	0.00	0.00	0.00	0.00
275.0	280.0	175.98	198.45	14.32	14.32	10.88	10.88	0.00	0.00
260.0	275.0	175.98	198.45	14.32	14.32	0.00	0.00	0.00	0.00
240.0	260.0	254.38	274.95	13.03	13.03	0.00	0.00	0.00	0.00
220.0	240.0	309.64	357.75	13.00	13.00	0.00	0.00	0.00	0.00
200.0	220.0	358.08	378.00	13.34	13.34	0.00	0.00	0.00	0.00
180.0	200.0	544.40	457.90	10.34	10.34	0.00	0.00	0.00	0.00
160.0	180.0	507.33	457.90	11.47	11.47	0.00	0.00	0.00	0.00
140.0	160.0	507.33	576.00	12.46	12.46	0.00	0.00	0.00	0.00
120.0	140.0	668.86	724.50	15.85	15.85	0.00	0.00	0.00	0.00
100.0	120.0	668.86	724.50	13.50	13.50	0.00	0.00	0.00	0.00
80.0	100.0	818.52	865.80	14.39	14.39	0.00	0.00	0.00	0.00
60.0	80.0	818.52	865.80	15.70	15.70	0.00	0.00	0.00	0.00
53.3	60.0	844.46	865.80	20.02	20.02	0.00	0.00	0.00	0.00
40.0	53.3	844.46	865.80	29.94	29.94	15.50	15.50	7.41	7.41
33.3	40.0	844.46	865.80	18.24	18.24	0.00	0.00	0.00	0.00
20.0	33.3	844.46	865.80	28.50	28.50	17.13	17.13	6.59	6.59
13.3	20.0	844.46	865.80	16.98	16.98	0.00	0.00	0.00	0.00
0.0	13.3	844.46	865.80	21.92	21.92	15.58	15.58	8.95	8.95

=====

* Only 3 condition(s) shown in full

* Some wind loads may have been derived from full-scale wind tunnel testing

=====

LOADING CONDITION A

89 mph wind with no ice. wind Azimuth: 0°

MAST LOADING

=====

LOAD TYPE	ELEV ft	APPLY.. RADIUS ft	LOAD..AT AZI	LOAD AZI	.....FORCES.....		.....MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	310.0	0.00	0.0	0.0	0.29	0.15	0.00	0.00
C	300.0	0.00	0.0	0.0	10.39	7.20	0.00	0.00
C	288.0	0.00	0.0	0.0	7.71	4.80	0.00	0.00
C	276.0	0.00	0.0	0.0	7.64	4.80	0.00	0.00
C	264.0	0.00	0.0	0.0	7.57	4.80	0.00	0.00
D	305.0	0.00	180.0	0.0	0.07	0.04	0.00	0.00
D	300.0	0.00	180.0	0.0	0.07	0.04	0.00	0.00
D	300.0	0.00	42.0	0.0	0.15	0.09	0.06	0.10
D	290.0	0.00	42.0	0.0	0.14	0.08	0.06	0.10
D	290.0	0.00	63.7	0.0	0.16	0.10	0.06	0.12
D	285.0	0.00	63.7	0.0	0.16	0.10	0.06	0.12
D	285.0	0.00	76.5	0.0	0.17	0.11	0.06	0.12
D	280.0	0.00	76.5	0.0	0.17	0.11	0.06	0.12
D	280.0	0.00	80.8	0.0	0.19	0.16	0.06	0.11
D	275.0	0.00	80.8	0.0	0.19	0.16	0.06	0.11
D	275.0	0.00	99.1	0.0	0.21	0.17	0.04	0.07
D	265.0	0.00	101.2	0.0	0.21	0.18	0.04	0.07
D	265.0	0.00	58.7	0.0	0.22	0.20	0.01	0.05
D	260.0	0.00	58.7	0.0	0.22	0.20	0.01	0.05
D	260.0	0.00	330.0	0.0	0.24	0.22	0.01	0.05
D	240.0	0.00	329.1	0.0	0.25	0.23	0.01	0.05
D	240.0	0.00	329.9	0.0	0.24	0.25	0.01	0.05
D	220.0	0.00	329.2	0.0	0.24	0.26	0.01	0.05
D	220.0	0.00	329.9	0.0	0.26	0.26	0.01	0.05
D	200.0	0.00	329.4	0.0	0.27	0.27	0.01	0.05
D	200.0	0.00	330.0	0.0	0.27	0.32	0.01	0.05
D	180.0	0.00	329.6	0.0	0.28	0.33	0.01	0.05
D	180.0	0.00	329.9	0.0	0.25	0.33	0.01	0.05
D	150.0	0.00	329.9	0.0	0.26	0.34	0.01	0.05
D	150.0	0.00	329.8	0.0	0.27	0.35	0.01	0.05
D	140.0	0.00	329.8	0.0	0.27	0.35	0.01	0.05
D	140.0	0.00	330.0	0.0	0.29	0.41	0.01	0.05
D	100.0	0.00	329.9	0.0	0.29	0.42	0.01	0.04
D	100.0	0.00	330.0	0.0	0.29	0.46	0.01	0.04
D	80.0	0.00	329.9	0.0	0.30	0.47	0.01	0.04
D	80.0	0.00	330.0	0.0	0.29	0.50	0.01	0.04
D	60.0	0.00	329.9	0.0	0.29	0.51	0.01	0.04
D	60.0	0.00	330.0	0.0	0.26	0.48	0.01	0.04
D	53.3	0.00	330.0	0.0	0.26	0.48	0.01	0.04
D	53.3	0.00	329.9	0.0	0.30	0.56	0.01	0.04
D	40.0	0.00	329.9	0.0	0.30	0.56	0.01	0.04
D	40.0	0.00	330.0	0.0	0.24	0.48	0.01	0.04
D	33.3	0.00	330.0	0.0	0.24	0.48	0.01	0.04
D	33.3	0.00	330.0	0.0	0.28	0.59	0.01	0.04
D	20.0	0.00	330.0	0.0	0.28	0.59	0.01	0.04
D	20.0	0.00	330.0	0.0	0.21	0.49	0.01	0.03
D	13.3	0.00	330.0	0.0	0.21	0.49	0.01	0.03
D	13.3	0.00	330.0	0.0	0.25	0.59	0.01	0.03
D	0.0	0.00	330.0	0.0	0.25	0.59	0.01	0.03

SUPPRESS PRINTING
=====

LOADS INPUT	...FOR THIS LOADING...			.....MAXIMUMS.....			
	DISPL	MEMBER FORCES	FOUNDN LOADS	ALL	DISPL	MEMBER FORCES	FOUNDN LOADS
no	yes	yes	yes	no	no	no	no

LOADING CONDITION M

89 mph wind with no ice. wind Azimuth: 0°

MAST LOADING
=====

LOAD TYPE	ELEV ft	APPLY.. RADIUS ft	LOAD..AT AZI	LOAD AZI	.....FORCES.....		.....MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	310.0	0.00	0.0	0.0	0.29	0.12	0.00	0.00
C	300.0	0.00	0.0	0.0	10.39	5.40	0.00	0.00
C	288.0	0.00	0.0	0.0	7.71	3.60	0.00	0.00
C	276.0	0.00	0.0	0.0	7.64	3.60	0.00	0.00
C	264.0	0.00	0.0	0.0	7.57	3.60	0.00	0.00
D	305.0	0.00	180.0	0.0	0.07	0.03	0.00	0.00
D	300.0	0.00	180.0	0.0	0.07	0.03	0.00	0.00
D	300.0	0.00	42.0	0.0	0.15	0.07	0.04	0.10
D	290.0	0.00	42.0	0.0	0.14	0.06	0.04	0.10
D	290.0	0.00	63.7	0.0	0.16	0.07	0.04	0.12
D	285.0	0.00	63.7	0.0	0.16	0.07	0.04	0.12
D	285.0	0.00	76.5	0.0	0.17	0.08	0.05	0.12
D	280.0	0.00	76.5	0.0	0.17	0.08	0.05	0.12
D	280.0	0.00	80.8	0.0	0.19	0.12	0.04	0.11
D	275.0	0.00	80.8	0.0	0.19	0.12	0.04	0.11
D	275.0	0.00	99.1	0.0	0.21	0.13	0.03	0.07
D	265.0	0.00	101.2	0.0	0.21	0.13	0.03	0.07
D	265.0	0.00	58.7	0.0	0.22	0.15	0.00	0.05
D	260.0	0.00	58.7	0.0	0.22	0.15	0.00	0.05
D	260.0	0.00	330.0	0.0	0.24	0.17	0.01	0.05
D	240.0	0.00	329.1	0.0	0.25	0.17	0.01	0.05
D	240.0	0.00	329.9	0.0	0.24	0.19	0.01	0.05
D	220.0	0.00	329.2	0.0	0.24	0.19	0.01	0.05
D	220.0	0.00	329.9	0.0	0.26	0.20	0.01	0.05
D	200.0	0.00	329.4	0.0	0.27	0.20	0.01	0.05
D	200.0	0.00	330.0	0.0	0.27	0.24	0.01	0.05
D	180.0	0.00	329.6	0.0	0.28	0.25	0.01	0.05
D	180.0	0.00	329.9	0.0	0.25	0.25	0.01	0.05
D	150.0	0.00	329.9	0.0	0.26	0.26	0.01	0.05
D	150.0	0.00	329.8	0.0	0.27	0.26	0.01	0.05
D	140.0	0.00	329.8	0.0	0.27	0.26	0.01	0.05
D	140.0	0.00	330.0	0.0	0.29	0.31	0.01	0.05
D	100.0	0.00	329.9	0.0	0.29	0.32	0.01	0.04
D	100.0	0.00	330.0	0.0	0.29	0.35	0.01	0.04
D	80.0	0.00	329.9	0.0	0.30	0.35	0.01	0.04
D	80.0	0.00	330.0	0.0	0.29	0.38	0.01	0.04
D	60.0	0.00	329.9	0.0	0.29	0.38	0.01	0.04
D	60.0	0.00	330.0	0.0	0.26	0.36	0.01	0.04
D	53.3	0.00	330.0	0.0	0.26	0.36	0.01	0.04
D	53.3	0.00	329.9	0.0	0.30	0.42	0.01	0.04
D	40.0	0.00	329.9	0.0	0.30	0.42	0.01	0.04
D	40.0	0.00	330.0	0.0	0.24	0.36	0.01	0.04
D	33.3	0.00	330.0	0.0	0.24	0.36	0.01	0.04
D	33.3	0.00	330.0	0.0	0.28	0.44	0.01	0.04
D	20.0	0.00	330.0	0.0	0.28	0.44	0.01	0.04
D	20.0	0.00	330.0	0.0	0.21	0.37	0.01	0.03
D	13.3	0.00	330.0	0.0	0.21	0.37	0.01	0.03
D	13.3	0.00	330.0	0.0	0.25	0.44	0.01	0.03
D	0.0	0.00	330.0	0.0	0.25	0.44	0.01	0.03

SUPPRESS PRINTING
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LOADS INPUT	...FOR THIS LOADING...		MAXIMUMS.....			
	DISPL	MEMBER FORCES	FOUNDN LOADS	ALL	DISPL	MEMBER FORCES	FOUNDN LOADS
no	yes	yes	yes	no	no	no	no

LOADING CONDITION Y =====

30 mph wind with 0.75 ice. wind Azimuth: 0°

MAST LOADING
=====

LOAD TYPE	ELEV ft	APPLY. RADIUS ft	LOAD. AT AZI	LOAD AZI	.....FORCES.....		.....MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	310.0	0.00	0.0	0.0	0.05	0.30	0.00	0.00
C	300.0	0.00	0.0	0.0	1.29	18.42	0.00	0.00
C	288.0	0.00	0.0	0.0	1.57	12.25	0.00	0.00
C	276.0	0.00	0.0	0.0	1.55	12.22	0.00	0.00
C	264.0	0.00	0.0	0.0	1.53	12.19	0.00	0.00
D	305.0	0.00	180.0	0.0	0.01	0.18	0.00	0.00
D	300.0	0.00	180.0	0.0	0.01	0.18	0.00	0.00
D	300.0	0.00	42.0	0.0	0.02	0.32	0.22	0.01
D	295.0	0.00	42.0	0.0	0.02	0.32	0.22	0.01
D	295.0	0.00	42.0	0.0	0.01	0.28	0.22	0.01
D	290.0	0.00	42.0	0.0	0.01	0.28	0.22	0.01
D	290.0	0.00	68.8	0.0	0.02	0.34	0.21	0.01
D	285.0	0.00	68.8	0.0	0.02	0.34	0.21	0.01
D	285.0	0.00	86.2	0.0	0.02	0.38	0.22	0.01
D	280.0	0.00	86.2	0.0	0.02	0.38	0.22	0.01
D	280.0	0.00	88.3	0.0	0.02	0.48	0.20	0.01
D	275.0	0.00	88.3	0.0	0.02	0.48	0.20	0.01
D	275.0	0.00	97.5	0.0	0.02	0.52	0.12	0.00
D	265.0	0.00	99.6	0.0	0.02	0.53	0.12	0.00
D	265.0	0.00	44.4	0.0	0.02	0.59	0.02	0.00
D	260.0	0.00	44.4	0.0	0.02	0.59	0.02	0.00
D	260.0	0.00	330.0	0.0	0.02	0.64	0.02	0.00
D	240.0	0.00	329.1	0.0	0.02	0.67	0.02	0.00
D	240.0	0.00	329.9	0.0	0.02	0.67	0.02	0.00
D	220.0	0.00	329.3	0.0	0.02	0.69	0.02	0.00
D	220.0	0.00	329.9	0.0	0.03	0.73	0.02	0.00
D	200.0	0.00	329.4	0.0	0.03	0.75	0.02	0.00
D	200.0	0.00	330.0	0.0	0.03	0.81	0.02	0.00
D	180.0	0.00	329.6	0.0	0.03	0.83	0.02	0.00
D	180.0	0.00	329.9	0.0	0.03	0.79	0.02	0.00
D	150.0	0.00	329.9	0.0	0.03	0.82	0.02	0.00
D	150.0	0.00	329.8	0.0	0.03	0.84	0.02	0.00
D	140.0	0.00	329.8	0.0	0.03	0.84	0.02	0.00
D	140.0	0.00	330.0	0.0	0.03	0.92	0.02	0.00
D	100.0	0.00	329.9	0.0	0.03	0.95	0.02	0.00
D	100.0	0.00	329.9	0.0	0.03	1.00	0.02	0.00
D	70.0	0.00	330.0	0.0	0.03	1.05	0.02	0.00
D	70.0	0.00	329.9	0.0	0.03	1.06	0.02	0.00
D	60.0	0.00	329.9	0.0	0.03	1.06	0.02	0.00
D	60.0	0.00	330.0	0.0	0.02	0.97	0.02	0.00
D	53.3	0.00	330.0	0.0	0.02	0.97	0.02	0.00
D	53.3	0.00	329.9	0.0	0.03	1.22	0.02	0.00
D	40.0	0.00	329.9	0.0	0.03	1.22	0.02	0.00
D	40.0	0.00	330.0	0.0	0.02	0.97	0.02	0.00
D	33.3	0.00	330.0	0.0	0.02	0.97	0.02	0.00
D	33.3	0.00	330.0	0.0	0.03	1.24	0.02	0.00
D	20.0	0.00	330.0	0.0	0.03	1.24	0.02	0.00
D	20.0	0.00	330.0	0.0	0.02	0.99	0.02	0.00
D	13.3	0.00	330.0	0.0	0.02	0.99	0.02	0.00
D	13.3	0.00	330.0	0.0	0.02	1.32	0.03	0.00
D	0.0	0.00	330.0	0.0	0.02	1.32	0.03	0.00

SUPPRESS PRINTING
=====

LOADS INPUT	...FOR THIS LOADING..			.....MAXIMUMS.....			
	DISPL	MEMBER FORCES	FOUNDN LOADS	ALL	DISPL	MEMBER FORCES	FOUNDN LOADS
no	yes	yes	yes	no	no	no	no

MAXIMUM MAST DISPLACEMENTS:
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ELEV ft	-----DEFLECTIONS (ft)-----			--TILTS (DEG)--		TWIST DEG
	NORTH	EAST	DOWN	NORTH	EAST	
305.0	4.692 G	-4.514 D	0.066 G	2.181 G	-2.099 D	0.135 L
300.0	4.502 G	-4.330 D	0.063 G	2.180 G	-2.099 D	0.135 L
295.0	4.309 G	-4.145 D	0.059 G	2.169 G	-2.088 D	0.134 L
290.0	4.121 G	-3.963 D	0.055 G	2.137 G	-2.056 D	-0.131 R

285.0	3.931 G	-3.781 D	0.052 G	2.079 G	-2.001 D	-0.126 R
280.0	3.750 G	-3.607 D	0.048 G	1.986 G	-1.911 D	-0.120 R
275.0	3.576 G	-3.439 D	0.045 G	1.928 G	-1.856 D	-0.115 R
270.0	3.408 G	-3.278 D	0.043 G	1.862 G	-1.792 D	-0.110 R
265.0	3.246 G	-3.122 D	0.040 G	1.788 G	-1.721 D	-0.105 R
260.0	3.090 G	-2.971 D	0.037 G	1.708 G	-1.644 D	-0.101 R
255.0	2.940 G	-2.827 D	0.036 e	1.647 G	-1.585 D	-0.096 R
250.0	2.795 G	-2.688 D	0.035 e	1.581 G	-1.522 D	-0.092 R
245.0	2.657 G	-2.555 D	0.034 e	1.514 G	-1.458 D	-0.088 R
240.0	2.524 G	-2.427 D	0.033 e	1.444 G	-1.390 D	-0.084 R
233.3	2.358 G	-2.266 D	0.033 e	1.371 G	-1.320 D	-0.080 R
226.7	2.199 G	-2.114 D	0.032 e	1.297 G	-1.249 D	-0.077 R
220.0	2.049 G	-1.970 D	0.031 e	1.223 G	-1.177 D	-0.073 R
213.3	1.907 G	-1.833 D	0.030 e	1.152 G	-1.109 D	-0.070 R
206.7	1.773 G	-1.703 D	0.029 e	1.081 G	-1.040 D	-0.066 R
200.0	1.647 G	-1.582 D	0.028 e	1.010 G	-0.972 D	-0.062 R
193.3	1.527 G	-1.467 D	0.027 e	0.965 G	-0.929 D	-0.058 R
186.7	1.414 G	-1.359 D	0.026 e	0.921 G	-0.886 D	-0.054 R
180.0	1.305 G	-1.253 D	0.026 e	0.876 G	-0.842 D	-0.050 R
170.0	1.154 G	-1.108 D	0.024 e	0.808 G	-0.777 D	-0.047 R
160.0	1.014 G	-0.974 D	0.023 e	0.741 G	-0.712 D	-0.043 R
150.0	0.886 G	-0.851 D	0.022 e	0.674 G	-0.648 D	-0.040 R
140.0	0.770 G	-0.739 D	0.020 e	0.608 G	-0.584 D	-0.037 R
130.0	0.664 G	-0.637 D	0.019 e	0.556 G	-0.534 D	-0.034 R
120.0	0.567 G	-0.544 D	0.018 e	0.505 G	-0.485 D	-0.031 R
110.0	0.478 G	-0.458 D	0.017 e	0.454 G	-0.436 D	-0.028 R
100.0	0.398 G	-0.381 D	0.015 j	0.404 G	-0.388 D	-0.025 R
90.0	0.325 G	-0.311 D	0.014 j	0.363 G	-0.349 D	-0.022 R
80.0	0.258 G	-0.248 D	0.013 j	0.322 G	-0.309 D	-0.018 R
70.0	0.196 G	-0.187 D	0.011 j	0.280 G	-0.269 D	0.016 X
60.0	0.138 G	-0.133 D	0.010 j	0.238 G	-0.229 D	0.013 X
53.3	0.115 G	-0.110 D	0.009 j	0.213 G	-0.204 D	0.012 X
40.0	0.067 G	-0.064 D	0.007 j	0.158 G	-0.152 D	0.009 X
33.3	0.051 G	-0.049 D	0.006 j	0.133 G	-0.127 D	0.007 X
20.0	0.021 S	-0.020 P	0.004 j	0.078 G	-0.075 D	-0.005 F
13.3	0.011 S	-0.010 P	0.002 j	0.053 G	-0.050 D	0.003 X
0.0	0.000 A	0.000 A	0.000 A	0.000 A	0.000 A	0.000 A

MAXIMUM TENSION IN MAST MEMBERS (kip)

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ELEV ft	LEGS	DIAG	HORIZ	BRACE
305.0	-----	-----	0.09 A	0.00 A
	0.15 U	0.46 M		
300.0	-----	-----	1.68 K	0.00 A
	5.43 M	5.29 T		
295.0	-----	-----	0.28 A	0.00 A
	18.86 M	5.83 B		
290.0	-----	-----	0.13 S	0.00 A
	34.64 M	8.21 N		
285.0	-----	-----	0.30 A	0.00 A
	57.01 M	10.09 B		
280.0	-----	-----	0.55 M	0.00 A
	76.89 M	8.24 M		
275.0	-----	-----	0.20 A	0.00 A
	97.86 M	9.78 H		
270.0	-----	-----	0.15 A	0.00 A
	118.04 M	8.95 T		
265.0	-----	-----	0.13 A	0.00 A
	137.87 M	10.92 T		
260.0	-----	-----	0.16 A	0.00 A
	160.47 M	10.90 T		
255.0	-----	-----	0.10 A	0.00 A
	180.63 M	10.44 T		
250.0	-----	-----	0.18 A	0.00 A
	199.90 M	10.04 T		
245.0	-----	-----	0.09 A	0.00 A
	217.16 M	9.78 T		
240.0	-----	-----	0.16 A	0.00 A
	236.21 M	10.29 T		
233.3	-----	-----	0.12 A	0.00 A
	256.06 M	9.98 T		
226.7	-----	-----	0.14 A	0.00 A
	274.88 M	9.74 T		
220.0	-----	-----	0.11 A	0.00 A
	292.26 M	9.64 T		
213.3	-----	-----	0.08 A	0.00 A
	309.02 M	9.58 T		
206.7	-----	-----	0.10 A	0.00 A
	324.81 M	9.59 T		
200.0	-----	-----	0.07 A	0.00 A
	340.19 M	9.63 T		
193.3	-----	-----	0.12 A	0.00 A
	354.77 M	9.71 N		
186.7	-----	-----	0.06 A	0.00 A
	369.18 M	9.82 T		
180.0	-----	-----	0.11 A	0.00 A

	386.16 M	10.85 T		
170.0	-----	-----	0.12 A	0.00 A
	406.35 M	10.94 N		
160.0	-----	-----	0.08 A	0.00 A
	425.55 M	11.08 T		
150.0	-----	-----	0.11 A	0.00 A
	444.44 M	11.29 N		
140.0	-----	-----	0.07 A	0.00 A
	462.66 M	11.55 T		
130.0	-----	-----	0.07 A	0.00 A
	480.68 M	11.89 V		
120.0	-----	-----	0.05 A	0.00 A
	498.35 M	12.24 P		
110.0	-----	-----	0.07 A	0.00 A
	515.94 M	12.61 V		
100.0	-----	-----	0.05 A	0.00 A
	533.23 M	12.99 P		
90.0	-----	-----	0.05 A	0.00 A
	550.43 M	13.40 V		
80.0	-----	-----	0.05 O	0.00 A
	567.44 M	13.81 P		
70.0	-----	-----	0.07 S	0.00 A
	584.31 M	14.21 V		
60.0	-----	-----	0.30 A	0.00 A
	604.17 M	14.99 P		
53.3	-----	-----	1.07 U	0.00 S
	602.83 M	19.55 P		
40.0	-----	-----	0.26 A	0.00 A
	637.15 M	15.73 V		
33.3	-----	-----	1.00 U	0.00 M
	635.77 M	20.04 V		
20.0	-----	-----	0.11 A	0.00 M
	669.59 M	16.38 P		
13.3	-----	-----	0.88 U	0.00 A
	668.20 M	20.37 P		
0.0	-----	-----	0.00 A	0.00 A

MAXIMUM COMPRESSION IN MAST MEMBERS (kip)
=====

ELEV ft	LEGS	DIAG	HORIZ	BRACE
305.0	-----	-----	-0.08 S	0.00 A
	-0.29 C	-0.50 G		
300.0	-----	-----	-1.47 Q	0.00 A
	-9.67 G	-5.56 B		
295.0	-----	-----	-0.20 S	0.00 A
	-24.11 G	-5.67 N		
290.0	-----	-----	-0.15 A	0.00 A
	-41.64 G	-8.34 B		
285.0	-----	-----	-0.23 S	0.00 A
	-65.90 G	-10.07 B		
280.0	-----	-----	-0.59 G	0.00 A
	-86.46 G	-8.70 G		
275.0	-----	-----	-0.15 S	0.00 A
	-111.10 G	-9.63 T		
270.0	-----	-----	-0.13 S	0.00 A
	-131.63 G	-9.11 B		
265.0	-----	-----	-0.10 S	0.00 A
	-154.69 G	-10.92 T		
260.0	-----	-----	-0.14 S	0.00 A
	-178.63 G	-10.96 B		
255.0	-----	-----	-0.08 S	0.00 A
	-199.78 G	-10.44 T		
250.0	-----	-----	-0.16 S	0.00 A
	-219.91 G	-10.10 B		
245.0	-----	-----	-0.08 S	0.00 A
	-238.18 G	-9.78 T		
240.0	-----	-----	-0.14 S	0.00 A
	-258.32 G	-10.34 B		
233.3	-----	-----	-0.10 S	0.00 A
	-279.65 G	-9.99 T		
226.7	-----	-----	-0.12 S	0.00 A
	-299.86 G	-9.79 H		
220.0	-----	-----	-0.09 S	0.00 A
	-318.75 G	-9.64 H		
213.3	-----	-----	-0.07 S	0.00 A
	-336.97 G	-9.62 H		
206.7	-----	-----	-0.09 S	0.00 A
	-354.30 G	-9.61 H		
200.0	-----	-----	-0.06 S	0.00 A
	-371.32 G	-9.66 H		
193.3	-----	-----	-0.11 S	0.00 A
	-387.69 G	-9.74 H		

186.7	-----		-0.05 S	0.00 A
	-403.93 G	-9.84 B		
180.0	-----		-0.10 S	0.00 A
	-423.18 G	-10.91 H		
170.0	-----		-0.11 S	0.00 A
	-446.23 G	-10.98 H		
160.0	-----		-0.07 S	0.00 A
	-468.28 G	-11.13 H		
150.0	-----		-0.09 S	0.00 A
	-490.12 G	-11.33 H		
140.0	-----		-0.06 S	0.00 A
	-511.48 G	-11.61 H		
130.0	-----		-0.06 S	0.00 A
	-532.88 G	-11.94 D		
120.0	-----		-0.05 S	0.00 A
	-553.99 G	-12.29 J		
110.0	-----		-0.06 S	0.00 A
	-575.08 G	-12.66 D		
100.0	-----		-0.04 S	0.00 A
	-596.05 G	-13.04 J		
90.0	-----		-0.04 S	0.00 A
	-617.10 G	-13.45 D		
80.0	-----		-0.05 I	0.00 A
	-638.12 G	-13.85 J		
70.0	-----		-0.08 A	0.00 A
	-659.12 G	-14.26 D		
60.0	-----		-0.27 S	0.00 A
	-682.74 G	-15.09 J		
53.3	-----		-1.28 C	0.00 O
	-684.52 G	-19.61 J		
40.0	-----		-0.22 S	0.00 A
	-724.42 G	-15.85 J		
33.3	-----		-1.21 C	0.00 J
	-726.27 G	-20.11 D		
20.0	-----		-0.09 S	0.00 J
	-765.93 G	-16.46 J		
13.3	-----		-1.08 C	0.00 T
	-767.78 G	-20.42 J		
0.0	-----		0.00 A	0.00 A

MAXIMUM INDIVIDUAL FOUNDATION LOADS: (kip)

-----	LOAD	COMPONENTS	-----	TOTAL
NORTH	EAST	DOWN	UPLIFT	SHEAR
71.86 G	61.84 K	792.65 G	-689.16 M	71.86 G

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

-----HORIZONTAL-----			DOWN	-----OVERTURNING-----			TORSION
NORTH	EAST	TOTAL		NORTH	EAST	TOTAL	
		@ 0.0				@ 0.0	
117.4 G	-111.8 P	117.4 G	312.9 J	21403.4 G	-20512.9 D	21403.4 G	49.2 X

Latticed Tower Analysis (Unguyed)
Processed under license at:

(c)2013 Guymast Inc. 416-736-7453

Sabre Towers and Poles

on: 24 aug 2017 at: 16:25:36

***** Service Load Condition *****

* only 1 condition(s) shown in full
* Some wind loads may have been derived from full-scale wind tunnel testing

LOADING CONDITION A

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

MAST LOADING
=====

LOAD TYPE	ELEV ft	APPLY. RADIUS ft	LOAD. AT AZI	LOAD AZI	.....FORCES.....		.....MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	310.0	0.00	0.0	0.0	0.08	0.13	0.00	0.00
C	300.0	0.00	0.0	0.0	2.95	6.00	0.00	0.00
C	288.0	0.00	0.0	0.0	2.19	4.00	0.00	0.00
C	276.0	0.00	0.0	0.0	2.17	4.00	0.00	0.00
C	264.0	0.00	0.0	0.0	2.15	4.00	0.00	0.00
D	305.0	0.00	180.0	0.0	0.02	0.03	0.00	0.00
D	300.0	0.00	180.0	0.0	0.02	0.03	0.00	0.00
D	300.0	0.00	42.0	0.0	0.04	0.08	0.05	0.03
D	290.0	0.00	42.0	0.0	0.04	0.07	0.05	0.03
D	290.0	0.00	63.7	0.0	0.04	0.08	0.05	0.03
D	280.0	0.00	76.5	0.0	0.05	0.09	0.05	0.04
D	280.0	0.00	80.8	0.0	0.06	0.13	0.05	0.03
D	275.0	0.00	80.8	0.0	0.06	0.13	0.05	0.03
D	275.0	0.00	99.1	0.0	0.06	0.14	0.04	0.02
D	265.0	0.00	101.2	0.0	0.06	0.15	0.03	0.02
D	265.0	0.00	58.7	0.0	0.06	0.16	0.00	0.02
D	260.0	0.00	58.7	0.0	0.06	0.16	0.00	0.02
D	260.0	0.00	330.0	0.0	0.07	0.18	0.01	0.01
D	240.0	0.00	329.1	0.0	0.07	0.19	0.01	0.01
D	240.0	0.00	329.9	0.0	0.07	0.21	0.01	0.01
D	220.0	0.00	329.2	0.0	0.07	0.22	0.01	0.01
D	220.0	0.00	329.9	0.0	0.08	0.22	0.01	0.01
D	200.0	0.00	329.4	0.0	0.08	0.22	0.01	0.01
D	200.0	0.00	330.0	0.0	0.08	0.27	0.01	0.01
D	180.0	0.00	329.6	0.0	0.08	0.27	0.01	0.01
D	180.0	0.00	329.9	0.0	0.07	0.28	0.01	0.01
D	150.0	0.00	329.9	0.0	0.08	0.29	0.01	0.01
D	150.0	0.00	329.8	0.0	0.08	0.29	0.01	0.01
D	140.0	0.00	329.8	0.0	0.08	0.29	0.01	0.01
D	140.0	0.00	330.0	0.0	0.08	0.34	0.01	0.01
D	100.0	0.00	329.9	0.0	0.08	0.35	0.01	0.01
D	100.0	0.00	330.0	0.0	0.08	0.39	0.01	0.01
D	80.0	0.00	329.9	0.0	0.08	0.39	0.01	0.01
D	80.0	0.00	330.0	0.0	0.08	0.42	0.01	0.01
D	60.0	0.00	329.9	0.0	0.08	0.42	0.01	0.01
D	60.0	0.00	330.0	0.0	0.07	0.40	0.01	0.01
D	53.3	0.00	330.0	0.0	0.07	0.40	0.01	0.01
D	53.3	0.00	329.9	0.0	0.09	0.47	0.01	0.01
D	40.0	0.00	329.9	0.0	0.09	0.47	0.01	0.01
D	40.0	0.00	330.0	0.0	0.07	0.40	0.01	0.01
D	33.3	0.00	330.0	0.0	0.07	0.40	0.01	0.01
D	33.3	0.00	330.0	0.0	0.08	0.49	0.01	0.01
D	20.0	0.00	330.0	0.0	0.08	0.49	0.01	0.01
D	20.0	0.00	330.0	0.0	0.06	0.41	0.01	0.01
D	13.3	0.00	330.0	0.0	0.06	0.41	0.01	0.01
D	13.3	0.00	330.0	0.0	0.07	0.49	0.01	0.01
D	0.0	0.00	330.0	0.0	0.07	0.49	0.01	0.01

SUPPRESS PRINTING
=====

LOADS INPUT	...FOR THIS LOADING..			.....MAXIMUMS.....			
	DISPL	MEMBER FORCES	FOUNDN LOADS	ALL	DISPL	MEMBER FORCES	FOUNDN LOADS
no	yes	yes	yes	no	no	no	no

=====

MAXIMUM MAST DISPLACEMENTS:

=====

ELEV ft	-----DEFLECTIONS (ft)-----			--TILTS (DEG)---		TWIST DEG
	NORTH	EAST	DOWN	NORTH	EAST	
305.0	1.343 G	-1.292 D	0.018 G	0.623 G	-0.600 D	-0.038 F
300.0	1.288 G	-1.240 D	0.017 G	0.623 G	-0.600 D	-0.038 F
295.0	1.233 G	-1.187 D	0.017 G	0.620 G	-0.597 D	-0.038 F
290.0	1.179 G	-1.135 D	0.016 G	0.611 G	-0.588 D	-0.037 F
285.0	1.125 G	-1.082 D	0.016 G	0.594 G	-0.572 D	-0.036 F
280.0	1.073 G	-1.033 D	0.015 G	0.568 G	-0.546 D	-0.034 F
275.0	1.024 G	-0.985 D	0.015 G	0.551 G	-0.530 D	-0.033 F
270.0	0.976 G	-0.939 D	0.014 G	0.532 G	-0.512 D	-0.031 F
265.0	0.929 G	-0.894 D	0.014 G	0.511 G	-0.492 D	-0.030 F
260.0	0.885 G	-0.851 D	0.014 G	0.488 G	-0.470 D	-0.029 F

255.0	0.842 G	-0.810 D	0.013 G	0.471 G	-0.453 D	-0.027 F
250.0	0.800 G	-0.770 D	0.013 G	0.452 G	-0.435 D	-0.026 F
245.0	0.761 G	-0.732 D	0.012 G	0.433 G	-0.417 D	-0.025 F
240.0	0.723 G	-0.695 D	0.012 G	0.413 G	-0.398 D	-0.024 F
233.3	0.675 G	-0.649 D	0.012 G	0.392 G	-0.378 D	-0.023 F
226.7	0.630 G	-0.606 D	0.011 G	0.371 G	-0.357 D	-0.022 F
220.0	0.587 G	-0.565 D	0.011 G	0.350 G	-0.337 D	-0.021 F
213.3	0.546 G	-0.525 D	0.010 G	0.330 G	-0.317 D	-0.020 F
206.7	0.508 G	-0.488 D	0.010 G	0.309 G	-0.298 D	-0.019 F
200.0	0.472 G	-0.454 D	0.010 G	0.289 G	-0.278 D	-0.018 F
193.3	0.438 G	-0.421 D	0.009 G	0.276 G	-0.266 D	-0.017 F
186.7	0.405 G	-0.390 D	0.009 G	0.264 G	-0.254 D	-0.015 F
180.0	0.374 G	-0.359 D	0.009 G	0.251 G	-0.241 D	-0.014 F
170.0	0.331 G	-0.318 D	0.008 G	0.231 G	-0.223 D	-0.013 F
160.0	0.291 G	-0.279 D	0.008 G	0.212 G	-0.204 D	-0.012 F
150.0	0.254 G	-0.244 D	0.007 G	0.193 G	-0.186 D	-0.011 F
140.0	0.221 G	-0.212 D	0.007 G	0.174 G	-0.167 D	-0.010 F
130.0	0.190 G	-0.183 D	0.007 G	0.159 G	-0.153 D	-0.010 F
120.0	0.163 G	-0.156 D	0.006 G	0.145 G	-0.139 D	-0.009 F
110.0	0.137 G	-0.131 D	0.006 G	0.130 G	-0.125 D	-0.008 F
100.0	0.114 G	-0.109 D	0.005 G	0.116 G	-0.111 D	-0.007 F
90.0	0.093 G	-0.089 D	0.005 G	0.104 G	-0.100 D	-0.006 F
80.0	0.074 G	-0.071 D	0.004 G	0.092 G	-0.089 D	-0.005 F
70.0	0.056 G	-0.054 D	0.004 G	0.080 G	-0.077 D	-0.004 F
60.0	0.040 G	-0.038 D	0.003 G	0.068 G	-0.066 D	-0.004 F
53.3	0.033 G	-0.031 D	0.003 G	0.061 G	-0.059 D	-0.003 F
40.0	0.019 G	-0.018 D	0.002 K	0.045 G	-0.043 D	-0.003 F
33.3	0.015 G	-0.014 D	0.002 J	0.038 G	-0.036 D	-0.002 F
20.0	0.006 G	-0.006 D	0.001 J	0.022 G	-0.022 D	-0.001 F
13.3	0.003 G	-0.003 D	0.001 J	0.015 G	-0.014 D	-0.001 F
0.0	0.000 A	0.000 A	0.000 A	0.000 A	0.000 A	0.000 A

MAXIMUM TENSION IN MAST MEMBERS (kip)

=====

ELEV ft	LEGS	DIAG	HORIZ	BRACE
305.0	-----	-----	0.03 A	0.00 A
	0.00 I	0.13 A		
300.0	-----	-----	0.54 K	0.00 A
	0.09 A	1.42 H		
295.0	-----	-----	0.10 A	0.00 A
	3.64 A	1.72 H		
290.0	-----	-----	0.03 G	0.00 A
	7.62 A	2.30 H		
285.0	-----	-----	0.11 A	0.00 A
	13.44 A	2.89 H		
280.0	-----	-----	0.14 A	0.00 A
	18.97 A	2.22 A		
275.0	-----	-----	0.08 A	0.00 A
	23.73 A	2.83 H		
270.0	-----	-----	0.05 A	0.00 A
	29.43 A	2.49 B		
265.0	-----	-----	0.05 A	0.00 A
	34.02 A	3.10 H		
260.0	-----	-----	0.05 A	0.00 A
	40.04 A	3.08 H		
255.0	-----	-----	0.03 A	0.00 A
	45.52 A	2.97 B		
250.0	-----	-----	0.06 A	0.00 A
	50.80 A	2.84 B		
245.0	-----	-----	0.03 A	0.00 A
	55.46 A	2.79 B		
240.0	-----	-----	0.05 A	0.00 A
	60.63 A	2.91 B		
233.3	-----	-----	0.04 A	0.00 A
	65.93 A	2.85 H		
226.7	-----	-----	0.04 A	0.00 A
	70.97 A	2.77 H		
220.0	-----	-----	0.04 A	0.00 A
	75.58 A	2.76 H		
213.3	-----	-----	0.03 A	0.00 A
	80.03 A	2.73 H		
206.7	-----	-----	0.03 A	0.00 A
	84.19 A	2.75 H		
200.0	-----	-----	0.02 A	0.00 A
	88.21 A	2.76 H		
193.3	-----	-----	0.04 A	0.00 A
	91.95 A	2.78 H		
186.7	-----	-----	0.02 A	0.00 A
	95.65 A	2.82 H		
180.0	-----	-----	0.04 A	0.00 A
	99.98 A	3.11 H		
170.0	-----	-----	0.04 A	0.00 A
	105.11 A	3.15 H		
160.0	-----	-----	0.03 A	0.00 A
	109.95 A	3.19 H		
150.0	-----	-----	0.04 A	0.00 A

140.0	114.70 A	3.25 H	0.02 A	0.00 A
	-----	-----		
	119.19 A	3.33 B		
130.0	-----	-----	0.02 A	0.00 A
	123.56 A	3.42 J		
120.0	-----	-----	0.02 A	0.00 A
	127.81 A	3.52 D		
110.0	-----	-----	0.02 A	0.00 A
	132.03 A	3.62 J		
100.0	-----	-----	0.02 A	0.00 A
	136.11 A	3.73 D		
90.0	-----	-----	0.02 A	0.00 A
	140.10 A	3.84 J		
80.0	-----	-----	0.01 C	0.00 A
	143.99 A	3.96 D		
70.0	-----	-----	0.01 G	0.00 A
	147.80 A	4.07 J		
60.0	-----	-----	0.10 A	0.00 A
	152.68 A	4.27 D		
53.3	-----	-----	0.27 I	0.00 I
	151.20 A	5.59 D		
40.0	-----	-----	0.09 A	0.00 A
	159.95 A	4.47 J		
33.3	-----	-----	0.25 I	0.00 B
	158.41 A	5.72 J		
20.0	-----	-----	0.04 A	0.00 B
	166.95 A	4.67 D		
13.3	-----	-----	0.22 I	0.00 A
	165.40 A	5.83 D		
0.0	-----	-----	0.00 A	0.00 A

MAXIMUM COMPRESSION IN MAST MEMBERS (kip)

=====

ELEV ft	LEGS	DIAG	HORIZ	BRACE
305.0	-----	-----	-0.02 G	0.00 A
	-0.12 C	-0.15 G		
300.0	-----	-----	-0.35 E	0.00 A
	-4.07 G	-1.68 H		
295.0	-----	-----	-0.03 G	0.00 A
	-8.47 G	-1.57 H		
290.0	-----	-----	-0.05 A	0.00 A
	-13.97 G	-2.42 B		
285.0	-----	-----	-0.04 G	0.00 A
	-21.42 G	-2.87 B		
280.0	-----	-----	-0.18 G	0.00 A
	-27.42 G	-2.60 G		
275.0	-----	-----	-0.03 G	0.00 A
	-35.52 G	-2.69 B		
270.0	-----	-----	-0.03 G	0.00 A
	-41.40 G	-2.65 H		
265.0	-----	-----	-0.02 G	0.00 A
	-48.90 G	-3.11 B		
260.0	-----	-----	-0.03 G	0.00 A
	-56.04 G	-3.14 B		
255.0	-----	-----	-0.01 G	0.00 A
	-62.29 G	-2.97 B		
250.0	-----	-----	-0.04 G	0.00 A
	-68.20 G	-2.89 B		
245.0	-----	-----	-0.02 G	0.00 A
	-73.64 G	-2.79 H		
240.0	-----	-----	-0.03 G	0.00 A
	-79.61 G	-2.97 H		
233.3	-----	-----	-0.02 G	0.00 A
	-86.04 G	-2.86 H		
226.7	-----	-----	-0.03 G	0.00 A
	-92.12 G	-2.82 H		
220.0	-----	-----	-0.02 G	0.00 A
	-97.86 G	-2.77 H		
213.3	-----	-----	-0.02 G	0.00 A
	-103.39 G	-2.77 H		
206.7	-----	-----	-0.02 G	0.00 A
	-108.69 G	-2.77 H		
200.0	-----	-----	-0.01 G	0.00 A
	-113.93 G	-2.79 H		
193.3	-----	-----	-0.02 G	0.00 A
	-119.04 G	-2.81 H		
186.7	-----	-----	-0.01 G	0.00 A
	-124.10 G	-2.84 H		
180.0	-----	-----	-0.02 G	0.00 A
	-130.13 G	-3.16 H		
170.0	-----	-----	-0.02 G	0.00 A
	-137.39 G	-3.18 H		

160.0	-----		-0.02 G	0.00 A
	-144.38 G	-3.24 H		
150.0	-----		-0.02 G	0.00 A
	-151.32 G	-3.29 H		
140.0	-----		-0.01 G	0.00 A
	-158.18 G	-3.38 H		
130.0	-----		-0.01 G	0.00 A
	-165.11 G	-3.47 D		
120.0	-----		-0.01 G	0.00 A
	-171.95 G	-3.56 J		
110.0	-----		-0.01 G	0.00 A
	-178.79 G	-3.67 D		
100.0	-----		-0.01 G	0.00 A
	-185.64 G	-3.78 J		
90.0	-----		-0.01 G	0.00 A
	-192.54 G	-3.89 D		
80.0	-----		-0.02 I	0.00 A
	-199.47 G	-4.00 J		
70.0	-----		-0.03 A	0.00 A
	-206.43 G	-4.11 D		
60.0	-----		-0.06 G	0.00 A
	-213.95 G	-4.37 J		
53.3	-----		-0.40 C	0.00 B
	-215.42 G	-5.65 D		
40.0	-----		-0.05 G	0.00 A
	-227.84 G	-4.58 D		
33.3	-----		-0.38 C	0.00 F
	-229.38 G	-5.79 D		
20.0	-----		-0.02 G	0.00 F
	-241.76 G	-4.75 J		
13.3	-----		-0.34 C	0.00 G
	-243.31 G	-5.87 D		
0.0	-----		0.00 A	0.00 A

MAXIMUM INDIVIDUAL FOUNDATION LOADS: (kip)

-----LOAD-----		COMPONENTS-----		TOTAL
NORTH	EAST	DOWN	UPLIFT	SHEAR
21.95 G	18.90 K	251.13 G	-170.63 A	21.95 G

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

-----HORIZONTAL-----			DOWN	-----OVERTURNING-----			TORSION
NORTH	EAST	TOTAL		NORTH	EAST	TOTAL	
		@ 0.0				@ 0.0	
33.7	-32.1	33.7	109.3	6135.7	-5883.4	6135.7	-14.0
G	D	G	J	G	D	G	F

=====

MAT FOUNDATION DESIGN BY SABRE TOWERS & POLES

Tower Description 305' S3TL Series HD1

Customer AT&T

Project Number 169279

Date 08/24/2017

Engineer DJH

Overall Loads:

Factored Moment (ft-kips)	21403.43
Factored Axial (kips)	312.87
Factored Shear (kips)	117.43

Individual Leg Loads:

Factored Uplift (kips)	689.00
Factored Download (kips)	793.00
Factored Shear (kips)	72.00

Anchor Bolt Count (per leg) 6

Tower eccentric from mat (ft)= 2.75

Width of Tower (ft)	33
Ultimate Bearing Pressure	16.00
Bearing Φ s	0.75

Allowable Bearing Pressure (ksf) 8.00
Safety Factor 2.00

Bearing Design Strength (ksf)	12
Water Table Below Grade (ft)	999
Width of Mat (ft)	40.5
Thickness of Mat (ft)	2
Depth to Bottom of Slab (ft)	6.5
Bolt Circle Diameter (in)	18

Max. Factored Net Bearing Pressure (ksf) 5.93

Minimum Mat Width (ft) 39.89

Top of Concrete to Top of Bottom Threads (in)	65.5
Diameter of Pier (ft)	3.5
Ht. of Pier Above Ground (ft)	0.5
Ht. of Pier Below Ground (ft)	4.5
Quantity of Bars in Mat	69
Bar Diameter in Mat (in)	1.27
Area of Bars in Mat (in ²)	87.41
Spacing of Bars in Mat (in)	7.04
Quantity of Bars Pier	16
Bar Diameter in Pier (in)	1.27
Tie Bar Diameter in Pier (in)	0.5
Spacing of Ties (in)	9
Area of Bars in Pier (in ²)	20.27
Spacing of Bars in Pier (in)	6.58
f'c (ksi)	4.5
fy (ksi)	60
Unit Wt. of Soil (kcf)	0.112
Unit Wt. of Concrete (kcf)	0.15
Volume of Concrete (yd ³)	126.85

Minimum Pier Diameter (ft) 2.83
Equivalent Square b (ft) 3.10

Recommended Spacing (in) 6 to 12

Minimum Pier A_s (in²) 6.93
Recommended Spacing (in) 5 to 12

MAT FOUNDATION DESIGN BY SABRE TOWERS & POLES (CONTINUED)

Two-Way Shear:

Average d (in)	19.73
ϕv_c (ksi)	0.228
$\phi v_c = \phi(2 + 4/\beta_c)f'_c{}^{1/2}$	0.342
$\phi v_c = \phi(\alpha_s d/b_o + 2)f'_c{}^{1/2}$	0.355
$\phi v_c = \phi 4f'_c{}^{1/2}$	0.228
Shear perimeter, b_o (in)	186.97
β_c	1

v_u (ksi)

0.224

Stability:

Overturning Design Strength (ft-k)

25711.1

Factored Overturning Moment (ft-k)

22225.4

One-Way Shear:

ϕV_c (kips)

1093.5

V_u (kips)

989.0

Pier Design:

Design Tensile Strength (kips)

1094.5

T_u (kips)

689.0

ϕV_n (kips)

75.6

V_u (kips)

72.0

$\phi V_c = \phi 2(1 + N_u/(500A_g))f'_c{}^{1/2}b_w d$

0.9

V_s (kips)

88.0

*** $V_s \text{ max} = 4 f'_c{}^{1/2} b_w d$ (kips)

378.7

Maximum Spacing (in)

11.15

(Only if Shear Ties are Required)

Actual Hook Development (in)

18.46

Req'd Hook Development l_{dh} (in)

13.25

*** Ref. ACI 11.5.5 & 11.5.6.3

Anchor Bolt Pull-Out:

$\phi P_c = \phi \lambda (2/3)f'_c{}^{1/2}(2.8A_{SLOPE} + 4A_{FLAT})$

208.9

P_u (kips)

689.0

Pier Rebar Development Length (in)

54.64

Required Length of Development (in)

35.75

Flexure in Slab:

ϕM_n (ft-kips)

7205.6

M_u (ft-kips)

7147.6

a (in)

2.82

Steel Ratio

0.00912

β_1

0.825

Maximum Steel Ratio (ρ_t)

0.0197

Minimum Steel Ratio

0.0018

Rebar Development in Pad (in)

111.30

Required Development in Pad (in)

22.48

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 305' S3TL Series HD1

Customer Name AT&T

Job Number 169279

Date 08/24/2017

Engineer DJH

Factored Uplift (kips)	689	Anchor Bolt Count (per leg)	6
Factored Download (kips)	793		
Factored Shear (kips)	72		
Ultimate Bearing Pressure	100		
Bearing Φ s	0.75		
Bearing Design Strength (ksf)	75		
Water Table Below Grade (ft)	999		
Bolt Circle Diameter (in)	18		
Top of Concrete to Top of Bottom Threads (in)	65.5		
Pier Diameter (ft)	3.5	Minimum Pier Diameter (ft)	2.83
Ht. Above Ground (ft)	0.5		
Pier Length Below Ground (ft)	30.5		
Quantity of Bars	16		
Bar Diameter (in)	1.41		
Tie Bar Diameter (in)	0.5		
Spacing of Ties (in)	9		
Area of Bars (in ²)	24.98	Minimum Area of Steel (in ²)	6.93
Spacing of Bars (in)	6.60		
f'c (ksi)	4.5		
fy (ksi)	60		
Unit Wt. of Concrete (kcf)	0.15		
Download Friction Φ s	0.75		
Uplift Friction Φ s	0.75		
Volume of Concrete (yd ³)	11.05		
Skin Friction Factor for Uplift	1	Length to Ignore Download (ft)	0
Ignore Bottom Length in Download?	<input type="checkbox"/>		
Depth at Bottom of Layer (ft)	Ult. Skin Friction (ksf)	(Ult. Skin Friction)*(Uplift Factor)	γ (kcf)
3	0.00	0.00	0.11
5	0.00	0.00	0.115
5.5	0.50	0.50	0.115
15	4.00	4.00	0.135
50	6.00	6.00	0.135
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)	0.9		
Bearing Design Strength (kips)	721.6		
Skin Friction Design Strength (kips)	1082.4		
Download Design Strength (kips)	1804.0	Factored Net Download (kips)	793.9

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

Uplift:

Nominal Skin Friction (kips)	1443.2
W _c , Weight of Concrete (kips)	44.7
W _R , Soil Resistance (kips)	1611.3
$\Phi sW_r + 0.9W_c$ (kips)	1248.7

Uplift Design Strength (kips)	1122.6
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Factored Uplift (kips)	689.0
------------------------	-------

Pier Design:

Design Tensile Strength (kips)	1349.1
--------------------------------	--------

T _u (kips)	689.0
-----------------------	-------

ΦV_n (kips)	75.6
-------------------	------

V _u (kips)	72.0
-----------------------	------

$\Phi V_c = \Phi 2(1 + N_u / (500A_g))f'_c{}^{1/2}b_wd$ (kips)	0.9
--	-----

V _s (kips)	88.0
-----------------------	------

*** V _s max = 4 f' _c ^{1/2} b _w d (kips)	378.7
---	-------

Maximum Spacing (in)	11.15
----------------------	-------

(Only if Shear Ties are Required)

*** Ref. ACI 11.5.5 & 11.5.6.3

Anchor Bolt Pull-Out:

$\Phi P_c = \Phi \lambda (2/3)f'_c{}^{1/2}(2.8A_{SLOPE} + 4A_{FLAT})$	208.9
---	-------

P _u (kips)	689.0
-----------------------	-------

Rebar Development Length (in)	54.71
-------------------------------	-------

Required Length of Development (in)	32.20
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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



August 14th^h, 2017
Kentucky Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, KY 40602-0615

RE: Site Name – Battle Creek
Proposed Cell Tower
37 03 25.36 North Latitude, 87 46 06.77 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 Don.Murdock@mastec.com

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,

A handwritten signature in blue ink, appearing to read "Don Murdock".

Don Murdock, Sr. Project Manager – Tennessee/Kentucky Market
MasTec Network Solutions
(615) 207-8280

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
<input type="text"/>				
<input type="button" value="Search"/>				

	Utility ID	Utility Name	Utility Type	Class	City	State
View	4107900	365 Wireless, LLC	Cellular	D	Atlanta	GA
View	4109300	Access Point, Inc.	Cellular	D	Cary	NC
View	4108300	Air Voice Wireless, LLC	Cellular	A	Bloomfield Hill	MI
View	4110650	Alliant Technologies of KY, L.L.C.	Cellular	C	Morristown	NJ
View	44451184	Alltel Communications, LLC	Cellular	A	Basking Ridge	NJ
View	4107800	American Broadband and Telecommunications Company	Cellular	C	Toledo	OH
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	C	Clayton	WA
View	4107400	Bandwidth.com, Inc.	Cellular	A	Raleigh	NC
View	4108600	BCN Telecom, Inc.	Cellular	D	Morristown	NJ
View	4110550	Blue Casa Mobile, LLC	Cellular	D	Santa Barbara	CA
View	4108750	Blue Jay Wireless, LLC	Cellular	C	Carrollton	TX
View	4202300	Bluegrass Wireless, LLC	Cellular	A	Elizabethtown	KY
View	4107600	Boomerang Wireless, LLC	Cellular	B	Hiawatha	IA
View	4105500	BullsEye Telecom, Inc.	Cellular	D	Southfield	MI
View	4110050	CampusSims, Inc.	Cellular	D	Boston	MA

View	4100700	Cellco Partnership dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
View	4106600	Cintex Wireless, LLC	Cellular	D	Rockville	MD
View	4101900	Consumer Cellular, Incorporated	Cellular	A	Portland	OR
View	4106400	Credo Mobile, Inc.	Cellular	A	San Francisco	CA
View	4108850	Cricket Wireless, LLC	Cellular	A	San Antonio	TX
View	4001900	CTC Communications Corp. d/b/a EarthLink Business I	Cellular	D	Grand Rapids	MI
View	10640	Cumberland Cellular Partnership	Cellular	A	Elizabethtown	KY
View	4101000	East Kentucky Network, LLC dba Appalachian Wireless	Cellular	A	Ivel	KY
View	4002300	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	C	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	B	Covington	LA
View	4109600	Google North America Inc.	Cellular	B	Mountain View	CA
View	33350363	Granite Telecommunications, LLC	Cellular	D	Quincy	MA
View	4106000	GreatCall, Inc. d/b/a Jitterbug	Cellular	A	San Diego	CA
View	10630	GTE Wireless of the Midwest dba Verizon Wireless	Cellular	A	Basking Ridge	NJ
View	4110600	Horizon River Technologies, LLC	Cellular	C	Atlanta	GA
View	4103100	i-Wireless, LLC	Cellular	A	Newport	KY
View	4109800	IM Telecom, LLC d/b/a Infiniti Mobile	Cellular	D	Tulsa	OK
View	22215360	KDDI America, Inc.	Cellular	D	New York	NY
View	10872	Kentucky RSA #1 Partnership	Cellular	A	Basking Ridge	NJ
View	10680	Kentucky RSA #3 Cellular General	Cellular	A	Elizabethtown	KY
View	10681	Kentucky RSA #4 Cellular General	Cellular	A	Elizabethtown	KY
View	4109750	Konatel, Inc. dba telecom.mobi	Cellular	D	Johnstown	PA
View	4107300	Lycamobile USA, Inc.	Cellular	D	Newark	NJ
View	4108800	MetroPCS Michigan, LLC	Cellular	A	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	A	San Antonio	TX

View	10900	New Par dba Verizon Wireless	Cellular	A	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	A	Detroit	MI
View	4110750	Onvoy Spectrum, LLC	Cellular	C	Plymouth	MN
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 Communications	Cellular	D	Cincinnati	OH
View	4202100	Powertel/Memphis, Inc. dba T-Mobile	Cellular	A	Bellevue	WA
View	4107700	Puretalk Holdings, LLC	Cellular	A	Covington	GA
View	4106700	Q Link Wireless, LLC	Cellular	A	Dania	FL
View	4108700	Ready Wireless, LLC	Cellular	B	Hiawatha	IA
View	4110350	Regional Strategic Partners LLC	Cellular	D	Buford	GA
View	4110500	Republic Wireless, Inc.	Cellular	D	Raleigh	NC
View	4106200	Rural Cellular Corporation	Cellular	A	Basking Ridge	NJ
View	4108550	Sage Telecom Communications, LLC dba TruConnect	Cellular	D	Los Angeles	CA
View	4109150	SelecTel, Inc. d/b/a SelecTel Wireless	Cellular	D	Freemont	NE
View	4106300	SI Wireless, LLC	Cellular	A	Carbondale	IL
View	4110150	Spectrotel, Inc. d/b/a Touch Base Communications	Cellular	D	Neptune	NJ
View	4200100	Sprint Spectrum, L.P.	Cellular	A	Atlanta	GA
View	4200500	SprintCom, Inc.	Cellular	A	Atlanta	GA
View	4109550	Stream Communications, LLC	Cellular	D	Dallas	TX
View	4110200	T C Telephone LLC d/b/a Horizon Cellular	Cellular	D	Red Bluff	CA
View	4202200	T-Mobile Central, LLC dba T-Mobile	Cellular	A	Bellevue	WA
View	4002500	TAG Mobile, LLC	Cellular	D	Carrollton	TX
View	4109700	Telecom Management, Inc. dba Pioneer Telephone	Cellular	D	South Portland	ME
View	4107200	Telefonica USA, Inc.	Cellular	D	Miami	FL
View	4108900	Telrite Corporation dba Life Wireless	Cellular	D	Covington	GA
View	4108450	Tempo Telecom, LLC	Cellular	D	Kansas City	MO
View	4109950	The People's Operator USA, LLC	Cellular	D	New York	NY
View	4109000	Ting, Inc.	Cellular	A	Toronto	ON
View	4110400	Torch Wireless Corp.	Cellular	D	Jacksonville	FL
View	4103300	Touchtone Communications, Inc.	Cellular	D	Whippany	NJ

View	4104200	TracFone Wireless, Inc.	Cellular	D	Miami	FL
View	4002000	Truphone, Inc.	Cellular	D	Durham	NC
View	4110300	UVNV, Inc.	Cellular	D	Costa Mesa	CA
View	4105700	Virgin Mobile USA, L.P.	Cellular	A	Atlanta	GA
View	4110800	Visible Service LLC	Cellular	C	Lone Tree	CO
View	4200600	West Virginia PCS Alliance, L.C.	Cellular	A	Waynesboro	VA
View	4106500	WiMacTel, Inc.	Cellular	D	Palo Alto	CA
View	4110100	Windward Wireless LLC	Cellular	D	Suwanee	GA
View	4109900	Wireless Telecom Cooperative, Inc. dba theWirelessFreeway	Cellular	D	Louisville	KY

EXHIBIT E
FAA



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

Aeronautical Study No.
2017-ASO-15368-OE

Issued Date: 08/22/2017

DAVE CUNDIFF
AT&T MOBILITY
208 S Akard Dr
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:	Tower Battle Creek
Location:	Princeton, KY
Latitude:	37-03-25.36N NAD 83
Longitude:	87-46-06.77W
Heights:	515 feet site elevation (SE) 320 feet above ground level (AGL) 835 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)
☒ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

This determination expires on 02/22/2019 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 licensee'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-15368-OE.

Signature Control No: 339661577-341669292

(DNE)

Jay Garver
Specialist

Attachment(s)
Frequency Data
Map(s)

cc: FCC

Frequency Data for ASN 2017-ASO-15368-OE

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

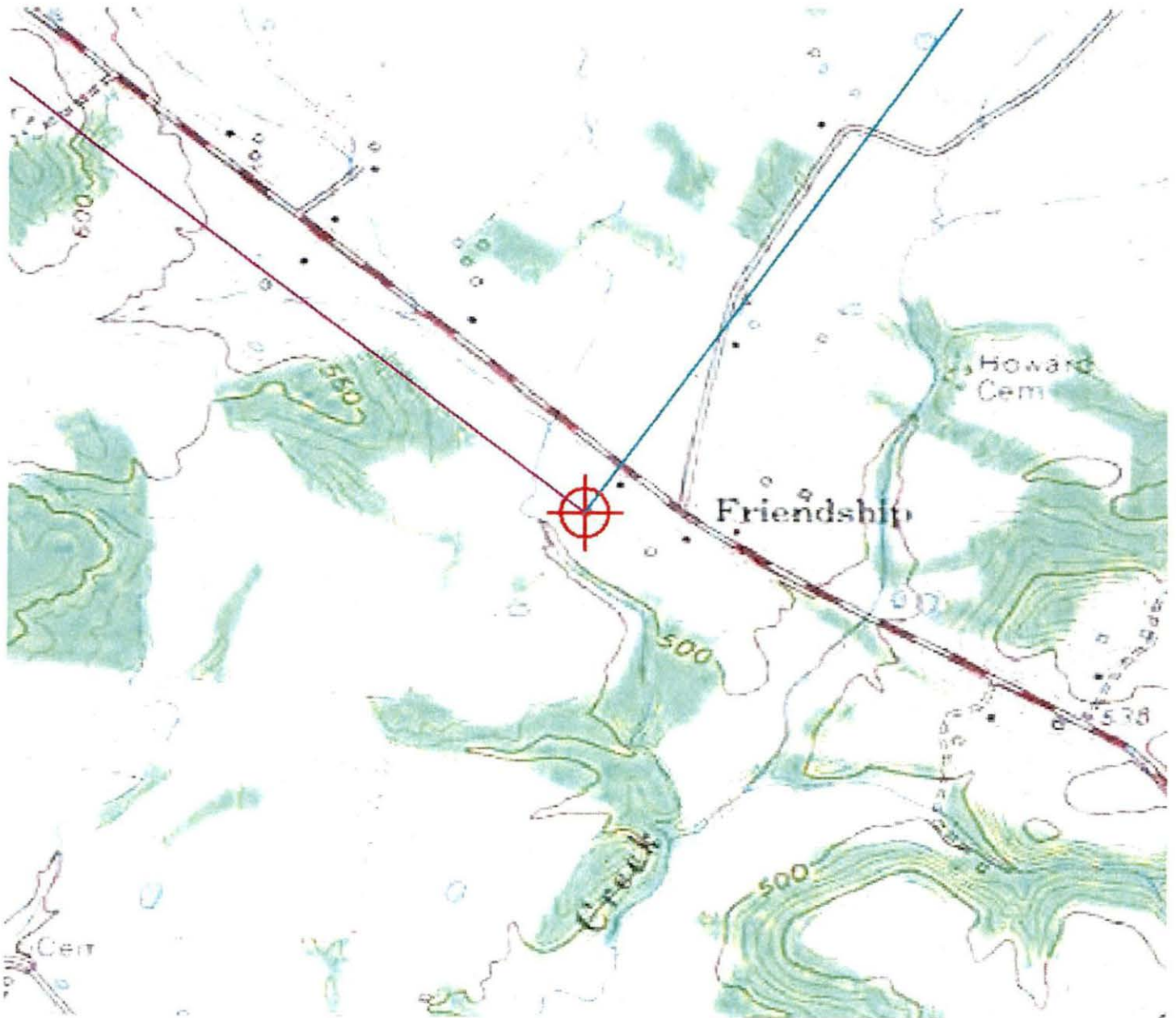


EXHIBIT F
KENTUCKY AIRPORT ZONING COMMISSION



KENTUCKY AIRPORT ZONING COMMISSION

MATTHEW BEVIN
Governor

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

August 25, 2017

APPROVAL OF APPLICATION

APPLICANT:

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

SUBJECT: AS-017-2M0-2017-073

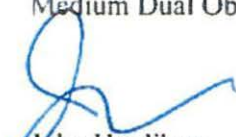
STRUCTURE: Antenna
LOCATION: Princeton, KY
COORDINATES: 37° 3' 25.36" N / 87° 46' 6.77" W
HEIGHT: 320' AGL/835' AMSL

The Kentucky Airport Zoning Commission has approved your application for a permit to construct 320' AGL/ 835' AMSL Antenna near Princeton, KY 37° 3' 25.36" N / 87° 46' 6.77" 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



An Equal Opportunity Employer M/F/D



KENTUCKY AIRPORT ZONING COMMISSION

MATTHEW BEVIN
Governor

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

CONSTRUCTION/ALTERATION STATUS REPORT

August 25, 2017

AERONAUTICAL STUDY NUMBER: AS-017-2M0-2017-073

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 August 25, 2017. 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.

STRUCTURE: Antenna
LOCATION: Princeton, KY
COORDINATES: 37° 3' 25.36" N / 87° 46' 6.77" W
HEIGHT: 320' AGL / 835' AMSL

CONSTRUCTION/ALTERATION STATUS

1. The project () is abandoned. () is not abandoned.

2. Construction status is as follows:

Structure reached its greatest height 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 _____



An Equal Opportunity Employer M/F/D

073
2017-075

	KENTUCKY TRANSPORTATION CABINET KENTUCKY AIRPORT ZONING COMMISSION	TC 55-2 Rev. 06/2016 Page 2 of 2
APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE		

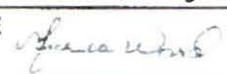
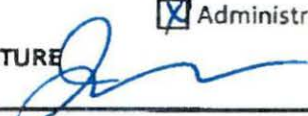
APPLICANT (name) John Monday	PHONE 855-699-7073	FAX 972-907-1131	KY AERONAUTICAL STUDY # AS-017-240-2017-073
ADDRESS (street) 3300 E. Renner Road, B3132	CITY Richardson	STATE TX	ZIP 75082
APPLICANT'S REPRESENTATIVE (name) Roy Johnson	PHONE 502-445-2475	FAX 502-222-4266	
ADDRESS (street) 3605 Mattingly Road	CITY Buckner	STATE KY	ZIP 40010
APPLICATION FOR <input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing DURATION <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary (months days)			WORK SCHEDULE Start End TBD
TYPE <input type="checkbox"/> Crane <input type="checkbox"/> Building <input checked="" type="checkbox"/> Antenna Tower <input type="checkbox"/> Power Line <input type="checkbox"/> Water Tank <input type="checkbox"/> Landfill <input type="checkbox"/> Other		MARKING/PAINTING/LIGHTING PREFERRED <input type="checkbox"/> Red Lights & Paint <input type="checkbox"/> White- medium intensity <input type="checkbox"/> White- high intensity <input checked="" type="checkbox"/> Dual- red & medium intensity white <input type="checkbox"/> Dual- red & high intensity white <input type="checkbox"/> Other	
LATITUDE 37° 03' 25.36 "	LONGITUDE 87° 46' 06.77 "	DATUM <input checked="" type="checkbox"/> NAD83 <input type="checkbox"/> NAD27 <input type="checkbox"/> Other	
NEAREST KENTUCKY City Princeton County Caldwell	NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT 2MO Princeton-Caldwell County		
SITE ELEVATION (AMSL, feet) 515	TOTAL STRUCTURE HEIGHT (AGL, feet) 320	CURRENT (FAA aeronautical study #) Filed Concurrently	
OVERALL HEIGHT (site elevation plus total structure height, feet) 835		PREVIOUS (FAA aeronautical study #)	
DISTANCE (from nearest Kentucky public use or Military airport to structure) 5.49 NM		PREVIOUS (KY aeronautical study #)	
DIRECTION (from nearest Kentucky public use or Military airport to structure) Southeast			
DESCRIPTION OF LOCATION (Attach USGS 7.5 minute quadrangle map or an airport layout drawing with the precise site marked and any certified survey.) <p style="text-align: center;">1A and Quad attached</p>			
DESCRIPTION OF PROPOSAL AT&T proposes to construct a 305' cell tower with a 15' lightning rod for an overall height of 320'.			
FAA Form 7460-1 (Has the "Notice of Construction or Alteration" been filed with the Federal Aviation Administration?) <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, when?			
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.) PENALTIES (Persons failing to comply with KRS 183.861 to 183.990 and 602 KAR 050 are liable for fines and/or imprisonment as set forth in KRS 183.990(3). Noncompliance with FAA regulations may result in further penalties.)			
NAME Michelle Ward	TITLE Sr. Real Estate Mgr.	SIGNATURE 	DATE 07/03/17
COMMISSION ACTION <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved			
SIGNATURE 		DATE 8-25-17	

EXHIBIT G
GEOTECHNICAL REPORT



March 29, 2017

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

ECS Project No. 26:3125-L

Reference: Report of Subsurface Exploration and Geotechnical Engineering Services
Battle Creek Tower
14900 Hopkinsville Road
Princeton, Kentucky

Dear Mr. Goralski:

ECS Southeast, LLP (ECS) has completed the subsurface exploration for the proposed construction of a self-supported tower located at 14900 Hopkinsville Road, approximately 250 feet north of the intersection with Friendship 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. 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 305+-foot tall self-supported tower with a 15-foot lightning arrestor and fenced equipment compound. The proposed tower site is located in a grassed 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 elevation at the center of the tower is approximately 522 feet MSL. To achieve the proposed grading at the tower site, we anticipate that negligible 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 March 16, 2017 through the completion of three Standard Penetration Test (SPT) borings drilled 35 feet from the staked center of the tower location. The borings were drilled to 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 borings. The drill rig utilized 3 1/4 inch hollow stem augers to advance the borehole. 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 significantly 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 soil encountered at the boring locations were maintained by the drilling crew. After recovery, each geotechnical 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 examination. 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.

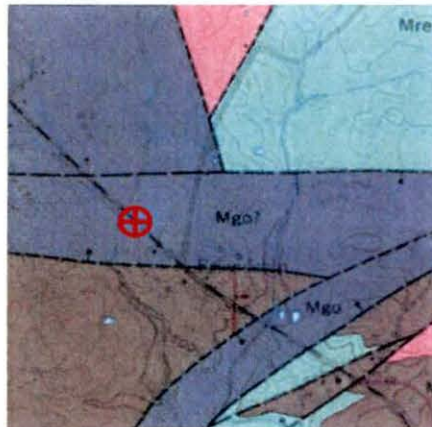
CLASSIFICATION AND LABORATORY TESTING PROCEDURES

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 summary. 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 Princeton East Quadrangle (1972) indicates this particular site is underlain by the Golconda formation. This formation typically consists of interbedded dark-gray shale, and dark brown to brownish-gray with some red and yellow, medium- to coarse-grained limestone. The lower faces of the formation are generally nodular and shaly with calcareous siltstone, shale or argillaceous limestone.



**Figure 1 - USGS Geologic Map of the Princeton East 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.

In general, the exploration revealed approximately 3 inches of topsoil overlying lean clay to depths ranging from approximately 5 to 5½ feet. SPT N-values for the lean clay materials varied from 5 to 33 blows per foot (bpf). Auger refusal was encountered at each boring location at depths ranging from approximately 5 to 5½ feet below the existing ground surface. 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, topsoil, 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, with 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 2 percentage points of the optimum moisture content, per 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 determine the required degree of compaction is being achieved. We recommend

that 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 or properly-compacted engineered fill. These foundations can be designed for a maximum net allowable soil bearing pressure of up to 2,500 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 18 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

We recommend that the proposed tower be supported on drilled shaft (caisson) foundations. Based on previous experience with pole structures, we anticipate that wind loading, associated uplift resistance, and lateral loading may control the sizing and depth of the pole 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.

Considering the subsurface conditions encountered, casing of the excavation 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 pier reinforcing cage and concrete. Up to 1 inch of water standing in the base of the pier is acceptable at the time of concrete placement 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 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. 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.

Pad and Pier Recommendations: Based on the relatively shallow depth to bedrock, 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 8,000 psf. 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 "B" 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: 37.05638, Longitude: -87.76558
- $S_s = 0.643$, $S_1 = 0.236$
- $S_{MS} = 0.643$, $S_{M1} = 0.236$
- $S_{DS} = 0.429$, $S_{D1} = 0.157$

*Spectral accelerations were determined from USGS National Seismic Hazard Maps

General Construction Considerations

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

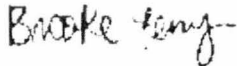
Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. ECS is not responsible for the conclusions, opinions, or recommendations made by others based on these data. 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.

Respectfully,

ECS SOUTHEAST, LLP



Brooke Ferry, E.I.
Geotechnical Project Manager



Donald L. Anderson
Principal Reviewer



Mark D. Luskin, P.E.
Engineering Manager

Attachments: Figure 1: Site Location Map
Figure 2: Boring Location Diagrams
Geotechnical Data Form
SPT Boring Logs (B-1 to B-3)
Reference Notes for Boring Logs
USGS Summary Report



Irish Tower – Battle Creek Tower

14900 Hopkinsville Road
Princeton, Kentucky
ECS Project No. 26:3125-L



Figure 1: Site Location Map

GEOTECHNICAL DATA FORM

Background Information

Client: Irish Tower, LLC
 Project: Battle Creek Tower
 Location: 14900 Hopkinsville Road, Princeton, Kentucky

ECS Project No.: 26/3125-L
 Type: Self Supported
 Height: 305' +/-



Subsurface Conditions

Depth (feet)	Soil Behavior Type	Average N (spt)	Relative Density/Consistency	USCS Classification
0 - 3	LEAN CLAY	6	Firm	CL
3 - 5.5	LEAN CLAY	12	Stiff	CL
5.5+	PROBABLE SANDSTONE	50/0	-	-

Estimated Soil Parameters for LPILE

Depth (feet)	LPILE Soil Type	γ (pcf)	S_u (psf)	ϕ' (°)	K^* (pci)	E_{50}^*
0 - 3	Firm Clay	110	750	-	90	0.01
3 - 5.5	Stiff Clay	115	1000	-	100	0.007
5.5+	Probable Sandstone	135	5000+	-	2000	0.001

γ = In-situ Soil Density

S_u = Undrained Shear Strength

ϕ' = Effective Friction Angle

K = Horizontal Subgrade Reaction

*Parameters estimated from values suggested in LPILE user manual.

Foundation Recommendations

For Drilled Shaft Foundations**

Depth (ft)	Allowable End Bearing (KSF)
0 - 3	2.5
3 - 5.5	3
5.5 - 15	8
*15+	50

Depth Interval	Allowable Average Side Friction (PSF)
0 - 3	-
3 - 5.5	250
5.5 - 15	2000
*15+	3000

**Ignore in top 5 feet in design, minimum embedment depth of 10% tower height applies.

*Parameters were increased with embedment depth due to anticipated increase in bedrock quality

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.

CLIENT		JOB #	TEST PIT #	SHEET
Irish Tower, LLC		26:3125-L	B-1	1 OF 1
PROJECT NAME		ARCHITECT-ENGINEER		
Irish Tower Sites-Battle Creek Tower				
SITE LOCATION				
14900 Hopkinsville Rd, Princeton, Caldwell County, KY				
NORTHING		EASTING	STATION	
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)
				DESCRIPTION OF MATERIAL
				ENGLISH UNITS
				BOTTOM OF CASING LOSS OF CIRCULATION WS
				SURFACE ELEVATION 522
0				Topsoil Depth [3"] (CL) LEAN CLAY, trace sand, grayish brown, moist, firm to very stiff
	S-1	SS	18	18
	S-2	SS	18	18
5				AUGER REFUSAL @ 5.5'
10				
15				
20				
25				
30				
<p>○ CALIBRATED PENETROMETER TONS/FT²</p> <p>ROCK QUALITY DESIGNATION & RECOVERY</p> <p>RQD% — — — REC% — — —</p> <p>PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%</p> <p>X ● △</p> <p>⊗ STANDARD PENETRATION BLOWS/FT</p>				
<p>THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.</p>				
WL	WS	WD	DATE STARTED	03/16/17
WL(SHW)	WL(ACR)		DATE COMPLETED	03/16/17
WL			RIG Truck	FOREMAN Jamison King
			HSA/SPT	

CLIENT Irish Tower, LLC		JOB # 26:3125-L	TEST PIT # B-2	SHEET 1 OF 1	
PROJECT NAME Irish Tower Sites-Battle Creek Tower		ARCHITECT-ENGINEER			
SITE LOCATION 14900 Hopkinsville Rd, Princeton, Caldwell County, KY					

NORTHING EASTING STATION					ROCK QUALITY DESIGNATION & RECOVERY RQD% — — — REC% — — —	
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ENGLISH UNITS
					BOTTOM OF CASING	LOSS OF CIRCULATION
					SURFACE ELEVATION 522	

Topsoil Depth [3"]
(CL) LEAN CLAY, trace sand, brown, moist, stiff

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.					
WL	WS <input type="checkbox"/>	WD <input checked="" type="checkbox"/>	DATE STARTED	03/16/17	
WL(SHW)		WL(ACR)	DATE COMPLETED	03/16/17	Auto
WL			RIG Truck	FOREMAN Jamison King	HSA/SPT

CLIENT Irish Tower, LLC				JOB # 26:3125-L		TEST PIT # B-3		SHEET 1 OF 1		
PROJECT NAME Irish Tower Sites-Battle Creek Tower				ARCHITECT-ENGINEER						
SITE LOCATION 14900 Hopkinsville Rd, Princeton, Caldwell County, KY										
NORTHING				EASTING		STATION		○ CALIBRATED PENETROMETER TONS/FT ² ROCK QUALITY DESIGNATION & RECOVERY RQD% - - - REC% - - - PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT% ✕ ● △ ⊗ STANDARD PENETRATION BLOWS/FT		
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL		ENGLISH UNITS			
					BOTTOM OF CASING LOSS OF CIRCULATION					
					SURFACE ELEVATION 522					
0					Topsoil Depth [3"] (CL) LEAN CLAY, trace sand, brown, moist, stiff to hard				2 2 3	
	S-1	SS	18	18					520	
	S-2	SS	18	18	AUGER REFUSAL @ 5'				4 14 24	
5									38	
10										
15										
20										
25										
30										
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.										
WL WS <input type="checkbox"/> WD <input checked="" type="checkbox"/>		DATE STARTED		03/16/17						
WL(SHW) WL(ACR)		DATE COMPLETED		03/16/17		Auto				
WL		RIG Truck		FOREMAN Jamison King		HSA/SPT				

USGS Design Maps Summary Report

User-Specified Input

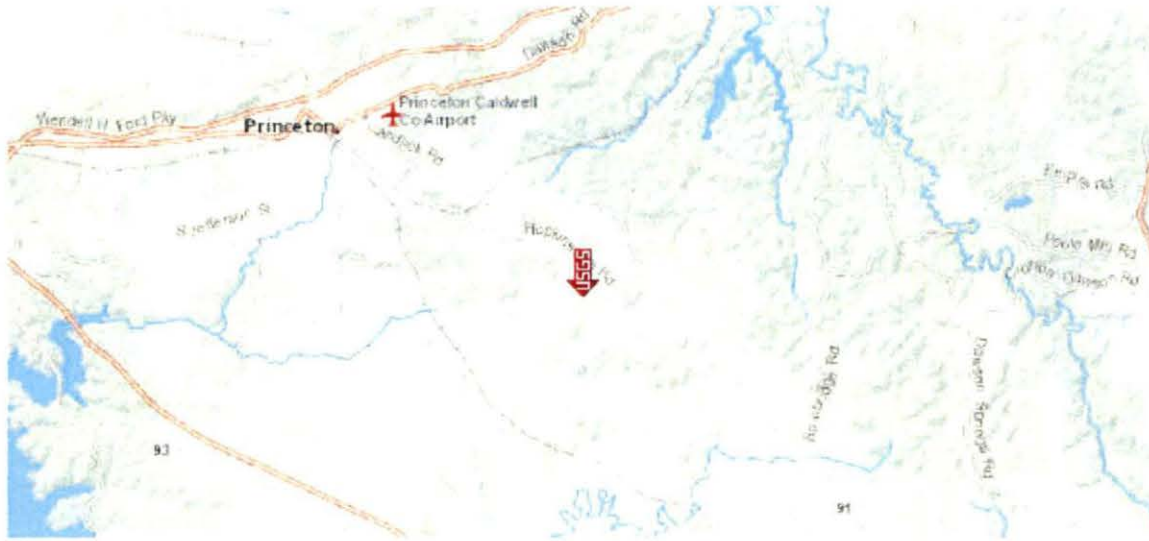
Report Title Battle Creek Tower
Mon March 27, 2017 18:17:53 UTC

Building Code Reference Document 2012/2015 International Building Code
(which utilizes USGS hazard data available in 2008)

Site Coordinates 37.05638°N, 87.76558°W

Site Soil Classification Site Class B – "Rock"

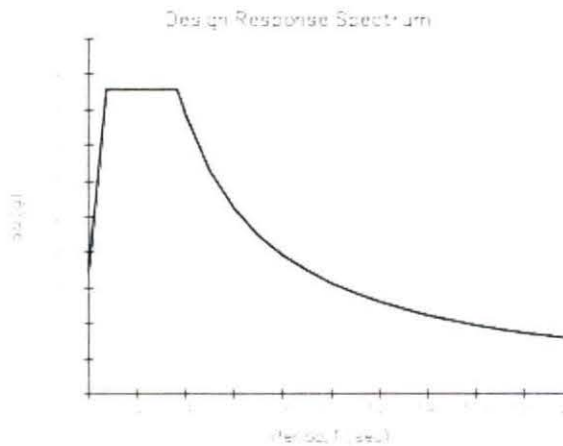
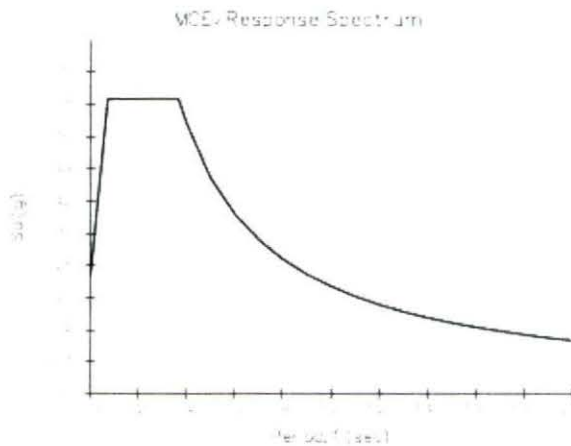
Risk Category I/II/III



USGS-Provided Output

$S_s = 0.643 \text{ g}$	$S_{MS} = 0.643 \text{ g}$	$S_{DS} = 0.429 \text{ g}$
$S_1 = 0.236 \text{ g}$	$S_{M1} = 0.236 \text{ g}$	$S_{D1} = 0.157 \text{ g}$
























For information on how the S_s and S_1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.



Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the accuracy of the data contained herein. This tool is not a substitute for technical engineering knowledge.



REFERENCE NOTES FOR BORING LOGS

MATERIAL ^{1,2}	
	ASPHALT
	CONCRETE
	GRAVEL
	TOPSOIL
	VOID
	BRICK
	AGGREGATE BASE COURSE
	FILL ³ MAN-PLACED SOILS
	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
	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
	SM SILTY SAND sand-silt mixtures
	SC CLAYEY SAND sand-clay mixtures
	ML SILT non-plastic to medium plasticity
	MH ELASTIC SILT high plasticity
	CL LEAN CLAY low to medium plasticity
	CH FAT CLAY high plasticity
	OL ORGANIC SILT or CLAY non-plastic to low plasticity
	OH ORGANIC SILT or CLAY high plasticity
	PT PEAT highly organic soils







DRILLING SAMPLING SYMBOLS & 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	
DESIGNATION	PARTICLE SIZES
Boulders	12 inches (300 mm) or larger
Cobbles	3 inches to 12 inches (75 mm to 300 mm)
Gravel: Coarse	¾ 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 & Clay ("Fines")	<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS		
UNCONFINED COMPRESSIVE STRENGTH, Q_p ⁴	SPT ⁵ (BPF)	CONSISTENCY ⁷ (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 ⁷	COARSE GRAINED (%) ⁸	FINE GRAINED (%) ⁸
Trace	≤5	≤5
Dual Symbol (ex: SW-SM)	10	10
With	15 - 20	15 - 25
Adjective (ex: "Silty")	≥25	≥30

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

WATER LEVELS ⁶	
	WL Water Level (WS)(WD) (WS) While Sampling (WD) While Drilling
	SHW Seasonal High WT
	ACR After Casing Removal
	SWT Stabilized Water Table
	DCI Dry Cave-In
	WCI Wet Cave-In

¹Classifications and symbols per ASTM D 2488-09 (Visual-Manual Procedure) unless noted otherwise.

²To 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.

³Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-FILL)].

⁴Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).

⁵Standard 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).

⁶The 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.

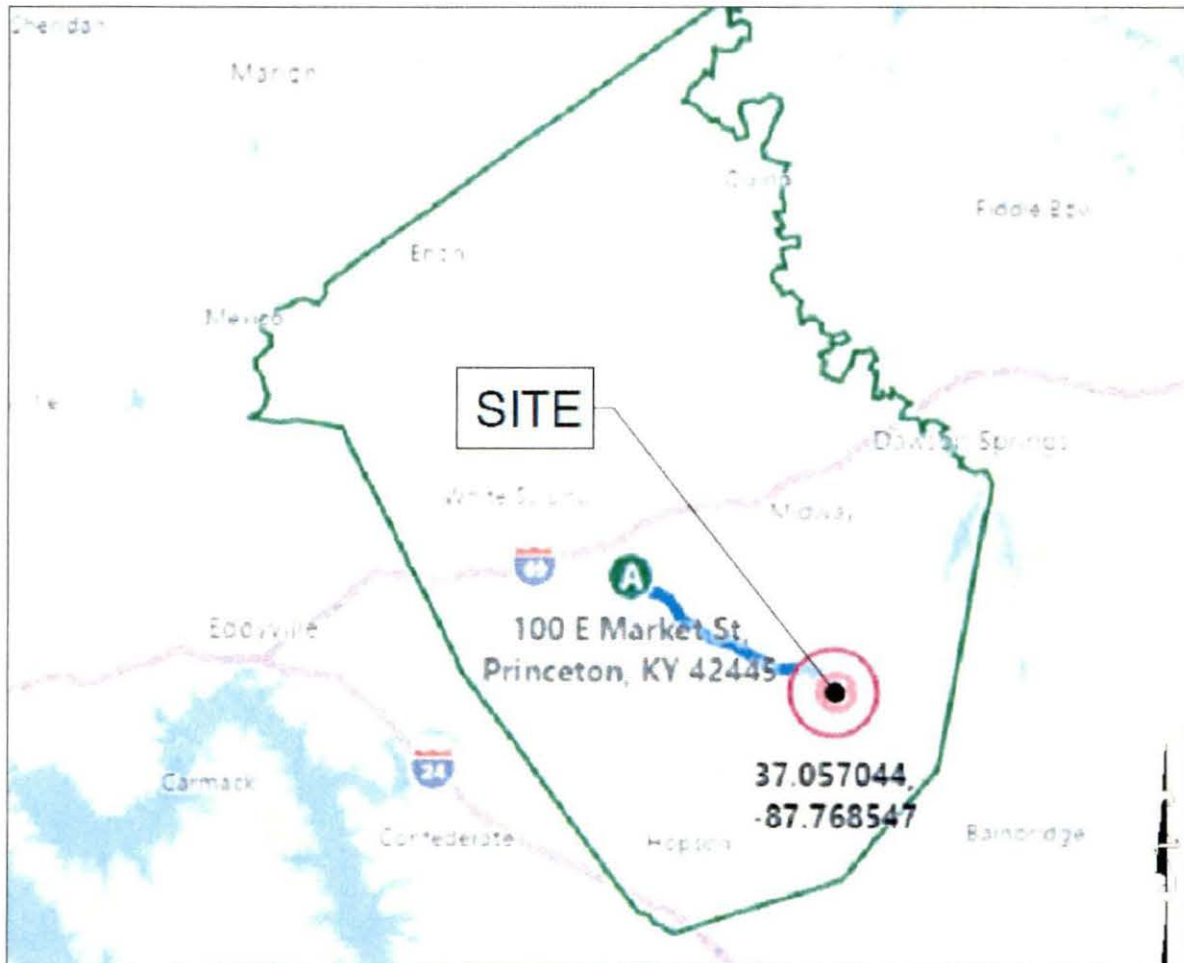
⁷Minor deviation from ASTM D 2488-09 Note 16.

⁸Percentages are estimated to the nearest 5% per ASTM D 2488-09.

EXHIBIT H
DIRECTIONS TO WCF SITE

Driving Directions to Proposed Battle Creek Tower Site

1. Start out at the Caldwell Judge Executive's office located at 100 East Market Street, Princeton, Kentucky.
2. Travel northwest on E Market St/US-62 E/KY-139/KY-293 toward N Jefferson St/US-62 W.
3. Take the 1st left onto W Court Sq/KY-293.
4. Turn left onto W Main St/US-62 E/KY-91/KY-293.
5. Turn slight right onto Hopkinsville Rd/KY-91. Continue to follow KY-91.
6. Arrive at 14900 Hopkinsville Rd, Princeton, Kentucky.
7. The site coordinates are: 37°03'25.36" North latitude, 87°46'06.77" West longitude



Prepared by:
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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: Evansville
Cell Site Number: KYL03256
Cell Site Name: Battle Creek (KY)
Fixed Asset Number: 13800776

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 Jimmy and Anna Louise Sanderson, a married couple, having a mailing address of 14869 Sugar Creek Road Cerulean, KY 42215 ("**Landlord**") and New Cingular Wireless PCS, I.L.C., a Delaware limited liability company, having a mailing address of 575 Morosgo Drive NE, Atlanta, GA 30324 ("**Tenant**").

J.S.
A.L.S.

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 14900 Hopkinsville Road, Princeton, KY 42445 in the County of Caldwell, State of Kentucky (collectively, the "**Property**"). Tenant desires to use a portion of the Property in connection with its federally licensed communications business. Landlord desires to grant to Tenant the right to use a portion of the Property in accordance with this Agreement.

The parties agree as follows:

1. OPTION TO LEASE.

(a) 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 [REDACTED] 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 [REDACTED] 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 upgrade, 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 (5th) anniversary of the Term Commencement Date.

(b) This Agreement will automatically renew for four (4) additional five (5) year term(s) (each 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 fifth (5th) day of each calendar month in advance [REDACTED] (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 Extension Term, the monthly Rent will increase by [REDACTED] 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 policy 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 Tenant 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 Landlord 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 [REDACTED] per occurrence and [REDACTED] 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 caused, 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.

12. 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, [REDACTED] 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, if 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. Landlord covenants and agrees that no part of the Communication Facility constructed, erected 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, erected 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 or 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.

(b) 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. Landlord 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.

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. ASSIGNMENT/SUBLEASE. 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 #KYL03256; Cell Site Name: Battle Creek (KY)
 Fixed Asset No.: 13800776
 575 Morosgo Drive NE
 Atlanta, GA 30324
 J.S.
 G.L.B.

With a copy to: New Cingular Wireless PCS, LLC
 Attn.: Legal Department
 Re: Cell Site #: KYL03256; Cell Site Name: Battle Creek (KY)
 Fixed Asset No.: 13800776
 208 S. Akard Street
 Dallas, TX 75202-4206
 J.S.
 G.L.B.

If to Landlord: Jimmy and Anna Louise Sanderson
14869 Sugar Creek Road
Cerulean, KY 42215

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.

19. **CASUALTY.** Landlord will provide notice to Tenant of any casualty or other harm affecting the 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.

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 #KYL03256; Cell Site Name: Battle Creek (KY)
Fixed Asset No: 13800776
575 Morosgo Drive NE
Atlanta, GA 30324

J.S.
a.g.d.

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.

(c) **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"

Jimmy Sanderson

By: Jimmy Sanderson

Print Name: Jimmy Sanderson

Its: Owner

Date: 11-28-16

Anna Louise Sanderson

By: Anna Louise Sanderson

Print Name: Anna Louise Sanderson

Its: Owner

Date: 11-28-16

"TENANT"

New Cingular Wireless PCS, LLC,
a Delaware limited liability company

By: AT&T Mobility Corporation

Its: Manager

By: Russell Baer

Print Name: Russell Baer

Its: AT&T MGR

Date: 3/4/17

[ACKNOWLEDGMENTS APPEAR ON THE NEXT PAGE]

TENANT ACKNOWLEDGMENT

STATE OF Alabama)
) ss:
COUNTY OF Jefferson)

On the 6th day of March, 2017, before me personally appeared Russell Barakat, and acknowledged under oath that he/she is the Area MGR 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.

Lisa Henderson
Notary Public: Lisa Henderson
My Commission Expires: 7/9/2018

LANDLORD ACKNOWLEDGMENT

STATE OF Kentucky)
) ss:
COUNTY OF Tigg)

On the 26 day of Nov, 2016 before me, personally appeared Jimmy & Anne Louise Henderson, who acknowledged under oath, that he/she is the person/officer named in the within instrument, and that he/she executed the same in his/her stated capacity as the voluntary act and deed of the Landlord for the purposes therein contained.

Linda M. Goodwin
Notary Public: Linda M. Goodwin
My Commission Expires: 1-29-18

EXHIBIT 1

DESCRIPTION OF PREMISES

Page 1 of 2

to the Option and Lease Agreement dated March 6, 2017 by and between Jimmy and Anna Louise Sanderson, a married couple, as Landlord, and New Cingular Wireless PCS, LLC, a Delaware limited liability company, as Tenant.

The Property is legally described as follows:

A certain tract, piece or parcel of land lying and being in Caldwell County, Kentucky, on a branch of the forks of Huddy Fork of Little River, bounded and described thusly:

Beginning at two white oaks; thence N. 39-1/2 E. 62 poles to a stake in the old Salem Road; thence S. 59 E. 54 poles to a stake where the Cadiz Road crosses the old road; thence with the Cadiz Road S. 6 W. 41 poles S. 2 W. 92 poles crossing the turnpike at 52 poles; thence S. 12 W. 34 poles to a stake; thence S. 22 W. 21 poles; thence S. 45 E. 16 3/4 poles to a stake; thence S. 22 W. 22-1/2 poles to a stake; thence N. 55 W. 88 poles to a hickory stump; thence W. 91 poles to a white oak; thence N. 26 poles to a stone; thence N. 15 W. 43-1/2 poles to two oaks; thence N. 34 W. 50 poles to a stake in Wolf's line; thence N. 70 E. 135 poles to a stake in the turnpike road; thence with same S. 55 E. 7-1/2 poles to a stake in the said road; thence N. 38-1/2 E. 12 poles to the beginning, containing 215 acres, more or less.

This being the same property conveyed by Henry K. Kuykendall et ux to Jimmy Sanderson and O. B. Sanderson by deed dated 1 March 1974, and recorded in office of Caldwell County Court Clerk in Deed Book 136, Page 343. Will of O.B. Sanderson filed Will Book M 136, Page 426.

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:

1. NONE

EXHIBIT J
NOTIFICATION LISTING

Battle Creek – Notice List

Sanderson Jimmy
14869 Sugar Creek Road
Cerulean, KY 42215

Brummett Dempsey & Connie
14664 Hopkinsville Road
Princeton, KY 42445

Woodward Properties LLC
c/o Jacob Stoltzfus
468 Liberty Lane
Kirkwood, PA 17536

Every Robert & Tina
14829 Hopkinsville Road
Princeton, KY 42445

Denham Robert Wayne
634 Friendship Road
Princeton, KY 42445

Coleman Charles R & Gloria Jean Coleman
15227 Hopkinsville Road
Princeton, KY 42445

ODonnell Patrick L & Linda G
15186 Hopkinsville Road
Princeton, KY 42445

Adams David & Karen
1232 Cadiz Road
Princeton, KY 42445

Battlefield Farm LLC
c/o J Todd Ppool
337 Battle Creek Road
Princeton, KY 42445

Ppool David & Andrea
4000 Dripping Springs Rd
Princeton, KY 42445

Morse Robert N & Joyce L
4674 Dripping Springs Rd
Princeton, KY 42445

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: Battle Creek**

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 14900 Hopkinsville Road, Princeton, KY (37°03'25.36" North latitude, 87°46'06.77" West longitude). The proposed facility will include a 305-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 or contiguous to the property on which the tower is to be constructed. You have a right to submit testimony to the Kentucky Public Service Commission ("PSC"), either in writing or to request intervention in the PSC's proceedings on the application. You may contact the PSC for additional information concerning this matter at: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2017-00332 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.

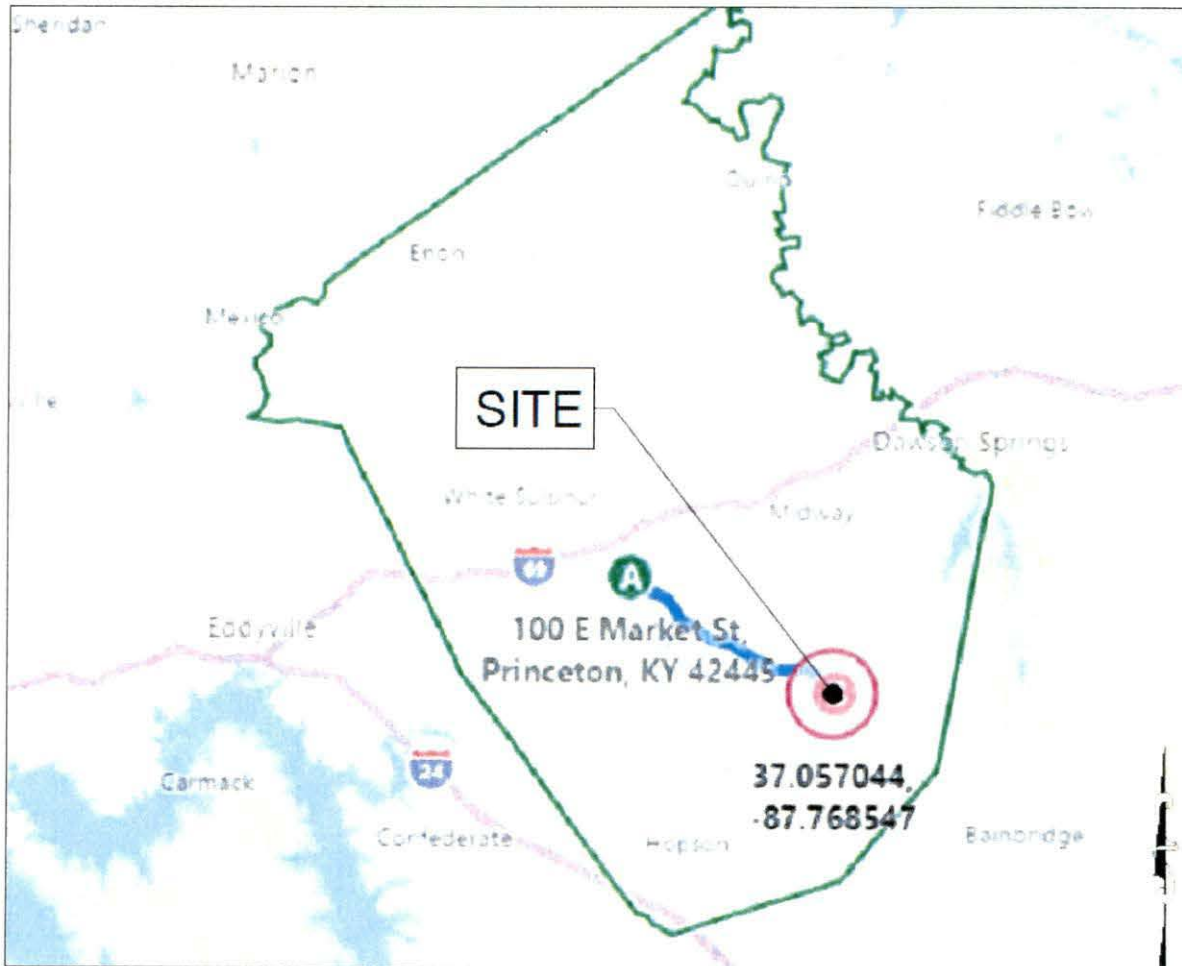
We have attached a map showing the site location for the proposed tower. AT&T Mobility's radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the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

1. Start out at the Caldwell Judge Executive's office located at 100 East Market Street, Princeton, Kentucky.
2. Travel northwest on E Market St/US-62 E/KY-139/KY-293 toward N Jefferson St/US-62 W.
3. Take the 1st left onto W Court Sq/KY-293.
4. Turn left onto W Main St/US-62 E/KY-91/KY-293.
5. Turn slight right onto Hopkinsville Rd/KY-91. Continue to follow KY-91.
6. Arrive at 14900 Hopkinsville Rd, Princeton, Kentucky.
7. The site coordinates are: 37°03'25.36" North latitude, 87°46'06.77" West longitude



Prepared by:
Robert W. Grant
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

Hon. Ellen V. Dunning
Caldwell Judge Executive
100 East Market Street
Room #27
Princeton, KY 42445

RE: Notice of Proposal to Construct Wireless Communications Facility
Kentucky Public Service Commission Docket No. 2017-00332
Site Name: Battle Creek

Dear Judge Dunning:

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 14900 Hopkinsville Road, Princeton, KY (37°03'25.36" North latitude, 87°46'06.77" West longitude). The proposed facility will include a 305-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 2017-00332 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
enclosure

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EXHIBIT M
COPY OF POSTED NOTICES

SITE NAME: BATTLE CREEK
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 2017-00332 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 2017-00332 in your correspondence.

EXHIBIT N
COPY OF RADIO FREQUENCY DESIGN SEARCH AREA



Lat: 37.052629
Lon: -87.774252
Radius: .5 miles

Battle Creek Search Area