

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

RECEIVED

APR 25 2014

PUBLIC SERVICE
COMMISSION

In the Matter of:

THE APPLICATION OF)
NEW CINGULAR WIRELESS PCS, LLC)
FOR ISSUANCE OF A CERTIFICATE OF PUBLIC) CASE NO.: 2014-00103
CONVENIENCE AND NECESSITY TO CONSTRUCT)
A WIRELESS COMMUNICATIONS FACILITY)
IN THE COMMONWEALTH OF KENTUCKY)
IN THE COUNTY OF JACKSON)

SITE NAME: CLOVER BOTTOM CREEK

* * * * *

**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. AT&T Mobility is in good standing in the state in which it is organized and is authorized to transact business in Kentucky.

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 license to provide wireless services is 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 427 Dean Road, McKee, KY 40447 (37°29'38.99" North latitude, 84°06'57.67" 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 Emmitt and Theresa Turner pursuant to Deeds recorded at Deed Book 134, Page 211 and Deed Book 91, Page 510 in the office of the Jackson County Clerk. The proposed WCF will consist of a 255-foot tall tower, with an approximately 10-foot tall lightning arrestor attached at the top, for a total height of 265-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**, along with a map of suitable scale showing the location of the proposed new construction as well as the location of any like facilities located anywhere within the map area, along with a map key showing the owner of such other facilities.

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. A report detailing Applicant's site selection process for the subject site (including documentation as to why co-location is not possible for this site) is attached as **Exhibit E**.

11. A copy of the Determination of No Hazard to Air Navigation issued by the Federal Aviation Administration ("FAA") is attached as **Exhibit F**.

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

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 H**. 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 I**. The name and telephone number of the preparer of **Exhibit I** are included as part of this exhibit.

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

16. Personnel directly responsible for the design and construction of the proposed WCF are well qualified and experienced. The tower and foundation drawings for the proposed tower submitted as part of **Exhibit 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 Tommy Bailey, and the identity and qualifications of each person directly responsible for design and construction of the proposed tower are contained **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 a scale of no less than 1 inch equals 200 feet 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 telephone number and 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 K** and **Exhibit L**, respectively.

21. Applicant has notified the applicable County Judge/Executive by certified mail, return receipt requested, of the proposed construction. This notice included the PSC docket number under which the application will be processed and informed the County Judge/Executive of his/her right to request intervention. A copy of this notice is attached as **Exhibit M**.

22. Notice signs meeting the requirements prescribed by 807 KAR 5:063, Section 1(2) that measure at least 2 feet in height and 4 feet in width and that contain all required language in letters of required height, have been posted, one in a visible location on the

proposed site and one on the nearest public road. Such signs shall remain posted for at least two weeks after filing of the Application, and a copy of the posted text is attached as **Exhibit N**. Notice of the location of the proposed facility has been published in a newspaper of general circulation in the county in which the WCF is proposed to be located.

23. The general area where the proposed facility is to be located is rural with sparse residences. [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 O**.

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

26. All responses and requests associated with this Application may be directed

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

Patrick W. Turner
General Attorney-Kentucky
AT&T Kentucky
1600 Williams Street
Suite 5200
Columbia, South Carolina 29201
Telephone: (803) 401-2900
Telefax: (803) 254-1731
Email: pt1285@att.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 and Map of Like Facilities in Vicinity
- E - Co-location Report
- F - FAA
- G - Kentucky Airport Zoning Commission
- H - Geotechnical Report
- I - Directions to WCF Site
- J - Copy of Real Estate Agreement
- K - Notification Listing
- L - Copy of Property Owner Notification
- M - Copy of County Judge/Executive Notice
- N - Copy of Posted Notices
- O - Copy of Radio Frequency Design Search Area



EXHIBIT A
FCC LICENSE DOCUMENTATION

ULS License

Cellular License - KNKN841 - NEW CINGULAR WIRELESS PCS, LLC

Call Sign	KNKN841	Radio Service	CL - Cellular
Status	Active	Auth Type	Regular

Market

Market	CMA452 - Kentucky 10 - Powell	Channel Block	A
Submarket	0	Phase	2

Dates

Grant	08/30/2011	Expiration	10/01/2021
Effective	08/30/2013	Cancellation	

Five Year Buildout Date

02/05/1997

Control Points

1 1650 Lyndon Farms Court, LOUISVILLE, KY
P: (502)329-4700

Licensee

FRN	0003291192	Type	Limited Liability Company
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Licensee

NEW CINGULAR WIRELESS PCS, LLC 2200 N. Greenville Ave, 1W Richardson, TX 75082 ATTN Reginald Youngblood	P:(972)234-7003 F:(972)301-6893 E:FCCMW@att.com
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Contact

AT&T MOBILITY LLC Michael P Goggin 1120 20th Street, NW - Suite 1000 Washington, DC 20036 ATTN Michael P. Goggin	P:(202)457-2055 F:(202)457-3073 E:michael.p.goggin@att.com
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Ownership and Qualifications

Radio Service Type	Mobile
Regulatory Status	Common Carrier Interconnected Yes

Alien Ownership

The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications

The Applicant answered "No" to each of the Basic Qualification questions.

Demographics

Race	
Ethnicity	Gender

ULS License

PCS Broadband License - WPOI255 - NEW CINGULAR WIRELESS PCS, LLC

Call Sign	WPOI255	Radio Service	CW - PCS Broadband
Status	Active	Auth Type	Regular

Market

Market	MTA026 - Louisville-Lexington-Evansvill	Channel Block	A
Submarket	19	Associated Frequencies (MHz)	001850.00000000- 001865.00000000 001930.00000000- 001945.00000000

Dates

Grant	07/07/2005	Expiration	06/23/2015
Effective	11/24/2012	Cancellation	

Buildout Deadlines

1st	06/23/2000	2nd	06/23/2005
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Notification Dates

1st	07/07/2000	2nd	02/17/2005
-----	------------	-----	------------

Licensee

FRN	0003291192	Type	Limited Liability Company
-----	------------	------	---------------------------

Licensee

NEW CINGULAR WIRELESS PCS, LLC 2200 N. Greenville Ave, 1W Richardson, TX 75082 ATTN Reginald Youngblood	P:(972)234-7003 F:(972)301-6893 E:FCCMW@att.com
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Contact

AT&T MOBILITY LLC Michael P Goggin 1120 20th Street, NW - Suite 1000 Washington, DC 20036 ATTN Michael P. Goggin	P:(202)457-2055 F:(202)457-3073 E:michael.p.goggin@att.com
--	--

Ownership and Qualifications

Radio Service Type Mobile

Regulatory Status Common Carrier Interconnected Yes

Alien Ownership

The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications

The Applicant answered "No" to each of the Basic Qualification questions.

Tribal Land Bidding Credits

This license did not have tribal land bidding credits.

ULS License

AWS, 1710-1755/2110-2155 MHz bands License - WQGA823 - New Cingular Wireless PCS, LLC

Call Sign	WQGA823	Radio Service	AW - AWS, 1710-1755/2110-2155 MHz bands
Status	Active	Auth Type	Regular
Market			
Market	CMA452 - Kentucky 10 - Powell	Channel Block	A
Submarket	0	Associated Frequencies (MHz)	001710.00000000-001720.00000000-002110.00000000-002120.00000000

Dates

Grant	11/29/2006	Expiration	11/29/2021
Effective	02/12/2014	Cancellation	

Buildout Deadlines

1st	2nd
-----	-----

Notification Dates

1st	2nd
-----	-----

Licensee

FRN	0003291192	Type	Limited Liability Company
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Licensee

New Cingular Wireless PCS, LLC 3300 E. Renner Road, B3132 Richardson, TX 75082 ATTN Reginald Youngblood	P:(855)699-7073 F:(972)907-1131 E:FCCMW@att.com
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Contact

AT&T Mobility LLC Michael P Goggin 1120 20th Street, NW - Suite 1000 Washington, DC 20036 ATTN Michael P. Goggin	P:(202)457-2055 F:(202)457-3073 E:michael.p.goggin@att.com
--	--

Ownership and Qualifications

Radio Service Type	Mobile
Regulatory Status	Common Carrier Interconnected Yes

Alien Ownership

The Applicant answered "No" to each of the Alien Ownership questions.

Basic Qualifications

The Applicant answered "No" to each of the Basic Qualification questions.

Tribal Land Bidding Credits

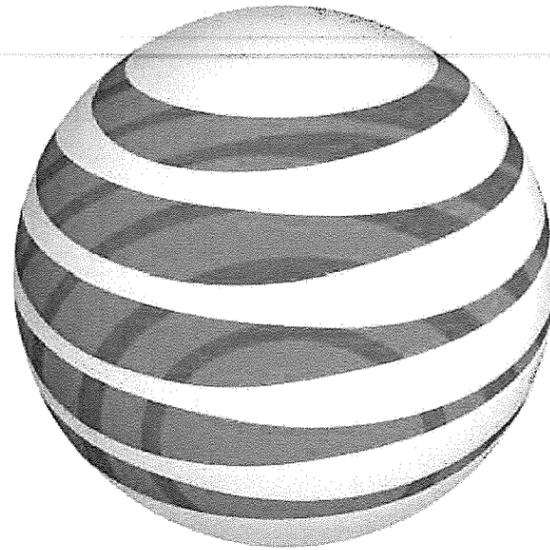
This license did not have tribal land bidding credits.



EXHIBIT B

SITE DEVELOPMENT PLAN:

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



at&t

SITE NAME:
CLOVER BOTTOM CREEK
 SITE NUMBER:

KYALU6174

PROPOSED RAWLAND SITE WITH NEW
 255 FT SELF SUPPORT TOWER
 WITH A 10' LIGHTNING ARRESTOR



Know what's below.
 Call before you dig.

SHEET INDEX	
T-1	TITLE SHEET
SURVEY:	
B-1	SITE SURVEY
B-2	500' RADIUS & ABUTTER'S MAP
B-3	500' RADIUS & ABUTTER'S MAP (CONT'D)
B-4	500' RADIUS & ABUTTER'S MAP (CONT'D)
CIVIL:	
C-1	OVERALL SITE LAYOUT
C-2	OVERALL SITE LAYOUT (CONT'D)
C-3	ENLARGED COMPOUND LAYOUT
C-4	TOWER ELEVATION

CONTACT INFORMATION	
FIRE DEPARTMENT MCKEE FIRE DEPARTMENT PHONE: (606) 287-3767	
POLICE DEPARTMENT JACKSON COUNTY SHERIFF PHONE: (606) 287-6020	
ELECTRIC COMPANY JACKSON ENERGY COOP PHONE: (606) 364-1000	
TELEPHONE COMPANY PEOPLES RURAL TELEPHONE PHONE: (606) 287-7101	

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-B1, IEEE 1100, IEEE C62.41	
ANSI T1.311, FDR TELECOM - DC POWER SYSTEMS - TELECOM, ENVIRONMENTAL PROTECTION	
2012 IBC	
2011 NEC	
FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN.	



ZONING DRAWING		
REV.	DATE	DESCRIPTION
A	9.3.13	CORRECT COORDINATES
0	11.18.13	ISSUED AS FINAL
1	04.09.14	REDLINES
2	04.17.14	REDLINES

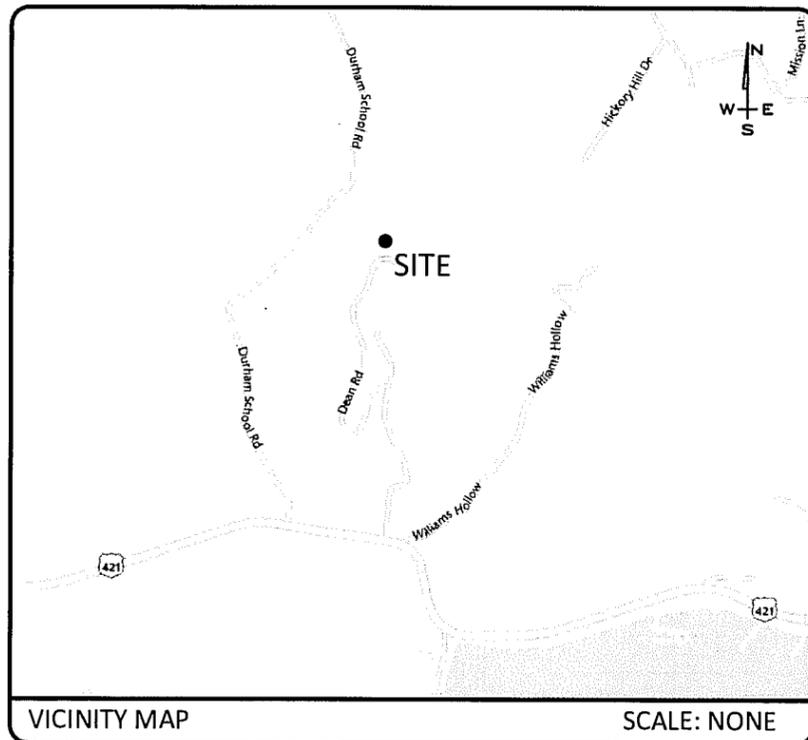
SITE INFORMATION:
CLOVER BOTTOM CREEK
 427 DEAN ROAD
 MCKEE, KY 40447

SITE NUMBER:
KYALU6174

POD NUMBER: 13-0690
 DRAWN BY: CMP
 CHECKED BY: MEP
 DATE: 08.29.13

SHEET TITLE:
TITLE SHEET AND PROJECT INFORMATION

SHEET NUMBER:
T-1

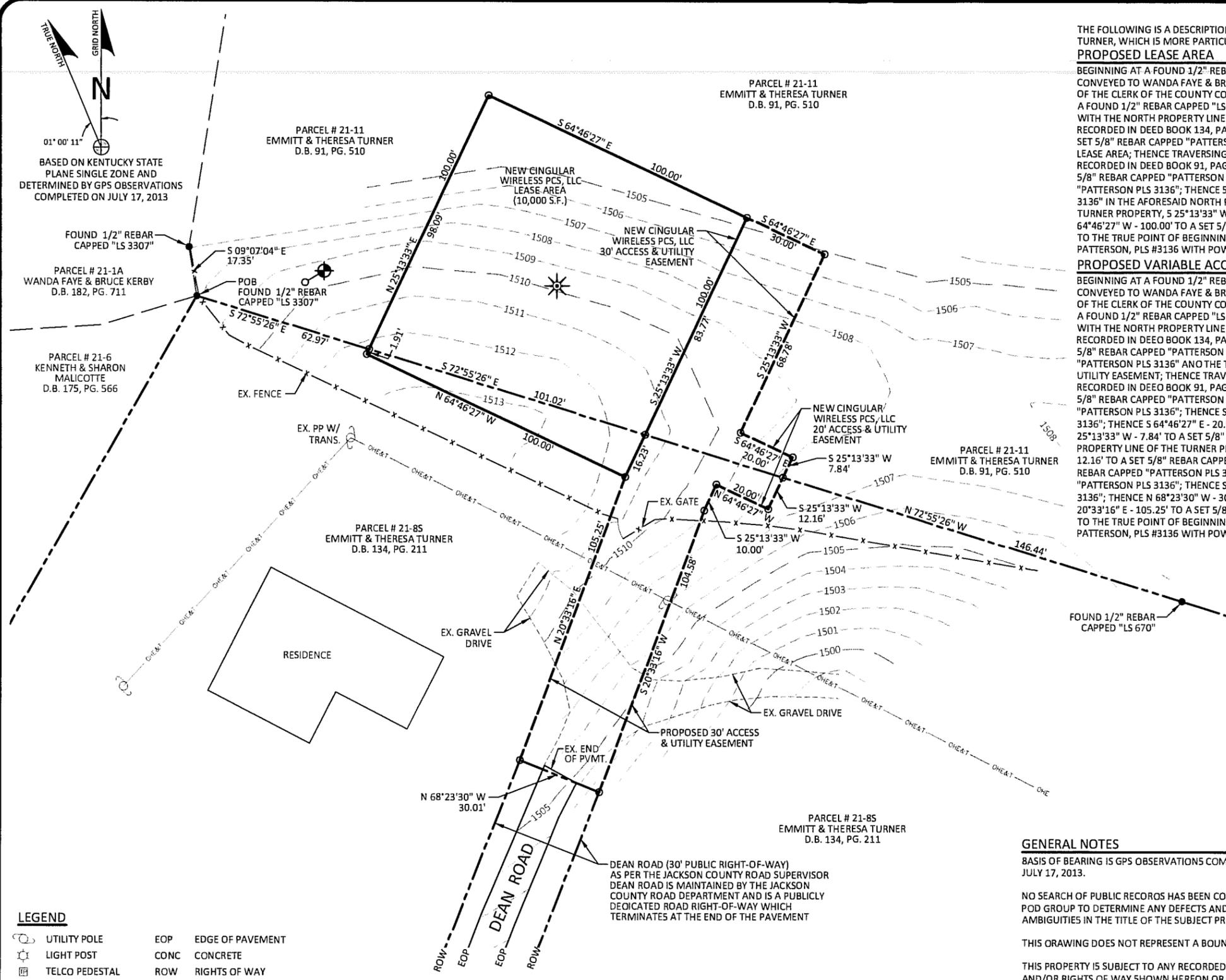


DRIVE DIRECTIONS	
FROM CIRCUIT COURT CLERK 100 FIRST ST, MC KEE, KY 40447:	
DEPART 1ST ST TOWARD US-421	50 FEET
TURN RIGHT US-421	9.5 MILES
TURN RIGHT ONTO DEAN RD	0.9 MILES
ARRIVE AT 427 DEAN ROAD, MCKEE, KY 40447	

SCOPE OF WORK:
CONSTRUCTION DRAWINGS FOR: CONSTRUCTION OF A NEW UNMANNED TELECOMMUNICATIONS FACILITY.
SITE WORK: NEW SELF SUPPORT TOWER, UNMANNED EQUIPMENT SHELTER ON A CONCRETE FOUNDATION, AND UTILITY INSTALLATIONS.

PROJECT INFORMATION	
COUNTY:	JACKSON
SITE ADDRESS:	427 DEAN ROAD MCKEE, KY 40447
APPLICANT:	AT&T 601 WEST CHESTNUT STREET LOUISVILLE, KY 40203
LATITUDE:	37° 29' 38.99"
LONGITUDE:	84° 06' 57.67"
ELEVATION:	1775'+/- AMSL

DEPARTMENT	NAME / SIGNATURE	DATE
LAND/TOWER OWNER		
SITE ACQUISITION AGENT		
ZONING/PERMITTING AGENT		
A&E MANAGER		
CONSTRUCTION MANAGER		
RF ENGINEER		



LEGAL DESCRIPTIONS

THE FOLLOWING IS A DESCRIPTION OF AN AREA TO BE LEASED FROM THE PROPERTY OF EMMITT & THERESA TURNER, WHICH IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

PROPOSED LEASE AREA

BEGINNING AT A FOUND 1/2" REBAR CAPPED "LS 3307" IN THE SOUTHEAST CORNER OF THE PROPERTY CONVEYED TO WANDA FAYE & BRUCE KERBY AS RECORDED IN DEED BOOK 182, PAGE 711 IN THE OFFICE OF THE CLERK OF THE COUNTY COURT OF JACKSON COUNTY, KENTUCKY, BEING S 09°07'04" E - 17.35' FROM A FOUND 1/2" REBAR CAPPED "LS 3307" IN THE EAST PROPERTY LINE OF SAID KERBY PROPERTY; THENCE WITH THE NORTH PROPERTY LINE OF THE PROPERTY CONVEYED TO EMMITT & THERESA TURNER AS RECORDED IN DEED BOOK 134, PAGE 211 IN THE AFORESAID CLERK'S OFFICE, S 72°55'26" E - 62.97' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136" AND THE TRUE POINT OF BEGINNING OF THE PROPOSED LEASE AREA; THENCE TRAVERSING THE PROPERTY CONVEYED TO EMMITT & THERESA TURNER AS RECORDED IN DEED BOOK 91, PAGE 510 IN THE AFORESAID CLERK'S OFFICE, N 25°13'33" E - 98.09' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136"; THENCE S 64°46'27" E - 100.00' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136"; THENCE S 25°13'33" W - 83.77' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136" IN THE AFORESAID NORTH PROPERTY LINE OF THE TURNER PROPERTY; THENCE TRAVERSING SAID TURNER PROPERTY, S 25°13'33" W - 16.23' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136"; THENCE N 64°46'27" W - 100.00' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136"; THENCE N 25°13'33" E - 1.91' TO THE TRUE POINT OF BEGINNING CONTAINING 10,000 SQUARE FEET AS PER SURVEY BY MARK E. PATTERSON, PLS #3136 WITH POWER OF DESIGN GROUP, LLC DATED JULY 31, 2013.

PROPOSED VARIABLE ACCESS & UTILITY EASEMENT

BEGINNING AT A FOUND 1/2" REBAR CAPPED "LS 3307" IN THE SOUTHEAST CORNER OF THE PROPERTY CONVEYED TO WANDA FAYE & BRUCE KERBY AS RECORDED IN DEED BOOK 182, PAGE 711 IN THE OFFICE OF THE CLERK OF THE COUNTY COURT OF JACKSON COUNTY, KENTUCKY, BEING S 09°07'04" E - 17.35' FROM A FOUND 1/2" REBAR CAPPED "LS 3307" IN THE EAST PROPERTY LINE OF SAID KERBY PROPERTY; THENCE WITH THE NORTH PROPERTY LINE OF THE PROPERTY CONVEYED TO EMMITT & THERESA TURNER AS RECORDED IN DEED BOOK 134, PAGE 211 IN THE AFORESAID CLERK'S OFFICE, S 72°55'26" E PASSING A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136" AT 62.97' IN ALL 163.99' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136" AND THE TRUE POINT OF BEGINNING OF THE PROPOSED VARIABLE ACCESS & UTILITY EASEMENT; THENCE TRAVERSING THE PROPERTY CONVEYED TO EMMITT & THERESA TURNER AS RECORDED IN DEED BOOK 91, PAGE 510 IN THE AFORESAID CLERK'S OFFICE, N 25°13'33" E - 83.77' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136"; THENCE S 64°46'27" E - 30.00' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136"; THENCE S 25°13'33" W - 68.78' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136"; THENCE S 25°13'33" W - 7.84' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136" IN THE AFORESAID NORTH PROPERTY LINE OF THE TURNER PROPERTY; THENCE TRAVERSING SAID TURNER PROPERTY, S 25°13'33" W - 12.16' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136"; THENCE N 64°46'27" W - 20.00' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136"; THENCE S 25°13'33" W - 10.00' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136"; THENCE S 20°33'16" W - 104.58' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136"; THENCE N 68°23'30" W - 30.01' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136"; THENCE N 20°33'16" E - 105.25' TO A SET 5/8" REBAR CAPPED "PATTERSON PLS 3136"; THENCE N 25°13'33" E - 16.23' TO THE TRUE POINT OF BEGINNING CONTAINING 6,529 SQUARE FEET AS PER SURVEY BY MARK E. PATTERSON, PLS #3136 WITH POWER OF DESIGN GROUP, LLC DATED JULY 31, 2013.

TEMPORARY BENCHMARK

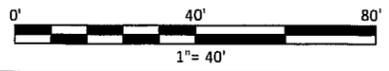
NORTHING: 3707561.29
EASTING: 5395172.49
ELEVATION: 1509.72'
LOCATION: BEING A SET IPC LOCATED 33'± NW OF THE SW CORNER OF THE PROPOSED LEASE AREA.

FAA COORDINATE POINT

NAO 83
LATITUDE: 37° 29' 38.99"
LONGITUDE: 84° 06' 57.67"
NAVD 88
ELEVATION: 1510' AMSL
NORTHING: 3707660.20
EASTING: 5395260.55

GENERAL NOTES

BASIS OF BEARING IS GPS OBSERVATIONS COMPLETED ON JULY 17, 2013.
NO SEARCH OF PUBLIC RECORDS HAS BEEN COMPLETED BY POD GROUP TO DETERMINE ANY DEFECTS AND/OR AMBIGUITIES IN THE TITLE OF THE SUBJECT PROPERTY.
THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.
THIS PROPERTY IS SUBJECT TO ANY RECORDED EASEMENTS AND/OR RIGHTS OF WAY SHOWN HEREON OR NOT.



FLOOD NOTE
THE PROPOSED LEASE AREA SHOWN HEREON IS NOT LOCATED IN A 100-YEAR FLOOD PLAIN PER FLOOD HAZARD BOUNDARY MAP, COMMUNITY-PANEL NUMBER 21109C0125C, DATED AUGUST 3, 2009. THE PROPOSED LEASE AREA IS LOCATED IN ZONE X.



SITE INFORMATION
TAX PARCEL NUMBER: 21-85 and 21-11
PROPERTY OWNER: EMMITT AND THERESA TURNER
P.O. BOX 29
SANDGAP, KY 40481
SOURCE OF TITLE: D.B. 91, PG. 510
D.B. 134, PG. 211

01° 00' 11"
BASED ON KENTUCKY STATE PLANE SINGLE ZONE AND DETERMINED BY GPS OBSERVATIONS COMPLETED ON JULY 17, 2013

FOUND 1/2" REBAR CAPPED "LS 3307"
PARCEL # 21-1A
WANDA FAYE & BRUCE KERBY
D.B. 182, PG. 711

PARCEL # 21-6
KENNETH & SHARON
MALICOTTE
D.B. 175, PG. 566

PARCEL # 21-11
EMMITT & THERESA TURNER
D.B. 91, PG. 510

PARCEL # 21-11
EMMITT & THERESA TURNER
D.B. 91, PG. 510

PARCEL # 21-11
EMMITT & THERESA TURNER
D.B. 91, PG. 510

PARCEL # 21-85
EMMITT & THERESA TURNER
D.B. 134, PG. 211

PARCEL # 21-85
EMMITT & THERESA TURNER
D.B. 134, PG. 211

LEGEND

- UTILITY POLE
- LIGHT POST
- TELCO PEDESTAL
- TRANSFORMER
- GUY WIRE
- EOP
- CONC
- ROW
- POB
- IPC
- EX. OVERHEAD ELECTRIC
- EX. OVERHEAD ELECTRIC & TELEPHONE
- EX. UNDERGROUND ELECTRIC & TELEPHONE
- EX. UNDERGROUND FIBER OPTIC
- EX. FENCE LINE
- EX. DITCH
- SET 5/8" REBAR 18" LONG CAPPED "PATTERSON PLS 3136" (UNLESS OTHERWISE NOTED)
- SET PK NAIL
- FOUND MONUMENT AS NOTED

LAND SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE SURVEY DEPICTED BY THE PLAT WAS PERFORMED BY PERSONS UNDER MY DIRECT SUPERVISION BY THE METHOD OF RANDOM TRAVERSE WITH SIDE SHOTS. THE UNADJUSTED PRECISION RATIO OF THE TRAVERSE EXCEEDED 1:10,000 AND WAS NOT ADJUSTED FOR CLOSURE. THIS SURVEY MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR AN URBAN SURVEY AS ESTABLISHED BY THE STATE OF KENTUCKY, PER 201 KAR 18:150 AND IN EFFECT ON THE DATE OF THIS SURVEY.

MARK PATTERSON, LPLS #3136
DATE 4-18-14



SURVEY

REV.	DATE	DESCRIPTION
1	8.04.13	ADDRESS CHANGE
2	4.9.14	SITE ADDRESS CHANGE
3	4.17.14	REDLINES (ZONING)

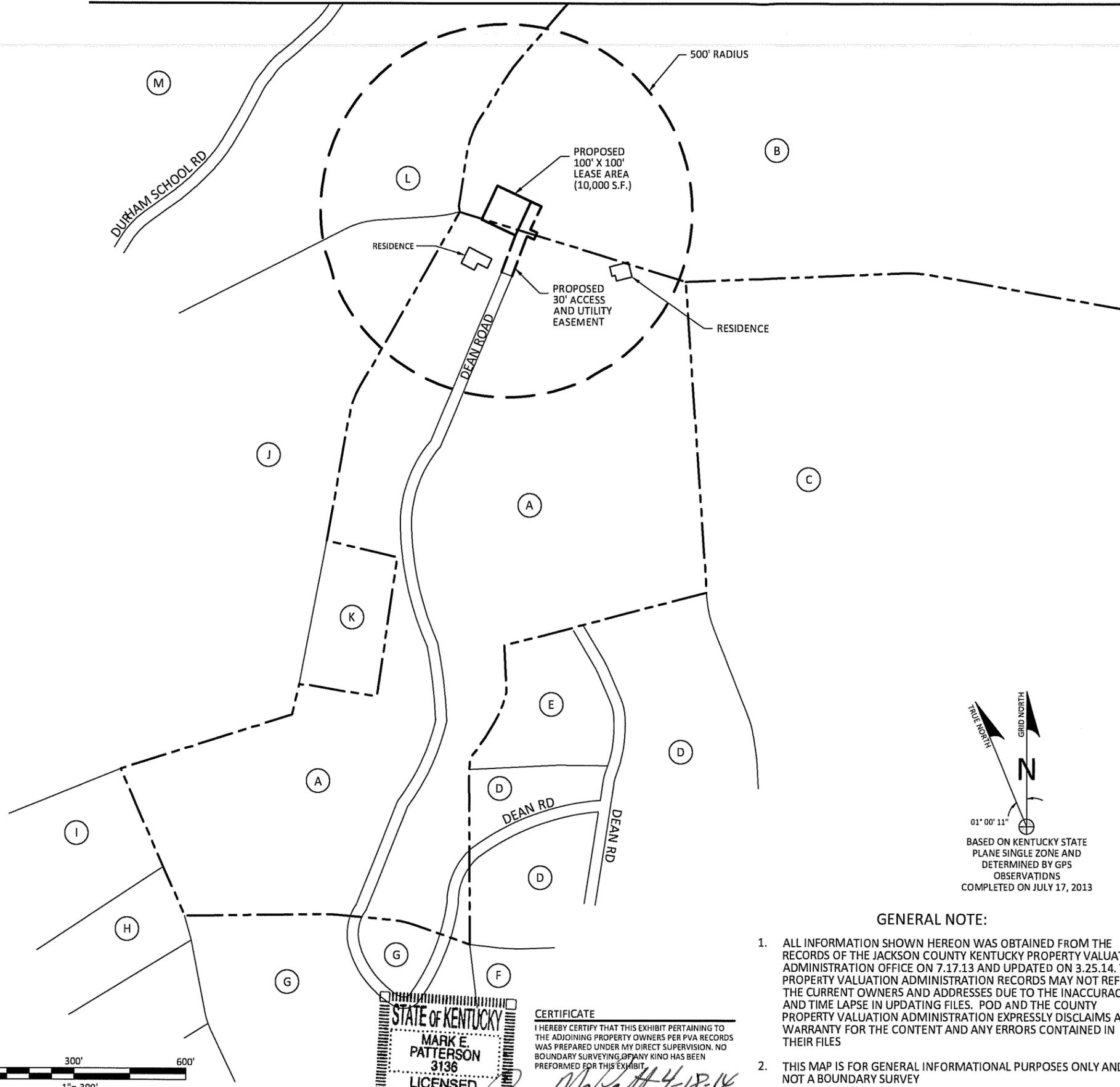
SITE INFORMATION:
CLOVER BOTTOM CREEK
427 DEAN ROAD,
MCKEE, KY 40447

SITE NUMBER:
KYALU6174

POD NUMBER: 13-0688
DRAWN BY: DSR
CHECKED BY: MEP
DATE: 07.31.13

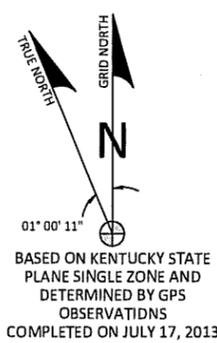
SHEET TITLE:
SITE SURVEY
SHEET NUMBER:
B-1

MATCH LINE (SEE SHEET B-3)



MATCH LINE (SEE SHEET B-4)

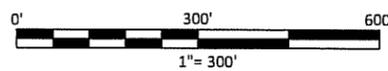
- (A) PARCEL # 21-85
EMMITT AND THERESA TURNER
PO BOX 29
SANDGAP, KY 40481
D.B. 134, PG. 211
NO ZONING
- (B) PARCEL # 21-11
EMMITT AND THERESA TURNER
PO BOX 29
SANDGAP, KY 40481
D.B. 91, PG. 510
NO ZONING
- (C) PARCEL # 21-10
TERRY GLENN AND JUDY SEABOURN
3130 SAWYER CREEK DRIVE
OSHKOSH, WI 54904
D.B. 171, PG. 323
NO ZONING
- (D) PARCEL # 21-8G
JUDITH C DEAN AND WENDELL M CARR
PO BOX 254
MCKEE, KY 40447
D.B. 182, PG. 486
NO ZONING
- (E) PARCEL # 21-8H
JUDITH C DEAN AND WENDELL M CARR
PO BOX 254
MCKEE, KY 40447
D.B. 182, PG. 483
NO ZONING
- (F) PARCEL # 21-8F
MIKE AND PHYLLIS HAYS
346 DEAN ROAD
MCKEE, KY 40447
D.B. 182, PG. 476
NO ZONING
- (G) PARCEL # 21-8U
DELBERT AND ORLENIA BAKER
PO BOX 133
SANDGAP, KY 40481
D.B. 141, PG. 117
NO ZONING
- (H) PARCEL # 21-7E
HAROLD AND TABITHA SAMS
244 DURHAM SCHOOL ROAD
MCKEE, KY 40447
D.B. 194, PG. 510
NO ZONING
- (I) PARCEL # 21-7A
NO RECORDS ON FILE WITH PVA
- (J) PARCEL # 21-6
KENNITH AND SHARON MALICOTTE
163 DURHAM SCHOOL ROAD
MCKEE, KY 40447
D.B. 175, PG. 566
NO ZONING
- (K) PARCEL # 21-8I
NO RECORDS ON FILE WITH PVA
- (L) PARCEL # 21-1A
WANDA FAYE AND BRUCE KERBY
109 LESLIE DRIVE
BEREA, KY 40403
D.B. 182, PG. 711
NO ZONING
- (M) PARCEL # 21-1
DAVID AND DEBORAH LUNSFORD
PO BOX 193
MCKEE, KY 40447
D.B. 182, PG. 722
NO ZONING



GENERAL NOTE:

1. ALL INFORMATION SHOWN HEREON WAS OBTAINED FROM THE RECORDS OF THE JACKSON COUNTY KENTUCKY PROPERTY VALUATION ADMINISTRATION OFFICE ON 7.17.13 AND UPDATED ON 3.25.14. THE PROPERTY VALUATION ADMINISTRATION RECORDS MAY NOT REFLECT THE CURRENT OWNERS AND ADDRESSES DUE TO THE INACCURACIES AND TIME LAPSE IN UPDATING FILES. POD AND THE COUNTY PROPERTY VALUATION ADMINISTRATION EXPRESSLY DISCLAIMS ANY WARRANTY FOR THE CONTENT AND ANY ERRORS CONTAINED IN THEIR FILES
2. THIS MAP IS FOR GENERAL INFORMATIONAL PURPOSES ONLY AND IS NOT A BOUNDARY SURVEY
3. NOT FOR RECORDING OR PROPERTY TRANSFER.

CERTIFICATE
I HEREBY CERTIFY THAT THIS EXHIBIT PERTAINING TO THE ADJOINING PROPERTY OWNERS PER PVA RECORDS WAS PREPARED UNDER MY DIRECT SUPERVISION. NO BOUNDARY SURVEYING OF ANY KIND HAS BEEN PERFORMED FOR THIS EXHIBIT.
Mark E. Patterson
MARK PATTERSON, LPLS #3136 DATE



4500 OLD LAGRANGE ROAD
 BUCKNER, KY 40010
 502-437-5252

EXHIBIT

REV.	DATE	DESCRIPTION
A	03.28.14	UPDATED PVA
B	04.09.14	SITE ADDRESS CHANGE
D	04.17.14	REDLINES (ZONING)

SITE INFORMATION:
CLOVER BOTTOM CREEK
 427 DEAN ROAD
 MCKEE, KY 40447

SITE NUMBER:
KYALU6174

POD NUMBER: 13-0689
 DRAWN BY: CSA
 CHECKED BY: MEP
 DATE: 08.29.13

SHEET TITLE:
500' RADIUS AND ABUTTER'S MAP

SHEET NUMBER:
B-2



TRUE NORTH
 GRID NORTH
 01° 00' 11"
 BASED ON KENTUCKY STATE
 PLANE SINGLE ZONE AND
 DETERMINED BY GPS
 OBSERVATIONS
 COMPLETED ON JULY 17, 2013

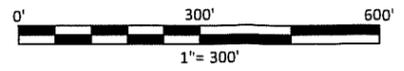
- (B) PARCEL # 21-11
EMMITT AND THERESA TURNER
PO BOX 29
SANDGAP, KY 40481
D.B. 91, PG. 510
NO ZONING
- (L) PARCEL # 21-1A
WANDA FAYE AND BRUCE KERBY
109 LESLIE DRIVE
BEREA, KY 40403
D.B. 182, PG. 711
NO ZONING
- (M) PARCEL # 21-1
DAVID AND DEBORAH LUNSFORD
PO BOX 193
MCKEE, KY 40447
D.B. 182, PG. 722
NO ZONING
- (N) PARCEL # 20-59
EMMITT AND THERESA TURNER
PO BOX 29
SANDGAP, KY 40481
D.B. 131, PG. 275
NO ZONING
- (O) PARCEL # 20-64
MIKE AND LISA ENGLAND
343 ASBILL ROAD
MCKEE, KY 40447
D.B. 113, PG. 117 & D.B. 138, PG. 75
NO ZONING
- (P) PARCEL # 20-80
FRANCES ISAACS
1088 KY HWY 2004
MCKEE, KY 40447
D.B. 170, PG. 295
NO ZONING
- (Q) PARCEL # 20-62
JACKIE ENGLAND
220 DURHAM RIDGE ROAD
MCKEE, KY 40447
D.B. 75, PG. 487
NO ZONING

MATCH LINE (SEE SHEET B-4)

MATCH LINE (SEE SHEET B-2)

CERTIFICATE
 I HEREBY CERTIFY THAT THIS EXHIBIT PERTAINING TO
 THE ADJOINING PROPERTY OWNERS PER PVA RECORDS
 WAS PREPARED UNDER MY DIRECT SUPERVISION. NO
 BOUNDARY SURVEYING OF ANY KIND HAS BEEN
 PERFORMED FOR THIS EXHIBIT
Mark Patterson 4-18-14
 MARK PATTERSON, LPLS #3136 DATE

STATE OF KENTUCKY
 MARK E.
 PATTERSON
 3136
 LICENSED
 PROFESSIONAL
 LAND SURVEYOR



- GENERAL NOTE:
- ALL INFORMATION SHOWN HEREON WAS OBTAINED FROM THE RECORDS OF THE JACKSON COUNTY KENTUCKY PROPERTY VALUATION ADMINISTRATION OFFICE ON 7.17.13 AND UPDATED ON 3.25.14. THE PROPERTY VALUATION ADMINISTRATION RECORDS MAY NOT REFLECT THE CURRENT OWNERS AND ADDRESSES DUE TO THE INACCURACIES AND TIME LAPSE IN UPDATING FILES. POD AND THE COUNTY PROPERTY VALUATION ADMINISTRATION EXPRESSLY DISCLAIMS ANY WARRANTY FOR THE CONTENT AND ANY ERRORS CONTAINED IN THEIR FILES
 - THIS MAP IS FOR GENERAL INFORMATIONAL PURPOSES ONLY AND IS NOT A BOUNDARY SURVEY
 - NOT FOR RECORDING OR PROPERTY TRANSFER.



EXHIBIT		
REV.	DATE	DESCRIPTION
A	03.28.14	UPDATED PVA
B	04.09.14	SITE ADDRESS CHANGE
O	04.17.14	REDLINES (ZONING)

SITE INFORMATION:
CLOVER BOTTOM CREEK
 427 DEAN ROAD
 MCKEE, KY 40447

SITE NUMBER:
 KYALU6174

POD NUMBER: 13-0689
 DRAWN BY: CSA
 CHECKED BY: MEP
 DATE: 08.29.13

SHEET TITLE:
**500' RADIUS
 AND ABUTTER'S
 MAP**

SHEET NUMBER:
B-3

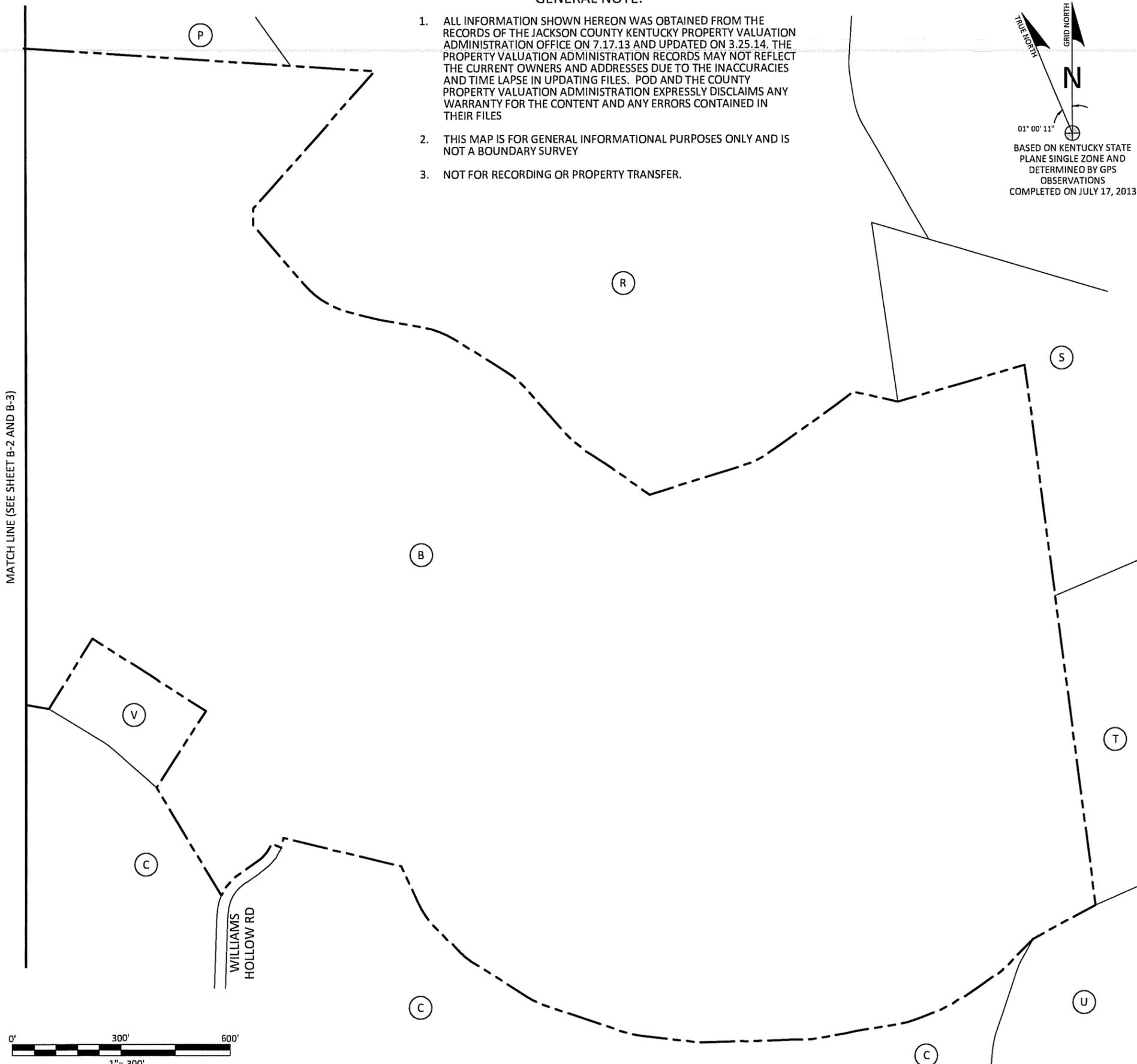
GENERAL NOTE:

1. ALL INFORMATION SHOWN HEREON WAS OBTAINED FROM THE RECORDS OF THE JACKSON COUNTY KENTUCKY PROPERTY VALUATION ADMINISTRATION OFFICE ON 7.17.13 AND UPDATED ON 3.25.14. THE PROPERTY VALUATION ADMINISTRATION RECORDS MAY NOT REFLECT THE CURRENT OWNERS AND ADDRESSES DUE TO THE INACCURACIES AND TIME LAPSE IN UPDATING FILES. POD AND THE COUNTY PROPERTY VALUATION ADMINISTRATION EXPRESSLY DISCLAIMS ANY WARRANTY FOR THE CONTENT AND ANY ERRORS CONTAINED IN THEIR FILES
2. THIS MAP IS FOR GENERAL INFORMATIONAL PURPOSES ONLY AND IS NOT A BOUNDARY SURVEY
3. NOT FOR RECORDING OR PROPERTY TRANSFER.

TRUE NORTH
GRID NORTH
N
01° 00' 11"
BASED ON KENTUCKY STATE PLANE SINGLE ZONE AND DETERMINED BY GPS OBSERVATIONS COMPLETED ON JULY 17, 2013

- (B) PARCEL # 21-11
EMMITT AND THERESA TURNER
PO BOX 29
SANDGAP, KY 40481
D.B. 91, PG. 510
NO ZONING
- (C) PARCEL # 21-10
TERRY GLENN AND JUDY SEABOURN
3130 SAWYER CREEK DRIVE
OSHKOSH, WI 54904
D.B. 171, PG. 323
NO ZONING
- (P) PARCEL # 20-80
FRANCES ISAACS
1088 KY HWY 2004
MCKEE, KY 40447
D.B. 170, PG. 295
NO ZONING
- (R) PARCEL # 20-84
WILLIAM O SMITH
245 KY HWY 2004
MCKEE, KY 40447
D.B. 92, PG. 346
NO ZONING
- (S) PARCEL # 21NE-25
TIMOTHY WAYNE JORDAN
1822 DEERWOOD AVENUE
LOUISVILLE, KY 40205
D.B. 83, PG. 340
NO ZONING
- (T) PARCEL # 21NE-17
RAY BOLES
PO BOX 75
SANDGAP, KY 40481
D.B. 166, PG. 336
NO ZONING
- (U) PARCEL # 21NE-10
KENNETH D AND CAROL MARCUM
137 STATE ROUTE 2004
MCKEE, KY 40447
D.B. 155, PG. 54
NO ZONING
- (V) PARCEL # 21-11A
TERRY & SALLY BREWER
PO BOX 37
SANDGAP, KY 40481
D.B. 149, PG. 460
NO ZONING

MATCH LINE (SEE SHEET B-2 AND B-3)



0' 300' 600'
1" = 300'



CERTIFICATE
I HEREBY CERTIFY THAT THIS EXHIBIT PERTAINING TO THE ADJOINING PROPERTY OWNERS PER PVA RECORDS WAS PREPARED UNDER MY DIRECT SUPERVISION. NO BOUNDARY SURVEYING OF ANY KIND HAS BEEN PERFORMED FOR THIS EXHIBIT.

Mark E. Patterson
MARK PATTERSON, LPLS #3136 DATE 08/29/14



EXHIBIT

REV.	DATE	DESCRIPTION
A	03.28.14	UPDATED PVA
B	04.09.14	SITE ADDRESS CHANGE
D	04.17.14	REDLINES (ZONING)

SITE INFORMATION:

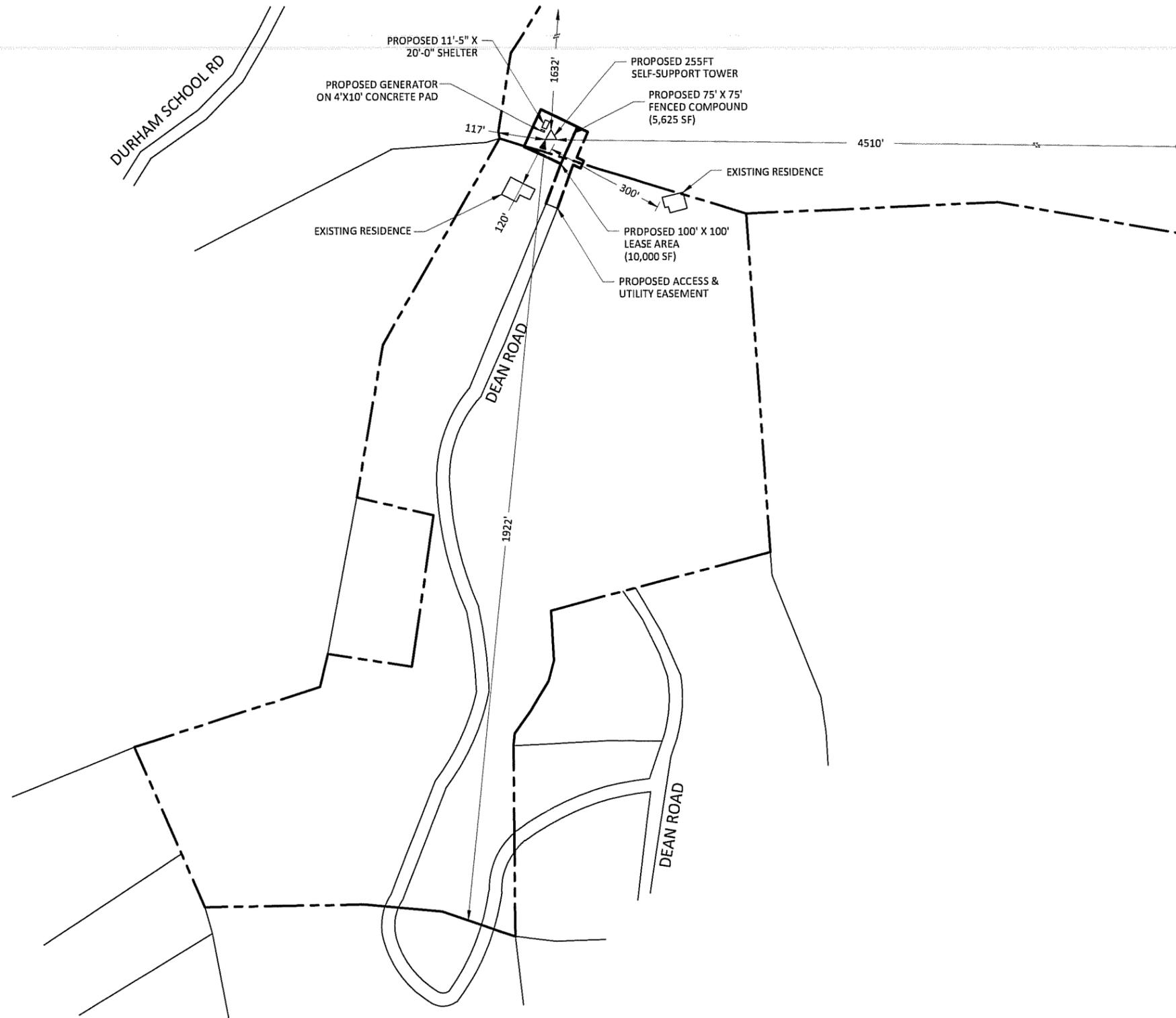
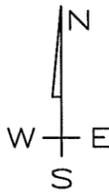
CLOVER BOTTOM CREEK
427 DEAN ROAD
MCKEE, KY 40447

SITE NUMBER:
KYALU6174

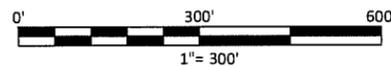
POD NUMBER: 13-0689
DRAWN BY: CSA
CHECKED BY: MEP
DATE: 08.29.13

SHEET TITLE:
500' RADIUS AND ABUTTER'S MAP

SHEET NUMBER:
B-4



- (P) LEASE LINE
- (P) ELECTRIC
- (P) TELEPHONE
- (P) FENCE
- (E) PROPERTY LINE
- (E) EDGE OF PAVEMENT
- (E) RIGHT OF WAY
- (E) FENCE
- (E) OVERHEAD ELECTRIC
- (E) LOT LINES



P D
POWER OF DESIGN
4500 OLD LAGRANGE ROAD
BUCKNER, KY 40010
502-437-5252

WESTOWER
COMMUNICATIONS

at&t

STATE OF KENTUCKY
MARK E. PATTERSON
16,300
PROFESSIONAL ENGINEER

ZONING DRAWING

REV.	DATE	DESCRIPTION
A	9.3.13	CORRECT COORDINATES
0	11.18.13	ISSUED AS FINAL
1	04.09.14	REDLINES
2	04.17.14	REDLINES

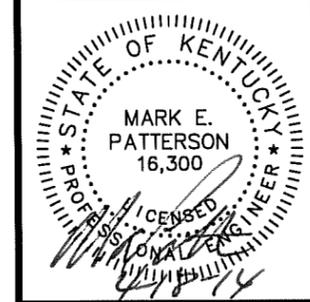
SITE INFORMATION:
CLOVER BOTTOM CREEK
427 DEAN ROAD
MCKEE, KY 40447

SITE NUMBER:
KYALU6174

POD NUMBER: 13-0690
DRAWN BY: CMP
CHECKED BY: MEP
DATE: 08.29.13

SHEET TITLE:
OVERALL SITE LAYOUT

SHEET NUMBER:
C-1



ZONING DRAWING

REV.	DATE	DESCRIPTION
A	9.3.13	CORRECT COORDINATES
0	11.18.13	ISSUED AS FINAL
1	04.09.14	REDLINES
2	04.17.14	REDLINES

SITE INFORMATION:
CLOVER BOTTOM CREEK
 427 DEAN ROAD
 MCKEE, KY 40447

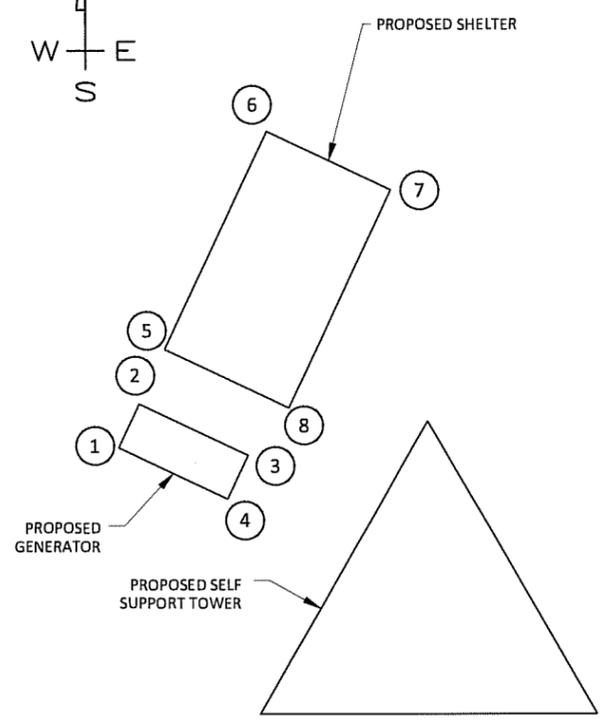
SITE NUMBER:
 KYALU6174

POD NUMBER: 13-0690

DRAWN BY: CMP
 CHECKED BY: MEP
 DATE: 08.29.13

SHEET TITLE:
OVERALL SITE LAYOUT (CONT'D)

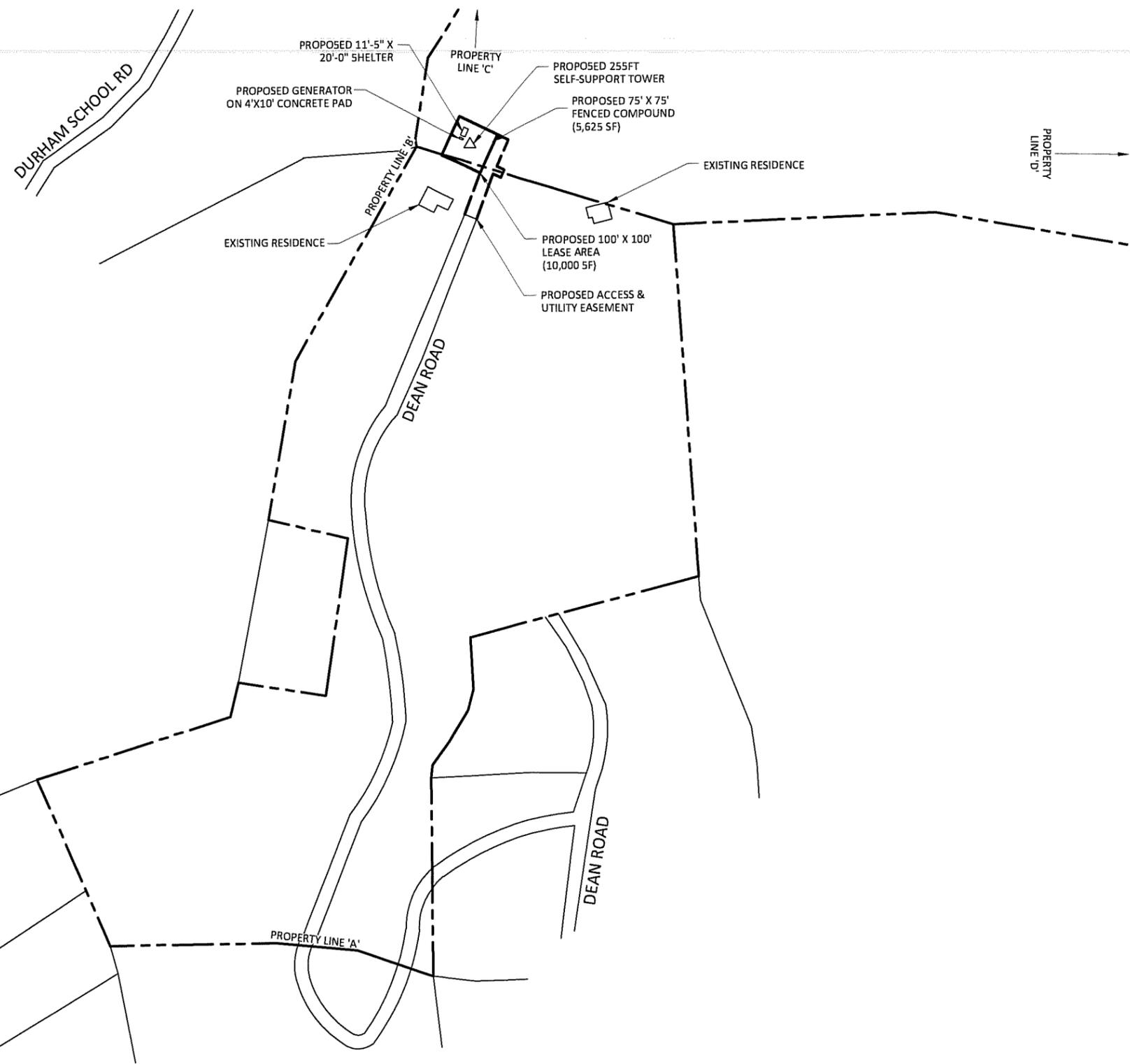
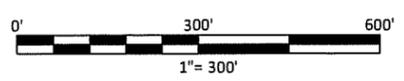
SHEET NUMBER:
C-2

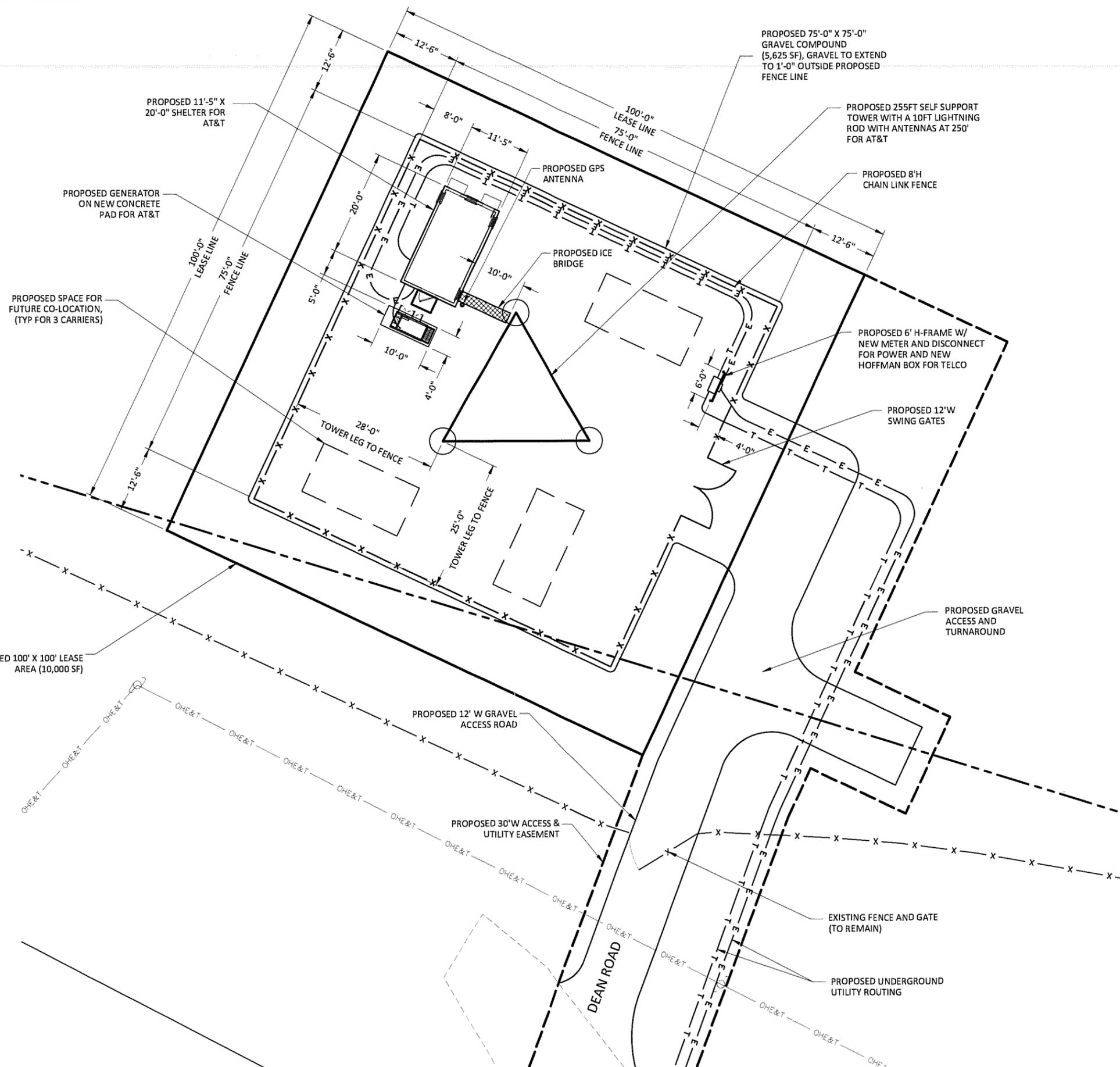


EQUIPMENT ENLARGEMENT
 NT5

PROPERTY LINE	EQUIPMENT	DISTANCE
A	4	1930'
B	1	102'
C	2	1633'
D	3	4540'
A	8	1931'
B	5	104'
C	6	1609'
D	7	4528'

- (P) LEASE LINE
- (P) ELECTRIC
- (P) TELEPHONE
- (P) FENCE
- (E) PROPERTY LINE
- (E) EDGE OF PAVEMENT
- (E) RIGHT OF WAY
- (E) FENCE
- (E) OVERHEAD ELECTRIC
- (E) LOT LINES

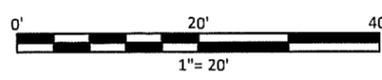




(E) UTILITY POLE

LINE LEGEND:

- (P) LEASE LINE
- (P) ELECTRIC
- (P) TELEPHONE
- (P) FENCE
- (E) PROPERTY LINE
- (E) EDGE OF PAVEMENT
- (E) RIGHT OF WAY
- (E) FENCE
- (E) OVERHEAD ELECTRIC
- (E) LOT LINES
- (E) GRAVEL
- (E) CONTOURS - MAJOR
- (E) CONTOURS - MINOR



POD
POWER OF DESIGN
4500 OLD LAGRANGE ROAD
BUCKNER, KY 40010
502-437-5252

WESTOWER
COMMUNICATIONS

at&t

STATE OF KENTUCKY
MARK E. PATTERSON
16,300
PROFESSIONAL ENGINEER

ZONING DRAWING

REV.	DATE	DESCRIPTION
A	9.3.13	CORRECT COORDINATES
0	11.18.13	ISSUED AS FINAL
1	04.09.14	REOLINES
2	04.17.14	REDLINES

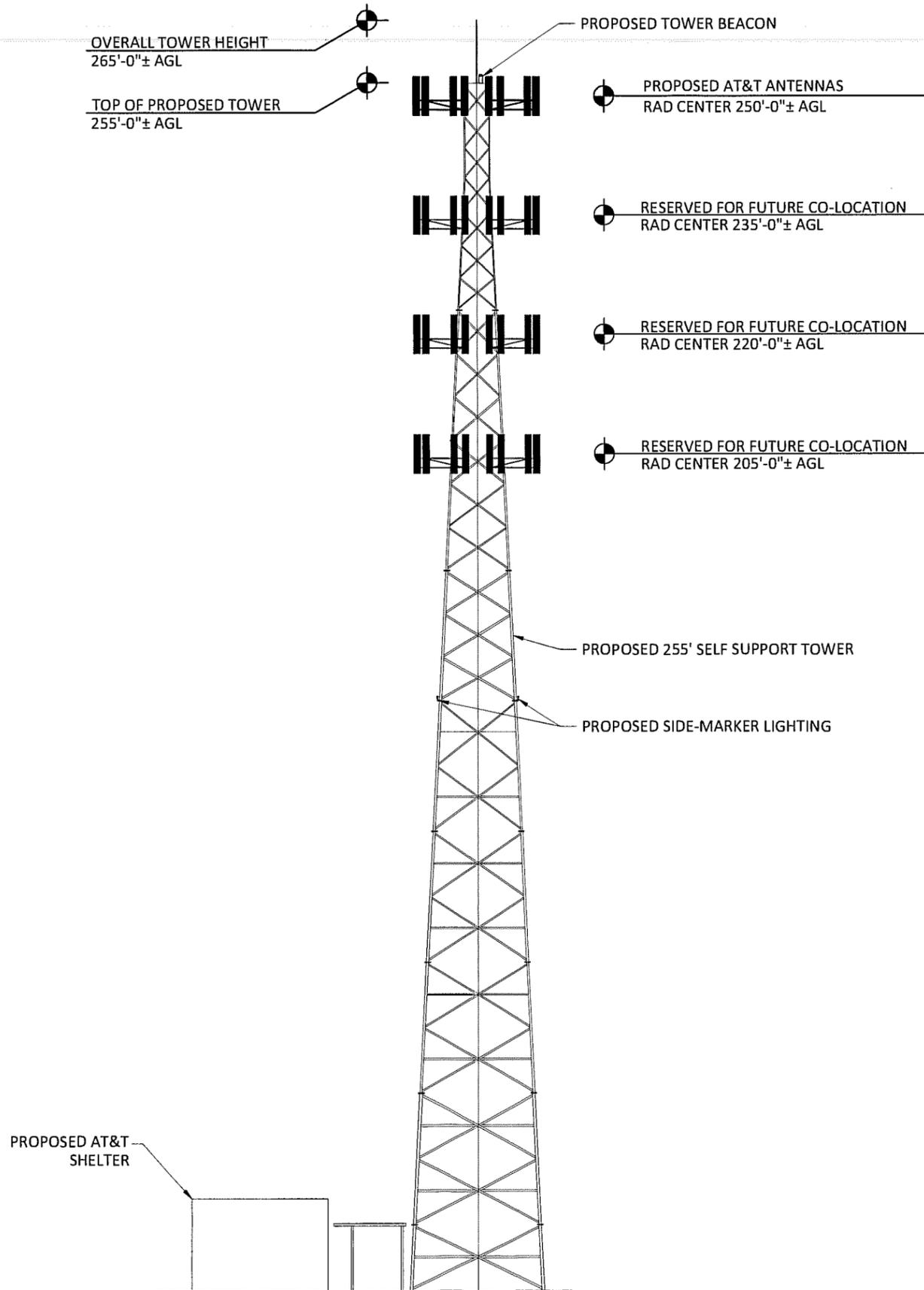
SITE INFORMATION:
CLOVER BOTTOM CREEK
427 DEAN ROAD
MCKEE, KY 40447

SITE NUMBER:
KYALU6174

POD NUMBER: 13-0690
DRAWN BY: CMP
CHECKED BY: MEP
DATE: 08.29.13

SHEET TITLE:
ENLARGED COMPOUND LAYOUT

SHEET NUMBER:
C-3



1 TOWER ELEVATION
NOT TO SCALE

POD
POWER OF DESIGN
4500 OLD LAGRANGE ROAD
BUCKNER, KY 40010
502-437-5252

WESTOWER
COMMUNICATIONS

at&t

STATE OF KENTUCKY
MARK E. PATTERSON
16,300
PROFESSIONAL ENGINEER

ZONING DRAWING

REV.	DATE	DESCRIPTION
A	9.3.13	CORRECT COORDINATES
0	11.18.13	ISSUED AS FINAL
1	04.09.14	REDLINES
2	04.17.14	REDLINES

SITE INFORMATION:
CLOVER BOTTOM CREEK
427 DEAN ROAD
MCKEE, KY 40447

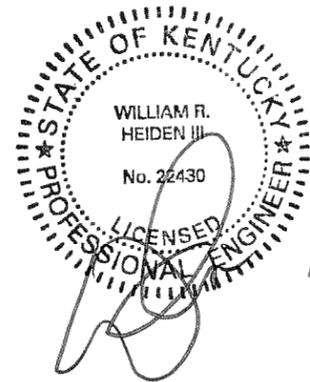
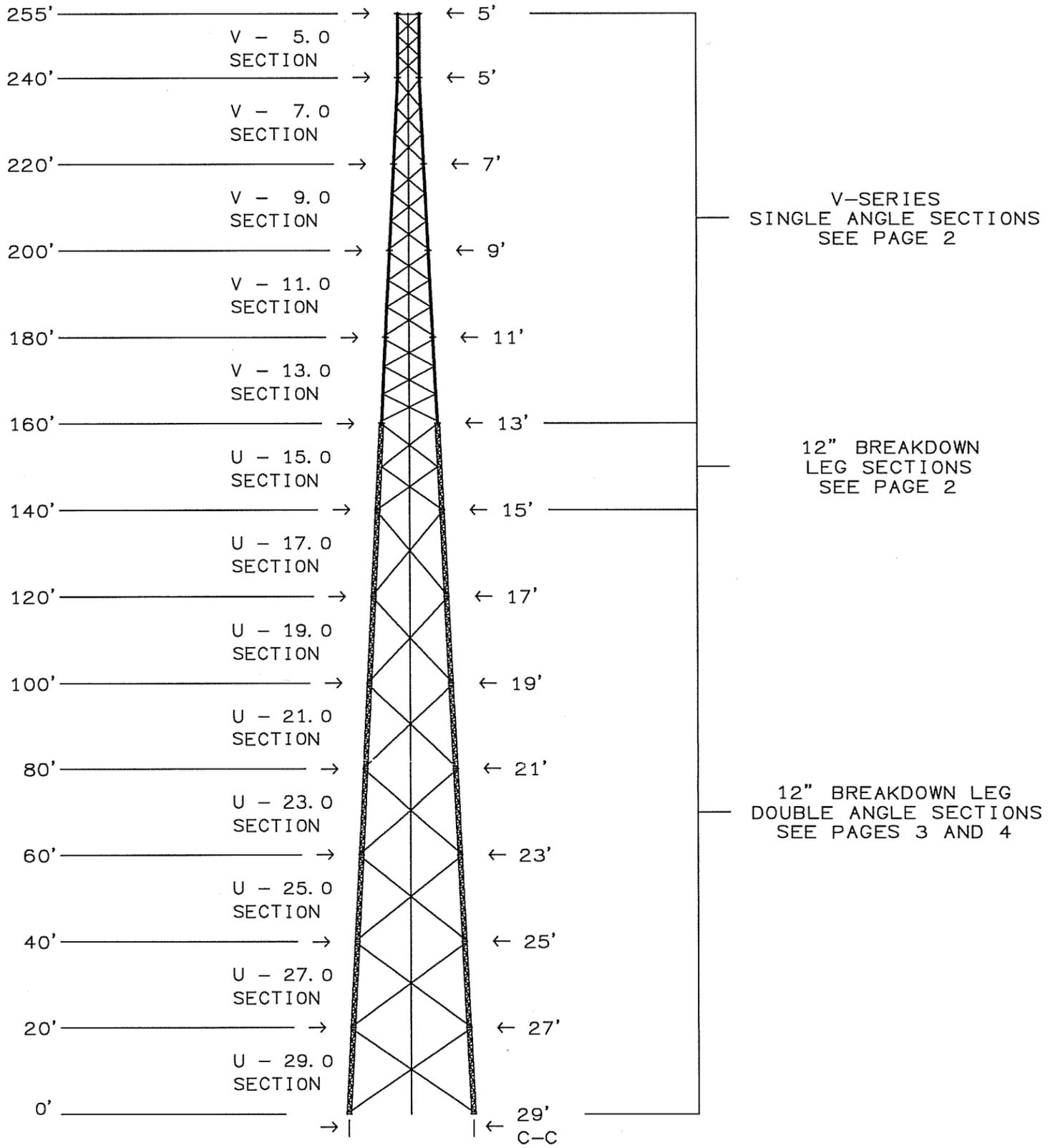
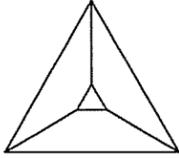
SITE NUMBER:
KYALU6174

POD NUMBER: 13-0690
DRAWN BY: CMP
CHECKED BY: MEP
DATE: 08.29.13

SHEET TITLE:
TOWER ELEVATION

SHEET NUMBER:
C-4

EXHIBIT C
TOWER AND FOUNDATION DESIGN



William R. Heiden III, KY Professional Engineer # 22430

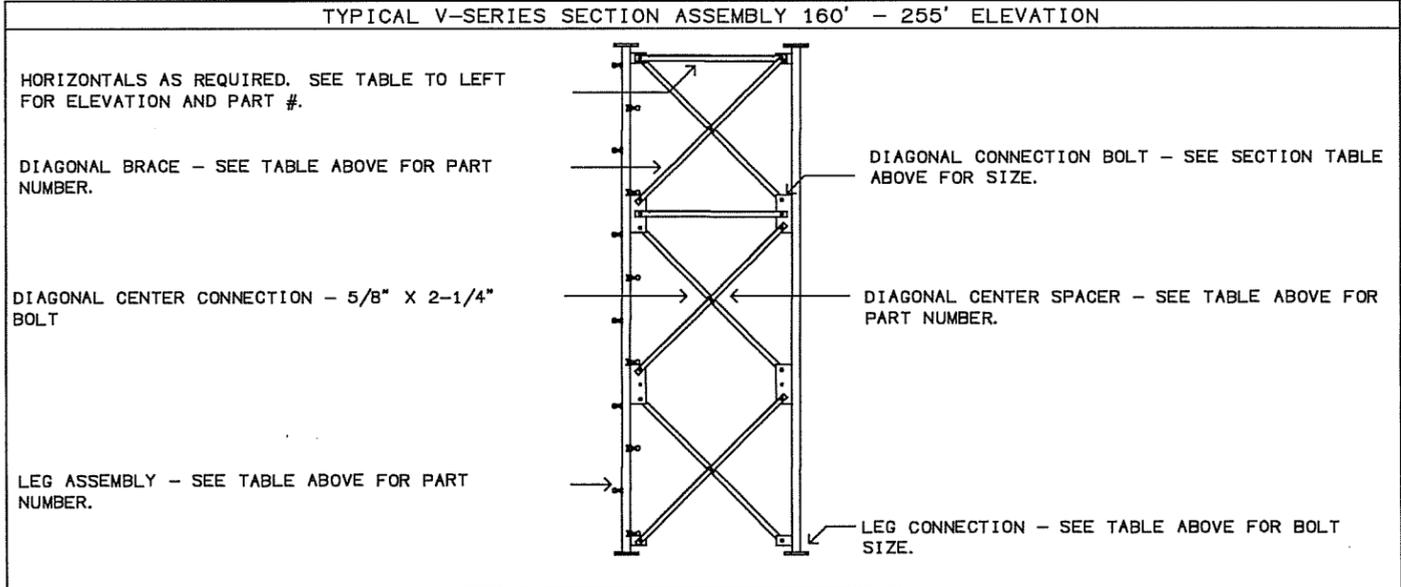
AMERICAN TOWER CORP.
#282216 CLOVER BOTTOM, KY
V-29.0 X 255'

B	ADD KY BUILDING CODE	SKK	04/10/2014			
A	ADDED FOUNDATIONS	MS	01/20/2014	APPROVED/ENG.	SKK 4/10/2014	
REV	DESCRIPTION OF REVISIONS	INI	DATE	APPROVED/FOUND.	N/A	1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR
				COPYRIGHT 2014		STRUCTURES
				DRAWN BY		DRAWING NO.
From: F1015792.DFT - 11/27/2013 14: 12				ENG. FILE NO. A-240589-		252258
Printed from 252258_01@B.DWG * 11/27/2013 15: 14 @ 04/10/2014 10: 27				ARCHIVE F-1015792		PAGE 1 OF 10

V-SERIES LEG SECTION DATA 160' - 255' ELEVATION																				
SECTION			LEG										DIAGONAL BRACE						HOR	
#	LENGTH	* WEIGHT	NOM SIZE	WALL	GRADE	CLIMBING		NON-CLIMB		CONNECT BOLT+		PART NUMBER **			ANGLE		CONNECT BOLT		CENTER	QTY
						QTY	PART#	QTY	PART#	DIAM	LENGTH	#1	#2	#3	FACE	THICK	DIAM	LENGTH	SPACER	
V- 5.0	15'	1013#	4"	0.237	A572-50	1	228175	2	228176	3/4"	3-1/2"	227077	227077	227077	2"	1/8"	3/4"	2-1/4"	116467	1
V- 7.0	20'	1609#	5"	0.258	A572-50	1	226200	2	226201	3/4"	3-1/2"	226190	226189	231342	2"	3/16"	3/4"	2-1/4"	116467	
V- 9.0	20'	1861#	5"	0.258	A572-50	3	226192			3/4"	3-1/2"	225035	225034	231345	2-1/2"	3/16"	3/4"	2-1/4"	116467	
V-11.0	20'	2200#	6"	0.280	A572-50	3	226206			3/4"	3-1/2"	225038	225037	231347	2-1/2"	3/16"	3/4"	2-1/4"	116487	
V-13.0	20'	2644#	6"	0.280	A572-50	3	229377			1"	4-3/4"	225041	225040	231350	3"	3/16"	3/4"	2-1/4"	116467	

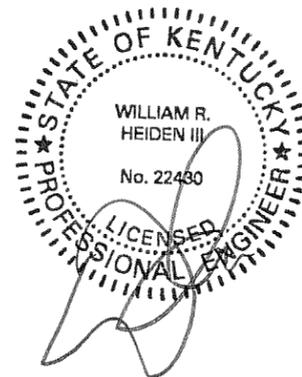
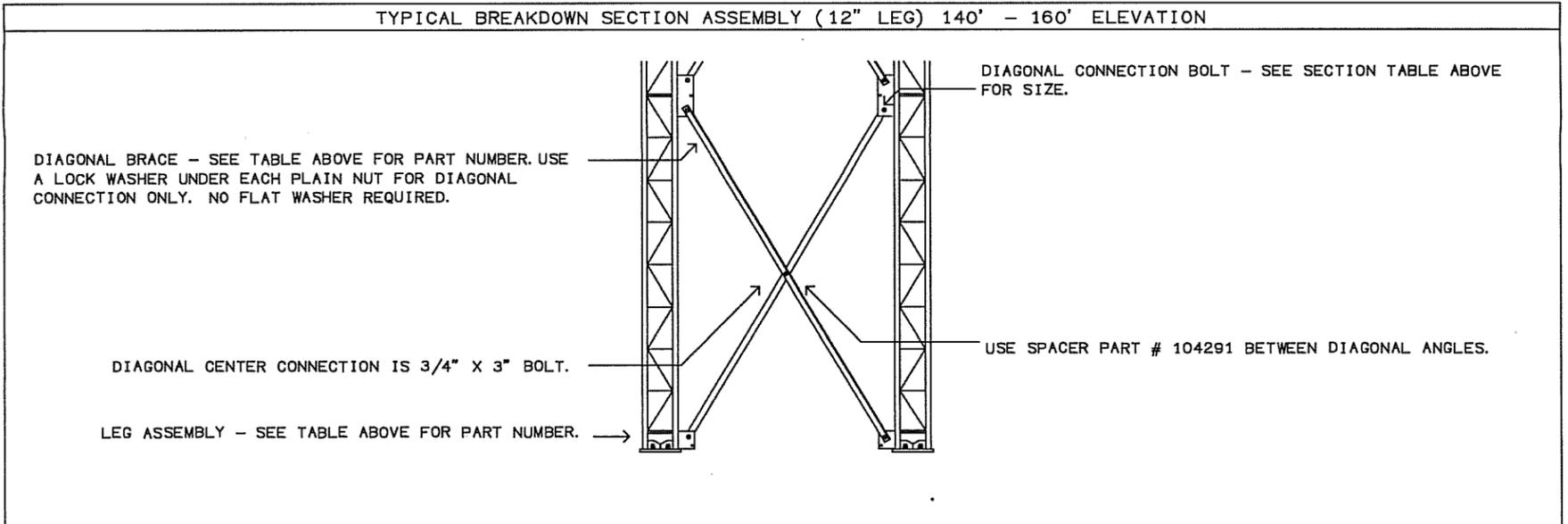
+ AT BOTTOM OF SECTION
* THE WEIGHTS LISTED ARE THEORETICAL. THE ACTUAL WEIGHTS WILL VARY. ALL WEIGHTS SHOULD BE CONFIRMED IN THE FIELD PRIOR TO ERECTION.
** PANELS ARE NUMBERED BEGINNING AT THE TOP OF THE SECTION.

HORIZONTAL DATA		
HORIZ HT	IN SEC#	HORIZ PART#
255	V- 5.0	227584



BREAKDOWN SECTION DATA (12" LEG) 140' - 160' ELEVATION													
SEC #	SECTION LENGTH	LEG SIZE	LEG PART#	TOP DIAG PART#	BOT DIAG PART#	DIAGONAL FACE	DIAGONAL THICK	DIAGONAL WEIGHT	SECTION DIAM	LEG CONNECT+ LENGTH	DIAG CONNECT DIAM	DIAG CONNECT LENGTH	
U-15.0	20'	1- 3/4"	229588	105580	105583	3"	5/16"	3585#	1"	4-3/4"	1"	2-1/4"	

* THE WEIGHTS LISTED ARE THEORETICAL. THE ACTUAL WEIGHTS WILL VARY. ALL WEIGHTS SHOULD BE CONFIRMED IN THE FIELD PRIOR TO ERECTION.
+ USE 1 FLAT WASHER UNDER EACH LOCK WASHER FOR LEG CONNECTION ONLY.



APR 10 2014

William R. Heiden III, KY Professional Engineer # 22430

AMERICAN TOWER CORP.
#282216 CLOVER BOTTOM, KY
V-29.0 X 255'

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PAGE 2 OF 10

BREAKDOWN SECTION LEG DATA (12" LEG WITH DOUBLE ANGLES) 0' - 140' ELEVATION

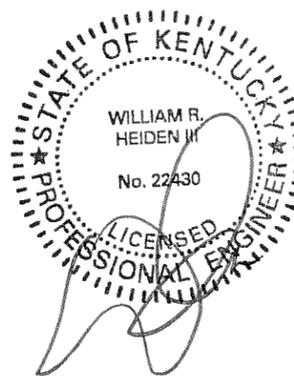
SECTION				LEG		LEG CONNECT @ BOTTOM+		
#	MODEL	LENGTH	WEIGHT*	SIZE	PART #	DIAM	LENGTH	#
7	U-17.0	20'	4008#	2 "	208332	1"	4-3/4"	12
6	U-19.0	20'	5330#	2- 1/4 "	208334	1"	4-3/4"	12
5	U-21.0	20'	5430#	2- 1/4 "	208334	1"	4-3/4"	12
4	U-23.0	20'	6119#	2- 1/2 "	208335	1"	4-3/4"	12
3	U-25.0	20'	6228#	2- 1/2 "	208335	1"	4-3/4"	12
2	U-27.0	20'	7120#	2- 3/4 "	208337	1"	4-3/4"	12
1	U-29.0	20'	7163#	2- 3/4 "	208337			

* THE WEIGHTS LISTED ARE THEORETICAL. THE ACTUAL WEIGHTS WILL VARY. ALL WEIGHTS SHOULD BE CONFIRMED IN THE FIELD PRIOR TO ERECTION.
 + QTY IS PER LEG. USE 1 LOCK WASHER AND 1 FLAT WASHER UNDER EACH PLAIN NUT.

BREAKDOWN SECTION DIAGONAL DATA (12" LEG WITH DOUBLE ANGLES) 0' - 140' ELEVATION

SECTION		DIAGONAL PART #			DIAG ANGLE		DIAG END BOLT		DIAG CENTER & SPACER BOLT		CENTER PLATE	SPACER	
#	MODEL	UPPER	LOWER	LONG	FACE	THICK	DIAM	LENGTH	DIAM	LENGTH	PART #	PART #	#*
7	U-17.0	215280	215284	215361	3"	3/16"	7/8"	2-1/2"	5/8"	2-1/4"	211833	104291	6
6	U-19.0	215289	215293	215365	3-1/2"	1/4"	7/8"	2-1/2"	5/8"	2-1/4"	211833	104291	7
5	U-21.0	215296	215300	215369	3-1/2"	1/4"	7/8"	2-1/2"	5/8"	2-1/4"	211833	104291	8
4	U-23.0	215304	215308	215373	3-1/2"	1/4"	7/8"	2-1/2"	5/8"	2-1/4"	211833	104291	8
3	U-25.0	215312	215316	215377	3-1/2"	1/4"	7/8"	2-1/2"	5/8"	2-1/4"	211833	104291	8
2	U-27.0	215320	215324	215380	3-1/2"	1/4"	7/8"	2-1/2"	5/8"	2-1/4"	211833	104291	8
1	U-29.0	215327	215330	215383	3-1/2"	1/4"	7/8"	2-1/2"	5/8"	2-1/4"	211833	104291	8

* QUANTITY IS PER PANEL PER FACE. USE 1 LOCK WASHER UNDER EACH PLAIN NUT.



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William R. Heiden III, KY Professional Engineer # 22430

AMERICAN TOWER CORP.
 #282216 CLOVER BOTTOM, KY
 V-29.0 X 255'

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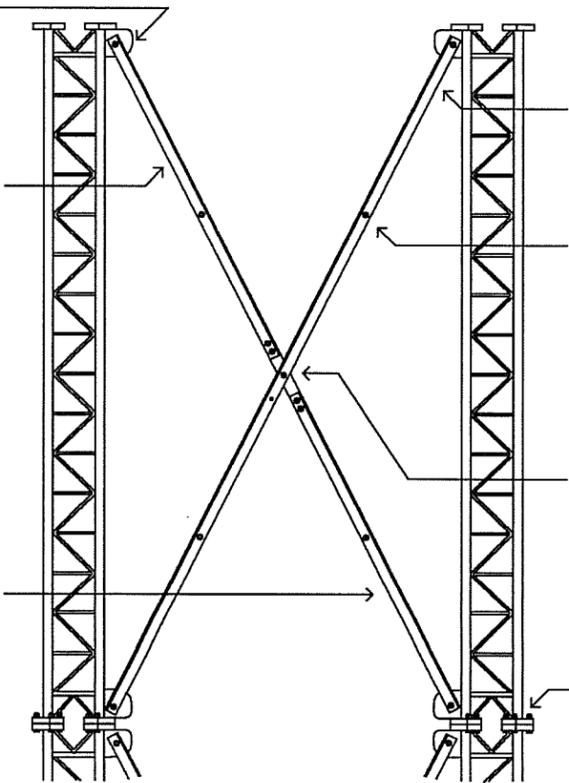
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TYPICAL BREAKDOWN SECTION ASSEMBLY (12" LEG WITH DOUBLE ANGLES) 0' - 140' ELEVATION

DIAGONAL END BOLTS - SEE DIAGONAL TABLE ON PAGE 3 FOR SIZE. NO FLAT WASHER REQUIRED.

"UPPER" DIAGONAL BRACES (BACK TO BACK ANGLES) - SEE TABLE ON PG. 3 FOR PART #.

"LOWER" DIAGONAL BRACES (BACK TO BACK ANGLES) - SEE TABLE ON PG. 3 FOR PART #.



"LONG" DIAGONAL BRACE (BACK TO BACK ANGLES) - SEE TABLE ON PG. 3 FOR PART #.

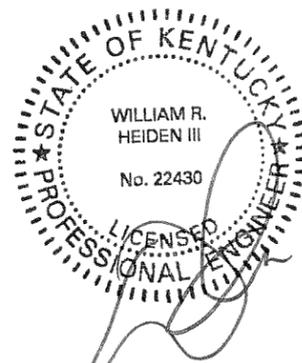
INTERMEDIATE DIAGONAL BOLTS WITH SPACER - SEE TABLE ON PG. 3 FOR SIZE, SPACER PART # AND NUMBER OF LOCATIONS PER PANEL ON EACH FACE. USE 1 SPACER PER BOLT. SEE DRAWING # 214823 FOR DETAILS.

DIAGONAL CENTER PLATE - SEE DIAGONAL TABLE ON PAGE 3 FOR PART # AND BOLT SIZE.

LEG CONNECTION - SEE TABLE ON PAGE 3 FOR BOLT SIZE. USE 1 LOCK WASHER AND 1 FLAT WASHER UNDER EACH PLAIN NUT FOR LEG CONNECTION.

ATTENTION ERECTOR:

- EXTRA CARE MUST BE TAKEN WHEN STANDING BREAKDOWN LEG SECTIONS FROM A FLAT "ASSEMBLY" POSITION ON THE GROUND TO AN UPRIGHT POSITION FOR STACKING. POOR RIGGING AND/OR LIFTING PROCEDURES MAY DAMAGE THE ANGLE BRACES AND/OR BREAKDOWN LEGS. IT IS THE RESPONSIBILITY OF THE TOWER CONTRACTOR TO ENSURE BREAKDOWN LEGS AND ANGLES ARE NOT DAMAGED DURING THE TOWER ASSEMBLY AND ERECTION.
- WHEN LIFTING ("FLYING") SINGLE PANEL TOWER SECTIONS TO PLACE THEM ON PREVIOUSLY ERECTED SECTIONS, A MINIMUM OF TWO (2) FULL SECTIONS (TYPICALLY 40') MUST BE ASSEMBLED TOGETHER TO PROVIDE ADEQUATE STABILITY TO THE TOWER LEGS AND ANGLE BRACES. IT IS THE RESPONSIBILITY OF THE TOWER CONTRACTOR TO ENSURE BREAKDOWN LEGS AND ANGLES ARE NOT DAMAGED DURING THE TOWER ASSEMBLY AND ERECTION.



APR 10 2014

William R. Heiden III, KY Professional Engineer # 22430

AMERICAN TOWER CORP.
#282216 CLOVER BOTTOM, KY
V-29.0 X 255'

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STRUCTURES

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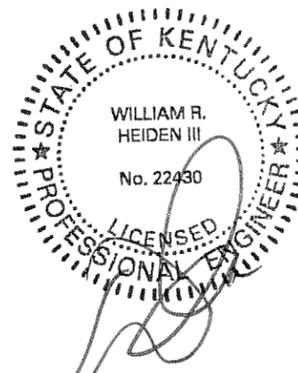
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GENERAL NOTES

1. TOWER MEETS THE REQUIREMENTS OF THE 2013 KENTUCKY BUILDING CODE UTILIZING AN 90 MPH 3-SEC GUST BASIC WIND SPEED WITH A STRUCTURE CLASS OF II, TOPOGRAPHIC CATEGORY OF 1 AND EXPOSURE C CRITERIA WITH NO ICE PER ANSI/TIA-222-G. TOWER MEETS THE REQUIREMENTS OF THE 2013 KENTUCKY BUILDING CODE UTILIZING AN 30 MPH 3-SEC GUST BASIC WIND SPEED WITH A STRUCTURE CLASS OF II, TOPOGRAPHIC CATEGORY OF 1 AND EXPOSURE C CRITERIA WITH .75" RADIAL ICE PER ANSI/TIA-222-G.
2. NO TWIST AND SWAY LIMITATIONS SPECIFIED OR USED FOR THIS TOWER.
3. MATERIAL: (A) SOLID RODS TO ASTM A572 GRADE 50. (B) ANGLES TO ASTM A36. (C) PIPE TO ASTM A500 GRADE B. (D) STEEL PLATES TO ASTM A36. (E) CONNECTION BOLTS TO ASTM A325 OR ASTM A449 (Fu=120 KSI AND Fy=92 KSI) AND ANCHOR BOLTS TO ASTM F1554 (Fu=150 KSI AND Fy=105 KSI). (F) TOWER LEG PIPE TO BE ASTM A500 GRADE B/C WITH 50KSI MIN. YIELD STRENGTH
4. BASE REACTIONS PER TIA-222-G FOR 90 MPH BASIC WIND SPEED WITH NO ICE (REACTIONS INCLUDE TIA-222-G LOAD FACTORS): TOTAL WEIGHT = 97.0 KIPS. MAXIMUM COMPRESSION = 601.0 KIPS PER LEG. MOMENT = 14278.0 KIP-FT. MAXIMUM UPLIFT = 529.0 KIPS PER LEG. MAXIMUM SHEAR = 97.0 KIPS TOTAL.
5. BASE REACTIONS PER TIA-222-G FOR 30 MPH BASIC WIND SPEED WITH 0.75" RADIAL ICE (REACTIONS INCLUDE TIA-222-G LOAD FACTORS): TOTAL WEIGHT = 289.0 KIPS. MOMENT = 1657.0 KIP-FT. MAXIMUM SHEAR = 11.0 KIPS TOTAL.
6. FINISH: ALL BOLTS ARE GALVANIZED IN ACCORDANCE WITH ASTM A153 (HOT DIPPED) OR ASTM B695 CLASS 50 (MECHANICAL). ALL OTHER STRUCTURAL MATERIALS ARE GALVANIZED IN ACCORDANCE WITH ASTM 123.
7. ANTENNAS: 250'-135 SQ. FT. AREA WITH 3,000# WITH ICE/115 SQ. FT. AREA WITH 2,000# NO ICE AND (1B) 1-5/8" LINES
 240'-135 SQ. FT. AREA WITH 3,000# WITH ICE/115 SQ. FT. AREA WITH 2,000# NO ICE AND (1B) 1-5/8" LINES
 230'-135 SQ. FT. AREA WITH 3,000# WITH ICE/115 SQ. FT. AREA WITH 2,000# NO ICE AND (1B) 1-5/8" LINES
 220'-135 SQ. FT. AREA WITH 3,000# WITH ICE/115 SQ. FT. AREA WITH 2,000# NO ICE AND (1B) 1-5/8" LINES
 NOTE: (A) ELEVATIONS ARE TO THE BOTTOM OF THE ANTENNAS EXCEPT FOR MICROWAVE DISHES, WHICH ARE TO THE CENTERLINE. (B) ALL TRANSMISSION LINES MUST BE PLACED ON PIROD SUPPLIED LINE BRACKETS.
8. REMOVE FOUNDATION TEMPLATE PRIOR TO ERECTING TOWER. INSTALL BASE SECTION WITH MINIMUM OF 2" CLEARANCE ABOVE CONCRETE. SEE BASE SECTION PLACEMENT PAGE FOR MORE INFORMATION. PACK NON-SHRINK STRUCTURAL GROUT UNDER BASE SECTION AFTER LEVELING TOWER.
9. MIN. WELDS 5/16" UNLESS OTHERWISE SPECIFIED. ALL WELDING TO CONFORM TO AWS D1.1 SPECIFICATIONS .
10. THIS DRAWING DOES NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, SEQUENCES AND PROCEDURES.
11. ALL BOLTS AND NUTS MUST BE IN PLACE BEFORE THE ADJOINING SECTIONS ARE INSTALLED.
12. ALL STRUCTURAL BOLTS ARE TO BE TIGHTENED TO A SNUG TIGHT CONDITION AS DEFINED BY AISC SPECIFICATION UNLESS OTHERWISE NOTED.
13. ATTENTION TOWER ERECTOR: COAT ALL BOLT ASSEMBLIES THAT USE PIN LOCK NUTS WITH ZINC RICH COLD GALVANIZING COMPOUND AFTER FINAL TIGHTENING.
14. TIA-222-G GROUNDING FOR TOWER.



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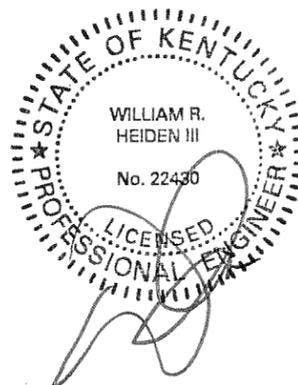
William R. Heiden III, KY Professional Engineer # 22430

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B	ADD KY BUILDING CODE	SKK	04/10/2014			
A	ADDED FOUNDATIONS	MS	01/20/2014	APPROVED/ENG.	SKK	4/10/2014
REV	DESCRIPTION OF REVISIONS	INI	DATE	APPROVED/FOUND.	N/A	
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FOUNDATION NOTES

1. ULTIMATE SOIL PRESSURE ASSUMED TO BE 5000 PSF. ULTIMATE PASSIVE PRESSURE ASSUMED TO BE 500 LB PCF. THE PURCHASER & OWNER/CONTRACTOR MUST VERIFY THAT THE ACTUAL SITE SOIL PARAMETERS MEET OR EXCEED THE ASSUMED SOIL PARAMETERS PER THIS NOTE AND/OR SHOULD OBTAIN A SOIL REPORT TO DETERMINE THE SOIL CONDITIONS AT THE SITE. FOUNDATION DESIGN MODIFICATIONS MAY BE REQUIRED IN THE EVENT THE ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE FOR THE ACTUAL SUBSURFACE CONDITIONS ENCOUNTERED.
2. CONCRETE TO BE 4000 PSI @ 28 DAYS. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 (2008) BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR NOT PERMITTED.
3. A COLD JOINT IS PERMISSIBLE UPON CONSULTATION WITH PIROD. ALL COLD JOINTS SHALL BE COATED WITH BONDING AGENTS PRIOR TO SECOND POUR.
4. ALL FILL SHOULD BE PLACED IN LOOSE LEVEL LIFTS OF NO MORE THAN 12" THICK. FILL MATERIALS SHOULD BE CLEAN AND FREE OF ORGANIC AND FROZEN MATERIALS OR ANY OTHER DELETERIOUS MATERIALS. COMPACT FILL TO 97% OF STANDARD PROCTOR MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D698.
5. BENDING, STRAIGHTENING OR REALIGNING (HOT OR COLD) OF THE ANCHOR BOLTS BY ANY METHOD IS PROHIBITED.
6. CROWN TOP OF FOUNDATION FOR PROPER DRAINAGE.
7. IN THE ABSENCE OF A GEOTECHNICAL REPORT, THE FOLLOWING PRESUMPTIVE SOIL PARAMETERS WERE USED: AN ULTIMATE BEARING PRESSURE OF 5000 PSF, A COHESION OF 1000 PSF, A SOIL UNIT WEIGHT OF 110 PCF, AN ANGLE OF INTERNAL FRICTION OF 0 DEGREES AND NO GROUNDWATER ENCOUNTERED. THESE SOIL PARAMETERS ARE IN COMPLIANCE WITH THE REQUIREMENTS OF ANSI/TIA-222-G-2005 AND CAN BE FOUND IN ANNEX F OF THIS STANDARD.
8. ANY SOFT OR UNSTABLE SUBGRADE SOILS DETECTED DURING THE EXCAVATION SHOULD BE REMOVED AND REPLACED WITH COMPACTED FILL.



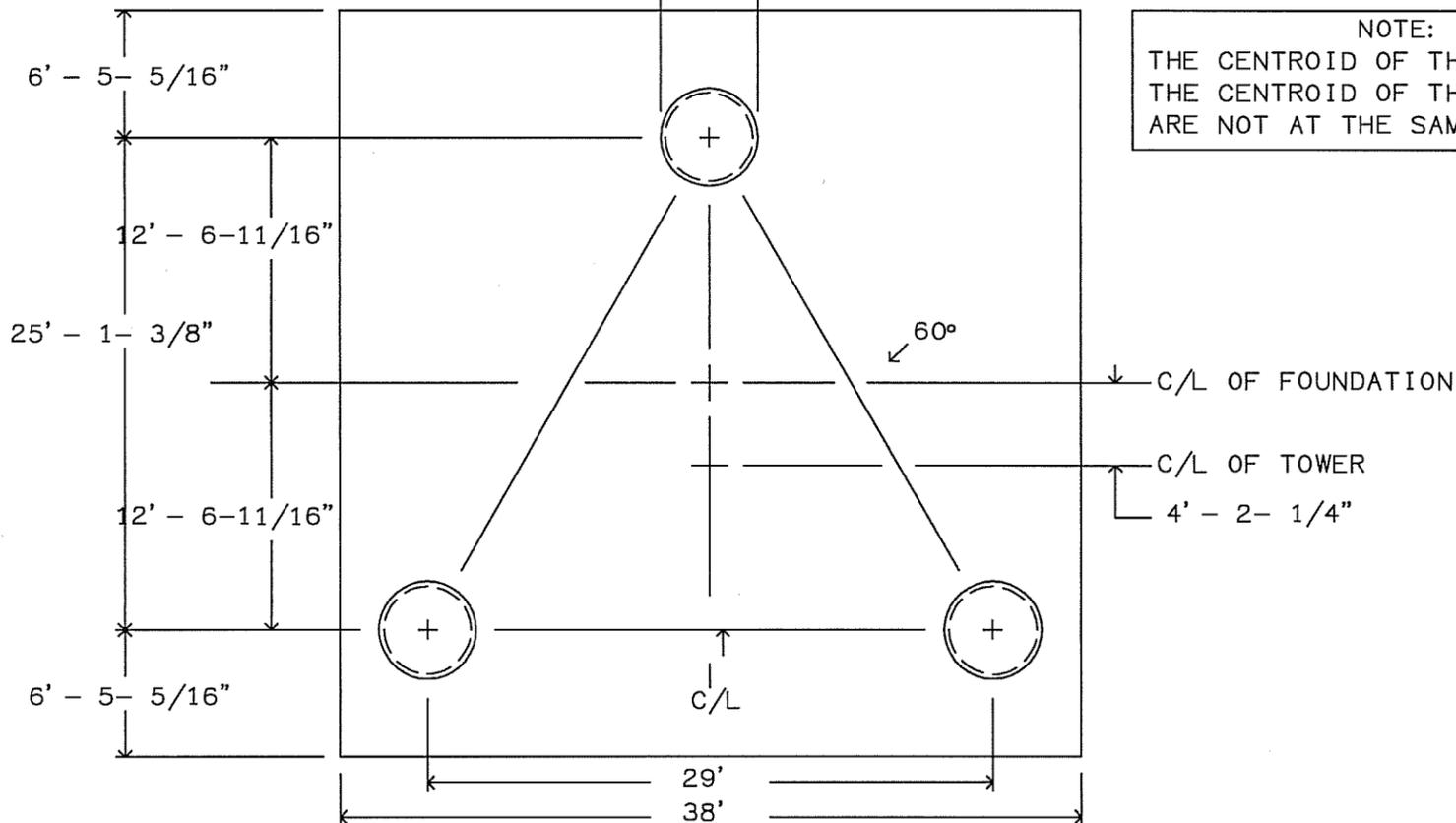
APR 10 2014

William R. Heiden III, KY Professional Engineer # 22430

				AMERICAN TOWER CORP. #282216 CLOVER BOTTOM, KY V-29.0 X 255'		
A	ADDED FOUNDATIONS	MS	01/20/2014	APPROVED/ENG.	SKK	4/10/2014
REV	DESCRIPTION OF REVISIONS	INI	DATE	APPROVED/FOUND.	M_S	4/10/2014
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						PAGE 6 OF 10



5' ROUND, CENTERED AROUND
THE CIRCULAR REBAR CAGE



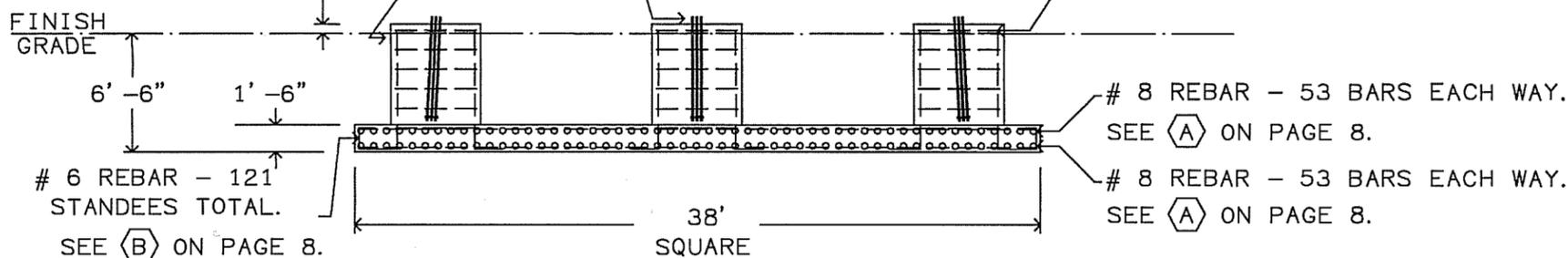
NOTE:
THE CENTROID OF THE TOWER AND
THE CENTROID OF THE FOUNDATION
ARE NOT AT THE SAME POINT!

NOTE: THE FOUNDATIONS DEPICTED ON THIS DRAWING WERE DESIGNED PER ASSUMED SOIL PARAMETERS. ALTHOUGH IT IS OUR EXPECTATION THAT THE SOIL WILL EXHIBIT SUFFICIENT STRENGTH TO COMPLY WITH THE ASSUMED STRENGTHS, IT IS POSSIBLE THAT THE SOIL MAY NOT EXHIBIT THE REQUIRED STRENGTHS. THEREFORE, IT IS HIGHLY RECOMMENDED THAT THE ASSUMED PROPERTIES BE CONFIRMED BY A GEOTECHNICAL ENGINEER VIA A SOIL REPORT OR AN ON-SITE INSPECTION DURING INSTALLATION.

7 VERTICAL REBAR -
SEE (C) ON PAGE 8.
29 PIECES REQ. PER PIER,
EQUALLY SPACED, TO BE
PLACED INSIDE TIES.

FOR ANCHOR STEEL IDENTIFICATION AND
PLACEMENT INFORMATION, SEE PAGE 9
OF THIS DRAWING. SEE PAGE 10 FOR
BASE SECTION INSTALLATION DETAIL.

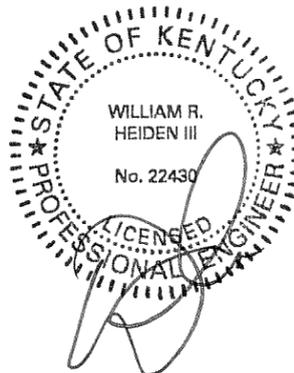
4 TIES - SEE (D) ON PAGE 8.
7 PIECES REQ. PER PIER



NOTE: ALL REBAR REQUIRES
MIN. 3" CONCRETE COVERAGE

TOWER FOUNDATION

92.2 CUBIC YARDS CONCRETE REQUIRED
FOR INSTALLATION SPECIFICATIONS AND
ADDITIONAL INFORMATION, SEE PAGE 6
OF THIS DRAWING.

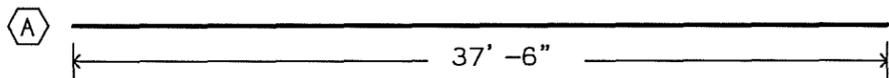


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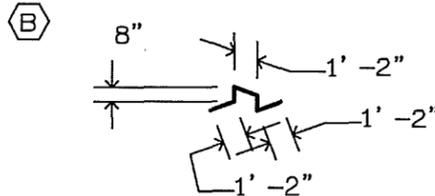
AMERICAN TOWER CORP.
#282216 CLOVER BOTTOM, KY
V-29.0 X 255'

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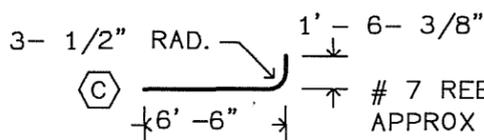


8 REBAR - 212 PIECES REQ. TOTAL
 APPROX WT = 100.1# EACH, 21221# TOTAL

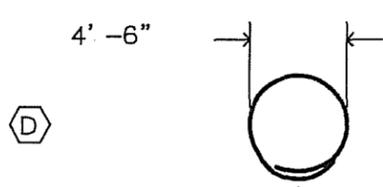
REBAR SUPPORTS MAY CONSIST OF ANY ACCEPTABLE MEANS OF SECURELY SUPPORTING THE TOP REINFORCEMENT GRID ABOVE THE BOTTOM REINFORCEMENT GRID WHILE MAINTAINING A SEPARATION OF 1' (OUTSIDE REBAR TO OUTSIDE REBAR).



6 REBAR - 121 PIECES REQUIRED TOTAL
 TYPE 26 STANDEE PLACED BETWEEN REBAR GRIDS ON NOMINAL 4' SPACING THROUGHOUT
 APPROX UNBENT LENGTH = 4'-9"
 APPROX WT = 7.1# EACH, 859# TOTAL



7 REBAR - 87 PIECES REQUIRED TOTAL
 APPROX UNBENT LENGTH = 7'-10-7/8"
 APPROX WT = 16.2# EACH, 1409# TOTAL

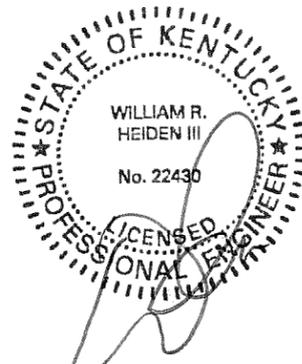


4 REBAR - 21 PIECES REQUIRED TOTAL
 APPROX UNBENT LENGTH = 15'-8-1/4"
 APPROX WT = 10.5# EACH, 221# TOTAL

LAP DIMENSION: 1'-6-1/2"
 PLACE CIRCULAR TIES SO THAT LAPS ON ADJACENT TIES ARE 180 DEGREES APART. PLACE ONE TIE AT TOP OF PAD AND TWO TIES AT TOP OF PIER REBAR. EQUALLY SPACE REMAINING TIES ALONG PIER.

REBAR DETAIL

TOTAL APPROX REBAR WEIGHT = 23710#
 REINFORCING BAR TO CONFORM TO
 ASTM A615 GRADE 60 SPECIFICATIONS.



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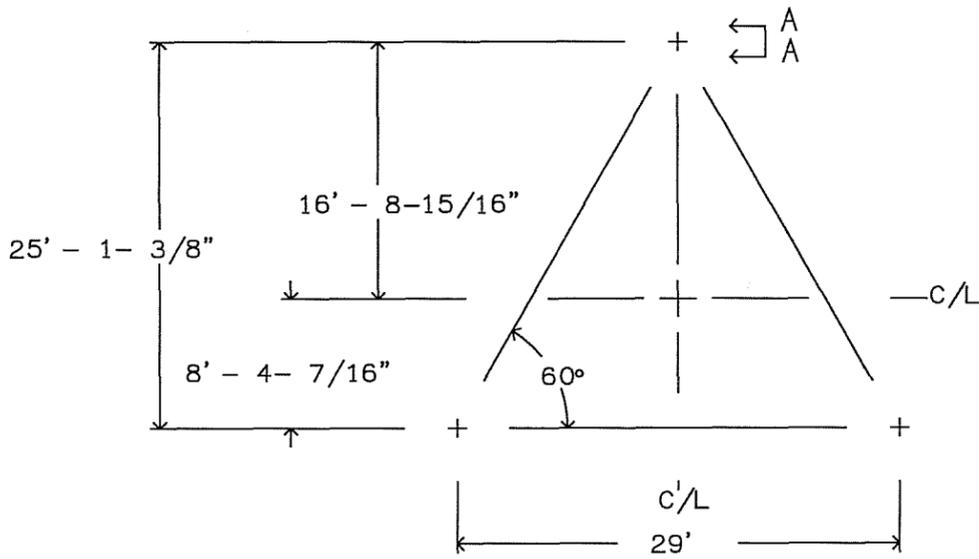
William R. Heiden III, KY Professional Engineer # 22430

				AMERICAN TOWER CORP. #282216 CLOVER BOTTOM, KY V-29.0 X 255'		
A	ADDED FOUNDATIONS	MS	01/20/2014	APPROVED/ENG.	SKK	4/10/2014
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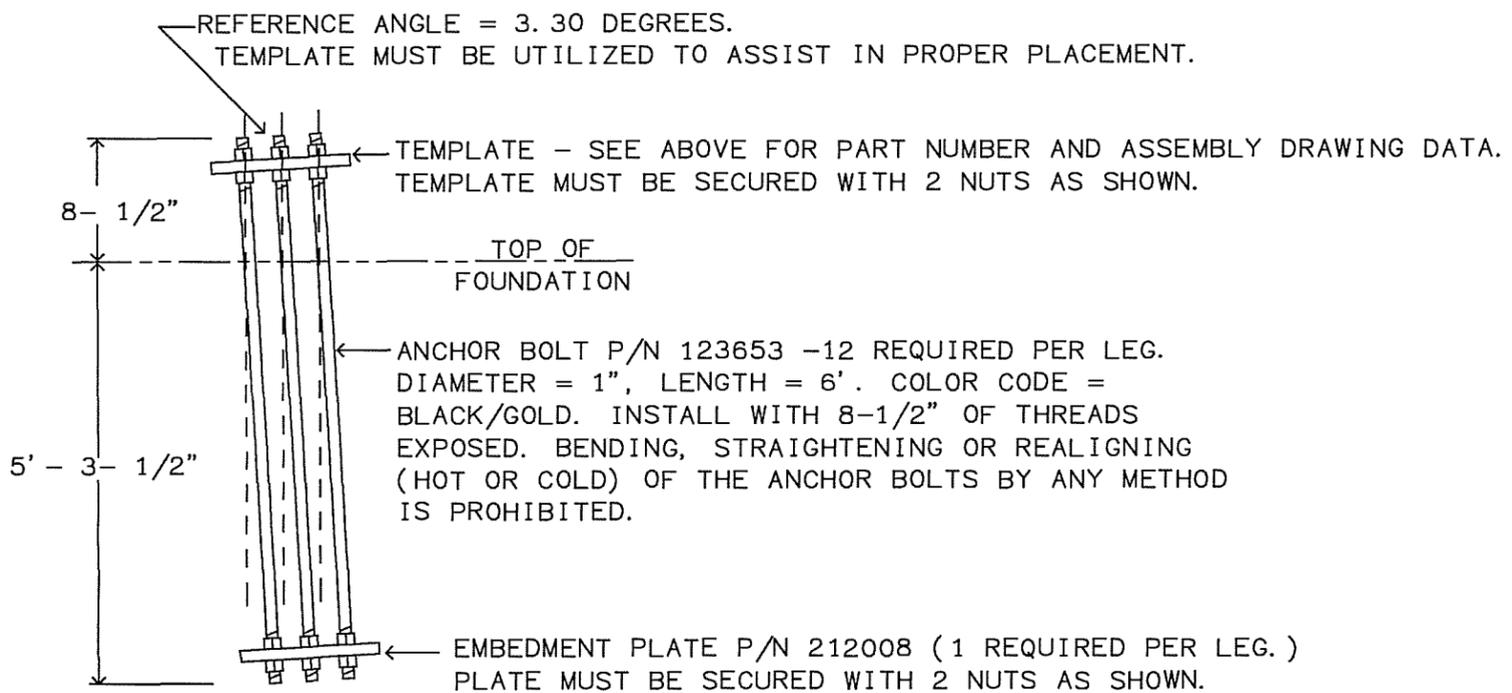


TEMPLATE ASSEMBLY P/N 216153 INCLUDES CORNER PLATE P/N 211902, IS REQUIRED FOR INSTALLATION AND MUST BE PLACED AS SHOWN. SEE DRAWING # 211875 FOR TEMPLATE ASSEMBLY DETAILS. SEE PAGE 7 FOR TOWER C/L LOCATION RELATIVE TO THE FOUNDATION LAYOUT. TEMPLATE PLACEMENT +/- 3". EACH LEG MUST BE CENTERED IN PIER WITHIN +/- 10% OF PIER DIAMETER. TEMPLATE MUST BE LEVEL +/- 1 DEGREE. INSTALL TEMPLATE WITH SUFFICIENT SPACE BENEATH (2" MINIMUM) TO PERMIT FINISHING OF CONCRETE AND TO FACILITATE TEMPLATE REMOVAL PRIOR TO TOWER ERECTION.

SEE PAGE 10 FOR BASE SECTION INSTALLATION DETAIL.



TOWER ANCHOR STEEL PLACEMENT - TOP VIEW



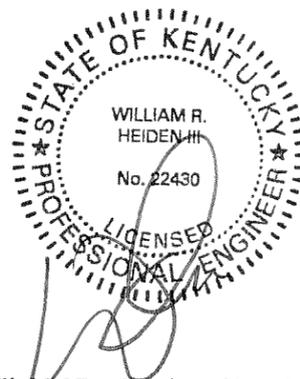
VIEW A - A - ANCHOR BOLT INSTALLATION DETAIL (NOT TO SCALE)

ATTENTION CONTRACTOR INSTALLING THE ANCHOR BOLTS!

1" DIAMETER ANCHOR BOLTS FOR TAPERED TOWER.

VERIFY THE PART NUMBERS AND SIZES FOR ALL COMPONENTS ON THIS PAGE AND PAGE 10.

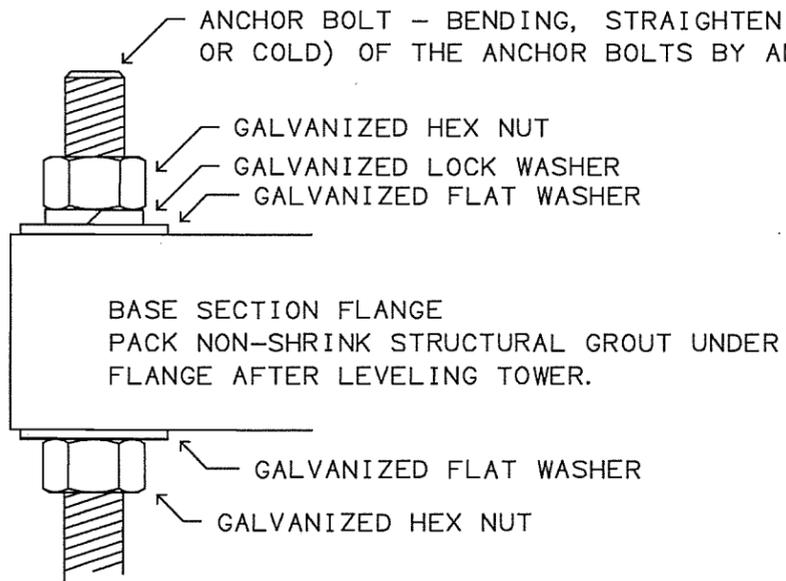
IF THERE ARE ANY DISCREPANCIES, PLEASE NOTIFY PIROD, INC. PRIOR TO INSTALLATION!!



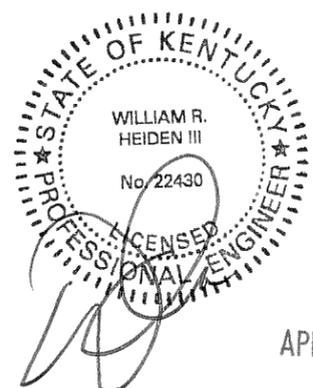
APR 10 2014

William R. Heiden III, KY Professional Engineer # 22430

				AMERICAN TOWER CORP. #282216 CLOVER BOTTOM, KY V-29.0 X 255'		
A	ADDED FOUNDATIONS	MS	01/20/2014	APPROVED/ENG.	SKK	4/10/2014
REV	DESCRIPTION OF REVISIONS	INI	DATE	APPROVED/FOUND.	M_S	4/10/2014
				COPYRIGHT 2014		valmont 1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR STRUCTURES
				DRAWN BY	M_S	
From: F1015792.DFT - 01/20/2014 09:38				ENG. FILE NO. A-240589-		252258
Printed from 252258_09@A.DWG - 01/20/2014 10:42 @ 04/10/2014 10:27				ARCHIVE	F-1015792	PAGE 9 OF 10



BASE SECTION INSTALLATION DETAIL



APR 10 2014

William R. Heiden III, KY Professional Engineer # 22430

				AMERICAN TOWER CORP. #282216 CLOVER BOTTOM, KY V-29.0 X 255'		
A	ADDED FOUNDATIONS	MS	01/20/2014	APPROVED/ENG.	SKK	4/10/2014
REV	DESCRIPTION OF REVISIONS	INI	DATE	APPROVED/FOUND.	M_S	4/10/2014
				COPYRIGHT 2014		valmont 1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR STRUCTURES
				DRAWN BY	M_S	
From: F1015792.DFT - 01/20/2014 09:38				ENG. FILE NO. A-240589-		252258
Printed from 252258_10@A.DWG - 01/20/2014 10:42 @ 04/10/2014 10:28				ARCHIVE	F-1015792	PAGE 10 OF 10



March 4, 2014

Kentucky Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, KY 40602-0615

RE: Site Name: Clover Bottom Creek
Proposed Cell Tower
37-29-38.99 North Latitude, -84-6-57.67 West Longitude

Dear Commissioners:

The Project / Construction Manager for the proposed new communications facility will be Tommy Bailey. His contact information is (606) 316-6620 or tbailey@westtower.com.

Tommy has been in the industry doing civil construction and constructing towers since 1983. He started in the industry with Andrew Corporation building MCI microwave sites across the US. He's worked for Southwest Bell, Cell One and AT&T. He has erected approximately fifty (50) cellular communications facilities and built over 1,000 civil sites for various carriers, nationwide.

He was also co-owner of EWS in Bastrop, TX for four (4) years installing radio equipment for T-Mobile and AT&T.

Thank you,

A handwritten signature in black ink, appearing to read "J Boud", with a long horizontal line extending to the right.

John Boud
Site Acquisition Manager: Kentucky Market
10400 Linn Station Rd., Suite 225, Louisville, KY 40223
jboud@westtower.com | 559.790.8855 (mobile)
www.westtower.com





STRUCTURES

April 10, 2014

American Tower Corp.

Attn: Mr. Ron Rohr

SUBJECT: Valmont File # 240589
Model V-29.0 X 255' -Self Supporting Tower
Site: # 282216
Site Name: Clover Bottom-Jackson, KY

Thank you for your inquiry concerning tower design codes and practices as they relate to your requested tower designs.

Valmont Structures has been designing and building guyed and self-supporting towers and monopoles since the early 1950's. During this time, we have sold thousands of towers ranging in height from as little as 50' high to in excess of 1400'. These towers were individually engineered to accommodate the loading requirements imparted by the design wind speed, ice considerations, antenna loading, and other factors dictated by the national code requirements existing at the time the tower was built.

The ANSI/TIA-222-G Standard represents the latest refinement of specific minimum requirements for tower engineers and manufacturers to follow to help assure that the tower structure and its foundations are designed to meet the most realistic conditions for local weather while assuring that the tower is designed to stringent factors of safety. This tower is designed to 90 MPH (no ice) and 30 MPH (3/4" ice) per ANSI/TIA-222-G with Class II, Topographical category 1, Exposure criteria C and a Crest height of 0 feet.

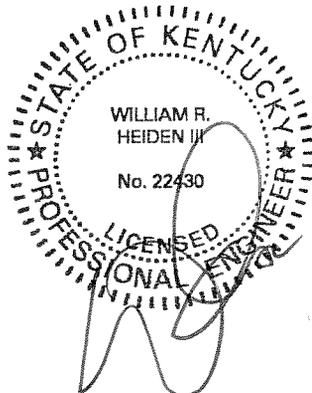
We are aware of few documented instances of a self supporting tower or monopole failure. Self supporting towers and monopoles can be designed such that the most common mode of failure is in the upper middle region of the tower, with the upper portion of the tower remaining connected and "bending and bowing over" against the base of the tower or pole. The fact that the wind is normally greater on the upper portion of the structure contributes to the likelihood of this type of failure. This particular Tower has a theoretical failure at the tower midpoint or above. The predicted mode of wind induced failure would be a buckling of the tower section at or above the tower midpoint with the top sections of the tower folding over on to the intact base sections. This would then affect a "zero fall zone" at ground level.

Including myself, our site has three licensed Professional Engineers covering a total of 49 states. Valmont Structures is an AISC approved shop. All Valmont Structures welders are AWS and CWB qualified. Our total design, engineer and build process has been quality audited by our customers including public utilities, telephone companies, government agencies, and of course AISC.

We trust the above and the attached will be helpful to you. If you should need anything else, please let us know at your convenience.

Sincerely,

William R. Heiden III
Manager of Engineering
Ext. #5243

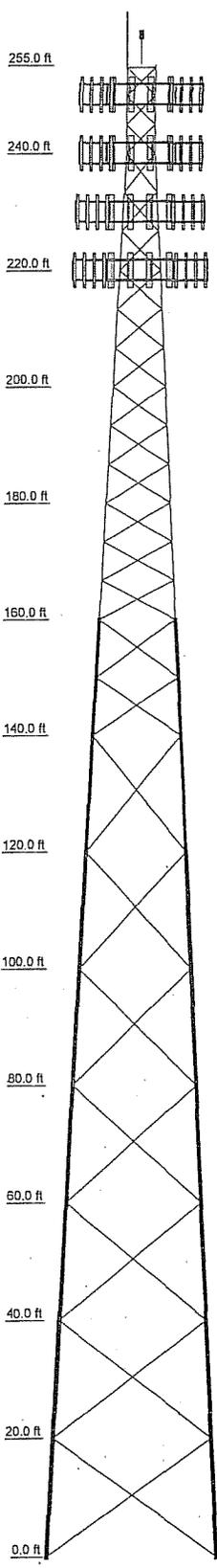


APR 10 2014



Communications Division, Valmont Industries, Inc.
1545 Pidco Drive Plymouth, Indiana 46563-4005 USA
574-936-4221 Fax 574-936-6796 www.valmont.com

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Legs	A	B	C	D	E	F	G	H		I		J	
Leg Grade	A572-50												
Diagonals	2L3x3x3/16												
Diagonal Grade	A36												
Top Girts	N.A.												
Face Width (ft)	5	7	9	11	13	15	17	19	21	23	25	27	29
# Panels @ (ft)	12 @ 6.66667												
Weight (K)	0.7	1.3	1.5	1.8	2.1	2.7	4.1	5.3	5.4	7 @ 20	8.1	6.2	7.2



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Beacon	255	ATC Loading	240
Beacon Extender (4') 803062	265	ATC Loading	230
5/8" x 10' lightning rod	255	ATC Loading	220
ATC Loading	250		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	P- 4.00" - 0.75" conn.-15' -C-Trans-6B-4B-(Pirod 228175)	F	#12ZG -1.75" - 1.00" conn.-HBD-Trans (Pirod 229588)
B	P- 5.00" - 0.75" conn.-Trans-20' -C-(Pirod 226200)	G	#12ZG -2.00" - 0.875" conn.-HBD-Trans (Pirod 208332)
C	P- 5.00" - 0.75" conn.-20' -C-(Pirod 226192)	H	#12ZG -2.25" - 0.875" conn. (Pirod 208334)
D	P- 6.00" - 0.75" conn.-20' -C-(Pirod 226206)	I	#12ZG - 2.50" - 0.875" conn. (Pirod 208335)
E	P- 6.00" - 0.75" conn.-HBD-Trans-20' -C-(Pirod 229377)	J	#12ZG - 2.75" - 0.875" conn. (Pirod 208337)

MATERIAL STRENGTH

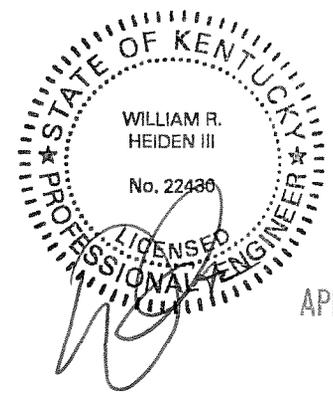
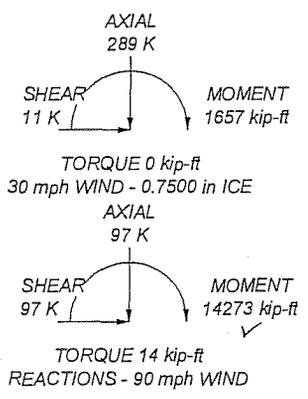
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Jackson County, Kentucky.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 90 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 30 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 97.2%

ALL REACTIONS ARE FACTORED

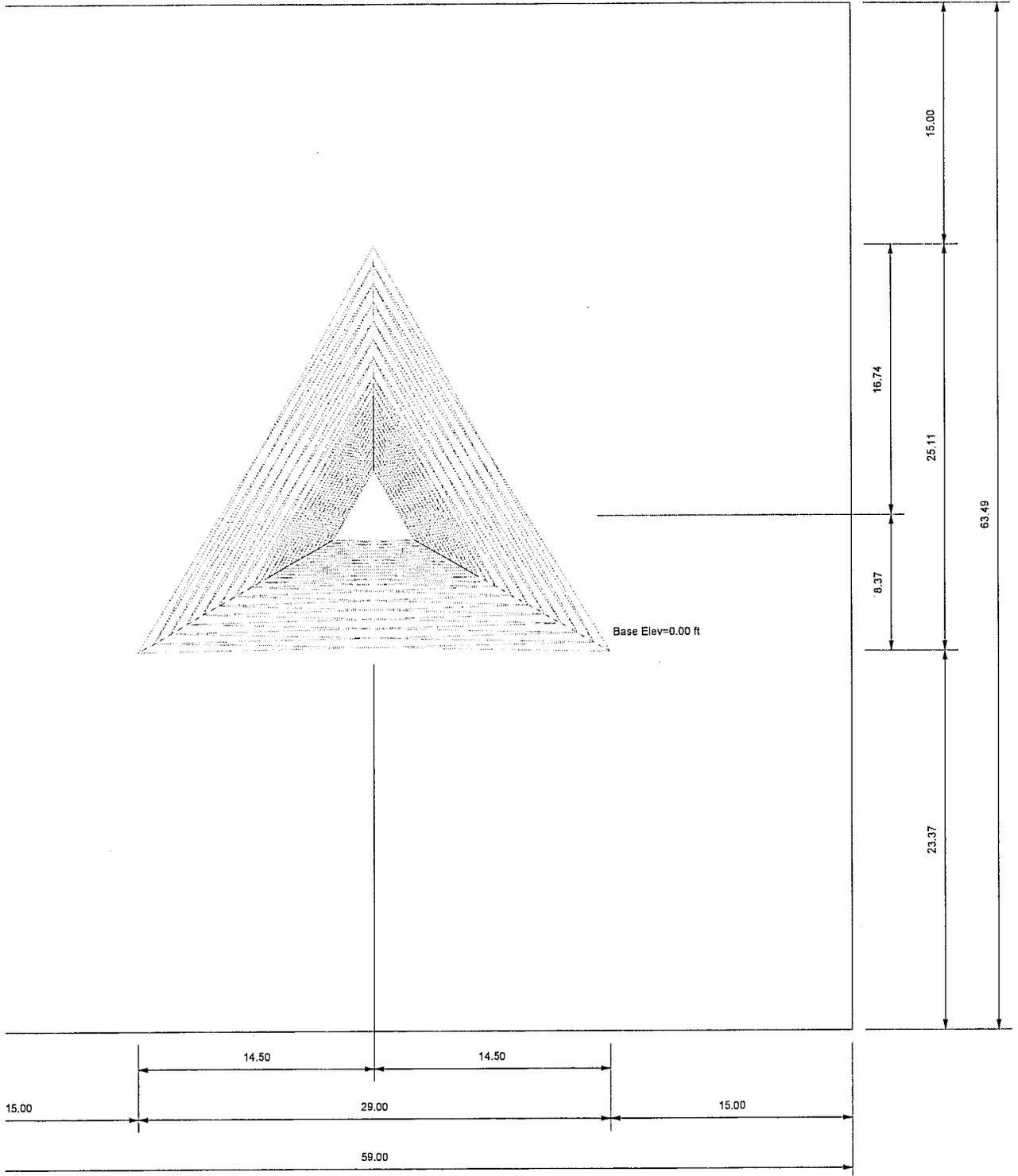
MAX. CORNER REACTIONS AT BASE:
 DOWN: 601 K
 UPLIFT: -528 K
 SHEAR: 62 K



APR 14 2014

Valmont		Job: 240589	
1545 Pidco Drive Plymouth, IN		Project V-29 x 255' #282216 Clover Bottom, KY	
Client: American Tower Corp.	Drawn by: SKK	App'd:	
Code: TIA-222-G	Date: 04/14/14	Scale: NTS	
Phone: 574-936-4221	FAX:	Path:	
		Dwg No. E-1	

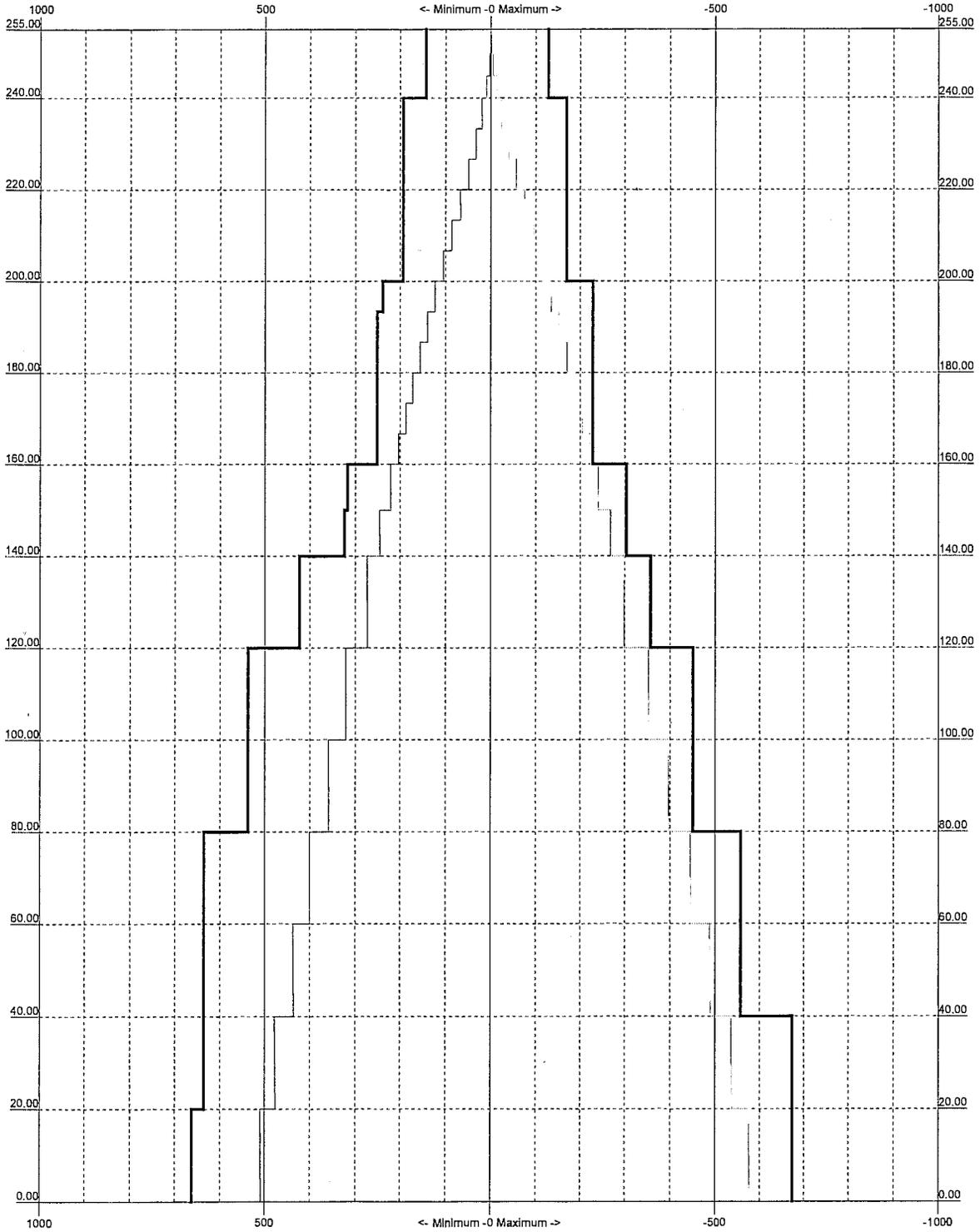
Plot Plan
Total Area - 0.09 Acres



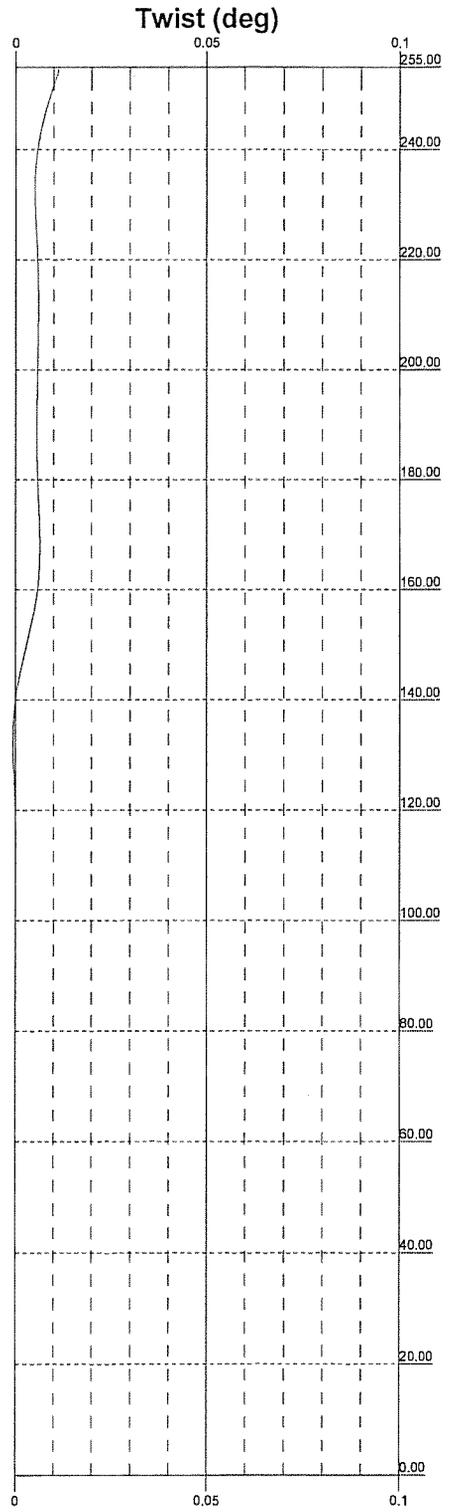
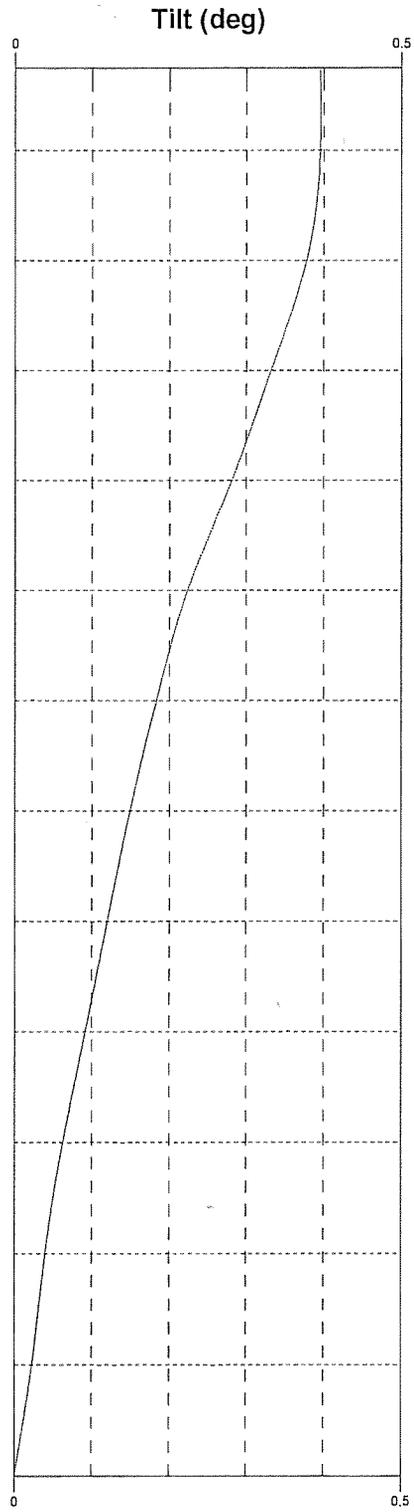
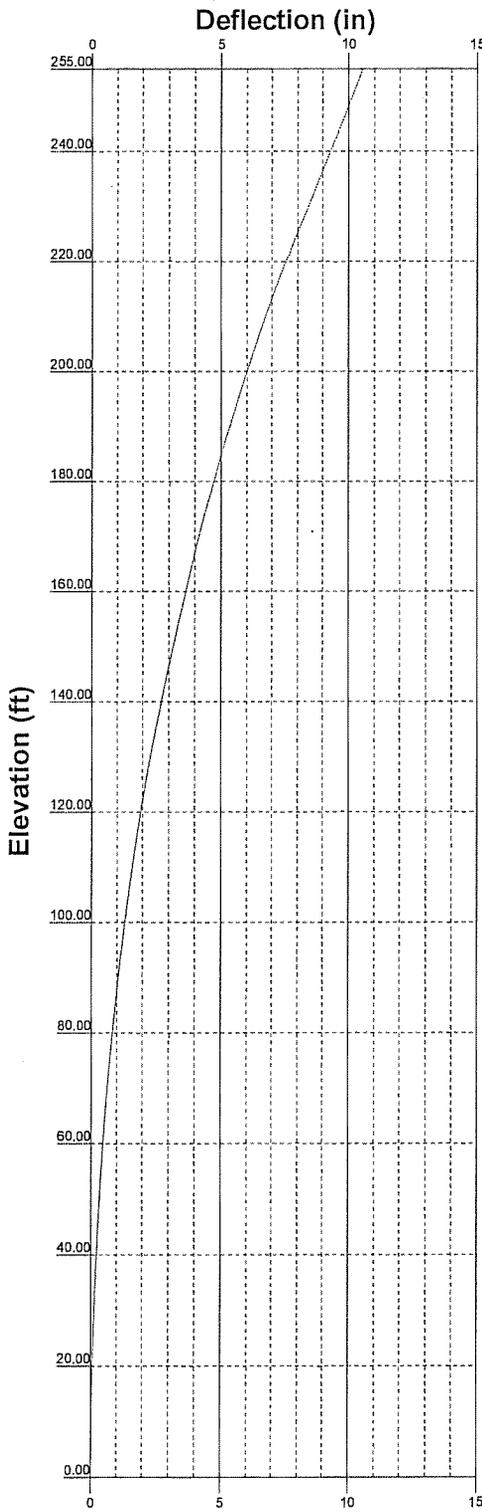
 valmont STRUCTURES Valmont Industries Inc. - Specialty Structures Group	1545 Pidco Drive Plymouth, IN 46563 Phone: (574) 936-4221 FAX: (574) 936-6458		Job: 240589
	Project: V-29 x 255' #282216 Clover Bottom, KY		
	Client: American Tower Corp.	Drawn by: na1	App'd:
	Code: TIA-222-G	Date: 11/27/13	Scale: NTS
	Path:	Dwg No. E-2	

TIA-222-G - 90 mph/30 mph 0.7500 in Ice Exposure C

Leg Capacity ——— Leg Compression (K)



 <p>1545 Pidco Drive STRUCTURES Plymouth, IN 46563 Valmont Industries Inc. - Speciality Structures Group Phone: (574) 936-4221 FAX: (574) 936-6458</p>	Job: 240589		
	Project: V-29 x 255' #282216 Clover Bottom, KY		
	Client: American Tower Corp.	Drawn by: na1	App'd:
	Code: TIA-222-G	Date: 11/27/13	Scale: NTS
	Path: \\p01\Workshop\Drawings\240589\TIA\29255_Clover Bottom, KY\2_Tower Capacity.dwg		Dwg No. E-3

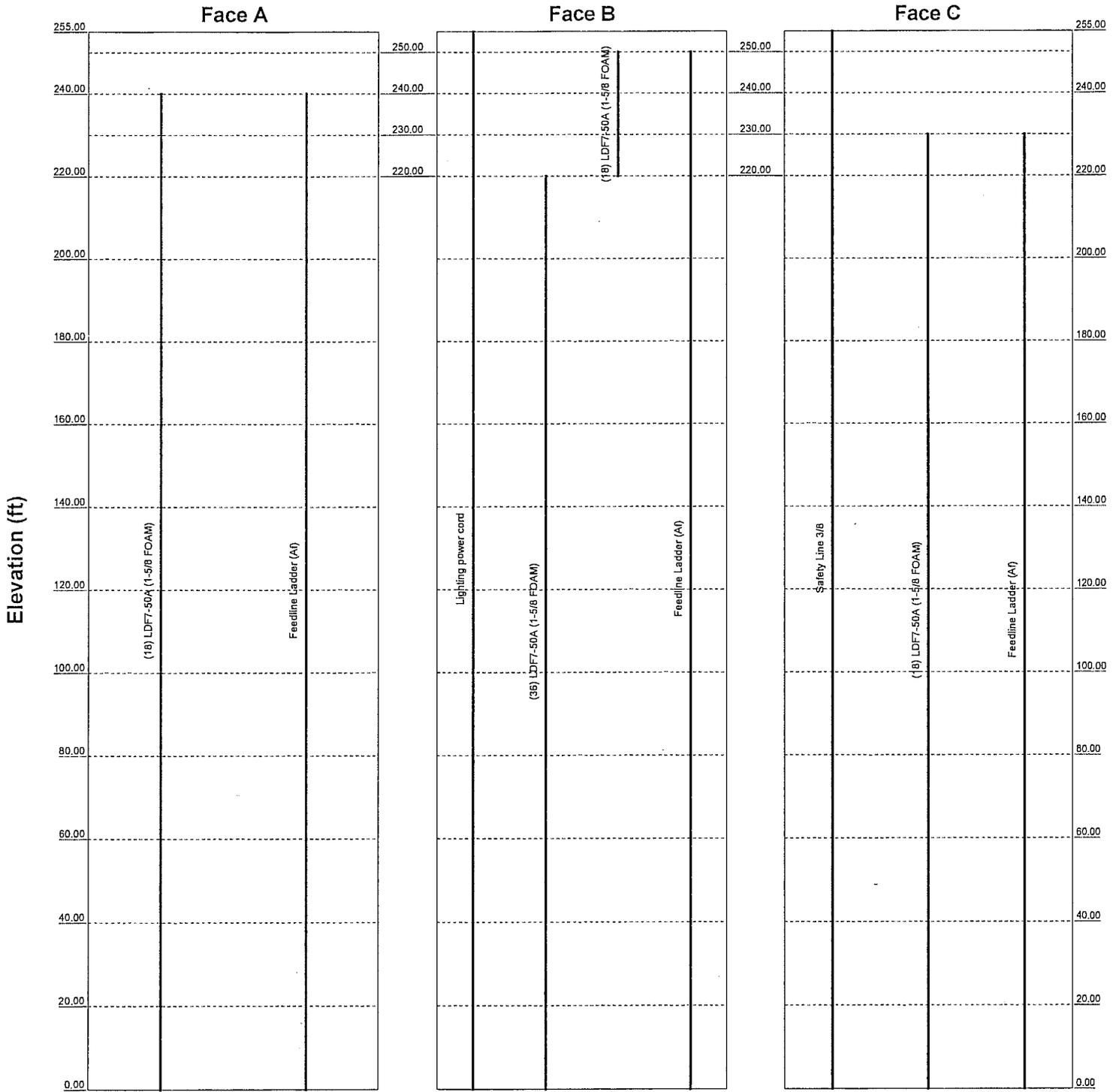


 <p>1545 Pidco Drive STRUCTURES Plymouth, IN 46563 Valmont Industries Inc. - Specialty Structures Group Phone: (574) 936-4221 FAX: (574) 936-6458</p>	Job: 240589
	Project: V-29 x 255' #282216 Clover Bottom, KY
	Client: American Tower Corp. Drawn by: na1 App'd:
	Code: TIA-222-G Date: 11/27/13 Scale: NTS
	Path: <small>\\p01\work\Drawings\2013\2013-ATC\2013-ATC-001.dwg</small> Dwg No. E-5

Feedline Distribution Chart

0' - 255'

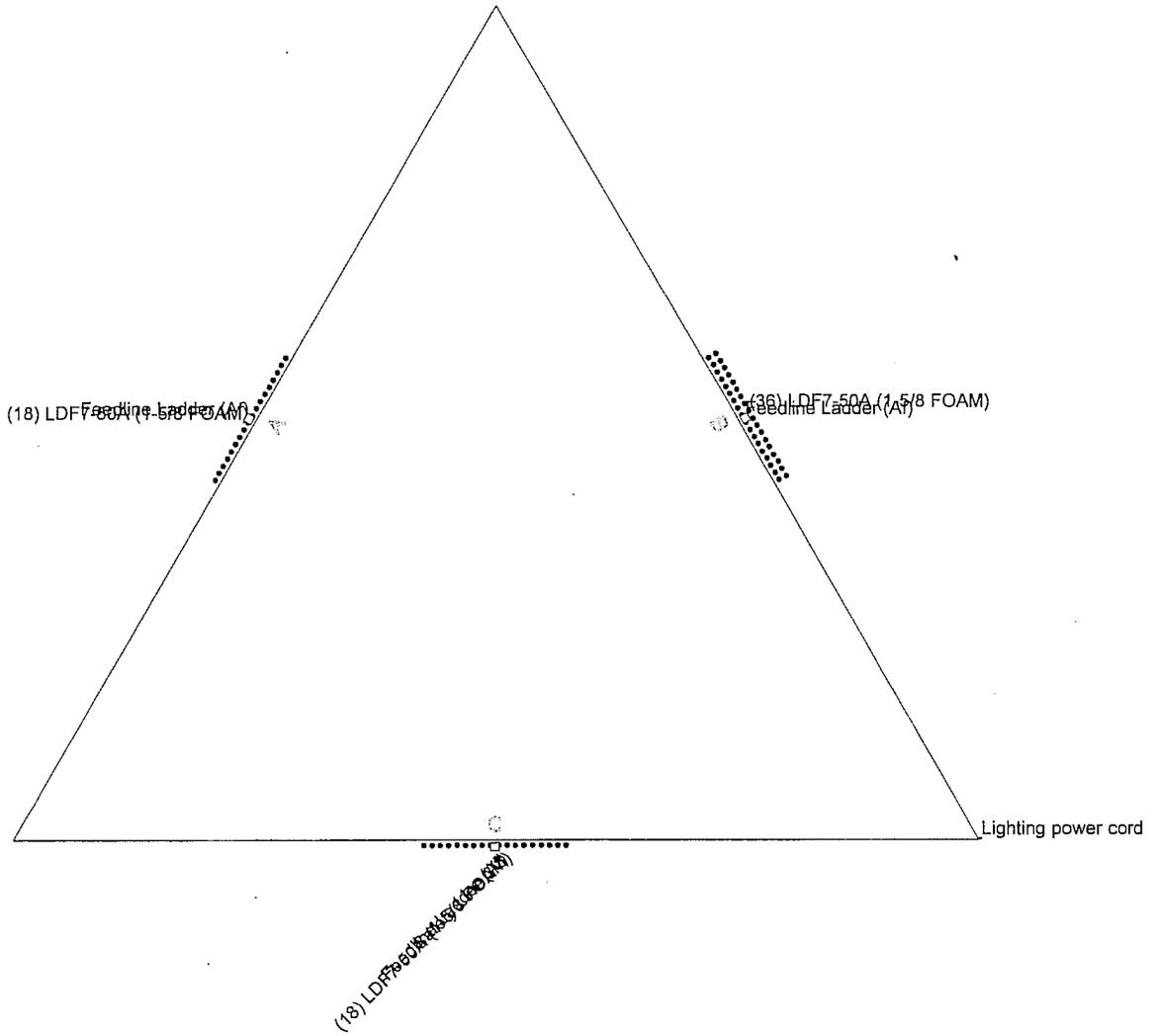
Round Flat App In Face App Out Face Truss Leg



		1545 Pidco Drive	
		Plymouth, IN 46563	
Valmont Industries Inc. - Specialty Structures Group		Phone: (574) 936-4221	
		FAX: (574) 936-6458	
Job: 240589			
Project: V-29 x 255' #282216 Clover Bottom, KY			
Client: American Tower Corp.	Drawn by: na1	App'd:	
Code: TIA-222-G	Date: 11/27/13	Scale: NTS	
Path: \\pvs01\person\Documents\240589\ATC\2925\Draw Bottom_KY01_Tower_Clay\240589.dwg			Dwg No. E-7

Feedline Plan

Round Flat App In Face App Out Face Truss-Leg



 <p>1545 Pidco Drive STRUCTURES Plymouth, IN 46563 Valmont Industries Inc. - Speciality Structures Group Phone: (574) 936-4221 FAX: (574) 936-6458</p>	Job: 240589		
	Project: V-29 x 255' #282216 Clover Bottom, KY		
	Client: American Tower Corp.	Drawn by: na1	App'd:
	Code: TIA-222-G	Date: 11/27/13	Scale: NTS
	Path:	Dwg No. E-7	

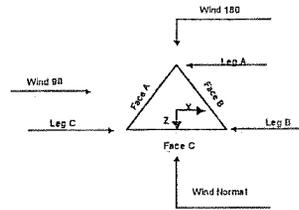
tnxTower 1545 Pildco Drive Plymouth, NJ 08563 Phone: (774) 936-4221 FAX: (774) 936-6458	Job:	240589	Page:	1 of 58
	Project:	V-29 x 255' #282216 Clover Bottom, KY	Date:	10:43:40 11/27/13
	Client:	American Tower Corp.	Designed by:	na1

tnxTower 1545 Pildco Drive Plymouth, NJ 08563 Phone: (774) 936-4221 FAX: (774) 936-6458	Job:	240589	Page:	2 of 58
	Project:	V-29 x 255' #282216 Clover Bottom, KY	Date:	10:43:40 11/27/13
	Client:	American Tower Corp.	Designed by:	na1

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 255.00 ft above the ground line. The base of the tower is set at an elevation of 0.00 ft above the ground line. The face width of the tower is 5.00 ft at the top and 29.00 ft at the base. This tower is designed using the TIA-222-G standard.

- The following design criteria apply:
- Tower is located in Jackson County, Kentucky.
 - Basic wind speed of 90 mph.
 - Structure Class II.
 - Exposure Category C.
 - Topographic Category 1.
 - Crest Height 0.00 ft.
 - Nominal ice thickness of 0.7500 in.
 - Ice thickness is considered to increase with height.
 - Ice density at 56 pcf.
 - A wind speed of 30 mph is used in combination with ice.
 - Temperature drop of 50 °F.
 - Deflections calculated using a wind speed of 60 mph.
 - A non-linear (P-delta) analysis was used.
 - Pressures are calculated at each section.
 - Stress ratio used in tower member design is 1.
 - Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.



Triangular Tower

Options

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontal Consider Moments - Diagonals Use Moment Mitigation Use Code Stress Ratios Use Code Safety Factors - Guys Exclude Ice Always Use Max Kz Use Special Wind Profile Include DBHs In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Lateral Bracing (4 Sided) Add DBC .60xW Combination | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Planned Assume Rigid Lateral Plate Use Clear Spans For Wind Area Use Clear Spans For KLR Retention Guys To Initial Tension Oppose Mast Stability Checks Use Azimuth Dist Coefficients Project Wind Area of Appart. Automatic Torque Arm Areas SR Members Have Cut Ends Self Capacity Reports By Component Triangulate Diamond Lateral Bracing | <ul style="list-style-type: none"> Treat Feedline Bundles As Cylinder Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Some Allowable Offset Girt At Foundation Consider Feedline Torque Include Angle Block Shear Check Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets |
|--|---|---|

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section H/dth	Number of Sections	Section Length
	β			β		β
T1	235.00-240.00		V-Series Leg	5.00	1	15.00
T2	240.00-220.00		V-Series Leg	5.00	1	20.00
T3	220.00-200.00		V-Series Leg	7.00	1	20.00
T4	200.00-180.00		V-Series Leg	9.00	1	20.00
T5	180.00-160.00		V-Series Leg	11.00	1	20.00
T6	160.00-140.00		PIRrad 12BD Truss Leg	13.00	1	20.00
T7	140.00-120.00		PIRrad 12BDH Truss Leg	15.00	1	20.00
T8	120.00-100.00		PIRrad 12BDH Truss Leg	17.00	1	20.00
T9	100.00-80.00		PIRrad 12BDH Truss Leg	19.00	1	20.00
T10	80.00-60.00		PIRrad 12BDH Truss Leg	21.00	1	20.00
T11	60.00-40.00		PIRrad 12BDH Truss Leg	23.00	1	20.00
T12	40.00-20.00		PIRrad 12BDH Truss Leg	25.00	1	20.00
T13	20.00-0.00		PIRrad 12BDH Truss Leg	27.00	1	20.00

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	β	β				in	in
T1	235.00-240.00	4.86	X Brace	No	No	3.0000	0.0000
T2	240.00-220.00	6.67	X Brace	No	No	0.0000	0.0000

tnxTower 1545 Pildco Drive Plymouth, NJ 08563 Phone: (774) 936-4221 FAX: (774) 936-6458	Job:	240589	Page:	3 of 58
	Project:	V-29 x 255' #282216 Clover Bottom, KY	Date:	10:43:40 11/27/13
	Client:	American Tower Corp.	Designed by:	na1

tnxTower 1545 Pildco Drive Plymouth, NJ 08563 Phone: (774) 936-4221 FAX: (774) 936-6458	Job:	240589	Page:	4 of 58
	Project:	V-29 x 255' #282216 Clover Bottom, KY	Date:	10:43:40 11/27/13
	Client:	American Tower Corp.	Designed by:	na1

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	β	β				in	in
T3	220.00-200.00	6.67	X Brace	No	No	0.0000	0.0000
T4	200.00-180.00	6.67	X Brace	No	No	0.0000	0.0000
T5	180.00-160.00	6.67	X Brace	No	No	0.0000	0.0000
T6	160.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T7	140.00-120.00	20.00	X Brace	No	No	0.0000	0.0000
T8	120.00-100.00	20.00	X Brace	No	No	0.0000	0.0000
T9	100.00-80.00	20.00	X Brace	No	No	0.0000	0.0000
T10	80.00-60.00	20.00	X Brace	No	No	0.0000	0.0000
T11	60.00-40.00	20.00	X Brace	No	No	0.0000	0.0000
T12	40.00-20.00	20.00	X Brace	No	No	0.0000	0.0000
T13	20.00-0.00	20.00	X Brace	No	No	0.0000	0.0000

Tower Elevation	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 235.00-240.00	Equal Angle	L2x3x3/16	A36 (36 ksi)	Solid Round	A36 (36 ksi)	

Tower Section Geometry (cont'd)

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_s	Weight Multi.	Double Angle Spacing Diagonals	Double Angle Spacing Horizontals
	β	β	in				in	in
T1	0.00	0.2500	A36 (36 ksi)	1	1	1.03	36.0000	36.0000
T2	0.00	0.3750	A36 (36 ksi)	1	1	1.03	36.0000	36.0000
T3	0.00	0.3750	A36 (36 ksi)	1	1	1.03	36.0000	36.0000
T4	0.00	0.3750	A36 (36 ksi)	1	1	1.03	36.0000	36.0000
T5	0.00	0.3750	A36 (36 ksi)	1	1	1.03	36.0000	36.0000
T6	0.00	0.5080	A36 (36 ksi)	1	1	1.03	36.0000	36.0000
T7	0.00	0.6250	A36 (36 ksi)	1	1	1.03	36.0000	36.0000
T8	0.00	0.6250	A36 (36 ksi)	1	1	1.03	36.0000	36.0000
T9	0.00	0.6250	A36 (36 ksi)	1	1	1.03	36.0000	36.0000
T10	0.00	0.6250	A36 (36 ksi)	1	1	1.03	36.0000	36.0000
T11	0.00	0.6250	A36 (36 ksi)	1	1	1.03	36.0000	36.0000
T12	0.00	0.6250	A36 (36 ksi)	1	1	1.03	36.0000	36.0000
T13	0.00	0.6250	A36 (36 ksi)	1	1	1.03	36.0000	36.0000

Tower Section Geometry (cont'd)

Tower Elevation	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 235.00-240.00	Pipe	P-4.00"-0.75" conn.-15' -C-Trans-6B-4B-(PIrad 228175)	A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T2 240.00-220.00	Pipe	P-5.00"-0.75" conn.-Trans-20' -C-(PIrad 226200)	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T3 220.00-200.00	Pipe	P-5.00"-0.75" conn.-20' -C-(PIrad 226192)	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T4 200.00-180.00	Pipe	P-6.00"-0.75" conn.-20' -C-(PIrad 226206)	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5 180.00-160.00	Pipe	P-6.00"-0.75" conn.-18BD-Trans-20' -C-(PIrad 229377)	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T6 160.00-140.00	Truss Leg	#122G-1.75"-1.50" conn.-18BD-Trans (PIrad 229388)	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T7 140.00-120.00	Truss Leg	#122G-2.00"-0.875" conn.-18BD-Trans (PIrad 208332)	A572-50 (50 ksi)	Double Equal Angle	2L3x3x3/16	A36 (36 ksi)
T8 120.00-100.00	Truss Leg	#122G-2.25"-0.875" conn. (PIrad 208334)	A572-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4	A36 (36 ksi)
T9 100.00-80.00	Truss Leg	#122G-2.25"-0.875" conn. (PIrad 208334)	A572-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4	A36 (36 ksi)
T10 80.00-60.00	Truss Leg	#122G-2.50"-0.875" conn. (PIrad 208335)	A572-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4	A36 (36 ksi)
T11 60.00-40.00	Truss Leg	#122G-2.50"-0.875" conn. (PIrad 208335)	A572-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4	A36 (36 ksi)
T12 40.00-20.00	Truss Leg	#122G-2.75"-0.875" conn. (PIrad 208337)	A572-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4	A36 (36 ksi)
T13 20.00-0.00	Truss Leg	#122G-2.75"-0.875" conn. (PIrad 208337)	A572-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
	β	β		β	β	β	β	β	β	β
T1	Yes	Yes	1	1	1	1	1	1	1	1
T2	Yes	Yes	1	1	1	1	1	1	1	1
T3	Yes	Yes	1	1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1

Tower Section Geometry (cont'd)

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Tower Section	Tower Elevation ft	Face	A _s ft	A _r ft	C _A In Face ft	C _A Out Face ft	Weight K
T12	46.00-20.00	A	0.000	0.000	81.390	0.000	0.46
		B	0.000	0.000	134.300	0.000	0.76
		C	0.000	0.000	82.930	0.000	0.47
T13	29.00-0.00	A	0.000	0.000	81.390	0.000	0.46
		B	0.000	0.000	134.300	0.000	0.76
		C	0.000	0.000	82.930	0.000	0.47

Section	Elevation ft	CP ₂ in	CP ₁ in	CP _r in	CP _l in
T1	255.00-210.00	2.4403	-1.4431	2.5217	-0.8699
T2	240.00-220.00	0.0628	-0.8383	0.1634	-0.6274
T3	220.00-200.00	1.2563	-0.6416	0.2529	0.1632
T4	200.00-180.00	1.4946	-0.7918	0.2918	0.2063
T5	180.00-160.00	1.7256	-0.8786	0.3268	0.2472
T6	160.00-140.00	1.9523	-1.0075	0.3513	0.2759
T7	140.00-120.00	2.2540	-1.1439	0.3941	0.3198
T8	120.00-100.00	2.4774	-1.2559	0.4278	0.3156
T9	100.00-80.00	2.7255	-1.3805	0.4618	0.3913
T10	80.00-60.00	2.9562	-1.4962	0.4924	0.4232
T11	60.00-40.00	3.1956	-1.6184	0.5202	0.4312
T12	40.00-20.00	3.4132	-1.7258	0.5465	0.4705
T13	20.00-0.00	3.6513	-1.8450	0.5429	0.4674

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Ice	Ice Thickness in	A _s ft	A _r ft	C _A In Face ft	C _A Out Face ft	Weight K
T1	255.00-240.00	A	1.333	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	86.643	0.000	1.46	
		C	0.000	0.000	6.067	0.000	0.08	
T2	240.00-220.00	A	1.831	0.000	0.000	159.139	0.000	2.72
		B	0.000	0.000	168.565	0.000	2.85	
		C	0.000	0.000	87.805	0.000	1.46	
T3	220.00-200.00	A	1.805	0.000	0.000	159.323	0.000	2.70
		B	0.000	0.000	159.267	0.000	4.00	
		C	0.000	0.000	157.353	0.000	2.81	
T4	200.00-180.00	A	1.787	0.000	0.000	159.213	0.000	2.68
		B	0.000	0.000	169.921	0.000	3.58	
		C	0.000	0.000	157.111	0.000	2.78	
T5	180.00-160.00	A	1.767	0.000	0.000	159.026	0.000	2.66
		B	0.000	0.000	168.731	0.000	3.95	
		C	0.000	0.000	166.845	0.000	2.76	
T6	160.00-140.00	A	1.745	0.000	0.000	158.818	0.000	2.64
		B	0.000	0.000	168.450	0.000	3.92	
		C	0.000	0.000	166.549	0.000	2.73	
T7	140.00-120.00	A	1.720	0.000	0.000	158.583	0.000	2.61
		B	0.000	0.000	168.110	0.000	3.89	
		C	0.000	0.000	166.215	0.000	2.70	
T8	120.00-100.00	A	1.692	0.000	0.000	158.314	0.000	2.58
		B	0.000	0.000	167.721	0.000	3.86	
		C	0.000	0.000	165.832	0.000	2.67	
T9	100.00-80.00	A	1.658	0.000	0.000	157.996	0.000	2.54
		B	0.000	0.000	167.261	0.000	3.81	
		C	0.000	0.000	165.379	0.000	2.63	
T10	80.00-60.00	A	1.617	0.000	0.000	157.608	0.000	2.49
		B	0.000	0.000	166.698	0.000	3.76	
		C	0.000	0.000	164.826	0.000	2.58	
T11	60.00-40.00	A	1.564	0.000	0.000	157.103	0.000	2.44
		B	0.000	0.000	165.967	0.000	3.70	
		C	0.000	0.000	164.107	0.000	2.51	
T12	40.00-20.00	A	1.486	0.000	0.000	156.569	0.000	2.35
		B	0.000	0.000	164.903	0.000	3.60	
		C	0.000	0.000	163.062	0.000	2.42	
T13	20.00-0.00	A	1.331	0.000	0.000	154.914	0.000	2.18
		B	0.000	0.000	162.955	0.000	3.41	
		C	0.000	0.000	160.989	0.000	2.24	

Feed Line Center of Pressure

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Tower Section	Feed Line Record No.	Description	Feed Line Section Elev.	K _u No Ice	K _u Ice
T3	9	Feedline Ladder (AF)	220.00 - 1.0000	1.0000	
			220.00 - 0.6000	0.6000	
T4	1	Safety Line 3/8	200.00 - 0.6000	0.6000	
			200.00 - 0.6000	0.6000	
T4	2	Lighting power cord	180.80 - 0.6000	0.6000	
			209.50 - 0.6000	0.6000	
T4	3	LDF7-50A (1-1/8 FOAM)	208.00 - 0.6000	0.6000	
			180.80 - 0.6000	0.6000	
T4	4	LDF7-50A (1-1/8 FOAM)	208.00 - 0.6000	0.6000	
			180.80 - 0.6000	0.6000	
T4	6	LDF7-50A (1-1/8 FOAM)	200.00 - 0.6000	0.6000	
			180.80 - 1.0000	1.0000	
T4	8	Feedline Ladder (AF)	200.00 - 1.0000	1.0000	
			180.00 - 1.0000	1.0000	
T4	9	Feedline Ladder (AF)	200.00 - 1.0000	1.0000	
			180.00 - 1.0000	1.0000	
T5	1	Safety Line 3/8	180.00 - 0.6000	0.6000	
			180.00 - 0.6000	0.6000	
T5	2	Lighting power cord	160.00 - 0.6000	0.6000	
			180.00 - 0.6000	0.6000	
T5	3	LDF7-50A (1-1/8 FOAM)	160.00 - 0.6000	0.6000	
			180.00 - 0.6000	0.6000	
T5	4	LDF7-50A (1-1/8 FOAM)	160.00 - 0.6000	0.6000	
			180.00 - 0.6000	0.6000	
T5	6	LDF7-50A (1-1/8 FOAM)	160.00 - 0.6000	0.6000	
			180.00 - 1.0000	1.0000	
T5	7	Feedline Ladder (AF)	160.00 - 1.0000	1.0000	
			180.00 - 1.0000	1.0000	
T5	9	Feedline Ladder (AF)	160.00 - 1.0000	1.0000	
			180.00 - 1.0000	1.0000	
T6	1	Safety Line 3/8	140.28 - 8.6000	8.6000	
			160.00 - 8.6000	8.6000	
T6	2	Lighting power cord	140.00 - 8.6000	8.6000	
			160.00 - 8.6000	8.6000	
T6	3	LDF7-50A (1-1/8 FOAM)	140.00 - 8.6000	8.6000	
			160.00 - 8.6000	8.6000	
T6	4	LDF7-50A (1-1/8 FOAM)	140.00 - 0.6000	0.6000	
			160.00 - 0.6000	0.6000	
T6	6	LDF7-50A (1-1/8 FOAM)	140.00 - 0.6880	0.6100	
			160.00 - 0.6880	0.6100	
T6	7	Feedline Ladder (AF)	140.00 - 1.0000	1.0000	
			160.00 - 1.0000	1.0000	
T6	9	Feedline Ladder (AF)	140.00 - 1.0000	1.0000	
			160.00 - 1.0000	1.0000	
T7	1	Safety Line 3/8	120.00 - 0.6000	0.6000	
			140.00 - 0.6000	0.6000	
T7	2	Lighting power cord	120.00 - 0.6000	0.6000	
			140.00 - 0.6000	0.6000	
T7	3	LDF7-50A (1-1/8 FOAM)	120.00 - 0.6000	0.6000	
			140.00 - 0.6000	0.6000	
T7	4	LDF7-50A (1-1/8 FOAM)	120.00 - 0.6000	0.6000	
			140.00 - 0.6000	0.6000	
T7	6	LDF7-50A (1-1/8 FOAM)	120.00 - 0.6000	0.6000	
			140.00 - 0.6000	0.6000	
T7	7	Feedline Ladder (AF)	120.00 - 1.0000	1.0000	
			140.00 - 1.0000	1.0000	

Tower Section	Feed Line Record No.	Description	Feed Line Section Elev.	K _u No Ice	K _u Ice
T7	8	Feedline Ladder (AF)	140.00 - 1.0000	1.0000	
			120.00 - 1.0000	1.0000	
T7	9	Feedline Ladder (AF)	140.00 - 1.0000	1.0000	
			120.00 - 1.0000	1.0000	
T8	1	Safety Line 3/8	108.00 - 0.6000	0.6000	
			128.00 - 0.6000	0.6000	
T8	2	Lighting power cord	108.00 - 0.6000	0.6000	
			120.00 - 0.6000	0.6000	
T8	3	LDF7-50A (1-1/8 FOAM)	108.00 - 0.6000	0.6000	
			120.00 - 0.6000	0.6000	
T8	4	LDF7-50A (1-1/8 FOAM)	108.00 - 0.6000	0.6000	
			120.00 - 0.6000	0.6000	
T8	6	LDF7-50A (1-1/8 FOAM)	100.00 - 0.6880	0.6000	
			120.00 - 0.6880	0.6000	
T8	7	Feedline Ladder (AF)	100.00 - 1.0000	1.0000	
			120.00 - 1.0000	1.0000	
T8	8	Feedline Ladder (AF)	100.00 - 1.0000	1.0000	
			120.00 - 1.0000	1.0000	
T8	9	Feedline Ladder (AF)	100.00 - 1.0000	1.0000	
			120.00 - 1.0000	1.0000	
T9	1	Safety Line 3/8	80.00 - 100.00	0.6000	
			80.00 - 100.00	0.6000	
T9	2	Lighting power cord	80.00 - 100.00	0.6000	
			80.00 - 100.00	0.6000	
T9	3	LDF7-50A (1-1/8 FOAM)	80.00 - 100.00	0.6000	
			80.00 - 100.00	0.6000	
T9	4	LDF7-50A (1-1/8 FOAM)	80.00 - 100.00	0.6000	
			80.00 - 100.00	0.6000	
T9	7	Feedline Ladder (AF)	80.00 - 100.00	1.0000	
			80.00 - 100.00	1.0000	
T9	8	Feedline Ladder (AF)	80.00 - 100.00	1.0000	
			80.00 - 100.00	1.0000	
T10	1	Safety Line 3/8	60.00 - 80.00	0.6000	
			60.00 - 80.00	0.6000	
T1					

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Discrete Tower Loads

Description	Face or Leg	Offset Type	Offset Horiz Lateral	Adjustment	Placement	C ₁ A ₁		Weight	
						F ₁	F ₂		
Beacon	A	From Leg	0.00	0.000	255.00	No Ice	2.40	2.40	0.07
						1/2" Ice	2.67	2.67	0.10
						1" Ice	2.96	2.96	0.12
Beacon Extender (*) R03062	A	From Leg	0.00	0.000	255.00	No Ice	1.11	1.11	0.03
						1/2" Ice	1.32	1.32	0.04
						1" Ice	1.54	1.53	0.05
8ft lightning rod	C	From Leg	0.00	0.000	255.00	No Ice	1.20	1.20	0.03
						1/2" Ice	2.08	2.00	0.06
						1" Ice	2.80	2.80	0.08
ATC Loading	C	None	0.000	0.000	250.00	No Ice	113.00	115.00	2.00
						1/2" Ice	135.00	135.00	3.00
						1" Ice	155.00	155.00	4.00
ATC Loading	C	None	0.000	0.000	240.00	No Ice	115.00	115.00	2.00
						1/2" Ice	135.00	135.00	3.00
						1" Ice	155.00	155.00	4.00
ATC Loading	C	None	0.000	0.000	230.00	No Ice	115.00	115.00	2.00
						1/2" Ice	135.00	135.00	3.00
						1" Ice	155.00	155.00	4.00
ATC Loading	C	None	0.000	0.000	220.00	No Ice	115.00	115.00	2.00
						1/2" Ice	135.00	135.00	3.00
						1" Ice	155.00	155.00	4.00

Truss-Leg Properties

Section Designation	Area	Area Ice	Self Weight	Ice Weight	Equiv. Diameter	Equiv. Diameter Ice	Leg Area
	in ²	in ²	K	K	in	in	in ²
#122G - 1.75" - 1.00" com.-HDD-Truss (Pinned 22958)	2209.6087	9756.0360	8.84	2.26	7.6410	28.1252	7.2158
#122G - 2.25" - 0.875" com.-HDD-Truss (Pinned 208332)	2321.4820	9854.1205	0.99	2.29	8.0607	20.3208	9.4248
#122G - 2.25" - 0.875" com.-HDD-Truss (Pinned 208334)	2437.0620	9910.1025	1.17	2.31	8.5315	20.5212	11.9282
#122G - 2.25" - 0.875" com.-HDD-Truss (Pinned 208334)	2437.0620	9891.2118	1.17	2.30	8.5315	20.4556	11.9282
#122G - 2.50" - 0.875" com.-HDD-Truss (Pinned 208334)	2597.2622	9940.0820	1.37	2.31	9.0183	20.6253	14.7262

Section Designation	Area	Area Ice	Self Weight	Ice Weight	Equiv. Diameter	Equiv. Diameter Ice	Leg Area
	in ²	in ²	K	K	in	in	in ²
0.875" com. (Pinned 208335)							
#122G - 2.50" - 0.875" com. (Pinned 208335)	2597.2622	9910.0820	1.37	2.28	9.0183	20.5209	14.7262
#122G - 2.75" - 0.875" com. (Pinned 208337)	2816.7341	9938.2486	1.63	2.28	9.7803	20.6189	17.8187
#122G - 2.75" - 0.875" com. (Pinned 208337)	2816.7341	9851.3735	1.63	2.19	9.7803	20.3173	17.8187

Tower Pressures - No Ice

$G_{H1} = 0.850$

Section Elevation	z	K _z	q _z	A ₀	F ₀	A _r	A _s	A _{0s}	Leg %	C ₁ A ₁ In Face	C ₁ A ₁ Out Face
ft	ft		psf	ft ²	lb	ft ²	ft ²	ft ²	%	ft ²	ft ²
255.00-240.00	T1	247.50	1.532	27	80.823	A	6.566	11.250	11.250	63.15	0.000
						B	6.566	11.250	63.15	0.663	
						C	6.566	11.250	63.15	0.000	
240.00-220.00	T2	230.00	1.508	27	129.283	A	7.669	18.574	18.574	70.78	81.280
						B	7.669	18.574	70.78	83.020	
						C	7.669	18.574	70.78	81.280	
220.00-200.00	T3	210.00	1.48	26	159.282	A	11.361	18.574	18.574	62.05	154.300
						B	11.361	18.574	62.05	82.000	
						C	11.361	18.574	62.05	82.000	
200.00-180.00	T4	190.00	1.449	26	211.054	A	13.370	22.120	22.120	62.33	81.280
						B	13.370	22.120	62.33	82.000	
						C	13.370	22.120	62.33	82.000	
180.00-160.00	T5	170.00	1.415	25	251.854	A	18.627	22.120	22.120	54.29	81.280
						B	18.627	22.120	54.29	82.000	
						C	18.627	22.120	54.29	82.000	
160.00-140.00	T6	150.00	1.378	24	302.944	A	15.272	25.512	25.512	62.55	154.300
						B	15.272	25.512	62.55	82.000	
						C	15.272	25.512	62.55	82.000	
140.00-120.00	T7	130.00	1.337	24	343.361	A	11.896	26.914	26.914	69.33	82.000
						B	11.896	26.914	69.33	82.000	
						C	11.896	26.914	69.33	82.000	
120.00-100.00	T8	110.00	1.291	23	383.778	A	14.599	28.486	28.486	66.12	81.280
						B	14.599	28.486	66.12	82.000	
						C	14.599	28.486	66.12	82.000	
100.00-80.00	T9	90.00	1.238	22	423.778	A	15.375	28.486	28.486	64.95	81.280
						B	15.375	28.486	64.95	82.000	
						C	15.375	28.486	64.95	82.000	
80.00-60.00	T10	70.00	1.174	21	464.196	A	16.198	30.111	30.111	65.02	81.280
						B	16.198	30.111	65.02	82.000	
						C	16.198	30.111	65.02	82.000	
60.00-40.00	T11	50.00	1.094	19	504.196	A	17.068	30.111	30.111	63.83	154.300
						B	17.068	30.111	63.83	82.000	
						C	17.068	30.111	63.83	82.000	
40.00-20.00	T12	30.00	0.982	17	544.613	A	17.958	32.655	32.655	64.52	81.280
						B	17.958	32.655	64.52	82.000	
						C	17.958	32.655	64.52	82.000	

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Section Elevation	z	K _z	q _z	A ₀	F ₀	A _r	A _s	A _{0s}	Leg %	C ₁ A ₁ In Face	C ₁ A ₁ Out Face
ft	ft		psf	ft ²	lb	ft ²	ft ²	ft ²	%	ft ²	ft ²
T13 20.00-0.00	10.00	0.85	15	584.613	A	18.884	32.655	32.655	63.36	81.280	
					B	18.884	32.655	63.36	154.300		
					C	18.884	32.655	63.36	82.000		

Tower Pressure - Service

$G_{H1} = 0.850$

Section Elevation	z	K _z	q _z	A ₀	F ₀	A _r	A _s	A _{0s}	Leg %	C ₁ A ₁ In Face	C ₁ A ₁ Out Face
ft	ft		psf	ft ²	lb	ft ²	ft ²	ft ²	%	ft ²	ft ²
255.00-240.00	T1	247.50	1.532	12	80.823	A	6.566	11.250	11.250	63.15	0.000
						B	6.566	11.250	63.15	41.943	
						C	6.566	11.250	63.15	0.000	
240.00-220.00	T2	230.80	1.508	12	129.283	A	7.669	18.574	18.574	70.78	81.280
						B	7.669	18.574	70.78	83.020	
						C	7.669	18.574	70.78	81.280	
220.00-200.00	T3	210.00	1.48	12	169.282	A	11.361	18.574	18.574	62.05	154.300
						B	11.361	18.574	62.05	82.000	
						C	11.361	18.574	62.05	82.000	
200.00-180.00	T4	190.00	1.449	11	211.054	A	13.370	22.120	22.120	62.33	81.280
						B	13.370	22.120	62.33	82.000	
						C	13.370	22.120	62.33	82.000	
180.00-160.00	T5	170.00	1.415	11	251.854	A	18.627	22.120	22.120	54.29	81.280
						B	18.627	22.120	54.29	82.000	
						C	18.627	22.120	54.29	82.000	
160.00-140.00	T6	150.00	1.378	11	302.944	A	15.272	25.512	25.512	62.55	154.300
						B	15.272	25.512	62.55	82.000	
						C	15.272	25.512	62.55	82.000	
140.00-120.00	T7	130.00	1.337	10	343.361	A	11.896	26.914	26.914	69.33	82.000
						B	11.896	26.914	69.33	82.000	
						C	11.896	26.914	69.33	82.000	
120.00-100.00	T8	110.00	1.291	10	383.778	A	14.599	28.486	28.486	66.12	81.280
						B	14.599	28.486	66.12	82.000	
						C	14.599	28.486	66.12	82.000	
100.00-80.00	T9	90.00	1.238	10	423.778	A	15.375	28.486	28.486	64.95	81.280
						B	15.375	28.486	64.95	82.000	
						C	15.375	28.486	64.95	82.000	
80.00-60.00	T10	70.00	1.174	9	464.196	A	16.198	30.111	30.111	65.02	81.280
						B	16.198	30.111	65.02	82.000	
						C	16.198	30.111	65.02	82.000	
60.00-40.00	T11	50.00	1.094	9	504.196	A	17.068	30.111	30.111	63.83	154.300
						B	17.068				

inxTower 1343 Pikes Drive Plymouth, IN 46563 Phone: (374) 936-4221 FAX: (374) 936-6438	Job	240589	Page	17 of 58
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	Client	American Tower Corp.	Designed by	na1

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Section Elevation	Add Weight	Self Weight	F _a	e	C _y	g _r	D _y	D _x	A _z	F	w	Ctrl. Force
ft	K	K	ft	ft	psf				ft ²	K	plf	
T3	1.69	1.45	C	0.203	2.586	26	1	1	16.925	4.49	224.32	B
220.00-280.00			A	0.177	2.673				20.461			
			B	0.177	2.673				20.461			
			C	0.168	2.706				23.251	4.57	228.51	B
T4	1.69	1.82	C	0.168	2.706	26	1	1	23.251			
200.00-180.00			A	0.168	2.706				23.251			
			B	0.162	2.727				28.516	4.78	238.96	B
			C	0.162	2.727				28.516			
T5	1.69	2.87	C	0.135	2.829	24	1	1	25.759	4.55	257.70	B
148.00-160.00			A	0.135	2.829				25.759			
			B	0.135	2.829				25.759			
			C	0.135	2.829				25.759			
T6	1.69	3.68	A	0.113	2.912	24	1	1	22.684	4.28	214.12	B
160.00-140.00			B	0.113	2.912				22.684			
			C	0.113	2.912				23.684			
T7	1.69	4.08	A	0.112	2.915	23	1	1	26.008	4.32	216.16	B
140.00-120.00			B	0.112	2.915				26.008			
			C	0.112	2.915				26.008			
T8	1.69	5.32	A	0.103	2.95	22	1	1	26.672	4.20	209.87	B
120.00-100.00			B	0.103	2.95				26.672			
			C	0.103	2.95				26.672			
T9	1.69	5.41	A	0.094	2.99	19	1	1	28.873	3.83	191.71	B
100.00-80.00			B	0.094	2.99				28.873			
			C	0.094	2.99				28.873			
T10	1.69	6.11	A	0.093	2.993	17	1	1	30.760	3.53	176.37	B
80.00-60.00			B	0.093	2.993				30.760			
			C	0.093	2.993				30.760			
T11	1.69	7.24	A	0.088	3.012	15	1	1	31.621	3.09	154.66	B
60.00-40.00			B	0.088	3.012				31.621			
			C	0.088	3.012				31.621			
Sum Weight:	20.02	52.54					OTM		6386.91	30.21		

Section Elevation	Add Weight	Self Weight	F _a	e	C _y	g _r	D _y	D _x	A _z	F	w	Ctrl. Force
ft	K	K	ft	ft	psf				ft ²	K	plf	
T5	1.69	2.07	C	0.168	2.706	25	0.8	1	20.577			
180.00-160.00			A	0.162	2.727				24.790	4.56	228.19	C
			B	0.162	2.727				24.798			
			C	0.162	2.727				24.799			
T6	1.69	3.68	A	0.135	2.829	24	0.8	1	22.781	4.38	218.78	C
160.00-148.00			B	0.135	2.829				22.704			
			C	0.135	2.829				22.704			
T7	1.69	4.88	A	0.113	2.912	24	0.8	1	20.305	4.14	287.18	C
140.00-120.00			B	0.113	2.912				20.305			
			C	0.113	2.912				20.305			
T8	1.69	5.32	A	0.112	2.915	23	0.8	1	23.597	4.16	287.93	C
120.00-100.00			B	0.112	2.915				23.597			
			C	0.112	2.915				23.597			
T9	1.69	5.41	A	0.103	2.95	21	0.8	1	24.851	3.89	194.66	C
100.00-80.00			B	0.1	2.965				24.851			
			C	0.1	2.965				24.851			
T10	1.69	6.11	A	0.094	2.99	19	0.8	1	25.461	3.67	183.33	C
80.00-60.00			B	0.094	2.99				25.461			
			C	0.094	2.99				25.461			
T11	1.69	7.13	A	0.093	2.993	17	0.8	1	27.168	3.37	168.46	C
60.00-40.00			B	0.093	2.993				27.168			
			C	0.093	2.993				27.168			
T12	1.69	7.24	A	0.088	3.012	15	0.8	1	27.844	2.95	147.42	C
40.00-20.00			B	0.088	3.012				27.844			
			C	0.088	3.012				27.844			
Sum Weight:	20.82	52.44					OTM		6148.25	48.25		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F _a	e	C _y	g _r	D _y	D _x	A _z	F	w	Ctrl. Force
ft	K	K	ft	ft	psf				ft ²	K	plf	
T1	0.24	0.73	A	0.231	2.527	27	0.8	1	11.347	1.26	84.04	C
355.00-240.00			B	0.231	2.527				11.347			
			C	0.221	2.527				11.347			
T2	1.17	1.28	A	0.203	2.586	27	0.8	1	15.392	3.07	153.60	C
240.00-220.00			B	0.203	2.586				15.392			
			C	0.203	2.586				15.392			
T3	1.69	1.45	A	0.177	2.673	26	0.8	1	18.189	4.35	217.58	C
220.00-200.00			B	0.177	2.673				18.189			
			C	0.177	2.673				18.189			
T4	1.69	1.82	A	0.168	2.706	26	0.8	1	28.577	4.41	220.66	C
200.00-180.00			B	0.168	2.706				28.577			

Tower Forces - No Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F _a	e	C _y	g _r	D _y	D _x	A _z	F	w	Ctrl. Force
ft	K	K	ft	ft	psf				ft ²	K	plf	
T1	0.24	0.73	A	0.231	2.527	27	0.85	1	11.675	1.28	85.31	C
355.00-240.00			B	0.231	2.527				11.675			
			C	0.221	2.527				11.675			
T2	1.17	1.28	A	0.203	2.586	27	0.85	1	15.715	3.33	167.23	C
240.00-220.00			B	0.203	2.586				15.715			
			C	0.203	2.586				15.715			
T3	1.69	1.45	A	0.177	2.673	26	0.85	1	18.757	4.02	201.02	C
220.00-200.00			B	0.177	2.673				18.757			
			C	0.177	2.673				18.757			
T4	1.69	1.82	A	0.168	2.706	26	0.85	1	21.245	4.18	204.76	C
200.00-180.00			B	0.168	2.706				21.245			
			C	0.168	2.706				21.245			
T5	1.69	2.07	A	0.162	2.727	25	0.85	1	23.722	4.27	213.43	C
180.00-160.00			B	0.162	2.727				23.722			
			C	0.162	2.727				23.722			
T6	1.69	3.68	A	0.135	2.829	24	0.85	1	23.468	4.03	204.01	C
160.00-140.00			B	0.135	2.829				23.468			

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	Project	V-29 x 255' #822216 Clover Bottom, KY	Date	10:43:40 11/27/13
	Client	American Tower Corp.	Designed by	na1

Section Elevation	Add Weight	Self Weight	F _a	e	C _y	g _r	D _y	D _x	A _z	F	w	Ctrl. Force
ft	K	K	ft	ft	psf				ft ²	K	plf	
T7	1.69	4.08	C	0.135	2.829	24	0.85	1	23.468	3.85	192.42	C
140.00-120.00			A	0.113	2.912				20.900			
			B	0.113	2.912				20.900			
			C	0.113	2.912				20.900			
T8	1.69	5.32	A	0.112	2.915	23	0.85	1	23.818	3.88	194.06	C
120.00-100.00			B	0.112	2.915				23.818			
			C	0.112</								

tnxTower 1545 Pkida Drive Plymouth, IN 46363 Phone: (374) 936-4221 FAX: (374) 936-6438	Job	240589	Page	21 of 50
	Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10:43:40 11/27/13
	Client	American Tower Corp.	Designed by	na1

tnxTower 1545 Pkida Drive Plymouth, IN 46363 Phone: (374) 936-4221 FAX: (374) 936-6438	Job	240589	Page	22 of 55
	Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10:43:40 11/27/13
	Client	American Tower Corp.	Designed by	na1

Section Elevation	Add Weight	Self Weight	F _a	e	C _r	g _r	D _r	D _s	A _t	F	w	Ctrl. Face
ft	K	K	e	e		psf			ft ²	K	psf	
T11 60.00-40.00	8.64	15.95	C A B C	0.213 0.198 0.198 0.198	2.553 2.603 2.603 2.603	2	0.8	0.8	61.320 61.737 61.737 61.737	0.65	32.48	B
T12 40.00-20.00	8.37	16.81	A B C C	0.186 0.186 0.186 0.186	2.645 2.645 2.645 2.645	2	0.8	0.8	62.476 62.476 62.476 62.476	0.59	29.35	B
T13 20.00-0.00	7.83	16.46	A B C	0.186 0.172 0.172	2.694 2.694 2.694	2	0.8	0.8	61.970 61.970 61.970	0.59	25.20	B
Sum Weight:	107.17	143.14							1088.83 kip-ft	1.50		

Section Elevation	Add Weight	Self Weight	F _a	e	C _r	g _r	D _r	D _s	A _t	F	w	Ctrl. Face
ft	K	K	e	e		psf			ft ²	K	psf	
T13 20.00-0.00	7.83	16.46	A B C	0.186 0.172 0.172	2.694 2.694 2.694	2	0.85	0.85	63.374 62.914 62.914	0.51	25.46	B
Sum Weight:	107.17	143.14							1087.44 kip-ft	1.50		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F _a	e	C _r	g _r	D _r	D _s	A _t	F	w	Ctrl. Face
ft	K	K	e	e		psf			ft ²	K	psf	
T1 255.00-240.00	1.54	2.62	A B C	0.458 0.458 0.458	1.96 1.96 1.96	3	0.85	0.85	27.119 27.119 27.119	0.25	16.69	C
T2 240.00-220.00	7.03	3.69	A B C	0.387 0.387 0.387	2.09 2.09 2.09	3	0.85	0.85	34.714 34.714 34.714	0.65	32.66	C
T3 220.00-200.00	9.51	4.33	A B C	0.337 0.333 0.333	2.09 2.212 2.212	3	0.85	0.85	38.342 38.342 38.342	0.71	35.58	B
T4 200.00-180.00	9.45	5.16	A B C	0.307 0.307 0.307	2.279 2.279 2.279	3	0.85	0.85	43.317 43.317 43.317	0.73	36.45	B
T5 180.00-160.00	9.37	6.06	A B C	0.29 0.29 0.29	2.323 2.323 2.323	3	0.85	0.85	49.121 49.121 49.121	0.75	37.36	B
T6 160.00-140.00	9.29	12.81	A B C	0.325 0.325 0.325	2.233 2.233 2.233	3	0.85	0.85	64.552 64.552 64.552	0.80	39.75	B
T7 140.00-120.00	9.21	13.28	A B C	0.268 0.268 0.268	2.386 2.386 2.386	3	0.85	0.85	67.252 67.252 67.252	0.76	37.99	B
T8 120.00-100.00	9.10	14.97	A B C	0.25 0.25 0.25	2.438 2.438 2.438	3	0.85	0.85	60.743 60.743 60.743	0.75	37.31	B
T9 100.00-80.00	8.98	15.08	A B C	0.229 0.229 0.229	2.503 2.503 2.503	2	0.85	0.85	61.142 61.142 61.142	0.73	36.36	B
T10 80.00-60.00	8.83	15.89	A B C	0.213 0.213 0.213	2.553 2.553 2.553	2	0.85	0.85	62.130 62.130 62.130	0.70	34.92	B
T11 60.00-40.00	8.64	15.95	A B C	0.198 0.198 0.198	2.603 2.603 2.603	2	0.85	0.85	62.590 62.590 62.590	0.66	32.78	B
T12 40.00-20.00	8.37	16.81	A B C	0.186 0.186 0.186	2.645 2.645 2.645	2	0.85	0.85	63.374 63.374 63.374	0.59	29.64	B

Tower Forces - Service - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F _a	e	C _r	g _r	D _r	D _s	A _t	F	w	Ctrl. Face
ft	K	K	e	e		psf			ft ²	K	psf	
T1 255.00-240.00	0.24	0.73	A B C	0.221 0.221 0.221	2.527 2.527 2.527	12	1	1	12.660 12.660 12.660	0.59	39.61	B
T2 240.00-220.00	1.17	1.28	A B C	0.203 0.203 0.203	2.586 2.586 2.586	12	1	1	16.925 16.925 16.925	1.41	70.26	B
T3 220.00-200.00	1.69	1.45	A B C	0.177 0.177 0.177	2.675 2.675 2.675	12	1	1	20.461 20.461 20.461	1.99	99.70	B
T4 200.00-180.00	1.69	1.82	A B C	0.168 0.168 0.168	2.706 2.706 2.706	11	1	1	23.251 23.251 23.251	2.83	101.56	B
T5 180.00-160.00	1.69	2.07	A B C	0.162 0.162 0.162	2.727 2.727 2.727	11	1	1	25.166 25.166 25.166	2.12	106.20	B
T6 160.00-140.00	1.69	3.68	A B C	0.135 0.135 0.135	2.829 2.829 2.829	11	1	1	25.759 25.759 25.759	2.62	101.20	B
T7 140.00-120.00	1.69	4.08	A B C	0.113 0.113 0.113	2.912 2.912 2.912	10	1	1	22.684 22.684 22.684	1.90	95.17	B
T8 120.00-100.00	1.69	5.32	A B C	0.112 0.112 0.112	2.915 2.915 2.915	10	1	1	26.088 26.088 26.088	1.92	96.07	B
T9 100.00-80.00	1.69	5.41	A B C	0.103 0.103 0.103	2.95 2.95 2.95	10	1	1	26.672 26.672 26.672	1.87	93.28	B
T10 80.00-60.00	1.69	6.11	A B C	0.1 0.1 0.1	2.965 2.965 2.965	9	1	1	28.095 28.095 28.095	1.81	90.27	B
T11 60.00-40.00	1.69	6.22	A B C	0.094 0.094 0.094	2.99 2.99 2.99	9	1	1	28.495 28.495 28.495	1.70	83.21	B
T12 40.00-20.00	1.69	7.13	A B C	0.093 0.093 0.093	2.993 2.993 2.993	8	1	1	30.760 30.760 30.760	1.57	78.39	B
T13 20.00-0.00	1.69	7.24	A B C	0.088 0.088 0.088	3.012 3.012 3.012	7	1	1	31.621 31.621 31.621	1.37	68.74	B
Sum Weight:	20.82	32.54							2834.53 kip-ft	22.31		

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	Client	American Tower Corp.	Designed by	na1

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	Client	American Tower Corp.	Designed by	na1

Tower Forces - Service - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F _a	e	C _r	g _r	D _r	D _s	A _t	F	w	Ctrl. Face
ft	K	K	e	e		psf			ft ²	K	psf	
T1 255.00-240.00	0.24	0.73	A B C	0.221 0.221 0.221	2.527 2.527 2.527	12	0.8	0.8	11.347 11.347 11.347	0.56	37.33	C
T2 240.00-220.00	1.17	1.28	A B C	0.203 0.203 0.203	2.586 2.586 2.586	12	0.8	0.8	13.392 13.392 13.392	1.37	68.27	C
T3 220.00-200.00	1.69	1.45	A B C	0.177 0.177 0.177	2.675 2.675 2.675	12	0.8	0.8	18.189 18.189 18.189	1.93	96.70	C
T4 200.00-180.00	1.69	1.82	A B C	0.168 0.168 0.168	2.706 2.706 2.706	11	0.8	0.8	20.577 20.577 20.577	1.96	98.07	C
T5 180.00-160.00	1.69	2.07	A B C	0.162 0.162 0.162	2.727 2.727 2.727	11	0.8	0.8	24.790 24.790 24.790	2.63	181.42	C
T6 160.00-140.00	1.69	3.68	A B C	0.135 0.135 0.135	2.829 2.829 2.829	11	0.8	0.8	22.704 22.704 22.704	1.94	97.23	C
T7 140.00-120.00	1.69	4.08	A B C	0.113 0.113 0.113	2.912 2.912 2.912	10	0.8	0.8	20.385 20.385 20.385	1.84	92.08	C
T8 120.00-100.00	1.69	5.32	A B C	0.112 0.112 0.112	2.915 2.915 2.915	10	0.8	0.8	23.088 23.088 23.088	1.83	92.41	C
T9 100.00-80.00	1.69	5.41	A B C	0.103 0.103 0.103	2.95 2.95 2.95	10	0.8	0.8	23.597 23.597 23.597	1.79	89.54	C
T10 80.00-60.00	1.69	6.11	A B C	0.1 0.1 0.1	2.965 2.965 2.965	9	0.8	0.8	24.851 24.851 24.851	1.73	86.52	C
T11 60.00-40.00	1.69	6.22	A B C	0.094 0.094 0.094	2.99 2.99 2.99	9	0.8	0.8	25.461 25.461 25.461	1.63	81.49	C
T12 40.00-20.00	1.69	7.13	A B C	0.093 0.093 0.093	2.993 2.993 2.993	8	0.8	0.8	27.168 27.168 27.168	1.50	74.87	C
T13 20.00-0.00	1.69	7.24	A B C	0.088 0.088 0.088	3.012 3.012 3.012	7	0.8	0.8	27.844 27.844 27.844	1.31	65.52	C
Sum Weight:	28.82	32.54							2732.56 kip-ft	21.44		

Section Elevation	Add Weight	Self Weight	F _a	e	C _r	g _r	D _r	D _s	A _t	F	w	Ctrl. Face
ft	K	K	e	e		psf			ft ²	K	psf	
T1 255.00-240.00	0.24	0.73	A B C	0.221 0.221 0.221	2.527 2.527 2.527	12	0.85	0.85	11.675 11.675 11.675	0.57	37.91	C
T2 240.00-220.00	1.17	1.28	A B C	0.203 0.203 0.203	2.586 2.586 2.586	12	0.85	0.85	15.775 15.775 15.775	1.49	74.34	C
T3 220.00-200.00	1.69	1.45	A B C	0.177 0.177 0.177	2.675 2.675 2.675	12	0.85	0.85	18.757 18.757 18.757	1.79	89.34	C
T4 200.00-180.00	1.69	1.82	A B C	0.168 0.168 0.168	2.706 2.706 2.706	11	0.85	0.85	21.245 21.245 21.245	1.82	91.03	C
T5 180.00-160.00	1.69	2.07	A B C	0.162 0.162 0.162	2.727 2.727 2.727	11	0.85	0.85	23.722 23.722 23.722	1.90	94.86	C
T6 16												

tnxTower		Job	24055b	Page	26 of 58
1545 Pitco Drive Plymouth, NJ 08553 Phone: (574) 936-4321 FAX: (574) 936-6438		Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10:43:40 11/27/13
		Client	American Tower Corp.	Designed by	na1

tnxTower		Job	24055a	Page	26 of 58
1545 Pitco Drive Plymouth, NJ 08553 Phone: (574) 936-4321 FAX: (574) 936-6438		Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10:43:40 11/27/13
		Client	American Tower Corp.	Designed by	na1

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F			OTM ₁			OTM ₂			Torque	
				K	V ₁	V ₂	K	V ₁	V ₂	K	V ₁	V ₂		
T2	240.00-220.00	0	Wind 90	1.28	-0.64	1.11	274.09	158.02	-0.19					
			Wind Normal	1.34	-1.16	0.67	165.24	286.18	-0.02					
			270	1.28	-1.28	0.60	-0.18	316.37	0.15					
			330	1.02	-0.89	-0.51	-126.82	219.02	0.23					
			0	0.82	-0.41	-0.71	-176.57	191.51	0.22					
			Wind Normal	2.93	0.00	-2.93	-673.85	-0.01	0.02					
			270	2.90	1.45	-2.91	-572.21	-333.03	-0.09					
			60	3.07	2.66	-1.54	-353.68	-611.91	-0.18					
			90	3.35	3.35	0.00	-0.40	-769.47	-0.24					
			120	3.16	2.74	1.58	363.19	-639.76	-0.20					
			150	2.90	1.45	2.51	576.41	-333.03	-0.12					
			180	2.84	0.80	2.84	652.45	-0.01	-0.01					
210	2.90	-1.45	2.51	576.41	333.01	0.09								
240	3.16	-2.74	1.58	-363.19	639.74	0.19								
270	3.35	-3.35	0.00	-0.40	769.45	0.24								
300	3.07	-2.66	-1.54	-353.68	611.89	0.20								
330	2.90	-1.45	-2.51	-572.21	333.01	0.12								
T3	270.00-270.00	0	Wind Normal	3.75	0.00	-3.75	-787.24	-0.71	0.29					
			30	4.67	2.01	-3.48	-731.57	-122.86	0.26					
			60	4.35	3.77	-2.18	-457.30	-792.12	0.02					
			90	4.02	4.02	0.00	-0.38	-845.00	-0.22					
			120	3.75	3.25	1.87	393.06	-692.18	-0.37					
			150	3.71	1.85	3.21	673.43	-389.75	-0.44					
			180	3.61	0.00	3.61	758.21	-0.71	-0.38					
			210	3.69	-2.01	3.48	736.80	421.44	-0.26					
			240	4.49	-3.89	2.54	-470.62	815.21	-0.03					
			270	4.02	-4.02	0.00	-0.38	845.59	0.22					
			300	3.61	-3.13	-1.81	-379.69	656.26	0.36					
			330	3.71	-1.85	3.21	674.22	-382.31	-0.44					
T4	200.00-180.00	0	Wind Normal	3.85	0.00	-3.85	-731.28	-0.86	0.44					
			30	4.10	2.05	-3.55	-674.31	-389.90	0.31					
			60	4.41	3.82	-2.21	-419.72	-777.03	0.03					
			90	4.10	4.10	0.00	-0.46	-778.95	-0.46					
			120	3.85	3.33	1.92	364.94	-623.77	-0.45					
			150	3.79	1.89	3.28	622.58	-360.57	-0.53					
			180	3.69	0.00	3.69	706.52	-0.86	-0.46					
			210	4.10	-2.05	3.55	673.38	389.90	-0.31					
			240	4.57	-3.96	2.29	-433.71	751.15	-0.03					
			270	4.10	-4.10	0.00	-0.46	777.23	0.26					
			300	3.69	-2.01	3.48	-350.99	692.21	0.43					
			330	3.79	-1.89	3.78	623.51	-388.66	0.53					
T5	180.00-160.00	0	Wind Normal	4.07	0.00	-4.07	-692.80	-1.01	0.59					
			30	4.27	2.13	-3.76	-629.00	-362.83	0.38					
			60	4.27	4.27	0.00	-0.44	-679.91	-0.44					
			90	4.27	4.27	0.00	-0.53	-726.68	-0.31					
			120	4.07	3.53	2.04	345.58	-600.52	-0.55					
			150	3.97	1.98	3.44	683.50	-338.21	-0.64					
			180	3.86	0.00	3.86	658.10	-1.01	-0.55					
			210	4.27	-2.13	-3.76	627.90	361.83	-0.38					
			240	4.78	-4.14	2.39	-405.68	702.60	-0.84					
			270	4.27	-4.27	0.00	-0.44	726.66	0.31					
			300	4.07	-3.54	-1.92	-328.37	666.70	0.52					
			330	3.97	-1.98	-3.44	-584.59	336.19	0.64					
T6	160.00-140.00	0	Wind Normal	3.87	0.00	-3.87	-580.42	-1.16	0.64					
			30	4.27	2.04	-3.52	-523.67	-307.18	0.41					
			60	4.38	3.79	-2.19	-328.79	-569.56	0.04					
			90	4.08	4.08	0.00	-0.63	-613.20	-0.24					
			120	3.87	3.35	1.92	283.27	-503.28	-0.60					
			150	3.79	1.89	3.28	622.58	-360.57	-0.53					
			180	3.69	0.00	3.69	706.52	-0.86	-0.46					
			210	4.10	-2.05	3.55	673.38	389.90	-0.31					
			240	4.57	-3.96	2.29	-433.71	751.15	-0.03					
			270	4.10	-4.10	0.00	-0.46	777.23	0.26					
			300	3.69	-2.01	3.48	-350.99	692.21	0.43					
			330	3.79	-1.89	3.78	623.51	-388.66	0.53					

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F			OTM ₁			OTM ₂			Torque
				K	V ₁	V ₂	K	V ₁	V ₂	K	V ₁	V ₂	
T7	140.00-120.00	0	Wind Normal	4.52	-3.94	2.28	340.92	590.42	-0.03				
			270	4.52	-4.08	0.00	-0.63	610.88	-0.53				
			300	3.85	-3.19	-1.84	-273.14	-477.78	0.37				
			330	3.79	-1.89	-3.28	-492.51	282.83	0.70				
			0	3.61	0.00	-3.61	-470.53	-1.31	0.68				
			Wind Normal	3.85	1.92	-3.35	-422.94	-0.00	0.44				
			60	4.14	3.59	-2.07	-270.84	-467.81	-0.05				
			90	3.83	3.83	0.00	-0.71	-501.62	-0.37				
			120	3.61	3.13	1.81	234.21	-408.21	-0.64				
			150	3.56	1.38	3.09	408.48	-223.94	-0.75				
			180	3.48	0.00	3.48	451.09	-1.31	-0.65				
			210	3.85	-1.92	3.33	452.57	248.84	-0.44				
240	4.28	-3.71	2.14	-277.68	490.82	-0.03							
270	3.85	-3.85	0.00	-0.71	498.99	0.31							
300	3.48	-3.01	-1.74	-226.60	289.95	0.71							
330	3.56	-1.78	-3.09	-401.89	230.31	0.28							
T8	120.00-100.00	0	Wind Normal	3.68	0.00	-3.68	-403.37	-1.46	0.76				
			30	3.88	1.94	-3.36	-370.53	-214.93	0.49				
			60	4.16	3.60	-2.08	-229.51	-397.62	0.05				
			90	3.88	3.88	0.00	-0.79	-478.40	-0.41				
			120	3.68	3.19	1.84	201.50	-351.84	-0.71				
			150	3.61	1.80	3.12	342.74	-199.80	-0.83				
			180	3.51	0.60	3.51	385.68	-1.46	-0.73				
			210	3.88	-1.94	3.36	368.95	212.01	-0.49				
			240	4.32	-3.74	2.16	-236.99	416.38	-0.04				
			270	3.88	-3.88	0.00	-0.79	425.48	0.41				
			300	3.51	-3.04	-1.76	-194.02	333.23	0.68				
			330	3.61	-1.80	-3.12	-344.32	196.87	0.83				
T9	100.00-80.00	0	Wind Normal	3.58	0.00	-3.58	-322.98	-1.41	0.81				
			30	3.77	1.88	-3.26	-294.48	-171.08	0.52				
			60	4.83	3.49	-2.01	-182.19	-315.66	0.06				
			90	3.77	3.77	0.00	-0.87	-340.36	-0.43				
			120	3.58	3.04	1.79	160.19	-286.57	-0.76				
			150	3.50	1.75	3.03	272.12	-159.21	-0.89				
			180	3.41	0.00	3.41	306.10	-1.61	-0.77				
			210	3.77	-1.88	-3.26	-292.67	167.85	-0.52				
			240	4.20	-3.64	2.10	-188.02	325.55	-0.06				
			270	3.77	-3.77	0.00	-0.87	337.33	0.43				
			300	3.41	-2.95	-1.71	-154.33	264.23	0.73				
			330	3.58	-2.15	-3.03	-273.84	155.99	0.89				
T10	80.00-60.00	0	Wind Normal	3.48	0.00	-3.48	-244.24	-1.76	0.86				
			30	3.65	1.82	-3.16	-221.97	-129.37	0.53				
			60	3.89	3.37	-1.95	-137.71	-227.78	0.04				
			90	3.58	3.58	0.00	-0.94	-406.90	-0.45				
			120	3.48	3.01	1.74	120.69	-212.46	-0.80				
			150	3.40	1.70	2.94	204.00	-120.61	-0.94				
			180	3.30	0.00	3.30	230.51	-1.76	-0.81				
			210	3.65	-1.82	3.16	220.07	125.84	-0.55				
			240	4.06	-3.52	2.03	-141.22	244.49	-0.06				
			270	3.65	-3.65	0.00	-0.95	253.45	0.45	</			

inxTower		Job	240589	Page	29 of 56
1543 Pikea Drive Plymouth, IN 46353 Phone: (574) 936-4221 FAX: (574) 936-6438		Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10:43:40 11/27/13
		Client	American Tower Corp.	Designed by	nat

inxTower		Job	240589	Page	30 of 56
1543 Pikea Drive Plymouth, IN 46353 Phone: (574) 936-4221 FAX: (574) 936-6438		Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10:43:40 11/27/13
		Client	American Tower Corp.	Designed by	nat

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F	V _x	V _y	OTM ₁	OTM ₂	Torque
				K	K	K	kip-ft	kip-ft	kip-ft
T7	140.00-120.00	60	Wind 60	0.68	-0.39	0.00	-66.38	-106.99	0.03
		90	Wind 90	0.79	0.79	0.00	-4.81	-123.55	0.02
		120	Wind Normal	0.80	0.70	0.40	58.51	-109.92	0.00
		150	Wind 90	0.80	0.40	0.69	101.47	-65.08	-0.01
		180	Wind 60	0.79	0.00	0.79	116.45	5.54	0.02
		210	Wind 90	0.79	-0.39	0.68	106.47	53.60	-0.03
		240	Wind Normal	0.80	-0.69	0.40	57.93	98.03	-0.03
		270	Wind 90	0.79	-0.79	0.00	-1.81	112.66	-0.02
		300	Wind 60	0.79	-0.68	-0.39	-60.96	95.99	-0.00
		330	Wind 90	0.80	-0.40	-0.69	-103.09	54.14	0.01
		0	Wind Normal	0.76	0.00	-0.76	-101.49	-61.23	0.03
		30	Wind 90	0.75	0.38	0.65	-85.54	-24.90	-0.00
60	Wind 60	0.74	0.65	-0.37	-50.46	-49.94	0.03		
90	Wind 90	0.75	0.75	0.00	-2.05	-103.69	0.02		
120	Wind Normal	0.76	0.66	0.38	47.67	-93.24	0.01		
150	Wind 90	0.76	0.38	0.65	-85.54	-24.90	-0.00		
180	Wind 60	0.75	0.00	0.75	95.75	6.12	-0.02		
210	Wind 90	0.75	-0.38	0.65	82.45	-42.66	-0.03		
240	Wind Normal	0.76	-0.66	0.38	47.19	79.16	-0.03		
270	Wind 90	0.75	-0.74	0.00	-2.85	91.45	-0.03		
300	Wind 60	0.75	-0.65	-0.38	-50.95	78.58	-0.01		
330	Wind 90	0.76	-0.38	-0.66	-87.38	43.15	0.01		
0	Wind Normal	0.76	0.00	-0.76	-85.85	-6.78	0.03		
30	Wind 90	0.74	0.37	-0.64	-71.06	-77.64	-0.03		
60	Wind 60	0.74	0.64	-0.37	-42.81	-76.96	0.03		
90	Wind 90	0.74	0.74	0.00	-2.29	-88.50	0.02		
120	Wind Normal	0.76	0.66	0.38	30.46	-79.10	0.01		
150	Wind 90	0.75	0.38	0.65	69.16	-48.04	-0.01		
180	Wind 60	0.74	0.00	0.74	79.53	-6.78	-0.03		
210	Wind 90	0.74	-0.37	0.64	68.48	34.08	-0.03		
240	Wind Normal	0.75	-0.65	0.38	30.97	64.85	-0.03		
270	Wind 90	0.74	-0.74	0.00	-2.29	74.94	-0.02		
300	Wind 60	0.74	-0.64	-0.37	-43.21	64.08	-0.01		
330	Wind 90	0.75	-0.38	-0.65	-79.75	34.47	0.01		
0	Wind Normal	0.74	0.00	-0.74	-60.86	-3.43	0.03		
30	Wind 90	0.72	0.36	-0.62	-58.69	-39.84	0.04		
60	Wind 60	0.71	0.62	-0.36	-34.68	-63.08	0.03		
90	Wind 90	0.72	0.72	0.00	-2.58	-72.25	0.02		
120	Wind Normal	0.74	0.64	0.37	30.61	-64.83	0.01		
150	Wind 90	0.73	0.36	0.63	54.13	-40.15	-0.01		
180	Wind 60	0.72	0.00	0.72	62.33	-7.43	-0.03		
210	Wind 90	0.72	-0.36	0.62	52.59	-24.98	-0.03		
240	Wind Normal	0.73	-0.63	0.36	30.30	49.46	-0.03		
270	Wind 90	0.72	-0.72	0.00	-2.55	57.39	-0.02		
300	Wind 60	0.72	-0.62	-0.36	-34.99	48.76	-0.02		
330	Wind 90	0.72	-0.36	-0.62	-62.72	21.11	0.01		
0	Wind Normal	0.71	0.00	-0.71	-52.40	-8.86	0.02		
30	Wind 90	0.69	0.35	-0.60	-44.75	-32.27	0.04		
60	Wind 60	0.69	0.65	-0.34	-28.81	-64.62	0.04		
90	Wind 90	0.69	0.69	0.00	-2.82	-56.48	0.02		
120	Wind Normal	0.71	0.61	0.35	21.97	-51.06	0.01		
150	Wind 90	0.70	0.35	0.60	39.32	-32.50	0.01		
180	Wind 60	0.69	0.00	0.69	45.63	-8.06	-0.03		
210	Wind 90	0.69	-0.35	0.60	39.12	16.15	-0.04		
240	Wind Normal	0.70	-0.61	0.35	21.74	34.48	-0.04		
270	Wind 90	0.69	-0.69	0.00	-2.82	46.37	-0.02		
300	Wind 60	0.69	-0.60	-0.34	-33.90	33.90	-0.01		
330	Wind 90	0.70	-0.35	-0.60	-45.15	16.38	0.01		
0	Wind Normal	0.67	0.00	-0.67	-36.39	-8.66	0.03		
30	Wind 90	0.65	0.32	-0.56	-31.23	-24.90	0.04		
60	Wind 60	0.64	0.56	-0.32	-18.19	-36.55	0.03		

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F	V _x	V _y	OTM ₁	OTM ₂	Torque
				K	K	K	kip-ft	kip-ft	kip-ft
T12	40.00-20.00	60	Wind 60	0.65	0.65	0.00	-3.10	-41.13	0.02
		90	Wind Normal	0.67	0.58	0.33	13.54	-37.48	0.01
		120	Wind 90	0.66	0.33	0.57	25.28	-25.05	-0.01
		150	Wind 60	0.65	0.00	0.65	29.37	-8.66	-0.03
		180	Wind 90	0.65	-0.33	0.56	25.02	7.58	-0.04
		210	Wind Normal	0.66	-0.66	0.00	-3.10	41.13	-0.02
		240	Wind 90	0.65	-0.65	-0.00	-3.10	23.82	-0.02
		270	Wind 60	0.65	-0.33	-0.32	-19.34	19.47	-0.01
		300	Wind 90	0.66	-0.32	-0.57	-31.49	7.70	0.01
		330	Wind Normal	0.66	0.00	0.60	-4.60	-9.21	0.01
		0	Wind Normal	0.59	0.29	-0.31	-18.69	-10.02	0.03
		30	Wind 90	0.58	0.50	-0.29	-12.15	-24.32	0.03
60	Wind 60	0.59	0.59	0.00	-3.43	-26.82	0.02		
90	Wind 90	0.59	0.29	0.31	-1.89	-10.02	0.03		
120	Wind Normal	0.60	0.52	0.30	5.61	-24.86	0.01		
150	Wind 90	0.59	0.30	0.51	11.97	-18.10	-0.01		
180	Wind 60	0.59	0.00	0.59	14.18	-9.21	-0.03		
210	Wind 90	0.59	-0.29	0.51	11.83	-8.40	-0.03		
240	Wind Normal	0.60	-0.60	0.30	5.53	6.31	-0.03		
270	Wind 90	0.59	-0.59	0.00	-3.43	8.41	-0.02		
300	Wind 60	0.59	-0.31	-0.29	-12.23	6.04	-0.01		
330	Wind 90	0.59	-0.30	-0.31	-18.81	-12.32	0.01		
0	Wind Normal	0.52	0.00	-0.52	-9.03	-9.61	0.02		
30	Wind 90	0.50	0.25	-0.44	-8.21	-12.14	0.03		
60	Wind 60	0.50	0.43	-0.23	-6.34	-13.94	0.03		
90	Wind 90	0.50	0.50	0.00	-3.84	-14.66	0.02		
120	Wind Normal	0.52	0.45	0.26	-1.23	-14.10	0.01		
150	Wind 90	0.51	0.25	0.44	0.57	-12.16	-0.01		
180	Wind 60	0.50	0.00	0.50	1.20	-9.21	-0.02		
210	Wind 90	0.50	-0.25	0.44	0.53	-7.00	-0.03		
240	Wind Normal	0.51	-0.44	0.26	-1.28	-5.16	-0.03		
270	Wind 90	0.50	-0.50	0.00	-3.84	-4.37	-0.02		
300	Wind 60	0.50	-0.44	-0.26	-6.23	-6.01	-0.01		
330	Wind 90	0.51	-0.25	-0.44	-4.25	-7.07	0.01		

Mast Totals - With Ice

Wind Azimuth °	V _x	V _y	OTM ₁	OTM ₂	Torque
	K	K	kip-ft	kip-ft	kip-ft
0	0.00	-8.55	-1106.70	-76.03	0.32
36	4.21	-7.30	-936.96	-61.95	0.36
60	7.30	-4.21	-568.65	-101.13	0.20
90	8.55	0.00	-287.29	-110.67	0.16
120	7.47	4.31	-518.44	-102.91	0.31
150	4.22	7.31	-89.12	-608.34	-0.18
180	0.00	8.55	187.13	-76.08	-0.31
210	-4.21	7.30	-899.37	-459.80	-0.36
240	-7.46	4.31	-523.05	-878.01	-0.16
270	-8.50	0.00	-28.79	-1012.24	-0.31
300	-7.51	-4.22	-655.84	-102.91	0.01
330	-4.22	-7.31	-950.70	-456.19	0.18

Mast Vectors - Service

inxTower		Job	240589	Page	31 of 56
1543 Pikea Drive Plymouth, IN 46353 Phone: (574) 936-4221 FAX: (574) 936-6438		Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10:43:40 11/27/13
		Client	American Tower Corp.	Designed by	nat

inxTower		Job	240589	Page	32 of 56
1543 Pikea Drive Plymouth, IN 46353 Phone: (574) 936-4221 FAX: (574) 936-6438		Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10:43:40 11/27/13
		Client	American Tower Corp.	Designed by	nat

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F	V _x	V _y	OTM ₁	OTM ₂	Torque
				K	K	K	kip-ft	kip-ft	kip-ft
T1	255.00-240.00	0	Wind Normal	0.49	0.00	-0.49	-121.13	-0.33	0.12
		30	Wind 90	0.57	0.57	0.00	-122.08	78.71	0.08
		60	Wind 60	0.56	0.49	-0.28	-69.51	-126.41	-0.01
		90	Wind 90	0.57	0.00	-0.57	-141.09	-0.07	-0.07
		120	Wind Normal	0.49	0.42	0.24	60.29	-103.07	-0.11
		150	Wind 90	0.57	0.81	0.32	78.25	-105.59	-0.11
		180	Wind 60	0.45	0.00	0.45	112.39	-0.33	-0.11
		210	Wind 90	0.57	-0.28	0.40	121.72	70.05	-0.08
		240	Wind Normal	0.59	-0.51	0.30	73.34	127.01	-0.01
		270	Wind 90	0.57	-0.81	0.00	-0.18	140.42	0.07
		300	Wind 60	0.45	-0.39	-0.23	-56.45	97.16	0.10
		330	Wind 90	0.37	-0.18	-0.32	-78.58	44.16	0.10
0	Wind Normal	1.30	0.00	-1.30	-299.71	-0.01	0.01		
30	Wind 90	1.29	0.64	-0.11	-216.76	-148.02	-0.04		
60	Wind 60	1.37	1.18	-0.68	-157.41	-271.97	-0.02		
90	Wind 90	1.49	1.49	0.00	-0.40	-341.99	-0.11		
120	Wind Normal	1.41	1.22	0.70	161.20	-279.80	-0.09		
150	Wind 90	1.29	0.64	1.11	235.90	-148.02	-0.04		
180	Wind 60	1.26	0.00	1.26	289.76	-0.01	-0.01		
210	Wind 90	1.29	-0.64	1.11	235.90	148.00	0.04		
240	Wind Normal	1.41	-1.22	0.70	161.20	279.88	0.08		
270	Wind 90	1.49	-1.49	0.00	-0.40	341.97	0.11		
300	Wind 60	1.37	-1.18	-0.68	-157.41	271.95	0.09		
330	Wind 90	1.29	-0.64	-1.11	-235.76	148.00	0.03		
0	Wind Normal	1.67	0.00	-1.67	-350.11	-0.11	0.17		
30	Wind 90	1.79	0.89	-1.55	-323.53	-188.33	0.01		
60	Wind 60	1.93	1.67	-0.97	-203.46	-352.45	0.01		
90	Wind 90	1.79	1.79	0.00	-0.39	-375.95	-0.10		
120	Wind Normal</								

tnxTower 1545 Pickett Drive Plymouth, IN 46353 Phone: (574) 936-4231 FAX: (574) 936-6438	Job	240589	Page	33 of 59
	Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10/43/40 11/27/13
	Client	American Tower Corp.	Designed by	na1

tnxTower 1545 Pickett Drive Plymouth, IN 46353 Phone: (574) 936-4231 FAX: (574) 936-6438	Job	240589	Page	34 of 58
	Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10/43/40 11/27/13
	Client	American Tower Corp.	Designed by	na1

Section No.	Section Elevation ft	Wind Azimuth *	Directionality	F _E	F _V	F _T	OTM _E	OTM _V	Torque
T12	40.00-20.00	30	Wind 90	1.53	0.76	-1.33	-67.22	-101.3	0.23
		60	Wind 60	1.63	1.41	-0.11	-41.78	-72.49	0.03
		90	Wind 90	1.53	1.53	0.00	-1.03	-78.34	-0.21
		120	Wind Normal	1.46	1.27	0.73	35.50	-65.19	-0.37
		150	Wind 60	1.71	0.67	1.23	66.67	-37.34	-0.43
		180	Wind 60	1.39	0.90	1.39	69.31	-1.51	-0.37
		210	Wind 90	1.53	-0.76	1.37	65.15	36.30	-0.25
		240	Wind Normal	1.70	-1.44	0.83	-41.27	71.88	-0.63
		270	Wind 90	1.33	1.53	0.00	-1.03	74.51	0.21
		300	Wind 60	1.39	-1.30	-0.69	-35.70	58.14	0.35
		330	Wind 90	1.42	-0.71	-1.23	-62.73	33.71	0.43
		0	Wind Normal	1.35	0.00	-1.35	-41.60	-2.95	0.34
		30	Wind 90	1.41	0.70	-1.22	-37.64	-33.17	0.23
		60	Wind 60	1.50	1.30	-0.35	-23.37	-46.97	0.63
		90	Wind 90	1.41	1.41	0.00	-1.11	-44.29	-0.20
		120	Wind Normal	1.35	1.17	0.67	10.13	-37.13	-0.36
		150	Wind 90	1.31	0.66	1.14	13.04	-31.98	-0.42
		180	Wind 60	1.28	0.00	1.28	37.27	-2.06	-0.36
210	Wind 90	1.41	-0.70	1.22	35.43	19.63	-0.23		
240	Wind Normal	1.57	-1.36	0.74	22.40	38.67	-0.53		
270	Wind 90	1.41	-1.41	0.00	-1.11	46.16	0.20		
300	Wind 60	1.28	-1.11	-0.64	-20.30	31.17	0.34		
330	Wind 90	1.31	-0.66	-1.14	-35.26	17.65	0.42		
0	Wind Normal	1.35	0.00	-1.35	-41.60	-2.95	0.34		
30	Wind 90	1.23	0.62	-1.07	-11.87	-8.34	0.23		
60	Wind 60	1.31	1.13	-0.66	-7.25	-13.56	0.02		
90	Wind 90	1.23	1.23	0.00	-1.19	-14.53	-0.19		
120	Wind Normal	1.19	1.03	0.59	4.74	-12.49	-0.34		
150	Wind 90	1.15	0.58	1.00	8.79	-7.98	-0.39		
180	Wind 60	1.12	0.00	1.12	10.62	-2.21	-0.34		
210	Wind 90	1.23	-0.62	0.97	9.69	3.94	-0.19		
240	Wind Normal	1.37	-1.19	0.69	5.68	9.69	-0.03		
270	Wind 90	1.23	-1.23	0.00	-1.19	10.12	0.19		
300	Wind 60	1.12	-0.97	-0.36	-6.80	7.34	0.32		
330	Wind 90	1.13	-0.58	-1.00	-11.18	3.53	0.39		

Discrete Appurtenance Pressures - No Ice $C_{M1} = 0.850$										
Description	Area	Weight	Offset _x	Offset _y	z	K _z	q _z	C _{pe}	C _{pe} Side	t _s
Roof	0.0000	0.07	0.00	-2.89	259.39	1.347	27	2.30	2.40	
Roof Extender (4')	0.0000	0.03	0.00	-2.89	257.21	1.344	27	1.11	1.11	
8ft Lighting rod	240.0000	0.03	-2.50	1.44	259.00	1.346	27	1.20	1.20	
ATC Loading	0.0000	2.00	0.00	0.00	250.00	1.333	27	115.08	115.00	
ATC Loading	0.0000	2.00	0.00	0.00	240.00	1.322	27	115.00	115.00	
ATC Loading	0.0000	2.00	0.00	0.00	230.00	1.308	27	115.00	115.00	
ATC Loading	0.0000	2.00	0.00	0.00	220.00	1.294	26	115.80	115.00	
Sum		8.17								
Weights										

Discrete Appurtenance Vectors - No Ice										
Wind Azimuth *	F _E	F _V	F _T	V _E	V _V	OTM _E	OTM _V	Torque		
0	0.00	0.00	0.00	0.00	0.00	-14.64	0.00	0.00		
30	0.03	0.03	0.03	0.03	-0.05	-12.70	-7.21	-0.03		
60	0.03	0.03	0.03	0.03	-0.03	-9.42	-12.49	-0.14		
90	0.00	0.00	0.00	0.00	0.00	-7.21	-14.43	-0.16		
120	0.03	0.03	0.03	0.03	0.03	-7.00	-12.49	-0.14		
150	0.03	0.03	0.03	0.03	0.03	12.78	-7.21	-0.03		
180	0.06	0.00	0.00	0.00	0.06	14.22	0.00	0.00		
210	0.03	0.03	0.03	0.03	0.03	12.78	7.21	0.03		
240	0.03	0.03	0.03	0.03	0.00	7.00	12.49	0.14		
270	0.00	0.00	0.00	0.00	0.00	-7.21	14.43	0.16		
300	0.03	0.03	0.03	0.03	-0.03	-7.42	12.49	0.14		
330	0.03	0.03	0.03	0.03	-0.03	-12.70	7.21	0.03		

Roof Extender (4') 030803 - Elevation 237.21 - From Lev A										
Wind Azimuth *	F _E	F _V	F _T	V _E	V _V	OTM _E	OTM _V	Torque		
0	0.03	0.00	0.00	0.00	-0.03	-6.69	0.00	0.00		
30	0.02	0.01	0.01	0.01	-0.02	-5.81	-3.30	-0.04		
60	0.01	0.02	0.02	0.01	-0.39	-5.72	-0.66	-0.06		
90	0.00	0.03	0.03	0.03	0.00	-6.60	-0.67	-0.07		
120	0.01	0.02	0.02	0.02	0.01	3.22	-5.72	-0.66		
150	0.02	0.01	0.01	0.02	0.02	5.63	-3.30	-0.04		
180	0.03	0.00	0.00	0.00	0.03	6.32	0.00	0.00		
210	0.02	0.01	0.01	0.01	0.02	5.63	3.30	0.04		
240	0.01	0.02	0.02	0.01	0.01	3.22	5.72	0.66		
270	0.00	0.03	0.03	0.03	0.00	-0.99	6.60	0.07		
300	0.01	0.02	0.02	0.01	0.01	3.22	5.72	0.66		
330	0.02	0.01	0.01	0.02	-0.02	-3.81	3.30	0.04		

8ft lightning rod - Elevation 239 - From Lev C										
Wind Azimuth *	F _E	F _V	F _T	V _E	V _V	OTM _E	OTM _V	Torque		
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

Mast Totals - Service

Wind Azimuth *	F _E	F _V	F _T	V _E	V _V	OTM _E	OTM _V	Torque
0	0.00	-19.07	-214.74	-16.43	3.37			
30	10.04	-17.38	-222.87	-2.26				
60	18.57	-10.72	-1373.53	-2182.88	0.16			
90	20.27	0.00	-9.23	2621.91	-2.01			
120	16.60	9.58	1215.43	-3.44				
150	9.29	16.08	2029.72	-1193.62	-3.92			
180	0.00	18.19	2310.17	-16.42	-3.40			
210	-10.04	17.38	2307.39	1263.33	-2.26			
240	-19.33	11.16	1410.65	241.09	-0.17			
270	-20.27	9.80	-9.23	2389.98	2.01			
300	-18.57	-9.15	-1188.90	2012.93	3.27			
330	-9.29	-16.08	-2048.22	1160.78	-3.92			

tnxTower 1545 Pickett Drive Plymouth, IN 46353 Phone: (574) 936-4231 FAX: (574) 936-6438	Job	240589	Page	35 of 58
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	Client	American Tower Corp.	Designed by	na1

tnxTower 1545 Pickett Drive Plymouth, IN 46353 Phone: (574) 936-4231 FAX: (574) 936-6438	Job	240589	Page	36 of 58
	Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10/43/40 11/27/13
	Client	American Tower Corp.	Designed by	na1

8ft lightning rod - Elevation 239 - From Lev C										
Wind Azimuth *	F _E	F _V	F _T	V _E	V _V	OTM _E	OTM _V	Torque		
0	0.01	0.00	0.00	-0.03	-7.13	0.13	-0.07			
30	0.02	0.01	0.01	-0.02	-6.16	-3.48	-0.04			
60	0.03	0.00	0.00	-0.01	-3.53	-6.11	0.00			
90	0.02	0.01	0.00	0.00	0.07	-7.08	0.04			
120	0.01	0.02	0.02	0.01	3.67	-4.11	0.03			
150	0.00	0.03	0.00	0.03	6.31	-3.48	0.08			
180	0.01	0.02	0.00	0.00	0.13	0.13	0.07			
210	0.02	0.01	0.01	0.02	3.71	0.03	0.04			
240	0.03	0.00	0.00	0.01	3.67	6.36	0.00			
270	0.02	0.01	0.00	0.00	0.09	7.33	-0.04			
300	0.01	0.02	0.02	0.01	-3.53	6.36	-0.07			
330	0.00	0.03	0.00	-0.02	-6.16	3.73	-0.08			

ATC Loading - Elevation 238 - From C										
Wind Azimuth *	F _E	F _V	F _T	V _E	V _V	OTM _E	OTM _V	Torque		
90	2.60	0.00	0.00	0.00	0.00	-597.65	0.00	0.00		
120	2.60	0.00	0.00	2.25	1.30	298.82	-517.58	0.00		
150	2.60	0.00	0.00	1.30	2.25	517.58	-298.82	0.00		
180	2.60	0.00	0.00	0.00	2.60	597.65	0.00	0.00		
210	2.60	0.00	0.00	-1.30	2.25	517.58	298.82	0.00		
240	2.60	0.00	0.00	-2.25	1.30	298.82	517.58	0.00		
270	2.60	0.00	0.00	-0.01	0.02	597.65	0.00	0.00		
300	2.60	0.00	0.00	-2.25	-1.30	-298.82	517.58	0.00		
330	2.60	0.00	0.00	-1.30	-2.25	-517.58	298.82	0.00		

ATC Loading - Elevation 239 - From C										
Wind Azimuth *	F _E	F _V	F _T	V _E	V _V	OTM _E	OTM _V	Torque		
0	2.64	0.00	0.00	-2.64	-661.12	0.00	0.00	0.00		
30	2.64	0.00	0.00	-2.29	-572.55	-330.56	0.00	0.00		
60	2.64	0.00	0.00	-1.32	-330.56	-572.55	0.00	0.00		
90	2.64	0.00	0.00							

tnxTower 1545 Pilboa Drive Plymouth, IN 46153 Phone: (374) 936-4221 FAX: (374) 936-6438	Job	240588a	Page	37 of 58
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	Client	American Tower Corp.	Designed by	na1

tnxTower 1545 Pilboa Drive Plymouth, IN 46153 Phone: (374) 936-4221 FAX: (374) 936-6438	Job	240589	Page	38 of 58
	Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10:43:40 11/27/13
	Client	American Tower Corp.	Designed by	na1

Description	Aiming Azimuth	Weight	Offset _x	Offset _y	z	K _x	g _x	C _{A/C} Front	C _{A/C} Side	I _x	I _y
Beacon	0.0000	8.10	8.00	-2.89	239.39	1.347	3	3.40	3.40	1.8403	1.8403
Beacon Extender (4*)	0.0000	8.07	0.00	-2.89	237.21	1.544	3	1.88	1.88	1.8403	1.8403
80 lightning rod	240.0000	0.13	-2.50	1.44	239.00	1.546	3	4.14	4.14	1.8403	1.8403
ATC Loading	0.0000	5.67	0.00	0.00	230.00	1.535	3	188.47	188.47	1.8367	1.8367
ATC Loading	0.0000	5.66	0.00	0.00	240.00	1.522	3	188.17	188.17	1.8292	1.8292
ATC Loading	0.0000	5.64	0.00	0.00	230.00	1.508	3	187.86	187.86	1.8214	1.8214
ATC Loading	0.0000	5.63	0.00	0.00	220.00	1.494	3	187.53	187.53	1.8134	1.8134
Sum		72.96									
Weight:											

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.01	0.01	0.01	0.01	0.00	0.00	0.00
30	0.01	0.01	0.01	0.01	0.00	0.00	0.00
60	0.01	0.01	0.01	0.01	0.00	0.00	0.00
90	0.01	0.01	0.01	0.01	0.00	0.00	0.00
120	0.01	0.01	0.01	0.01	0.00	0.00	0.00
150	0.01	0.01	0.01	0.01	0.00	0.00	0.00
180	0.01	0.01	0.01	0.01	0.00	0.00	0.00
210	0.01	0.01	0.01	0.01	0.00	0.00	0.00
240	0.01	0.01	0.01	0.01	0.00	0.00	0.00
270	0.01	0.01	0.01	0.01	0.00	0.00	0.00
300	0.01	0.01	0.01	0.01	0.00	0.00	0.00
330	0.01	0.01	0.01	0.01	0.00	0.00	0.00

Discrete Appurtenance Vectors - With Ice

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.01	0.00	0.00	0.00	-0.01	-2.74	0.00
30	0.01	0.00	0.00	0.00	-0.01	-2.43	-0.01
60	0.00	0.01	0.01	0.00	-0.00	-1.60	-0.82
90	0.00	0.01	0.01	0.00	0.00	-0.47	-0.03
120	0.00	0.01	0.01	0.00	0.00	0.67	-0.07
150	0.01	0.00	0.00	0.01	1.50	-1.13	-0.01
180	0.01	0.00	0.00	0.01	1.80	0.00	0.00
210	0.01	0.00	0.00	0.01	1.50	1.13	0.01
240	0.00	0.01	0.01	0.00	0.00	0.67	0.07
270	0.00	0.01	0.01	0.00	0.00	-0.47	0.03
300	0.00	0.01	0.01	0.00	-0.00	-1.60	1.96
330	0.01	0.00	0.00	0.01	-0.01	-2.43	1.13

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.48	0.00	0.00	0.00	-0.48	-120.39	0.00
30	0.48	0.00	0.24	-0.42	-104.26	-60.19	0.08
60	0.48	0.00	0.42	-0.24	-60.19	-104.26	0.00
90	0.48	0.00	0.48	0.00	0.00	-120.39	0.00
120	0.48	0.00	0.42	0.24	60.19	-104.26	0.00
150	0.48	0.00	0.24	0.42	104.26	-60.19	0.00
180	0.48	0.00	0.00	0.48	120.39	0.00	0.00
210	0.48	0.00	-0.24	0.42	104.26	60.19	0.00
240	0.48	0.00	-0.42	0.24	60.19	104.26	0.00
270	0.48	0.00	-0.48	0.00	0.00	120.39	0.00
300	0.48	0.00	-0.42	-0.24	-60.19	104.26	0.00
330	0.48	0.00	-0.24	-0.42	-104.26	60.19	0.00

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.00	0.00	0.00	0.00	-0.00	-1.44	0.00
30	0.00	0.00	0.00	0.00	-0.00	-1.27	-0.01
60	0.00	0.00	0.00	0.00	-0.00	-0.82	-0.01
90	0.00	0.00	0.00	0.00	0.00	-0.19	-0.01
120	0.00	0.00	0.00	0.00	0.00	0.33	-0.01
150	0.00	0.00	0.00	0.00	0.89	-0.62	-0.01
180	0.00	0.00	0.00	0.00	1.05	0.00	0.00
210	0.00	0.00	0.00	0.00	0.89	0.62	0.01
240	0.00	0.00	0.00	0.00	0.43	1.08	0.01
270	0.00	0.00	0.00	0.00	-0.19	1.24	0.01
300	0.00	0.00	0.00	0.00	-0.82	1.08	0.01
330	0.00	0.00	0.00	0.00	-1.27	0.62	0.01

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.48	0.00	0.00	0.00	-0.48	-114.40	0.00
30	0.48	0.00	0.24	-0.41	-99.07	-57.20	0.00
60	0.48	0.00	0.41	-0.24	-57.20	-99.07	0.00
90	0.48	0.00	0.48	0.00	0.00	-114.40	0.00
120	0.48	0.00	0.41	0.24	57.20	-99.07	0.00
150	0.48	0.00	0.24	0.41	99.07	-57.20	0.00
180	0.48	0.00	0.00	0.48	114.40	0.00	0.00
210	0.48	0.00	-0.24	0.41	99.07	57.20	0.00
240	0.48	0.00	-0.41	0.24	57.20	99.07	0.00
270	0.48	0.00	-0.48	0.00	0.00	114.40	0.00
300	0.48	0.00	-0.41	-0.24	-57.20	99.07	0.00
330	0.48	0.00	-0.24	-0.41	-99.07	57.20	0.00

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.01	0.01	0.00	0.00	-0.01	-2.58	0.32
30	0.01	0.01	0.01	0.01	-0.01	-2.21	-1.06
60	0.01	0.01	0.01	0.01	-0.01	-1.20	-2.07

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.47	0.00	0.00	0.00	-0.47	-105.48	0.00
30	0.47	0.00	0.24	-0.41	-93.94	-54.24	0.00
60	0.47	0.00	0.41	-0.24	-54.24	-93.94	0.00
90	0.47	0.00	0.47	0.00	0.00	-105.48	0.00
120	0.47	0.00	0.41	0.24	54.24	-93.94	0.00
150	0.47	0.00	0.24	0.41	93.94	-54.24	0.00

tnxTower 1545 Pilboa Drive Plymouth, IN 46153 Phone: (374) 936-4221 FAX: (374) 936-6438	Job	240589	Page	39 of 58
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	Client	American Tower Corp.	Designed by	na1

tnxTower 1545 Pilboa Drive Plymouth, IN 46153 Phone: (374) 936-4221 FAX: (374) 936-6438	Job	240589	Page	40 of 58
	Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10:43:40 11/27/13
	Client	American Tower Corp.	Designed by	na1

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
180	0.47	0.00	0.00	0.47	108.48	0.00	0.00
210	0.47	0.00	-0.24	0.41	93.94	54.24	0.00
240	0.47	0.00	-0.41	0.24	54.24	93.94	0.00
270	0.47	0.00	-0.47	0.00	0.00	108.48	0.00
300	0.47	0.00	-0.41	-0.24	-54.24	93.94	0.00
330	0.47	0.00	-0.24	-0.41	-93.94	54.24	0.00

Description	Aiming Azimuth	Weight	Offset _x	Offset _y	z	K _x	g _x	C _{A/C} Front	C _{A/C} Side	I _x	I _y
80 lightning rod	240.0000	0.05	-2.50	1.44	239.00	1.546	12	1.20	1.20	115.00	115.00
ATC Loading	0.0000	2.00	0.00	0.00	230.00	1.535	12	115.00	115.00	115.00	115.00
ATC Loading	0.0000	2.00	0.00	0.00	240.00	1.522	12	115.00	115.00	115.00	115.00
ATC Loading	0.0000	2.00	0.00	0.00	230.00	1.508	12	115.00	115.00	115.00	115.00
ATC Loading	0.0000	2.00	0.00	0.00	220.00	1.494	12	115.00	115.00	115.00	115.00
Sum		8.15									
Weight:											

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.47	0.00	0.00	0.00	-0.47	-182.63	0.00
30	0.47	0.00	0.23	-0.40	-188.87	-51.31	0.00
60	0.47	0.00	0.40	-0.23	-51.31	-188.87	0.00
90	0.47	0.00	0.47	0.00	0.00	-102.62	0.00
120	0.47	0.00	0.23	0.40	51.31	-188.87	0.00
150	0.47	0.00	0.23	0.40	188.87	-51.31	0.00
180	0.47	0.00	0.00	0.47	102.62	0.00	0.00
210	0.47	0.00	-0.23	0.40	188.87	51.31	0.00
240	0.47	0.00	-0.40	0.23	51.31	188.87	0.00
270	0.47	0.00	-0.47	0.00	0.00	102.62	0.00
300	0.47	0.00	-0.40	-0.23	-51.31	188.87	0.00
330	0.47	0.00	-0.23	-0.40	-188.87	51.31	0.00</

inxTower 1343 Piko Drive Plymouth, IN 46563 Phone: (774) 936-6121 FAX: (774) 936-6438	Job	240589	Page	41 of 58
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	Client	American Tower Corp.	Designed by	na1

inxTower 1343 Piko Drive Plymouth, IN 46563 Phone: (774) 936-6121 FAX: (774) 936-6438	Job	240589	Page	42 of 58
	Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10.43.40 11/27/13
	Client	American Tower Corp.	Designed by	na1

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
180	0.01	0.01	0.00	0.01	3.27	0.13	0.03
210	0.01	0.01	-0.01	0.01	2.84	1.73	0.02
240	0.01	0.00	-0.01	0.01	1.67	2.90	0.00
270	0.01	0.01	-0.01	0.00	0.07	3.33	-0.02
300	0.01	0.01	-0.01	-0.01	-1.53	2.90	-0.03
330	0.00	0.01	-0.01	-0.01	-2.70	1.73	-0.04

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
300	1.15	0.00	-1.15	0.00	0.00	263.62	0.00
270	1.15	0.00	-1.00	-0.58	-132.81	230.03	0.00
330	1.15	0.00	-0.58	-1.00	-250.63	132.81	0.00

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	1.18	0.00	0.00	-1.18	-293.83	0.00	0.00
30	1.18	0.00	0.59	-1.02	-254.47	-146.92	0.00
60	1.18	0.00	1.02	-0.59	-146.92	-254.47	0.00
90	1.18	0.00	1.18	0.00	0.00	-293.83	0.00
120	1.18	0.00	0.59	1.02	146.92	-254.47	0.00
150	1.18	0.00	0.00	1.18	293.83	-146.92	0.00
180	1.18	0.00	-0.59	1.02	254.47	146.92	0.00
210	1.18	0.00	-1.02	0.59	146.92	254.47	0.00
240	1.18	0.00	-1.18	0.00	0.00	293.83	0.00
270	1.18	0.00	-1.02	-0.59	-146.92	254.47	0.00
300	1.18	0.00	-0.59	-1.02	-254.47	146.92	0.00
330	1.18	0.00	0.00	-1.18	-293.83	0.00	0.00

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	1.14	0.00	0.00	-1.14	-251.71	0.00	0.00
30	1.14	0.00	0.57	-0.99	-217.98	-125.85	0.00
60	1.14	0.00	0.99	-0.57	-125.85	-217.98	0.00
90	1.14	0.00	1.14	0.00	0.00	-251.71	0.00
120	1.14	0.00	0.57	0.99	125.85	-217.98	0.00
150	1.14	0.00	0.00	1.14	251.71	-125.85	0.00
180	1.14	0.00	-0.57	0.99	217.98	125.85	0.00
210	1.14	0.00	-0.99	0.57	125.85	217.98	0.00
240	1.14	0.00	-1.14	0.00	0.00	251.71	0.00
270	1.14	0.00	-0.99	-0.57	-125.85	217.98	0.00
300	1.14	0.00	-0.57	-0.99	-217.98	125.85	0.00
330	1.14	0.00	0.00	-1.14	-251.71	0.00	0.00

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	1.17	0.00	0.00	-1.17	-279.66	0.00	0.00
30	1.17	0.00	0.58	-1.01	-242.20	-139.83	0.00
60	1.17	0.00	1.01	-0.58	-139.83	-242.20	0.00
90	1.17	0.00	1.17	0.00	0.00	-279.66	0.00
120	1.17	0.00	0.58	1.01	139.83	-242.20	0.00
150	1.17	0.00	0.00	1.17	279.66	-139.83	0.00
180	1.17	0.00	-0.58	1.01	242.20	139.83	0.00
210	1.17	0.00	-1.01	0.58	139.83	242.20	0.00
240	1.17	0.00	-1.17	0.00	0.00	279.66	0.00
270	1.17	0.00	-1.01	-0.58	-139.83	242.20	0.00
300	1.17	0.00	-0.58	-1.01	-242.20	139.83	0.00
330	1.17	0.00	0.00	-1.17	-279.66	0.00	0.00

Discrete Appurtenance Totals - Service

Wind Azimuth	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	kip-ft	kip-ft	kip-ft
0	0.00	-4.69	-1103.59	0.13	-0.03
30	2.34	4.06	-955.77	-551.56	-0.07
60	4.06	-2.34	-551.56	-955.42	-0.09
90	4.69	0.00	-0.23	-1103.24	-0.09
120	4.06	2.34	551.46	-555.42	-0.06
150	2.34	4.06	955.22	-551.56	-0.02
180	0.00	4.69	1103.14	0.13	0.03
210	-2.34	4.06	955.22	551.81	0.07
240	-4.06	2.34	551.46	955.67	0.09
270	-4.69	0.00	-0.23	1103.49	0.09
300	-4.06	-2.34	-551.91	955.67	0.06
330	-2.34	-4.06	-955.77	551.81	0.02

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	1.15	0.00	0.00	-1.15	-263.62	0.00	0.00
30	1.15	0.00	0.58	-1.00	-230.03	-132.81	0.00
60	1.15	0.00	1.00	-0.58	-132.81	-230.03	0.00
90	1.15	0.00	1.15	0.00	0.00	-263.62	0.00
120	1.15	0.00	0.58	1.00	132.81	-230.03	0.00
150	1.15	0.00	0.00	1.15	263.62	-132.81	0.00
180	1.15	0.00	-0.58	1.00	230.03	132.81	0.00
210	1.15	0.00	-1.00	0.58	132.81	230.03	0.00
240	1.15	0.00	-1.15	0.00	0.00	263.62	0.00

Force Totals

Load Case	Vertical Forces	Sum of Forces X	Sum of Forces Z	Sum of Overturning Moments, M _x	Sum of Overturning Moments, M _y	Sum of Torques
	K	K	K	kip-ft	kip-ft	kip-ft
Leg Weight	33.36					
Breeding Weight	17.28					
Total Member Self-Weight	52.54					
Total Weight	80.71			-9.47	-16.29	-16.29
Wind 0 deg - No Ice		0.00	-53.43	-7949.40	-16.29	7.90

inxTower 1343 Piko Drive Plymouth, IN 46563 Phone: (774) 936-6121 FAX: (774) 936-6438	Job	240589	Page	43 of 58
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	Client	American Tower Corp.	Designed by	na1

inxTower 1343 Piko Drive Plymouth, IN 46563 Phone: (774) 936-6121 FAX: (774) 936-6438	Job	240589	Page	44 of 58
	Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10.43.40 11/27/13
	Client	American Tower Corp.	Designed by	na1

Load Case	Vertical Forces	Sum of Forces X	Sum of Forces Z	Sum of Overturning Moments, M _x	Sum of Overturning Moments, M _y	Sum of Torques
	K	K	K	kip-ft	kip-ft	kip-ft
Wind 30 deg - No Ice	27.86	-18.25	-7146.83	-4137.06	4.94	
Wind 60 deg - No Ice	50.92	-29.10	-4324.49	-7490.81	0.16	
Wind 90 deg - No Ice	56.16	0.00	-9.47	-831.23	-4.73	
Wind 120 deg - No Ice	46.49	26.84	3987.35	-6938.99	-7.87	
Wind 150 deg - No Ice	26.17	45.33	6728.19	-3906.28	-8.87	
Wind 180 deg - No Ice	0.00	51.48	7591.80	-16.29	-75.84	
Wind 210 deg - No Ice	-27.86	48.25	7127.90	4104.47	-4.94	
Wind 240 deg - No Ice	-52.67	30.38	4425.27	7664.91	-0.11	
Wind 270 deg - No Ice	-56.16	0.00	-9.47	8328.65	4.73	
Wind 300 deg - No Ice	-44.79	-25.86	-3186.07	6099.72	7.86	
Wind 330 deg - No Ice	-26.17	-45.33	-6747.14	3873.70	8.87	
Member Ice	90.60					
Total Weight Ice	273.27					
Wind 0 deg - Ice	0.00	-16.47	-1559.33	-75.76	0.29	
Wind 30 deg - Ice	5.17	-8.96	-1349.01	-837.71	0.32	
Wind 60 deg - Ice	8.96	-3.17	-795.20	-1402.39	0.28	
Wind 90 deg - Ice	10.42	0.00	-29.27	-1616.23	0.14	
Wind 120 deg - Ice	9.13	5.27	744.84	-1415.17	-0.02	
Wind 150 deg - Ice	5.18	8.97	1284.22	-834.10	-0.17	
Wind 180 deg - Ice	0.00	10.29	1476.81	-75.76	-0.28	
Wind 210 deg - Ice	-5.17	8.96	1290.47	686.19	-0.23	
Wind 240 deg - Ice	-9.12	5.27	747.65	1369.91	-0.27	
Wind 270 deg - Ice	-10.42	-0.00	-29.27	1464.71	-0.14	
Wind 300 deg - Ice	-8.97	-3.18	-791.39	1344.62	0.02	
Wind 330 deg - Ice	-5.18	-8.97	-1342.76	882.88	0.13	
Total Weight	80.71					
Wind 0 deg - Service	0.00	-23.75	-3529.08	-16.29	3.54	
Wind 30 deg - Service	12.38	-21.44	-3172.39	-1831.33	2.19	
Wind 60 deg - Service	22.63	-13.07	-1918.19	-3373.81	0.07	
Wind 90 deg - Service	24.96	0.00	-0.23	-3708.74	-0.01	
Wind 120 deg - Service	20.63	11.97	1776.14	-3076.63	-3.50	
Wind 150 deg - Service	11.83	21.44	2994.29	-1728.76	-3.94	
Wind 180 deg - Service	0.00	22.18	3422.14	0.13	-3.77	
Wind 210 deg - Service	-12.33	21.44	3171.94	1831.58	-2.19	
Wind 240 deg - Service	-23.39	13.50	1976.77	3413.99	-0.08	
Wind 270 deg - Service	-24.96	0.00	-0.23	3708.99	2.19	
Wind 300 deg - Service	-18.91	-11.49	-1723.16	2985.02	3.23	
Wind 330 deg - Service	-11.63	-20.14	-2994.74	1729.01	3.94	

Code	Description
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section	Elevation ft	Component
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		Client	American Tower Corp.	Designed by	na1

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1545 Pidas Drive Plymouth, IN 46353 Phone: (317) 936-4121 Fax: (317) 936-6438		Project	V-29 x 255' #282216 Clover Bottom, KY	Date	10:43:40 11/27/13
		Client	American Tower Corp.	Designed by	na1

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Actual K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T2	240 - 220	Leg	Max. Vy	26	-4.03	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
			Max. Tension	7	49.14	-0.10	0.00
			Max. Compression	2	-55.02	1.38	-0.01
			Max. Mx	14	18.37	-2.80	0.01
			Max. My	24	-1.21	0.53	-1.87
		Diagonal	Max. Vy	14	1.05	-2.17	0.01
			Max. Vx	20	-0.93	0.63	1.66
			Max. Tension	12	7.05	0.00	0.00
			Max. Compression	12	-7.32	0.00	0.00
			Max. Mx	27	0.61	0.03	0.00
			Max. My	22	-5.08	0.09	-6.01
T3	220 - 200	Leg	Max. Vy	22	0.00	0.00	0.00
			Max. Tension	7	104.62	-0.36	0.00
			Max. Compression	2	-115.71	0.59	-0.00
			Max. Mx	18	-75.33	1.21	-0.00
			Max. My	8	-4.88	-0.02	0.99
			Max. Vx	20	-1.30	0.13	-0.00
		Diagonal	Max. Vy	4	-1.31	0.03	-0.01
			Max. Tension	12	8.64	0.00	0.00
			Max. Compression	12	-8.85	0.00	0.00
			Max. Mx	6	7.56	0.06	0.00
			Max. My	12	-8.82	-0.03	0.01
			Max. Vx	27	-0.04	0.05	-0.01
T4	200 - 180	Leg	Max. Vy	12	-0.00	0.00	0.00
			Max. Tension	7	155.75	-2.07	0.00
			Max. Compression	2	-170.33	0.13	0.00
			Max. Mx	22	134.25	-2.09	-0.02
			Max. My	8	-7.07	-0.03	1.54
			Max. Vx	14	-0.38	-2.09	0.01
		Diagonal	Max. Vy	8	0.23	-0.03	1.54
			Max. Tension	12	9.09	0.00	0.00
			Max. Compression	12	-9.36	0.00	0.00
			Max. Mx	27	0.85	0.06	-0.01
			Max. My	31	0.05	0.05	0.01
			Max. Vx	29	0.05	0.05	-0.01
T3	180 - 160	Leg	Max. Vy	31	-0.00	0.00	0.00
			Max. Tension	7	203.92	-3.78	0.00
			Max. Compression	2	-222.55	-2.83	-0.02
			Max. Mx	2	-222.36	-4.18	-0.02
			Max. My	8	-8.04	-0.11	2.24
			Max. Vx	2	1.12	-4.18	-0.02
		Diagonal	Max. Vy	8	0.50	-0.11	2.24
			Max. Tension	12	10.07	0.00	0.00
			Max. Compression	12	-10.11	0.00	0.00
			Max. Mx	4	4.20	0.10	0.00
			Max. My	24	-10.09	-0.04	-0.02
			Max. Vx	29	0.06	0.07	-0.01
T6	160 - 140	Leg	Max. Vy	24	0.00	0.00	0.00
			Max. Tension	7	245.57	-4.47	-0.00
			Max. Compression	2	-268.64	6.38	-0.08
			Max. Mx	2	-241.01	13.31	-0.03
			Max. My	8	-11.11	-0.49	8.59
			Max. Vx	2	-1.82	13.31	-0.03
		Diagonal	Max. Vy	8	-0.80	-0.49	8.59
			Max. Tension	10	11.55	0.00	0.00
			Max. Compression	23	-11.34	0.00	0.00
			Max. Mx	4	3.03	0.17	0.01
			Max. My	24	-11.07	-0.05	-0.03
			Max. Vx	29	0.03	0.12	-0.02

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Actual K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T7	140 - 120	Leg	Max. Vy	24	0.01	0.00	0.00
			Max. Tension	7	273.72	5.92	-0.01
			Max. Compression	2	-298.94	20.32	-0.20
			Max. Mx	18	-29.10	20.34	-0.01
			Max. My	8	-12.55	0.31	11.18
			Max. Vx	18	-1.58	20.34	-0.01
		Diagonal	Max. Vy	16	-0.77	0.31	11.16
			Max. Tension	23	16.31	0.00	0.00
			Max. Compression	10	-17.95	0.00	0.00
			Max. Mx	29	0.57	-0.30	0.06
			Max. My	24	-16.33	0.00	0.00
			Max. Vx	29	-0.12	-0.30	-0.06
T8	120 - 100	Leg	Max. Vy	29	0.01	0.00	0.00
			Max. Tension	7	321.58	7.33	-0.01
			Max. Compression	2	-335.95	18.17	-0.17
			Max. Mx	18	-352.24	18.20	-0.00
			Max. My	8	-16.06	-0.18	10.12
			Max. Vx	18	-1.55	18.20	-0.00
		Diagonal	Max. Vy	2	0.44	-0.24	-0.12
			Max. Tension	18	15.81	0.00	0.00
			Max. Compression	12	-16.72	0.00	0.00
			Max. Mx	29	1.50	-0.46	-0.08
			Max. My	30	0.76	-0.46	0.08
			Max. Vx	29	-0.17	-0.46	-0.08
T9	100 - 80	Leg	Max. Vy	38	0.01	0.00	0.00
			Max. Tension	7	338.94	1.91	-0.01
			Max. Compression	2	-397.10	17.52	-0.16
			Max. Mx	18	-396.06	17.53	0.00
			Max. My	4	-18.23	0.43	-8.52
			Max. Vx	18	-1.25	17.55	0.00
		Diagonal	Max. Vy	16	-0.61	0.43	8.51
			Max. Tension	23	16.14	0.08	0.00
			Max. Compression	18	-17.69	0.00	0.00
			Max. Mx	29	1.16	-0.51	-0.08
			Max. My	32	0.77	-0.50	-0.08
			Max. Vx	29	-0.19	-0.51	-0.08
T10	80 - 60	Leg	Max. Vy	32	-0.01	0.00	0.00
			Max. Tension	7	401.39	4.41	-0.00
			Max. Compression	2	-446.95	13.09	-0.15
			Max. Mx	22	394.82	-15.22	-0.16
			Max. My	4	-21.06	-0.43	-11.94
			Max. Vx	22	1.25	-15.22	-0.16
		Diagonal	Max. Vy	16	-0.67	0.43	11.92
			Max. Tension	12	16.40	0.00	0.00
			Max. Compression	12	-17.23	0.00	0.00
			Max. Mx	29	0.88	-0.61	-0.09
			Max. My	27	-0.66	-0.60	0.09
			Max. Vx	29	-0.21	-0.61	-0.09
T11	60 - 40	Leg	Max. Vy	27	0.01	0.00	0.00
			Max. Tension	7	437.57	1.19	-0.00
			Max. Compression	2	-489.65	16.82	-0.13
			Max. Mx	18	-488.43	16.82	0.00
			Max. My	24	-21.84	-0.68	5.19
			Max. Vx	18	-1.17	16.83	0.00
		Diagonal	Max. Vy	4	-0.29	-0.66	-3.14
			Max. Tension	23	17.01	0.00	0.00
			Max. Compression	18	-18.78	0.00	0.00
			Max. Mx	29	1.93	-0.65	-0.09
			Max. My	28	2.05	-0.64	0.10
			Max. Vx	29	-0.22	-0.65	-0.09

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Actual K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T12	40 - 20	Leg	Max. Vy	7	477.73	1.29	-0.00
			Max. Tension	2	-538.13	12.30	-0.11
			Max. Compression	27	469.08	-13.08	0.14
			Max. Mx	4	-28.73	-0.67	-16.11
			Max. My	22	0.99	-13.08	-0.14
			Max. Vx	4	1.02	-0.67	-16.11
		Diagonal	Max. Vy	10	17.31	0.00	0.00
			Max. Tension	12	-17.63	0.00	0.00
			Max. Compression	29	-0.99	-0.77	0.11
			Max. Mx	20	-2.68	-0.76	0.12
			Max. My	29	-0.24	-0.77	0.11
			Max. Vx	28	0.01	0.00	0.00
T13	20 - 0	Leg	Max. Vy	7	310.08	-0.76	-0.00
			Max. Tension	2	-373.00	8.28	-0.01
			Max. Compression	10	-575.00	8.29	0.00
			Max. Mx	24	-28.38	-0.99	10.33
			Max. My	18	-0.61	0.29	0.00
			Max. Vx	4	-0.63	0.98	-10.31
		Diagonal	Max. Vy	15	10.52	0.00	0.00
			Max. Tension	2	-20.59	0.00	0.00
			Max. Compression	30	2.84	-0.74	-0.30
			Max. Mx	31	2.58	-0.74	0.10
			Max. My	30	-0.23	-0.74	-0.10
			Max. Vx	31	0.01	0.00	0.00

Load Combination	Vertical K	Shear K	Shear K	Overswing Moment kip-ft	Overswing Moment kip-ft	Torque kip-ft
Dead Only	80.71	-0.00	0.00	-9.44	-16.24	-0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	96.85	-0.00	-97.21	-14278.30	-19.73	12.89
0.9 Dead+1.6 Wind 0 deg - No Ice	72.64	-0.80	-97.21	-14236.08	-14.80	12.86
1.2 Dead+1.6 Wind 30 deg - No Ice	96.85	44.93	-77.82	-11636.36	-6733.02	8.09
0.9 Dead+1.6 Wind 30 deg - No Ice	72.64	44.93	-77.82	-11617.50	-6718.81	8.01
1.2 Dead+1.6 Wind 60 deg - No Ice	96.85	81.47	-47.03	-6933.08	-1202.89	0.23
0.9 Dead+1.6 Wind 60 deg - No Ice	72.64	81.47	-47.03	-6940.74	-12021.36	0.23
1.2 Dead+1.6 Wind 90 deg - No Ice	96.85	09.03	8.00	-12.96	-1343.83	-7.78
0.9 Dead+1.6 Wind 90 deg - No Ice	72.64	09.03	0.00	-18.03	-13470.40	-7.76
1.2 Dead+1.6 Wind 128 deg - No Ice	96.85	84.18	41.68	7121.50	-12373.17	-12.73
0.9 Dead+1.6 Wind 120 deg - No Ice	72.64	84.18	48.60	7115.10	-12333.49	-12.71
1.2 Dead+1.6 Wind 150 deg - No Ice	96.85	44.93	77.82	11614.93	-6730.37	-14.23
0.9 Dead+1.6 Wind 150 deg - No Ice	72.64	44.93	77.82	11661.77	-6716.43	-14.19
1.2 Dead+1.6 Wind 180 deg - No Ice	96.85	-0.00	94.07	13871.83	-49.73	-12.27
0.9 Dead+1.6 Wind 180 deg - No Ice	72.64	-0.00	94.07	13855.76	-14.79	-12.23
1.2 Dead+1.6 Wind 210 deg - No Ice	96.85	-44.93	77.82	11614.98	6691.15	-8.09
0.9 Dead+1.6 Wind 210 deg - No Ice	72.64	-44.93	77.82	11660.83	6686.87	-8.08
1.2 Dead+1.6 Wind 240 deg - No Ice	96.85	-84.18	48.60	7121.97	12333.82	-0.28
0.9 Dead+1.6 Wind 240 deg - No Ice	72.64	-84.18	48.60	7115.17	12324.00	-0.28
1.2 Dead+1.6 Wind 270 deg - No Ice	96.85	-99.85	0.00	-12.97	13404.52	7.78
0.9 Dead+1.6 Wind 270 deg - No Ice	72.64	-99.85	0.00	-10.06	13390.97	7.76
1.2 Dead+1.6 Wind 300 deg - No Ice	96.85	-01.47	-47.03	-6933.16	12003.36	12.16
0.9 Dead+1.6 Wind 300 deg - No Ice	72.64	-01.47	-47.03	-6940.		

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Section No.	Elevation	Component Type	Bolt Grade	Bolt Size	Number Of Bolts	Maximum Load per Bolt	Allowable Load	Ratio	Allowable Ratio	Criteria
	ft			in		lb	K	lb		
T6	140	Leg	A325N	1.0000	6	40.93	53.81	0.772	✓	Bolt Tension
		Diagonal	A325N	1.0000	1	11.55	26.28	0.438	✓	Member Bearing
T7	140	Leg	A325H	1.0000	12	22.81	53.01	0.430	✓	Bolt Tension
		Diagonal	A325N	0.8750	1	16.31	31.32	0.521	✓	Member Bearing
T8	120	Leg	A325H	1.0000	12	26.80	53.01	0.505	✓	Bolt Tension
		Diagonal	A325N	0.8750	1	15.81	41.76	0.379	✓	Member Bearing
T9	100	Leg	A325N	1.0000	12	29.91	53.01	0.564	✓	Bolt Tension
		Diagonal	A325N	0.8750	1	16.14	41.76	0.386	✓	Member Bearing
T10	80	Leg	A325H	1.0000	12	33.45	53.81	0.631	✓	Bolt Tension
		Diagonal	A325N	0.8750	1	16.40	41.76	0.393	✓	Member Bearing
T11	60	Leg	A325N	1.0000	12	36.46	53.01	0.688	✓	Bolt Tension
		Diagonal	A325N	0.8750	1	17.01	41.76	0.407	✓	Member Bearing
T12	40	Leg	A325N	1.0000	12	39.81	53.01	0.751	✓	Bolt Tension
		Diagonal	A325N	0.8750	1	17.51	41.76	0.419	✓	Member Bearing
T13	20	Leg	F1554-10	1.0000	12	42.51	53.22	0.798	✓	Bolt Tension
		Diagonal	A325N	0.8750	1	18.52	41.76	0.444	✓	Member Bearing

Section No.	Elevation	Size	L	L _c	K _{tr}	A	P _c	Φ _p	Ratio
	ft		ft	ft		in ²	K	K	P _c
T8	120-100	#122G-2.25" - 0.875" conn. (Pinned 208334)	20.03	20.03	48.8	11.9282	-353.49	451.15	0.764 ¹
T9	100-80	#122G-2.25" - 0.875" conn. (Pinned 208334)	20.83	20.03	48.8	11.9282	-397.10	451.15	0.880 ¹
T10	80-60	#122G-2.50" - 0.875" conn. (Pinned 208335)	20.03	20.03	48.7	14.7262	-446.95	557.27	0.802 ¹
T11	60-40	#122G-2.50" - 0.875" conn. (Pinned 208335)	20.03	20.03	48.7	14.7262	-489.65	557.27	0.879 ¹
T12	40-20	#122G-2.75" - 0.875" conn. (Pinned 208337)	20.03	20.03	48.6	17.8187	-538.15	674.68	0.798 ¹
T13	20-0	#122G-2.75" - 0.875" conn. (Pinned 208337)	20.83	20.03	48.6	17.8187	-577.30	674.68	0.856 ¹

¹ P_c / Φ_p controls

Truss-Leg Diagonal Data

Section No.	Elevation	Diagonal Size	L _d	K _{tr}	Φ _p	A	P _c	Φ _p	Ratio
	ft		ft			in ²	K	K	P _c
T6	160-148	0.5	1.40	94.1	324.71	0.1963	1.82	4.63	0.393
T7	148-120	0.5	1.39	93.2	424.12	0.1963	1.58	4.67	0.338
T8	120-100	0.5	1.38	92.4	536.77	0.1963	1.55	4.71	0.329
T9	100-80	0.5	1.38	92.4	536.77	0.1963	1.25	4.71	0.265
T10	80-60	0.5	1.36	91.6	662.68	0.1963	1.25	4.75	0.264
T11	60-40	0.5	1.36	91.6	662.68	0.1963	1.17	4.75	0.246
T12	40-20	0.625	1.35	72.6	801.84	0.3068	1.10	8.74	0.139
T13	20-0	0.625	1.35	72.6	801.84	0.3068	0.65	8.74	0.087

Diagonal Design Data (Compression)

Section No.	Elevation	Size	L	L _c	K _{tr}	A	P _c	Φ _p	Ratio
	ft		ft	ft		in ²	K	K	P _c
T1	255-240	L2x2x1/8	5.80	2.71	91.4	6.4844	-3.49	9.92	0.352 ¹
T2	240-220	L2x2x3/16	6.11	4.07	123.9	0.7150	-3.32	10.33	0.709 ¹
T3	220-200	L2 1/2x2 1/2x3/16	9.60	4.80	117.2	0.9020	-8.86	14.17	0.625 ¹

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation	Size	L	L _c	K _{tr}	A	P _c	Φ _p	Ratio
	ft		ft	ft		in ²	K	K	P _c
T1	255-240	P-4.00"-0.75" conn.-15" C-Trans-6B-4B-(Pinned 228175)	15.00	4.86	38.6	3.1741	-12.18	128.06	0.895 ¹
T2	240-220	P-5.00"-0.75" conn.-Trans-20" C-(Pinned 226200)	20.03	6.68	42.7	4.2999	-55.92	169.37	0.310 ¹
T3	220-200	P-5.00"-0.75" conn.-20" C-(Pinned 228192)	20.03	6.68	42.7	4.2999	-115.71	169.37	0.683 ¹
T4	200-180	P-6.00"-0.75" conn.-20" C-(Pinned 226206)	20.03	6.68	35.7	5.5813	-178.33	228.83	0.744 ¹
T5	180-160	P-6.00"-0.75" conn.-HBD-Trans-20" C-(Pinned 226377)	20.03	6.68	35.7	5.5813	-222.55	228.83	0.973 ¹
T6	160-140	#122G-1.75" - 1.00" conn.-HBD-Trans (Pinned 229188)	20.03	10.02	30.4	7.2158	-208.64	303.46	0.885 ¹
T7	140-120	#122G-2.00" - 0.875" conn.-HBD-Trans (Pinned 208337)	20.03	20.03	48.8	9.4248	-298.94	356.29	0.839 ¹

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Section No.	Elevation	Size	L	L _c	K _{tr}	A	P _c	Φ _p	Ratio
	ft		ft	ft		in ²	K	K	P _c
T4	208-180	L2 1/2x2 1/2x3/16	11.26	5.62	136.2	0.9020	-9.36	10.99	0.852 ¹
T5	180-160	L3x3x3/16	13.81	6.49	130.6	1.0900	-10.11	14.33	0.705 ¹
T6	168-148	L3x3x5/16	15.67	7.91	161.2	1.7800	-11.34	15.47	0.733 ¹
T7	140-120	2L3x3x3/16	23.79	12.43	159.1	2.1800	-17.95	19.45	0.923 ¹
T8	120-100	2L3 1/2x3 1/2x1/4	25.83	13.02	143.2	3.3750	-16.72	37.20	0.449 ¹
T9	100-80	2L3 1/2x3 1/2x1/4	26.36	13.65	150.1	3.3750	-17.69	33.83	0.523 ¹
T10	80-60	2L3 1/2x3 1/2x1/4	27.77	14.33	157.5	3.3750	-17.23	30.72	0.561 ¹
T11	60-40	2L3 1/2x3 1/2x1/4	29.23	15.04	163.4	3.3750	-18.70	27.86	0.671 ¹
T12	40-20	2L3 1/2x3 1/2x1/4	30.78	15.80	173.7	3.3750	-17.63	25.27	0.698 ¹
T13	20-0	2L3 1/2x3 1/2x1/4	32.37	16.58	182.3	3.3750	-28.59	22.95	0.897 ¹

¹ P_c / Φ_p controls

Top Girt Design Data (Compression)

Section No.	Elevation	Size	L	L _c	K _{tr}	A	P _c	Φ _p	Ratio
	ft		ft	ft		in ²	K	K	P _c
T1	255-240	L2x2x3/16	5.80	4.33	132.8	0.7150	-0.32	9.26	0.634 ¹

¹ P_c / Φ_p controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation	Size	L	L _c	K _{tr}	A	P _c	Φ _p	Ratio
	ft		ft	ft		in ²	K	K	P _c
T1	255-240	P-4.00"-0.75" conn.-15" C-Trans-6B-4B-(Pinned 228175)	15.00	4.86	38.6	3.1741	10.16	142.83	0.871 ¹
T2	240-220	P-5.00"-0.75" conn.-Trans-20" C-(Pinned 226200)	20.03	6.68	42.7	4.2999	49.14	193.49	0.254 ¹

Section No.	Elevation	Size	L	L _c	K _{tr}	A	P _c	Φ _p	Ratio
	ft		ft	ft		in ²	K	K	P _c
T3	220-200	P-5.00"-0.75" conn.-20" C-(Pinned 228192)	20.03	6.68	42.7	4.2999	104.62	193.49	0.541 ¹
T4	200-180	P-6.00"-0.75" conn.-20" C-(Pinned 226206)	20.03	6.68	35.7	5.5813	155.75	251.16	0.620 ¹
T5	180-160	P-6.00"-0.75" conn.-HBD-Trans-20" C-(Pinned 229377)	20.03	6.68	35.7	5.5813	203.92	251.16	0.812 ¹
T6	160-140	#122G-1.75" - 1.00" conn.-HBD-Trans (Pinned 229188)	20.03	10.02	30.4	7.2158	243.57	324.71	0.356 ¹
T7	140-120	#122G-2.00" - 0.875" conn.-HBD-Trans (Pinned 208337)	20.03	20.03	48.8	9.4248	273.72	424.12	0.645 ¹
T8	128-100	#122G-2.25" - 0.875" conn. (Pinned 208334)	20.03	20.03	48.8	11.9282	321.58	536.77	0.599 ¹
T9	100-80	#122G-2.25" - 0.875" conn. (Pinned 208334)	20.03	20.03	48.8	11.9282	358.94	536.77	0.669 ¹
T10	80-60	#122G-2.50" - 0.875" conn. (Pinned 208335)	20.03	20.03	48.7	14.7262	401.39	662.68	0.606 ¹
T11	60-40	#122G-2.50" - 0.875" conn. (Pinned 208335)	20.03	20.03	48.7	14.7262	437.57	662.68	0.668 ¹
T12	40-20	#122G-2.75" - 0.875" conn. (Pinned 208337)	20.03	20.03	48.6	17.8187	477.75	801.84	0.596 ¹
T13	28-0	#122G-2.75" - 0.875" conn. (Pinned 208337)	20.03	20.03	48.6	17.8187	510.08	801.84	0.631 ¹

¹ P_c / Φ_p controls

Truss-Leg Diagonal Data

Section No.	Elevation	Diagonal Size	L _d	K _{tr}	Φ _p	A	P _c	Φ _p	Ratio
	ft		ft			in ²	K	K	P _c
T6	160-148	0.5	1.40	94.1	324.71	0.1963	1.82	4.63	0.393
T7	140-120	0.5	1.39	93.2	424.12				

UNIT BASE FOUNDATION SUMMARY

ATC
Clover Bottom, KY

V- 29.0 255
A- 240589

V 2.1

Foundation Dimensions		
Pad width, W:	38.0	ft
Depth, D:	6.5	ft
Ext. above grade, E:	0.5	ft
Pier diameter, d _p :	5.0	ft
Pad thickness, T:	1.50	ft
Depth neglected, N:	6.5	ft
Volume, V _o :	92.22	cy

Soil Information Per:	
Assumed as Clay Per TIA-222-G Annex F.	

Material Properties		
Steel tensile str, F _y :	60000	psi
Conc. Comp. str, F' _c :	4000	psi
Conc. Density, δ:	150	pcf
Clear cover, cc:	3.00	in

Reinforcement Design		
pad, m _p :	53	bars *
size, s _p :	8	
vertical, m _c :	29	verticals
size, s _c :	7	4.5" cage
ties, m _t :	7	ties
size, s _t :	4	w/ overlap

Soil Parameters	
Soil unit weight, γ:	110 pcf
Ultimate Bearing, B _c :	5.000 ksf
Cohesion, C _c :	1.000 ksf
Friction angle, φ:	0.0 degrees
Ult. Passive P., P _p :	0.418 pcf
Base sliding, μ:	0.20
Seismic Zone:	1
Water at:	none ft

Backfill Compaction		
Lift thickness:	12	in
Compaction:	97	%
Standard Proctor:	ASTM	D698

* Rebar to be equally spaced, both ways, top & bottom

* Use standees to support top rebar above bottom rebar in mat

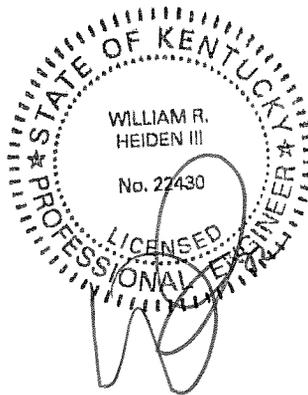
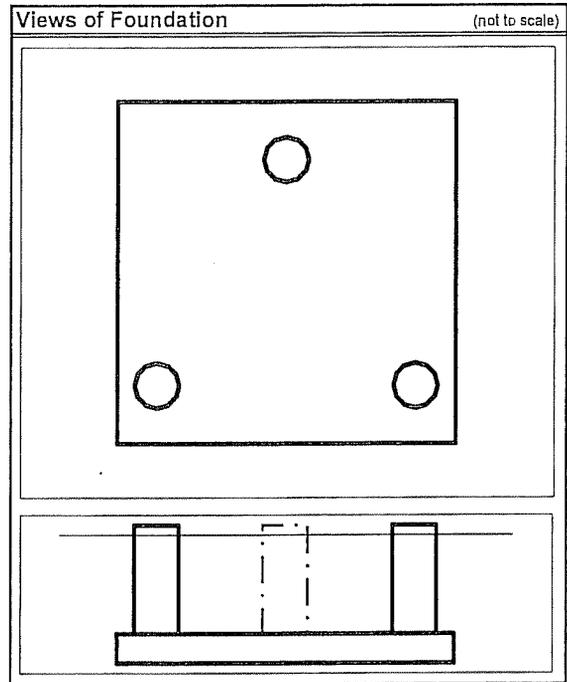
Anchor Steel Selection	
Part Number, P/N:	123653
Dia = 1"	Length = 72"

Tower design conforms to the following:

- * 1997 Uniform Building Code (UBC)
- * 2000 & 2003 International Building Code (IBC)
- * ANSI TIA-222-G
- * Building Code Requirements for Reinforced Concrete (ACI 318-05)

Note: The centroid of the tower is offset from the centroid of the foundation

Foundation Loading			
Load Case 1			
Load Case 2			
	stress ratio: 99.0%	mark up: 1.0%	
Shear (total), S:	97.00 kips	x 1.01 =	97.97 kips
Moment, M:	14278.00 ft-kips	x 1.01 =	14420.78 ft-kips
Compression/Leg, C:	601.00 kips	x 1.01 =	607.01 kips
Uplift/Leg, U:	529.00 kips	x 1.01 =	534.29 kips
Tower Weight, W _t :	97.00 kips	=	97.00 kips



APR 10 2014

Additional Notes:

- * No foundation modifications listed.
- * See attached "Foundation Notes" for further information.

FOUNDATION NOTES

- 1 IN THE ABSENCE OF A GEOTECHNICAL REPORT, THE FOLLOWING PRESUMPTIVE SOIL PARAMETERS WERE USED: AN ULTIMATE BEARING PRESSURE OF 5000 PSF, A COHESION OF 1000 PSF, A SOIL UNIT WEIGHT OF 110 PCF, AN ANGLE OF INTERNAL FRICTION OF 0 DEGREES AND NO GROUNDWATER ENCOUNTERED. THESE SOIL PARAMETERS ARE IN COMPLIANCE WITH THE REQUIREMENTS OF ANSI/TIA-222-G-2005 AND CAN BE FOUND IN ANNEX F OF THIS STANDARD.
- 2 ANY SOFT OR UNSTABLE SUBGRADE SOILS DETECTED DURING THE EXCAVATION SHOULD BE REMOVED AND REPLACED WITH COMPACTED FILL.

UNIT BASE FOUNDATION (Load Case 2)

ATC
Clover Bottom, KY

V- 29.0 255
A- 240589

V 2.1

Reactions	stress ratio	99.0%	mark up:	1.0%
Shear, S:	97.00 kips	x 1.01 =	97.97 kips	
Moment, M:	14278.00 ft-kips	x 1.01 =	14420.78 ft-kips	
Compression / leg, C:	601.00 kips	x 1.01 =	607.01 kips	
Uplift / leg, U:	529.00 kips	x 1.01 =	534.29 kips	
Tower weight, W _t :	97.00 kips	=	97.00 kips	

Soil per: Assumed as Clay Per TIA-222-G Annex F.

Ultimate bearing: 5.000 ksf
Ultimate Pp: 0.418 kcf

Load Case 2 = 0.9*D + 1.0*Dg + 1.6*Wo

Physical Parameters:

Concrete volume:	$V = T * W^2 + 3 * (d^2 / 4 * \pi) * (D + E - T)$	V =	92.2	cy
Concrete weight:	$W_c = V * \delta$	W _c =	373.5	kips
Soil weight:	$W_s = (D - T) * (W^2 - 3 * (d^2 / 4 * \pi)) * \gamma$	W _s =	761.8	kips
Total weight:	$P = W_c + W_s + W_t$	P =	1232.30	kips

Passive Pressure:

Pp coefficient:	$K_p = \text{TAN}(45 + \phi / 2)^2$	K _p =	1.000	
	$P_{pn} = K_p * \gamma * N + 2 * C_o * \sqrt{(K_p)}$	P _{pn} =	2.715	ksf
	$P_{pt} = K_p * \gamma * (D - T) + 2 * C_o * \sqrt{(K_p)}$	P _{pt} =	2.550	ksf
	$P_{pb} = K_p * \gamma * D + 2 * C_o * \sqrt{(K_p)}$	P _{pb} =	2.715	ksf
	$P_{ptop} = \text{IF}(N < (D - T), P_{pt}, P_{pn})$	P _{ptop} =	2.7	ksf
	$P_p' = (P_{ptop} + P_{pb}) / 2$	P _{p'} =	2.715	ksf
Shear area:	$T_{pp} = 0$	T _{pp} =	0.0	ft
	$A_{pp} = T_{pp} * W$	A _{pp} =	0.00	ft ²
Shear Capacity:	$S_{actual} = (P_p' * A_{pp} + \mu * P) * \phi_r$	S _{actual} =	184.845	kips
$\phi_r = 0.75$				

Check S_{actual} = 184.84 kips >= S = 97.97 kips OK

Overturning Moment Resistance at Toe:

Wt of soil wedge:	$W_{sw} = D * (D * \text{TAN}(\phi)) / 2 * W * \gamma$	W _{sw} =	0.0	kips
Dist. from leg to edge:	$O = (W - 0.866 * w) / 2$	O =	6.443	ft
Additional offset of Wt:	$O_a = (2 / 3 * 0.866 * w + O) - W / 2$	O _a =	4.186	ft
Resisting moments:	$M_{rwt} = P * W / 2 - W_t * O_a$	M _{rwt} =	23007.67	ft-kips
	$M_{rp} = P_p' * A_{pp} * (D - N) / 3$	M _{rp} =	0.00	ft-kips
	$M_{rsw} = W_{sw} * (W + D * \text{TAN}(\phi) / 3)$	M _{rsw} =	0.00	ft-kips
Total resisting:	$M_{rt} = (M_{rwt} + M_{rp} + M_{rsw}) * \phi_r$	M _{rt} =	17255.75	ft-kips
$\phi_r = 0.75$				
Total overturning:	$M_o = M + S * (D + E)$	M _o =	15106.57	ft-kips

Check M_{rt} = 17255.75 ft-kips >= M_o = 15106.57 ft-kips OK

Bearing Resistance due to Pressure Distribution:

Area of mat:	$\text{area} = W^2$	area =	1444.0	ft ²
Section modulus:	$SM = W^3 / 6$	SM =	9145.3	ft ³
Factored total weight:	$P' = W_t + 0.9 * (W_c + W_s)$	P' =	1118.8	kips
Pressure exerted:	$P_{pos} = P' / \text{area} + M_o / SM$	P _{pos} =	2.427	ksf
	$P_{neg} = P' / \text{area} - M_o / SM$	P _{neg} =	-0.877	ksf

Note: The stress resultant is NOT within the kern. Bearing area has been adjusted below.

Load eccentricity:	$e_c = M_o / P'$	e _c =	13.50	ft
	$P_{adj} = 2 * P' / (3 * W * (W / 2 - e_c))$	P _{adj} =	3.6	ksf
Adj. applied pressure:	$q_a = \text{IF}(P_{neg} >= 0, P_{pos}, P_{adj})$	q _a =	3.570	ksf
$\phi_r = 0.75$				

Check q_a = 3.570 ksf <= B_c * ϕ_r = 3.750 ksf OK

Concrete Shear Strength:

One way beam action at d_l from tower

Effective depth:	$d_c = T - cc - db_p / 2$	d _c =	14.500	in
Factored Intensity:	$q_s = C / \text{area}$	q _s =	0.420	ksf
Required shear:	$V_{n1} = q_s * (O - d_i / 2 - dc) * W / \phi_s$	V _{n1} =	58.24	kips
$\phi_s = 0.75$ [ACI 9.3.2.3]				
Available shear:	$V_{c1} = 2 * \sqrt{F'c} * W * dc$	V _{c1} =	836.36	kips
[ACI 12.2.4]				

Check V_{c1} = 836.36 kips >= V_{n1} = 58.24 kips OK

Two way beam action at $d_i / 2$ from lower

Perimeter:	$P_o = (d_i + d_c) * \pi$	$P_o = 19.50$	ft
Required shear: $\phi_s = 0.75$ [ACI 9.3.2.3]	$V_{n2} = \phi_s / \phi_s * (\text{area} - (d_i + d_c)^2 * \pi / 4)$	$V_{n2} = 792.38$	kips
Available shear: [ACI 12.2.2]	$V_{c2} = 4 * \sqrt{F'c} * P_o * d_c$	$V_{c2} = 858.55$	kips
Check		$V_{c2} = 858.55$ kips	$\geq V_{n2} = 792.38$ kips OK

Column Compression Capacity:

Compression reaction: $\phi_c = 0.65$ [ACI 9.3.2.2]	$P_c = \phi_c * 0.8 * F'c * (d_i^2 / 4 * \pi)$	$P_c = 5881.1$	kips
Check		$P_c = 5881.06$ kips	$\geq C = 607.01$ kips OK

Pier Reinforcement:

Cross-sectional area:	$A_g = d_i^2 * \pi / 4$	$A_g = 2827.43$	in ²
Min. area of steel (pier): [ACI 10.9.1] & [ACI 10.8.4]	$A_{st,c} = A_g * 0.005$	$A_{st,c} = 14.14$	in ²
Cage circle:	$d_o = d_i - 2 * cc$	$d_o = 54.00$	in
Rebar:	$s_{c,c} = 7$	$d_{b,c} = 0.875$	in
	$m_{c,c} = 29$	$A_{b,c} = 0.6$	in ²
	$A_{s,c} = A_{b,c} * m_{c,c}$	$A_{s,c} = 17.40$	in ²
Check		$A_{s,c} = 17.40$ in ²	$\geq A_{st,c} = 14.14$ in ² OK
Actual moment:	$M_{max} = (D - T + E) * S / 2$	$M_{max} = 269.42$	ft-kips
Pier moment capacity:	M_{allow} per Maxmomnt.xls [see attached]	$M_{allow} = 349.83$	ft-kips
Check		$M_{allow} = 349.83$ ft-kips	$\geq M_{max} = 269.42$ ft-kips OK
Bar separation:	$B_{s,c} = (d_o * \pi) / m_{c,c} - d_{b,c}$	$B_{s,c} = 4.97$	in
Check		$B_{s,c} = 4.97$ in	$\geq 4.5"$ OK

Vertical Rebar Development Length:

Reinforcement location: [ACI 12.2.4]	$\psi_{l,c} =$ if the space under the rebar > 12 in, use 1.3, else use 1.0	$\psi_{l,c} = 1.3$	
Epoxy coating: [ACI 12.2.4]	$\psi_{e,c} =$ if epoxy-coated bars are not used, use 1.0; but if epoxy-coated bars are used, then if $B_s < 6 * d_b$ or $cc < 3 * d_b$, use 1.5, else 1.2	$\psi_{e,c} = 1.0$	
Max term: [ACI 12.2.4]	$\psi_l \psi_{e,c} =$ the product of ψ_l & ψ_e , need not be taken larger than 1.7	$\psi_l \psi_{e,c} = 1.3$	
Reinforcement size: [ACI 12.2.4]	$\psi_{s,c} =$ if the bar size is 6 or less, then use 0.8, else use 1.0	$\psi_{s,c} = 1$	
Light weight concrete: [ACI 12.2.4]	$\lambda_c =$ if lightweight concrete is used, 1.3, else use 1.0	$\lambda_c = 1.0$	
Spacing/cover: [ACI 12.2.4]	$c_{c,c} =$ the smaller of: half the bar spacing or the concrete edge distance	$c_{c,c} = 3.36$ in	
Transverse bars: [ACI 12.2.3]	$k_{tr,c} = 0$ in (per simplification)	$k_{tr,c} = 0$ in	
Max term: [ACI 12.2.3]	$c_{c,c}' = \text{MIN}(2.5, (c_{c,c} + k_{tr,c}) / d_{b,c})$	$c_{c,c}' = 2.500$	
Excess reinforcement: [ACI 12.2.5]	$R_c = M_{max} / M_{allow}$	$R_c = 0.77$	
Development (tensile): [ACI 12.2.2]	$L_{dt,c}' = (3 / 40) * (F_y / \sqrt{F'c}) * (\psi_l \psi_{e,c} * \psi_s * \lambda_c * R_c / c_{c,c}') * d_{b,c}$	$L_{dt,c}' = 24.93$ in	
Minimum length: [ACI 12.2.1]	$L_{d,min} = 12$ inches	$L_{d,min} = 12.0$ in	
Development length:	$L_{dt,c} = \text{MAX}(L_{d,min}, L_{dt,c}')$	$L_{dt,c} = 24.93$ in	
Development (comp.): [ACI 12.3.2]	$L_{dc,c}' = 0.02 * d_{b,c} * F_y * R_c / \sqrt{F'c}$	$L_{dc,c}' = 12.79$ in	
	$L_{dc,c}'' = 0.0003 * d_{b,c} * F_y * R_c$	$L_{dc,c}'' = 12.13$ in	
Development length:	$L_{dc,c} = \text{MAX}(8, L_{dc,c}', L_{dc,c}'')$	$L_{dc,c} = 12.79$ in	
Length available in pier:	$L_{vc} = D - T + E - cc$	$L_{vc} = 63.0$ in	
Check		$L_{vc} = 63.0$ in	$\geq L_{dt,c} = 24.9$ in OK
Check		$L_{vc} = 63.0$ in	$\geq L_{dc,c} = 12.8$ in OK
Length available in pad:	$L_{vp} = T - cc$	$L_{vp} = 15.0$ in	
Check		$L_{vp} = 15.0$ in	$\geq L_{dt,c} = 24.9$ in HOOKS
Check		$L_{vp} = 15.0$ in	$\geq L_{dc,c} = 12.8$ in OK

Vertical Rebar Hook Ending:

Bar size & clear cover: [ACI 12.5.3]	α_h if the bar size ≤ 11 and side $cc \geq 2.5"$, use 0.7, else use 1.0	$\psi_{t,h} = 0.7$
Epoxy coating: [ACI 12.5.2]	β_h if epoxy-coated bars are used, use 1.2, else use 1.0	$\psi_{e,h} = 1.0$
Light weight concrete: [ACI 12.5.2]	λ_h if lightweight concrete is used, 1.3, else use 1.0	$\lambda_h = 1.0$
Development (hook): [ACI 12.5.2]	$L_{dh}' = 0.02 * \psi_{t,h} * \psi_{e,h} * \lambda_h * F_y / \sqrt{(F'c)} * db_c$	$L_{dh}' = 11.6$ in
Minimum length: [ACI 12.5.1]	L_{dh_min} the larger of: 8 * db or 6 in	$L_{dh_min} = 7.0$ in
Development length:	$L_{dh} = \text{MAX}(L_{dh_min}, L_{dh}')$	$L_{dh} = 11.6$ in
Hook tail length:	$L_{h_tail} = 12 * db$ beyond the bend radius	$L_{h_tail} = 14.0$ in
Length available in pad:	$L_{h_pad} = (W - w' - d) / 2$	$L_{h_pad} = 24$ in
	Check $L_{vp} = 15.0$ in \geq $L_{dh} = 11.6$ in OK	
	Check $L_{h_pad} = 24.0$ in \geq $L_{h_tail} = 14.0$ in OK	

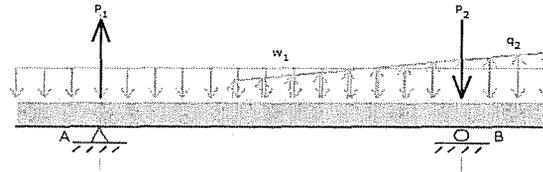
Pier Ties:

Minimum size: [ACI 7.10.5.1]	$s_{t_min} = F(s_c \leq 10, 3, 4)$	$s_{t_min} = 3$
z factor:	$z = 0.5$ if the seismic zone is less than 2, else 1.0	$z = 0.5$
Tie parameters:	$s_t = 4$	$d_{b,t} = 0.5$ in
	$m_t = 7$	$A_{b,t} = 0.2$ in ²
Allowable tie spacing:		
per vertical rebar [ACI 7.10.5.2] & [ACI 21.3.3.2]	$B_{s_t_max1} = 8 / z * db_c$	$B_{s_t_max1} = 14$ in
per tie size [ACI 7.10.5.2] & [ACI 21.3.3.2]	$B_{s_t_max2} = 24 / z * db_t$	$B_{s_t_max2} = 24$ in
per pier diameter [ACI 7.10.5.2] & [ACI 21.3.3.2]	$B_{s_t_max3} = di / (4 * z^2)$	$B_{s_t_max3} = 60$ in
per seismic zone [ACI 7.10.5.2] & [ACI 21.3.3.2]	$B_{s_t_max4} = 12"$ in active seismic zones, else 18"	$B_{s_t_max4} = 18$ in
	$B_{s_t_max} = \text{MIN}(B_{s_t_max1}, B_{s_t_max2}, B_{s_t_max3}, B_{s_t_max4})$	$B_{s_t_max} = 14$ in
	$m_{t_min} = (D - T + E) / B_{s_t_max} + 2$	$m_{t_min} = 6.7$
	Check $m_t = 7.0$ \geq $m_{t_min} = 6.7$ OK	

Anchor Steel:

A/S parameters:	$P_{as} = 123653$	$L_{as} = 72$ in
	$d_{as} = 1$ in	$E_{as} = 63.50$ in
Development available:	L_{das} per Anchor Bolts (see attached)	$L_{das} = 44.19$ in
Required development:	L_{das_min} per Anchor Bolts (see attached)	$L_{das_min} = 24.93$ in
	Check $L_{das} = 44.19$ in \geq $L_{das_min} = 24.93$ in OK	
To bottom rebar grid:	$E_{as_max} = D + E - cc - 2 * db_p$	$E_{as_max} = 79$ in
	Check $E_{as} = 63.50$ in \leq $E_{as_max} = 79.00$ in OK	
To top rebar grid:	$\text{rebar } @ = D + E - T + cc$	$\text{rebar } @ = 69.00$ in
	Check $69 + 6$ in \geq $E_{as} = 63.50$ in or \leq 69 in OK	
Min. cage dia:	d_{o_min} per anctest.xls (see attached)	$d_{o_min} = 34.65$ in
	Check $d_o = 54.00$ in \geq $d_{o_min} = 34.65$ in OK	

Pad Reactions:



MDSolids Geometry Input (Option 1)

Total Beam Length:	$B_{L2_1} = W$	$B_{L2_1} =$	38	ft
Location of Left Support:	$S_{L2_1} = 0$	$S_{L2_1} =$	6.443	ft
Location of Right Support:	$S_{R2_1} = W - 0$	$S_{R2_1} =$	31.56	ft

MDSolids Geometry Input (Option 2)

Total Beam Length:	$B_{L2_2} = W$	$B_{L2_2} =$	38.0	ft
Location of Left Support:	$S_{L2_2} = (W - w) / 2$	$S_{L2_2} =$	4.50	ft
Location of Right Support:	$S_{R2_2} = S_{L1_2} + W$	$S_{R2_2} =$	33.50	ft

MDSolids Load Input (Option 1 & Option 2)

Uplift:	$P_{2_1} = U$	$P_{2_1} =$	534.3	kips
Compression:	$P_{2_2} = C$	$P_{2_2} =$	607.01	kips
Weight of Overburden: (Distributed)	$w_{2_1} = 0.9 * (W_c + W_s) / W$	$w_{2_1} =$	26.89	k/ft
Distributed Soil Pressure: (Linearly Increasing)	$q_{2_2L} = 0$	$q_{2_2L} =$	0.00	k/ft
	$q_{2_2R} = q_s * W$	$q_{2_2R} =$	135.68	k/ft

Applied over the beam starting at 0' and ending at W=38ft.

This linearly increasing load is applied from e=13.5ft to W=38ft

MDSolids Design Result

Option 1:	$M_{max2_1} = M_{max2_1}$ (Max. Moment calculated from MDSolids for Option 1)	$M_{max2_1} =$	2012.00	ft*kips
Option 2:	$M_{max2_2} = M_{max2_2}$ (Max. Moment calculated from MDSolids for Option 2)	$M_{max2_2} =$	1018.00	ft*kips
Max moment:	$M_{maxp} = \text{Max}(M_{max2_1}, M_{max2_2})$	$M_{maxp} =$	2012.00	ft*kips
Required moment: $\phi t = 0.9$ [ACI 9.3.2.1]	$M_n = M_{maxp} / \phi t$	$M_n =$	2235.56	ft*kips

Pad Reinforcement:

	$\beta = \text{IF}(F'c \leq 4000, 0.85, \text{IF}(F'c >= 8000, 0.65, 0.85 - (F'c - 4000) * 0.05))$	$\beta = 0.85$
Effective width:	$W_e = w' * 0.866 + d_i$	$W_e = 30.114 \text{ ft}$
	$A_{st_p} = Mn / (0.9 * F_y * dc)$	$A_{st_p} = 34.261 \text{ in}^2$
	$a_p = A_{st_p} * F_y / (\beta * F'c * W_e)$	$a_p = 1.67 \text{ in}$
Required steel:	$A_{st_p_st} = Mn / (F_y * (dc - a_p / 2)) * (W / W_e)$	$A_{st_p_st} = 41.292 \text{ in}^2$
Shrinkage:	$\rho_{sh} = \text{IF}(F_y >= 60000, 0.0018, 0.002)$	$\rho_{sh} = 0.0018$
	$A_{st_p_sh} = \rho_{sh} * W * T / 2$	$A_{st_p_sh} = 7.387 \text{ in}^2$
	$A_{st_p} = \text{MAX}(A_{st_p_st}, A_{st_p_sh})$	$A_{st_p} = 41.292 \text{ in}^2$
Rebar:	$s_p = 8$ Equally spaced, top and bottom, both directions.	$d_{b_p} = 1 \text{ in}$
	$m_p = 53$	$A_{b_p} = 0.79 \text{ in}^2$
	$A_{s_p} = A_{b_p} * m_p$	$A_{s_p} = 41.87 \text{ in}^2$
	Check $A_{s_p} = 41.87 \text{ in}^2 \geq A_{st_p} = 41.29 \text{ in}^2$	OK
Bar separation:	$B_{s_p} = (W - 2 * cc - d_{b_p}) / (m_p - 1) - d_{b_p}$	$B_{s_p} = 7.63 \text{ in}$
	Check $11 \geq B_{s_p} = 7.63 \text{ in} \geq 4.5"$	OK

Pad Development Length:

Reinforcement location:	$\psi_{l_p} = \text{if the space under the rebar} > 12 \text{ in, use } 1.3, \text{ else use } 1.0$	$\psi_{l_p} = 1$
[ACI 12.2.4]		
Epoxy coating:	$\psi_{e_p} = \text{if epoxy-coated bars are not used, use } 1.0; \text{ but if epoxy-coated bars are used, then if } B_s < 6 * d_b \text{ or } cc < 3 * d_b, \text{ use } 1.5, \text{ else } 1.2$	$\psi_{e_p} = 1.0$
[ACI 12.2.4]		
Max term:	$\psi_i \psi_{e_p} = \text{the product of } \psi_l \text{ \& } \psi_e, \text{ need not be taken larger than } 1.7$	$\psi_i \psi_{e_p} = 1$
[ACI 12.2.4]		
Reinforcement size:	$\psi_{s_p} = \text{if the bar size is } 6 \text{ or less, then use } 0.8, \text{ else use } 1.0$	$\psi_{s_p} = 1$
[ACI 12.2.4]		
Light weight concrete:	$\lambda_p = \text{if lightweight concrete is used, } 1.3, \text{ else use } 1.0$	$\lambda_p = 1.0$
[ACI 12.2.4]		
Spacing/cover:	$c_p = \text{the smaller of: half the bar spacing or the concrete edge distance}$	$c_p = 3.50 \text{ in}$
[ACI 12.2.4]		
Transverse bars:	$k_{tr_p} = 0 \text{ in}$ (per simplification)	$k_{tr_p} = 0 \text{ in}$
[ACI 12.2.3]		
Max term:	$c_p' = \text{MIN}(2.5, (c_p + k_{tr_p}) / d_{b_p})$	$c_p' = 2.500$
[ACI 12.2.3]		
Excess reinforcement:	$R_p = A_{st_p} / A_{s_p}$	$R_p = 0.99$
[ACI 12.2.5]		
Development (tensile):	$L_d = (3 / 40) * (F_y / \sqrt{F'c}) * \psi_t \psi_{e_p} * \psi_s * \lambda_p * R_p * d_{b_p} / c_p'$	$L_{dp}' = 28.1 \text{ in}$
[ACI 12.2.2]		
Minimum length:	$L_{d_min} = 12 \text{ inches}$	$L_{d_min} = 12.0 \text{ in}$
[ACI 12.2.1]		
Development length:	$L_{dp} = \text{MAX}(L_{d_min}, L_{dp}')$	$L_{dp} = 28.1 \text{ in}$
Length available in pad:	$L_{pad} = (W / 2 - w' / 2) - cc$	$L_{pad} = 51.0 \text{ in}$
	Check $L_{pad} = 51.00 \text{ in} \geq L_{dp} = 28.07 \text{ in}$	OK

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

Loading	
(negative for compression)	
Axial load =	534.29 kips

Foundation	
<i>Concrete</i>	
Pier diameter =	5.00 ft
Pier area =	2827.4 in ²
<i>Reinforcement</i>	
Clear cover =	3.00 in
Cage diameter =	4.43 ft
Bar size =	7
Bar diameter =	0.875 in
Bar area =	0.601 in ²
Number of bars =	29

Material Strengths		
Concrete compressive strength =	4000	psi
Reinforcement yield strength =	60000	psi
Modulus of elasticity =	29000	ksi
Reinforcement yield strain =	0.00207	
Limiting compressive strain =	0.003	

(per ACI 10.3.5 - OK)

Seismic	
Seismic Zone =	1
Are hooks required?	no

Minimum Area of Steel

Required area of steel = 14.14 in²
 Actual area of steel = 17.44 in² OK
 Bar spacing = 4.97 in

Axial Loading

Load factor = 1.00
 Reduction factor = 0.65575 (per ACI 9.3.1 & 2)
 Factored axial load = 814.78 kips

Neutral Axis

Distance from extreme edge to neutral axis = 3.20 in
 Equivalent compression zone factor = 0.85 (per ACI 10.2.7.3)
 Distance from extreme edge to
 Equivalent compression zone factor = 2.72 in
 Distance from centroid to neutral axis = 26.80 in

Compression Zone

Area of steel in compression zone = 0.00 in²
 Angle from centroid of pier to intersection of
 equivalent compression zone and edge of pier = 24.60 deg
 Area of concrete in compression = 45.75 in²
 Force in concrete = $0.85 * f_c * Acc$ = 155.54 kips (per ACI 10.3.6.2)
 Total reinforcement forces = -970.32 kips
 Factored axial load = 814.78 kips
 Force in concrete = -155.54 kips

 Sum of the forces in concrete = 0.00 kips OK

Maximum Moment

First moment of the concrete area in compression about the centroid = 1297.92 in³
 Distance between centroid of concrete in compression and centroid of pier = 28.37 in
 Moment of concrete in compression = 4412.94 in-kips
 Total reinforcement moment = 1988.95 in-kips
 Nominal moment strength of column = 6401.89 in-kips
 Factored moment strength of column = 4198.02 in-kips 349.83 ft-kips

Maximum allowable moment of the pier =	349.83 ft-kips
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Individual Bars

Bar #	Angle from first bar (deg)	Distance to centroid (in)	Distance to neutral axis (in)	Distance to equivalent comp. zone (in)	Strain	Area of steel in compression (in ²)	Axial force (kips)	Moment (in-kips)
1	0.00	0.00	-26.80	-27.28	-0.0251	0.00	-36.08	0.00
2	12.41	5.71	-21.09	-21.57	-0.01975	0.00	-36.08	-206.02
3	24.83	11.15	-15.64	-16.12	-0.01466	0.00	-36.08	-402.40
4	37.24	16.07	-10.72	-11.20	-0.01004	0.00	-36.08	-579.97
5	49.66	20.24	-6.55	-7.03	-0.00614	0.00	-36.08	-730.42
6	62.07	23.47	-3.33	-3.81	-0.00312	0.00	-36.08	-846.72
7	74.48	25.59	-1.20	-1.68	-0.00113	0.00	-19.66	-503.07
8	86.90	26.52	-0.27	-0.75	-0.00026	0.00	-4.48	-118.70
9	99.31	26.21	-0.58	-1.07	-0.00055	0.00	-9.56	-250.47
10	111.72	24.68	-2.12	-2.60	-0.00199	0.00	-34.66	-855.20
11	124.14	21.99	-4.81	-5.29	-0.00451	0.00	-36.08	-793.22
12	136.55	18.27	-8.53	-9.01	-0.00799	0.00	-36.08	-659.06
13	148.97	13.69	-13.10	-13.58	-0.01227	0.00	-36.08	-494.08
14	161.38	8.48	-18.32	-18.80	-0.01716	0.00	-36.08	-306.00
15	173.79	2.87	-23.93	-24.41	-0.02241	0.00	-36.08	-103.62
16	186.21	-2.87	-29.67	-30.15	-0.02779	0.00	-36.08	103.62
17	198.62	-8.48	-35.28	-35.76	-0.03305	0.00	-36.08	306.00
18	211.03	-13.69	-40.49	-40.97	-0.03793	0.00	-36.08	494.08
19	223.45	-18.27	-45.06	-45.54	-0.04222	0.00	-36.08	659.06
20	235.86	-21.99	-48.78	-49.26	-0.0457	0.00	-36.08	793.22
21	248.28	-24.68	-51.47	-51.95	-0.04822	0.00	-36.08	890.29
22	260.69	-26.21	-53.01	-53.49	-0.04966	0.00	-36.08	945.73
23	273.10	-26.52	-53.32	-53.80	-0.04995	0.00	-36.08	956.95
24	285.52	-25.59	-52.39	-52.87	-0.04908	0.00	-36.08	923.42
25	297.93	-23.47	-50.27	-50.75	-0.04709	0.00	-36.08	846.72
26	310.34	-20.24	-47.04	-47.52	-0.04407	0.00	-36.08	730.42
27	322.76	-16.07	-42.87	-43.35	-0.04016	0.00	-36.08	579.97
28	335.17	-11.15	-37.95	-38.43	-0.03555	0.00	-36.08	402.40
29	347.59	-5.71	-32.51	-32.99	-0.03045	0.00	-36.08	206.02

DEVELOPMENT LENGTH CHECK OF PIER REINFORCEMENT

Foundation:	Pier diameter =	5.0	ft	Cover between side of pier and cage =	3.00	in.
	Cage diameter =	4.5	ft	Cover between top of pier and cage =	3.00	in.
	Rebar size =	8		Compressive strength of concrete =	4000	psi
	Number of bars =	53		Rebar yield strength =	60000	psi
	Clear spacing =	7.63	in.			
	Are there hooks?	n				
	Check Compression?	n				
Anchor Steel:	Part number:	123653	▼	Actual Bending Moment =	269.42	ft-kips
	Embedment length =	63.5	in.	Allowable Bending Moment =	349.83	ft-kips
	Bolt Diameter =	1"	▼	Excess Reinforcement Ratio =	0.770	
Anchor Plate:	Part number:	212008	▼			
	Plate width =	21.375	in.			
Required development length (compression) =	999.00	in.				
Required development length (tension) =	32.37	in.				
Required development length (tension) =	24.93	in.	(reduced)			
Available development length =	44.188	in.				

OK

The length available in the pier for the development of the vertical reinforcement exceeds the required length (ACI 318-02, section 12.2).

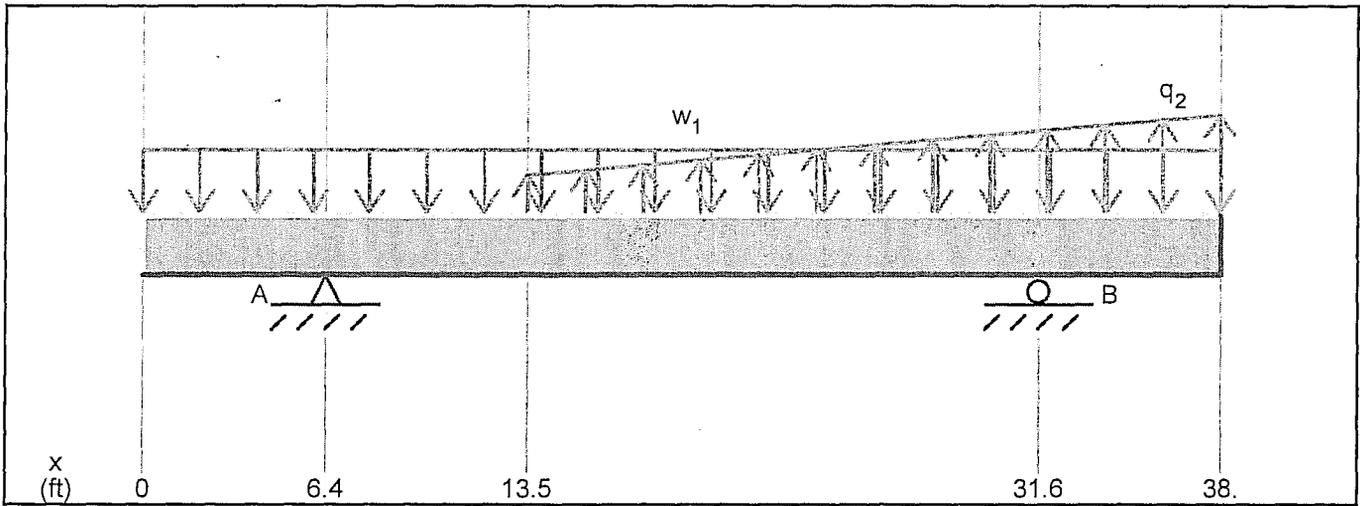
CHECK EMBEDMENT PLATE CLEARANCE IN THE PIER

Foundation:	Pier diameter =	5.0	ft	Cover between side of pier and cage =	3.00	in.
	Cage diameter =	4.5	ft	Minimum cover between A/S and cage =	3.00	in.
Anchor Steel:	Part number:	123653		Angle of anchor steel in foundation =	3.3	degrees
	Embedment length =	63.5	in.			
Anchor Plate:	Part number:	212008				
	Largest plate width =	21.38	in.			
	Bolt Diameter =	1	in.			
	Minimum cage diameter =	34.65	in.			
	Actual cage diameter =	54	in.			

OK

The available space exceeds the minimum cage diameter required for anchor steel installed in the pier at an angle.

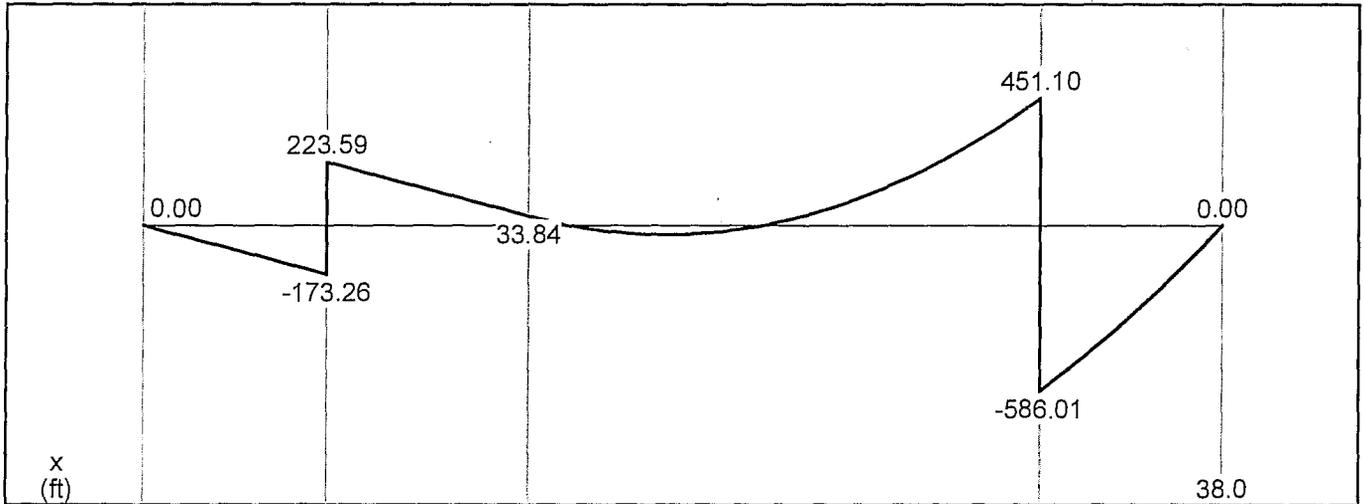
LC2- Option 1



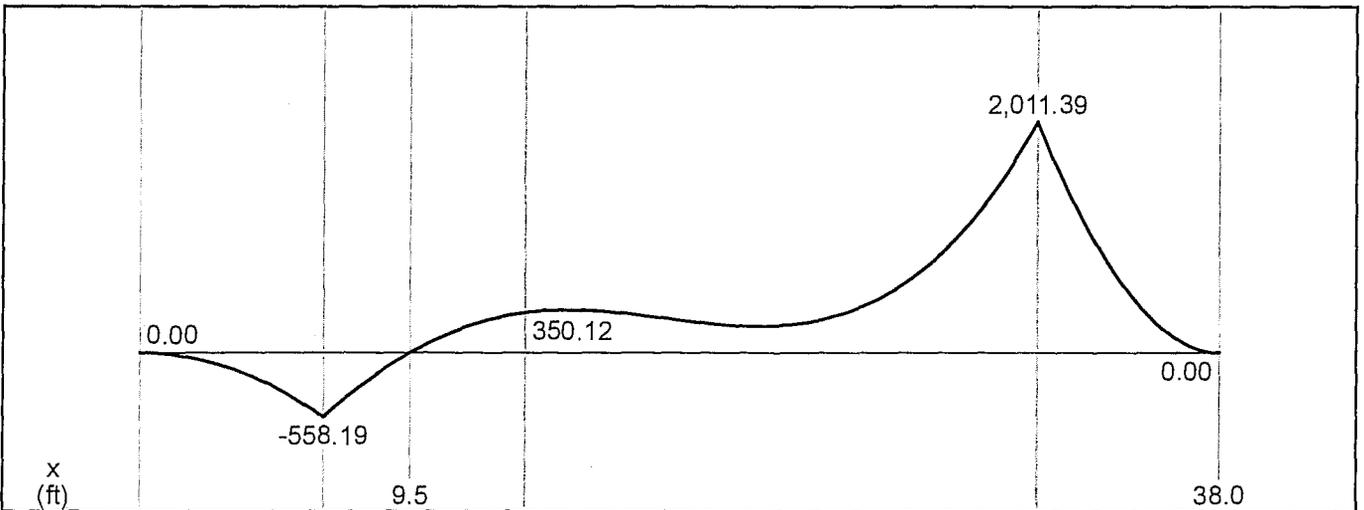
Load Diagram

$w_1 = 26.89$ kip/ft (down)
 $q_2 = 0.0$ to 135.68 kip/ft (up)

$A_y = 396.85$ kip (up)
 $B_y = 1,037.11$ kip (down)

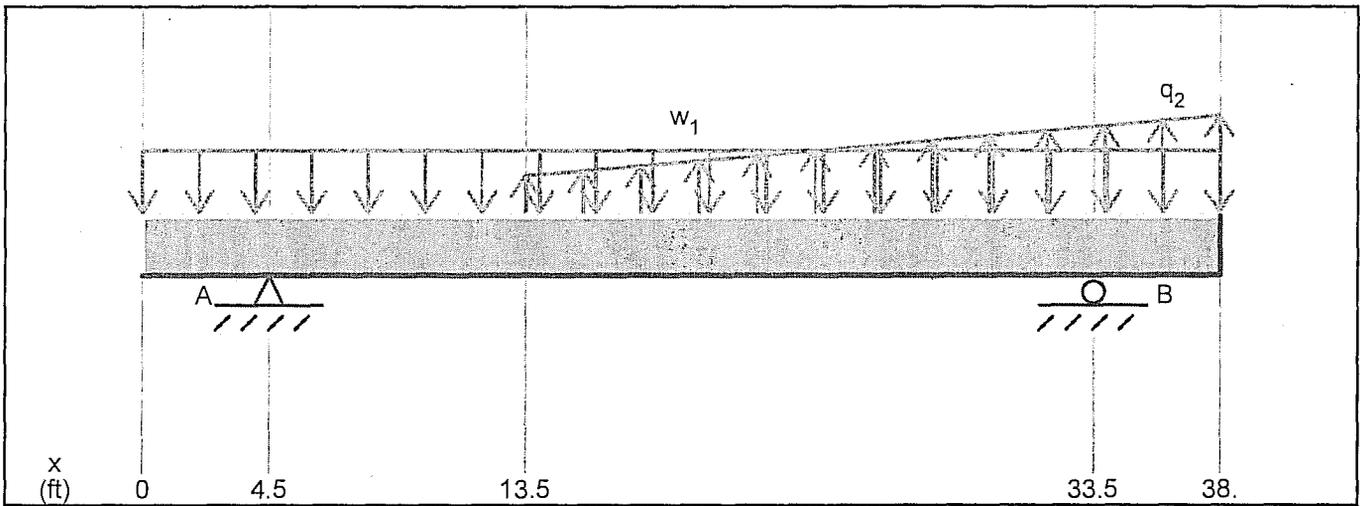


Shear Diagram (kip)



Moment Diagram (kip-ft)

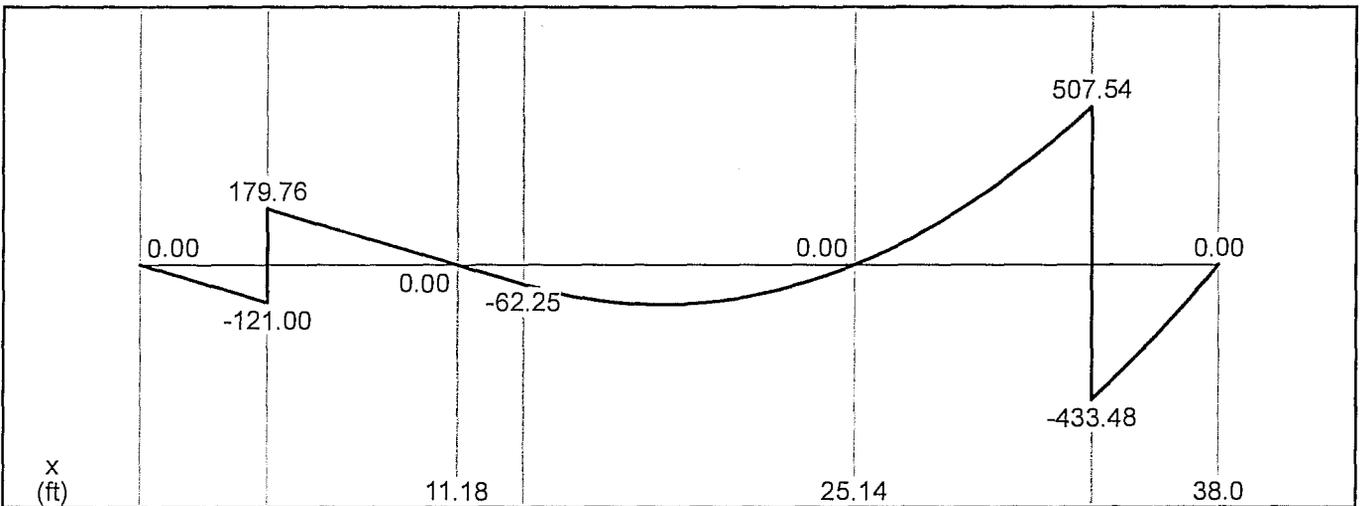
LC2- Option 2



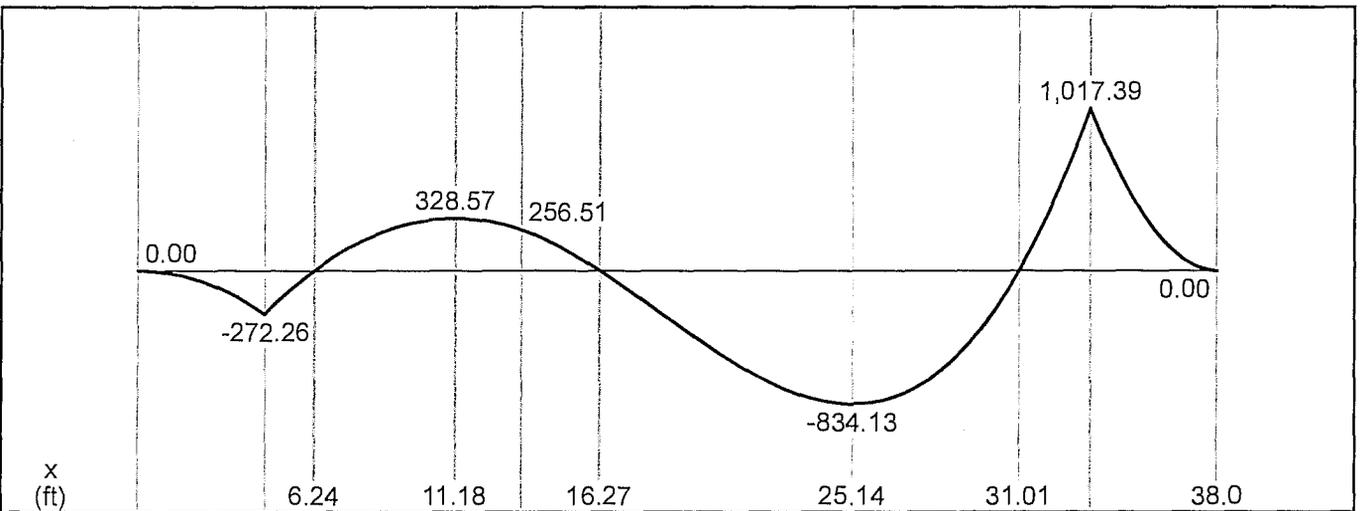
Load Diagram

$w_1 = 26.89$ kip/ft (down)
 $q_2 = 0.0$ to 135.68 kip/ft (up)

$A_y = 300.76$ kip (up)
 $B_y = 941.02$ kip (down)



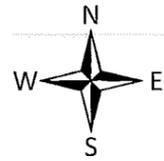
Shear Diagram (kip)



Moment Diagram (kip-ft)

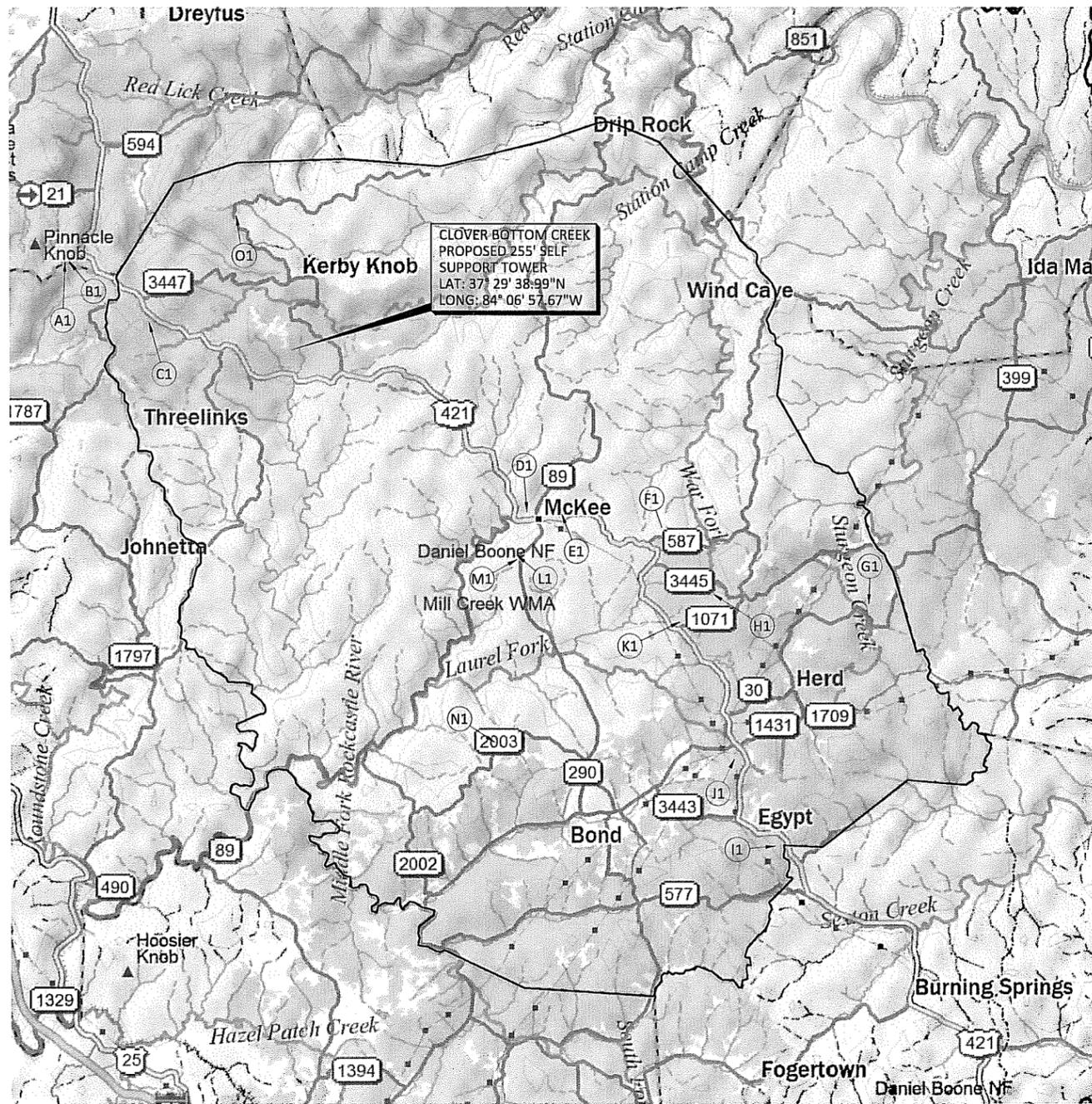


EXHIBIT D
COMPETING UTILITIES, CORPORATIONS, OR PERSONS LIST
AND MAP OF LIKE FACILITIES IN VICINITY



JACKSON COUNTY, KENTUCKY

AT&T SITE NAME: CLOVER BOTTOM CREEK

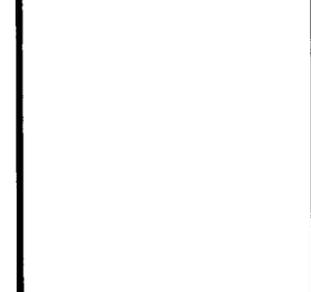
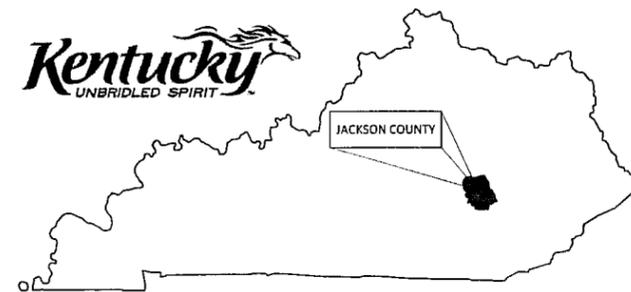


NOTE: TOWERS DEPICTED ARE ALL KNOWN TOWER SITES REGISTERED WITH THE FEDERAL COMMUNICATIONS COMMISSION IN JACKSON COUNTY, KENTUCKY.

USGS 7.5 MINUTE QUADRANGLE: MCKEE, KY

EXISTING TOWER LEGEND

- | | |
|--|--|
| (A1) FCC REGISTRATION #: 1207089
COUNTY OF MADISON
LAT: N37° 31' 37.30"
LONG: W84° 13' 26.70" | (H1) FCC REGISTRATION #: 1252879
CC ATT LCC
LAT: N37° 24' 06.70"
LONG: W83° 54' 56.10" |
| (B1) FCC REGISTRATION #: 1269019
MADISON COUNTY EMERGENCY
MANAGEMENT AGENCY
LAT: N37° 31' 37.40"
LONG: W84° 13' 22.60" | (I1) FCC REGISTRATION #: 1267215
EAST KENTUCKY NETWORK LLC
dba APPALACHIAN WIRELESS
LAT: N37° 18' 22.70"
LONG: W83° 53' 11.20" |
| (C1) FCC REGISTRATION #: 1233677
LONDON RADIO SERVICE INC.
LAT: N37° 30' 17.80"
LONG: W84° 11' 01.90" | (J1) FCC REGISTRATION #: 1233988
EAST KENTUCKY POWER COOP. INC.
LAT: N37° 20' 23.30"
LONG: W83° 54' 20.70" |
| (D1) FCC REGISTRATION #: 1043802
NEW CINGULAR WIRELESS PCS LLC
LAT: N37° 25' 58.70"
LONG: W84° 00' 12.80" | (K1) FCC REGISTRATION #: 1284352
EAST KENTUCKY NETWORK LLC
dba APPALACHIAN WIRELESS
LAT: N37° 23' 29.40"
LONG: W83° 55' 52.50" |
| (E1) FCC REGISTRATION #: 1263783
EAST KENTUCKY NETWORK LLC
dba APPALACHIAN WIRELESS
LAT: N37° 25' 54.90"
LONG: W83° 59' 14.10" | (L1) FCC REGISTRATION #: 1238352
JACKSON ENERGY COOP. CORP.
LAT: N37° 24' 59.30"
LONG: W84° 00' 31.70" |
| (F1) FCC REGISTRATION #: 1042399
EAST KENTUCKY NETWORK LLC
dba APPALACHIAN WIRELESS
LAT: N37° 25' 39.00"
LONG: W83° 56' 24.00" | (M1) FCC REGISTRATION #: 1044844
COMMONWEALTH OF KY dba =
EMERGENCY WARNING SYSTEM KEWS
LAT: N37° 24' 54.40"
LONG: W84° 00' 31.30" |
| (G1) FCC REGISTRATION #: 1284189
EAST KENTUCKY NETWORK LLC
dba APPALACHIAN WIRELESS
LAT: N37° 23' 51.50"
LONG: W83° 50' 28.50" | (N1) FCC REGISTRATION #: 1043440
EAST KENTUCKY NETWORK LLC
dba APPALACHIAN WIRELESS
LAT: N37° 20' 45.00"
LONG: W84° 01' 10.00" |
| | (O1) FCC REGISTRATION #: 1228453
PINNACLE TOWERS ACQUISITION LLC
LAT: N37° 32' 40.80"
LONG: W84° 17' 40.60" |



COUNTY TOWER MAP

REV.	DATE	DESCRIPTION
A	4.9.14	UPDATED TOWER INFO

SITE INFORMATION:
CLOVER BOTTOM CREEK
 427 DEAN ROAD
 MCKEE, KY 40447
 COUNTY: JACKSON

SITE NUMBER:
 KYALU6174

POD NUMBER: 13-1443
 DRAWN BY: DAP
 CHECKED BY: MEP
 DATE: 12.12.13

SHEET TITLE:
TOWER GRID MAP

SHEET NUMBER:
C-1

License Search

Search Results

Specified Search:

State = **Kentucky**County = **JACKSON**Radio Service = **AW, CL, CW, WU**

Matches 1- 42 (of 42)

PA = Pending Application(s)**TP** = Termination Pending**L** = Lease

	Call Sign/Lease ID	Name	FRN	Radio Service	Status	Expiration Date
1	PA KNKN809	East Kentucky Network, LLC d/b/a Appalachian Wireless	0001786607	CL	Active	10/01/2021
2	KNKN841	NEW CINGULAR WIRELESS PCS, LLC	0003291192	CL	Active	10/01/2021
3	KNLF252	WIRELESSCO, L.P.	0002316545	CW	Active	06/23/2015
4	KNLF672	NextWave Personal Communications Inc., Debtor-in-Possession	0002964922	CW	Canceled	01/03/2007
5	PA KNLH256	Cellco Partnership	0003290673	CW	Active	04/28/2017
6	PA KNLH398	Powertel Memphis Licenses, Inc.	0001832807	CW	Active	04/28/2017
7	PA KNLH399	Powertel Memphis Licenses, Inc.	0001832807	CW	Active	04/28/2017
8	L000005260	Access 700, LLC	0014650329	WU	Expired	09/30/2009
9	L000008141	GTE Mobilnet of Florence, Alabama Incorporated	0001573518	WU	Active	06/13/2019
10	L000008142	Topeka Cellular Telephone Company, Inc.	0005068713	WU	Active	06/13/2019
11	PA L000008150	Tuscaloosa Cellular Partnership	0001573104	WU	Active	06/13/2019
12	L000008155	Kentucky RSA No. 1 Partnership	0001836709	WU	Active	06/13/2019
13	L000008156	Missouri RSA 2 Limited Partnership	0019468784	WU	Active	06/13/2019
14	L000008157	Missouri RSA 4 Limited Partnership	0019468800	WU	Active	06/13/2019
15	L000008169	St. Joseph CellTelCo	0005005541	WU	Active	06/13/2019
16	L000008489	Illinois RSA 6 and 7 Limited Partnership	0002842334	WU	Active	06/13/2019
17	L000008491	Alltel Central Arkansas Cellular Limited Partnership	0001722008	AW	Canceled	06/13/2019
18	L000008492	Alltel Central Arkansas Cellular Limited Partnership	0001722008	WU	Active	06/13/2019
19	L000008493	Alltel Communications Wireless, Inc.	0020532149	AW	Canceled	06/13/2019
20	L000008494	Alltel Communications Wireless, Inc.	0020532149	WU	Active	06/13/2019
21	L000008505	Arkansas RSA #2 (Searcy County) Cellular Limited Partnership	0004989638	AW	Canceled	06/13/2019
22	L000008506	Arkansas RSA #2 (Searcy County) Cellular Limited Partnership	0004989638	WU	Active	06/13/2019
23	L000008543	Missouri RSA #15 Limited Partnership	0002533610	AW	Active	06/13/2019
24	L000008544	Missouri RSA #15 Limited Partnership	0002533610	WU	Active	06/13/2019
25	L000008573	Northwest Arkansas RSA Limited Partnership	0001837178	AW	Canceled	06/13/2019
26	L000008574	Northwest Arkansas RSA Limited Partnership	0001837178	WU	Active	06/13/2019
27	L000008622	Southern Indiana RSA Limited Partnership	0001837269	AW	Active	06/13/2019
28	L000008624	Southern Indiana RSA Limited Partnership	0001837269	WU	Active	06/13/2019
29	L000009730	East Kentucky Network, LLC d/b/a Appalachian Wireless	0001786607	WU	Canceled	06/13/2019
30	L000010763	East Kentucky Network, LLC d/b/a Appalachian Wireless	0001786607	WU	Active	06/13/2019
31	WPOI255	NEW CINGULAR WIRELESS PCS, LLC	0003291192	CW	Active	06/23/2015
32	PA WQCS428	Cellco Partnership	0003290673	CW	Active	05/13/2015
33	PA WQCX683	T-Mobile License LLC	0001565449	CW	Active	06/20/2015
34	WQDI527	Cricket License Company, LLC	0018402123	CW	Active	09/06/2015
35	PA WQGA718 L	Cellco Partnership	0003290673	AW	Active	11/29/2021
36	WQGA823	New Cingular Wireless PCS, LLC	0003291192	AW	Active	11/29/2021
37	PA WQGA940	Cellco Partnership	0003290673	AW	Active	11/29/2021
38	PA WQGB377 L	T-Mobile License LLC	0001565449	AW	Active	11/29/2021
39	WQGD755	Cricket License Company, LLC	0018402123	AW	Active	12/18/2021

40	WQJN514	CELLCO PARTNERSHIP	0003290673	WU	Expired	01/06/2009
41	<input type="checkbox"/> PA WQJQ692	<input type="checkbox"/> Cellco Partnership	0003290673	WU	Active	06/13/2019
42	<input type="checkbox"/> PA WQSL582	T-Mobile License LLC	0001565449	AW	Active	04/30/2022

**Call
Sign/Lease
ID**

Name

FRN

**Radio
Service**

Status

**Expiration
Date**



EXHIBIT E
CO-LOCATION REPORT

WESTOWER COMMUNICATIONS

April 11, 2014

Kentucky Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, KY 40602-0615

RE: Alternate Site Analysis Report
Application for Certificate of Public Convenience and Necessity
Applicant: AT&T Mobility
Site Location: Jackson County, Kentucky
Coordinates: 37° 29' 38.99" N / 84° 06' 57.67" W
Site Name: Clover Bottom Creek

Dear Commissioners:

This report is provided to explain the site development process used by the Applicant to identify the site selected for the new wireless communications facility proposed in the accompanying application for Certificate of Public Convenience and Necessity ("CPCN").

AT&T Mobility Site Development Process

Step 1: Problem Identification. AT&T Mobility radio frequency engineers first identified a growing coverage and capacity gap in the US 421 area of Jackson County.

Step 2: Search Ring. To help guide the site development team's task of identifying a suitable location for a new wireless communications facility site, AT&T Mobility's radio frequency engineers identified the geographic area where the antenna site must be located in order to close these gaps and issued a map (called a Search Ring) that identified the general area in which a new site must be located. In this instance, the search area was limited because the topography of the surrounding terrain interrupted the signal.

Step 3: Review of the Area. The site development team first reviewed the area within the Search Ring for a suitable tall structure for co-location. An existing tower owned by Appalachian Wireless was located, but Applicant's request for co-location was denied. Mike Johnson, the person responsible for allowing other carriers to collocate on their towers informed us that Appalachian Wireless is not allowing collocation on the subject tower due to their current and long term construction of LTE Networks and LRA network. Further the available antenna mounting height available, if we could locate on the Appalachian Tower was 160' and that height was below our required mount height. There are no other tall structures within the search area.

Once the site development team determined that there are no available existing tall structures which are technically feasible and suitable for co-location, the team next reviewed the search area to identify a suitable location where a new tower might be located that would have the least-intrusive impact on surrounding properties.

In this instance, any new tower site must be located on the proposed location to achieve coverage objectives.

Step 4: Preliminary Inspection and Assessment of Suitable Parcels. Once suitable parcels were identified, the site development team visited the parcels and performed a preliminary inspection. The purpose of the preliminary inspection was: (1) to confirm the availability of sufficient land space for the proposed facility; (2) to identify a specific location for the facility on the parcel; (3) to identify any recognized environmental conditions that would disqualify the parcel from consideration; (4) to identify any construction issues that would disqualify the candidate; and, (5) to assess the potential impact of the facility on neighboring properties. Parcel 8A (as shown on the attached Exhibit A) is the proposed site. Parcels to the south of 8A are not surrounded by dense trees and forest, and thus do not provide natural screening like the proposed location does. Parcels to the west of 8A have no access and the ground elevation and topography does not meet AT&T Mobility's Radio Frequency Engineers objectives.

Step 5: Candidate Evaluation and Selection. After the preliminary site assessments were performed, the site development team ranked the candidates based on the availability of ground space, topography, applicable environmental conditions, construction feasibility and the potential impact of the facility on neighboring properties.

In this instance, locating a site with access to the proposed site location that would satisfy coverage objectives was the primary consideration. Three suitable candidates were evaluated, but two were disqualified because of lack of owner interest or access. The parcel presented in this application for the Commission's consideration and approval is the only technically and environmentally feasible site with adequate access that meets all development requirements for a wireless communications facility. It is also the parcel where a tower of the proposed height will present the least visual impact, while still providing a reliable wireless connection to the national telephone network.

Step 6: Leasing and Due Diligence. Once a suitable candidate was selected, lease negotiations were commenced and site due diligence steps were performed, as described below.

Leasehold Due Diligence:

- A Title Report was obtained and reviewed to ensure that there are no limitations on the landowner's capacity to lease and to address any title issues.
- A site survey was obtained to identify the location of parcel features, boundaries, easements and other encumbrances revealed by the title search.

Engineering Due Diligence:

- Utility access identified.
- Grounding plan designed.
- Geotechnical soil analysis performed to determine foundation requirements.
- Foundations designed to meet the Kentucky Building Code lateral and subjacent support requirements.
- Site plan developed.

Environmental Due Diligence:

A Phase I Environmental Site Assessment ("ESA") investigation was performed to establish the pre-existing types and amounts of contamination at a site, and to establish

that the leaseholder is innocent of liability for the costs of performing environmental cleanup work that might arise from pollution or contamination of the site caused by a third party.

In addition to performing a Phase 1 ESA, the site was also evaluated for potential impacts under the *National Environmental Policy Act* (NEPA), submitted to the State Historic Preservation Office for review of potential impacts to historic structures or districts, and submitted to each registered Tribal Historic Preservation Office so that registered Native American nations had the opportunity to review potential impacts on native religious, ceremonial, or cultural resources.

Federal Regulatory Approvals

- Federal Aviation Administration ("FAA") compliance.
- Federal Communication Commission ("FCC") compliance.

Step 7: Application. Once a lease is obtained and all site due diligence is completed, AT&T Mobility prepared and filed the accompanying application requesting a CPCN.

Conclusion

Applicant's site identification and selection process aims to identify the least intrusive of all the technically feasible parcels in a service need area. In this case, there was only one technically feasible parcel in the area that was available for lease. It is, by far, the largest parcel in the area. It is surrounded by mature vegetation that provides a visual barrier to area land uses. To further minimize the proposed tower's visibility, the tower will have a neutral gray finish.

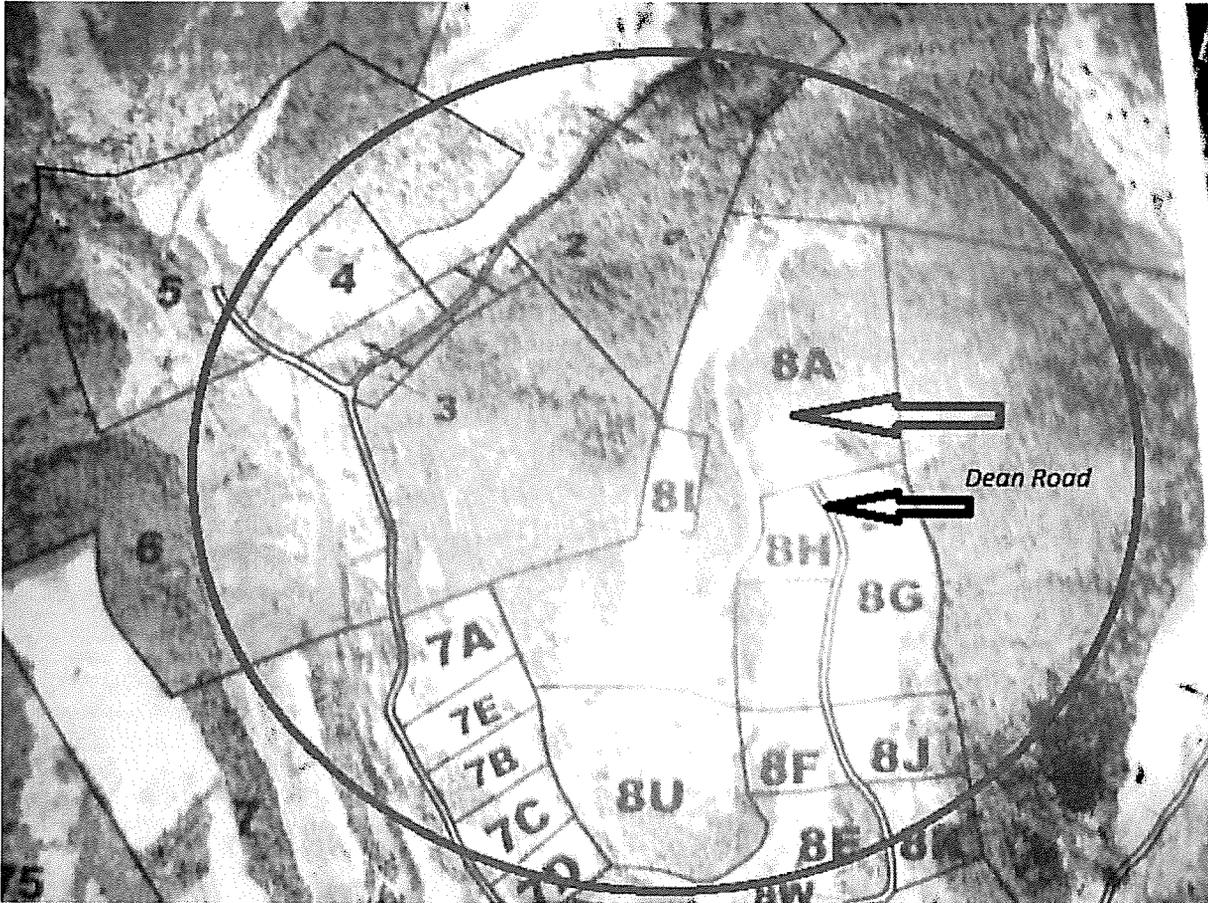
Sincerely,



John Boud

Site Acquisition Manager: Kentucky Market
10400 Linn Station Rd., Suite 225, Louisville, KY 40223
jboud@westtower.com | 559.790.8855 (mobile)
www.westtower.com

Parcel Map with .3 mile search ring marked



Aerial Map with Ring Marked

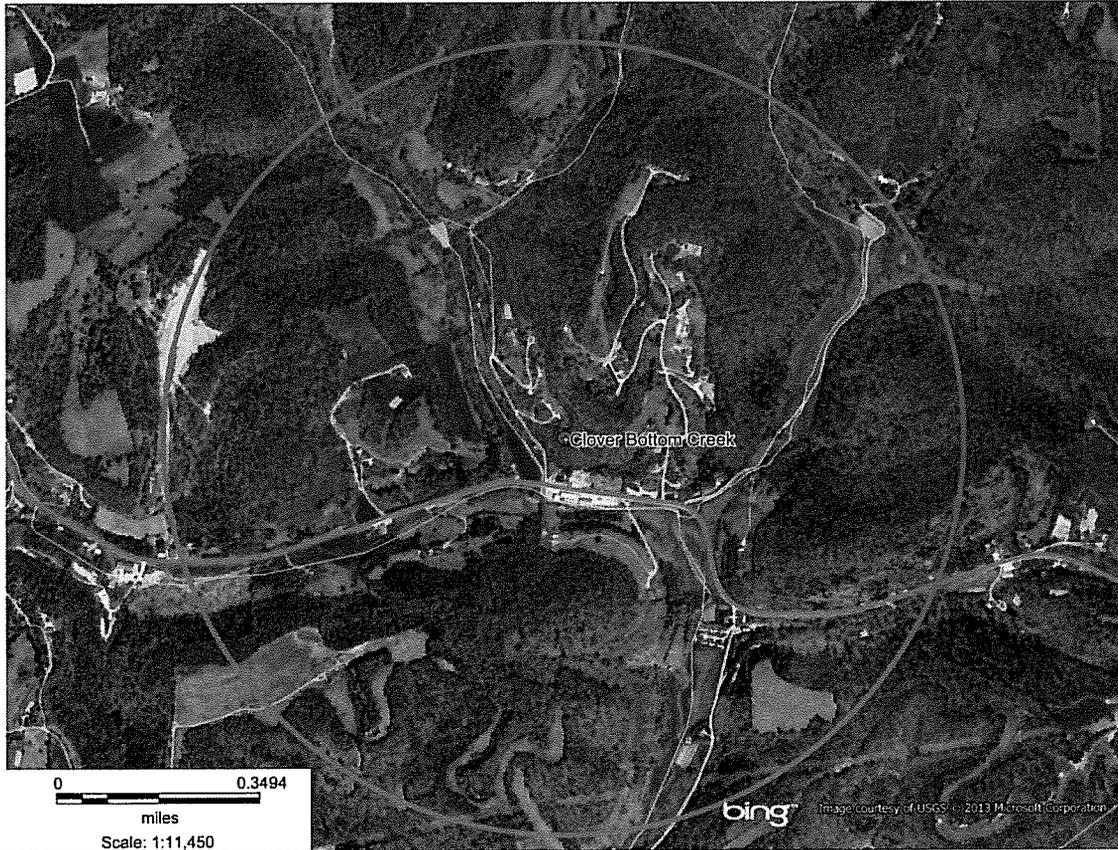




EXHIBIT F
FAA



Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 2601 Meacham Boulevard
 Fort Worth, TX 76137

Aeronautical Study No.
 2013-ASO-7059-OE
 Prior Study No.
 2013-ASO-7060-OE

Issued Date: 09/09/2013

John Monday
 ATT Mobility (DB)
 2200 N Greenville Ave
 1W
 Richardson, TX 75082

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

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

Structure: Antenna Tower Clover Bottom Creek
 Location: McKee, KY
 Latitude: 37-29-38.99N NAD 83
 Longitude: 84-06-57.67W
 Heights: 1510 feet site elevation (SE)
 265 feet above ground level (AGL)
 1775 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 marked/lighted in accordance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, a med-dual system - Chapters 4,8(M-Dual),&12.

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 I)
- Within 5 days after the construction reaches its greatest height (7460-2, Part II)

This determination expires on 03/09/2015 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

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

This determination is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power 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 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.

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.

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 (847) 294-8084. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2013-ASO-7059-OE.

Signature Control No: 196512709-197758207

(DNE)

Carole Bernacchi
Technician

Attachment(s)
Frequency Data

cc: FCC

Frequency Data for ASN 2013-ASO-7059-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
698	806	MHz	1000	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
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
1850	1910	MHz	1640	W
1930	1990	MHz	1640	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W



EXHIBIT G
KENTUCKY AIRPORT ZONING COMMISSION

clover Bottom creek



KENTUCKY TRANSPORTATION CABINET

TC 56-50
Rev. 07/2010
Page 2 of 2

KENTUCKY AIRPORT ZONING COMMISSION

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

APPLICANT (name) <i>ATT Shelly Paey</i>		PHONE <i>615-221-3393</i>	FAX	KY AERONAUTICAL STUDY #	
ADDRESS (street) <i>540 Maryland way</i>		CITY <i>Brentwood</i>		STATE <i>TN</i>	ZIP <i>37027</i>
APPLICANT'S REPRESENTATIVE (name) <i>NSCRO - Vicki Hollis</i>		PHONE <i>770-360-5176</i>	FAX		
ADDRESS (street) <i>12730A Westport Rd</i>		CITY <i>Louisville</i>		STATE <i>KY</i>	ZIP <i>40245</i>
APPLICATION FOR <input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration <input type="checkbox"/> Existing				WORK SCHEDULE	
DURATION <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary (months days)				Start End	
TYPE <input type="checkbox"/> Crane <input type="checkbox"/> Building		MARKING/PAINTING/LIGHTING PREFERRED			
<input checked="" type="checkbox"/> Antenna Tower		<input type="checkbox"/> Red Lights & Paint <input type="checkbox"/> White- medium intensity <input type="checkbox"/> White- high intensity			
<input type="checkbox"/> Power Line <input type="checkbox"/> Water Tank		<input checked="" type="checkbox"/> Dual- red & medium intensity white <input type="checkbox"/> Dual- red & high intensity white			
<input type="checkbox"/> Landfill <input type="checkbox"/> Other		<input checked="" type="checkbox"/> Other			
LATITUDE <i>37 29 38.99</i>		LONGITUDE <i>84 06 57.67</i>		DATUM <input checked="" type="checkbox"/> NAD83 <input type="checkbox"/> NAD27	
NEAREST KENTUCKY City <i>McKee</i> County <i>Jackson</i>		NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT <i>Madison Airport, Richmond, KY</i>			
SITE ELEVATION (AMSL, feet) <i>1509</i>		TOTAL STRUCTURE HEIGHT (AGL, feet) <i>265'</i>		CURRENT (FAA aeronautical study #) <i>T3D</i>	
OVERALL HEIGHT (site elevation plus total structure height, feet) <i>1774</i>				PREVIOUS (FAA aeronautical study #) <i>NA</i>	
DISTANCE (from nearest Kentucky public use or Military airport to structure) <i>20 miles</i>				PREVIOUS (KY aeronautical study #) <i>NA</i>	
DIRECTION (from nearest Kentucky public use or Military airport to structure) <i>8 miles SW of Richmond, KY see attached</i>					
DESCRIPTION OF LOCATION (Attach USGS 7.5 minute quadrangle map or an airport layout drawing with the precise site marked and any certified survey.) <i>Site Address: 427 Deann Road, McKee, KY 40447 Jackson, KY see attached MAP</i>					
DESCRIPTION OF PROPOSAL <i>Telecommunication Tower Site Name: Clover Bottom Creek Site ID: KYALU0174</i>					
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? <i>By Aug 5th 2013</i>					
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 <i>Cee Staalard</i>		TITLE <i>Site Acq</i>		SIGNATURE <i>[Signature]</i>	
				DATE <i>4/21/2014</i>	
COMMISSION ACTION					
<input type="checkbox"/> Chairperson, KAZC					
<input type="checkbox"/> Administrator, KAZC					
<input type="checkbox"/> Approved		SIGNATURE		DATE	
<input type="checkbox"/> Disapproved					



**EXHIBIT H
GEOTECHNICAL REPORT**

Geotechnical Engineering Report

Clover Bottom Creek Tower

Dean Road

Clover Bottom, Jackson County, Kentucky

April 24, 2014

Terracon Project Number: 57145020

Prepared for:

Wes Tower Communications

Louisville, Kentucky

Prepared by:

Terracon Consultants, Inc.

Cincinnati, Ohio

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials



April 24, 2014

Wes Tower Communications
10400 Linn Station Road, Suite 225
Louisville, Kentucky 40223

Attn: Mr. John Boud

Re: Geotechnical Engineering Report
Clover Bottom Creek Tower
Dean Road
Clover Bottom Creek, Jackson County, Kentucky
Terracon Project Number: 57155020

Dear Mr. Boud:

Terracon Consultants, Inc. (Terracon) has completed the geotechnical engineering services for the above referenced project. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations for the proposed project.

Terracon's geotechnical design parameters and recommendations within this report apply to the existing planned tower height and would apply to adjustments in the tower height, up to a 20% increase or decrease in height, as long as the type of tower does not change. If changes in the height of the tower dictate a change in tower type (i.e. self-support to monopole), Terracon should be contacted to evaluate our recommendations with respect to these changes.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact the writer.

Sincerely,
Terracon Consultants, Inc.


Akshat Saxena, E.I.T.
Geotechnical Staff Engineer



Reviewed by: Timothy G. LaGrow, PE – Senior Principal

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2.3 Groundwater.....	3
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APPENDIX

Exhibit A-1	Site Location Map
Exhibit A-2	Test Boring Location Plan
Exhibit A-3	Field Exploration Description
Exhibit A-3	Laboratory Testing
Exhibit A-4	Test Boring Log
Exhibit B-1	General Notes
Exhibit B-2	Unified Soil Classification System
Exhibit B-3	Description of Rock Properties

**GEOTECHNICAL ENGINEERING REPORT
CLOVER BOTTOM CREEK TOWER
DEAN ROAD
CLOVER BOTTOM, JACKSON COUNTY, KENTUCKY
Terracon Project No. 57145020
April 24, 2014**

1.0 PROJECT INFORMATION

1.1 Project Description

Item	Description
Site layout	See Exhibit A-2 (Test Boring Location Plan)
Site Dimensions	The proposed tower property consists of an approximate 100-foot by 100-foot compound lease area located at the end of Dean Road.
Tower	Self-Supporting, 255 feet tall with a 10 feet tall lightning rod
Maximum loads	Vertical: 660 kips (assumed) Shear: 85 kips (assumed) Uplift: 545 kip-ft (assumed)
Maximum allowable settlement	1-inch (assumed)
Equipment Building: Maximum Loads	Column: 15 kips (assumed) Wall: 1 kip/ft (assumed)
Equipment Building: Maximum allowable settlement	Total Settlement: 1-inch (assumed) Differential Settlement: ¾ inch over 40 feet (assumed)
Grading	Cut: 3 feet (+/-) (assumed) Fill: 3 feet (+/-) (assumed)

1.2 Site Location and Description

Item	Description
Location	Dean Road, Clover Bottom, Kentucky (See Exhibit A-1)
Existing improvements and current ground cover	Aerial photos indicate the site is covered by mature vegetation, trees, etc. The area south of the site is developed with a residential plot and a pavement.
Existing topography	The site gently slopes northwards. Based on information provided, existing grades vary between about El. 1512 feet to El. 1505 feet.

2.0 SUBSURFACE CONDITIONS

2.1 Geology

Based on the USGS Soil Mapping, overburden soils at the site belong to the Lily and Gilpin Soil series. Lily series consist of soils formed in residuum weathered primarily from sandstone; Gilpin series consist of soils formed in residuum of nearly horizontal interbedded shale, siltstone, and some sandstone. Based on Geologic map of Kentucky, the bedrock at the site is the Breathitt Formation of the Pennsylvanian Age. Breathitt Formation has shale as its primary rock type and siltstone, sandstone, coal, and conglomerate as its other rock types.

2.2 Typical Profile

One boring was drilled at the tower center as surveyed and staked in the field by the owner's representative. Based the results of the boring, the subsurface conditions on the project site can be generalized as follows:

Description	Approximate Depth to Bottom of Stratum (feet)	Material Encountered	Consistency/ Density
Surface	0.3	Topsoil	N/A
Stratum 1	4.0	Lean Clay	Medium stiff to very stiff
Stratum 2	14.0	Completely weathered sandstone	Very soft to soft (in terms of rock hardness)
Stratum 3	19.0	Completely weathered siltshale	Very soft (in terms of rock hardness)
Stratum 3	28.0 (Bottom of boring)	Siltshale; Sandy limestone	Siltshale – Medium hard to very soft Sandy limestone – Very hard to hard

1. Standard penetration test (SPT) values were 3 and 9 blows per foot (bpf). Measured unconfined compressive strengths for cohesive soils samples (determined from correlations with a hand penetrometer) were approximately 3,000 and 8,000 pounds per square foot. Natural moisture contents were approximately 19 and 25 percent.
2. Measured unconfined compressive strength test conducted on an intact bedrock sample at approximately 21 feet below existing grade equaled approximately 4,120 pounds per square foot.
3. The sample recovery ranged from approximately 77 to 100 percent and the quality of the rock core obtained is considered to be very poor with RQD values ranging from approximately 8 to 17 percent.

Specific conditions encountered at the boring location are indicated on the attached boring log. Stratification boundaries on the boring log represent the approximate location of changes in soil and rock types; in-situ, the transition between materials may be gradual. Further details of the boring can be found on the appended boring log.

2.3 Groundwater

No groundwater was encountered during the auger drilling portion of the borehole. Water was used to advance the boring during rock coring operations. The introduction of water into the borehole precluded obtaining accurate groundwater level readings at the time of coring operations. Long term observation of the groundwater level in monitoring wells, sealed from the influence of surface water, would be required to obtain accurate groundwater levels on the site.

3.0 RECOMMENDATIONS FOR DESIGN AND CONSTRUCTION

3.1 Geotechnical Considerations

Drilled pier and shallow mat foundation alternatives are presented below for support of the proposed tower. The equipment building may be supported on shallow spread footings bearing on stiff to very stiff natural cohesive soils or new engineered granular fill. Design recommendations for the tower drilled piers and a mat foundation as well as shallow footings for the equipment building are presented in the following report sections.

3.2 Foundation Recommendations

3.2.1 Drilled Pier Foundation

The proposed tower can be founded on a straight shafted drilled pier foundation system. Based on the results of boring data and laboratory testing, we have developed the following drilled pier design parameters.

Description – Approximate Depth (feet) ¹	Allowable Skin Friction (psf)	Allowable End Bearing Pressure (psf)	Allowable Passive Pressure (psf)	Cohesion (psf)	Internal Angle of Friction (Degrees)	Strain ϵ_{50}	Lateral Subgrade Modulus (pci)
0 to 2	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore
Lean clay – 4	400	Ignore	300	1,250	--	0.008	100
Completely weathered sandstone – 14.0	650	10,000	900	4,000	--	0.004	300

Completely weathered siltshale – 19	800	15,000	3,000	7,500	--	0.004	500
Siltshale and Sandy limestone – 28	1,000 ²	20,000	6,000 ²	15,000 ²	--	0.001	1,000

1. Pier observation is recommended to adjust pier length if variable rock conditions are encountered. A total unit weight of 120, 130, and 140 pcf can be assumed for the lean clay, completely weathered sandstone and siltshale, and siltshale and sandy limestone, respectively.
2. The pier should be embedded a minimum of 3 feet into competent bedrock to mobilize these higher rock strength parameters. Furthermore, it is assumed the rock socket will be extended using coring techniques rather than blasting/shooting.

The above indicated cohesion, friction angle, lateral subgrade modulus and strain values have no factors of safety, and the allowable skin friction and the passive resistances have a factor of safety of about 2. The cohesion, internal friction angle, lateral subgrade modulus and strain values given in the above table are based on our boring, published values and our past experience with similar soil and rock types. These values should, therefore, be considered approximate.

To mobilize the rock strength parameters, the piers should be socketed at least 3 feet into competent bedrock. The allowable end bearing pressures provided in the table have an approximate factor of safety of at least 3. If the drilled piers are designed using the above parameters and bear on or within the interbedded siltstone and sandstone bedrock, settlements are not anticipated to exceed 1 inch.

The upper 2 feet of clay should be ignored due to the potential effects of frost action and construction disturbance. To avoid a reduction in lateral and uplift resistance caused by variable subsurface conditions and or bedrock depths, we recommend that drawings instruct the contractor to notify the engineer if subsurface conditions significantly different than encountered in our boring are disclosed during drilled pier installation. Under these circumstances, it may be necessary to adjust the overall length of the pier. To facilitate these adjustments and assure that the piers are embedded in suitable materials, we recommend that a Terracon representative observe the drilled pier excavations.

We recommend that a minimum pier length and minimum competent rock socket length be stated on the design drawings. Terracon should be contacted if the tower is moved from its current location, or if significant grade changes occur at the site, to review our recommendations and determine whether an additional boring is required. In particular, moving the tower could result in significant depth variances between the ground surface and shale and limestone bedrock.

A drilled pier foundation should be designed with a minimum shaft diameter of 30 inches to facilitate clean out and possible dewatering of the pier excavation. Temporary casing will be

required during the pier excavation in order to support the sides of the excavation in granular soil and weak soil zones. Care should be taken so that the sides and bottom of the excavations are not disturbed during construction. The bottom of the shaft should be free of soil or debris and/or loose rocks prior to reinforcing steel and concrete placement.

A concrete slump of at least 6 inches is recommended to facilitate temporary casing removal. It should be possible to remove the casing from a pier excavation during concrete placement provided that the concrete inside the casing is maintained at a sufficient level to resist any earth and hydrostatic pressures outside the casing during the entire casing removal procedure.

3.2.2 Shallow Mat Foundation System

If desired, a mat foundation can be used to support the proposed tower. The mat foundations can be designed using the following natural soil parameters.

DESCRIPTION	VALUE
Foundation Subgrade ¹	Weathered sandstone at a depth of 4 feet below existing grade
Net allowable bearing pressure ²	4,000 psf,
Allowable passive pressure ³	900 psf
Coefficient of sliding friction ³	0.5
Minimum embedment below finished grade for frost protection	24 inches
Approximate total settlement ⁴	< 1.0 inch

1. A geotechnical engineer should verify footing subgrade prior to concrete placement.
2. Assumes any soft or unsuitable soils, if encountered, will be undercut and replaced with approved engineered granular fill. The recommended net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation.
3. The sides of the excavation for the mat foundation must be nearly vertical and the concrete should be placed neat against these vertical faces for the passive earth pressure values to be valid. If the loaded side is sloped or benched, and then backfilled, the allowable passive pressure will be significantly reduced. Passive resistance in the upper 2 feet of the soil profile should be neglected. Lateral resistance due to friction at the base of the footing should be ignored where uplift also occurs.
4. The foundation settlement will depend upon the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the footing, the thickness of compacted fill, and the quality of the earthwork operations.

Uplift forces can be resisted by the dead weight of the footing and the effective weight of any soil above the footing. The footing needs to be designed for lateral and overturning moments as well. A unit weight of soil not exceeding 120 pcf is appropriate for the on-site soils backfilled above the foundation, assuming that it is compacted to at least 98 percent of Standard Proctor maximum dry density (ASTM D-698). A unit weight of 150 pcf could be used for reinforced

footing concrete. The ground surface should be sloped away from the foundation to avoid ponding of water and saturation of the backfill materials.

The base of all foundation excavations should be free of water and loose soil prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Should the soils at bearing level become excessively dry, disturbed or saturated, or frozen, the affected soil should be removed prior to placing concrete. Place a lean concrete mud-mat over the bearing soils if the excavations must remain open over night or for an extended period of time. It is recommended that the geotechnical engineer be retained to observe and test the soil foundation bearing materials.

3.2.3 Equipment Building/Cabinet Foundations

The equipment building may be supported on shallow spread footings bearing on stiff to very stiff natural cohesive soils or new engineered granular fill.

Description	Value
Foundation Subgrade ¹	Natural cohesive soils or new engineered granular fill
Allowable bearing pressure ²	2,000 psf
Allowable passive pressure ³	300 psf
Ultimate coefficient of sliding friction	0.3
Minimum embedment below finished grade for frost protection ³	24 inches
Approximate total settlement ⁴	< 1.0 inch

1. A geotechnical engineer should verify footing subgrade prior to concrete placement.
2. Assumes any soft or unsuitable soils, if encountered, will be undercut and replaced with approved engineered fill. The recommended net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation.
3. For perimeter footing and footings beneath unheated areas.
4. The foundation settlement will depend upon the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the footings, the thickness of any compacted fill, and the quality of the earthwork operations.

3.3 Earthwork

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

Fill Type ¹	USCS Classification	Acceptable Location for Placement ¹
Lean clay	CL (LL<45 & PI<22)	All locations and elevations
Well graded granular material	GW ² , SW, SM, and SC ³	All locations and elevations

1. Controlled, compacted fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade. A sample of each material type should be submitted to the geotechnical engineer for evaluation. Any fill to be placed beneath the tower footing should consist of well graded granular material.
2. Similar to KYDOT Type 1 or Type 5 crushed limestone aggregate, limestone screenings, or granular material such as sand, gravel or crushed stone containing at least 18% low plasticity fines.
3. Similar to crushed limestone aggregate or limestone screenings or granular material such as sand, gravel or crushed stone (pug mix).

3.3.1 Compaction Requirements

Fill Lift Thickness	9-inches or less in loose thickness
Compaction Requirements	98% of the materials Standard Proctor maximum dry density (ASTM D-698)
Moisture Content – Granular Material	Moisture levels should be maintained low enough to allow for satisfactory compaction to be achieved without the cohesionless fill material pumping when proofrolled.
Moisture Content – Cohesive Soil	Lean Clay - within the range of optimum moisture content to 2% above or 1% below optimum moisture content as determined by the standard Proctor test at the time of placement

We recommend that engineered fill be tested for moisture content and compaction during placement. Should the results of the in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the test should be reworked and retested as required until the specified moisture and compaction requirements are achieved.

3.3.2 Construction Considerations

Unstable subgrade conditions could develop during general construction operations, particularly if the soils are wetted and/or subjected to repetitive construction traffic. The use of light construction equipment would aid in reducing subgrade disturbance. Should unstable subgrade conditions develop, stabilization measures will need to be employed.

Construction traffic over the completed subgrade should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. If the subgrade should become frozen, desiccated, saturated, or disturbed, the

Geotechnical Engineering Report

Clover Bottom Creek Tower ■ Clover Bottom, KY
April 24, 2014 ■ Terracon Project Number 57145020



affected material should be removed or these materials should be scarified, moisture conditioned, and recompacted.

As a minimum, all temporary excavations should be sloped or braced as required by Occupational Health and Safety Administration (OSHA) regulations to provide stability and safe working conditions. Temporary excavations will probably be required during grading operations. The grading contractor, by his contract, is usually responsible for designing and constructing stable, temporary excavations and should shore, slope or bench the sides of the excavations as required, to maintain stability of both the excavation sides and bottom. All excavations should comply with applicable local, state and federal safety regulations, including the current OSHA Excavation and Trench Safety Standards.

The geotechnical engineer should be retained during the construction phase of the project to observe earthwork and to perform necessary tests and observations during subgrade preparation; proof-rolling; placement and compaction of controlled compacted fills; backfilling of excavations into the completed subgrade, and just prior to construction of foundations.

4.0 GENERAL COMMENTS

Terracon should be retained to review the final design plans and specifications so comments can be made regarding interpretation and implementation of our geotechnical recommendations in the design and specifications. Terracon also should be retained to provide observation and testing services during grading, excavation, foundation construction and other earth-related construction phases of the project.

The analysis and recommendations presented in this report are based upon the data obtained from the boring performed at the indicated location and from other information discussed in this report. This report does not reflect variations that may occur across the site, or due to the modifying effects of weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

The scope of services for this project does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either express or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are

Geotechnical Engineering Report

Clover Bottom Creek Tower ■ Clover Bottom, KY

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planned, the conclusions and recommendations contained in this report shall not be considered valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.

APPENDIX



Source: Google Earth Pro
 DIAGRAM IS FOR GENERAL LOCATION
 ONLY, AND IS NOT INTENDED FOR
 CONSTRUCTION PURPOSES

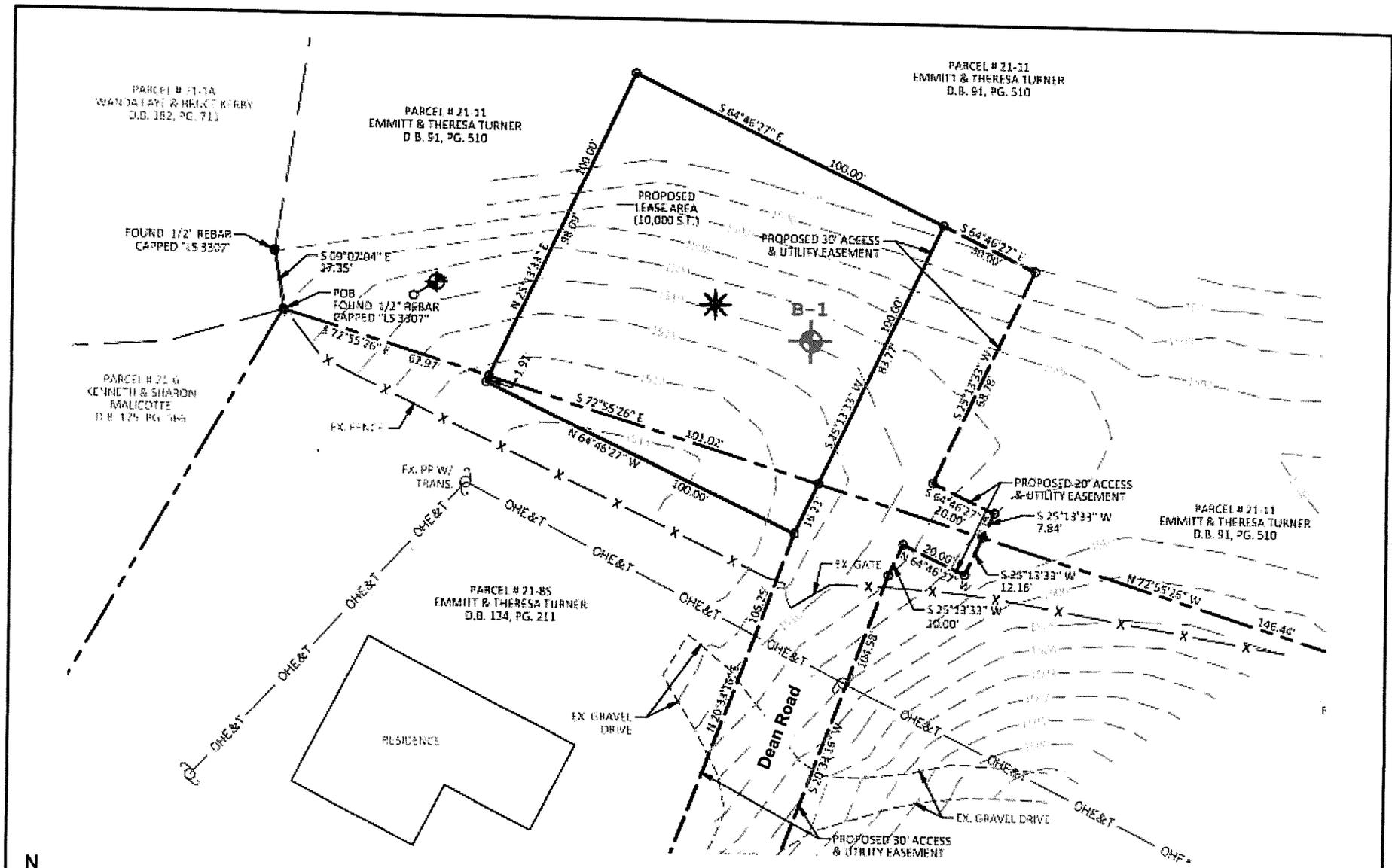
Project Manager:	AS	Project No.	57145020
Drawn by:	AS	Scale:	N.T.S.
Checked by:	TGL	File Name:	A-1
Approved by:	TGL	Date:	04/24/2014

Terracon
 Consulting Engineers & Scientists

1109 Commercial Drive, Suite 2 Lexington, Kentucky 40505
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SITE LOCATION MAP
CLOVER BOTTOM CREEK TOWER
 Dean Road
 CLOVER BOTTOM, JACKSON COUNTY, KENTUCKY

Exhibit
A-1



Source: Others
 DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	AS	Project No.	57145020
Drawn by:	AS	Scale:	1" = 40'
Checked by:	TGL	File Name:	A-2
Approved by:	TGL	Date:	4/24/2014

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TEST BORING LOCATION PLAN
 CLOVER BOTTOM CREEK TOWER
 Dean Road
 CLOVER BOTTOM, JACKSON COUNTY, KENTUCKY

Exhibit
A-2

Field Exploration Description

The boring was drilled near the tower center as staked in the field by the owner's representative. The approximate boring location is shown on the enclosed boring location plan. The boring location was provided by others. The boring was drilled by a subcontractor.

The boring was drilled with truck-mounted rotary drill rig using continuous flight hollow-stem augers to advance the borehole. Samples of the soil encountered in the boring were obtained using the split-barrel sampling procedure. In the split barrel sampling procedure, the number of blows required to advance a standard 2-inch O.D. split barrel sampler the last 12 inches of the typical total 18-inch penetration by means of a rope and cathead manual safety hammer with a free fall of 30 inches, is the standard penetration resistance value (SPT-N). This value is used to estimate the in-situ relative density of cohesionless soils and consistency of cohesive soils. A SPT hammer (using a cathead and rope method) was used to advance the split-barrel sampler in the boring performed on this site.

The samples were tagged for identification, sealed to reduce moisture loss, and taken to our laboratory for further examination, testing, and classification. Information provided on the boring log attached to this report includes soil/bedrock descriptions, consistency evaluations, boring depths, sampling intervals, and groundwater conditions during the drilling program. The boring was backfilled with soil cuttings, prior to the drill crew leaving the site.

A field log of the boring was prepared by the drill crew. This log included visual classifications of the materials encountered during drilling as well as the driller's interpretation of the subsurface conditions between samples. The final boring log included with this report represents the engineer's review of obtained soil/bedrock samples, driller's field log and includes modifications based on laboratory tests of the samples.

Laboratory Testing

The laboratory testing program consisted of performing water content tests and one unconfined compression test on a representative rock core. A calibrated hand penetrometer was used to estimate the approximate unconfined compressive strength of the soil samples. The calibrated hand penetrometer has been correlated with unconfined compression tests and provides a better estimate of soil consistency than visual examination alone. Results of these tests are provided on the boring log at the appropriate horizon.

BORING LOG NO. B-1

PROJECT: Clover Bottom Creek Tower

CLIENT: WesTower Communications Inc
112 E State St, Ridgeland MS

SITE: Dean Road
Clover Bottom, Kentucky

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO LOG-DEPTH TO BOTTOM OF PAGE BORING LOGS.GPJ TERRACON2012.GDT 4/24/14

GRAPHIC LOG	LOCATION See Exhibit A-2	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	FIELD TEST RESULTS	ROD (%)	LABORATORY TORVANE/HP (lbf)	STRENGTH TEST			WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES	
									TEST TYPE	COMPRESSIVE STRENGTH (psf)	STRAIN (%)				
		0.3													
	TOPSOIL														
	LEAN CLAY (CL) , with sand, reddish-brown, medium stiff, trace root hairs	1.5			78	2-1-2 N=3		1.5 (HP)				19			
	LEAN CLAY (CL) , with sand, reddish-brown, very stiff, trace root hairs	4.0			72	2-3-6 N=9		4.0 (HP)				25			
	COMPLETELY WEATHERED SANDSTONE , orangish brown, very soft to soft (in terms of rock hardness), -trace lean clay between 9' and 10.5'	5			80	14-19-50/2" N=50/2"						18			
					38	31-50/3" N=50/3"						9			
		10			83	27-20-17 N=37									
	COMPLETELY WEATHERED SILTSHALE , gray, very soft (in terms of rock hardness)	15				50/4" N=50/4"									
	SILTSHALE (90%) and SANDY LIMESTONE (10%) SILTSHALE , moderately to severely weathered, dark gray, medium hard to very soft, very thinly to thinly bedded SANDY LIMESTONE , very slightly weathered, light gray, very hard to hard, very thinly bedded	20			77		8		4120	2.6	10				
		25			100		17								
	Boring Terminated at 28 Feet	28.0													
		30													

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:

See Exhibit A-3 for description of field procedures.

Notes:

Boring drilled by a subcontractor (Geodrill).

Abandonment Method:

Boring backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

No water observed during drilling.

No water observed at completion.



611 Lunken Park Drive
Cincinnati, Ohio

Boring Started: 4/11/2014

Drill Rig: B-80

Project No.: 57145020

Boring Completed: 4/11/2014

Driller: S. Anderson with Geodrill

Exhibit: A-4

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING			WATER LEVEL		Water Initially Encountered	FIELD TESTS	(HP) Hand Penetrometer	
	Auger	Split Spoon			Water Level After a Specified Period of Time		(T) Torvane	
					Water Level After a Specified Period of Time		(b/f) Standard Penetration Test (blows per foot)	
	Shelby Tube	Macro Core		Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.			(PID) Photo-Ionization Detector	
							(OVA) Organic Vapor Analyzer	
								
Grab Sample	No Recovery							

DESCRIPTIVE SOIL CLASSIFICATION

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

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS	RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance Includes gravels, sands and silts.			CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance				BEDROCK		
	Descriptive Term (Density)	Standard Penetration or N-Value Blows/Ft.	Ring Sampler Blows/Ft.	Descriptive Term (Consistency)	Unconfined Compressive Strength, Qu, tsf	Standard Penetration or N-Value Blows/Ft.	Ring Sampler Blows/Ft.	Ring Sampler Blows/Ft.	Standard Penetration or N-Value Blows/Ft.	Descriptive Term (Consistency)
Very Loose	0 - 3	0 - 6	Very Soft	less than 0.25	0 - 1	< 3	< 30	< 20	Weathered	
Loose	4 - 9	7 - 18	Soft	0.25 to 0.50	2 - 4	3 - 4	30 - 49	20 - 29	Firm	
Medium Dense	10 - 29	19 - 58	Medium-Stiff	0.50 to 1.00	4 - 8	5 - 9	50 - 89	30 - 49	Medium Hard	
Dense	30 - 50	59 - 98	Stiff	1.00 to 2.00	8 - 15	10 - 18	90 - 119	50 - 79	Hard	
Very Dense	> 50	≥ 99	Very Stiff	2.00 to 4.00	15 - 30	19 - 42	> 119	> 79	Very Hard	
			Hard	> 4.00	> 30	> 42				

RELATIVE PROPORTIONS OF SAND AND GRAVEL

GRAIN SIZE TERMINOLOGY

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

PLASTICITY DESCRIPTION

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A				Soil Classification		
				Group Symbol	Group Name ^B	
Coarse Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines ^C	$Cu \geq 4$ and $1 \leq Cc \leq 3$ ^E	GW	Well-graded gravel ^F	
		Gravels with Fines: More than 12% fines ^C	Fines classify as ML or MH	GP	Poorly graded gravel ^F	
			Fines classify as CL or CH	GM	Silty gravel ^{F,G,H}	
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines ^D	$Cu \geq 6$ and $1 \leq Cc \leq 3$ ^E	SW	Well-graded sand ^I	
		Sands with Fines: More than 12% fines ^D	Fines classify as ML or MH	SP	Poorly graded sand ^I	
			Fines classify as CL or CH	SM	Silty sand ^{G,H,I}	
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	$PI > 7$ and plots on or above "A" line ^J	CL	Lean clay ^{K,L,M}	
			$PI < 4$ or plots below "A" line ^J	ML	Silt ^{K,L,M}	
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay ^{K,L,M,N}
			Liquid limit - not dried			Organic silt ^{K,L,M,O}
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots on or above "A" line	CH	Fat clay ^{K,L,M}	
			PI plots below "A" line	MH	Elastic Silt ^{K,L,M}	
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay ^{K,L,M,P}
			Liquid limit - not dried			Organic silt ^{K,L,M,Q}
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat	

^A Based on the material passing the 3-inch (75-mm) sieve

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

^E $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$

^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

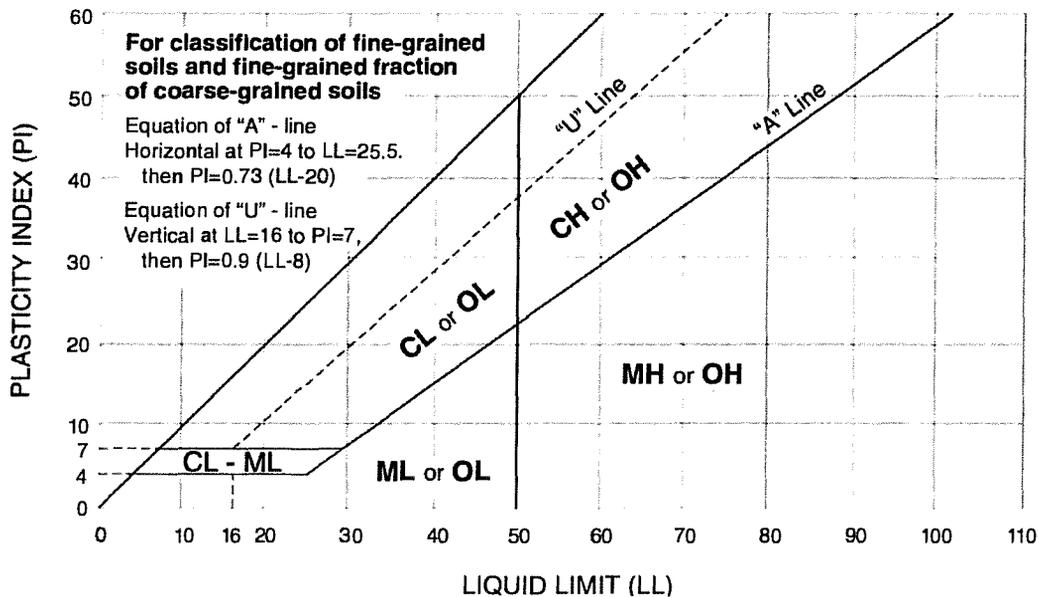
^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N $PI \geq 4$ and plots on or above "A" line.

^O $PI < 4$ or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.



DESCRIPTION OF ROCK PROPERTIES

WEATHERING

Term	Description
Unweathered	No visible sign of rock material weathering, perhaps slight discoloration on major discontinuity surfaces.
Slightly weathered	Discoloration indicates weathering of rock material and discontinuity surfaces. All the rock material may be discolored by weathering and may be somewhat weaker externally than in its fresh condition.
Moderately weathered	Less than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as a continuous framework or as corestones.
Highly weathered	More than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as a discontinuous framework or as corestones.
Completely weathered	All rock material is decomposed and/or disintegrated to soil. The original mass structure is still largely intact.
Residual soil	All rock material is converted to soil. The mass structure and material fabric are destroyed. There is a large change in volume, but the soil has not been significantly transported.

STRENGTH OR HARDNESS

Description	Field Identification	Uniaxial Compressive Strength, PSI (MPa)
Extremely weak	Indented by thumbnail	40-150 (0.3-1)
Very weak	Crumbles under firm blows with point of geological hammer, can be peeled by a pocket knife	150-700 (1-5)
Weak rock	Can be peeled by a pocket knife with difficulty, shallow indentations made by firm blow with point of geological hammer	700-4,000 (5-30)
Medium strong	Cannot be scraped or peeled with a pocket knife, specimen can be fractured with single firm blow of geological hammer	4,000-7,000 (30-50)
Strong rock	Specimen requires more than one blow of geological hammer to fracture it	7,000-15,000 (50-100)
Very strong	Specimen requires many blows of geological hammer to fracture it	15,000-36,000 (100-250)
Extremely strong	Specimen can only be chipped with geological hammer	>36,000 (>250)

DISCONTINUITY DESCRIPTION

Fracture Spacing (Joints, Faults, Other Fractures)		Bedding Spacing (May Include Foliation or Banding)	
Description	Spacing	Description	Spacing
Extremely close	< ¼ in (<19 mm)	Laminated	< ½ in (<12 mm)
Very close	¼ in – 2-1/2 in (19 - 60 mm)	Very thin	½ in – 2 in (12 – 50 mm)
Close	2-1/2 in – 8 in (60 – 200 mm)	Thin	2 in – 1 ft (50 – 300 mm)
Moderate	8 in – 2 ft (200 – 600 mm)	Medium	1 ft – 3 ft (300 – 900 mm)
Wide	2 ft – 6 ft (600 mm – 2.0 m)	Thick	3 ft – 10 ft (900 mm – 3 m)
Very Wide	6 ft – 20 ft (2.0 – 6 m)	Massive	> 10 ft (3 m)

Discontinuity Orientation (Angle): Measure the angle of discontinuity relative to a plane perpendicular to the longitudinal axis of the core. (For most cases, the core axis is vertical; therefore, the plane perpendicular to the core axis is horizontal.) For example, a horizontal bedding plane would have a 0 degree angle.

ROCK QUALITY DESIGNATION (RQD)*

Description	RQD Value (%)
Very Poor	0 - 25
Poor	25 - 50
Fair	50 - 75
Good	75 - 90
Excellent	90 - 100

*The combined length of all sound and intact core segments equal to or greater than 4 inches in length, expressed as a percentage of the total core run length.

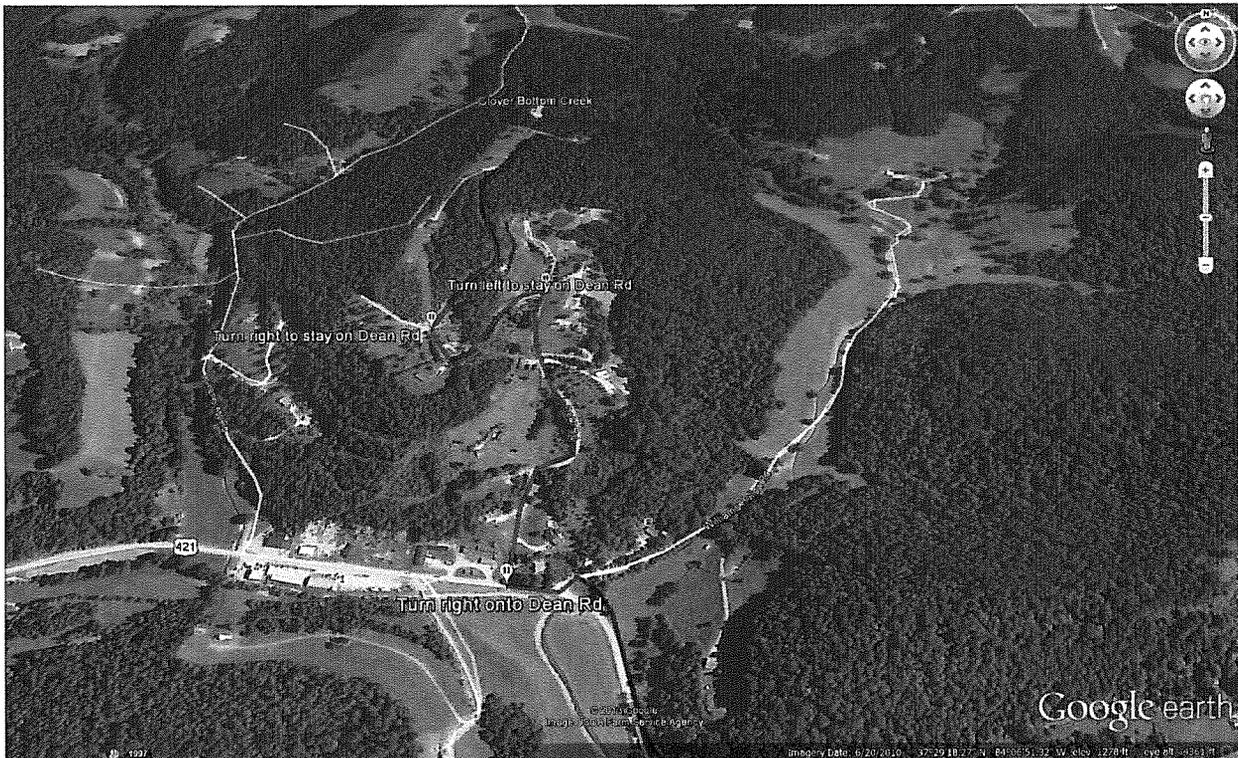
Reference: U.S. Department of Transportation, Federal Highway Administration, Publication No FHWA-NHI-10-034, December 2009
Technical Manual for Design and Construction of Road Tunnels – Civil Elements



EXHIBIT I
DIRECTIONS TO WCF SITE

Driving Directions to Proposed Tower Site at Clover Bottom Creek

1. Beginning at the corner of First Street and Main Street in McKee, Kentucky, travel east on Main Street / US-421 N and continue on US-421 N for approximately 9.5 miles.
2. Turn right onto Dean Road and travel approximately 0.3 miles.
3. Turn left to stay on Dean Road and travel approximately 0.2 miles.
4. Turn right to stay on Dean road and travel approximately 0.4 miles. The destination will be on the right at 427 Dean Road, McKee, KY.
5. The site coordinates are
 - a. North 37 deg 29' 38.99
 - b. West 84 deg 06' 57.67



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Shepherdsville, KY 40165-3069
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EXHIBIT J
COPY OF REAL ESTATE AGREEMENT

Market: Lexington
Cell Site Number: KYALU6174
Cell Site Name: Clover Bottom Creek
Fixed Asset Number: 12568684

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 Emmitt Turner and Theresa Turner, a married couple, having a mailing address of 217 Upper Dry Fork Ridge Road, McKee, KY 40447 ("**Landlord**") and New Cingular Wireless PCS, LLC, a Delaware limited liability company, having a mailing address of 575 Morosgo Drive NE, Suite 13-F West Tower, Atlanta, GA 30324 ("**Tenant**").

BACKGROUND

Landlord owns or controls that certain plot, parcel or tract of land, as described on **Exhibit 1**, together with all rights and privileges arising in connection therewith, located at end of Dean Road, in the County of Jackson, 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 thirty (30) 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 five (5) 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 Three Million Dollars (\$3,000,000) per occurrence and Six Million Dollars (\$6,000,000) 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 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, \$500.00 per day 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.

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 #: KYALU6174; Cell Site Name: Clover Bottom Creek
 Fixed Asset #: 12568784; State : KY
 575 Morosgo Drive NE,
 Suite 13-F West Tower,
 Atlanta, GA 30324

With a copy to: New Cingular Wireless PCS, LLC
 Re: Cell Site #: KYALU6174; Cell Site Name: Clover Bottom Creek

Fixed Asset #: 12568784; State : KY
AT&T Legal Department – Network
208 S. Akard Street
Dallas, TX 75202-4206
New Cingular Wireless PCS, LLC

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

If to Landlord: Emmitt Turner
217 Upper Dry Fork Ridge Road
Mckee, KY 40447

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.

(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
Re: Cell Site #: KYALU6174; Cell Site Name: Clover Bottom Creek
Fixed Asset #: 12568784; State: KY
575 Morosgo Drive NE,
Suite 13-F West Tower,
Atlanta, GA 30324

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

22. SALE OF PROPERTY

(a) Landlord shall not be prohibited from the selling, leasing or use of any of the Property 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, 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 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 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"



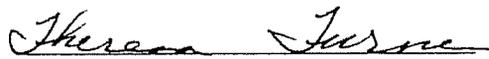
By: EMMITT TURNER

Print Name: Emmitt Turner

Its: _____

Date: 9-6-2013

"LANDLORD"



By: Theresa Turner

Print Name: Theresa Turner

Its: _____

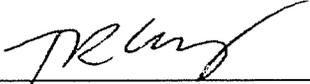
Date: 9-6-2013

"TENANT"

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

By: AT&T Mobility Corporation

Its: Manager

By: 

Print Name: Terry R. Kilgore

Its: Area Manager, C&E

Date: 10/14/13

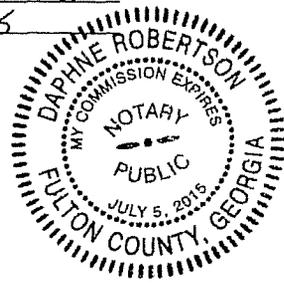
[ACKNOWLEDGMENTS APPEAR ON THE NEXT PAGE]

TENANT ACKNOWLEDGMENT

STATE OF Georgia)
) ss:
COUNTY OF FULTON)

On the 14th day of October, 2013, before me personally appeared Terry R. Kilgore, and acknowledged under oath that he/she is the Area Mgr. Const. & Engrg. 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.

Daphne Robertson
Notary Public: DAPHNE ROBERTSON
My Commission Expires: 7/5/15



LANDLORD ACKNOWLEDGMENT

STATE OF Ky)
) ss:
COUNTY OF JACKSON)

On the 6 day of Sept, 2013 before me, personally appeared Emmitt Turner + THERESA THOMAS, 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.

George T. Hagy
Notary Public: 410289
My Commission Expires: 5-1-2015

LANDLORD ACKNOWLEDGMENT

STATE OF _____)
) ss:
COUNTY OF _____)

On the _____ day of _____, 20__ before me, personally appeared _____, 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.

Notary Public: _____
My Commission Expires: _____

EXHIBIT 1

DESCRIPTION OF PREMISES

Page 1 of 2

to the Option and Lease Agreement dated October 14, 2013, by and between Emmitt Turner and Theresa Turner, 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:

Legal Descriptions

The following is a description of an area to be leased from the property of Emmitt & Theresa Turner, which is more particularly described as follows:

PROPOSED LEASE AREA

Beginning at a found 1/2" rebar capped "LS 3307" in the southeast corner of the property conveyed to Wanda Faye & Bruce Kerby as recorded in deed book 182, page 711 in the office of the clerk of the county court of Jackson County, Kentucky, being S 09°07'04" E - 17.35' from a found 1/2" rebar capped "LS 3307" in the east property line of said Kerby property; thence with the north property line of the property conveyed to Emmitt & Theresa Turner as recorded in deed book 134, page 211 in the aforesaid clerk's office, S 72°55'26" E - 62.97' to a set 5/8" rebar capped "Patterson PLS 3136" and the true point of beginning of the proposed lease area; thence traversing the property conveyed to Emmitt & Theresa Turner as recorded in deed book 91, page 510 in the aforesaid clerk's office, N 25°13'33" E - 98.09' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 64°46'27" E - 100.00' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 25°13'33" W - 83.77' to a set 5/8" rebar capped "Patterson PLS 3136" in the aforesaid north property line of the Turner property; thence traversing said Turner property, S 25°13'33" W - 16.23' to a set 5/8" rebar capped "Patterson PLS 3136"; thence N 64°46'27" W - 100.00' to a set 5/8" rebar capped "Patterson PLS 3136"; thence N 25°13'33" E - 1.91' to the true point of beginning containing 10,000 square feet as per survey by Mark E. Patterson, PLS #3136 with Power of Design Group, LLC dated July 31, 2013.

CENTERLINE PROPOSED 30' ACCESS & UTILITY EASEMENT

Beginning at a found 1/2" rebar capped "LS 3307" in the southeast corner of the property conveyed to Wanda Faye & Bruce Kerby as recorded in deed book 182, page 711 in the office of the clerk of the county court of Jackson County, Kentucky, being S 09°07'04" E - 17.35' from a found 1/2" rebar capped "LS 3307" in the east property line of said Kerby property; thence with the north property line of the property conveyed to Emmitt & Theresa Turner as recorded in deed book 134, page 211 in the aforesaid clerk's office, S 72°55'26" E passing a set 5/8" rebar capped "Patterson PLS 3136" at 62.97' in all 163.99' to a set 5/8" rebar capped "Patterson PLS 3136" and the true point of beginning of the proposed variable access & utility easement; thence traversing the property conveyed to Emmitt & Theresa Turner as recorded in deed book 91, page 510 in the aforesaid clerk's office, N 25°13'33" E - 83.77' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 64°46'27" E - 30.00' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 25°13'33" W - 68.78' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 64°46'27" E - 20.00' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 25°13'33" W - 7.84' to a set 5/8" rebar capped "Patterson PLS 3136" in the aforesaid north property

line of the Turner property; thence traversing said Turner property, S 25°13'33" W - 12.16' to a set 5/8" rebar capped "Patterson PLS 3136"; thence N 64°46'27" W - 20.00' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 25°13'33" W - 10.00' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 20°33'16" W - 104.58' to a set 5/8" rebar capped "Patterson PLS 3136"; thence N 68°23'30" W - 30.01' to a set 5/8" rebar capped "Patterson PLS 3136"; thence N 20°33'16" E - 105.25' to a set 5/8" rebar capped "Patterson PLS 3136"; thence N 25°13'33" E - 16.23' to the true point of beginning containing 6,529 square feet as per survey by Mark E. Patterson, PLS #3136 with Power of Design Group, LLC dated July 31, 2013.

Notes:

1. THIS EXHIBIT MAY BE REPLACED BY A LAND SURVEY AND/OR CONSTRUCTION DRAWINGS OF THE PREMISES ONCE RECEIVED BY TENANT.
2. ANY SETBACK OF THE PREMISES FROM THE PROPERTY'S BOUNDARIES SHALL BE THE DISTANCE REQUIRED BY THE APPLICABLE GOVERNMENTAL AUTHORITIES.
3. WIDTH OF ACCESS ROAD SHALL BE THE WIDTH REQUIRED BY THE APPLICABLE GOVERNMENTAL AUTHORITIES, INCLUDING POLICE AND FIRE DEPARTMENTS.
4. THE TYPE, NUMBER AND MOUNTING POSITIONS AND LOCATIONS OF ANTENNAS AND TRANSMISSION LINES ARE ILLUSTRATIVE ONLY. ACTUAL TYPES, NUMBERS AND MOUNTING POSITIONS MAY VARY FROM WHAT IS SHOWN ABOVE.

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 12
STANDARD ACCESS LETTER
[FOLLOWS ON NEXT PAGE]

DATE

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

Re: Authorized Access granted to AT&T

Dear Building and Security Staff,

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

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

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


Landlord Signature

EXHIBIT 24b

MEMORANDUM OF LEASE

[FOLLOWS ON NEXT PAGE]

MEMORANDUM OF LEASE

Prepared by:

Lee Skaalerud

PBM Wireless Services

13714 Smokey Ridge Overlook

Carmel, IL 46033

Return to:

New Cingular Wireless PCS, LLC

Attn: Network Real Estate Administration

575 Morosgo Drive NE,

Suite 13-F West Tower,

Atlanta, GA 30324

Re: Cell Site #KYALU6174; Cell Site Name: Clover Bottom Creek
Fixed Asset # 12568684
State: KY
County: Jackson

MEMORANDUM OF LEASE

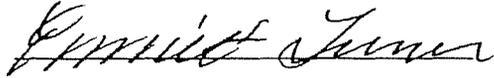
This Memorandum of Lease is entered into on this 14th day of October, 2013, by and between Emmitt Turner and Theresa Turner, a married couple, having a mailing address of 217 Upper Dry Fork Ridge Road, McKee, KY 40447 (hereinafter referred to as "Landlord") and New Cingular Wireless PCS, LLC, a Delaware limited liability company, having a mailing address of 575 Morosgo Drive NE, Suite 13-F West Tower, Atlanta, GA 30324 (hereinafter referred to as "Tenant").

1. Landlord and Tenant entered into a certain Option and Lease Agreement ("Agreement") on the 14th day of October, 2013, for the purpose of installing, operating and maintaining a communications facility and other improvements. All of the foregoing is set forth in the Agreement.
2. The initial lease term will be five (5) years commencing on the effective date of written notification by Tenant to Landlord of Tenant's exercise of its option, with four (4) successive five (5) year options to renew.
3. The portion of the land being leased to Tenant and associated easements are described in **Exhibit 1** annexed hereto.

4. This Memorandum of Lease is not intended to amend or modify, and shall not be deemed or construed as amending or modifying, any of the terms, conditions or provisions of the Agreement, all of which are hereby ratified and affirmed. In the event of a conflict between the provisions of this Memorandum of Lease and the provisions of the Agreement, the provisions of the Agreement shall control. The Agreement shall be binding upon and inure to the benefit of the parties and their respective heirs, successors, and assigns, subject to the provisions of the Agreement.

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

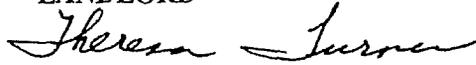
"LANDLORD"



By: EMMITT TURNER
Print Name: Emmitt Turner

Its: _____
Date: 9-6-2013

"LANDLORD"



By: Theresa Turner
Print Name: Theresa Turner

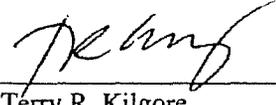
Its: _____
Date: 9-6-2013

"TENANT"

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

By: AT&T Mobility Corporation

Its: Manager

By: 
Print Name: Terry R. Kilgore

Its: Area Manager, C&E

Date: 10/14/13

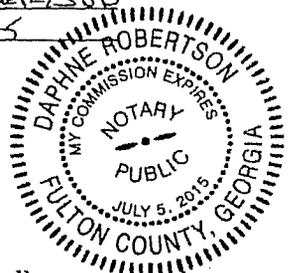
[ACKNOWLEDGMENTS APPEAR ON THE NEXT PAGE]

TENANT ACKNOWLEDGMENT

STATE OF Georgia)
) ss:
COUNTY OF FULTON)

On the 14th day of October, 2013, before me personally appeared Terry R. Kilgore, and acknowledged under oath that he/she is the Area Mgr. Const. & Engrg. 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.

Daphne Robertson
Notary Public: DAPHNE ROBERTSON
My Commission Expires: 7/5/15



LANDLORD ACKNOWLEDGMENT

STATE OF Ky)
) ss:
COUNTY OF JACKSON)

On the 6 day of Sept, 2013 before me, personally appeared Emmitt Turner & THERESA Turner, 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 Landlord for the purposes therein contained.

Gregory J. Hoop
Notary Public: 440289
My Commission Expires: 5-1-2015

LANDLORD ACKNOWLEDGMENT

STATE OF _____)
) ss:
COUNTY OF _____)

On the _____ day of _____, 20__ before me, personally appeared _____, 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 Landlord for the purposes therein contained.

Notary Public: _____
My Commission Expires: _____

EXHIBIT 1

DESCRIPTION OF PREMISES

Page 1 of 2

to the Memorandum of Lease dated October 14, 2013, by and between Emmitt Turner and Theresa Turner, a married couple, as Landlord, and New Cingular Wireless PCS, LLC, a Delaware limited liability company, as Tenant.

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Beginning at a found 1/2" rebar capped "LS 3307" in the southeast corner of the property conveyed to Wanda Faye & Bruce Kerby as recorded in deed book 182, page 711 in the office of the clerk of the county court of Jackson County, Kentucky, being S 09°07'04" E - 17.35' from a found 1/2" rebar capped "LS 3307" in the east property line of said Kerby property; thence with the north property line of the property conveyed to Emmitt & Theresa Turner as recorded in deed book 134, page 211 in the aforesaid clerk's office, S 72°55'26" E - 62.97' to a set 5/8" rebar capped "Patterson PLS 3136" and the true point of beginning of the proposed lease area; thence traversing the property conveyed to Emmitt & Theresa Turner as recorded in deed book 91, page 510 in the aforesaid clerk's office, N 25°13'33" E - 98.09' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 64°46'27" E - 100.00' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 25°13'33" W - 83.77' to a set 5/8" rebar capped "Patterson PLS 3136" in the aforesaid north property line of the Turner property; thence traversing said Turner property, S 25°13'33" W - 16.23' to a set 5/8" rebar capped "Patterson PLS 3136"; thence N 64°46'27" W - 100.00' to a set 5/8" rebar capped "Patterson PLS 3136"; thence N 25°13'33" E - 1.91' to the true point of beginning containing 10,000 square feet as per survey by Mark E. Patterson, PLS #3136 with Power of Design Group, LLC dated July 31, 2013.

CENTERLINE PROPOSED 30' ACCESS & UTILITY EASEMENT

Beginning at a found 1/2" rebar capped "LS 3307" in the southeast corner of the property conveyed to Wanda Faye & Bruce Kerby as recorded in deed book 182, page 711 in the office of the clerk of the county court of Jackson County, Kentucky, being S 09°07'04" E - 17.35' from a found 1/2" rebar capped "LS 3307" in the east property line of said Kerby property; thence with the north property line of the property conveyed to Emmitt & Theresa Turner as recorded in deed book 134, page 211 in the aforesaid clerk's office, S 72°55'26" E passing a set 5/8" rebar capped "Patterson PLS 3136" at 62.97' in all 163.99' to a set 5/8" rebar capped "Patterson PLS 3136" and the true point of beginning of the proposed variable access & utility easement; thence traversing the property conveyed to Emmitt & Theresa Turner as recorded in deed book 91, page 510 in the aforesaid clerk's office, N 25°13'33" E - 83.77' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 64°46'27" E - 30.00' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 25°13'33" W - 68.78' to a set 5/8" rebar

capped "Patterson PLS 3136"; thence S 64°46'27" E - 20.00' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 25°13'33" W - 7.84' to a set 5/8" rebar capped "Patterson PLS 3136" in the aforesaid north property line of the Turner property; thence traversing said Turner property, S 25°13'33" W - 12.16' to a set 5/8" rebar capped "Patterson PLS 3136"; thence N 64°46'27" W - 20.00' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 25°13'33" W - 10.00' to a set 5/8" rebar capped "Patterson PLS 3136"; thence S 20°33'16" W - 104.58' to a set 5/8" rebar capped "Patterson PLS 3136"; thence N 68°23'30" W - 30.01' to a set 5/8" rebar capped "Patterson PLS 3136"; thence N 20°33'16" E - 105.25' to a set 5/8" rebar capped "Patterson PLS 3136"; thence N 25°13'33" E - 16.23' to the true point of beginning containing 6,529 square feet as per survey by Mark E. Patterson, PLS #3136 with Power of Design Group, LLC dated July 31, 2013.



**EXHIBIT K
NOTIFICATION LISTING**

CLOVER BOTTOM CREEK LANDOWNER NOTICE LIST

Emmitt & Theresa Turner
P.O. Box 29
Sandgap, KY 40481

Terry Glenn & Judy Seabourn
3130 Sawyer Creek Drive
Oshkosh, WI 54904

Judith C. Dean & Wendell M. Carr
P.O. Box 254
McKee, KY 40447

Mike & Phyllis Hays
346 Dean Road
McKee, KY 40447

Delbert & Orlenia Baker
P.O. Box 133
Sandgap, KY 40481

Harold & Tabitha Sams
244 Durham School Road
McKee, KY 40447

No parcel records on file with PVA Parcel #21-7A

Kennith & Sharon Malicotte
163 Durham School Road
McKee, KY 40447

No parcel records on file with PVA Parcel #21-81

Wanda Faye & Bruce Kerby
109 Leslie Drive
Berea, KY 40403

David & Deborah Lunsford
P.O. Box 193
McKee, KY 40447

Mike & Lisa England
343 Asbill Road
McKee, KY 40447

Frances Isaacs
1088 KY HWY 2004
Mckee, KY 40447

Jackie England
220 Durham Ridge Road
McKee, KY 40447

William O. Smith
245 KY HWY 2004
McKee, KY 40447

Timothy Wayne Jordan
1822 Deerwood Avenue
Louisville, KY 40205

Ray Boles
P.O. Box 75
Sandgap, KY 40481

Kenneth D. & Carol Marcum
137 State Route 2004
McKee, KY 40447

No records on file with PVA Parcel # 21-11A



EXHIBIT L
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: Clover Bottom 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 427 Dean Road, McKee, Kentucky 40447 (37°29'38.99" North latitude, 84°06'57.67" West longitude). The proposed facility will include a 255-foot tall antenna tower, plus a 10-foot lightning arrester 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 Jackson 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 2014-00103 in any correspondence sent in connection with this matter.

We have attached driving directions 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 AT&T Mobility

enclosure

Driving Directions to Proposed Tower Site at Clover Bottom Creek

1. Beginning at the corner of First Street and Main Street in McKee, Kentucky, travel east on Main Street / US-421 N and continue on US-421 N for approximately 9.5 miles.
2. Turn right onto Dean Road and travel approximately 0.3 miles.
3. Turn left to stay on Dean Road and travel approximately 0.2 miles.
4. Turn right to stay on Dean road and travel approximately 0.4 miles. The destination will be on the right at 427 Dean Road, McKee, KY.
5. The site coordinates are
 - a. North 37 deg 29' 38.99
 - b. West 84 deg 06' 57.67



Prepared by:
Aaron L. Roof
Pike Legal Group PLLC
1578 Highway 44 East, Suite 6
P.O. Box 369
Shepherdsville, KY 40165-3069
Telephone: 502-955-4400 or 800-516-4293



EXHIBIT M
COPY OF 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. William O. Smith
Jackson County Judge Executive
P.O. Box 175
McKee, KY 40447

RE: Notice of Proposal to Construct Wireless Communications Facility
Kentucky Public Service Commission Docket No. 2014-00103
Site Name: Clover Bottom Creek

Dear Judge Smith:

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 427 Dean Road, McKee, KY 40447 (37°29'38.99" North latitude, 84°06'57.67" West longitude). The proposed facility will include a 255-foot tall antenna tower, plus a 10-foot lightning arrester 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 2014-00103 in any correspondence sent in connection with this matter.

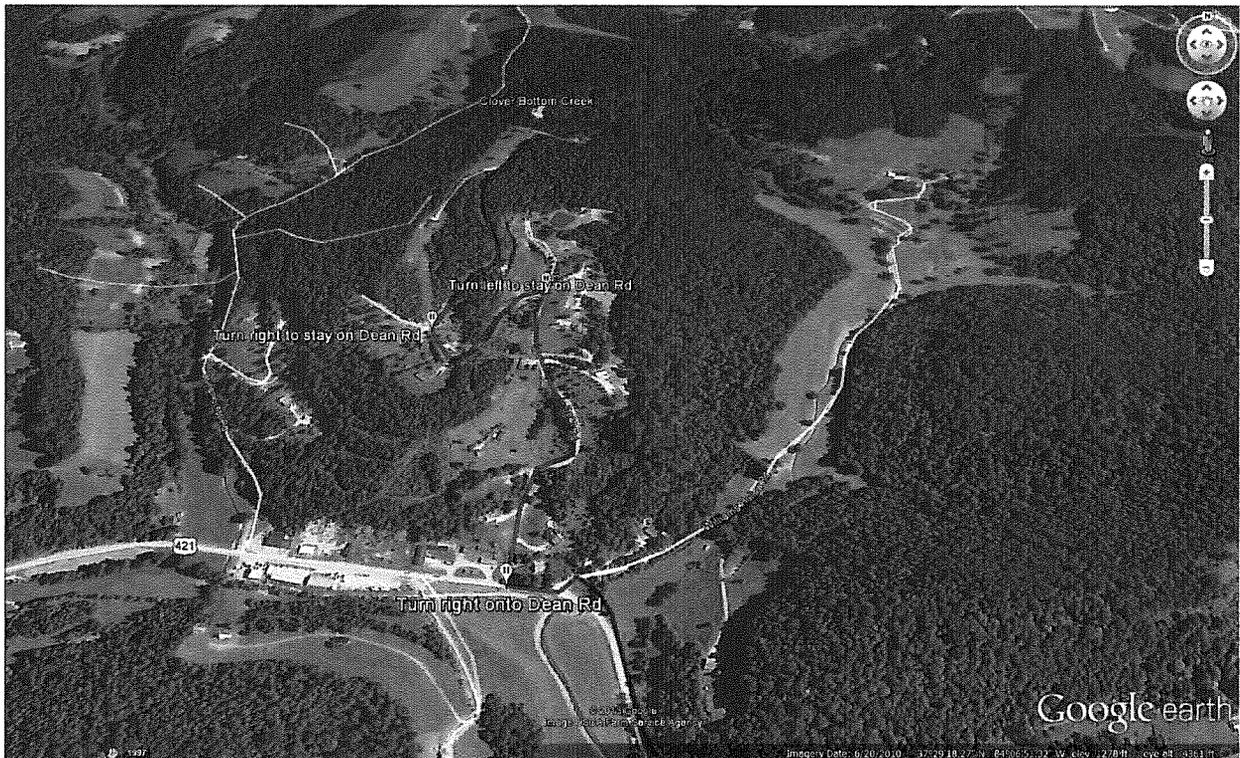
We have attached driving directions showing the site location for the proposed tower. AT&T Mobility's radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers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

Sincerely,

David A. Pike
Attorney for AT&T Mobility
enclosure

Driving Directions to Proposed Tower Site at Clover Bottom Creek

1. Beginning at the corner of First Street and Main Street in McKee, Kentucky, travel east on Main Street / US-421 N and continue on US-421 N for approximately 9.5 miles.
2. Turn right onto Dean Road and travel approximately 0.3 miles.
3. Turn left to stay on Dean Road and travel approximately 0.2 miles.
4. Turn right to stay on Dean road and travel approximately 0.4 miles. The destination will be on the right at 427 Dean Road, McKee, KY.
5. The site coordinates are
 - a. North 37 deg 29' 38.99
 - b. West 84 deg 06' 57.67



Prepared by:
Aaron L. Roof
Pike Legal Group PLLC
1578 Highway 44 East, Suite 6
P.O. Box 369
Shepherdsville, KY 40165-3069
Telephone: 502-955-4400 or 800-516-4293



EXHIBIT N
COPY OF POSTED NOTICES



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 TELEFAX: 606-287-7196

The Jackson County Sun
Attn: Jim Brummett
101 Main Street
P.O. Box 130
McKee, KY 40447

RE: Legal Notice Advertisement
Site Name: Clover Bottom Creek

Dear Jamie:

Please publish the following legal notice advertisement in the next edition of *The Jackson County Sun*:

NOTICE

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 427 Dean Road, McKee, KY 40447 (37°29'38.99" North latitude, 84°06'57.67" West longitude). 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 2014-00103 in any correspondence sent in connection with this matter.

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

Sincerely,
Aaron L. Roof
Pike Legal Group, PLLC

SITE NAME: CLOVER BOTTOM 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 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 (800) 516-4293, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number Case No. 2014-00103 in your correspondence.

New Cingular Wireless PCS, LLC 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 (800) 516-4293, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number Case No. 2014-00103 in your correspondence.



EXHIBIT O
COPY OF RADIO FREQUENCY DESIGN SEARCH AREA

Aerial Map with Ring Marked

