## COMMONWEALTH OF KENTUCKY BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:
THE APPLICATION OF NEW CINGULAR WIRELESS PCS, LLC FOR ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A WIRELESS COMMUNICATIONS FACILITY IN THE COMMONWEALTH OF KENTUCKY IN THE COUNTY OF GRAYSON

RECEIVED
JAN 102014
PUBLIC SERVICE COMMISSION

SITE NAME: LEITCHFIELD SOUTH

## 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 $\S \S 278.020(1), 278.040,278.650,278.665$, and other statutory authority.
3. The Certificate of Authority filed with the Kentucky Secretary of State for the Applicant entity was attached to a prior application and is part of the case record for PSC case number 2011-00473 and is hereby incorporated by reference.
4. The Applicant operates on frequencies licensed by the Federal Communications Commission ("FCC") pursuant to applicable FCC requirements. A copy of the Applicant's FCC 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 397 Victory Heights Road, Leitchfield, Kentucky 42754 ( $37^{\circ} 27^{\prime} 38.42^{\prime \prime}$ North latitude, $86^{\circ} 17^{\prime} 39.27^{\prime \prime}$ 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 The Herbert R. and Patsy F. Swift Trust pursuant to a Deed recorded at Deed Book 380, Page 555 in the office of the Grayson County Clerk. The proposed WCF will consist of a 190-foot tall tower, with an approximately 9 -foot tall lightning arrestor attached at the top, for a total height of 199-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 an analysis stating that no notice to the Federal Aviation Administration ("FAA") is required to build a tower on this site is attached as Exhibit F.
12. A copy of a statement from the Kentucky Airport Zoning Commission ("KAZC") stating that no notice is required to construct a tower on this site 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 $\mathbf{C}$ 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 Ron Rohr, 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 an appropriate scale that shows the location of the proposed tower and identifies every owner of real estate within 500 feet of the proposed tower (according to the records maintained by the County Property Valuation Administrator). Every structure and every easement within 500 feet of the proposed tower or within 200 feet of the access road including intersection with the public street system is illustrated in Exhibit B.
20. Applicant has notified every person who, according to the records of the County Property Valuation Administrator, owns property which is within 500 feet of the proposed tower or contiguous to the site property, by certified mail, return receipt requested, of the proposed construction. Each notified property owner has been provided with a map of the location of the proposed construction, the 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 also been published in a newspaper of general circulation in the county in which the WCF is proposed to be located.
23. The general area where the proposed facility is to be located is a wooded hilltop with sparse rural residences.
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 $\mathbf{O}$.
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
to:
David A. Pike
Pike Legal Group, PLLC
1578 Highway 44 East, Suite 6
P. O. Box 369
Shepherdsville, KY 40165-0369
Telephone: (502) 955-4400
Telefax: (502) 543-4410
Email: dpike@pikelegal.com
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 $\S \S 278.020(1), 278.650$, 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. . 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 Listand 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

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EXHIBIT A
FCC LICENSE DOCUMENTATION

ULS License

## Cellular License - KNKN748 - NEW CINGULAR WIRELESS PCS, LLC

[ This license has pending applications: 0006003502

| Call Sign | KNKN748 | Radio Service <br> Auth Type | CL-Cellular <br> Regular |
| :--- | :--- | :--- | :--- |
| Status | Active |  |  |
| Market |  | Phase | 2 |
| Market | CMA445 - Kentucky 3-Meade | Channel Block | A |
| Submarket | 0 |  |  |
| Dates |  | Expiration | $10 / 01 / 2021$ |
| Grant | $08 / 30 / 2011$ | Cancellation |  |
| Effective | $11 / 24 / 2012$ |  |  |

Five Year Buildout Date
01/06/1997

## Control Points

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

Licensee
FRN 0003291192 Type Limited Liability Company

## Licensee

NEW CINGULAR WIRELESS PCS, LLC
P:(972)234-7003
2200 N. Greenville Ave, 1 W
Richardson, TX 75082
ATTN Reginald Youngblood

F:(972)301-6893
E:FCCMW@att.com

## Contact

AT\&T MOBILITY LLC P:(202)457-2055
MICHAEL P GOGGIN F:(202)457-3073
1120 20TH STREET, NW, SUITE 1000 E:MG7268@ATT.COM
WASHINGTON, DC 20036

## 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 - KNLG923-NEW CINGULAR WIRELESS PCS, LLC 

| Call Sign | KNLG923 | Radio Service <br> Auth Type | CW - PCS Broadband <br> Regular |
| :--- | :--- | :--- | :--- |
| Status | Active |  |  |
| Market |  | Channel Block | F |
| Market | BTA263 - Louisville, KY | Associated | 001890.00000000 - |
| Submarket | 0 | Frequencies | 001895.00000000 |
|  |  | (MHz) | $001970.00000000-$ |
|  |  |  | 001975.00000000 |

## Dates

Grant
Grant

09/28/2007
Effective
11/24/2012
Expiration 08/21/2017

Buildout Deadlines
1st 08/21/2002 2nd

## Notification Dates

1st 10/05/2001
2nd

## Licensee

FRN 0003291192 Type Limited Liability Company

## Licensee

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

## 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

# 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-LexingtonEvansvill | Channel Block | A |
| Submarket | 19 | Associated Frequencies (MHz) | $\begin{aligned} & 001850.00000000- \\ & 001865.00000000 \\ & 001930.00000000- \\ & 001945.00000000 \end{aligned}$ |
| Dates |  |  |  |
| Grant | 07/07/2005 | Expiration | 06/23/2015 |
| Effective | 11/24/2012 | Cancellation |  |
| Buildout Deadlines |  |  |  |
| 1st | 06/23/2000 | 2nd | 06/23/2005 |
| 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, 1 W
Richardson, TX 75082
ATTN Reginald Youngblood

P:(972)234-7003
F:(972)301-6893
E:FCCMW@att.com

P:(202)457-2055
F:(202)457-3073
E:michael.p.goggin@att.com

## Contact

AT\&T MOBILITY LLC
Michael P Goggin
1120 20th Street, NW - Suite 1000
Washington, DC 20036
ATTN Michael P. Goggin

## EXHIBIT B

## SITE DEVELOPMENT PLAN:

500' VICINITY MAP
LEGAL DESCRIPTIONS
FLOOD PLAIN CERTIFICATION
SITE PLAN
VERTICAL TOWER PROFILE
 <br> \title{
Stat <br> \title{
Stat <br> SITE NAME: <br> LEITCHFIELD KYEVU3354 <br> SOUTH
}

> PROPOSED RAW LAND SITE WITH NEW 190 FT MONOPOLE TOWER WITH A 9 FT LIGHTNING ARRESTOR


Know what's below Call before you dig.
PROJECT INFORMATION







-
-

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## EXHIBIT C

## TOWER AND FOUNDATION DESIGN

## AMERICAN TOWER"

CORPORATION

11/7/13

RE:
Dear Commissioners:

The construction manager for the proposed new communications facility will be Ron Rohr. His contact information is 740-438-9710. Ron Rohr has been involved in the construction of communications facilities for over 17 years, and general construction for over 20 years.

Some of the notable and most recent projects are:

## 2010 - Present

American Tower Corporation - Construction Manager

- Successfully led the construction team on the 140 site, Southern Ohio Launch while maintaining a respectful and professional demeanor under difficult circumstances.
- Played a key part in the collaborating efforts to build the scope of work, pricing matrix, and close out documentation on several projects.
- Have cultivated a pool of responsible, dependable and quality driven GC's to work on ATC projects throughout the Midwest and Northeast Region.


## 1990-2009

Superior Concepts - Owner

- Contract Project and Construction Manager to multiple wireless carriers. Work included, but not limited to, permitting all the way through to final construction close outs. Also managed several DAS projects in shopping malls and residential areas.
- Equipment operator, cell site super intendant, regional foreman, etc...
- Carpentry, Construction and Consulting


## Accreditations and Licenses

OSHA Electrical Safety
Vallen Safety Knowledge Systems / Fall Protection
Builders Exchange of Central Ohio / Estimating \& Bid Preparation
Amphenol Wireless Cable Connector Training
Commscope Connector Training
Andrew Connector Training
Current OSHA Safety Training
Current Haz Com Training
FAA/FCC Training

Thank you,


## Ron Rohr

Construction Manager

1 Faimolm Avenue Peoria, IL G1603 USA Phone 309-566-3000 FAX 309-566-3079

PURCHASER:
NAME OF PROJECT:

FILE NUMBER:
DRAWING NUMBER:

## AMERICAN TOWER CORPORATION

## LEITCHFIELD SOUTH 281922, GRAYSON COUNTY, KENTUCKY 190 FT TAPERED STEEL POLE

208656
208656-01-D1, 208656-01-F1, A810214R8 AND B010356R10

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

CERTIFIED BY:



## FOUNDATION AND ANCHOR TOLERANCES ALL FOUNDATIONS

1. CONCRETE DIMENSIONS - PLUS OR MINUS $1^{\prime \prime}$ ( 25 mm ).
2. DEPTH OF FOUNDATION - PLUS $3^{\prime \prime}(76 \mathrm{~mm})$ OR MINUS $0^{\circ}$.
3. DRILLED FOUNDATIONS OUT OF PLUMB - 1.0 DEGREE.
4. REINFORCING STEEL PLACEMENT - PER A.C.I. 301.
5. PROJECTION OF EMBEDMENTS - PLUS OR MINUS $1 / 8^{\prime \prime}(3 \mathrm{~mm})$.
6. VERTICAL EMBEDMENTS OUT OF PLUMB - 0.5 DEGREE.

## ANCHOR BOLTS

7. MAXIMUM DISTANCE FROM CENTERLINE OF ANCHOR BOLTS TO CENTERLINE OF FOUNDATION - $1 / 24$ OF PIER DIAMETER UP TO A MAXIMUM OF 2" (51mm)
8. ANCHOR BOLT SPACING - $1 / 16^{\prime \prime}(2 \mathrm{~mm})$.
9. ANCHOR BOLT CIRCLE DIAMETER - PLUS OR MINUS $1 / 16^{\prime \prime}(2 \mathrm{~mm})$

## SELF-SUPPORTINGं TOWERS

11. FACE SPREAD DIMENSION CENTER TO CENTER OF ANCHOR BOLT CIRCLES PLUS OR MINUS $1 / 16^{\prime \prime}(2 \mathrm{~mm})$ OR $1 / 16^{\prime \prime}(2 \mathrm{~mm})$ PER 20 FT . ( 6 m ) OF FACE SPREAD.
12. MAXIMUM DIFFERENCE BETWEEN ANY TWO FOUNDATION ELEVATIONS $1 / 2^{\prime \prime}$ (13mm).

## GUYED TOWERS

13. GUY RADIUS - PLUS OR MINUS 5\% OF DISTANCE SPECIFIED.
14. ANCHOR ELEVATION - PLUS OR MINUS 5\% OF GUY RADIUS
15. ANCHOR ALIGNMENT (PERPENDICULAR TO GUY RADIUS) - 1.0 DEGREE.
16. ANCHOR ROD SLOPE - PLUS OR MINUS 1.0 DEGREE.
17. ANCHOR ROD ALIGNMENT WITH GUY RADIUS PLUS OR MINUS 10 DEGREE
18. ANCHOR ROD ALIGNMENT WITH GUY RADIUS PLUS OR MINUS 1.0 DEGREE.
19. ANCHOR HEAD OUT OF PLUMB - 1.0 DEGREE.
20. GUY INITIAL TENSION - PLUS OR MINUS $10 \%$ OF TENSION SPECIFIED.

NOTE: TOLERANCES IN NOTES 13 AND 14 CAN NOT OCCUR SIMULTANEOUSLY

## WARNING!!

AFTER ANCHOR BOLTS ARE INSTALLED IN CONCRETE HAS TAKEN ITS INITIAL SET, ANCHOR BOLTS MUST NOT BE MOVED, BENT OR REALIGNED IN ANY MANNER. A NUT LOCKING DEVICE MUST BE INSTALLED ON ALL ANCHOR BOLTS.


P.O. Box 5999

Peoria, IL 61603 USA
Phone 309-566-3000
FAX 309-566-3079
Toll Free $800-727-$ ROHN

November 26, 2013
American Tower Corporation
1898 Leland Drive
Marietta, GA 30067

Attention: Mr. Ron Rohr
Reference: $\quad 190^{\circ}$ Tapered Steel Pole
Site \# 281922 Leitchfield South, Grayson County KY
Rohn File \#: 208656

Dear Mr. Rohr:

The referenced pole is designed to meet the specified loading requirements in accordance with the ANSI/TIA/EIA-222-G ANSI/TIA/EIA-222-G-2005 for 90 MPH 3-second wind speed with no ice and 30 MPH 3 second gust wind speed with 0.75 inches radial ice. Structure Class: II; Exposure Category: C; Topographic Category: 1.

It is our understanding that the design of the referenced pole may require consideration of a contained fall radius in the event a catastrophic wind speed were to result in a failure. Although the pole is not designed to fail, stronger sections than required by analysis are provided in the lower portion of the pole. This would result in an increased safety factor in the lower sections. This design would enable the pole to fail through a combination of bending and buckling in the upper portion of the pole should a catastrophic wind loading occur. Failure in this manner would result in the upper portion of the pole folding over the lower portion resulting in a fall radius equal to 50 feet. The failure mode would theoretically be a local buckling failure involving a crippling of the pole on one side of the pole as opposed to the pole shearing off or completely breaking off and hitting the ground.

Please contact us at your convenience should you have further questions concerning the safety of pole structures or other aspects of pole design.


ROHN Products LLC.

File: Customer: Site: Type:

208656 Site: 1 Cycle: 1 Design: 1 Engineer: don_g AMERICAN TOWER CORPORATION LEITCHFIELD SOUTH 281922 , KY POLE-TPR
Pole: Tapered Steel


POLE SHAFT PROPERTIES:


Design Bend Radius $=2.5$ inches
POLE SHAFT SECTION MAXIMUM FORCES AND MOMENTS:


Total Shaft steel weight $=34.784$ kips

File:
Customer:
Site:
Type:

208656 Site: 1 Cycle: 1 Design: 1 Engineer: don_g AMERICAN TOWER CORPORATION LEITCHFIELD SOUTH 281922
POLE-TPR
Pole: Tapered Steel

Page: 2
11/26/2013
11:06 AM

PROPERTIES:
( © Max Segment $=5.0 \mathrm{ft}$ )

| Node No. | Node Elev. <br> (ft) | $\begin{array}{r} \text { Diam. } \\ \text { Across } \\ \text { Flats } \\ \text { (in) } \\ \hline \end{array}$ | Wa11 <br> Thick <br> [t] <br> (in) | $[\mathrm{W} / \mathrm{t}]$ <br> Ratio | Diam/ <br> Thick <br> [D/t] <br> Ratio | $\begin{gathered} \text { Area } \\ \left(\text { in^2 }^{2}\right) \\ \hline \end{gathered}$ | $\left(\operatorname{in}^{\wedge} 4\right)^{J}$ | $\left(\operatorname{in}^{\wedge} 4\right)$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 58 | 190.000 | 24.00 | 0.1875 | 17.52 | 128.00 | 14.17 | 2035.5 | 1015.2 |
| 57 | 185.667 | 24.89 | 0.1875 | 18.35 | 132.73 | 14.70 | 2271.4 | 1132.9 |
| 56 | 181.333 | 25.77 | 0.1875 | 19.18 | 137.46 | 15.23 | 2525.0 | 1259.3 |
| 55 | 177.000 | 26.66 | 0.1875 | 20.02 | 142.19 | 15.75 | 2796.6 | 1394.8 |
| 54 | 172.667 | 27.55 | 0.1875 | 20.85 | 146.91 | 16.28 | 3087.2 | 1539.7 |
| 53 | 168.333 | 28.43 | 0.1875 | 21.68 | 151.64 | 16.81 | 3397.1 | 1694.3 |
| 52 | 164.000 | 29.32 | 0.1875 | 22.52 | 156.37 | 17.34 | 3727.2 | 1859.0 |
| 51 | 159.667 | 30.21 | 0.1875 | 23.35 | 161.10 | 17.86 | 4077.9 | 2033.9 |
| 50 | 155.333 | 31.09 | 0.1875 | 24.19 | 165.83 | 18.39 | 4450.1 | 2219.5 |
| 49 | 151.000 | 31.98 | 0.1875 | 25.02 | 170.56 | 18.92 | 4844.2 | 2416.1 |
| 480 | 146.667 | 32.87 | 0.1875 | 25.85 | 175.29 | 19.45 | 5260.8 | 2623.9 |
| 481 | 146.667 | 32.33 | 0.2500 | 18.92 | 129.32 | 25.45 | 6636.1 | 3309.8 |
| 47 | 142.250 | 33.23 | 0.2500 | 19.56 | 132.94 | 26.17 | 7212.8 | 3597.4 |
| 46 | 140.000 | 33.69 | 0.2500 | 19.89 | 134.78 | 26.54 | 7519.2 | 3750.3 |
| 45 | 137.750 | 34.16 | 0.2500 | 20.21 | 136.62 | 26.90 | 7834.1 | 3907.3 |
| 44 | 135.500 | 34.62 | 0.2500 | 20.54 | 138.46 | 27.27 | 8157.8 | 4068.7 |
| 43 | 133.250 | 35.08 | 0.2500 | 20.86 | 140.30 | 27.63 | 8490.1 | 4234.5 |
| 42 | 131.000 | 35.54 | 0.2500 | 21.19 | 142.15 | 28.00 | 8831.5 | 4404.7 |
| 41 | 128.750 | 36.00 | 0.2500 | 21.51 | 143.99 | 28.36 | 9181.8 | 4579.5 |
| 40 | 126.500 | 36.46 | 0.2500 | 21.83 | 145.83 | 28.73 | 9541.3 | 4758.8 |
| 39 | 124.250 | 36.92 | 0.2500 | 22.16 | 147.67 | 29.10 | 9910.0 | 4942.7 |
| 38 | 122.000 | 37.38 | 0.2500 | 22.48 | 149.52 | 29.46 | 10288.1 | 5131.3 |
| 37 | 119.750 | 37.84 | 0.2500 | 22.81 | 151.36 | 29.83 | 10675.7 | 5324.6 |
| 360 | 117.208 | 38.36 | 0.2500 | 23.18 | 153.44 | 30.24 | 11125.2 | 5548.7 |
| 371 | 119.750 | 37.18 | 0.3125 | 17.81 | 118.98 | 36.57 | 12590.6 | 6279.7 |
| 36 | 117.208 | 37.70 | 0.3125 | 18.10 | 120.64 | 37.08 | 13131.2 | 6549.2 |
| 35 | 114.667 | 38.22 | 0.3125 | 18.39 | 122.31 | 37.60 | 13686.9 | 6826.4 |
| 34 | 111.967 | 38.77 | 0.3125 | 18.70 | 124.08 | 38.15 | 14294.5 | 7129.5 |
| 33 | 109.267 | 39.33 | 0.3125 | 19.02 | 125.84 | 38.70 | 14919.7 | 7441.3 |
| 32 | 106.567 | 39.88 | 0.3125 | 19.33 | 127.61 | 39.24 | 15563.0 | 7762.1 |
| 31 | 103.867 | 40.43 | 0.3125 | 19.64 | 129.38 | 39.79 | 16224.4 | 8092.0 |
| 30 | 101.167 | 40.98 | 0.3125 | 19.95 | 131.15 | 40.34 | 16904.4 | 8431.2 |
| 29 | 98.467 | 41.54 | 0.3125 | 20.26 | 132.92 | 40.89 | 17603.1 | 8779.6 |
| 28 | 95.767 | 42.09 | 0.3125 | 20.58 | 134.69 | 41.44 | 18320.7 | 9137.6 |
| 27 | 93.067 | 42.64 | 0.3125 | 20.89 | 136.46 | 41.99 | 19057.6 | 9505.1 |
| 26 | 90.367 | 43.20 | 0.3125 | 21.20 | 138.23 | 42.53 | 19814.1 | 9832.4 |
| 25 | 87.667 | 43.75 | 0.3125 | 21.51 | 140.00 | 43.08 | 20590.1 | 10269.4 |
| 240 | 84.708 | 44.35 | 0.3125 | 21.85 | 141.93 | 43.68 | 21463.5 | 10705.1 |
| 25 I | 87.667 | 42.97 | 0.3750 | 17.50 | 114.58 | 50.70 | 23298.3 | 11620.2 |
| 24 | 84.708 | 43.57 | 0.3750 | 17.79 | 116.20 | 51.42 | 24306.4 | 12123.0 |
| 23 | 81.750 | 44.18 | 0.3750 | 18.07 | 117.81 | 52.14 | 25343.2 | 12640.1 |
| 22 | 78.375 | 44.87 | 0.3750 | 18.39 | 119.65 | 52.96 | 26560.1 | 13247.0 |
| 21 | 75.000 | 45.56 | 0.3750 | 18.72 | 121.49 | 53.78 | 27815.4 | 13873.1 |
| 20 | 71.625 | 46.25 | 0.3750 | 19.04 | 123.34 | 54.60 | 29109.7 | 14518.7 |
| 19 | 68.250 | 46.94 | 0.3750 | 19.37 | 125.18 | 55.42 | 30443.5 | 15183.9 |
| 18 | 64.875 | 47.63 | 0.3750 | 19.69 | 127.02 | 56.24 | 31817.5 | 15869.2 |
| 17 | 61.500 | 48.32 | 0.3750 | 20.02 | 128.86 | 57.07 | 33232.1 | 16574.7 |
| 16 | 58.125 | 49.01 | 0.3750 | 20.34 | 130.70 | 57.89 | 34688.0 | 17300.9 |
| 15 | 54.750 | 49.70 | 0.3750 | 20.67 | 132.54 | 58.71 | 36186.1 | 18048.0 |
| 14 | 51.375 | 50.39 | 0.3750 | 20.99 | 134.38 | 59.53 | 37726.4 | 18816.3 |
| 13 | 48.000 | 51.08 | 0.3750 | 21.32 | 136.22 | 60.35 | 39310.1 | 19606.1 |
| 120 | 44.583 | 51.78 | 0.3750 | 21.64 | 138.08 | 61.18 | 40957.5 | 20427.8 |
| 131 | 48.000 | 50.18 | 0.4375 | 17.86 | 114.70 | 69.07 | 43294.2 | 21593.3 |
| 12 | 44.583 | 50.88 | 0.4375 | 18.14 | 116.30 | 70.04 | 45144.3 | 22516.0 |
| 11 | 41.167 | 51.58 | 0.4375 | 18.42 | 117.89 | 71.01 | 47046.7 | 23464.8 |
| 10 | 37.050 | 52.42 | 0.4375 | 18.76 | 119.82 | 72.18 | 49409.5 | 24643.3 |

ROHN Products LLC.


| Node No. | Node Elev. <br> (ft) | $\begin{array}{r} \text { Diam. } \\ \text { Across } \\ \text { Flats } \\ \text { (in) } \\ \hline \end{array}$ | $\begin{array}{r} \text { Wall } \\ \text { Thick } \\ {[t]} \\ \text { (in) } \\ \hline \end{array}$ | $\begin{aligned} & {[\mathrm{W} / \mathrm{t}]} \\ & \text { Ratio } \end{aligned}$ | Diam/ <br> Thick <br> [D/t] <br> Ratio | $\begin{gathered} \text { Area } \\ \left(i^{\wedge} 2\right) \\ \hline \end{gathered}$ | $\begin{array}{r} \mathrm{J} \\ \left(\operatorname{in}^{\wedge} 4\right) \\ \hline \end{array}$ | $\left(i n^{\wedge} 4\right)^{I}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 9 | 32.933 | 53.26 | 0.4375 | 19.10 | 121.74 | 73.35 | 51850.2 | 25860.6 |
| 8 | 28.817 | 54.10 | 0.4375 | 19.44 | 123.67 | 74.52 | 54369.9 | 27117.3 |
| 7 | 24.700 | 54.95 | 0.4375 | 19.78 | 125.59 | 75.69 | 56970.0 | 28414.1 |
| 6 | 20.583 | 55.79 | 0.4375 | 20.12 | 127.52 | 76.86 | 59651.6 | 29751.6 |
| 5 | 16.467 | 56.63 | 0.4375 | 20.46 | 129.44 | 78.03 | 62416.2 | 31130.4 |
| 4 | 12.350 | 57.47 | 0.4375 | 20.80 | 131.37 | 79.20 | 65264.8 | 32551.2 |
| 3 | 8.233 | 58.32 | 0.4375 | 21.14 | 133.29 | 80.37 | 68198.8 | 34014.6 |
| 2 | 4.117 | 59.16 | 0.4375 | 21.47 | 135.22 | 81.54 | 71219.5 | 35521.2 |
| 1 | 0.000 | 60.00 | 0.4375 | 21.81 | 137.14 | 82.71 | 74328.1 | 37071.6 |


| File: | 208656 Site: 1 Cycle: 1 Design: 1 Engineer: don_g | Page: 4 |  |
| :--- | :--- | ---: | :--- |
| Customer: | AMERICAN TOWER CORPORATION |  | $11 / 26 / 2013$ |
| Site: | LEITCHEIELD SOUTH 281922 |  | $11: 06$ AM |
| Type: | POLE-TPR |  |  |

## DISCRETE APPURTENANCE PROPERTIES



File: Customer: Site: Type:

208656 Site: 1 Cycle: 1 Design: 1 Engineer: don_g AMERICAN TOWER CORPORATION LEITCHFIELD SOUTH 281922 POLE-TPR
Pole: Tapered Steel

Page: 5
11/26/2013 11:06 AM

## PRESSURES

|  | Elev. |  | W/o Ice |  | With Ice |  | Operational |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Seg. | (ft) | kz | $\mathrm{G}_{\mathrm{h}} \cdot \mathrm{q} z$ | Cf | $\mathrm{G}_{\mathrm{h}} \cdot \mathrm{q} 2$ | Cf | $\mathrm{G}_{\mathrm{h}} \cdot \mathrm{q} \mathrm{Z}$ | Cf |
| 1-11 | 187.833 | 1.445 | 31.317 | 0.650 | 3.480 | 1.200 | 12.454 | 0.650 |
| 1-10 | 183.500 | 1.438 | 31.164 | 0.650 | 3.463 | 1.200 | 12.393 | 0.650 |
| 1-9 | 179.167 | 1.431 | 31.007 | 0.650 | 3.445 | 1. 200 | 12.330 | 0.650 |
| 1-8 | 174.833 | 1.424 | 30.848 | 0.650 | 3.428 | 1.200 | 12.267 | 0.650 |
| 1-7 | 170.500 | 1.416 | 30.685 | 0.650 | 3.409 | 1.200 | 12.202 | 0.650 |
| 1-6 | 166.167 | 1.408 | 30.519 | 0.650 | 3.391 | 1.200 | 12.136 | 0.650 |
| 1-5 | 161.833 | 1.401 | 30.350 | 0.650 | 3.372 | 1.200 | 12.069 | 0.650 |
| 1-4 | 157.500 | 1.393 | 30.177 | 0.650 | 3.353 | 1.200 | 12.000 | 0.650 |
| 1-3 | 153.167 | 1.384 | 30.000 | 0.650 | 3.333 | 1.200 | 11.930 | 0.650 |
| 1-2 | 148.833 | 1.376 | 29.820 | 0.650 | 3.313 | 1.200 | 11.858 | 0.650 |
| 1-1 | 144.458 | 1.368 | 29.633 | 0.650 | 3.293 | 1.200 | 11.784 | 0.650 |
| 2-13 | 144.458 | 1.368 | 29.633 | 0.650 | 3.293 | 1.200 | 11.784 | 0.650 |
| 2-12 | 141.125 | 1.361 | 29.488 | 0.650 | 3.276 | 1.200 | 11.726 | 0.650 |
| 2-11 | 138.875 | 1.356 | 29.388 | 0.650 | 3.265 | 1.200 | 11.686 | 0.650 |
| 2-10 | 136.625 | 1.352 | 29.287 | 0.650 | 3.254 | 1.200 | 11.646 | 0.650 |
| 2-9 | 134.375 | 1.347 | 29.185 | 0.650 | 3.243 | 1.200 | 11.606 | 0.650 |
| 2-8 | 132.125 | 1.342 | 29.081 | 0.650 | 3.231 | 1.200 | 11.565 | 0.650 |
| 2-7 | 129.875 | 1.337 | 28.976 | 0.650 | 3.220 | I. 200 | 11.523 | 0.650 |
| 2-6 | 127.625 | 1.332 | 28.870 | 0.650 | 3.208 | 1.200 | 11.480 | 0.650 |
| 2-5 | 125. 375 | 1.327 | 28.762 | 0.650 | 3.196 | 1.200 | 11.438 | 0.650 |
| 2-4 | 123.125 | 1.322 | 28.653 | 0.650 | 3.184 | 1.200 | 11.394 | 0.650 |
| 2-3 | 120.875 | 1.317 | 28.542 | 0.650 | 3.171 | 1.200 | 11.350 | 0.650 |
| 2-2 | 118.479 | 1.312 | 28.422 | 0.650 | 3.158 | 1.200 | 11.302 | 0.650 |
| 2-1 | 115.938 | 1.306 | 28.292 | 0.650 | 3.144 | 1.200 | 11.251 | 0.650 |
| 3-14 | 118.479 | 1.312 | 28.422 | 0.650 | 3.158 | 1.200 | 11.302 | 0.650 |
| 3-13 | 115.938 | 1.306 | 28.292 | 0.650 | 3.144 | 1.200 | 11.251 | 0.650 |
| 3-12 | 113.317 | 1.299 | 28.156 | 0.650 | 3.128 | 1.200 | 11.197 | 0.650 |
| 3-11 | 110.617 | 1.293 | 28.014 | 0.650 | 3.113 | 1.200 | 11.140 | 0.650 |
| 3-10 | 107.917 | 1.286 | 27.868 | 0.650 | 3.096 | 1.200 | 11.082 | 0.650 |
| 3-9 | 105.217 | 1.279 | 27.720 | 0.650 | 3.080 | 1.200 | 11.023 | 0.650 |
| 3-8 | 102.517 | 1.272 | 27.569 | 0.650 | 3.063 | 1.200 | 10.963 | 0.650 |
| 3-7 | 99.817 | 1.265 | 27.414 | 0.650 | 3.046 | 1.200 | 10.902 | 0.650 |
| 3-6 | 97.117 | 1.258 | 27.256 | 0.650 | 3.028 | 1.200 | 10.839 | 0.650 |
| 3-5 | 94.417 | 1.250 | 27.095 | 0.650 | 3.011 | 1.200 | 10.775 | 0.650 |
| 3-4 | 91.717 | 1.243 | 26.930 | 0.650 | 2.992 | 1.200 | 10.709 | 0.650 |
| 3-3 | 89.017 | 1.235 | 26.761 | 0.650 | 2.973 | 1.200 | 10.642 | 0.650 |
| 3-2 | 86.188 | 1.227 | 26.580 | 0.650 | 2.953 | 1.200 | 10.570 | 0.650 |
| 3-1 | 83.229 | 1.218 | 26.385 | 0.650 | 2.932 | 1.200 | 10.492 | 0.650 |
| 4-14 | 85.188 | 1.227 | 26.580 | 0.650 | 2.953 | 1.200 | 10.570 | 0.650 |
| 4-13 | 83.229 | 1.218 | 26.385 | 0.650 | 2.932 | 1.200 | 10.492 | 0.650 |
| 4-12 | 80.063 | 1.208 | 26.171 | 0.650 | 2.908 | 1.200 | 10.407 | 0.650 |
| 4-11 | 75.688 | 1.197 | 25.934 | 0.650 | 2.882 | 1.200 | 10.313 | 0.650 |
| 4-10 | 73.313 | 1.186 | 25.690 | 0.650 | 2.854 | 1.200 | 10.216 | 0.650 |
| 4-9 | 69.938 | 1.174 | 25.436 | 0.650 | 2.826 | 1.200 | 10.115 | 0.650 |
| 4-8 | 65.563 | 1.162 | 25.173 | 0.650 | 2.797 | 1.200 | 10.010 | 0.650 |
| 4-7 | 63.188 | 1.149 | 24.898 | 0.650 | 2.766 | 1.200 | 9.901 | 0.650 |
| 4-6 | 59.813 | 1.136 | 24.612 | 0.650 | 2.735 | 1.200 | 9.787 | 0.650 |
| 4-5 | 56.438 | 1.122 | 24.313 | 0.650 | 2.701 | 1.200 | 9.668 | 0.650 |
| 4-4 | 53.063 | 1.108 | 24.000 | 0.650 | 2.667 | 1.200 | 9.544 | 0.650 |
| 4-3 | 49.688 | 1.092 | 23.670 | 0.650 | 2.630 | 1.200 | 9.413 | 0.650 |
| 4-2 | 46.292 | 1.076 | 23.320 | 0.650 | 2.591 | 1.200 | 9.273 | 0.650 |
| 4-1 | 42.875 | 1.059 | 22.946 | 0.650 | 2.550 | 1.200 | 9.125 | 0.650 |
| 5-12 | 46.292 | 1.076 | 23.320 | 0.650 | 2.591 | 1.200 | 9.273 | 0.650 |
| 5-11 | 42.875 | 1.059 | 22.946 | 0.650 | 2.550 | 1.200 | 9.125 | 0.650 |
| 5-10 | 39.108 | 1.039 | 22.506 | 0.650 | 2.501 | 1.200 | 8.950 | 0.650 |
| 5-9 | 34.992 | 1.015 | 21.986 | 0.650 | 2.443 | 1.200 | 8.743 | 0.650 |
| 5-8 | 30.875 | 0.988 | 21.414 | 0.650 | 2.379 | 1.200 | 8.515 | 0.650 |
| 5-7 | 26.758 | 0.959 | 20.778 | 0.650 | 2.309 | 1.200 | 8.263 | 0.650 |
| 5-6 | 22.642 | 0.926 | 20.060 | 0.650 | 2.229 | 1.200 | 7.977 | 0.650 |
| 5-5 | 18.525 | 0.887 | 19.230 | 0.650 | 2.137 | 1.200 | 7.647 | 0.650 |
| 5-4 | 14.408 | 0.850 | 18.419 | 0.650 | 2.047 | 1.200 | 7.324 | 0.650 |
| 5-3 | 10.292 | 0.850 | 18.419 | 0.650 | 2.047 | 1.200 | 7.324 | 0.650 |
| 5-2 | 6.175 | 0.850 | 18.419 | 0.650 | 2.047 | 1.200 | 7.324 | 0.650 |
| 5-1 | 2.058 | 0.850 | 18.419 | 0.650 | 2.047 | 1.200 | 7.324 | 0.650 |

File: Customer:
Site:
Type:

208656 Site: 1 Cycle: 1 Design: 1 Engineer: don_g AMERICAN TOWER CORPORATION LEITCHFIELD SOUTH 281922 POLE-TPR
Pole: Tapered Steel
Pole: Tapered Steel

MOMENTS, FORCES AND DEELECTIONS

|  |  |  | Mom |  |  |  |  | Oper | tional |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Axial | My | Mz | Vy | Vz | Torsion | Deflection | Twist | Sway |
| Node | Elev. | (kips) | ( $\mathrm{ft} \mathrm{t}-\mathrm{k}$ ) | (ft-k) | (kips) | (kips) | (ft-k) | (in) | (deg) | (deg) |
| 58 | 190.000 | 4.990 | 0.00 | 4.66 | 0.02 | 0.54 | 0.616 | - 49.129 | 0.065 | 2.445 |
| 57 | 185.667 | 2.743 | 0.00 | 27.53 | 5.73 | 0.00 | 0.000 | 46.912 | 0.063 | 2.439 |
| 56 | 181. 333 | 4.676 | 0.00 | 56.15 | 9.65 | 0.00 | 0.000 | 44.701 | 0.061 | 2.428 |
| 55 | 177.000 | 5.843 | 0.00 | 102.38 | 11.58 | 0.00 | 0.000 | 42.504 | 0.059 | 2.409 |
| 54 | 172.667 | 7.225 | 0.00 | 158.09 | 13.89 | 0.00 | 0.000 | 40.328 | 0.056 | 2.382 |
| 53 | 168.333 | 9.169 | 0.00 | 225.42 | 17.40 | 0.00 | 0.000 | 38.180 | 0.052 | 2.346 |
| 52 | 164.000 | 9.999 | 0.00 | 307.99 | 18.14 | 0.00 | 0.000 | 36.069 | 0.049 | 2.301 |
| 51 | 159.667 | 12.721 | 0.00 | 396.54 | 23.19 | 0.00 | 0.000 | 34.002 | 0.045 | 2.248 |
| 50 | 155.333 | 13.509 | 0.00 | 506.27 | 23.56 | 0.00 | 0.000 | 31.987 | 0.040 | 2.185 |
| 49 | 151.000 | 14.550 | 0.00 | 617.87 | 23.93 | 0.00 | 0.000 | 30.034 | 0.036 | 2.113 |
| 48 | 146.667 | 15.856 | 0.00 | 731.47 | 24.32 | 0.00 | 0.000 | 28.148 | 0.033 | 2.035 |
| 47 | 142.250 | 16.761 | 0.00 | 849.45 | 24.61 | 0.00 | 0.000 | 26.298 | 0.030 | 1.960 |
| 46 | 140.000 | 17.251 | 0.00 | 910.37 | 24.81 | 0.00 | 0.000 | 25.382 | 0.028 | 1.924 |
| 45 | 137.750 | 17.745 | 0.00 | 971.79 | 25.01 | 0.00 | 0.000 | 24.483 | 0.027 | 1.887 |
| 44 | 135.500 | 18.242 | 0.00 | 1033.72 | 25.22 | 0.00 | 0.000 | 23.602 | 0.026 | 1.850 |
| 43 | 133.250 | 18.743 | 0.00 | 1096.16 | 25.42 | 0.00 | 0.000 | 22.738 | 0.025 | 1.812 |
| 42 | 131.000 | 19.247 | 0.00 | 1159.09 | 25.63 | 0.00 | 0.000 | 21.893 | 0.023 | 1.773 |
| 41 | 128.750 | 19.755 | 0.00 | 1222.51 | 25.84 | 0.00 | 0.000 | 21.066 | 0.022 | 1.733 |
| 40 | 126.500 | 20.267 | 0.00 | 1286.43 | 26.05 | 0.00 | 0.000 | 20.258 | 0.021 | 1.694 |
| 39 | 124.250 | 20.782 | 0.00 | 1350.84 | 26.27 | 0.00 | 0.000 | 19.469 | 0.020 | 1.653 |
| 38 | 122.000 | 21.301 | 0.00 | 1415.73 | 26.48 | 0.00 | 0.000 | 18.698 | 0.019 | 1.613 |
| 37 | 119.750 | 22.064 | 0.00 | 1481.10 | 26.72 | 0.00 | 0.000 | 17.947 | 0.018 | 1.572 |
| 36 | 117.208 | 23.067 | 0.00 | 1555.60 | 26.96 | 0.00 | 0.000 | 17.121 | 0.017 | 1.529 |
| 36 | 117.208 | 23.067 | 0.00 | 1555.60 | 26.96 | 0.00 | 0.000 | 17.121 | 0.017 | 1.529 |
| 35 | 114.667 | 23.927 | 0.00 | 1630.83 | 27.22 | 0.00 | 0.000 | 16.318 | 0.017 | 1.486 |
| 34 | 111.967 | 24.654 | 0.00 | 1711.49 | 27.48 | 0.00 | 0.000 | 15.489 | 0.016 | 1.444 |
| 33 | 109.267 | 25.387 | 0.00 | 1792.87 | 27.75 | 0.00 | 0.000 | 14.684 | 0.015 | 1.401 |
| 32 | 106.567 | 26.126 | 0.00 | 1874.96 | 28.02 | 0.00 | 0.000 | 13.903 | 0.014 | 1.358 |
| 31 | 103.867 | 26.873 | 0.00 | 1957.75 | 28.29 | 0.00 | 0.000 | 13.146 | 0.013 | 1.316 |
| 30 | 101.167 | 27.621 | 0.00 | 2041.24 | 28.56 | 0.00 | 0.000 | 12.413 | 0.013 | 1.273 |
| 29 | 98.467 | 28.380 | 0.00 | 2125.42 | 28.83 | 0.00 | 0.000 | 11.705 | 0.012 | 1.230 |
| 28 | 95.767 | 29.146 | 0.00 | 2210.28 | 29.11 | 0.00 | 0.000 | 11.020 | 0.011 | 1.188 |
| 27 | 93.067 | 29.918 | 0.00 | 2295.83 | 29.39 | 0.00 | 0.000 | 10.360 | 0.011 | 1.145 |
| 26 | 90.367 | 30.997 | 0.00 | 2382.05 | 29.67 | 0.00 | 0.000 | 9.724 | 0.010 | 1.102 |
| 25 | 87.667 | 32.450 | 0.00 | 2469.00 | 29.96 | 0.00 | 0.000 | 9.112 | 0.010 | 1.060 |
| 24 | 84.708 | 33.975 | 0.00 | 2565.19 | 30.27 | 0.00 | 0.000 | 8.468 | 0.009 | 1.016 |
| 24 | 84.708 | 33.975 | 0.00 | 2565.19 | 30.27 | 0.00 | 0.000 | 8.468 | 0.009 | 1.016 |
| 23 | 81.750 | 35.296 | 0.00 | 2662.31 | 30.60 | 0.00 | 0.000 | 7.851 | 0.008 | 0.973 |
| 22 | 78.375 | 36.423 | 0.00 | 2774.17 | 30.96 | 0.00 | 0.000 | 7.178 | 0.008 | 0.927 |
| 21 | 75.000 | 37.562 | 0.00 | 2887.05 | 31.31 | 0.00 | 0.000 | 6.539 | 0.007 | 0.881 |
| 20 | 71.625 | 38.714 | 0.00 | 3000.95 | 31.67 | 0.00 | 0.000 | 5.931 | 0.007 | 0.835 |
| 19 | 68.250 | 39.877 | 0.00 | 3115.86 | 32.03 | 0.00 | 0.000 | 5.356 | 0.006 | 0.790 |
| 18 | 64.875 | 41.053 | 0.00 | 3231.75 | 32.38 | 0.00 | 0.000 | 4.813 | 0.006 | 0.745 |
| 17 | 61.500 | 42.241 | 0.00 | 3348.61 | 32.75 | 0.00 | 0.000 | 4.302 | 0.005 | 0.700 |
| 16 | 58.125 | 43.441 | 0.00 | 3466.42 | 33.11 | 0.00 | 0.000 | 3.822 | 0.005 | 0.656 |
| 15 | 54.750 | 44.653 | 0.00 | 3585.17 | 33.47 | 0.00 | 0.000 | 3.373 | 0.005 | 0.612 |
| 14 | 51.375 | 45.878 | 0.00 | 3704.83 | 33.83 | 0.00 | 0.000 | 2.956 | 0.004 | 0.568 |
| 13 | 48.000 | 47.642 | 0.00 | 3825.38 | 34.19 | 0.00 | 0.000 | 2.569 | 0.004 | 0.525 |
| 12 | 44.583 | 49.942 | 0.00 | 3948.39 | 34.56 | 0.00 | 0.000 | 2.208 | 0.003 | 0.483 |
| 12 | 44.583 | 49.942 | 0.00 | 3948.39 | 34.56 | 0.00 | 0.000 | 2.208 | 0.003 | 0.483 |
| 11 | 41.167 | 51.950 | 0.00 | 4072.42 | 34.95 | 0.00 | 0.000 | 1.876 | 0.003 | 0.442 |
| 10 | 37.050 | 53.673 | 0.00 | 4223.06 | 35.38 | 0.00 | 0.000 | 1.514 | 0.003 | 0.396 |
| 9 | 32.933 | 55.418 | 0.00 | 4374.92 | 35.81 | 0.00 | 0.000 | 1.192 | 0.002 | 0.349 |
| 8 | 28.817 | 57.184 | 0.00 | 4527.93 | 36.23 | 0.00 | 0.000 | 0.910 | 0.002 | 0.304 |
| 7 | 24.700 | 58.970 | 0.00 | 4682.05 | 36.64 | 0.00 | 0.000 | 0.666 | 0.002 | 0.259 |
| 6 | 20.583 | 60.774 | 0.00 | 4837.19 | 37.04 | 0.00 | 0.000 | 0.462 | 0.001 | 0.214 |
| 5 | 16.467 | 62.603 | 0.00 | 4993.29 | 37.43 | 0.00 | 0.000 | 0.295 | 0.001 | 0.170 |
| 4 | 12.350 | 64.454 | 0.00 | 5150.26 | 37.82 | 0.00 | 0.000 | 0.166 | 0.001 | 0.127 |
| 3 | 8.233 | 66.325 | 0.00 | 5308.06 | 38.21 | 0.00 | 0.000 | 0.074 | 0.001 | 0.084 |
| 2 | 4.117 | 68.218 | 0.00 | 5466.67 | 38.61 | 0.00 | 0.000 | 0.019 | 0.000 | 0.042 |
| 1 | 0.000 | 68.218 | 0.00 | 5626.08 | 38.61 | 0.00 | 0.000 | 0.000 | 0.000 | 0.000 |

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ROHN Products LLC.

File: Customer: Site: Type:

208656 Site: 1 Cycle: 1 Design: 1 Engineer: don_g AMERICAN TOWER CORPORATION LEITCHEIELD SOUTH 281922 POLE-TPR
Pole: Tapered Steel

ACTUAL AND ALLOWABLE STRESSES

|  |  | Actual Stresses |  |  |  |  | Allowable <br> Stress <br> [ Fb ] <br> (ksi) | Combined Stress Ratio |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Node | Elevation (ft) | Axial <br> [fa] <br> (ksi) | Bending <br> [fb] <br> (ksi) | Shear <br> [fv] <br> (ksj) | $\begin{gathered} \text { Torsion } \\ \text { [ft] } \\ \text { (ksi) } \end{gathered}$ | Combined [Ftot] (ksi) |  |  |
| 58 | 190.000 | 0.352 | 0.671 | 0.076 | 0.044 | 1.038 | 80.800 | 0.0141 |
| 57 | 185.667 | 0.187 | 3.685 | 0.780 | 0.000 | 4.479 | 79.819 | 0.0540 |
| 56 | 181.333 | 0.307 | 7.001 | 1.268 | 0.000 | 8.916 | 78.838 | 0.1033 |
| 55 | 177.000 | 0.371 | 11.922 | 1.470 | 0.000 | 14.454 | 77.858 | 0.1759 |
| 54 | 172.667 | 0.444 | 17.232 | 1.707 | 0.000 | 20.588 | 76.877 | 0.2561 |
| 53 | 168.333 | 0.546 | 23.047 | 2.071 | 0.000 | 27.880 | 75.896 | 0.3463 |
| 52 | 164.000 | 0.577 | 29.596 | 2.093 | 0.000 | 34.553 | 74.916 | 0.4485 |
| 51 | 159.667 | 0.712 | 35.881 | 2.597 | 0.000 | 43.335 | 73.935 | 0.5514 |
| 50 | 155.333 | 0.735 | 43.211 | 2.562 | 0.000 | 50.508 | 72.954 | 0.6708 |
| 49 | 151.000 | 0.769 | 49.827 | 2.530 | 0.000 | 56.996 | 71.974 | 0.7826 |
| 480 | 146.667 | 0.815 | 55.821 | 2.501 | 0.000 | 62.890 | 70.993 | 0.8880 |
| 481 | 146.667 | 0.623 | 43.531 | 1.910 | 0.000 | 47.804 | 79.143 | 0.6206 |
| 47 | 142.250 | 0.640 | 47.811 | 1.881 | 0.000 | 51,988 | 78.393 | 0.6874 |
| 46 | 140.000 | 0.650 | 49.833 | 1.870 | 0.000 | 53.979 | 78.011 | 0.7197 |
| 45 | 137.750 | 0.660 | 51.755 | 1.860 | 0.000 | 55.872 | 77.629 | 0.7509 |
| 44 | 135.500 | 0.669 | 53.582 | 1.850 | 0.000 | 57.672 | 77.247 | 0.7810 |
| 43 | 133.250 | 0.678 | 55.320 | 1.840 | 0.000 | 59.384 | 76.865 | 0.8102 |
| 42 | 131.000 | 0.687 | 56.973 | 1.831 | 0.000 | 61.013 | 76.483 | 0.8384 |
| 41 | 128.750 | 0.696 | 58.548 | 1.822 | 0.000 | 62.564 | 76.101 | 0.8657 |
| 40 | 126.500 | 0.705 | 60.046 | 1.814 | 0.000 | 64.041 | 75.719 | 0.8922 |
| 39 | 124.250 | 0.714 | 61.473 | 1.806 | 0.000 | 65.448 | 75.337 | 0.9179 |
| 38 | 122.000 | 0.723 | 62.832 | 1.798 | 0.000 | 66.788 | 74.955 | 0.9428 |
| 37 | 119.750 | 0.740 | 64.128 | 1.791 | 0.000 | 68.077 | 74.573 | 0.9672 |
| 360 | 117.208 | 0.763 | 65.521 | 1.783 | 0.000 | 69.464 | 74.141 | 0.9941 |
| 371 | 119.750 | 0.603 | 53.427 | 1.461 | 0.000 | 56.166 | 80.459 | 0.7466 |
| 36 | 117.208 | 0.622 | 54.557 | 1.454 | 0.000 | 57.294 | 80.114 | 0.7657 |
| 35 | 114.667 | 0.636 | 55.630 | 1.448 | 0.000 | 58.363 | 79.768 | 0.7842 |
| 34 | 111.967 | 0.646 | 56.709 | 1.441 | 0.000 | 59.432 | 79.401 | 0.8030 |
| 33 | 109.267 | 0.656 | 57.727 | 1.434 | 0.000 | 60.440 | 79.035 | 0.8212 |
| 32 | 106.567 | 0.666 | 58.689 | 1.428 | 0.000 | 61.393 | 78.668 | 0.8387 |
| 31 | 103.867 | 0.675 | 59.597 | 1.422 | 0.000 | 62.293 | 78.301 | 0.8557 |
| 30 | 101.167 | 0.685 | 60.454 | 1.416 | 0.000 | 63.144 | 77.934 | 0.8721 |
| 29 | 98.467 | 0.694 | 61.264 | 1.410 | 0.000 | 63.947 | 77.567 | 0.8879 |
| 28 | 95.767 | 0.703 | 62.030 | 1. 405 | 0.000 | 64.707 | 77.200 | 0.9033 |
| 27 | 93.067 | 0.713 | 62.752 | 1.400 | 0.000 | 65.425 | 76.833 | 0.9182 |
| 26 | 90.367 | 0.729 | 63.435 | 1.395 | 0.000 | 66.110 | 76.467 | 0.9328 |
| 25 | 87.567 | 0.753 | 64.082 | 1.391 | 0.000 | 66.770 | 76.100 | 0.9471 |
| 240 | 84.708 | 0.778 | 64.754 | 1.386 | 0.000 | 67.453 | 75.698 | 0.9623 |
| 251 | 87.667 | 0.640 | 55.624 | 1.182 | 0.000 | 57.661 | 80.817 | 0.7738 |
| 24 | 84.708 | 0.661 | 56.175 | 1.178 | 0.000 | 58.222 | 80.482 | 0.7849 |
| 23 | 81.750 | 0.677 | 56.694 | 1.174 | 0.000 | 58.749 | 80.147 | 0.7956 |
| 22 | 78.375 | 0.688 | 57.250 | 1.169 | 0.000 | 59.304 | 79.765 | 0.8073 |
| 21 | 75.000 | 0.698 | 57.766 | 1.164 | 0.000 | 59.820 | 79.384 | 0.8186 |
| 20 | 71.625 | 0.709 | 58.244 | 1.160 | 0.000 | 60.299 | 79.002 | 0.8294 |
| 19 | 68.250 | 0.720 | 58.688 | 1.156 | 0.000 | 60.743 | 78.620 | 0.8398 |
| 18 | 64.875 | 0.730 | 59.098 | 1.152 | 0.000 | 61:154 | 78.238 | 0.8499 |
| 17 | 61.500 | 0.740 | 59.478 | 1.148 | 0.000 | 61.536 | 77.857 | 0.8597 |
| 16 | 58.125 | 0.750 | 59.829 | 1.144 | 0.000 | 61.888 | 77.475 | 0.8691 |
| 15 | 54.750 | 0.761 | 60.152 | 1.140 | 0.000 | 62.213 | 77.093 | 0.8782 |
| 14 | 51.375 | 0.771 | 60.450 | 1.137 | 0.000 | 62.513 | 76.711 | 0.8870 |
| 13 | 48.000 | 0.789 | 60.723 | 1.133 | 0.000 | 62.797 | 76.330 | 0.8957 |
| 120 | 44.583 | 0.816 | 60.978 | 1.130 | 0.000 | 63.070 | 75.943 | 0.9044 |
| 131 | 48.000 | 0.690 | 54.162 | 0.990 | 0.000 | 55.832 | 80.398 | 0.7582 |
| 12 | 44.583 | 0.713 | 54.359 | 0.987 | 0.000 | 56.045 | 80.067. | 0.7644 |
| 11 | 41.167 | 0.732 | 54.538 | 0.984 | 0.000 | 56.239 | 79.736 | 0.7704 |
| 10 | 37.050 | 0.744 | 54.730 | 0.980 | 0.000 | 56.435 | 79.336 | 0.7771 |

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ROHN Products LLC.

| Eile: | 208656 Site: 1 Cycle: 1 Design: 1 Engineer: don_g | Page: 8 |
| :--- | :--- | ---: |
| Customer: | AMERICAN TOWER CORPORATION |  |
| Site: | LEITCHFIELD SOUTH 281922 |  |
| Type: | POLE-TPR |  |
|  | Pole: Tapered Steel |  |


| Node | $\begin{array}{r} \text { Elevation } \\ (\mathrm{ft}) \end{array}$ | Actual Stresses |  |  |  |  | Allowable <br> Stress [ Fb ] <br> (ksi) | $\begin{array}{r} \text { Combined } \\ \text { Stress } \\ \text { Ratio } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Axial <br> [fa] | Bending [fb] | Shear [fv] | Torsion [ft] | Combined [Ftot] (ksi) |  |  |
|  |  | (ksi) | (ksi) |  |  |  |  |  |
| 9 | 32.933 | 0.756 | 54.897 | 0.976 | 0.000 | 56.606 | 78.937 | 0.7836 |
| 8 | 28.817 | 0.767 | 55.041 | 0.972 | 0.000 | 56.754 | 78.538 | 0.7897 |
| 7 | 24.700 | 0.779 | 55.162 | 0.968 | 0.000 | 56.879 | 78.139 | 0.7957 |
| 6 | 20.583 | 0.791 | 55.263 | 0.964 | 0.000 | 56.982 | 77.739 | 0.8013 |
| 5 | 16.467 | 0.802 | 55.342 | 0.959 | 0.000 | 57.065 | 77.340 | 0.8068 |
| 4 | 12.350 | 0.814 | 55.402 | 0.955 | 0.000 | 57.128 | 76.941 | 0.8120 |
| 3 | 8.233 | 0.825 | 55.444 | 0.951 | 0.000 | 57.174 | 76.542 | 0.8170 |
| 2 | 4.117 | 0.837 | 55.469 | 0.947 | 0.000 | 57.202 | 76.143 | 0.8218 |
| 1 | 0.000 | 0.825 | 55.477 | 0.934 | 0.000 | 57.174 | 75.743 | 0.8261 |

ROHN Products LLC.


## MAXIMUM POLE REACTIONS:

```
Axial =96.60 kips
Moment = 5,626.08 ft-kips
Shear = 38.81 kips
Torsion = 23.35 ft-kips
```

ANCHOR BOLTS:

## DESIGN STRENGTH

| Axial $=207.8$ kips $/$ bolt | Axial | $=260.0$ kips $/ \mathrm{bolt}$ |  |
| :--- | :--- | :--- | :--- |
| Moment | $=1.9$ in-kips/bolt | Moment | $=126.3$ in-kips $/ \mathrm{bolt}$ |
| Shear | $=2.9$ kips/bolt | Shear | $=134.2$ kips $/$ bolt |

ANCHOR BOLT STRESS RATIO $=0.822<1.0$ OK
PLATE:
Required Thickness $=2.19$ in.
PLATE THICKNESS INTERACTION RATIO $=0.878<1.0$ OK

MIN. Reinforcing WELD SIZE:

Outside $=0.6250$ in.
Inside $=0.6250 \mathrm{in}$.

## Mat Foundation

## Design Parameters



| Foundation |  |
| :--- | ---: |
| Ht. AGL, ft | 0.50 |
| Depth, ft . | 6.00 |
| Pole |  |
| Butt OD, ft | 5.58 |
| Offset, in | .00 |
| Soil | $\mathrm{N} / \mathrm{a}$ |
| Blow Count | $\mathrm{N} / \mathrm{a}$ |
| Inplace Unit Wt, pcf | 110.00 |
| Submerged Unit Wt, pcf | 60.00 |
| Friction Angle, $\phi$, deg. | 30.00 |
| Cohesion, ksf | $\mathrm{N} / \mathrm{a}$ |
| Uplift Angle, deg. | 30.00 |
| Water Depth, ft | None |
|  |  |
| Ult Bearing Capacity, psf | 30.00 |


| Mat |  |
| :--- | ---: |
| Thickness, ft | 3.00 |
| Width, ft | 23.00 |
| EA, in | 18.00 |
| Batter, in/ ft | 0.00 |


| Anchor Bolts |  |
| :--- | ---: |
| Diameter, in | 2.2500 |
| No. | 16 |
| Length, in | 84.00 |
| Bolt Circle, in | 67.00 |
| Projection, in | 12.00 |
| Concrete |  |
| 28 Day Strength, ksi | 4.00 |
| Dry Unit Wt, pcf | 150.00 |
| Wet Unit Wt, pcf | 88.00 |


| Pocket |  |
| :--- | ---: |
| Diameter, in | $\mathrm{N} / \mathrm{a}$ |
| Thickness, ft | $\mathrm{N} / \mathrm{a}$ |


| Pier |  |
| :--- | ---: |
| Height, ft | 3.50 |
| Diameter, ft | 8.00 |
| No. Piers | 1 |
| Shape | Round |

## Results

| $\phi \mathrm{M}_{N}$ - Parallel Axis | $6,467.2$ | ft-kips |
| :--- | ---: | :--- |
| $\phi \mathrm{M}_{\mathrm{N}}$ - Diagonal Axis | $7,963.2$ | ft-kips |
| Moment - Interaction Ratio | 0.960 |  |
| $\phi \mathrm{~V}_{\mathrm{N}}$ - Lateral Load | 126.57 | kips |
| Lateral Load - Interaction Ratio | 0.324 |  |

Final Mat Dimension $\quad: 23.00 \times 23.00 \times 3.00 \mathrm{ft}$. thick $\mathrm{w} /(1) 8.00 \mathrm{ft}$ dia. Pier
Final Pocket Dimension : Pockets not required
Total Volume of Concrete : $65.3 \mathrm{yd}^{3}$

Designed By: DWG
Date: 26 Nov ,13@02:38 PM

Checked By: Date:


## Mat Foundation

## Design: Min. Foundation Width

Controlling Load Case: 1 [Wind w/Max. Dead Load]
Foundation Width $=23.00 \mathrm{ft}$
$\mathrm{M}_{\mathrm{U}}=6,208.9 \mathrm{ft}-\mathrm{kips}$

|  | $\phi \mathrm{M}_{\mathrm{N},} \mathrm{ft}-\mathrm{kips}$ | $\mathrm{x}, \mathrm{ft}$ | N | $\sigma_{\mathrm{ur}}$ |
| :---: | :---: | :---: | :---: | :---: |
| Parallel | $6,467.2$ | 2.300 | 0.100 | 15.61 |
| Diagonal | $7,963.2$ | 5.246 | 0.161 | $\mathrm{n} / \mathrm{a}$ |

$\phi \mathrm{M}_{N_{N}}=6,467.18 \mathrm{ft}-\mathrm{kips}$
IRatio $=0.960$
$\phi \mathrm{V}_{\mathrm{N}}=126.57 \mathrm{kips}$
IRatio $=0.324$
WARNING: The stress block is less than or equal to the minimum of 0.1 x mat width.

## Mat Design

$\gamma_{\mathrm{e}}=130.00 \mathrm{pcf}$

|  |  |  |  | Moment, ft-kips |  |  | Shear, kips |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\mathrm{x}, \mathrm{ft}$ | N | $\sigma_{\mathrm{R}}, \mathrm{ksf}$ | Rt | Lt | $\mathrm{M}_{\mathrm{U}} / \mathrm{ft}$ | Rt | Lt | $\mathrm{V}_{\mathrm{U}} / \mathrm{ft}$ |
| Parallel | 3.107 | 0.135 | 8.66 | 5,086.82 | 1,488.85 | 221.17 | 568.59 | 257.42 | 24.72 |
| Diagonal | 9.475 | 0.291 | 6.89 | 5,147.88 | 1,407.43 | 158.27 | 555.73 | 257.42 | 17.09 |
| Use | 4, \% | 4, +4, | 8.66 | \% | 3, 4, | 221.17 | 4 | , | 24.72 |

\& Ultimate soil bearing capacity required
Punching Shear

|  | Download |  |  | Uplift |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Interior | Edge | Corner | Interior | Edge | Corner |
| $\mathrm{b}_{0}, \mathrm{ft}$ | 38.69 | $\mathrm{~N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ |
| $\mathrm{Vsu}, \mathrm{psi}$ | 191.49 | $\mathrm{~N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ |
| $\phi \mathrm{Vc}, \mathrm{psi}$ | 215.03 | $\mathrm{~N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ |
| IR | 0.89 | $\mathrm{~N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ | $\mathrm{N} / \mathrm{a}$ |

Critical Sections: $a=11.50 \mathrm{ft}$.

$$
\begin{aligned}
& \mathrm{b}=11.50 \mathrm{ft} \\
& \mathrm{c}=11.50 \mathrm{ft} \\
& \mathrm{~g}=11.50 \mathrm{ft} \quad \text { (min. of } \mathrm{a}, \mathrm{~b}, \& \mathrm{c})
\end{aligned}
$$

## Mat Reinforcement

$\begin{array}{ll}\text { Min. Steel Area (Strength) } & =1.601 \mathrm{in}^{2} / \mathrm{ft} . \\ \text { Min Steel Area (Temperature) } & =.389 \mathrm{in}^{2} / \mathrm{ft} . \\ \text { Height of compression block, } \mathrm{x} & =3.90 \mathrm{in} .\end{array}$

## One-Way Shear

$\mathrm{V}_{\mathrm{U}}=24.72 \mathrm{kips}$
$\phi \mathrm{Vc}=40.00 \mathrm{kips}$
Min. Slab Thickness $=24.2 \mathrm{in}$.

38 - \#9 Horizontal bars equally spaced @ 7.30 in., each way, top and bottom.
(Total of 152)

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Checked By:


## Mat Foundation

## Pier Design

Controlling Load Case: 1 [Wind w/Max. Dead Load]

| $\mathrm{C}=102.00 \mathrm{kips}$ | Vc $=41.00 \mathrm{kips}$ | Mc $=6,085.90 \mathrm{ft}-\mathrm{kips}$ |
| :--- | :--- | :--- |
| $\mathrm{T}=.00 \mathrm{kips}$ | $\mathrm{Vt}=.00 \mathrm{kips}$ | $\mathrm{Mt}=.00 \mathrm{ft}-\mathrm{kips}$ |
| $\mathrm{Fy}=60.00 \mathrm{ksi}$ | Fyt $=60.00 \mathrm{ksi}$ | L.F. $=1.00$ |
| $\mathrm{H}=96.00 \mathrm{in}$. | Ds $=87.00 \mathrm{in}$. | $\mathrm{F}^{\prime} \mathrm{c}=4.00 \mathrm{ksi}$ |
| $\mathrm{U}=1.00$ | Irs $=$ Round |  |

$\mathrm{U}=1.00$
*** NOTE: Pier cross section is Round ${ }^{* * *}$

## SUMMARY OF ANALYSIS

| Minimum area of steel required | $=36.191 \mathrm{in}^{2}$ | (Rhomin $=0.0050$ ) |
| :--- | :--- | :--- |
| Area of steel provided. | $=37.974 \mathrm{in}^{2}$ |  |
| (Rhoactual $=0.0052$ ) |  |  |
| Maximum steel area limit | $=579.060 \mathrm{in}^{2}$ | (Rhomax $=0.0800$ ) |

(38) \#9 Vertical Bars equally spaced w/ \#5 Circular Ties @ 3 " on center.

## CIRCULAR TIE DATA

$\mathrm{Vu}<0.85^{*} \mathrm{Vc} / 2$, shear reinforcement is not required
Use maximum tie spacing specified in ACI 318, Section 7.10.5 for compression reinforcement.

## DEVELOPMENT LENGTH MODIFIERS FOR BAR DEVELOPMENT

Modifier for tension development $\quad=0.959$
Modifier for compression development $=0.558$ REQUIRED Ld = MODIFIER * BASIC Ld * ACI 318 MODIFIERS, (12 in. min.)

Designed By: DWG
Date: 26 Nov,13@02:38 PM

Checked By: Date:



## EXHIBIT D

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

License Search

## Search Results

## Specifled Search

```
State = Kentucky
County = GRAYSON
Radio Service = CL, CW
Status = Active
```

Matones $1-1$ (of 11 )

|  | Call Sign/Lease ID | Name | FRN | Radio Service | Status | Expiration Date |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 PA | KNKN748 | NEW CINGULAR W IRELESS PCS, LLC | 0003291192 | CL | Active | 10/01/2021 |
| 2 [PA | KNKN867 | Kentucky RSA \#3 Cellular General Partnership | 0001786706 | CL | Active | 10/01/2020 |
| 3 | KNLF252 | WIRELESSCO, L.P. | 0002316545 | CW | Active | 06/23/2015 |
| 4 | KNLG209 | Powertel Memphis Licenses, Inc. | 0001832807 | CW | Active | 04/28/2017 |
| 5 | KNLG923 | NEW CINGULAR WIRELESS PCS, LLC | 0003291192 | CW | Active | 08/21/2017 |
| 6 | KNLH397 | Powertel Memphis Licenses, Inc. | 0001832807 | CW | Active | 04/28/2017 |
| 7 | WPOI255 | NEW CINGULAR WIRELESS PCS, LLC | 0003291192 | CW | Active | 06/23/2015 |
| 8 | WPZV471 | Bluegrass Wireless LLC | 0010698868 | CW | Active | 06/23/2015 |
| 9 | WQCS429 | Cellco Partnership | 0003290673 | CW | Active | 05/13/2015 |
| 10 | WQCX684 | T-Mobile License LLC | 0001565449 | CW | Active | 06/20/2015 |
| 11 PA | WQDI528 | Cricket License Company, LLC | 0018402123 | CW | Active | 09/06/2015 |
|  | $\begin{gathered} \text { Call } \\ \text { Sign/Lease } \\ \text { ID } \end{gathered}$ | Name | FRN | Radio Service | Status | Expiration Date |



EXHIBIT E CO-LOCATION REPORT

## fmhe

January 8, 2014

Public Service Commission
211 Sower Boulevard
Frankfort, KY 40602

RE: Alternate Site Analysis Report<br>Certificate of Public Convenience and Necessity<br>Applicant: AT\&T Mobility<br>Site Location: 397 Victory Heights Road, Leitchfield, KY 42754<br>Site Name: Leitchfield South

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 a CPCN.

## AT\&T Mobility Site Development Process

Step 1: Problem Identification. AT\&T Mobility radio frequency engineers first identified a growing coverage and/or capacity gap in the area along Highway 259 South of Western Kentucky Parkway in Leitchfield, Kentucky.

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 the gap 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 ring has a radius of 3 miles and is centered on a particular hill that is high in elevation and has an existing guyed tower. A map of the search ring is attached.

Step 3: Co-location Review. The site development team first reviewed the area within the Search Ring for a suitable tall structure for co-location. In this case, there is an existing Bluegrass Cellular Tower in the center of the search ring. Jill Vice, with Bluegrass Cellular, was contacted regarding a possible collocation on the tower. The response was that the
site is planned for future expansion and they cannot accommodate any new collocations (copy of email attached). A one mile radius search outside the search ring for collocation opportunities was conducted and no existing structures were found to be suitable for collocation.

Step 4: Review of the Area's Zoning Classification. 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 local zoning requirements to identify parcels located within the search area that might be suitable from a land use perspective to host an antenna site. In this case, the site acquisition agent visited the Property Valuation Assessor's Office in Leitchfield to view a parcel map of the area. They do not have this information on computers and the agent was only able to view large maps of the area and determine what parcels were in the search ring. Copies of the large parcel maps did not copy well so the agent reached out to Sheila Puckett, City Zoning Administrator, and she confirmed to the agent who owned the particular properties that were being considered. The search ring was very small as a result of the requirements of the AT\&T Mobility RF Engineers, and, moreover the elevation dropped off considerably further from the center of the search ring. Thus, there were very few feasible options. The search ring is located in Grayson County and there is no zoning classification of property in this unincorporated part of the County.

Step 5: Preliminary Inspection and Assessment of Suitable Parcels. Once suitably zoned parcels are identified, the site development team visits the parcels and performs a preliminary inspection. The purpose of the preliminary inspection is: (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. In this case, once the Bluegrass Cellular tower was ruled out, properties within the search ring were identified that would meet the requirements of the construction of a tower. There were three properties that were on a high elevation, consisted of enough property to meet setback requirements, if any, and were constructible. On the hilltop where the search ring was centered, there were only four properties.

Step 6: Candidate Evaluation and Selection. After the preliminary site assessments were performed, the site development team ranked the candidates based on compliance with zoning regulations, the availability of ground space, topography, applicable environmental conditions, construction feasibility and the potential impact of the facility on neighboring properties. In this case, three candidates were submitted to AT\&T for review. The A Candidate is the Lucas Property. Bridgette Lucas was contacted and she was interested in a proposed lease agreement. Her property was chosen as Candidate A as it is located within the search ring, there is an existing road to the site and the site was cleared. This site has a natural tree buffer on all four sides and sits just South of the Bluegrass Cellular Tower. There is not a home on this parcel. There are homes along Hwy 259 at the access road to the site. The B Candidate is the Stanton Property. Mark Stanton was contacted and was interested in a proposed lease agreement. This site is in the search ring, closer to the freeway, and is just off Victory Heights Road so a long access road would not be necessary. The Stanton home is SW of the site but is
surrounded by trees. However, there is a church just East of the site and the Swift Home is South of the site so the site would be visible from the Swift Home. The C Candidate is the Swift Property. It is behind an outbuilding/garage and within view of the Bluegrass Tower. It does have a natural tree buffer on three sides (West, South and East). It will be in view from the Swift's home, however, this was their choice of location. After submitting all three candidates, AT\&T RF chose the Swift Property as their primary candidate and the Lucas Property as a back-up candidate. An aerial map and a road map are attached identifying all three candidates. Again, the approved candidate is a location that the landlords chose.

Step 7: 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 the 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 Communications Commission ("FCC") compliance.

In this case, only four property owners were contacted, Bluegrass Cellular, which denied collocation on their tower, The Swifts, The Stanton and Bridgette Lucas. All three parties were interested in leasing space to AT\&T. The Swift property was chosen by AT\&T's RF Department.

Step 8: Application. Once a lease is obtained and all site due diligence is completed, AT\&T Mobility prepared and filed the accompanying application for a CPCN to construct, maintain, and operate a communications facility.

## 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, AT\&T's RF Department considered all three available candidates and chose the candidate that would provide optimum coverage for their wireless service. Based on the elevation and natural tree buffer, we believe that a 190' Monopole at this location would be the least intrusive to neighboring homes.

Sincerely,


Jennifer M. Sturgeon
Site Acquisition Specialist
FMHC
2310 Valletta Lane
Louisville, KY 40205
502-817-1964



From: Jill Vice [mailto:jvice@bluegrasscellular.com]
Sent: Tuesday, January 07, 2014 5:04 PM
To: Jennifer Sturgeon
Subject: FW: So. Leitchfield Site
Jennifer -

This site is planned for future expansion; we cannot accommodate any new colocations at this time.

## Thanks.

Jill

Jill Vice | Senior Lease \& Co-location Administrator
Bluegrass Cellular Inc. 12902 Ring Rd. | Elizabethtown, KY 42701
Email: jvice@bluegrasscellular.com
Office: $270.765 .6361 \times 3015$ | Fax: 270.737.0580
Cell:

## BLUEGRASS CELLULAR

YOUR COMMUNITY, EXPANDED.

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## EXHIBIT F

## FAA

```
                        Federal Airways & Airspace *
                                Summary Report: New Construction *
    Antenna Structure *
Airspace User: David Duncan
File: LEITCHFIELD-SOUTH
Location: Leitchfield, KY
Distance: 1.4 Statute Miles
Direction: 20 (true bearing)
Latitude: 370-27'-38.42" Longitude: 860-17'-39.27"
SITE ELEVATION AMSL......712 ft.
STRUCTURE HEIGHT......... }1999\mathrm{ ft.
OVERALL HEIGHT AMSL......911 ft.
NOTICE CRITERIA
    FAR 77.9(a): NNR (DNE 200 ft AGL)
    FAR 77.9(b): NNR (DNE Notice Slope)
    FAR 77.9(c): NNR (Not a Traverse Way)
    FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for M20
    FAR 77.9: NNR (No Expected TERPS® impact 2I3)
    FAR 77.9(d): NNR (Off Airport Construction)
    NR = Notice Required
    NNR = Notice Not Required
    PNR = Possible Notice Required (depends upon actual IFR procedure)
        For new Construction review Air Navigation Facilities at bottom
        of this report.
    Notice to the FAA is not required at the analyzed location and height for
    slope, height or Straight-In procedures. Please review the 'Air Navigation'
    section for notice requirements for offset IFR procedures and EMI.
```

```
OBSTRUCTION STANDARDS
```

OBSTRUCTION STANDARDS
FAR 77.17(a)(1): DNE 499 ft AGL
FAR 77.17(a)(1): DNE 499 ft AGL
FAR 77.17(a)(2): DNE - Airport Surface
FAR 77.17(a)(2): DNE - Airport Surface
FAR 77.19(a): DNE - Horizontal Surface
FAR 77.19(a): DNE - Horizontal Surface
FAR 77.19(b): DNE - Conical Surface
FAR 77.19(b): DNE - Conical Surface
FAR 77.19(c): DNE - Primary Surface
FAR 77.19(c): DNE - Primary Surface
FAR 77.19(d): DNE - Approach Surface
FAR 77.19(d): DNE - Approach Surface
FAR 77.19(e): DNE - Transitional Surface
FAR 77.19(e): DNE - Transitional Surface
VFR TRAFFIC PATTERN AIRSPACE FOR: M20: GRAYSON COUNTY
Type: A RD: 22809.9 RE: 760
FAR 77.17(a)(1): DNE
FAR 77.17(a)(2): DNE - Height No Greater Than 200 feet AGL.
VFR Horizontal Surface: DNE
VFR Conical Surface: DNE
VFR Approach slope: DNE
VFR Transitional Slope: DNE
VFR TRAFFIC PATTERN AIRSPACE FOR: 2I3: ROUGH RIVER STATE PARK
Type: A RD: 81585.01 RE: 577

```
```

    FAR 77.17(a)(1): DNE
    FAR 77.17(a)(2): Does Not Apply.
    VFR Horizontal Surface: DNE
    VFR Conical Surface: DNE
    VFR Approach Slope: DNE
    VFR Transitional Slope: DNE
    TERPS DEPARTURE PROCEDURE (FAA Order 8260.3, Volume 4)
    FAR 77.17(a)(3) Departure Surface Criteria (40:1)
    DNE Departure Surface
    MINIMUM OBSTACLE CLEARANCE ALTITUDE (MOCA)
    FAR 77.17(a)(4) MOCA Altitude Enroute Criteria
    The Maximum Height Permitted is 1700 ft AMSIs
    PRIVATE LANDING FACILITIES
        FACIL BEARING RANGE DELTA ARP FAA
        IDENT TYP NAME TO FACIL IN NM ELEVATION IFR
        ----- --- -------------------------- ------------------------------------------
        56KY HEL TWIN LAAKES RGNL MEDICAL CENT 24.56 .74 +254
        Possible Impact to Private landing Facility
        Exceeds Notice Standards by: }85\mathrm{ ft (Medical Heliport)
        Notice to actual facility is recommended
        66KY AIR MC GREW 56.45 5.08 +191
    No Impact to VFR Transitional Surface.
    Below surface height of 408 ft above ARP.
    AIR NAVIGATION ELECTRONIC FACILITIES
    FAC ST DIST DELTA GRND
    APCH
IDNT TYPE AT FREQ VECTOR (ft) ELEEVA ST LOCATION ANGLE
BEAR

```

```

    MYS VOR I 108.2 5.2 158464 +121 KY MYSTIC . 04
    FTK VOR/DME I 109.6 29.7 187359 +177 KY FORT KNOX . 05
    EWO VOR/DME I 110.8 70.65 189811 -49 KY NEW HOPE -.01
    BWG VORTAC R 117.9 192.6 198498 +346 KY BOWLING GREEN . I0
    LVX RADAR WXL Y 28.3 213036 +78 KY FORT KNOX . 02
    FCC AM PROOF-OF-PERFORMANCE
NOT REQUIRED: Structure is not near a FCC licensed AM radio
station Proof-of-Performance is not required. Please review
AM Station Report for details.
Nearest AM Station: WMTL @ 5641 meters.

```

Airspace \({ }^{\text {® }}\) Summary Version 13.9.332
AIRSPACE \({ }^{\circledR}\) and TERPS \({ }^{\circledR}\) are registered \({ }^{\circledR}\) (rademarks of Federal Airways \& Airspace \({ }^{\circledR}\) Copyright © 1989-2013

10-29-2013
14:21:15
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\section*{EXHIBIT G}

KENTUCKY AIRPORT ZONING COMMISSION
\begin{tabular}{ll} 
From: & Woulhan, Jomn KKTC \\
To: & Lotte Thombson \\
Subject: & RE: KAZC Filings for 4 sites, Allens Tower, KY Oaks, Mall, Leitchfield South\& Millers Mill \\
Date: & Thursday, October 31, 2013 8:01:40 AM
\end{tabular}

The above subject does not require a permit from the Kentucky Airport Zoning Commission. The antennas do not exceed any of the following criteria:
602 KAR 50:030. Jurisdiction of the Kentucky Airport Zoning Commission.
RELATES TO: KRS 183.861, 183.865, 183.867, 183.870
STATUTORY AUTHORITY: KRS 183.861
NECESSITY, FUNCTION, AND CONFORMITY: KRS 183.867 specifies that the commission has jurisdiction over zoning for all public use and military airports. This administrative regulation defines the areas over which the Kentucky Airport Zoning Commission has jurisdiction for the purpose of zoning in accordance with KRS Chapter 183 and specifics when the owner or person who has control over a structure which encroaches on the jurisdiction of the Kentucky Airport Zoning Commission shall apply for a permit.

Section 1. The commission has zoning jurisdiction over that airspace over and around the public use and military airports within the Commonwealth which lies above the imaginary surface that extends outward and upward at one (1) of the following slopes:
(1) 100 to one (1) for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each public use and military airport with at least one (1) runway 3,200 feet or more in length; or
(2) Fifty (50) to one (1) for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each public use and military airport with its longest runway less than 3,200 feet in actual length.

Section 2. The commission has zoning jurisdiction over the use of land and structures within public use airports within the state.

Section 3. The commission has jurisdiction from the ground upward within the limits of the primary and approach surfaces of each public use and military airport as depicted on Airport Zoning Maps approved by the Kentucky Airport Zoning Commission.

Section 4. The commission has junisdiction over the airspace of the Commonwealth that exceeds 200 feet in height above ground level.

Section 5. The owner or person who has control over a structure which penetrates or will penetrate the airspace over which the commission has jurisdiction shall apply for a permit from the commission in accordance with 602 KAR 50:090. (KAV-9-1; 1 Ky.R. 807; eff. 5-14-75; Am. 2 Ky.R. 306; eff. 3-10-76; 5 Ky.R. 599; eff. 3-7-79; 10 Ky.R. 445; eff. 1-4-84; 14 Ky.R. 267; eff. 9-10-87; 19 Ky.R. 800; eff. 11-4-92; 27 Ky.R. 2228; 2774; eff. 4-9-2001.)

Please keep this email for your records. Thank you.
Kentucky Arport Zoning Commission (KAZC)
John Houllhen, Administrator
90 Airport Road, Bullding 400
Frankfort, KY 40601
Direc Line 502-564-0310, Cell 502-330-3955, Office 502-564-4480, Fax 502-564-7953
KAZC webpage: http://transportation.ky.gov/Aviation/Pages/ZoningCommission.aspx
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Sent: Wednesday, October 30, 2013 5:55 PM
To: Houlihan, John (KYTC)
Subject: FW: KAZC Filings for 4 sites, Allens Tower, KY Oaks, Mall, Leitchfield South\& Millers Mill

Please see attached four \(K A Z C\) filing request for sites that did not require FAAFCC filing.

Thanks,
Lottie Thompson
FMHC Corporation
1700 Sherwin Ave.
Des Plaines, IL 60018
773.380 .3871 office
773.341.6071 Cell
thompson@fmhc.com

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\section*{EXHIBIT H}

GEOTECHNICAL REPORT

\title{
Geotechnical Evaluation of Subsurface Conditions
}

\section*{Monopole Tower}

\section*{Report Prepared for FMHC Corporation}

Site Name: Leitchfield South
Site ID: 141700-A
397 Victory Heights Road - Leitchfield, KY 42754
Lat: \(37^{\circ} 27^{\prime} 38.42^{\prime \prime}\)
Lon: -86 \(6^{\circ} 17^{\prime} 39.27^{\prime \prime}\)

FDH Project Number 1305541600 Revision 1

\section*{Prepared by:}


Cedric D. Fairbanks, PhD, P.E. Senior Geotechnical Engineer

J. Darrin Holt, PhD, P.E.
Managing Principal

FDH Engineering, Inc. 6521 Meridian Drive Raleigh, NC 27616 (919)755-1012 info@fdh-inc.com


\section*{EXECUTIVE SUMMARY}

Project Location: 397 Victory Heights Road - Leitchfield, KY 42754
Structure Type: Monopole
Site ID/Number: \(141700-\mathrm{A}\)
Number of Borings: One (1)
Depth of Borings: \(\mathrm{B}-1\) to 14.0 ft

\section*{INTRODUCTION}

FDH Engineering, Inc. understands that a monopole telecommunication tower with a proposed height of \(190-\mathrm{ft}\) tall will be erected at the aforementioned project site. The authorized subsurface investigation has been completed to evaluate the existing subsurface conditions and their effect on the proposed construction and site development.

\section*{SITE INVESTIGATIONS}

The project site is slightly sloping to the east to southeast and exhibits a topographic variation of less than 10.0 ft . Currently, the footprint area of the proposed monopole tower is vacant and covered with grass and sparse bushes. The site drainage is surface runoff.

Subsurface conditions were evaluated by obtaining one test boring near the tower's foundation elements base as shown on Figure 1. The boring was sampled at selected intervals using standard penetration test procedures designated in ASTM D-1586. The soil samples were transported to our soil lab and classified according to ASTM D-2487. Additionally, unconfined compressive strength tests according to ASTM D-2166 were conducted on selected cohesive soil samples.

The soil samples will be retained in our laboratory for a period of forty-five (45) days, after which, they will be discarded unless other instructions are received as to their disposition.

\section*{SUBSURFACE CONDITIONS}

Based on the field boring record and laboratory test results, the subsurface conditions on site can be generalized using the following strata descriptions:
\begin{tabular}{|c|c|c|}
\hline Strata \# & \begin{tabular}{c} 
Approx. Depth \\
\((\mathrm{ft})\)
\end{tabular} & General Description \\
\hline I & \(0.0-3.5\) & CL - Very Stiff Lean Clay with sand \\
\hline II & \(3.5-14.0\) & PWR - Very Dense Partially Weathered Rock (Probable \\
Sandstone) \\
\hline
\end{tabular}

\section*{GROUNDWATER}

Groundwater was not encountered in the soil boring B-1 during the time of drilling. However, regional groundwater levels will fluctuate with seasonal and climatic changes and may be different at
other times. We recommend that FDH be immediately notified if a noticeable change in groundwater occurs from the depths mentioned in this report.

\section*{FOUNDATION RECOMMENDATIONS}

The following recommendations are made based on our review of the attached test boring data and laboratory results, along with our past experience with similar projects and subsurface conditions. Ultimate soil strength design parameters are presented on the attached Table 1. The values in this table can be used to evaluate the lateral capacity of the soil supporting this foundation. Based on the TIA Standard (TIA-222-G), dated August 2005, the recommended design frost penetration depth to be used for Grayson County, KY is 20 -inches ( 1.7 ft ).

FDH was not provided with the required foundation capacities at the time of this report. For monopole towers, we anticipate the planned tower foundation will be subjected to relatively high axial loads and bending moments. Based on our past experience with similar projects and subsurface conditions, we recommend that Drilled Shaft (Caisson) and Pad \& Pier type foundation be used as the tower foundation. For these foundations, general soil strength design recommendations are given in this report that can be used by the Engineer of Record to determine the foundation sizes once the required foundation capacities are known.

\section*{Drilled Shaft (Caisson) Foundation}

Should caisson foundations be used, we recommend the caissons be reinforced with steel to resist and transfer lateral and axial loads Skin friction and bearing at the tip of the caisson can be used to determine the compressive capacity of the foundation. For these cases, we recommend the following values be used:
- Ultimate Compressive SKIN FRICTION vs. DEPTH = shown in Figure 2. This figure display ultimate values and an appropriate factor of safety should be used.
- Net Ultimate Bearing Capacity vs. DEPTH = shown in Figure 3. This figure display ultimate values and an appropriate factor of safety should be used.

Based on the subsurface soil conditions, excavation for the caisson should be possible using a large, truck-mounted, hydraulic-advanced drill rig. All debris, loose or disturbed soil should be removed from the excavation prior to placing reinforced steel and/or concrete. Reinforcing steel and/or concrete should be placed immediately upon completion of the excavation.

Drilling fluid or casing could be used to assist in keeping the drilled hole open. If casing is used, we recommend it be removed from the excavation as concrete is being placed. Continuous vibration or other approved methods should be used during casing withdrawal to reduce the potential for void-space formation within the concrete. If water is present during concrete placement and/or drilling fluids are used to maintain hole stability, concrete should be pumped or otherwise discharged to the bottom of the hole via a hose or tremie pipe. The end of the hose or tremie pipe must remain below the top surface of any water, drilling fluid and the in-place concrete at all times. Additionally, concrete should be consolidated using vibration methods over the entire length and width of the caisson and the consolidation should be performed only after these fluids are removed and to the extent possible.

\section*{Pad \& Pier Foundation}

Should a pad \& pier foundations be used, we recommend the pad \& pier be reinforced with steel to resist and transfer lateral and axial loads, as well as prevent cracking and shrinkage due to temperature and moisture variations. Based on the subgrade conditions and frost penetration depth of the project site, we recommend the bottom of the pad foundation bears at a depth deeper than 1.7 ft . The tower's foundation capacity can be determined using the soil's bearing capacity, passive pressure resistance, and a sliding friction factor. For these calculations we recommend the following:
- Net Ultimate Bearing Capacity for PAD \& PIER Foundation:
\begin{tabular}{|c|c|c|c|}
\hline \begin{tabular}{c} 
Pad Dimensions \\
(ft)
\end{tabular} & Pad Bearing Depth (ft) & \begin{tabular}{c} 
Net Ultimate Bearing \\
Capacity \\
(psf)
\end{tabular} & \begin{tabular}{c} 
Sliding Friction \\
Factor
\end{tabular} \\
\hline \multirow{3}{*}{\(4.0 \times 4.0\)} & 3.0 & 14,000 & \multirow{3}{*}{0.40} \\
\cline { 2 - 3 } & 4.0 & 30,000 & \\
\hline \multirow{3}{*}{\(6.0 \times 6.0\)} & 5.0 & 30,000 & \multirow{3}{*}{0.40} \\
\cline { 2 - 3 } & 3.0 & 13,500 & \multirow{3}{*}{0.40} \\
\cline { 2 - 3 } & 4.0 & 30,000 & 30,000 \\
\hline \multirow{3}{*}{\(8.0 \times 8.0\)} & 5.0 & 13,000 & 30,000 \\
\hline
\end{tabular}

These values are ultimate values and an appropriate factor of safety should be used.
- Ultimate Passive Pressure vs. Depth: Shown in Figure 5. This figure contains ultimate values and an appropriate factor of safety should be used. These values have been reduced for frost penetration to a depth of 1.7 ft .

The pad should bear on natural soils or on controlled structural fill placed on acceptable natural soils. The site should be stripped to suitable depths to remove any existing grass, bushes, top soil and miscellaneous fill material. Select fill used to elevate the grade and backfill the excavation should consist of clean soils without deleterious inclusions and with maximum 3.0 -inch particle size. On-site soils identified as sandy lean clay are acceptable for use as structural fill if the soils are maintained normally at optimum moisture content. Some of these soils may require aeration and drying prior to re-use as structural fill. The select fill material should be placed in maximum of 8.0 inches loose lifts and compacted to a minimum of 95 percent of the maximum dry density as per ASTM D-698. The moisture content should be within -2 to \(+2 \%\) of optimum moisture.

The pad \& pier foundation should be protected from freezing if built during the winter or subject to freezing temperatures after construction. Groundwater was not encountered within the recommended bearing depth at the project site. However, positive drainage should be provided to prevent rainwater water collection in foundation excavations or on subgrades of the construction area either during or after construction. Undercut or excavated areas should be sloped toward a corner to facilitate removal of any collected rainwater or surface runoff.

\section*{Construction Inspection}

We recommend that the foundation excavation and fill placement process be monitored by a geotechnical engineer or representative thereof. Geological material variances may occur at project site. Therefore, the soil excavations should be inspected under the supervision of a geotechnical engineer or representative thereof to confirm that the bearing soils are similar to those encountered in our field exploration and that the subgrade has been properly prepared. The geotechnical engineer should be immediately notified should any subsoil conditions be uncovered that will alter the conclusions and recommendations contained in this report. Further investigation and supplemental recommendations may be required if such a condition is encountered.

Samples of the subgrade soil and structural fill material should be obtained prior to compaction operations for laboratory moisture/density testing (Proctor Tests). The tests will then provide a basis for evaluating the in-place density requirements during compaction operations. A qualified soil technician should perform sufficient in-place density tests during the filling operations to verify that proper levels of compaction are being attained.

Prior to placement of concrete, the foundation excavation should be inspected to verify that the excavation is to the proper depth and reinforcing steel is placed as recommended. Concrete cylinders should be made for 7 -day and 28 -day breaks and the concrete compressive strength should reach the required strengths after curing for designated days.

\section*{LIMITATIONS}

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.

Table 1
ULTIMATE SOIL STRENGTH PARAMETERS
Leitchfield South
Site ID: 141700-A
\begin{tabular}{|c|c|c|c|c|c|}
\hline Boring \# & \begin{tabular}{c} 
Depth \\
(ft)
\end{tabular} & \begin{tabular}{c} 
Unified Soil \\
Classification
\end{tabular} & \begin{tabular}{c} 
Moist \\
Unit Weight \\
(pcf)
\end{tabular} & \begin{tabular}{c} 
Friction Angle \\
(degrees)
\end{tabular} & \begin{tabular}{c} 
Cohesion \\
(psf)
\end{tabular} \\
\hline B-1 & \(0.0-3.5\) & CL & 115 & 0 & 2000 \\
& \(3.5-14.0\) & PWR & 135 & 45 & 0 \\
\hline
\end{tabular}

Geotechnical Evaluation Report
Site Name: Leitchfield South

FIGURE 2: Ultimate Skin Friction vs. Depth Soil Boring B-1, 3.0 ft to 5.0 ft Diameter Calssons

Ignore the top 4.0 ft for skIn friction
An approprlate factor of safety should be used with this figure


FDH Engineering, Inc., 6521 Meridlen Drive, Ralelgh, NC 27616, Ph: 919.755.1012, Fax: 919.755.1031

FIGURE 3: Ultimate Tip Resistance vs. Depth Soil Boring B-1, 3.0 ft to 5.0 ft Diameter Caissons

An appropriate factor of safety should be used with this figure


FIGURE 4: Ultimate Passive Resistance vs. Depth Soil Boring B-1

Ultimate Passive Resistance (psf)



\section*{EXHIBIT I}

DIRECTIONS TO WCF SITE

Driving Directions to Proposed Tower Site:
1. Beginning at the offices of the Grayson County Judge Executive, located, at 10 Public Square, Leitchfield, KY, head southwest towards the Public Square.
2. At the traffic circle, stay on Public Square until continuing onto South Main Street. After reaching South Main Street, travel 1.0 mile.
3. Continue onto KY-259 South / Anneta Road and travel 0.2 miles.
4. Turn right onto Victory Heights Road and travel 0.3 miles. The destination is 397 Victory Heights Road, Leitchfield, Kentucky and it will be on the left.
5. site coordinates are
a. 37 deg 27 min 38.42 sec N
b. 86 deg 17 min 39.27 sec W


Prepared by:
Aaron L. Roof
Pike Legal Group PLLC
1578 Highway 44 East, Suite 6
PO Box 369
Shepherdsville, KY 40165-0369
Telephone: 502-955-4400 or 800-516-4293

\section*{EXHIBIT J}

COPY OF REAL ESTATE AGREEMENT

\section*{\(405 / \angle 910\)}

Prepared by Jennifer M. Sturgeon


FMHC Corporation
2310 Valletta Lane
Louisville, KY 40205
Recd \(1700+18\)
Ex. Po. \(17=36000\)
Date. \(11-7-301 \geqslant\)

\section*{Return to:}

Suite 13-F West Tower
575 Morosgo Drive
Atlanta, GA 30324
Attn: Network Real Estate Administration
Re: Cell Site \#KYEVU3354; Cell Site Name: Leitchfield South
Fixed Asset \#10153963
State: Kentucky
County: Grayson

\section*{MEMORANDUM \\ OF \\ LEASE}

This Memorandum of Lease is entered into on this \(35^{\text {th }}\) day of Lely, 2013, by and between Herbert R. Swift and Patsy F. Swift as Trustees of The Herbert R. af fd Patsy F. Swift Trust U.T.D. Jan. 25, 2002, having a mailing address of 397 Victory Heights Drive, Leitchfield, KY 42754 (hereinafter referred to as "Landlord") and New Cingular Wireless PCS, LLC, a Delaware limited liability company, having a mailing address of Suite 13-F West Tower, 575 Morosgo Drive, Atlanta, GA 30324 (hereinafter referred to as "Tenant").
1. Landlord and Tenant entered into a certain Option and Lease Agreement ("Agreement") on the \(85^{\text {r }}\) day of clef \(\qquad\) , 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．

\section*{＂LANDLORD＂}

Herbert R．Swift and Patsy F．Swift as Trustees of The Herbert R．and Patsy F．Swift Trust U．T．D．Jan．25， 2002
By：Tdedent presuiftcug．
Print Name：Herbert R．Swift，Trustee
Its： \(\qquad\)
Date： \(6-7-13\)
By：Fetus 务 Remit cist
Print Name：／Patsy F．Swift，Trustee
Its：
Date： \(\qquad\)
＂TENANT＂

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

By：


Print Name：Daniel Toth
Its：Manager Real Estate and Construction
Date：


\section*{TENANT ACKNOWLEDGMENT}

\section*{STATE OF TENNESSEE)}

\section*{COUNTY OF WILLIAMSON)}

On the \(20^{\text {ot h }}\) day of Secy \(\qquad\) , 2013, before me personally appeared Daniel Coth, and acknowledged under oath that heads the Manager Real Estate and Construction of AT\&T Mobility Corporation, the Manager of New Cingular Wireless PCS, LLC, the Tenant named in the attached instrument, and as such was authorized to execute this instrument on behalf of the Tenant.


Notary Public: Erin Woodard My Commission Expires:

\section*{LANDLORD ACKNOWLEDGMENT}

\section*{STATE OF KENTUCKY)}
) ss:

\section*{COUNTY OF GRAYSON)}


On the \(7^{\text {th }}\) day of Lee, 2013, before me personally appeared Herbert R. Swift, who acknowledged under oath, that he 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.


\section*{STATE OF KENTUCKY)}
) ss:

COUNTY OF GRAYSON)

On the \(]^{+\underline{1}}\) day of fere2013 before me, personally appeared Patsy F. Swift, who acknowledged under oath, that 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.


\section*{EXHIBIT 1}

\section*{DESCRIPTION OF PREMISES}

Page 1 of 12

\begin{abstract}
to the Memorandum of Lease dated Seley 25 , 2013, by and between Herbert R. Swift and Patsy F. Swift as Trustees of The Herbert R. and Patsy F. Swift Trust U.T.D. Jan. 25, 2002, as Landlord, and New Cingular Wireless PCS, LLC, a Delaware limited liability company, as Tenant.

The Property is legally described as follows:
Deed for Property for Leased Premises Attached - Deed Book 380, Page 555
Deed for Property for Access Road Attached - Deed Book 328, Page 227
The Premises are described and/or depicted as follows:
\end{abstract}



THIS DEED OF CONVEYANCE made and entered into on this the 3/4t day of January, 2008, by and between WILLIAM E. ALLEN and JOYCE ANN ALLEN, his wife, of 1625 Anneta Road, Leitchfield, Grayson County, Kentucky 42754, hereinafter referred to as First Parties, and HERBERT R. SWIFT and PATSY F. SWIFT as Trustees of THE

HERBERT R. AND PATSY F. SWIFT TRUST U.T.D. Jan 25, 2002, of P. O. Box 4163, 397 Victory Heights Drive, Leitchfield, Grayson County, Kentucky 42754, hereinafter referred to as Second Parties;

\section*{WITNESSETH:}

That First Parties, for and in consideration of the sum of SEVEN THOUSAND TWO
HUNDRED SEVENTY-THREE ( \(\$ 7,273.00\) ) DOLLARS, cash in hand paid, the receipt of which is hereby acknowledged, do hereby sell and convey unto the said Second Parties as Trustees, their successors and assigns forever, the following described real property located in Grayson County, Kentucky, to-wit:

A certain tract of land lying and being near the south end of the City of Leitchfield, Grayson County, Kentucky, being approx. 1000' west of highway \#259 and 0.3 miles south of the Western Ky. Parkway and being further bounded and described as follows:

All references to "a rebar (set)" being \(1 / 2\) " \(\times 18\) " steel rebar w/id cap \#2811 or to a "reference rebar (set)" being \(1 / 2\) " x 18 " steel rebar w/id cap stamped "witness monument PLS2811".

Beginning at a \(5 / 8^{\prime \prime}\) steel rebar (found) w/id cap \#2373 at the northeast corner of the Kentucky RSA \#3 Cellular General Partnership Tract (D.B. 228, Pg. 638); Thence with the line of said Cellular Tract, S-89-15-04-W a distance of \(440.60^{\prime}\) to a \(5 / 8^{\prime \prime}\) steel rebar (found) w/id cap \#2373, said rebar being the northwest corner of the Cellular Tract; Thence severing the William \& Joyce Allen Parent Tract, S-89-15-04-

W a distance of \(291.94^{\prime}\) to a rebar (set) in the east line of the Kay Fentress Stanton Revocable Living Trust Tract (D.B. 367, Pg. 62); Thence with east line of Stanton, \(\mathrm{N}-23-31-09-\mathrm{E}\) a distance of 501.66' to a rebar (set) in a south line of the Herbert \& Patsy Swift Tract (D.B. 328, Pg. 227); Thence the next three calls with the south lines of Swift; S-84-05-17-E a distance of \(440.36^{\prime}\) to a \(5 / 8^{\prime \prime}\) steel rebar (found) wi/id cap \#2373; N-05-31-48-E a distance of \(99.00^{\prime}\) to a rebar (set) S-81-47-12-E a distance of 234.96' to an unmarked point, said point being referenced N-18-08-25-E a distance of \(6.79^{\prime}\) from a \(1 / 2^{\prime \prime}\) steel rebar (found) w/id cap \#2811 and being the northwest corner of Marty \& Sons Construction, Inc. (D. B. 315, Pg. 603); Thence S-18-08-25W a distance of \(333.38^{\prime}\) (passing a \({ }^{1 / 2}{ }^{\prime \prime}\) rebar on line at a distance of \(6.79^{\prime}\) ) to a \(1 / 2\) " steel rebar (found) w/id cap \(\# 2811\), said rebar being the southwest comer of Marty \& Sons Tract; Thence severing the said parent tract, S-16-02-01-W a distance of 159.41 ' to the POINT OF BEGINNING.

CONTAINING: 7.273 ACRES more or less according to a survey performed by Clemons Engineering and Land Surveying on 12/27/07. Kendall Clemons Ky. P. L. S. \#2811.

Together with and subject to any and all rights-of-way, appurtenances, covenants, easements and restrictions on record in effect to date. BASIS OF BEARING: Geodetic north.

BEING part of the same property conveyed from E. Michael Dice and Linda Dice, his wife, to William E. Allen and Joyce Ann Allen, his wife, by Deed dated the 31st day of January, 1992, and of record in Deed Book 226, at Page 319, records of the Grayson County Clerk's Office.

TO BAVE AND TO HOLD the same, together with all the appurtenances thereunto
belonging to the Second Parties as Trustees, their successors and assigns forever, with Covenant
of GENERAL WARRANTY.
THE PARTIES HERETO state under oath that the consideration reflected in this Deed
is the full consideration paid to First Parties for their interest in and to the above-described property. Second Parties as Trustees join in this Deed for the sole purpose of certifying the amount of consideration pursuant to K.R.S. 382.

IN TESTIMONY WHEREOF, Witness the signatures of the Parties hereto on this the day and year first above written.

\section*{FIRST PARTIES:}


SECOND PARTIES:
THE HERBERT R. AND PATSY F. SWIFT TRUST U.T.D. Jan 25, 2002


STATE OF KENTUCKY
COUNTY OF GRAYSON
SUBSCRIBED, SWORN TO AND ACKNOWLEDGED before me by WILLIAM E. ALLEN, on this the 3 day of January, 2008 to be his free and voluntary act and deed.
\[
\begin{aligned}
& \text { hanane D. Jotetron } \\
& \text { NOTARY PUBLIC } \\
& \text { MY COMM. EXPIRES: }
\end{aligned}
\]

\section*{STATE OF KENTUCKY}

\section*{COUNTY OF GRAYSON}

SUBSCRIBED, SWORN TO AND ACKNOWLEDGED before me by JOYCE ANN ALLEN, on this the 515 day of January, 2008 to be her free and voluntary act and deed.


\section*{STATE OF KENTUCKY}

\section*{COUNTY OF GRAYSON}

SUBSCRIBED, SWORN TO AND ACKNOWLEDGED before me by HERBERT R. SWIFT and PATSY F. SWIFT as Trustees of THE HERBERT R. AND PATSY F. SWIFT TRUST U.T.D. Jan 25, 2002, on this the 31 if day of January, 2008, to be their free and voluntary act and deed.
\[
\begin{aligned}
& \text { plan, abe b dackug } \\
& \begin{array}{l}
\text { NOTARY PuBLIC } \quad i / \|_{i=1 / i} \\
\text { MY COMM. EXPIRES: }
\end{array}
\end{aligned}
\]

Instrument prepared by:
GOFF \& GOFF, P.S.C.
Attorneys at Law
53 Public Square
Leitchfield, KY 42754
(270) 259-9237

By :

K. HAROLD GOFF, II


227

\section*{DEED OF CONVEYANCE}

\(\qquad\) day of

THIS DEED OF CONVEYANCE made and entered into this 2002, by and between Herbert R. Swift and Patsy F. Swift, his wife, of P.O. Box 4163, Leitchfield, Kentucky 42755, Parties of the First Part, Swift Enterprises, Inc., a corporation organized and existing under the laws of the state of Kentucky, Party of the Second Part, and the Herbert R. and Patsy F. Swift Trust dated the 25th day of January, 2002, \%Herbert R. Swift or Patsy F. Swift, Co-Trustees, P.O. Box 4163 Leitchfield, Kentucky 42755, Party of the Third Part.

WITNESSETH:
That, for the consideration of \(\$ 1.00\) and other consideration, the receipt of which is hereby acknowledged, the Parties of the First Part and Second Part hereby grant and convey unto Herbert R. Swift or Patsy F. Swift, Co-Trustees, the Herbert R. and Patsy F. Swift Trust, under declaration of trust dated the 25th day of January, 2002, Party of the Second Part:

\section*{PARCEL ONE:}

TRACT I: A certain lot or parcel of property lying and being on the west side of Kentucky Highway 259 just south of The Western Kentucky Parkway in Grayson County, Kentucky, and further described as follows: BEGINNING at a point in the north lines of an old roadway, said beginning approximately \(317^{\prime} \mathrm{N} 87\) degrees 02 W from the west right of way of Ky 259 and also being the northeast corner of this property description; thence crossing the old roadway and with the west line of Grayson County 4 acre tract S 01 degrees \(23^{\prime}\) E 612.0 feet to a steel rod in an old fence line; thence with the old fence N 84 degrees -21' W 262.0 feet to a steel rod; thence, a new line, N 37 degrees 36 ' W 602.0 feet to a steel rod in the east line of the old roadway; thence with said line N 9 degrees \(04^{\prime} \mathrm{E}\) a distance of 230.5 feet crossing the old road to the north lines; thence with the north line of the roadway S 63 degrees \(48^{\prime}\) E 225.1 feet and S 87 degrees \(02^{\prime}\) E 374.8 feet to the beginning, containing 6.80 acres.

Subject to a permanent easement for a roadway along the north side of this property description; said easement being 50 feet in width and approximately 600 feet in length. Survey by: Paul E. Young, Sr., Kentucky Registered Land Surveyor \#1422 on March 30, 1985. Being a part of the same land conveyed by R. C. Constant, et al to First Pentecostal Church, Baptized Saints of that Faith, Inc., by
deed dated March. 13, 1985 and recorded in Deed Book 191, page 464 , records of the Grayson County Court Clerk's office.

TRACT II: A certain lot or parcel of property lying and being on the west side of Kentucky Highway 259 just south of The Western Kentucky Parkway in Grayson County, Kentucky, and further described as follows: BEGINNING at a point in the east lines of an old roadway in the north line of the Raymond Pearl property; said point being the southwest corner of this property description; thence leaving Pearl and with the east line of the roadway as follows: N 37 degrees 03 minutes E 106 feet to a steel bar; N 66 degrees 48 minutes E 157 feet to a steel bar and S 77 degrees 19 minutes E 186 feet to a steel bar; thence crossing the roadway N 1 degrees 11
 E 420 feet to a steel bar at a power line; thence again crossing the roadway S 31 degrees 17 minutes E 50.2 feet to a steel bar; thence continuing the east line of the roadway N 50 degrees 23 minutes E 112. 7 feet to a steel bar; N 46-16 minutes E 255.6 feet to a steel bar and N 9 degrees 04 minutes E 45.0 feet to a steel bar; thence leaving the roadway South 37 degrees 36 minutes East 602.0 feet to a steel bar in an old fence line; thence with the fence N 84 degrees 21 minutes W 300 feet to a tree; thence South 2 degrees 58 minutes West 99.0 feet to a steel bar; thence leaving the fence N 87 degrees 02 minutes \(W 1172.0\) feet to the beginning, containing 7.71 acres.

Subject to a permanent easement along the north line and central section of this property description for a roadway; said easement being 50 feet in width and approximately 420 feet in length. Survey made by Paul E. Young, Sr., Kentucky Registered Land Surveyor \#1422, March 30, 1985.

Parcel One being the same property conveyed to the First Parties by deed dated the \(24^{\text {th }}\) day of June, 1987, and recorded in Deed Book 203, Page 14, in the office of the Clerk of the Grayson County Court. A portion of Parcel One was conveyed to Swift Enterprises, Inc. by deed dated the \(30^{\text {th }}\) day of September, 1998, and recorded in Deed Book 296, Page 344, in the office of the Clerk of the Grayson County Court. By this deed, the full 7.71 acres has now been reconsolidated.

\section*{PARCEL TWO:}

TRACT I: A certain parcel of land located in Grayson County, Kentucky, on the waters of Taylor's Fork of Bear Creek, lying
approximately \(1 / 2\) mile West of State Highway No. 259, and \(1 / 4\) mile South of the Western Ky. Parkway, formerly known as the Tan Rice farm, more fully described as follows: BEGINNING at a Pen Oak, an original corner to the Dr. Ramsey tract and the W. A. Higdon tract; thence N 86 degrees \(06^{\circ}\) W, with the W. A. Higdon and the Edward Elmore tract, 1401.64 feet to an iron rod and stone at the south edge of an old road, a corner of Don McDonald; thence with McDonald's line, nearly following an old woven wire fence, N 3 degrees 06' W 1761.4 feet to an iron rod at the base of an original corner stone joining the A. J. Route farm; thence S 88 degrees E . 2237.4 feet, with the A. J. Route, Howard Tomes and Lowery Enterprizes lines to an iron rod, located about 110 feet west of the easement line of the R. E. A. high voltage power line; thence S 22 cicgrees 36 Wi 1918.06 feet to the beginning corner, containing 76.03 acres.

TRACT II: A certain parcel of land located in Grayson County, Kentucky, near the City of Leitchfield, lying on the South side of the Western Kentucky Parkway, on Sunset Lick Branch, bounded and described as follows: BEGINNING at an iron rod in the A. J. Routt line at a pull post in the South right of way fence of the Western Kentucky Parkway, being 150 feet right of Station 6985+92; thence continuing with the right of way line N 56 degrees 38 ' E 303.93 feet to an iron rod at another pull post; thence continuing with the right of way line N 57 degrees 36 E 770.40 feet, to another pull post; thence continuing with the right of way line, N 73 degrees 41' \(E\) 362.76 feet to an iron rod approximately 160 feet right of Western Ky. Parkway station \(7000+80\); thence nearly with an old fence line, S 27 degrees \(35^{\prime}\) W 770.57 feet, to an iron rod at the base of a 12" elm; thence meandering with a branch S 7 degrees W-337.90 feet to an iron rod; thence \(S 40\) degrees \(15^{\prime}\) W 164.60 feet to an iron rod in center of branch, 25 feet Southeast of twin black oaks, this corner being in the original Tan Rice line; thence continuing with the Rice line N 88 degrees \(W-700.30\) to an iron rod near an old woven wire fence line the A. J. Routt Heirs line; thence nearly with the fence continuing with the Routt line to the beginning corner at N 3 degrees 04' E 609.51 feet, containing 20.06 acres.

Parcel Two being the same property in which an undivided onefourth (1/4) interest was conveyed to First Parties by deed dated the \(9^{\text {th }}\) day of September, 2000, and recorded in Deed Book 306, Page 28, in the office of the Clerk of the Grayson County Court. Also being the same property in which an undivided one-fourth (1/4) interest was conveyed to the First Parties by deed dated the \(29^{\text {th }}\) day of January, 2000, and recorded in Deed Book 299, Page 64, in the

\section*{230}
office of the Clerk of the Grayson County Court. The two deeds vest an undivided one-half ( \(1 / 2\) ) interest in said property.

TO HAVE AND TO HOLD the foregoing described real estate together with all and singular the appurtenances thereunto belonging or in anywise appertaining unto Herbert R. Swift or Patsy F. Swift, Co-Trustees, the Herbert R. and Patsy F. Swift Trust, under declaration of trust dated the 25th day of January, 2002, Party of the Second Part, the covenant of general warranty of title.

First, Second, and Third Parties did not request a title search or title opinion, therefore no title search was performed nor certificate of title opinion issued.

The parties inereto state that the nominal consideration reflected in this deem is tie fou consideration paid for the property. The Party of the Third Part joins in this deed for the sole purpose of certifying the consideration pursuant to Kr RS 382.135. Party of the Third Part certifies understanding that falsification of the stated consideration or sales price of the property is a Class \(D\) felony, subject to one to five years imprisonment and a fine up to \(\$ 10,000\).

There is no consideration paid for property contained in this deed. In accordance with KRS 142.050 the fair market value of the property is \(\$ / / 55400.00\) However, under KRS \(142.050(8 \mathrm{~b})\) this is a deed of conveyance that is exempt from the transfer tax because it is to a Trust that qualifies under the specific cited KRS section.

IN TESTIMONY WHEREOF, witness the hands of the parties hereto this the day and date first written above.


Herbert R. Swift, Individually First Party

Sw妾 Ematrises, inc.

By:


Herbert R. Swift, President Second Party


Herbert R: Swift, Co-Trustee Herbert R. and Patsy F. Swift Trust Third Party


Patsy F Swift, Individatilly First Party

\section*{231}

\section*{THE STATE OF KENTUCKY}

\section*{COUNTY OF GRAYSON}

The foregoing deed and consideration certificate was acknowledged and sworn to before me on the day of Swift and Patsy F. Swift, Individually, and Herber R 2002 by Herbert R. Co-Trustees, the Herbert R. and Patsy F. Swift Trust Swift and Patsy F. Swift, January, 2002, and Herbert R. Swift, President Trust dated the 25th day of (herbert R. Swift, President of Swift Enterprises, Inc.


Don T. Ratcliffe, Notary, State at Large My Commission Expires 1/20/03

This instrument was preparad by:


Danvill Shelbyville Road
Danville Building, Suite 327
Louisville, Kentucky 40243
502/244-4228 or 800/923-4227


State of Kentucky, County of Grayson...SCT This instrument was filed for record on the \(\frac{M}{}\) day of November 2013 at \(9: 40\) o'clock \(A M\) and duly recorded in Def Book 425 Page

of the records of this office.
Aft.Shergy Weedmon. anerly

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EXHIBIT K NOTIFICATION LISTING

\section*{Leitchfield South Landowner Notice Listing}
Herbert R and Patsy F Swift Trust
P.O. Box 4163
Leitchfield, KY 42755
Charles E. and Claudia S. Day
1434 Sunbeam Road
Leitchfield, KY 42754
Lots LLC co/ Mark Stanton
204 Harrison Street
Leitchfield, KY 42754
Mark Stanton
P.O. Box 483
Leitchfield, KY 42755
Cellular Gen Partnership
P.O. Box 5012
Elizabethtown, KY 42702
Bridgette Allen
1625 Annetta Road
Leitchfield, KY 42754
Mark H. and Kay F. Stanton
Stanton Revocable Living Trust
400 Victory Heights Drive
Leitchfield, KY 42754
Mark H. Stanton
P.O. Box 483
Leitchfield, KY 42755
Jesse and Kenneth Young
clo Mark H. Stanton
P.O. Box 483
Leitchfield, KY 42755
Phillip W. Smith
127 East White Oak Street
Leitchfield, KY 42754
Victory Heights Temple, Inc.
72 Victory Heights Road
Leitchfield, KY 42754
-
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\(\qquad\)

\section*{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

\section*{Notice of Proposed Construction of Wireless Communications Facility Site Name: Leitchfield South}

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 397 Victory Heights Road, Leitchfield, Kentucky 42754 ( \(37^{\circ} 27^{\prime} 38.42^{\prime \prime}\) North latitude, \(86^{\circ} 17^{\prime} 39.27^{\prime \prime}\) West longitude). The proposed facility will include a 190 -foot tall antenna tower, plus a 9 -foot lightning arrestor and related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

This notice is being sent to you because the Grayson 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 2013-00426 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. AT\&T Mobility's radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the area. Please feel free to contact us toll free at (800) 516-4293 if you have any comments or questions about this proposal.

Sincerely,
David A. Pike
Attorney for AT\&T Mobility
enclosure

Driving Directions to Proposed Tower Site:
1. Beginning at the offices of the Grayson County Judge Executive, located, at 10 Public Square, Leitchfield, KY, head southwest towards the Public Square.
2. At the traffic circle, stay on Public Square until continuing onto South Main Street. After reaching South Main Street, travel 1.0 mile.
3. Continue onto KY-259 South / Anneta Road and travel 0.2 miles.
4. Turn right onto Victory Heights Road and travel 0.3 miles. The destination is 397 Victory Heights Road, Leitchfield, Kentucky and it will be on the left.
5. site coordinates are
a. 37 deg 27 min 38.42 sec N
b. 86 deg 17 min 39.27 sec W


Prepared by:
Aaron L. Roof
Pike Legal Group PLLC
1578 Highway 44 East, Suite 6
PO Box 369
Shepherdsville, KY 40165-0369
Telephone: 502-955-4400 or 800-516-4293

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\section*{EXHIBIT M}

COPY OF COUNTY JUDGE/EXECUTIVE NOTICE

\section*{VIA CERTIFIED MAIL}

\author{
Hon. Gary Logsdon \\ Grayson County Judge/Executive \\ Grayson County Courthouse \\ 10 Public Sq. \\ Leitchfield, KY 42754
}

RE: Notice of Proposal to Construct Wireless Communications Facility Kentucky Public Service Commission Docket No. 2013-00426 Site Name: Leitchfield South

Dear Judge Logsdon:
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 397 Victory Heights Road, Leitchfield, Kentucky 42754 ( \(37^{\circ} 27^{\prime} 38.42^{\prime \prime}\) North latitude, \(86^{\circ} 17^{\prime} 39.27^{\prime \prime}\) West longitude). The proposed facility will include a 190 -foot tall antenna tower, plus a 9 -foot lightning arrestor and related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

You have a right to submit comments to the PSC or to request intervention in the PSC's proceedings on the application. You may contact the PSC at: Executive Director, Public Service Commission, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2013-00426 in any correspondence sent in connection with this matter.

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

Sincerely,
David A. Pike
Attorney for AT\&T Mobility enclosure

Driving Directions to Proposed Tower Site:
1. Beginning at the offices of the Grayson County Judge Executive, located, at 10 Public Square, Leitchfield, KY, head southwest towards the Public Square.
2. At the traffic circle, stay on Public Square until continuing onto South Main Street. After reaching South Main Street, travel 1.0 mile.
3. Continue onto KY-259 South / Anneta Road and travel 0.2 miles.
4. Turn right onto Victory Heights Road and travel 0.3 miles. The destination is 397 Victory Heights Road, Leitchfield, Kentucky and it will be on the left.
5. site coordinates are
a. 37 deg 27 min 38.42 sec N
b. 86 deg 17 min 39.27 sec W


Prepared by:
Aaron L. Roof
Pike Legal Group PLLC
1578 Highway 44 East, Suite 6
PO Box 369
Shepherdsville, KY 40165-0369
Telephone: 502-955-4400 or 800-516-4293


\section*{EXHIBIT N}

COPY OF POSTED NOTICES

\section*{SITE NAME: LEITCHFIELD SOUTH 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. 2013-00426 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. 2013-00426 in your correspondence.

\section*{VIA TELEFAX: 270-230-8405}

\author{
The Grayson Record \\ Attn: Shannon Dennis \\ 209 W. White Oak Street \\ Leitchfield, KY 42754
}

RE: Legal Notice Advertisement Site Name: Leitchfield South

Dear Shannon Dennis:
Please publish the following legal notice advertisement in the next edition of The Grayson Record:

\section*{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 397 Victory Heights Road, Leitchfield, Kentucky 42754 ( \(37^{\circ} 27^{\prime} 38.42^{\prime \prime}\) North latitude, \(86^{\circ} 17^{\prime} 39.27^{\prime \prime}\) 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 2013-00426 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

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EXHIBIT O
COPY OF RADIO FREQUENCY DESIGN SEARCH AREA


Leitchfield South: 37.459194 -86.294694```

