RECEIVED

### COMMONWEALTH OF KENTUCKY BEFORE THE PUBLIC SERVICE COMMISSION

NOV 12 2008

PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF NEW CINGULAR WIRELESS PCS, LLC) FOR ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A WIRELESS COMMUNICATIONS FACILITY NEAR **HIGHWAY 11 NORTH. GIRDLER.** KNOX COUNTY, KENTUCKY, 40943

)CASE: 2008-00458

SITE NAME: GIRDLER (098G0127)

## **APPLICATION FOR CERTIFICATE** OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A WIRELESS COMMUNICATIONS FACILITY

New Cingular Wireless PCS, LLC, a Delaware limited liability company, ("Applicant"), by counsel, pursuant to (i) KRS §§ 278.020, 278.040, 278.665 and the rules and regulations applicable thereto, and (ii) the Telecommunications Act of 1996 respectfully submits this Application requesting the 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 telecommunication services. In support of this Application, Applicant respectfully provides and states the following:

1. The complete name and address of the Applicant is: New Cingular Wireless PCS, LLC, a Delaware limited liability company having a local address of 601 West Chestnut Street, Louisville, Kentucky 40203.

2. Applicant is a Delaware limited liability company and a copy of its Delaware Certificate of Formation and Certificate of Amendment are attached as **Exhibit A**. A copy of the Certificate of Authorization to transact business in the Commonwealth of Kentucky is also included as **Exhibit A**.

3. Applicant proposes construction of an antenna tower in Knox County, Kentucky, which is outside the jurisdiction of a planning commission and Applicant submits the Application to the PSC for a CPCN pursuant to KRS §§ 278.020(1), 278.650, and 278.665.

4. 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 enhancing coverage and/or capacity and thereby increasing the public's access to wireless telecommunication services. 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.

5. To address the above-described service needs, Applicant proposes to construct a WCF at Highway 11 North, Girdler, Kentucky 40943 (36° 56' 28.683" North Latitude, 83° 50" 31.937" West Longitude (NAD 83)), in an area entirely within Knox County. The property in which the WCF will be located is currently owned by Paris and Mae Lee, pursuant to that Deed of record in Deed Book 109, Page 250 in the Office of the Knox County Clerk. The proposed WCF will consist of a 300 foot self-support tower with an approximately 10-foot tall lightning arrestor attached to the top of the tower for a total height of 310 feet. The WCF will also include concrete foundations to accommodate the placement of a prefabricated equipment shelter. The WCF compound will be fenced and all access gates(s) will be secured. A detailed site development plan and survey, signed and sealed by a professional land surveyor registered in Kentucky is attached as **Exhibit B**.

6. A detailed description of the manner in which the WCF will be constructed is included in the site plan and a vertical tower profile signed and sealed by a professional engineer registered in Kentucky is attached as **Exhibit C**. Foundation design plans and a description of the standards according to which the tower was designed which have been signed and sealed by a professional engineer registered in Kentucky are attached as **Exhibit D**.

7. A geotechnical engineering report was performed at the WCF site by Terracon Consultants, of Louisville, Kentucky, dated September 26, 2008 and is attached as **Exhibit E**. The name and address of the geotechnical engineering firm and the professional engineer registered in the Commonwealth of Kentucky who prepared the report is included as part of the exhibit.

8. A list of public utilities, corporations, and or persons with whom the proposed WCF is likely to compete with is attached as **Exhibit F**. Three maps of suitable scale showing the location of the proposed WCF as well as the location of any like facilities owned by others located anywhere within the map area are also included in **Exhibit F**.

9. The Federal Aviation Administration Determination of No Hazard to Air Navigation is attached as **Exhibit G**. The Kentucky Airport Zoning Commission Application for Permit to Construct or Alter a Structure was filed by the Applicant on September 15, 2008 and is also attached as **Exhibit G**. Approval from the KAZC will be forwarded once received.

10. The Applicant operates on frequencies licensed by the Federal Communications Commission pursuant to applicable federal requirements. Copies of the licenses are attached as **Exhibit H**. Appropriate FCC required signage will be posted on the site.

11. Based on the review of Federal Emergency Management Agency Flood Insurance Rate Maps, the licensed, professional land surveyor has noted in **Exhibit B** that the Flood Insurance Rate Map (FIRM) No. 21121C0155E dated August 16, 2006 indicates that the proposed WCF is not located within any flood hazard area.

12. Personnel directly responsible for the design and construction of the proposed WCF are well qualified and experienced. Project Manager for the site is Will Jacobs, of Nsoro.

13. Clear directions to the proposed WCF site from the county seat are attached as **Exhibit I**, including the name and telephone number of the preparer. A copy of the lease for the property on which the tower is proposed to be located is also attached as **Exhibit I**.

14. Applicant has notified every person of the proposed construction who, according to the records of the Knox County Property Valuation Administrator, owns property which is within 500 feet of the proposed tower or is contiguous to the site property, by certified mail, return receipt requested. Applicant included in said notices the docket number under which the Application will be processed and informed each person of his or her right to request intervention. A list of the property owners who received notices is attached as **Exhibit J**. Copies of the certified letters sent to the referenced property owners are attached as **Exhibit J**.

15. Applicant has notified the Knox County Judge Executive by certified mail, return receipt requested, of the proposed construction. The notice included the docket number under which the Application will be processed and informed the Knox County Judge Executive of his right to request intervention. Copy of the notice is attached as **Exhibit K**.

16. Pursuant to 807 KAR 5:063, Applicant affirms that two notice signs measuring at least two feet by four feet in size with all required language in letters of required height have been posted in a visible location on the proposed site and on the nearest road. Copies of the signs are attached as **Exhibit L**. Such signs shall remain posted for at least two weeks after filing the Application. Notice of the proposed construction has been posted in a newspaper of general circulation in the county in which the construction is proposed (The Barbourville Mountain Advocate).

17. The site of the proposed WCF is located in an undeveloped area near Girdler, Kentucky.

18. Applicant has considered the likely effects of the proposed construction on nearby land uses and values and has concluded that there is no more suitable location reasonably available from which adequate service to the area can be provided. Applicant carefully evaluated locations within the search area for co-location opportunities and found no suitable towers or other existing structures that met the requirements necessary in providing adequate service to the area. Applicant has attempted to co-locate on towers deigned to host multiple wireless service providers' facilities or existing structures, such as a telecommunications tower or another suitable structure capable of supporting the utility's facilities.

19. A map of the area in which the proposed WCF is located, that is drawn to scale and that clearly depicts the search area in which a site should, pursuant to radio frequency requirements, be located is attached as **Exhibit M**.

20. No reasonably available telecommunications tower, or other suitable structure capable of supporting the Applicant's facilities which would provide adequate service to the area exists.

21. Correspondence and communication with regard to this Application should be directed to:

Todd R. Briggs Briggs Law Office, PSC 17300 Polo Fields Lane Louisville, KY 40245 (502) 254-9756 briggslo@bellsouth.net

WHEREFORE, Applicant respectfully requests that the PSC accept the foregoing application for filing and enter an order granting a Certificate of Public Convenience and Necessity to Applicant for construction and operation of the proposed WCF and providing for such other relief as is necessary and appropriate.

Respectfully submitted,

Todd R. Briggs Briggs Law Office, PSC 17300 Polo Fields Lane Louisville, KY 40245 Telephone 502-254-9756 Counsel for New Cingular Wireless PCS, LLC

# LIST OF EXHIBITS

.

Exhibit A	Certificate of Authorization
Exhibit B	Site Development Plan and Survey
Exhibit C	Vertical Tower Profile
Exhibit D	Structural Design Report
Exhibit E	Geotechnical Engineering Report
Exhibit F	Competing Utilities List and Map of Like Facilities, General Area
Exhibit G	FAA Determination of No Hazard KAZC Application
Exhibit H	FCC Documentation
Exhibit I	Directions to Site and Copy of Lease Agreement
Exhibit J	Notification Listing and Copy of Property Owner Notifications
Exhibit K	Copy of County Judge Executive/Commissioner Notices
Exhibit L	Copy of Posted Notices
Exhibit M	Map of Search Area
Exhibit N	Miscellaneous

Exhibit A

7/22/2008

# Commonwealth of Kentucky Trey Grayson, Secretary of State

Division of Corporations Business Filings

P. O. Box 718 Frankfort, KY 40602 (502) 564-2848 http://www.sos.ky.gov

# **Certificate of Authorization**

Authentication Number: 67612 Jurisdiction: Kentucky Visit <u>http://apps.sos.ky.gov/business/obdb/certvalidate.aspx\_t</u>o authenticate this certificate.

I, Trey Grayson, Secretary of State of the Commonwealth of Kentucky, do hereby certify that according to the records in the Office of the Secretary of State, NEW CINGULAR WIRELESS PCS, LLC

, a limited liability company organized under the laws of the state of Delaware, is authorized to transact business in the Commonwealth of Kentucky and received the authority to transact business in Kentucky on October 14, 1999.

I further certify that all fees and penalties owed to the Secretary of State have been paid; that an application for certificate of withdrawal has not been filed; and that the most recent annual report required by KRS 275.190 has been delivered to the Secretary of State.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at Frankfort, Kentucky, this 22nd day of July, 2008.



Tmb-

Trey Grayson Secretary of State Commonwealth of Kentucky 67612/0481848



PAGE 1

The First State

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS & TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "AT&T WIRELESS PCS, LLC", CHANGING ITS NAME FROM "AT&T WIRELESS PCS, LLC" TO "NEW CINGULAR WIRELESS PCS, LLC", FILED IN THIS OFFICE ON THE TWENTY-SIXTH DAY OF OCTOBER, A.D. 2004, AT 11:07 O'CLOCK A.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE EFFECTIVE DATE OF THE AFORESAID CERTIFICATE OF AMENDMENT IS THE TWENTY-SIXTH DAY OF OCTOBER, A.D. 2004, AT 7:30 O'CLOCK P.M.

2445544 8100

040770.586

AUTHENTICATION: 3434823 DATE: 10-26-04

Harriet Smith Windsor, Secretary of State

Finalda

#### State of Delaware Secretary of State Division of Corporations Delivered 11:20 AM 10/26/2004 FILED 11:07 AM 10/26/2004 CERTIFICATE OF AMENDMENT SRV 040770586 - 2445544 FILE TO THE CERTIFICATE OF FORMATION

#### OF

### AT&T WIRELESS PCS, LLC

- 1. The name of the limited liability company is AT&T Wireless PCS, LLC (the "Company").
- 2. The Certificate of Formation of the Company is amended by deleting the first paragraph in its entirety and replacing it with a new first paragraph to read as follows:

"FIRST: The name of the limited liability company is New Cingular Wireless PCS, LLC."

3. The Certificate of Amendment shall be effective at 7:30 p.m. EDT on October 24, 2004.

[Signature on following page]

### ATL01/11726913v2

IN WITNESS WHEREOF, AT&T Wireless PCS, LLC has caused this Certificate of Amendment to be executed by its duly authorized Manager this  $20^{27}$  day of October, 2004.

- 2 -

## AT&T WIRELESS PCS, LLC

By: Cingular Wireless LLC, its Manager

By Name: oame. 100 aro Assistant Secretary Title:\_

### ATL01/11728913v2

STATE OF DELAWARE SENECTARSOFTATESINT FAX 425 828 1800 DIVISION OF CORPORATIONS FILED 04:30 PM 09/07/1899 991373168 - 2445544

AT&T LEGAL

#### STATE OF DELAWARE

### CERTIFICATE OF FORMATION OF

### AT&T WIRELESS PCS, LLC

The undersigned authorized person hereby executes the following Certificate of Formation for the purpose of forming a limited liability company under the Delaware Limited Liability Company Act.

FIRST:

The name of the limited liability company is AT&T Wireless PCS, LLC.

SECOND: The address of its registered office in the State of Delaware is Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware 19801. The name of its registered agent at such address is The Corporation Trust Company.

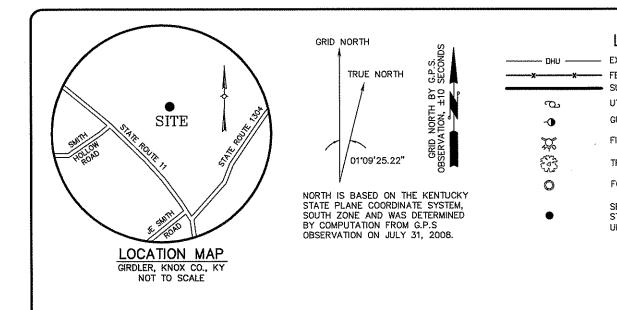
DATED this 7 \_\_ day of September, 1999.

AT&T WIRELESS SERVICES, INC., As Authorized Person

Mark U. Thomas, Vice President

Ø 000

Exhibit B



#### LEGAL DESCRIPTION

THIS IS THE DESCRIPTION FOR AT&T, FOR AN AREA TO BE LEASED FROM A TRACT OF LAND CONVEYED TO PARIS & MAE LEE BY DEED OF RECORD IN DEED BOOK 109, PAGE 250 IN THE OFFICE OF THE COUNTY CLERK OF KNOX COUNTY, KENTUCKY AND FURTHER DESCRIBED AS FOLLOWS:

### DESCRIPTION OF PROPOSED LEASE AREA AND EASEMENT

NOTE: ALL BEARINGS AND DISTANCES ARE BASED ON KENTUCKY STATE PLANE COORDINATE SYSTEM SOUTH ZONE

BEGINNING AT A FOUND WOOD FENCE POST AT THE NORTHEAST PROPERTY CORNER OF A TRACT OF LAND CONVEYED TO PARIS & MAE LEE BY DEED OF RECORD IN DEED BOOK 109, PAGE 250 IN THE OFFICE OF THE COUNTY CLERK OF KNOX COUNTY, KENTUCKY; THENCE N72'36'43"W, 128.36 FEET TO A SET #5 REBAR WITH CAP STAMPED "J CHARLES #3152", HEREAFTER REFERRED TO AS A SET REBAR, AT THE <u>TRUE POINT OF BEGINNING</u>; THENCE WITH THE PROPOSED LEASE AREA THE NEXT FOUR CALLS, N52'58'05"W, 124.91 FEET TO A SET REBAR; THENCE N47'36'14"E, 112.67 FEET TO A SET REBAR; THENCE S61'07'07"E, 49.57 FEET TO A SET REBAR; THENCE S11'57'19"W, 130.03 FEET TO THE TRUE THE POINT OF BEGINNING AND CONTAINING 10,000 SQUARE FEET.

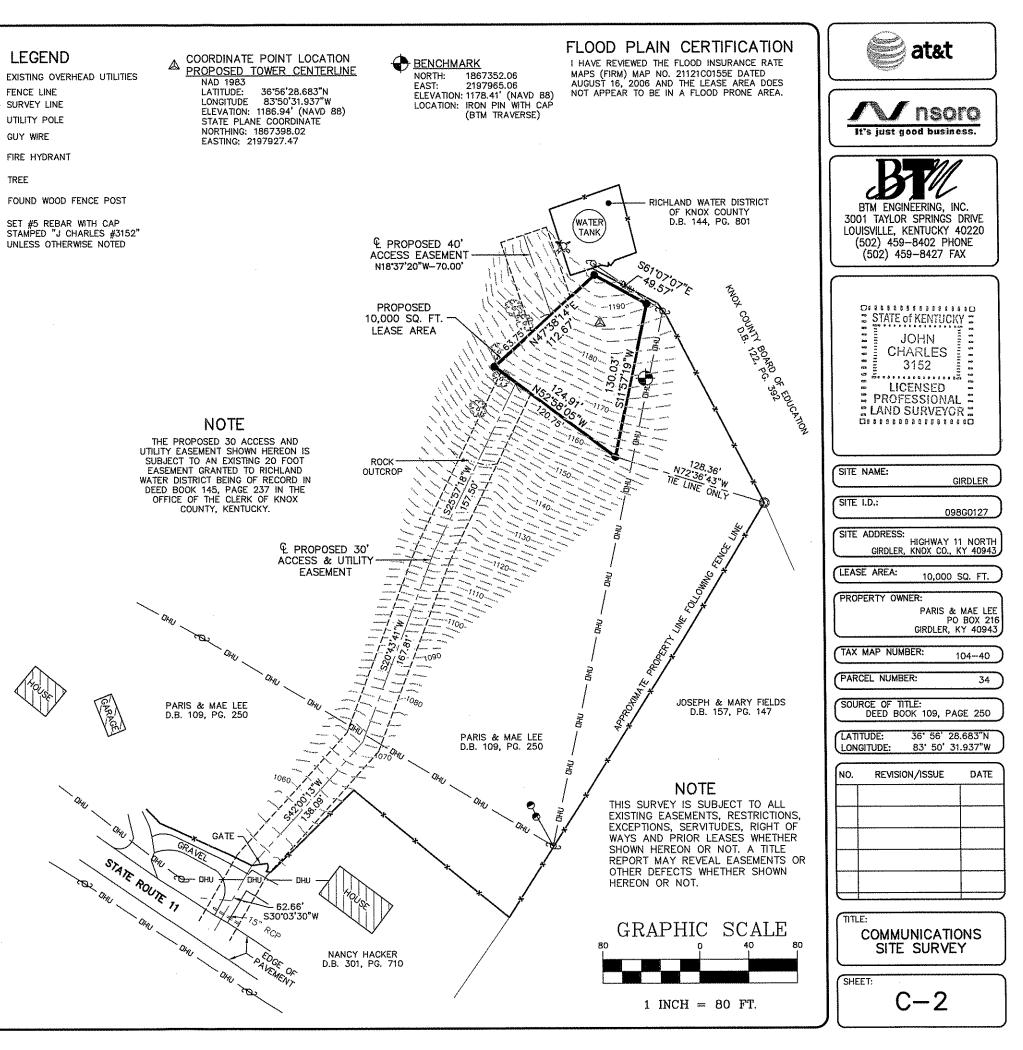
ALSO, THE RIGHT TO USE FOR ACCESS & UTILITIES FOR THE ABOVE DESCRIBED LEASE AREA, A 30 FOOT WIDE EASEMENT THE CENTERLINE DESCRIBED AS FOLLOWS: BEGINNING AT A FOUND WOOD FENCE POST AT THE NORTHEAST PROPERTY CORNER OF A TRACT OF LAND CONVEYED TO PARIS & MAE LEE BY DEED OF RECORD IN DEED BOOK 109, PAGE 250 IN THE OFFICE OF THE COUNTY CLERK OF KNOX COUNTY, KENTUCKY; THENCE N72'36'43"W, 128.36 FEET TO A POINT; THENCE N52'58'05W, 120.75 FEET TO THE <u>IRUE POINT OF BEGINNING</u>; THENCE WITH SAID EASEMENT CENTERLINE THE FOLLOWING FOUR CALLS, S25'57'18"W, 157.50 FEET TO A POINT; THENCE S20'43'41"W, 167.81 FEET TO A POINT; THENCE S42'00'13"W, 138.09 FEET TO A POINT; THENCE S30'03'30"W, 62.66 FEET TO THE TERMINATION OF SAID EASEMENT CENTERLINE IN THE CENTERLINE OF STATE ROUTE 11.

ALSO, THE RIGHT TO USE FOR ACCESS FOR THE ABOVE DESCRIBED LEASE AREA, A 40 FOOT WIDE EASEMENT THE CENTERLINE DESCRIBED AS FOLLOWS: BEGINNING AT A FOUND WOOD FENCE POST AT THE NORTHEAST PROPERTY CORNER OF A TRACT OF LAND CONVEYED TO PARIS & MAE LEE BY DEED OF RECORD IN DEED BOOK 109, PAGE 250 IN THE OFFICE OF THE COUNTY CLERK OF KNOX COUNTY, KENTUCKY; THENCE N72'36'43"W, 128.36 FEET TO A POINT; THENCE N52'58'05W, 124.91 FEET TO A POINT; THENCE N47'38'14"E, 63.75 FEET TO THE <u>TRUE POINT OF BEGINNING</u>; THENCE WITH SAID EASEMENT CENTERLINE, N18'37'20"W, 70.00 FEET TO THE TERMINATION OF SAID EASEMENT CENTERLINE.

### LAND SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAT AND SURVEY WERE MADE UNDER MY SUPERVISION, AND THAT THE ANGULAR AND LINEAR MEASUREMENTS AS WITNESSED BY MONUMENTS SHOWN HEREON ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS SURVEY WAS MADE BY METHOD OF RANDOM TRAVERSE WITH SIDESHOTS. THE UNADJUSTED CLOSURE RATIO OF THE TRAVERSE WAS GREATER THAN 1:5,000. THIS SURVEY MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR A CLASS "B" SURVEY AS ESTABLISHED BY THE STATE OF KENTUCKY PER 201 KAR 18:150.

John Charles	10-28-08
JOHN CHARLES	PLS NO, 3152
OWNER APPROVAL:	DATE
OWNER APPROVAL:	DATE
AT&T APPROVAL:	DATE



# SITE PLAN NOTES

1. THE PROPOSED DEVELOPMENT IS FOR A 300 FOOT SELF-SUPPORT TOWER AND MULTIPLE EQUIPMENT LOCATIONS. THE LOCATION IS SR 11 NORTH, GIRDLER, KY 40943.

2. THE TOWER WILL BE ACCESSED BY A PROPOSED STABILIZED DRIVE FROM AN EXISTING ASPHALT ROADWAY (SR 11 NORTH) WHICH IS A PUBLIC RIGHT OF WAY. WATER, SANITARY SEWER, AND WASTE COLLECTIONS SERVICES ARE NOT REQUIRED FOR THE PROPOSED DEVELOPMENT.

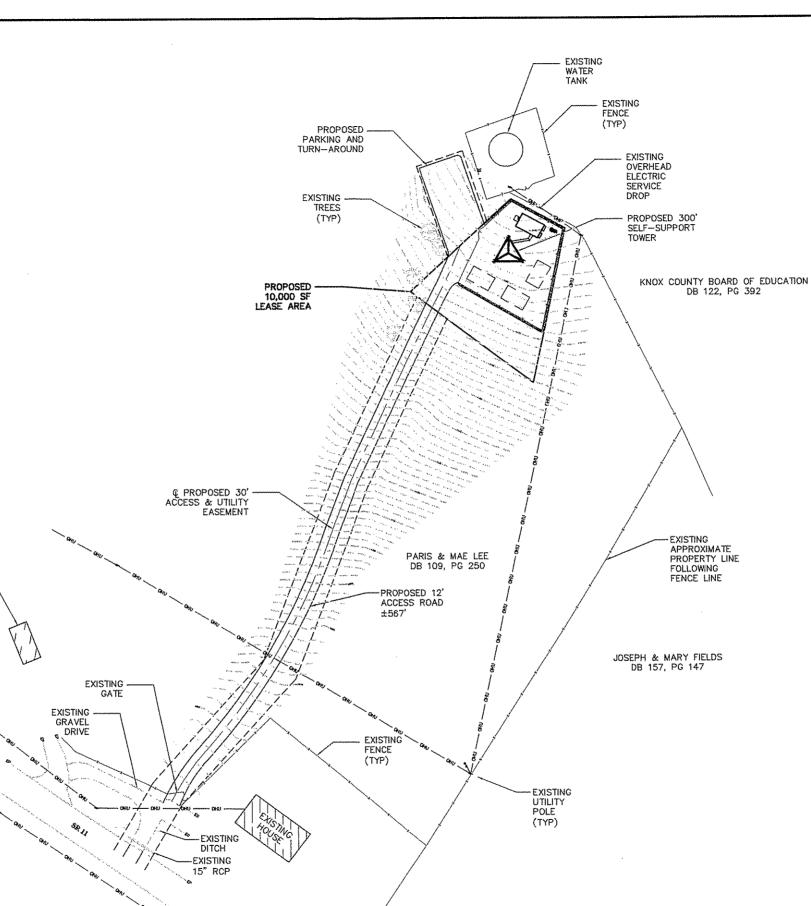
3. CENTERLINE OF PROPOSED TOWER GEOGRAPHIC LOCATIONS: LATITUDE: 36' 56' 28.683"N 1867352.06 N LONGITUDE: 83' 50' 31.937"W 2197927.47 E

4. REMOVE ALL VEGETATION, CLEAN AND GRUBB LEASE AREA (WHERE REQUIRED).

5. FINISH GRADING TO PROVIDE EFFECTIVE DRAINAGE WITH A SLOPE OF NO LESS THAN ONE EIGHTH INCH (1/8") PER FOOT FLOWING AWAY FROM EQUIPMENT FOR A MINIMUM DISTANCE OF SIX FEET (6') IN ALL DIRECTIONS.

6. LOCATE ALL U.G. UTILITIES PRIOR TO ANY CONSTRUCTION.

7. COMPOUND FINISHED SURFACE TO BE FENCED



UNDERGROUND UTILITIES CALL 2 WORKING DAYS BEFORE YOU DIG INDIANA 1-800-382-5544 KENTUCKY 1-800-752-6007 OR DIAL 811 UTILITIES PROTECTION SERVICE NON-MEMBERS MUST CALL DIRECTLY

EXISTING

GARAGE



	EXISTING OVERHEAD ELECTRIC
	EXISTING OVERHEAD TELEPHONE
	EXISTING UNDERGROUND ELECTRIC
	EXISTING UNDERGROUND TELEPHONE
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•	BOLLARDS

GRAPHIC SCALE 80 40 1 INCH = 80 FT.

at&t
It's just good business.
CENSED
SITE NAME: SITE ID NUMBER: 09BC0127
SITE ADDRESS: HIGHWAY 11 NORTH GIRDLER, KY 40943 LATITUDE: 36' 56' 28.683"N LONGITUDE: 83' 50' 31.937"W (TAX MAP NUMBER: 104-40)
PARCEL NUMBER: 34) SOURCE OF TITLE: DEED BOOK 109, PAGE 250 PROPERTY OWNER: PARIS & MAE LEE PO BOX 216
GIRDLER, KY 40943 NO. REVISION/ISSUE DATE 1 ISSUE FOR COMMENT 08/27/08 2 ISSUE FOR ZONING 10/23/08
TITLE:
OVERALL SITE LAYOUT

# SITE PLAN NOTES

1. THE PROPOSED DEVELOPMENT IS FOR A 300 FOOT SELF-SUPPORT TOWER AND MULTIPLE EQUIPMENT LOCATIONS. THE LOCATION IS SR 11 NORTH, GIRDLER, KY 40943.

2. THE TOWER WILL BE ACCESSED BY A PROPOSED STABILIZED DRIVE FROM AN EXISTING ASPHALT ROADWAY (SR 11 NORTH) WHICH IS A PUBLIC RIGHT OF WAY. WATER, SANITARY SEWER, AND WASTE COLLECTIONS SERVICES ARE NOT REQUIRED FOR THE PROPOSED DEVELOPMENT.

- 3. CENTERLINE OF PROPOSED TOWER GEOGRAPHIC LOCATIONS: LATITUDE: 36\* 56' 28.683"N 1867352.06 N
- LONGITUDE: 83' 50' 31.937"W 2197927.47 E

4. REMOVE ALL VEGETATION, CLEAN AND GRUBB LEASE AREA (WHERE REQUIRED).

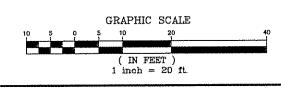
5. FINISH GRADING TO PROVIDE EFFECTIVE DRAINAGE WITH A SLOPE OF NO LESS THAN ONE EIGHTH INCH (1/8") PER FOOT FLOWING AWAY FROM EQUIPMENT FOR A MINIMUM DISTANCE OF SIX FEET (6') IN ALL DIRECTIONS.

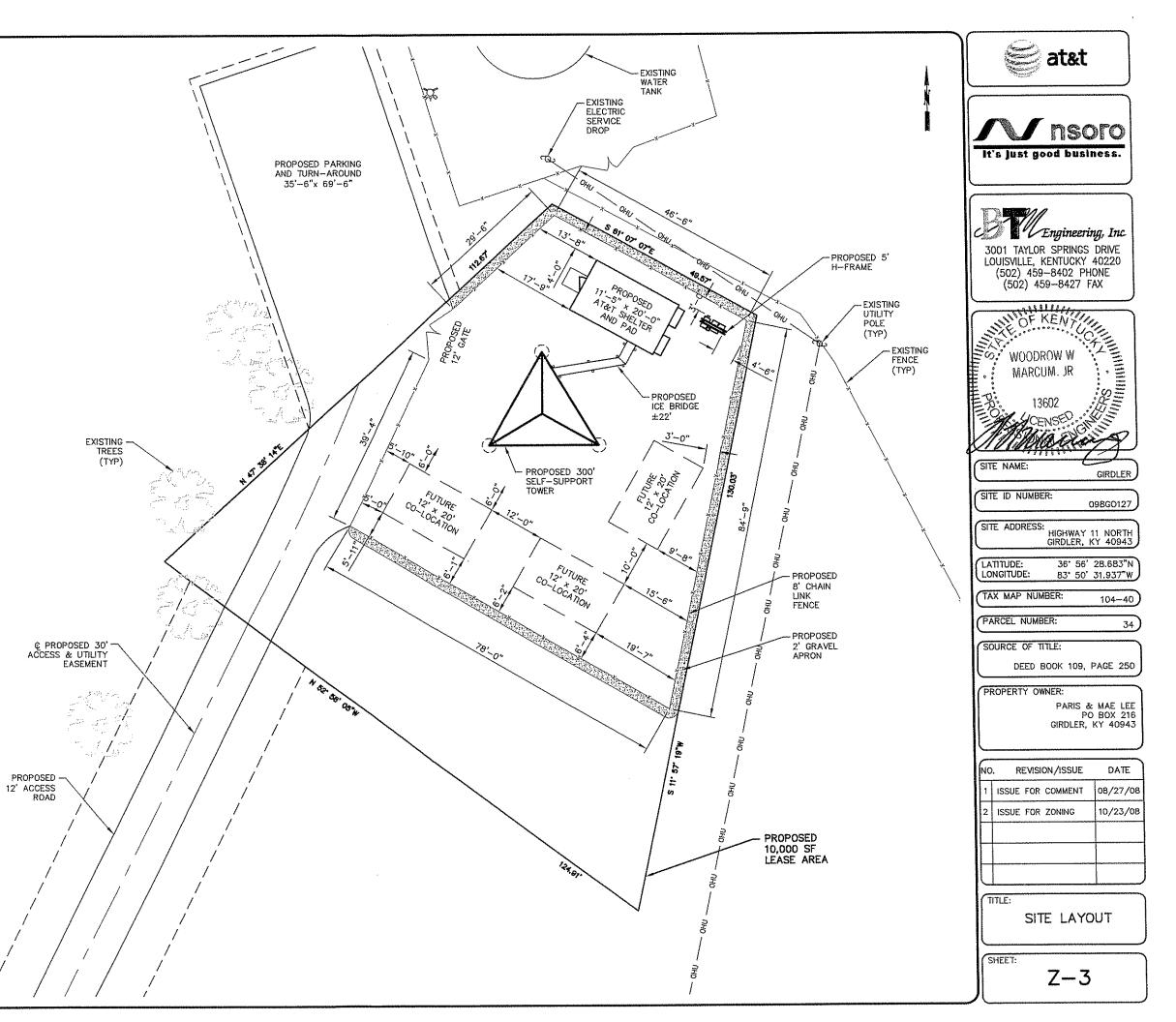
6. LOCATE ALL U.G. UTILITIES PRIOR TO ANY CONSTRUCTION.

7. COMPOUND FINISHED SURFACE TO BE FENCED



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•	BOLLARDS





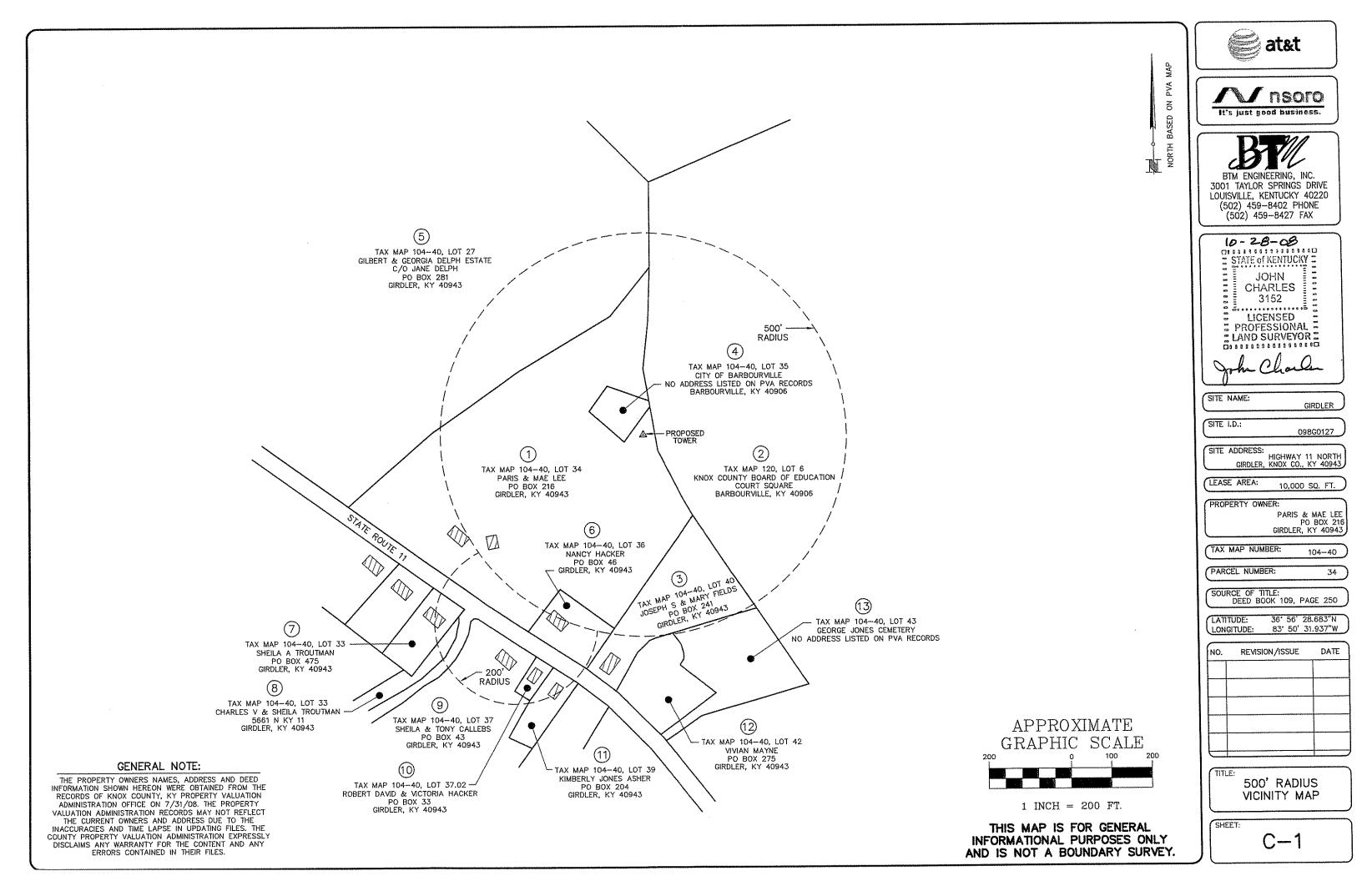
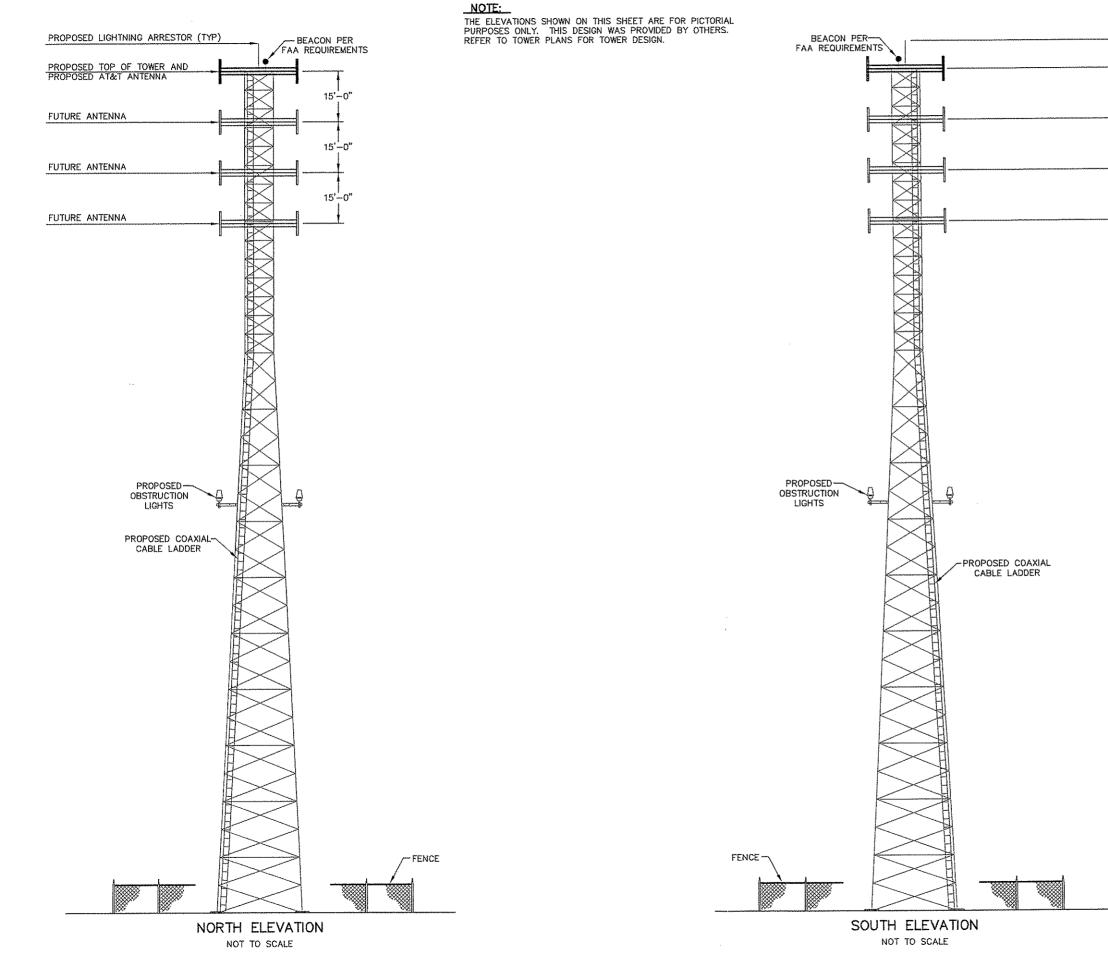
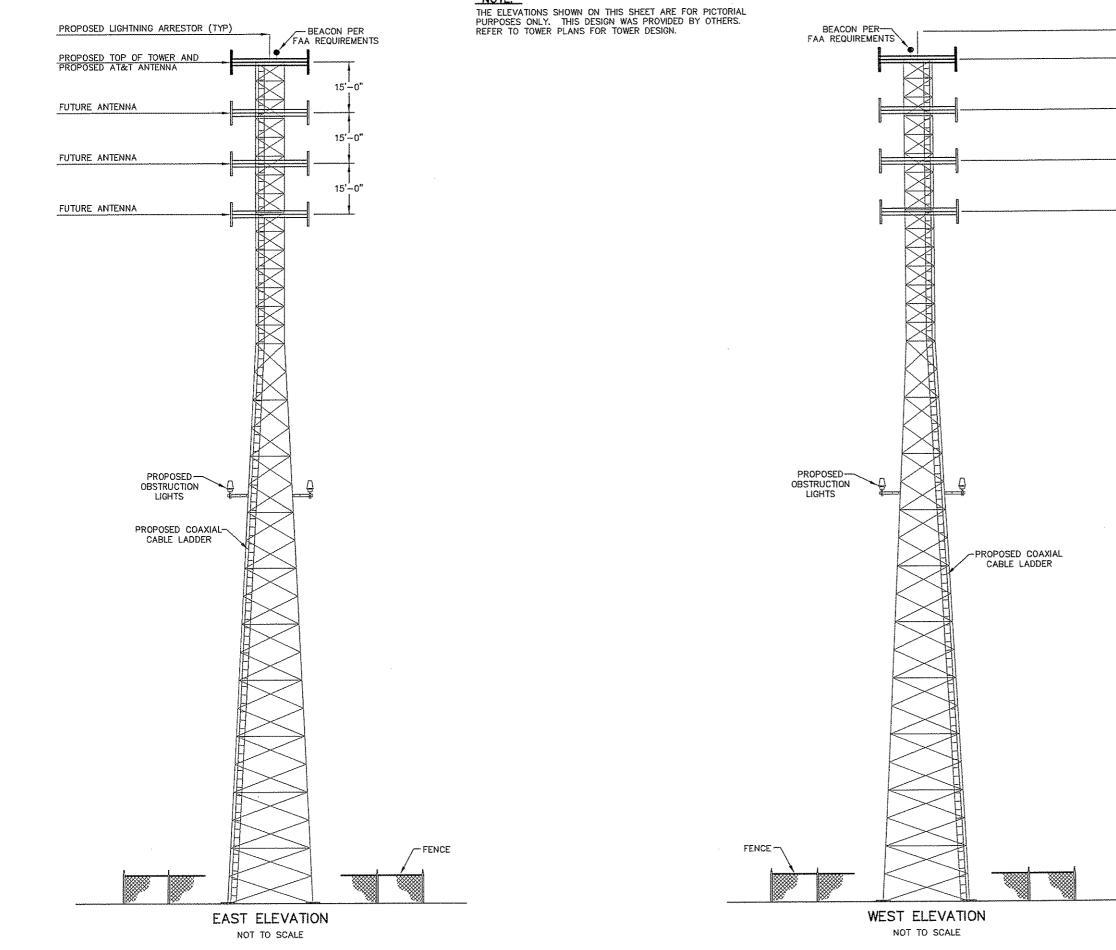


Exhibit C



	at&t
	It's just good business.
	3001 TAYLOR SPRINGS DRIVE LOUISVILLE, KENTUCKY 40220 (502) 459–8402 PHONE (502) 459–8427 FAX
	WOODROW W MARCUM. JR 13602
	SITE ID NUMBER:
RR RR WRELESS ANTENNA CENTER VING ARRESTOR	SITE ADDRESS: HIGHWAY 11 NORTH GIRDLER, KY 40943
RR RR WIRELESS ANTE	LATITUDE: 36' 56' 28.683"N LONGITUDE: 83' 50' 31.937"W
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NOTE:

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FUTURE ANTENNA CENTER FUTURE ANTENNA CENTER FUTURE ANTENNA CENTER 300'-0" TO TOP OF PROPOSED TOWER AND AT&T W 300'-0" TO TOP OF PROPOSED LIGHTNI	PARCEL NUMBER: 34 SOURCE OF TITLE: DEED BOOK 109, PAGE 250 PROPERTY OWNER: PARIS & MAE LEE PO BOX 216 GIRDLER, KY 40943 NO. REVISION/ISSUE DATE
0° 0°	1         ISSUE FOR COMMENT         08/27/08           2         ISSUE FOR ZONING         10/23/08
	EAST & WEST ELEVATIONS
<u> </u>	SHEET: Z-5

# Exhibit D



# **Structural Design Report** 300' S3TL Series HDO Self-Supporting Tower

þ

located at: Girdler, KY

prepared for: NSORO LLC by: Sabre Towers & Poles <sup>™</sup>

Job Number: 09-10054

October 7, 2008

Tower Profile	1
Foundation Design Summary (Option 1)	2
Foundation Design Summary (Option 2)	3
Maximum Leg Loads	4
Maximum Diagonal Loads	5
Maximum Foundation Loads.	6
Calculations	A1-A14

Tower by

Approved by

Foundation by





	PLAN	<ul> <li>NOTES:</li> <li>The tower model is S3TL Series HDO.</li> <li>Transmission lines are to be attached i standard 6 hole single rail waveguide 1 with stackable hangers.</li> <li>Azimuths are relative (not based on tri Foundation loads shown are maximums.</li> <li>(6) 1 1/2" dia. A449 anchor bolts per Minimum 57.5" embedment from top of con top of nut.</li> <li>(Al unequal angles are oriented with ti leg vertical.</li> </ul>	7. This tower was designed for Structure Exposure Category C and Topographic Ca       8. The foundation loads shown below are f       ANTENNA LIST       NO     ELEV       1     300'       (6) DEXLN-9090C-R2M     (12) 1       + Platform	2         300'         (12) ETD19G8-12UB           3         288'         (9) 8' x 1' x 3in         (9) 1           4         288'         (9) ETD19G8-12UB         (9) 1           5         276'         (9) 8' x 1' x 3in         (9) 1           6         276'         (9) ETD19G8-12UB         (9) 1           7         264'         (9) ETD19G8-12UB         (9) 1           8         264'         (9) ETD19G8-12UB         (9) 1	NO         TYPE         .           A         8.6250"x0.3220" PIPE         .           B         5.5625"x0.5000" PIPE         .           C         5.5625"x0.3750" PIPE         .           D         5.5625"x0.2580" PIPE         .	E 4.5000*x0.3370" PIPE F 3.5000*x0.3370" PIPE G 2.3750*x0.1540" PIPE H 1 3-1/2*x5*x5/16" I 4*x4*x5/16" J 1 3-1/2*x5*x1/4" K 1 3-1/2*x5*x1/4" L 3-1/2*x5*x1/4" H 2 3*x3*x1/4" H 4 3*x4*x1/4"	N L 3"x3"x3/16" O L 2-1/2"x2-1/2"x3/16" P L 2"x2"x3/16" Q L 2"x2"x1/8" CENS	10/7/0
ж ж ж ж ж к к к к к к к к к к к к к к к	PLAN	<ol> <li>The tower model is SJTL Set</li> <li>Transmission lines are to b standard 6 hole single rail with stackable hangers.</li> <li>Azimuths are relative (not</li> <li>Foundation loads shown are</li> <li>(6) 1 1/2" dia. A449 anchoo Hinimum 57.5" embedment fro top of nut.</li> <li>All unequal angles are origined wortical.</li> </ol>	7. This tower was designed for Exposure Category C and Top 8. The foundation loads shown       NTENNA LIST       NO     ELEV       ANTENNA       1     300'       (6) DEXLH-9090C-R2M       + Platform	2 300' (12) ETD19G8-12UB 3 288' (9) 8' x 1' x 3in + 10' 3T-Boom(R) 4 288' (9) ETD19G8-12UB 5 276' (9) 8' x 1' x 3in + 10' 3T-Boom(R) 6 276' (9) ETD19G8-12UB 7 264' (9) ETD19G8-12UB 9 8' x 1' x 3in + 10' 3T-Boom(R)	NO         TYPE         .           A         8.6250"x0.3220" PIPE         .           B         5.5625"x0.5000" PIPE         .           C         5.5625"x0.3750" PIPE         .           D         5.5625"x0.3750" PIPE         .	E 4.5000°x0.3370° PIFE F 3.5000°x0.3000° PIFE G 2.3750°x0.1540° PIFE H U 3-1/2°x5°x5/16° I U 4°x4°x5/16° J U 3-1/2°x5°x1/4° K U 3-1/2°x5°x1/4° L 3-1/2°x3°1/4° W U 3°x3°x1/4°	V.K.	10 l
0       0			NO	3 4 5 7	NO A B C	E F G H I J K L M N	5	****************
0       1							3	₹
$\begin{bmatrix} I & J & K \\ I & L & 4^{1}X4^{1}K1/4^{1} \\ I & I \\ M \\$								
I     J     K     L     4"X4"X1/4"     L     P     Q       I     I     I     I     I     I     P     Q       M     M     I     I     I     I     I     P       M     M     I     I     I     I     I     I       1     M     I     I     I     I     I       1     M     I     I     I     I       2     J4"     (2) 5/8"     (1) 3/4"     I     I	280.0' 275.0'	255.0' 240.0' 220.0'	180.0'	140.0'	100.0'	40.0'	20.0'	. 13.3'
I     J     K     L     4*x4*x1/4*     E     Q       I     I     C     L     2*x2*x1/2*     P     Q       M     C     E     P     Q       M     C     E     P     Q       M     C     E     P     Q       M     C     E     P     Q	280.0 <sup>1</sup> 275.0 <sup>1</sup>	220.0' 225.0' 220.0'		140.0'		60.0'		
I     J     K     L     4*x4*x1/4*     L     P     Q       I     I     I     Q     P     P     Q       M     M     I     Q     P     P	280.0 <sup>1</sup> 275.0 <sup>1</sup>	-0     -0     -0       -0     -0     255.01       240.01     -0       -0     -0       -0     -0		140.0'		40.0 <sup>1</sup>		
IJK L4"X4"X1/4" L M M O L 2"X2"X1/8" P Q	280.0 <sup>1</sup> 275.0 <sup>1</sup>	240.0 <sup>1</sup> 240.0 <sup>1</sup> 220.0 <sup>1</sup>		140.0'				
IJK L4 <sup>m</sup> X4 <sup>m</sup> X1/4 <sup>m</sup> L 4 <sup>m</sup> X4 <sup>m</sup> X1/8 <sup>m</sup> P Q	280.0' 275.0'	i         i	180.0'	140.0'				
	280,0 <sup>1</sup> 275.0 <sup>1</sup>	220.0'		140.0'		40.0 <sup>1</sup>		

;

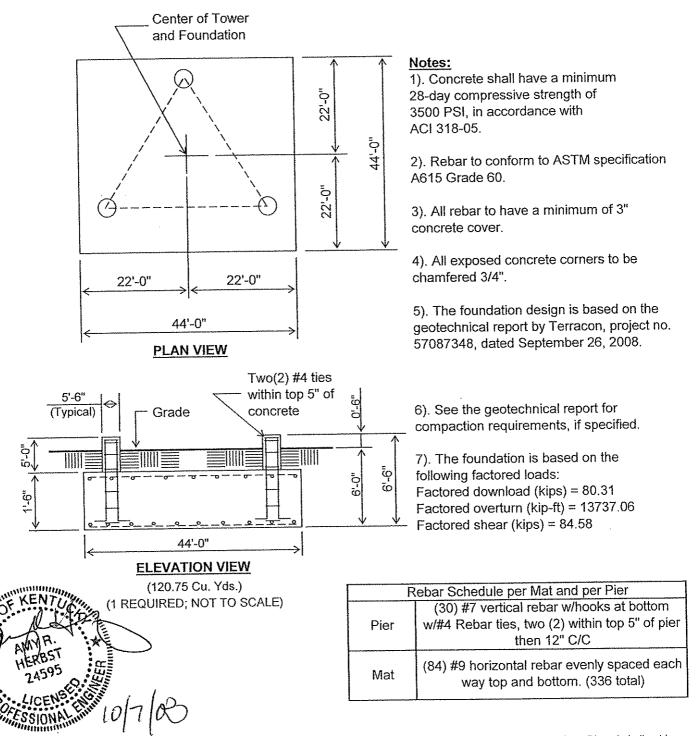


No.: 09-10054 Page: 2 Date: 10/7/08 By: ARH

### Customer: NSORO LLC Site: Girdler, KY

3

300 ft. Model S3TL Series HDO Self Supporting Tower At 90 mph Wind with no ice and 30 mph Wind with 0.75 in. Ice per ANSI/TIA-222-G-2005. Antenna Loading per Page 1



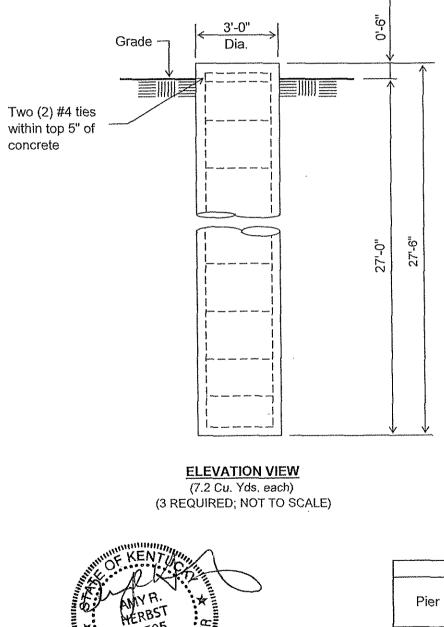
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No.: 09-10054 Page: 3 Date: 10/7/08 By: ARH

### Customer: NSORO LLC Site: Girdler, KY

300 ft. Model S3TL Series HDO Self Supporting Tower At 90 mph Wind with no ice and 30 mph Wind with 0.75 in. Ice per ANSI/TIA-222-G-2005. Antenna Loading per Page 1



### Notes:

1). Concrete shall have a minimum 28-day compressive strength of 3000 PSI, in accordance with ACI 318-05.

2). Rebars to conform to ASTM specification A615 Grade 60.

3). All rebar to have a minimum of 3" concrete cover.

4). All exposed concrete corners to be chamfered 3/4".

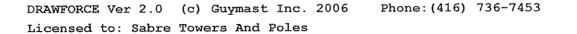
5). The foundation design is based on the geotechnical report by Terracon, project no. 57087348, dated September 26, 2008.

6). See the geotechnical report for drilled pier installation requirements, if specified.

7). The foundation is based on the following factored loads: Factored uplift (kips) = 466.28 Factored download (kips) = 538.45 Factored shear (kips) = 51.12

	Rebar Schedule per Pier
Pier	(14) #10 vertical rebar w/#4 ties, two (2) within top 5" of pier then 12" C/C

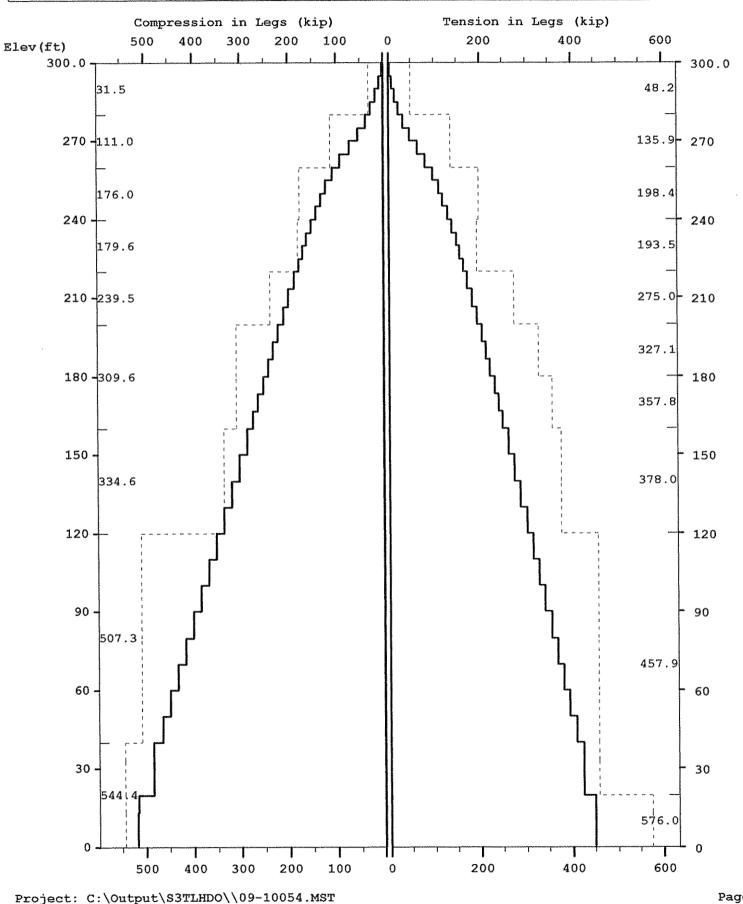
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# 3 oct 2008

10:26:31

Maximum

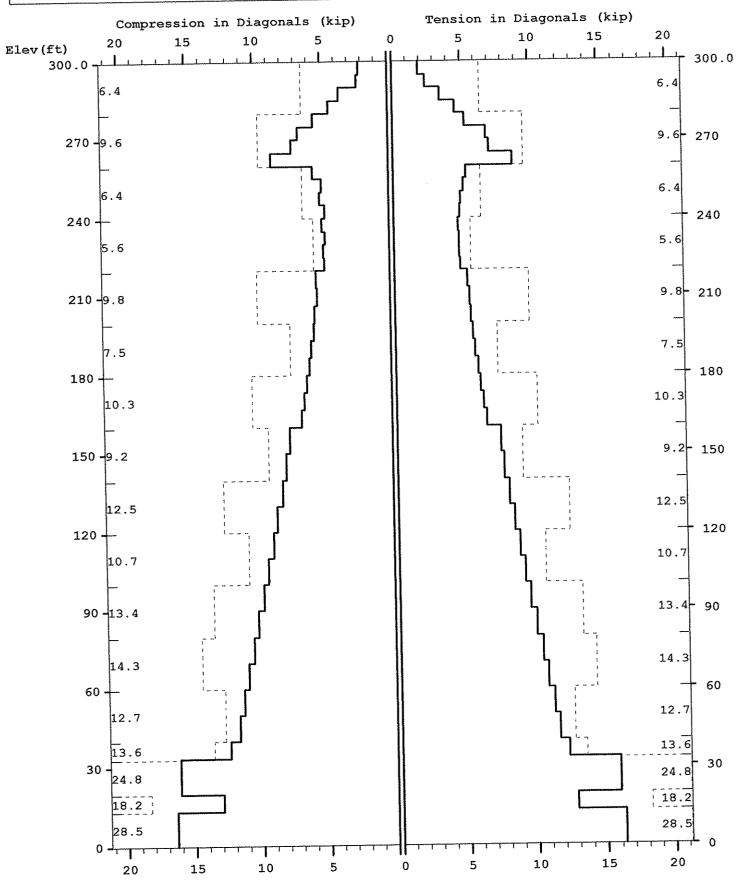


Page

DRAWFORCE Ver 2.0 (c) Guymast Inc. 2006 Phone: (416) 736-7453

Licensed to: Sabre Towers And Poles

Maximum

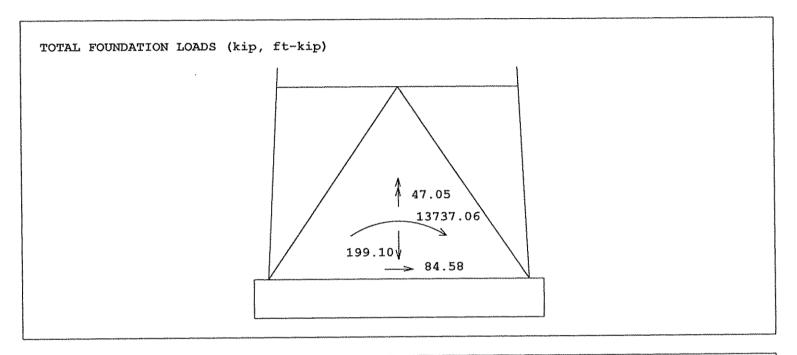


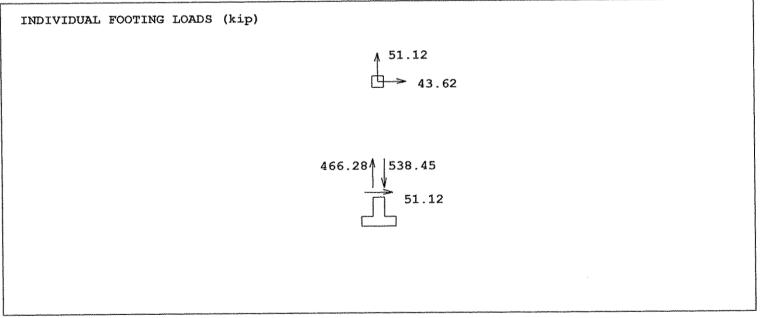
Project: C:\Output\S3TLHDO\\09-10054.MST

Page 5

DRAWFORCE Ve	er 2.0	(c) (	Guymast	Inc.	2006	Phone: (416)	736-7453	3	oct	2008
Licensed to	: Sabre	Towe:	rs And I	Poles					10:2	6:31
[										

Maximum





MAST G- Latticed Tower Analysis (Unguy Processed under license at:	ed) (c)2005	Guymast	Inc.	416-736-7453
Sabre Towers And Poles	on 	: 3 oct	2008	at: 10:23:36

09-10054.txt

### MAST GEOMETRY ( ft )

PANEL TYPE	NO.OF LEGS	ELEV.AT BOTTOM	ELEV.AT TOP	F.WAT BOTTOM	F.WAT TOP	TYPICAL PANEL HEIGHT
*****	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	$\begin{array}{c} 295.00\\ 280.00\\ 275.00\\ 260.00\\ 255.00\\ 240.00\\ 220.00\\ 200.00\\ 180.00\\ 160.00\\ 140.00\\ 120.00\\ 100.00\\ 100.00\\ 60.00\\ 40.00\\ 33.33\\ 20.00\\ 13.33\\ 0.00\end{array}$	300.00 295.00 280.00 275.00 260.00 255.00 240.00 200.00 180.00 160.00 140.00 120.00 100.00 80.00 60.00 40.00 33.33 20.00 13.33	5.00 5.00 5.00 5.00 7.00 9.00 11.00 13.00 15.00 17.00 19.00 21.00 25.00 27.67 29.00 29.67 31.00	5.00 5.00 5.00 5.00 5.00 7.00 9.00 11.00 13.00 15.00 17.00 19.00 21.00 23.00 27.00 27.67 29.00 29.67	5.00 5.00 5.00 5.00 5.00 5.00 6.67 6.67 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 13.33 6.67 13.33

#### MEMBER PROPERTIES \_\_\_\_\_

MEMBER TYPE	BOTTOM ELEV ft	TOP ELEV ft	X-SECTN AREA in.sq	RADIUS OF GYRAT in	ELASTIC MODULUS ksi	THERMAL EXPANSN /deg
LE LE LE LE LE DI DI DI DI DI DI DI DI	$\begin{array}{c} 280.00\\ 260.00\\ 240.00\\ 220.00\\ 200.00\\ 160.00\\ 120.00\\ 0.00\\ 280.00\\ 260.00\\ 260.00\\ 220.00\\ 180.00\\ 160.00\\ 140.00\\ 100.00\\ 40.00\\ 20.00\\ \end{array}$	300.00 280.00 260.00 240.00 220.00 160.00 120.00 300.00 280.00 260.00 220.00 180.00 160.00 140.00 100.00	$1.075 \\ 3.016 \\ 4.407 \\ 4.299 \\ 6.111 \\ 7.952 \\ 8.399 \\ 12.763 \\ 0.484 \\ 0.715 \\ 0.484 \\ 0.902 \\ 1.090 \\ 1.438 \\ 1.688 \\ 1.938 \\ 1.812 \\ 1.812 \\ 0.901 \\ 0.902 \\ 0.901 \\ 0.902 \\ 0.902 \\ 0.901 \\ 0.901 \\ 0.901 \\ 0.902 \\ 0.902 \\ 0.901 \\ 0.902 \\ 0.9$	0.787 0.787 0.787 0.787 0.787 0.787 0.787 0.626	29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000. 29000.	0.0000116 0.0000116 0.0000116 0.0000116 0.0000116 0.0000116 0.0000116 0.0000116 0.0000116 0.0000116 0.0000116 0.0000116 0.0000116 0.0000116 0.0000116 0.0000116
DI	33.33	40.00			<i>2</i> ,000.	0.0000110

			09-10	)054.txt	
DŤ	20.00	33.33	2.062	0.626	29000. 0.0000116
DI	13.33	20.00	2.402	0.626	29000. 0.0000116
DI	0.00	13.33	2.559	0.626	29000. 0.0000116
HO	295.00	300.00	0.484	0.626	29000. 0.0000116
НО	275.00	280.00	0.715	0.626	29000. 0,0000116
НО	255.00	260.00	0.484	0.626	29000. 0.0000116
НО	20.00	33.33	2.402	0.626	29000. 0.000116
НО	0.00	13.33	2.402	0.626	29000. 0.0000116
BR	20.00	33.33	1.438	0.000	29000. 0.0000116
BR	0.00	13.33	1.438	0.000	29000. 0.0000116

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

BOTTOM	TOP	LI	EGS	DIAG	ONALS	HORIZ	ONTALS	INT	BRACING
ELEV	ELEV	COMP	TENS	COMP	TENS	COMP	TENS	COMP	TENS
ft	ft	kip	kip	kip	kip	kip	kip	kip	kip
295.0 280.0 275.0 260.0 255.0 240.0 220.0 200.0	300.0 295.0 280.0 275.0 260.0 255.0 240.0 220.0	31.48 31.48 110.98 110.98 175.98 175.98 175.61 239.46	48.15 48.15 135.90 135.90 198.45 198.45 193.50 274.95	6.39 6.39 9.58 9.58 6.39 6.39 5.63 9.84	6.39 6.39 9.58 9.58 6.39 6.39 5.63 9.84	5.82 0.00 8.46 0.00 5.82 0.00 0.00 0.00	5.82 0.00 8.46 0.00 5.82 0.00 0.00 0.00	$\begin{array}{c} 0.00\\ 0.00\\ 0.00\\ 0.00\\ 0.00\\ 0.00\\ 0.00\\ 0.00\\ 0.00\\ 0.00\\ 0.00\\ \end{array}$	$\begin{array}{c} 0.00\\$
180.0	200.0	309.64	327.10	7.46	7.46 10.34	0.00 0.00	$0.00 \\ 0.00$	$0.00 \\ 0.00$	0.00 0.00
160.0	$180.0 \\ 160.0$	309.64 334.65	357.75 378.00	$10.34 \\ 9.19$	9.19	0.00	0.00	0.00	0.00
$140.0 \\ 120.0$	140.0	334.65	378.00	12.53	12.53	0.00	ŏ.ŏŏ	Ŏ.00	0.00
100.0	120.0	507.33	457.90	10.73	10.73	0.00	0.00	0.00	0.00
80.0 60.0 40.0 33.3 20.0 13.3 0.0	$   \begin{array}{r}     100.0 \\     80.0 \\     60.0 \\     40.0 \\     33.3 \\     20.0 \\     13.3   \end{array} $	507.33 507.33 507.33 544.40 544.40 544.40 544.40	457.90 457.90 457.90 457.90 457.90 576.00 576.00	13.43 14.31 12.68 13.57 24.82 18.24 28.49	13.43 14.31 12.68 13.57 24.82 18.24 28.49	$0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 19.36 \\ 0.00 \\ 17.34$	$\begin{array}{c} 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 19.36 \\ 0.00 \\ 17.34 \end{array}$	0.00 0.00 0.00 7.52 0.00 6.69	$0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 7.52 \\ 0.00 \\ 6.69 $

## 

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

LOADING CONDITION A

90 mph wind with no ice. Wind Azimuth: 00

	LOADING							
LOAD TYPE	ELEV	APPLYLOA RADIUS	DAT AZI	LOAD AZI	FORCES	DOWN	VERTICAL	ENTS TORSNAL
IIFE	ft	ft	~~~	, <u>, , , , , , , , , , , , , , , , , , </u>	kip	kip	ft-kip	ft-kip
C C	300.0 288.0	$0.00 \\ 0.00$	0.0	$0.0 \\ 0.0$	3.89 3.26	$4.40 \\ 1.85$	$0.00 \\ 0.00$	$0.00 \\ 0.00$
c c	276.0	0.00	0.0 0.0	0.0 0.0	3.23 3.20	1.85 1.85	$0.00 \\ 0.00$	$\begin{array}{c} 0.00\\ 0.00\end{array}$

	300.0 295.0 290.0 290.0 285.0 280.0 285.0 280.0 275.0 265.0 265.0 260.0 240.0 240.0 220.0 200.0 180.0 180.0 160.0 160.0 140.0 140.0 140.0 140.0 140.0 140.0 120.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 13.3 33.3 20.0 25.0 26.0 20		$\begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0$	$\begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0$	09-100 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	220022335566880011122344334545550044991	0.05 0.05 0.05 0.05 0.05 0.05 0.06 0.10 0.10 0.10 0.11 0.12 0.12 0.12 0.21 0.221 0.221 0.221 0.221 0.221 0.222 0.224 0.30 0.311 0.312 0.321 0.325 0.325 0.345 0.455 0.555 0.555 0.555 0.555 0.555 0.555 0.555 0.555 0.555 0.555 0.5555 0.5555 0.55555 0.555555555555555555555555555555555555	$\begin{array}{c} 0.04\\ 0.04\\ 0.04\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.02\\ 0.02\\ 0.01\\ 0.02\\ 0.02\\ 0.02\\ 0.02\\ 0.02\\ 0.02\\ 0.03\\$	$\begin{array}{c} 0.08\\ 0.08\\ 0.08\\ 0.09\\ 0.09\\ 0.09\\ 0.10\\ 0.08\\ 0.04\\ 0.06\\ 0.05\\ 0.05\\ 0.05\\ 0.05\\ 0.05\\ 0.05\\ 0.04\\$	
LOA INF	DS DIS	FOR THIS UPL MEMBER FORCES	R FOUN	IDN		ISPL		FOUNDN LOADS		
r	no yes	s yes	y€	<b>!</b> S	no	no	no	no		

90 mph wind with no ice. Wind Azimuth: 00

MAST LOADING

~~~~~~

| LOAD<br>TYPE                                                                                | ELEV<br>ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | APPLY<br>RAD                                                                                | LOAD<br>IUS<br>ft                                                  | .AT<br>AZI                                                       | LOAD<br>AZI                                                      | HOR      | 054.txt<br>FORCES.<br>IZ<br>ip                                                                       | DOWN<br>kip                                                                                                                                                                                          | VERTI  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | TS<br>TORSNAL<br>ft-kip                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|----------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| C<br>C<br>C<br>C                                                                            | 300.0<br>288.0<br>276.0<br>264.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0<br>0                                                                                      | .00<br>.00<br>.00<br>.00                                           | $\begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\end{array}$        | $0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0$                                | 3.<br>3. | 89<br>26<br>23<br>20                                                                                 | 3.30<br>1.39<br>1.39<br>1.39                                                                                                                                                                         | 0<br>0 | .00<br>.00<br>.00<br>.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | $0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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| D<br>D<br>D<br>D<br>D<br>D<br>D<br>D<br>D<br>D<br>D<br>D<br>D<br>D<br>D<br>D<br>D<br>D<br>D | 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Page A4

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

MAST LOADING

| LOAD<br>TYPE     | ELEV<br>ft                                                                                                                                                                                                                                                                                                                                                              | APPLYLOAD<br>RADIUS<br>ft                                       | AZI                                                              | LOAD<br>AZI                                                      | FORCES.<br>HORIZ<br>kip                                                                                                                                                                                                                                                                                                                                                                                                           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| C<br>C<br>C<br>C | 300.0<br>288.0<br>276.0<br>264.0                                                                                                                                                                                                                                                                                                                                        | $\begin{array}{c} 0.00\\ 0.00\\ 0.00\\ 0.00\\ 0.00 \end{array}$ | $0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0$                                | $0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0$                                | 0.51<br>0.42<br>0.41<br>0.41                                                                                                                                                                                                                                                                                                                                                                                                      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8.82<br>3.63<br>3.63<br>3.62                                                                                                                                                                                                                                                                                                         | $\begin{array}{c} 0.00\\ 0.00\\ 0.00\\ 0.00\\ 0.00\end{array}$                                                                                                                                                                                                                                           | $0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00$                                                                                                                                                                                                                                                                                                                                                 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|                  | 300.0<br>295.0<br>290.0<br>290.0<br>285.0<br>280.0<br>285.0<br>265.0<br>265.0<br>265.0<br>265.0<br>265.0<br>265.0<br>260.0<br>255.0<br>240.0<br>220.0<br>200.0<br>200.0<br>180.0<br>160.0<br>160.0<br>160.0<br>160.0<br>140.0<br>120.0<br>100.0<br>100.0<br>80.0<br>60.0<br>60.0<br>40.0<br>100.0<br>100.0<br>100.0<br>100.0<br>100.0<br>100.0<br>100.0<br>13.3<br>13.3 | $\begin{array}{c} 0.00 \\ 0.00 \\ 0.00 \end{array}$             | $\begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0$ | $\begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0$ | $\begin{array}{c} 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.02\\ 0.02\\ 0.02\\ 0.02\\ 0.02\\ 0.02\\ 0.02\\ 0.02\\ 0.02\\ 0.02\\ 0.02\\ 0.02\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 0.03\\ 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0.24\\ 0.24\\ 0.21\\ 0.24\\ 0.26\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.35\\ 0.55\\ 0.55\\ 0.55\\ 0.55\\ 0.55\\ 0.62\\ 0.68\\ 0.77\\ 0.67\\ 0.76\\ 0.77\\ 0.67\\ 0.95\\ 0.72\\ 1.01\\ \end{array}$ | $\begin{array}{c} 0.16\\ 0.16\\ 0.14\\ 0.14\\ 0.15\\ 0.15\\ 0.15\\ 0.13\\ 0.05\\ 0.05\\ 0.05\\ 0.05\\ 0.05\\ 0.05\\ 0.05\\ 0.05\\ 0.05\\ 0.05\\ 0.05\\ 0.05\\ 0.06\\ 0.05\\ 0.06\\ 0.06\\ 0.07\\ 0.06\\ 0.08\\ 0.07\\ 0.09\\ 0.08\\ 0.10\\ 0.09\\ 0.11\\ 0.10\\ 0.12\\ 0.12\\ 0.13\\ 0.14\\ \end{array}$ | $\begin{array}{c} 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 0.01\\ 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0.01\\$ |

| D            | 0.0       | 0.00                          | 0.0   | 0.0       |     | 0054.tx<br>.03 | t<br>1.01                 | 0.23            | 0.01 |
|--------------|-----------|-------------------------------|-------|-----------|-----|----------------|---------------------------|-----------------|------|
|              | S PRINTIN |                               |       |           |     |                |                           |                 |      |
| LOAE<br>INPL | DS DISPL  | OR THIS L<br>MEMBER<br>FORCES | FOUNE | <b>DN</b> | ALL | MAX<br>DISPL   | IMUMS<br>MEMBER<br>FORCES | FOUNDN<br>LOADS |      |
| nc           | o yes     | yes                           | yes   | 5         | no  | no             | no                        | no              |      |

## MAXIMUM MAST DISPLACEMENTS:

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

| ELEV<br>ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | DEF<br>NORTH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | LECTIONS (ft<br>EAST                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | t)<br>DOWN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ~-TILTS (<br>NORTH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DEG)<br>EAST                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | TWIST<br>DEG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------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| $\begin{array}{c} 300.0\\ 295.0\\ 290.0\\ 285.0\\ 285.0\\ 280.0\\ 275.0\\ 260.0\\ 255.0\\ 260.0\\ 255.0\\ 240.0\\ 235.0\\ 240.0\\ 235.0\\ 240.0\\ 235.0\\ 220.0\\ 235.0\\ 220.0\\ 235.0\\ 220.0\\ 235.0\\ 220.0\\ 235.0\\ 220.0\\ 235.0\\ 220.0\\ 235.0\\ 220.0\\ 235.0\\ 220.0\\ 235.0\\ 220.0\\ 235.0\\ 200.0\\ 193.3\\ 166.7\\ 160.0\\ 150.0\\ 140.0\\ 130.0\\ 120.0\\ 140.0\\ 130.0\\ 120.0\\ 140.0\\ 130.0\\ 120.0\\ 100.0\\ 90.0\\ 80.0\\ 70.0\\ 60.0\\ 50.0\\ 40.0\\ 33.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 13.3\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.0\\ 20.$ | A.909 G<br>4.909 G<br>4.702 G<br>4.499 G<br>4.294 G<br>4.096 G<br>3.903 G<br>3.716 G<br>3.531 G<br>3.551 G<br>3.186 G<br>2.723 G<br>2.043 G<br>3.763 G<br>3.716 G<br>0.701 G<br>0.600 G<br>0.2177 G<br>0.2172 G<br>0.1122 G<br>0.012 G<br>0.0048 G<br>0.017 G<br>0.007 G | -4.683 D<br>-4.485 D<br>-4.291 D<br>-4.095 D<br>-3.906 D<br>-3.722 D<br>-3.722 D<br>-3.543 D<br>-3.366 D<br>-3.198 D<br>-3.366 D<br>-2.883 D<br>-2.734 D<br>-2.593 D<br>-2.457 D<br>-2.329 D<br>-2.457 D<br>-2.329 D<br>-2.069 D<br>-1.944 D<br>-1.676 D<br>-1.553 D<br>-1.435 D<br>-1.324 D<br>-1.217 D<br>-1.217 D<br>-1.119 D<br>-1.023 D<br>-0.892 D<br>-0.773 D<br>-0.665 D<br>-0.569 D<br>-0.481 D<br>-0.329 D<br>-0.263 D<br>-0.205 D<br>-0.205 D<br>-0.106 D<br>-0.016 D<br>-0.006 J | 0.071 G<br>0.067 G<br>0.062 G<br>0.058 G<br>0.054 G<br>0.050 G<br>0.044 G<br>0.041 G<br>0.041 G<br>0.038 G<br>0.035 G<br>0.031 G<br>0.029 e<br>0.028 e<br>0.028 e<br>0.028 e<br>0.026 e<br>0.026 e<br>0.026 e<br>0.027 e<br>0.026 e<br>0.027 e<br>0.028 e<br>0.028 e<br>0.028 e<br>0.029 e<br>0.028 e<br>0.029 e<br>0.028 e<br>0.029 e<br>0.028 e<br>0.029 e<br>0.028 e<br>0.029 e<br>0.029 e<br>0.029 e<br>0.029 e<br>0.029 e<br>0.021 e<br>0.021 e<br>0.019 e<br>0.010 e<br>0.0010 e<br>0.0000 e | 2.356 G<br>2.349 G<br>2.324 G<br>2.279 G<br>2.201 G<br>2.103 G<br>2.027 G<br>1.929 G<br>1.855 G<br>1.782 G<br>1.632 G<br>1.632 G<br>1.632 G<br>1.478 G<br>1.478 G<br>1.478 G<br>1.478 G<br>1.478 G<br>1.255 G<br>1.115 G<br>1.011 G<br>1.011 G<br>0.960 G<br>0.809 G<br>0.809 G<br>0.809 G<br>0.809 G<br>0.597 G<br>0.528 G<br>0.483 G<br>0.350 G<br>0.350 G<br>0.218 G<br>0.350 G<br>0.218 G<br>0.258 G<br>0.218 G<br>0.258 | -2.252 D<br>-2.245 D<br>-2.221 D<br>-2.178 D<br>-2.103 D<br>-2.065 D<br>-2.010 D<br>-1.938 D<br>-1.844 D<br>-1.774 D<br>-1.774 D<br>-1.631 D<br>-1.631 D<br>-1.412 D<br>-1.412 D<br>-1.339 D<br>-1.412 D<br>-1.339 D<br>-1.266 D<br>-1.198 D<br>-1.014 D<br>-0.964 D<br>-0.915 D<br>-0.866 D<br>-0.702 D<br>-0.568 D<br>-0.568 D<br>-0.502 D<br>-0.417 D<br>-0.374 D<br>-0.374 D<br>-0.374 D<br>-0.290 D<br>-0.207 D<br>-0.207 D<br>-0.138 D<br>-0.082 D<br>-0.082 D<br>-0.085 D | -0.246 R<br>-0.245 R<br>-0.235 R<br>-0.227 R<br>-0.227 R<br>-0.220 R<br>-0.213 R<br>-0.204 R<br>-0.195 R<br>-0.195 R<br>-0.181 R<br>-0.168 R<br>-0.156 R<br>-0.145 R<br>-0.125 R<br>-0.125 R<br>-0.116 R<br>-0.106 R<br>-0.100 L<br>0.094 L<br>-0.088 F<br>-0.082 F<br>0.076 L<br>0.076 L<br>0.076 L<br>0.076 L<br>0.0661 L<br>0.0661 L<br>0.0661 L<br>0.043 L<br>-0.035 F<br>-0.021 F<br>-0.021 F<br>-0.021 F<br>-0.021 F<br>-0.021 F<br>-0.021 F<br>-0.021 F<br>-0.021 L<br>0.010 L<br>0.004 L<br>0.005 L<br>0.010 L<br>0.010 L<br>0.010 L<br>0.010 L<br>0.010 L<br>0.010 L<br>0.001 L<br>0.001 L<br>0.001 L<br>0.001 L<br>0.001 L<br>0.003 L |
| 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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                                                                                                                        | 0.000 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

# MAXIMUM TENSION IN MAST MEMBERS (kip)

| ELEV<br>ft | LEGS     | DIAG       | HORIZ             | BRACE  |
|------------|----------|------------|-------------------|--------|
| 300.0      |          |            | 0.72 K            | 0.00 A |
| 295.0      | 1.24 M   | 1.92 N     | 0.07 A            | 0.00 A |
| 290.0      | 6.33 M   | 2.39 H     | 0.03 S            | 0.00 A |
| 285.0      | 12.64 M  | 3.46 T     | 0.07 A            | 0.00 A |
| 280.0      | 22.26 M  | 4.54 H     | 0.75 A            | 0.00 A |
| 275.0      |          | 5.29 M     | 0.11 A            | 0.00 A |
| 270.0      | 47.38 M  |            | 0.02 S            | 0.00 A |
| 265.0      | 63.27 M  | 7.08 T     | 0.11 A            | 0.00 A |
| 260.0      | 81.72 M  | 8.79 H     | 0.62 S            | 0.00 A |
| 255.0      | 97.85 M  | 5.34 M     | 0.08 A            | 0.00 A |
| 250.0      | 110.32 M | 5.15 G     | 0.01 A            | 0.00 A |
| 245.0      | 119.94 M | 4.90 M     | 0.06 A            | 0.00 A |
| 240.0      | 130.39 M | 4.85 G     | 0.01 A            | 0.00 A |
| 235.0      | 139.01 M | 4.72 M     | 0.05 A            | 0.00 A |
| 230.0      | 148.24 M | 4.79 H     | 0.02 A            | 0.00 A |
| 225.0      | 156.23 M | 4.76 T     | 0.04 A            | 0.00 A |
| 220.0      | 164.70 M | 4.87 H     | 0.05 A            | 0.00 A |
|            | 173.42 M | 5.32 T     | 0.06 A            | 0.00 A |
| 213.3      | 183.91 M | 5.46 H     | 0.04 A            | 0.00 A |
| 206.7      | 193.48 M | 5.53 т     | 0.05 A            | 0.00 A |
| 200.0      | 203.40 M | 5.71 н     | 0.03 A            | 0.00 A |
| 193.3      | 212.64 M | 5.83 T     |                   | 0.00 A |
| 186.7      | 222.17 M | 6.03 H     | 0.04 A            |        |
| 180.0      | 231.24 M | 6.20 т     | 0.03 A            | 0.00 A |
| 173.3      | 240.55 M | <br>6.44 н | 0.08 A            | 0.00 A |
| 166.7      | 249.60 M | 6.66 т     | 0.03 A            | 0.00 A |
| 160.0      | 261.00 M | 7.59 т     | 0.09 A            | 0.00 A |
| 150.0      | 274.50 м | 7.86 т     | 0.08 A            | 0.00 A |
| 140.0      |          |            | 0.07 A<br>Page A7 | 0,00 A |

|       |                                        |            | 09-10054.txt |        |
|-------|----------------------------------------|------------|--------------|--------|
| 130.0 | 288.08 M                               | 8.20 T     | 0.09 A       | 0.00 A |
| 190.0 | 301.46 M                               | 8.53 T     |              |        |
| 120.0 | 314.95 м                               | <br>8.90 т | 0.06 A       | 0.00 A |
| 110.0 | ~~                                     |            | 0.05 A       | 0.00 A |
| 100.0 | 328.19 M                               | 9.24 T     | 0.06 A       | 0.00 A |
|       | 341.56 M                               | 9.64 T     |              |        |
| 90.0  | <u>354.83</u> м                        | 10.03 т    | 0.05 A       | 0.00 A |
| 80.0  |                                        |            | 0.05 A       | 0.00 A |
| 70.0  | 368.22 M                               | 10.44 T    | 0.05 A       | 0.00 A |
|       | 381.54 M                               | 10.83 T    |              |        |
| 60.0  | 394.97 м                               | 11.23 N    | 0.01 e       | 0.00 A |
| 50.0  |                                        |            | 0.07 s       | 0.00 A |
| 40.0  | 408.31 M                               | 11.60 T    | 0.23 A       | 0.00 A |
|       | 424.11 M                               | 12.26 N    |              |        |
| 33.3  | 423.15 M                               | 15.97 N    | 0.85 M       | 0.00 S |
| 20.0  |                                        |            | 0.15 A       | 0.00 S |
| 13.3  | 450.25 M                               | 12.84 T    | 0.76 M       | 0.00 I |
|       | 449.21 M                               | 16.31 T    |              |        |
| 0.0   | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ |            | 0.00 A       | 0.00 A |

# MAXIMUM COMPRESSION IN MAST MEMBERS (kip)

| ELEV<br>ft     | LEGS                  | DIAG                    | HORIZ              | BRACE            |
|----------------|-----------------------|-------------------------|--------------------|------------------|
| 300.0<br>295.0 | -3.63 G               | -2.11 H                 | -0.58 Q<br>-0.04 S | 0.00 A<br>0.00 A |
| 290.0          | -9.43 G<br>-16.25 G   | -2.23 N<br>-3.61 н      | -0.04 A            | 0.00 A           |
| 285.0<br>280.0 | -26.99 G              | -4.43 T                 | -0.05 S<br>-0.72 S | 0.00 A<br>0.00 A |
| 275.0          | -37.63 G<br>-54.31 G  | -5.56 G<br>т<br>-6.70 т | -0.08 S            | 0.00 A           |
| 270.0<br>265.0 | -70.47 G              | -7.20 H                 | -0.03 A<br>-0.09 S | 0.00 A<br>0.00 A |
| 260.0          | -90.80 G<br>-107.47 G | -8.70 T<br>-5.62 G      | -0.80 A            | 0.00 A           |
| 255.0<br>250.0 | -120.97 G             | -4.94 T                 | -0.07 S<br>-0.01 S | 0.00 A<br>0.00 A |
| 245.0          | -130.90 G             | -5.13 G                 | -0.06 S<br>Page A8 | 0.00 A           |

|       |              |                 | 09-10054.txt |        |
|-------|--------------|-----------------|--------------|--------|
| 240.0 | -142.25 G    | -4.75 T         | -0.01 s      | 0.00 A |
| 235.0 | -151.29 G    | -4.93 G         | -0.05 S      | 0.00 A |
| 230.0 | -161.33 G    | -4.73 T         | -0.02 S      | 0.00 A |
| 225.0 | -169.82 G    | -4.92 G         | -0.04 s      | 0.00 A |
| 220.0 | -179.08 G    | -4.83 T         | -0.04 S      | 0.00 A |
|       | -188.51 G    | -5.48 G         | -0.05 S      | 0.00 A |
| 213.3 | -200.18 G    | -5.42 T         |              |        |
| 206.7 | -210.70 G    | -5.64 G         | -0.04 S      | 0.00 A |
| 200.0 | -221.85 G    | -5.69 т         | -0.04 S      | 0.00 A |
| 193.3 | -232.22 G    | -5.90 G         | -0.02 S      | 0.00 A |
| 186.7 | -243.05 G    | -6.01 T         | -0.04 S      | 0.00 A |
| 180.0 | -253.32 G    |                 | -0.03 S      | 0.00 A |
| 173.3 | -264.02 G    | -6.44 T         | -0.07 S      | 0.00 A |
| 166.7 | -274.39 G    |                 | -0.02 S      | 0.00 A |
| 160.0 | -287.55 G    |                 | -0.09 s      | 0.00 A |
| 150.0 |              |                 | -0.07 S      | 0.00 A |
| 140.0 | -303.16 G    | -7.91 H         | -0.06 s      | 0.00 A |
| 130.0 | -318.99 G    |                 | -0.08 S      | 0.00 A |
| 120.0 | ~            | -8.58 H         | -0.05 s      | 0.00 A |
| 110.0 | -350.65 G    | -8.92 H         | -0.04 s      | 0.00 A |
| 100.0 | -366.57 G    | -9.30 H         | -0.05 s      | 0.00 A |
| 90.0  | -382.77 G    | -9.67 H         | -0.04 s      | 0.00 A |
| 80.0  | -398.93 G    | -10.08 H        | -0.05 s      | 0.00 A |
| 70.0  | -415.33 G    | -10.47 H        | -0.04 s      | 0.00 A |
| 60.0  | -431.68 G    | -10.88 H        | -0.01 Y      | 0.00 A |
|       | -448.25 G    | -11.25 н        | -0.08 A      | 0.00 A |
| 50.0  | -464.74 G    | -11.64 н        |              |        |
| 40.0  | -483.49 G    | -12.33 н        | -0.21 s      | 0.00 A |
| 33.3  | -484.77 G    | -16.02 н        | -1.02 G      | 0.00 N |
| 20.0  | -516.61 G    | -12.92 н        | -0.13 s      | 0.00 N |
| 13.3  | -518.00 G    |                 | -0.93 G      | 0.00 G |
| 0.0   | ~~- <u>-</u> | ~ ~ ~ _ ~ ~ ~ ~ | 0.00 A       | 0.00 A |

| MAXIMUM INDIVIDUAL FOUNDATION LOADS: (kip)                                             |                  |             |                       |                 |              |           |  |
|----------------------------------------------------------------------------------------|------------------|-------------|-----------------------|-----------------|--------------|-----------|--|
| NORTH EAST DOWN UPLIFT SHEAR                                                           |                  |             |                       |                 |              |           |  |
| 51.12 G                                                                                | 43.62 K          | 538.45      | G -460                | 5.28 M          | 51.12 G      |           |  |
| MAXIMUM TOTA                                                                           | AL LOADS ON F    | OUNDATION : | (kip & k <sup>-</sup> | ip-ft)<br>===== |              |           |  |
| HORIZONTAL DOWNOVERTURNING TORSION<br>NORTH EAST TOTAL NORTH EAST TOTAL<br>@ 0.0 @ 0.0 |                  |             |                       |                 |              |           |  |
| 84.6 -<br>S                                                                            | 79.3 84.6<br>D S | 199.1<br>f  | 13737.1<br>G          | -13002.3<br>D   | 13737.1<br>G | 47.0<br>L |  |

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# MAT FOUNDATION DESIGN BY SABRE TOWERS & POLES

Tower Description 300' S3TL Series HDO Customer NSORO LLC Project Number 09-10054 Date 10/7/2008 Engineer ARH

| Overall Loads:<br>Factored Moment (ft-kips)<br>Factored Axial (kips)<br>Factored Shear (kips)<br>Individual Leg Loads:<br>Factored Uplift (kips)<br>Factored Download (kips)<br>Factored Shear (kips)                                                                                  | 13737.06<br>80.31<br>84.58<br>466.28<br>538.45<br>51.12          | Anchor Bolt Count (per leg)                                                | <u></u>              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------|
| Width of Tower (ft)<br>Ultimate Bearing Pressure<br>Bearing Φs<br>Overturning Φs<br>Bearing Design Strength (ksf)<br>Water Table Below Grade (ft)<br>Width of Mat (ft)<br>Thickness of Mat (ft)<br>Depth to Bottom of Slab (ft)<br>Bolt Circle Diameter (in)<br>Top of Concrete to Top | 31<br>6<br>0.75<br>0.75<br>4.5<br>999<br>44<br>1.5<br>6<br>13.25 | Max. Factored Net Bearing Pressure (ksf)<br>Minimum Mat Width (ft)         | <u>1.11</u><br>43.63 |
| of Bottom Threads (in)<br>Diameter of Pier (ft)<br>Ht. of Pier Above Ground (ft)<br>Ht. of Pier Below Ground (ft)<br>Quantity of Bars in Mat<br>Bar Diameter in Mat (in)                                                                                                               | 57.5<br>5.5<br>0.5<br>4.5<br>84<br>1.128                         | Minimum Pier Diameter (ft)<br>Equivalent Square b (ft)                     | 2.60<br>4.87         |
| Area of Bars in Mat (in <sup>2</sup> )<br>Spacing of Bars in Mat (in)<br>Quantity of Bars Pier<br>Bar Diameter in Pier (in)<br>Tie Bar Diameter in Pier (in)                                                                                                                           | 83.94<br>6.28<br>30<br>0.875<br>0.5<br>12                        | Recommended Spacing (in)                                                   | 6 to 12              |
| Spacing of Ties (in)<br>Area of Bars in Pier (in <sup>2</sup> )<br>Spacing of Bars in Pier (in)<br>f'c (ksi)<br>fy (ksi)<br>Unit Wt. of Soil (kcf)<br>Unit Wt. of Concrete (kcf)<br>Volume of Concrete (yd <sup>3</sup> )                                                              | 12<br>18.04<br>6.09<br>3.5<br>60<br>0.12<br>0.15<br>120.75       | Minimum Pier A <sub>s</sub> (in <sup>2</sup> )<br>Recommended Spacing (in) | 17.11<br>6 to 12     |

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

| Two-Way Shear:                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Average d (in)                                                             | 13.872                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                   |                                                                                                                |
| φV <sub>c</sub> (kips)                                                     | 624.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | V <sub>u</sub> (kips)                                                             | 538.5                                                                                                          |
| $\phi V_c = \phi (2 + 4/\beta_c) f_c^{1/2} b_o d$                          | 937.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                   |                                                                                                                |
| $\phi V_c = \phi(\alpha_s d/b_o + 2) f_c^{1/2} b_o d$                      | 699.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                   |                                                                                                                |
| $\phi V_{c} = \phi 4 f_{c}^{1/2} b_{o} d$                                  | 624.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                   |                                                                                                                |
| Shear perimeter, b <sub>o</sub> (in)                                       | 223.91                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                   |                                                                                                                |
| βα                                                                         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                   |                                                                                                                |
| Stability:                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                |
| Resisting moment                                                           | 32582.88                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                   |                                                                                                                |
| Overturning Design Strength (ft-k)                                         | 24437.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Factored Overturning Moment (ft-k)                                                | 14286.8                                                                                                        |
| One-Way Shear:                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | V (line)                                                                          |                                                                                                                |
| ∳V <sub>c</sub> (kips)                                                     | 736.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | V <sub>u</sub> (kips)                                                             | 732.1                                                                                                          |
| Pier Design:                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Televine                                                                          | 466.3                                                                                                          |
| Design Tensile Strength (kips)                                             | 974.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Tu (kips)                                                                         | the second s |
| $\phi V_n$ (kips)                                                          | 254.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | $V_u$ (kips)                                                                      | 51,1                                                                                                           |
| $\phi V_c = \phi 2(1 + N_u / (500 A_g)) f'_c^{1/2} b_w d$                  | 254.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | - 1/2                                                                             |                                                                                                                |
| V <sub>s</sub> (kips)                                                      | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | *** V <sub>s</sub> max = 4 f' <sub>c</sub> <sup>1/2</sup> b <sub>w</sub> d (kips) | 824.7                                                                                                          |
| Maximum Spacing (in)                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | (Only if Shear Ties are Required)                                                 |                                                                                                                |
| Actual Hook Development (in)                                               | 12.74                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Req'd Hook Development I <sub>dh</sub> (in)                                       | 12.42                                                                                                          |
|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | *** Ref. ACI 11.5.5 & 11.5.6.3                                                    |                                                                                                                |
| Anchor Bolt Pull-Out:                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                |
| $\phi P_{c} = \phi \lambda (2/3) f_{c}^{1/2} (2.8 A_{SLOPE} + 4 A_{FLAT})$ | and the second se | P <sub>u</sub> (kips)                                                             | 466.3                                                                                                          |
| Pier Rebar Development Length (in)                                         | 32.06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Required Length of Development (in)                                               | 21.24                                                                                                          |
| Flexure in Slab:                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | M (ft king)                                                                       | 4549.0                                                                                                         |
| φM <sub>n</sub> (ft-kips)                                                  | 4634.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | M <sub>u</sub> (ft-kips)                                                          | 4548.9                                                                                                         |
| a (in)                                                                     | 3.21<br>0.01146                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                |
| Steel Ratio                                                                | 0.01140                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                   |                                                                                                                |
| $\beta_1$                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                |
| Maximum Steel Ratio (.75p <sub>b</sub> )                                   | 0.0187                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                   |                                                                                                                |
| Minimum Steel Ratio                                                        | 0.0018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Required Development in Pad (in)                                                  | 105.25                                                                                                         |
| Rebar Development in Pad (in)                                              | 201.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Required bevelopment in Fud (in)                                                  |                                                                                                                |
| Condition                                                                  | 1 is OK, 0 Fails                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                |
| Minimum Mat Width                                                          | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                   |                                                                                                                |
| Maximum Soil Bearing Pressure                                              | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                   |                                                                                                                |
| Pier Area of Steel                                                         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                   |                                                                                                                |
| Pier Shear                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                |
| Two-Way Shear                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                |
| Overturning                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                |
| Anchor Bolt Pull-Out                                                       | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                   |                                                                                                                |
| Flexure<br>Steel Patie                                                     | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                   |                                                                                                                |
| Steel Ratio<br>Length of Development in Pad                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                |
| Interaction Diagram Visual Check                                           | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                   |                                                                                                                |
| One-Way Shear                                                              | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                   |                                                                                                                |
| Hook Development                                                           | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | }                                                                                 |                                                                                                                |
| L                                                                          | <u></u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                   |                                                                                                                |

P.AIZ

# DRILLED STRAIGHT PIER DESIGN BY SABRE TOWERS & POLES

Tower Description 300' S3TL Series HDO Customer Name NSORO LLC Job Number 09-10054 Date 10/7/2008 Engineer ARH

| Factored Uplift (kips)<br>Factored Download (kips)<br>Factored Shear (kips)<br>Ultimate Bearing Pressure<br>Bearing Φs<br>Bearing Design Strength (ksf)<br>Water Table Below Grade (ft) | 466:28<br>538:45<br>51.12<br>9<br>0.75<br>6.75<br>999 | Anchor Bolt Count (per leg)              | 6       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------------------------------|---------|
| Bolt Circle Diameter (in)                                                                                                                                                               | 13.25                                                 |                                          |         |
| Top of Concrete to Top                                                                                                                                                                  |                                                       |                                          |         |
| of Bottom Threads (in)                                                                                                                                                                  | 57.5                                                  |                                          |         |
| Pier Diameter (ft)                                                                                                                                                                      | 3                                                     | Minimum Pier Diameter (ft)               | 2.60    |
| Ht. Above Ground (ft)                                                                                                                                                                   | 0.5                                                   |                                          |         |
| Pier Length Below Ground (ft)                                                                                                                                                           | 27                                                    |                                          |         |
| Quantity of Bars                                                                                                                                                                        | 14                                                    |                                          |         |
| Bar Diameter (in)                                                                                                                                                                       | 1.27                                                  |                                          |         |
| Tie Bar Diameter (in)                                                                                                                                                                   | 0.5                                                   |                                          |         |
| Spacing of Ties (in)                                                                                                                                                                    | 12                                                    | 2                                        |         |
| Area of Bars (in <sup>2</sup> )                                                                                                                                                         | 17.73                                                 | Minimum Area of Steel (in <sup>2</sup> ) | 5.09    |
| Spacing of Bars (in)                                                                                                                                                                    | 6.22                                                  |                                          |         |
| ťc (ksi)                                                                                                                                                                                | 3                                                     |                                          |         |
| fy (ksi)                                                                                                                                                                                | 60                                                    |                                          |         |
|                                                                                                                                                                                         |                                                       |                                          |         |
| Unit Wt. of Concrete (kcf)                                                                                                                                                              | 0.15                                                  |                                          |         |
| Download Friction Φs                                                                                                                                                                    | 0.75                                                  |                                          |         |
| Uplift Friction Φs                                                                                                                                                                      | 0.75                                                  |                                          |         |
| Volume of Concrete (yd <sup>3</sup> )                                                                                                                                                   | 7.20                                                  |                                          |         |
| Skin Friction Factor for Uplift                                                                                                                                                         | 1                                                     | Length to Ignore Download (ft)           |         |
| Ignore Bottom Length in Download?                                                                                                                                                       |                                                       | 0                                        |         |
| Depth at Bottom of Layer (ft)                                                                                                                                                           | Ult. Skin Friction (ksf)                              | (Ult. Skin Friction)*(Uplift Factor)     | γ (kcf) |
| 2                                                                                                                                                                                       | 0.00                                                  | 0.00                                     | 0.11    |
| 23                                                                                                                                                                                      | 0.85                                                  | 0.85                                     | 0.12    |
| 33                                                                                                                                                                                      | 15.00                                                 | 15.00                                    | 0.15    |
| 0                                                                                                                                                                                       | 0.00                                                  | 0.00                                     | 0       |
| 0                                                                                                                                                                                       | 0.00                                                  | 0.00                                     | 0       |
| 0                                                                                                                                                                                       | 0.00                                                  | 0.00                                     | 0       |
| 0                                                                                                                                                                                       | 0.00                                                  | 0.00                                     | 0       |
| 0                                                                                                                                                                                       | 0.00                                                  | 0.00                                     | 0       |
| 0                                                                                                                                                                                       | 0.00                                                  | 0.00                                     | 0       |
| 0                                                                                                                                                                                       | 0.00                                                  | 0.00                                     | 0       |

#### Download:

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

| <br>0.6   |  |
|-----------|--|
| <br>47.7  |  |
| <br>550.3 |  |
| 598.0     |  |

Factored Net Download (kips)

539.1

P. A13

| Uplift:                                                                     |                  |                                           |           |
|-----------------------------------------------------------------------------|------------------|-------------------------------------------|-----------|
| Nominal Skin Friction (kips)                                                | 733.7            |                                           |           |
| Wc, Weight of Concrete (kips)                                               | 29.2             |                                           |           |
| W <sub>R</sub> , Soil Resistance (kips)                                     | 1047.5           |                                           |           |
| Φs(Wr+Wc) (kips)                                                            | 807.5            |                                           |           |
| Uplift Design Strength (kips)                                               | 572.2            | Factored Uplift (kips)                    | 466.3     |
| Pier Design:                                                                |                  |                                           |           |
| Design Tensile Strength (kips)                                              | 957.7            | Tu (kips)                                 | 466.3     |
| ψV <sub>n</sub> (kips)                                                      | 56.2             | V <sub>u</sub> (kips)                     | 51.1      |
| $\phi V_c = \phi 2(1 + N_u / (500 A_g)) f_c^{1/2} b_w d$ (kips)             | 8.1              | •                                         |           |
| V <sub>s</sub> (kips)                                                       | 56.5             | *** $V_s max = 4 f'_c^{1/2} b_w d$ (kips) | 227.2     |
| Maximum Spacing (in)                                                        | 13.09            | . (Only if Shear Ties are Required)       |           |
|                                                                             |                  | *** Ref. ACI 11.5.5 & 11.5.6.3            |           |
| Anchor Bolt Pull-Out:                                                       |                  | _                                         |           |
| $\phi P_{c} = \phi \lambda (2/3) f'_{c}^{1/2} (2.8 A_{SLOPE} + 4 A_{FLAT})$ | 125.3            | P <sub>u</sub> (kips)                     | 466.3     |
| Rebar Development Length (in)                                               | 47.26            | Required Length of Development (          | in) 33.87 |
| PM 1                                                                        |                  | 1                                         |           |
| Condition                                                                   | 1 is OK, 0 Fails | 4                                         |           |
| Download                                                                    | 1                |                                           |           |

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

Condition1 is OK, 0 FailsDownload1Uplift1Area of Steel1Shear1Anchor Bolt Pull-Out1Interaction Diagram Visual Check1

# P. A14

Exhibit E

### **GEOTECHNICAL ENGINEERING REPORT**

# PROPOSED GIRDLER TELECOMMUNICATION TOWER SITE NUMBER: 098G0127 HIGHWAY 11 NORTH GIRDLER, KNOX COUNTY, KENTUCKY

TERRACON PROJECT NO.: 57087348 September 26, 2008

**Prepared For:** 

NSORO, LLC Atlanta, Georgia

Prepared by:



Louisville, Kentucky

#### September 26, 2008

**TREFERENCE** Consulting Engineers & Scientists

Nsoro, LLC 2500 Cumberland Parkway, Suite 100 Atlanta, Georgia 30339

Attention: Will Jacobs

Re: Geotechnical Engineering Report Proposed 300' Self Supporting Tower Site Name: Girdler Site Number: 098G0127 Highway 11 North Girdler, Knox County, Kentucky Terracon Project No. 57087348

Dear Mr. Jacobs:

The results of our subsurface exploration are attached. The purpose of this exploration was to obtain information on subsurface conditions at the proposed project site and, based on this information, to provide recommendations regarding the design and construction of foundations for the proposed tower.

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

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

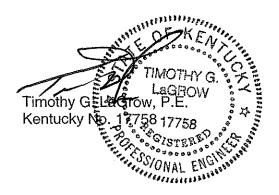
Sincerely, llerracon

Shaikh Z. Rahman, EIT. Project Engineer

n:\projects\2008\57087348\G57087348.doc

Attachments: Geotechnical Engineering Report

Copies: Addressee (1 pdf)



Terracon Consultants, Inc. 5217 Linbar Drive, #309 Nashville, Tennessee 37211 Phone 615.333.6444 Fax 615.333.6443 www.terracon.com

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Boring Location Vian Boring Log General Notes General Notes – Description of Rock Properties Unified Soil Classification System

#### **GEOTECHNICAL ENGINEERING REPORT**

#### PROPOSED GIRDLER TELECOMMUNICATIN TOWER SITE NUMBER: 098G0127 GIRDLER, KNOX COUNTY, KENTUCKY TERRACON PROJECT NO.: 57087348 September 26, 2008

### **1.0 INTRODUCTION**

The purpose of this report is to describe the subsurface conditions encountered in the boring, analyze and evaluate the test data, and provide recommendations regarding the design and construction of foundations and earthwork for the proposed tower. One boring extending to a depth of about 33 feet below the existing ground surface was drilled at the site. An individual boring log and a boring location plan are included with this report.

#### 2.0 PROJECT DESCRIPTION

Terracon understands the proposed project will consist of the construction of a 300-foot self supporting tower. Exact tower loads are not available, but based on our past experience are anticipated to be as follows:

| Vertical Load:    | 825 kips |
|-------------------|----------|
| Horizontal Shear: | 100 kips |
| Uplift:           | 650 kips |

A small, lightly loaded equipment building will also be constructed. Wall and floor loads for this building are not anticipated to exceed 1 kip per linear foot and 100 pounds per square foot, respectively. At the time of the site visit, the property was a gently to moderately sloping hillside. Existing grades within the 100-foot by 100-foot tower leasehold area were not available at the time of this writing. Based on observed topography, several feet of cut/fill may be required.

#### 3.0 EXPLORATION PROCEDURES

#### 3.1 Field Exploration

The subsurface exploration consisted of drilling and sampling one boring at the site to a depth of about 33 feet below existing grade. The boring was advanced at the center of the lease area, staked by the project surveyor. Ground surface elevations were not available at the time of this report and have been omitted from the boring log. The location of the boring should be considered accurate only to the degree implied by the means and methods used to define them.

The boring was drilled with a truck-mounted rotary drill rig using hollow stem augers to advance the borehole. Representative soil samples were obtained by the split-barrel sampling procedure in general accordance with the appropriate ASTM standard. In the split-barrel sampling procedure, the number of blows required to advance a standard 2-inch O.D. split-barrel sampler the last 12 inches of the typical total 18-inch penetration by means of a 140-pound hammer with a free fall of 30 inches, is the standard penetration resistance (SPT) value (N-Value). This value is used to estimate the in-situ relative density of cohesionless soils and the consistency of cohesive soils. The sampling depths, penetration distance, and SPT N-Values are shown on the boring log. The samples were sealed and delivered to the laboratory for testing and classification.

Auger refusal was encountered at a depth of about 23 feet below the existing ground surface. The boring was extended into the refusal materials using a diamond bit attached to the outer barrel of a double core barrel. The inner barrel collected the cored material as the outer barrel was rotated at high speeds to cut the rock. The barrel was retrieved to the surface upon completion of each drill run. Once the core samples were retrieved, they were placed in a box and logged. The rock was later classified by an engineer and the "percent recovery" and rock quality designation (RQD) were determined.

The "percent recovery" is the ratio of the sample length retrieved to the drilled length, expressed as a percent. An indication of the actual in-situ rock quality is provided by calculating the sample's RQD. The RQD is the percentage of the length of broken cores retrieved which have core segments at least 4 inches in length compared to each drilled length. The RQD is related to rock soundness and quality as illustrated below:

| Relation of RQD ar | d In-situ Rock Quality |
|--------------------|------------------------|
| RQD (%)            | Rock Quality           |
| 90 - 100           | Excellent              |
| 75 - 90            | Good                   |
| 50 - 75            | Fair                   |
| 25 - 50            | Poor                   |
| 0 -25              | Very Poor              |

#### Table 1 – Rock Quality Designation (RQD)

A field log of the boring was prepared by a subcontract driller. This log included visual classifications of the materials encountered during drilling as well as the driller's interpretation of the subsurface conditions between samples. The final boring log included with this report represents an interpretation of the driller's field log and a visual classification of the soil samples made by the Geotechnical Engineer.

#### 3.2 Laboratory Testing

The samples were classified in the laboratory based on visual observation, texture and plasticity. The descriptions of the soils indicated on the boring log are in accordance with the enclosed General Notes and the Unified Soil Classification System. Estimated group symbols according to the Unified Soil Classification System are given on the boring log. A brief description of this classification system is attached to this report.

The laboratory testing program consisted of performing water content tests and an Atterberg Limits tests on representative soil samples. Information from these tests was used in conjunction with field penetration test data to evaluate soil strength in-situ, volume change potential, and soil classification. Results of these tests are provided on the boring log.

A representative sample of rock core was tested for unconfined compressive strength. Result of this test is provided on the boring log at the appropriate horizon.

Classification and descriptions of rock core samples are in accordance with the enclosed General Notes, and are based on visual and tactile observations. Petrographic analysis of thin sections may indicate other rock types. Percent recovery and rock quality designation (RQD) were calculated for these samples and are noted at their depths of occurrence on the boring log.

#### 4.0 EXPLORATORY FINDINGS

#### 4.1 Subsurface Conditions

Conditions encountered at the boring location are indicated on the boring log. Stratification boundaries on the boring log represent the approximate location of changes in soil types and the transition between materials may be gradual. Water levels shown on the boring log represent the conditions only at the time of our exploration. Based on the results of the boring, subsurface conditions on the project site can be generalized as follows.

Beneath about ½ foot of topsoil, the boring encountered sandy clay (CL) and fat clay (CH) with varying amounts of chert extending to auger refusal at about 23 feet below grade. The clays exhibited a very stiff to hard consistency based on standard penetration test (N) values in the range of about 13 to over 50 blows per foot (bpf). The presence of chert in the soil matrix most likely inflated the higher blow counts.

Rock coring techniques were employed to sample the refusal materials. The core sample consists of slightly weathered, hard, closely jointed siltstone with shale seams. Core recovery was 100 percent. Bedrock quality is considered excellent as defined by an RQD value of 91 percent. Considering the competent nature of the bedrock, coring operations were terminated at a depth of approximately 33 feet below existing grade.

#### 4.2 Site Geology

A review of the Geologic Map of Fount Quadrangle, Kentucky published by the United States Geological Survey (1978), indicates that the site is underlain by Breathitt formation of the lower and middle Pennsylvanian age. This formation consists largely of gray siltstone and shale, and minor amounts of coal and limestone. The Breathitt Formation is about 1,000 feet thick.

Tlerracon

#### 4.3 Groundwater Conditions

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

Fluctuations of the groundwater level can occur due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the boring was performed. Perched water could develop at higher levels within more permeable layers following periods of heavy or prolonged precipitation. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

#### **5.0 ENGINEERING RECOMMENDATIONS**

Based on the encountered subsurface conditions, the tower can be constructed on drilled piers or on a mat foundation. The lightly loaded equipment building can be supported on shallow spread footings. Drilled pier and shallow foundation recommendations are presented in the following paragraphs.

#### 5.1 Tower Foundation

**Drilled Pier Alternative:** Based on the results of the boring, the following tower foundation design parameters have been developed:

| Depth *<br>(feet) | Description                | Allowable<br>Skin<br>Friction<br>(psf) | Allowable<br>End<br>Bearing<br>Pressure<br>(psf) | Allowable<br>Passive<br>Pressure<br>(psf) | Internal<br>Angle of<br>Friction<br>(Degree) | Cohesion<br>(psf) | Lateral<br>Subgrade<br>Modulus<br>(pci) | Strain,<br>& <sub>50</sub><br>(in/in) |
|-------------------|----------------------------|----------------------------------------|--------------------------------------------------|-------------------------------------------|----------------------------------------------|-------------------|-----------------------------------------|---------------------------------------|
| 0-2'              | Topsoil and<br>Sandy Clay  | Ignore                                 | Ignore                                           | Ignore                                    |                                              | -                 | Ignore                                  | Ignore                                |
| 2-23'             | Sandy Clay<br>and Fat Clay | 425                                    | 3,000                                            | 1,500                                     | 0                                            | 1,500             | 125                                     | 0.007                                 |
| 23 33'            | Competent<br>Siltstone *** | 7,500 ***                              | 40,000                                           | 15,000 ***                                | 0                                            | 150,000 ***       | 3,000                                   | 0.00001                               |

#### Table 2 - Drilled Pier Foundation Design Parameters

\* Pier inspection is recommended to adjust pier length if variable soil/rock conditions are encountered.

\*\* A total unit weight of 120 and 150 pcf can be estimated for the lean clay and competent siltstone, respectively. \*\*\* The pier should be embedded a minimum of 3 feet into competent siltstone to mobilize these higher rock

strength parameters. Furthermore, it is assumed the rock socket will be extended using coring techniques rather than blasting/shooting.

The above indicated cohesion, friction angle, lateral subgrade modulus and strain values have no factors of safety, and the allowable skin friction and the passive resistances have factors of safety of 2. The cohesion, internal friction angle, lateral subgrade modulus and strain values given in the above table are based on the boring, published correlation values and Terracon's past experience with similar soil/rock types. These values should, therefore, be considered approximate. To mobilize the higher rock strength parameters, the pier should be socketed at least 3 feet into bedrock. Furthermore, it is assumed that the rock socket is developed using coring rather than blasting techniques. The allowable end bearing pressure provided in the table has an approximate factor of safety of at least 3. Total settlement of drilled piers designed using the above parameters is not anticipated to exceed ½ inch.

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

If a bedrock socket is required, it is recommended that a minimum pier length and minimum competent rock socket length be stated on the design drawings. Competent rock was encountered in the boring below a depth of about 23 feet, but could vary between tower legs or if the tower is moved from the location of the boring. If the tower center is moved from the

planned location, Terracon should be notified to review the recommendations and determine whether an additional boring is required. To facilitate pier length adjustments that may be necessary because of variable rock conditions, it is recommended that a Terracon representative observe the drilled pier excavation.

A drilled pier foundation should be designed with a minimum shaft diameter of 30 inches to facilitate clean out and possible dewatering of the pier excavation. Temporary casing may be required during the pier excavation in order to control possible groundwater seepage and support the sides of the excavation in weak soil zones. Care should be taken so that the sides and bottom of the excavations are not disturbed during construction. The bottom of the shaft should be free of loose soil or debris prior to reinforcing steel and concrete placement.

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

**Mat Foundation Alternative**: The mat foundation can be designed using the following natural soil/engineered fill parameters. These parameters are based on the findings of the boring, a review of published correlation values and Terracon's experience with similar soil conditions. These design parameters also assume that the base of the mat foundation will rest on natural soils or well-graded crushed stone that is compacted and tested on a full time basis.

| Depth<br>(feet) | Description                                       | Allowable Contact<br>Bearing Pressure (psf) | Allowable Passive<br>Pressure (psf) | Coefficient of Friction, Tan $\delta$ | Vertical Modulus of<br>Subgrade Reaction (pci) |
|-----------------|---------------------------------------------------|---------------------------------------------|-------------------------------------|---------------------------------------|------------------------------------------------|
| 0-2             | Topsoil and<br>Lean Clays                         | Ignore                                      | Ignore                              |                                       |                                                |
| ≥2              | Sandy and<br>Fat Clay or<br>Crushed<br>Stone Fill | 3,000                                       | lgnore                              | 0.35                                  | 125                                            |

| • | Table 3 - | Mat | Found | lation | Design | Parameters |
|---|-----------|-----|-------|--------|--------|------------|
|---|-----------|-----|-------|--------|--------|------------|

To assure that soft soils are not left under the mat foundation, it is recommended that a geotechnical engineer observe the foundation subgrade prior to concrete placement. Provided the above recommendations are followed, total mat foundation settlements are not anticipated to exceed about 1 inch. Differential settlement should not exceed 50 percent of the total settlement.

#### 5.2 Equipment Building Foundations

The proposed equipment building may be supported on shallow footings bearing on stiff natural soils or on properly compacted fill extending to suitable soils. The near surface fat clays have the potential for expansion under light loads such as those expected for the equipment building. To reduce the risk, we recommend a minimum of 2 feet of low volume change soil be placed below the foundation and building floor slab. Even with the recommended low volume change buffer, some differential movements of lightly loaded shallow foundations and floor slabs could occur. This office should be contacted for more aggressive measures if differential movements in excess of 1 inch are not tolerable.

The equipment building foundations should be dimensioned using a net allowable soil bearing pressure of 2,500 pounds per square foot (psf). In using net allowable soil pressures for footing dimensioning, the weight of the footings and backfill over the footings need not be considered. Furthermore, the footings should be at least 12 inches wide and a minimum of 2.0 feet square.

The geotechnical engineer or a qualified representative should observe the foundation excavations to verify that the bearing materials are suitable for support of the proposed loads. If, at the time of such observation, any soft soils are encountered at the design foundation elevation, the excavations should be extended downward to native stiff soils and backfilled with compacted engineered fill.

The recommended soil bearing value should be considered an upper limit, and any value less than that listed above would be acceptable for the foundation system. Using the value given, total settlement under normal building loads would be about 1 inch or less with differential settlements being less than 75 percent of total settlement. Footings should be placed at a depth of 2.0 feet, or greater, below finished exterior grade for protection against frost damage.

#### 5.3 Parking and Drive Areas

The drive that accesses the site will be surfaced with crushed stone. Parking and drive areas that are surfaced with crushed stone should have a minimum thickness of 6 inches and be properly placed and compacted as outlined herein. The crushed stone should meet Kentucky Transportation Cabinet specifications and applicable local codes.

A paved section consisting only of crushed graded aggregate base course should be considered a high maintenance section. Regular care and maintenance is considered essential to the longevity and use of the section. Site grades should be maintained in such a manner as to allow for adequate surface runoff. Any potholes, depressions or excessive rutting that may develop should be repaired as soon as possible to reduce the possibility of degrading the soil subgrade.

#### 5.4 Site Preparation

Site preparation should begin with the removal of any topsoil, loose, soft or otherwise unsuitable materials from the construction area. The geotechnical engineer should evaluate the actual stripping depth, along with any soft soils or fat clay that require undercutting at the time of construction.

Any fill and backfill placed on the site should consist of approved materials that are free of organic matter and debris. Suitable fill materials should consist of well graded crushed stone below the tower foundation and well graded crushed stone or low plasticity cohesive soil elsewhere. Low-plasticity cohesive soil should have a liquid limit of less than 45 percent and a plasticity index of less than 25 percent. The on-site sandy clays are considered suitable for reuse. The on-site fat clays, encountered at about 3 feet below grade, are considered marginal for re-use as fill due to their high plasticity. These fat clays should not be placed beneath the equipment building. It is recommended that during construction these soils be further tested and evaluated prior to use as fill. Fill should not contain frozen material and it should not be placed on a frozen subgrade.

The fill should be placed and compacted in lifts of 9 inches or less in loose thickness. Fill placed below structures or used to provide lateral resistance should be compacted to at least 98 percent of the material's maximum standard Proctor dry density (ASTM D-698). Fill should be placed, compacted, and maintained at moisture contents within minus 1 to plus 3 percent of the optimum value determined by the standard Proctor test.

The geotechnical engineer should be retained to monitor fill placement on the project and to perform field density tests as each lift of fill is placed in order to evaluate compliance with the design requirements. Standard Proctor and Atterberg limits tests should be performed on the representative samples of fill materials before their use on the site.

#### 5.5 Seismic Considerations

According to the 2002 Kentucky Building Code, the site is located within Seismic Design Category C. The applicable site class definition would be Class C based on an estimated average undrained shear strength for the entire soil and underlying siltstone profile in excess of 2,000 psf.

#### 6.0 GENERAL COMMENTS

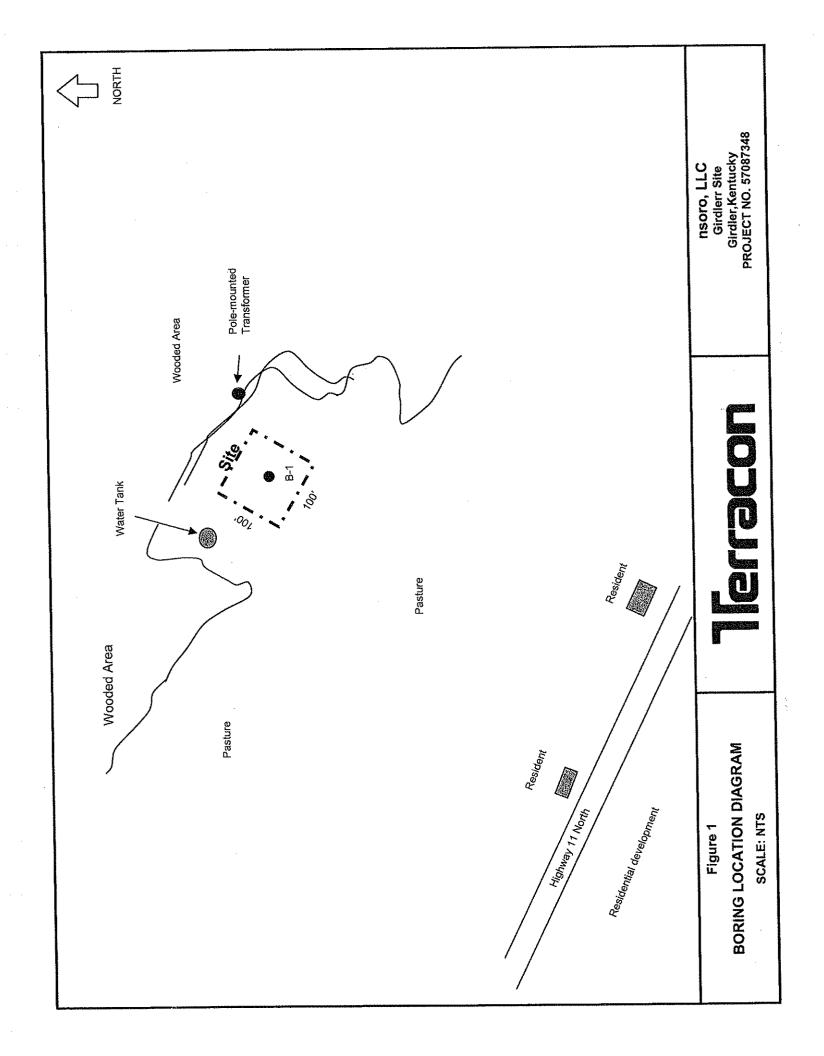
Terracon should be retained to review the final design plans and specifications so comments can be made regarding interpretation and implementation of our geotechnical recommendations in the design and specifications. Terracon also should be retained to provide testing and observation during excavation,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

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

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

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either express or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.

# APPENDIX



# LOG OF BORING NO. B-1

| Page | 1 | of 1 |
|------|---|------|
| raue |   | UI.  |

| CLI                                                    | CN         | NIT                                                                                                             |            |             |            |                       |               | <u></u> ,            |                   |                 | : 4                         | gerorr                                              |
|--------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------|------------|-------------|------------|-----------------------|---------------|----------------------|-------------------|-----------------|-----------------------------|-----------------------------------------------------|
| υLI                                                    | EN         | Nsoro, LLC                                                                                                      |            |             |            |                       |               |                      |                   |                 | · · ·                       |                                                     |
| SIT                                                    | E          |                                                                                                                 | PRC        | JEC         | CT j       |                       |               |                      |                   |                 |                             |                                                     |
|                                                        | ,          | Girdler, Kentucky                                                                                               |            | T           | - <u>T</u> |                       | MPLES         |                      | muni              | cation          | Tower<br>TESTS              | · · · · · · · · · · · · · · · · · · ·               |
|                                                        |            |                                                                                                                 |            | Ì           |            |                       |               |                      | -                 |                 |                             |                                                     |
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| LOG                                                    |            | DESCRIPTION                                                                                                     | ' ٹیر      | MB          |            |                       | R,            | a≓                   | IT, %             | N E             | HILL I                      | ËRO                                                 |
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| 0<br><u>x k: x</u>                                     | 0.6        |                                                                                                                 |            | +           |            |                       |               | · ·                  |                   |                 |                             |                                                     |
|                                                        |            | SANDY CLAY trace chert fragments, light                                                                         |            |             | L 1        | SS                    | 14            | 13                   | 16                |                 |                             |                                                     |
|                                                        | 2          | brown, very stiff, moist                                                                                        |            |             |            |                       |               |                      |                   |                 |                             |                                                     |
|                                                        | <u>13.</u> | 5.5 FAT CLAY with sand, trace gravel, red,                                                                      | -          |             | H 2        | - SS                  | 16            | 24                   | 17                |                 |                             | LL = 63                                             |
|                                                        |            | very stiff to hard, moist                                                                                       | 5-         |             |            |                       |               | <u> </u>             |                   |                 |                             | PL = 28<br>PI = 35                                  |
|                                                        |            |                                                                                                                 | . • -      |             | H 3        | s ss                  | 3 14          | 50/5                 | 18                |                 | · · ·                       |                                                     |
|                                                        |            |                                                                                                                 |            |             | _          |                       |               | ·                    | ļ                 | <u> </u>        |                             |                                                     |
|                                                        |            |                                                                                                                 | -          |             | н 4        | I SS                  | 3 16          | 53                   | 28                |                 | <u> </u>                    | ψ.                                                  |
|                                                        |            | with weathered rock fragments                                                                                   | 10         | Ť           |            |                       |               | ·                    | +                 | <u> </u>        |                             |                                                     |
|                                                        |            | a a construction de la construction |            |             |            |                       |               | )                    |                   |                 |                             |                                                     |
|                                                        | 9          |                                                                                                                 |            |             |            |                       |               |                      |                   |                 |                             |                                                     |
|                                                        | 2          |                                                                                                                 |            |             | H (        | 5 5                   | 5 16          | 47                   | 29                |                 |                             |                                                     |
|                                                        |            |                                                                                                                 | 15~        | <u> </u>    |            |                       |               |                      |                   | ļ               | · · · ·                     |                                                     |
|                                                        |            |                                                                                                                 |            |             |            |                       |               |                      |                   |                 |                             |                                                     |
|                                                        |            |                                                                                                                 | .          | _           |            |                       |               |                      | <b>.</b>          |                 |                             |                                                     |
|                                                        | 1          | 18.5                                                                                                            |            | _           |            |                       |               |                      |                   |                 |                             |                                                     |
|                                                        |            | FAT CLAY trace coal fragments, medium<br>brown, hard, moist                                                     | 20-        | · · · ·     | H I        | 6 S                   | S 6           | 50/5                 | 32                |                 |                             |                                                     |
|                                                        | 2          | Drown, nard, moloc                                                                                              | 20-        | _           |            |                       | Ι.            |                      |                   |                 |                             |                                                     |
|                                                        |            |                                                                                                                 |            | _           |            |                       |               |                      |                   |                 |                             |                                                     |
|                                                        | <b>A</b> 2 | AUGER REFUSAL                                                                                                   | ~ -        |             |            | 7 D                   | B1009         | RQD                  | ) .               |                 | 5310                        |                                                     |
| XX                                                     | 2          | SILTSTONE, slightly weathered, with                                                                             |            | _           |            | ·                     |               | 91%                  |                   |                 | pcf                         |                                                     |
| x x                                                    |            | shale seams, medium gray, moderately hard, closely jointed                                                      | 25-        |             |            |                       |               |                      |                   |                 |                             |                                                     |
| × ×<br>× ×                                             |            | hard, closely jointed                                                                                           | 1          |             |            |                       |               |                      | ł                 |                 |                             |                                                     |
| XXX                                                    | k x        |                                                                                                                 | · ·        | 7           |            |                       |               |                      |                   |                 |                             |                                                     |
| ₹X<br>₹X                                               | k k        |                                                                                                                 |            | Ξ           |            |                       |               | ľ.                   |                   |                 | · .                         |                                                     |
| 9/20/<br>× × ×                                         |            |                                                                                                                 | 30         |             |            |                       |               |                      |                   |                 |                             | · · ·                                               |
|                                                        | k x        |                                                                                                                 |            |             |            |                       |               |                      |                   |                 |                             |                                                     |
| NON X X                                                | ۲,<br>۲    | 33                                                                                                              | _          |             |            |                       |               |                      |                   |                 |                             |                                                     |
| ERR.                                                   |            | CORING TERMINATED                                                                                               |            |             |            | ·                     |               |                      |                   |                 |                             | · .                                                 |
| a.                                                     | l          |                                                                                                                 |            |             | ŀ          |                       | ļ             |                      |                   |                 |                             |                                                     |
| C SCS                                                  | 'he        | e stratification lines represent the approximate boundary lines                                                 |            | -<br>·      |            |                       | 1             |                      | 1                 | and a community |                             |                                                     |
| OREHOLE 99 5/08/348 LOGS GPJ TERRACON GDT 9/28/08<br>く | etw        | ween soil and rock types: in-situ, the transition may be gradual.                                               |            |             |            | o di kanan di tu di k |               |                      |                   |                 |                             | and the second states and the second states and the |
| V 108                                                  | VA'        | ATER LEVEL OBSERVATIONS, ft                                                                                     |            |             |            |                       |               | RING                 |                   |                 |                             | 9-4-08                                              |
| 8 V                                                    | ٧L         | - ¥ ¥ ¶err                                                                                                      |            |             |            |                       | BO            | RING                 | COMF              | ······          |                             | 9-4-08                                              |
| ųν                                                     | VL         |                                                                                                                 | Q          |             |            |                       | RIC           | 3                    | CMI               | E-55            | FOREM                       |                                                     |
| Υ N                                                    | ٧L         | – N/E                                                                                                           | •          |             |            |                       | AP            | PROVI                | ED I              | RCH             | JOB #                       | 57087348                                            |

# **GENERAL NOTES**

| DRILLI | NG & SAMPLING SYMBOLS:                                     |     |                           |
|--------|------------------------------------------------------------|-----|---------------------------|
| SS:    | Split Spoon - 1-3/8" I.D., 2" O.D., unless otherwise noted | HS: | Hollow Stem Auger         |
| ST:    | Thin-Walled Tube - 2" O.D., unless otherwise noted         | PA: | Power Auger               |
| RS;    | Ring Sampler - 2.42" I.D., 3" O.D., unless otherwise noted | HA: | Hand Auger                |
| DB:    | Diamond Bit Coring - 4", N, B                              | RB: | Rock Bit                  |
| BS:    | Bulk Sample or Auger Sample                                | WB: | Wash Boring or Mud Rotary |

The number of blows required to advance a standard 2-inch O.D. split-spoon sampler (SS) the last 12 inches of the total 18-inch penetration with a 140-pound hammer falling 30 inches is considered the "Standard Penetration" or "N-value".

#### WATER LEVEL MEASUREMENT SYMBOLS:

| WL: Water Level WS:  | While Sampling        |
|----------------------|-----------------------|
| WCI: Wet Cave in WD: | While Drilling        |
| DCI: Dry Cave in BCR | Before Casing Removal |
| AB: After Boring ACR | After Casing Removal  |

Water levels indicated on the boring logs are the levels measured in the borings at the times indicated. Groundwater levels at other times and other locations across the site could vary. In pervious soils, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of groundwater levels may not be possible with only short-term observations.

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

#### CONSISTENCY OF FINE-GRAINED SOILS **RELATIVE DENSITY OF COARSE-GRAINED SOILS** Standard Penetration or **Standard Penetration** Unconfined or N-value (SS) Compressive N-value (SS) **Relative Density** Consistency Blows/Ft. Strength, Qu, psf Blows/Ft. 0 - 3Very Loose < 500 <2 Very Soft 2-3 4 - 9Loose 500 - 1.000Soft 10-29 Medium Dense 1,001 - 2,000 4-6 Medium Stiff 2,001 - 4,000 7-12 Stiff 30 - 49Dense 4,001 - 8,000 Very Stiff 50+Very Dense 13-26 8.000+ 26+ Hard **RELATIVE PROPORTIONS OF SAND AND GRAVEL GRAIN SIZE TERMINOLOGY** Major Component Descriptive Term(s) of other Percent of **Dry Weight** of Sample Particle Size constituents **Bouiders** Over 12 in. (300mm) < 15 Trace Cobbles 12 in. to 3 in. (300mm to 75 mm) With 15-29 3 in. to #4 sieve (75mm to 4.75 mm) > 30 Gravel Modifier #4 to #200 sieve (4.75mm to 0.075mm) Sand **RELATIVE PROPORTIONS OF FINES** Silt or Clay Passing #200 Sieve (0.075mm) PLASTICITY DESCRIPTION Percent of Descriptive Term(s) of other **Dry Weight** constituents **Plasticity Index** Term Non-plastic 0 < 5 Trace 1-10 With 5 - 12Low Médium -11-30 > 12 Modifiers High 30+



# **GENERAL NOTES**

# **Sedimentary Rock Classification**

# DESCRIPTIVE ROCK CLASSIFICATION:

|              | Sedimentary rocks are composed of cemented clay, silt and sand sized particles. The most common minerals are clay, quartz and calcite. Rock composed primarily of calcite is called limestone; rock of sand size grains is called sandstone, and rock of clay and silt size grains is called mudstone or claystone, siltstone, or shale. Modifiers such as shaly, sandy, dolomitic, calcareous, carbonaceous, etc. are used to describe various constituents. Examples: sandy shale; calcareous sandstone. |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LIMESTONE    | Light to dark colored, crystalline to fine-grained texture, composed of CaCo <sub>3</sub> , reacts readily with HCI.                                                                                                                                                                                                                                                                                                                                                                                       |
| DOLOMITE     | Light to dark colored, crystalline to fine-grained texture, composed of CaMg(CO <sub>3</sub> ) <sub>2</sub> , harder than limestone, reacts with HCI when powdered.                                                                                                                                                                                                                                                                                                                                        |
| CHERT        | Light to dark colored, very fine-grained texture, composed of micro-crystalline quartz (Si0₂), brittle, breaks into angular fragments, will scratch glass.                                                                                                                                                                                                                                                                                                                                                 |
| SHALE        | Very fine-grained texture, composed of consolidated silt or clay, bedded in thin layers. The unlaminated equivalent is frequently referred to as siltstone, claystone or mudstone.                                                                                                                                                                                                                                                                                                                         |
| SANDSTONE    | Usually light colored, coarse to fine texture, composed of cemented sand size grains of quartz, feldspar, etc. Cement usually is silica but may be such minerals as calcite, iron-oxide, or some other carbonate.                                                                                                                                                                                                                                                                                          |
| CONGLOMERATE | Rounded rock fragments of variable mineralogy varying in size from near sand to boulder size but usually pebble to cobble size (½ inch to 6 inches). Cemented together with various cemen-<br>ting agents. Breccia is similar but composed of angular, fractured rock particles cemented together.                                                                                                                                                                                                         |

**BEDDING AND JOINT CHARACTERISTICS** 

#### PHYSICAL PROPERTIES:

#### **DEGREE OF WEATHERING**

| Slight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Slight decomposition of parent<br>material on joints. May be color<br>change. | Bed Thickness<br>Very Thick<br>Thick | Very Wide > 10'<br>Wide 3' - 10'                                            |   |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------|---|--|--|--|
| Moderate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Some decomposition and color<br>change throughout.                            | Medium<br>Thin<br>Very Thin          | Moderately Close 1' - 3'<br>Close 2" - 1'<br>Very Close .4" - 2"            |   |  |  |  |
| High                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Rock highly decomposed, may be ex-                                            | Laminated                            | — .1"4"                                                                     |   |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | tremely broken.                                                               | Bedding Plane                        | A plane dividing sedimentary rocks of<br>the same or different lithology.   | : |  |  |  |
| HARDNESS AND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | DEGREE OF CEMENTATION                                                         | Joint                                | Fracture in rock, generally more or                                         |   |  |  |  |
| Limestone and D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | olomite:                                                                      |                                      | less vertical or transverse to bedding,<br>along which no appreciable move- |   |  |  |  |
| Hard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Difficult to scratch with knife.                                              |                                      | ment has occurred.                                                          |   |  |  |  |
| Moderately<br>Hard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Can be scratched easily with knife,<br>cannot be scratched with fingernail.   | Seam                                 | Generally applies to bedding plane with an unspecified degree of            | : |  |  |  |
| Soft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Can be scratched with fingernall.                                             |                                      | weathering.                                                                 |   |  |  |  |
| Shale, Siltstone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | and Claystone                                                                 |                                      |                                                                             |   |  |  |  |
| Hard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Can be scratched easily with knife,                                           | SOLUTION AND VOID CONDITIONS         |                                                                             |   |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | cannot be scratched with fingernall.                                          | Solid                                | Contains no voids.                                                          |   |  |  |  |
| Moderately<br>Hard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Can be scratched with fingernail.                                             | Vuggy (Pitted)                       | Rock having small solution pits or<br>cavities up to ½ inch diameter, fre-  |   |  |  |  |
| Soft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Can be easily dented but not molded with fingers.                             | Porous                               | quently with a mineral lining.<br>Containing numerous voids, pores, or      |   |  |  |  |
| Sandstone and (                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Conglomerate                                                                  |                                      | other openings, which may or may not interconnect.                          |   |  |  |  |
| Well<br>Cemented                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Capable of scratching a knife blade.                                          | Cavernous                            | Containing cavities or caverns, some-<br>times quite large.                 | • |  |  |  |
| Cemented                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Can be scratched with knife.                                                  |                                      |                                                                             |   |  |  |  |
| Poorly<br>Cemented                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Can be broken apart easily with fingers.                                      |                                      |                                                                             |   |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                               |                                      | _lerracon_                                                                  |   |  |  |  |
| - Construction of the second s |                                                                               |                                      |                                                                             |   |  |  |  |

# UNIFIED SOIL CLASSIFICATION SYSTEM

| Criteria fo                          | Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests <sup>4</sup> |                                                      |                                                   |                 |                                   |
|--------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------|-----------------|-----------------------------------|
|                                      |                                                                                          |                                                      |                                                   | Group<br>Symbol | Group Name <sup>e</sup>           |
| Coarse Grained Soils                 | Graveis                                                                                  | Clean Gravels                                        | Clean Gravels $Cu \ge 4$ and $1 \le Cc \le 3^{E}$ |                 | Well-graded gravel <sup>F</sup>   |
| More than 50% retained               | More than 50% of coarse fraction retained on                                             | Less than 5% fines <sup>c</sup>                      | $Cu < 4$ and/or $1 > Cc > 3^{e}$                  | GP              | Poorly graded gravel <sup>F</sup> |
| on No. 200 sieve                     | No. 4 sieve                                                                              | Gravels with Fines                                   | Fines classify as ML or MH                        | GM              | Silty gravel <sup>F,G, H</sup>    |
|                                      |                                                                                          | More than 12% fines <sup>c</sup>                     | Fines classify as CL or CH                        | GC              | Clayey gravel <sup>F,0,H</sup>    |
|                                      | Sands                                                                                    | Clean Sands                                          | $Cu \ge 6$ and $1 \le Cc \le 3^{E}$               | SW              | Well-graded sand                  |
|                                      | 50% or more of coarse<br>fraction passes<br>No. 4 sieve                                  | Less than 5% fines <sup>D</sup>                      | $Cu < 6$ and/or $1 > Cc > 3^{E}$                  | SP              | Poorly graded sand                |
|                                      |                                                                                          | Sands with Fines<br>More than 12% fines <sup>b</sup> | Fines classify as ML or MH                        | SM              | Silty sand <sup>o,HI</sup>        |
|                                      |                                                                                          |                                                      | Fines Classify as CL or CH                        | SC              | Clayey sand <sup>6,43</sup>       |
| Fine-Grained Soils                   | Silts and Clays                                                                          | inorganic                                            | PI > 7 and plots on or above "A" line"            | CL              | Lean clay <sup>KLM</sup>          |
| 50% or more passes the No. 200 sieve | Liquid limit less than 50                                                                |                                                      | PI < 4 or plots below "A" line <sup>3</sup>       | ML              | Sili <sup>kl,M</sup>              |
| NO. 200 SIEVE                        |                                                                                          | organic                                              | Liquid limit - oven dried                         | OL              | Organic clayKLMN                  |
|                                      |                                                                                          |                                                      | Liquid limit - not dried                          | ~~<br>          | Organic silt <sup>K,LMO</sup>     |
|                                      | Silts and Clays                                                                          | inorganic                                            | PI plots on or above "A" line                     | CH              | Fat clay <sup>KLM</sup>           |
|                                      | Liquid limit 50 or more                                                                  |                                                      | PI plots below "A" line                           | MH              | Elastic Silt <sup>K,L,M</sup>     |
|                                      |                                                                                          | organic                                              | Liquid limit - oven dried < 0.75                  | ОН              | Organic clay <sup>K,LM,P</sup>    |
|                                      |                                                                                          |                                                      | Liquid limit - not dried                          |                 | Organic silt <sup>KLMA</sup>      |
| Highly organic solls                 | Primar                                                                                   | rily organic matter, dark in                         | color, and organic odor                           | PT              | Peat                              |

<sup>A</sup>Based on the material passing the 3-in. (75-mm) sieve

- <sup>B</sup> If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
- <sup>C</sup>Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.
- <sup>D</sup>Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

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

<sup>F</sup> If soil contains  $\geq$  15% sand, add "with sand" to group name.

<sup>G</sup>If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

- <sup>H</sup>If fines are organic, add "with organic fines" to group name.
- <sup>1</sup> If soil contains  $\geq$  15% gravel, add "with gravel" to group name.
- <sup>J</sup> If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.
- <sup>K</sup> If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.
- <sup>L</sup> If soil contains  $\geq$  30% plus No. 200 predominantly sand, add "sandy" to group name.
- <sup>M</sup> If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.
- <sup>N</sup>PI  $\geq$  4 and plots on or above "A" line.
- PI < 4 or plots below "A" line.</p>
- <sup>P</sup>PI plots on or above "A" line.

Q

PI plots below "A" line.

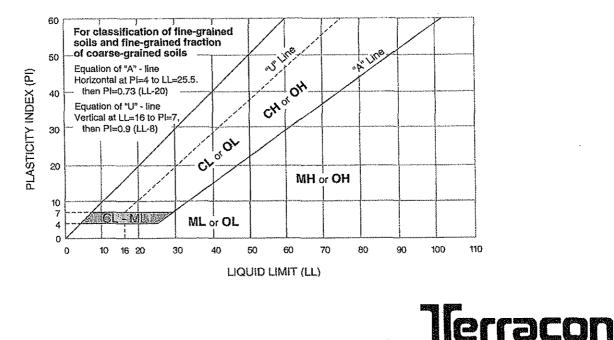
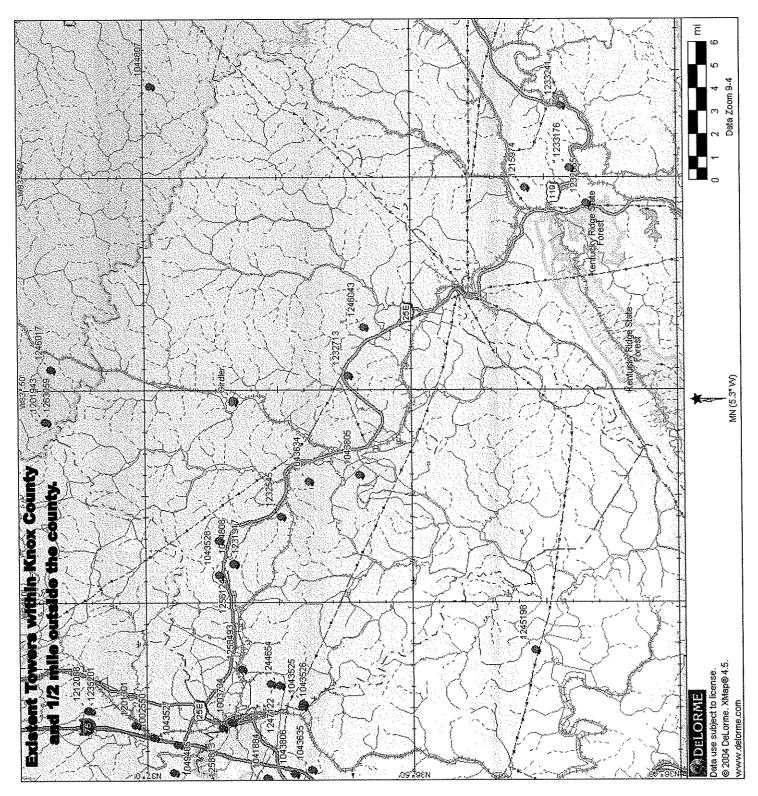


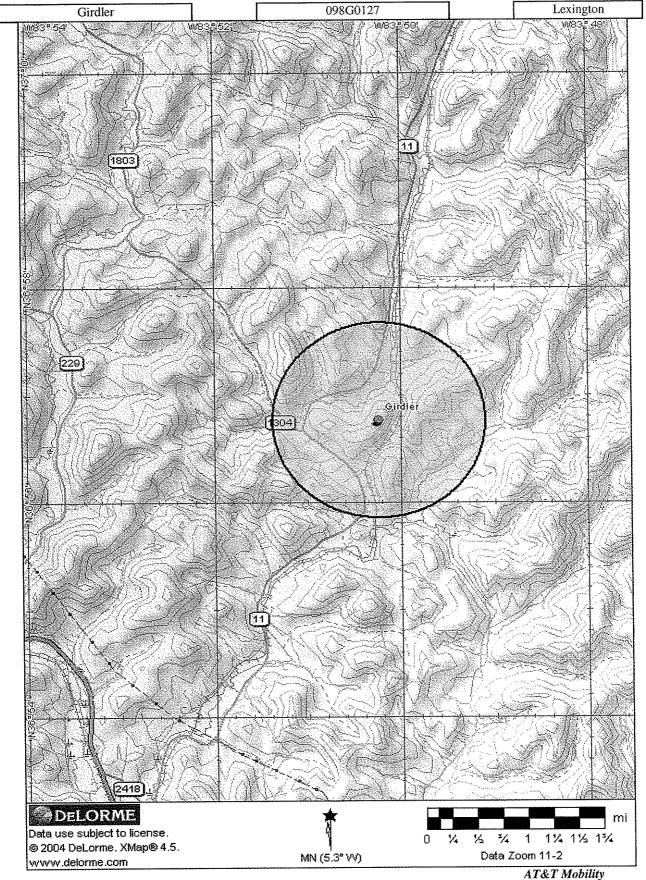
Exhibit F

# **Competing Utilities, Corporations or Persons**

American Tower Crown Communication SBA Towers Verizon Sprint / Nextel T-Mobile Bluegrass Cellular RamCell Cellular







KY/TN RF Engineering

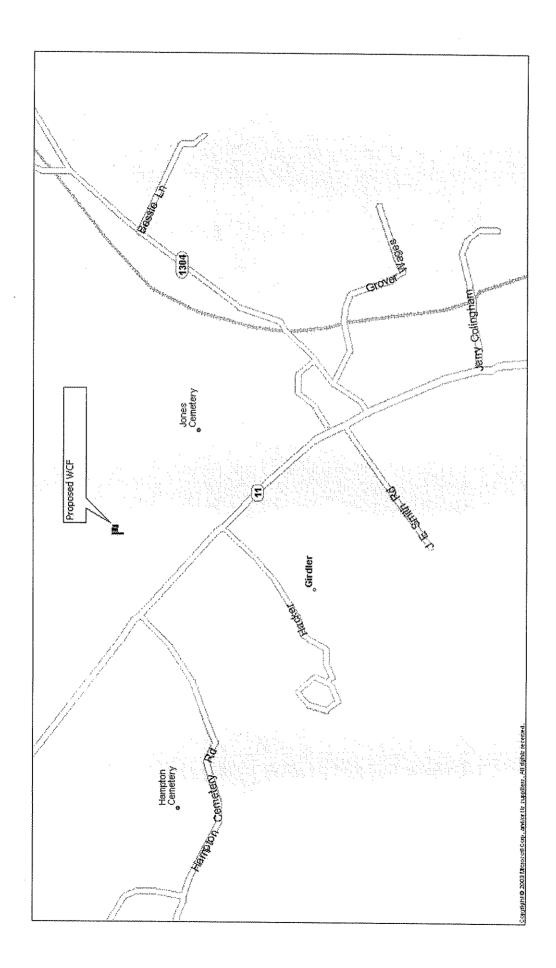


Exhibit G

.



Federal Aviation Administration Air Traffic Airspace Branch, ASW-520 2601 Meacham Blvd. Fort Worth, TX 76137-0520

Issued Date: 10/21/2008

AT&T Mobility Muayyad Mustafa (AG) 5601 Legacy Drive; MS:A3 Plano, TX 75024

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

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

| Structure: | Antenna Tower 098G0127 Girdler        |
|------------|---------------------------------------|
| Location:  | Girdler, KY                           |
| Latitude:  | 36-56-28.68N NAD 83                   |
| Longitude: | 83-50-31.94W                          |
| Heights:   | 320 feet above ground level (AGL)     |
|            | 1507 feet above mean sea level (AMSL) |

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

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

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be completed and returned to this office any time the project is abandoned or:

At least 10 days prior to start of construction (7460-2, Part I)

\_X\_\_Within 5 days after the construction reaches its greatest height (7460-2, Part II)

This determination expires on 04/21/2010 unless:

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

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE POSTMARKED OR DELIVERED TO THIS OFFICE AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

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

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

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

If we can be of further assistance, please contact our office at (718) 553-4542. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2008-ASO-5304-OE.

Signature Control No: 597607-103458770 Katie Venticinque Technician

Attachment(s) Frequency Data (DNE)

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# Frequency Data for ASN 2008-ASO-5304-OE

| LOW<br>FREQUENCY | HIGH<br>FREQUENCY | FREQUENCY<br>UNIT | ERP  | ERP<br>UNIT |
|------------------|-------------------|-------------------|------|-------------|
|                  |                   |                   |      |             |
| 806              | 824               | MHz               | 500  | W           |
| 824              | 849               | MHz               | 500  | W           |
| 851              | 866               | MHz               | 500  | W           |
| 869              | 894               | MHz               | 500  | W           |
| 896              | 901               | MHz               | 500  | W           |
| 901              | 902               | MHz               | 7    | W           |
| 930              | 931               | MHz               | 3500 | W           |
| 931              | 932               | MHz               | 3500 | W           |
| 932              | 932.5             | MHz               | 17   | dBW         |
| 935              | 940               | MHz               | 1000 | W           |
| 940              | 941               | MHz               | 3500 | W           |
| 1850             | 1910              | MHz               | 1640 | W           |
| 1930             | 1990              | MHz               | 1640 | W           |
| 2305             | 2310              | MHz               | 2000 | W           |
| 2345             | 2360              | MHz               | 2000 | W           |

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| Kentucky Transportation Cabinet, Kentucky Airport Zoning Commission, 90 Air<br>APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER<br>INSTRUCTIONS INCLUDED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| <ol> <li>APPLICANT Name, Address, Telephone, Fax, etc.<br/>ATCT WIReless<br/>LISA GLASS<br/>5310 MAREQLAND WAY<br/>BRENTWOOD, TN. 37027<br/>615-221-3583</li> <li>Representative of Applicant Name, Address, Telephone, Fax<br/>NSORO<br/>Will TACODS<br/>1000 Reco LAWE<br/>SIM PSONVILLE, KY. 40067<br/>502-550-0015 Phove<br/>502-805-0744 FAX</li> <li>Application for: The Construction Alteration Existing</li> <li>Duration: Permanent Temporary (Months)</li> <li>Work Schedule: StartBD End</li> <li>Type: Antenna Tower Crane Building Power Line<br/>Landfill Water Tank Other</li> <li>Marking/Painting and/or Lighting Preferred:<br/>Red Lights and Paint Dual - Red &amp; Medium Intensity White<br/>White - Medium Intensity Other</li> <li>FAA Aeronautical Study Number</li> </ol> | <ul> <li>9. Latitude: <u>36° 56° 28.7</u></li> <li>10. Longitude: <u>83° 50° 31.9</u></li> <li>11. Datum: <u>BNADB3</u> DNAD27 DOther</li> <li>12. Nearest Kentucky City: <u>GiRPleR</u> County <u>KNOX</u></li> <li>13. Nearest Kentucky public use or Military airport:<br/><u>LONDOU - CORDOW</u> <u>AIRPORT - MAgee Field</u></li> <li>14. Distance from #13 to Structure: <u>14.14</u> NM</li> <li>15. Direction from #13 to Structure: <u>South East</u></li> <li>16. Site Elevation (AMSL): <u>1,187</u> Feet</li> <li>17. Total Structure Height (AGL): <u>310</u> Feet</li> <li>18. Overall Height (#16 + #17) (AMSL): <u>1,497</u> Feet</li> <li>19. Previous FAA and/or Kentucky Aeronautical Study Number(s): <u>N/A</u></li> <li>20. Description of Location: (Attach USGS 7.5 minute Quadrangle Map or an Alrport layout Drawing with the precise site marked and any certified survey)<br/>See ATTAched MAP.</li> </ul> |  |  |  |  |
| 21. Description of Proposal:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |
| ATET Wireless wants to build & Telecommunications Tower<br>site NAME: GIRDLER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |
| 22. Has a "NOTICE OF CONSTRUCTION OR ALTERATION" (FAA Form 7460-1) been filed with the Federal Aviation Administration?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |
| CERTIFICATION: I hereby certify that all the above statements made by ma are true, complete and correct to the best of my knowledge and belief.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |
| William E. JACObs PM William 9/15/08<br>Printed Name and Title Signature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |
| PENALTIES: Persons failing to comply with Kentucky Revised Statutes (KRS 183.86) through 183.990) and Kentucky Administrative Regulations (602 KAR 050:Series) are liable for fines and/or imprisonment as set forth in KRS 183.990(3). Non-compliance with Federal Aviation Administration Regulations may result in further penalties.                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | man, KAZC C Administralor, KAZC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |
| Approved     Disapproved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |

Exhibit H

# ULS License Cellular License - KNKN673 - NEW CINGULAR WIRELESS PCS, LLC

| - " -                                                                                             |                                                             |            |                                                |                           |  |  |
|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------|------------|------------------------------------------------|---------------------------|--|--|
| Call Sign                                                                                         | KNKN673                                                     |            | Radio Service                                  | CL - Cellular             |  |  |
| Status                                                                                            | Active                                                      |            | Auth Type                                      | Regular                   |  |  |
| Market                                                                                            | CMAAEO 16                                                   | <b>C</b> I | Channel Black                                  | ٨                         |  |  |
| Market                                                                                            | CMA453 - Kentucky 11 - (                                    | Liay       | Channel Block                                  | A                         |  |  |
| Submarket                                                                                         | 0                                                           |            | Phase                                          | 2                         |  |  |
| Dates                                                                                             | 0.0 (0.1 (0.0.0.1                                           |            |                                                | 10/01/0011                |  |  |
| Grant                                                                                             | 08/21/2001                                                  |            | Expiration                                     | 10/01/2011                |  |  |
| Effective                                                                                         | 02/08/2007                                                  |            | Cancellation                                   |                           |  |  |
| Five Year Buildo                                                                                  | ut Date                                                     |            |                                                |                           |  |  |
| 11/29/1996                                                                                        |                                                             |            |                                                |                           |  |  |
| Control Points                                                                                    |                                                             |            |                                                |                           |  |  |
| 1                                                                                                 | 1650 LYNDON FARMS COURT, LOUISVILLE, KY<br>P: (502)329-4700 |            |                                                |                           |  |  |
|                                                                                                   | ,,,()                                                       |            |                                                |                           |  |  |
|                                                                                                   |                                                             |            |                                                |                           |  |  |
| Licensee                                                                                          |                                                             |            |                                                |                           |  |  |
| FRN                                                                                               | 0003291192                                                  |            | Туре                                           | Limited Liability Company |  |  |
| Licensee                                                                                          |                                                             |            |                                                |                           |  |  |
| NEW CINGULAR WIRELESS PCS, LLC                                                                    |                                                             |            | P:(469)229-7422<br>F:(469)229-7297             |                           |  |  |
| PLANO, TX 75024                                                                                   | 5601 LEGACY DRIVE, MS: A-3<br>PLANO, TX 75024               |            | E:KELLYE.E.ABERNATHY@CINGULAR.COM              |                           |  |  |
| ATTN KELLYE E. A                                                                                  | BERNATHY                                                    |            |                                                |                           |  |  |
|                                                                                                   |                                                             |            |                                                |                           |  |  |
| Contact                                                                                           |                                                             |            |                                                |                           |  |  |
| AT&T MOBILITY LLC                                                                                 |                                                             |            | P:(202)255-1679                                |                           |  |  |
| DAVID C JATLOW                                                                                    |                                                             |            | F:(561)279-2097<br>E:DAVID.JATLOW@CINGULAR.COM |                           |  |  |
|                                                                                                   | 11760 US HIGHWAY 1<br>NORTH PALM BEACH, FL 33408            |            |                                                |                           |  |  |
|                                                                                                   |                                                             |            |                                                |                           |  |  |
| Ownership and                                                                                     | Qualifications                                              |            |                                                |                           |  |  |
|                                                                                                   |                                                             |            |                                                |                           |  |  |
| Radio Service Typ                                                                                 |                                                             | Interconn  | ected Yes                                      |                           |  |  |
| Regulatory Status                                                                                 |                                                             | Intercom   | ected res                                      |                           |  |  |
| Alien Ownership<br>The Applicant answered "No" to each of the Alien Ownership questions.          |                                                             |            |                                                |                           |  |  |
| Basic Qualifications<br>The Applicant answered "No" to each of the Basic Qualification questions. |                                                             |            |                                                |                           |  |  |
| The Applicant answered the to cach of the basic Quantitation questions.                           |                                                             |            |                                                |                           |  |  |
|                                                                                                   |                                                             |            |                                                |                           |  |  |
| Demographics                                                                                      |                                                             |            |                                                |                           |  |  |
| Race                                                                                              |                                                             |            |                                                |                           |  |  |
| Ethnicity                                                                                         |                                                             |            | Gender                                         |                           |  |  |

# ULS License

# PCS Broadband License - WPO1255 - NEW CINGULAR WIRELESS PCS, LLC

| Call Sign                                                                                         | WPOI255                                     | Radio Service                                                     | CW - PCS Broadband                                                         |  |  |  |
|---------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------------------|--|--|--|
| Status                                                                                            | Active                                      | Auth Type                                                         | Regular                                                                    |  |  |  |
| Market                                                                                            |                                             |                                                                   |                                                                            |  |  |  |
| Market                                                                                            | MTA026 - Louisville-Lexington-<br>Evansvill | Channel Block                                                     | A                                                                          |  |  |  |
| Submarket                                                                                         | 19                                          | Associated<br>Frequencies<br>(MHz)                                | 001850.00000000-<br>001865.00000000<br>001930.00000000-<br>001945.00000000 |  |  |  |
| Dates                                                                                             |                                             |                                                                   |                                                                            |  |  |  |
| Grant                                                                                             | 07/07/2005                                  | Expiration                                                        | 06/23/2015                                                                 |  |  |  |
| Effective                                                                                         | 02/08/2007                                  | Cancellation                                                      |                                                                            |  |  |  |
| Buildout Deadlin                                                                                  | nes                                         |                                                                   |                                                                            |  |  |  |
| 1st                                                                                               | 06/23/2000                                  | 2nd                                                               | 06/23/2005                                                                 |  |  |  |
| Notification Dat                                                                                  | es                                          |                                                                   |                                                                            |  |  |  |
| 1st                                                                                               | 07/07/2000                                  | 2nd                                                               | 02/17/2005                                                                 |  |  |  |
|                                                                                                   |                                             |                                                                   |                                                                            |  |  |  |
| Licensee                                                                                          |                                             |                                                                   |                                                                            |  |  |  |
| FRN                                                                                               | 0003291192                                  | Туре                                                              | Limited Liability Company                                                  |  |  |  |
| Licensee                                                                                          |                                             |                                                                   |                                                                            |  |  |  |
| NEW CINGULAR V<br>5601 LEGACY DR<br>PLANO, TX 75024<br>ATTN KELLYE E. A                           | •                                           | F:(469)229-7297                                                   | P:(469)229-7422<br>F:(469)229-7297<br>E:KELLYE.E.ABERNATHY@CINGULAR.COM    |  |  |  |
| Contact                                                                                           |                                             |                                                                   |                                                                            |  |  |  |
| AT&T MOBILITY LLC<br>DAVID C JATLOW<br>11760 US HIGHWAY 1<br>NORTH PALM BEACH, FL 33408           |                                             | P:(202)255-1679<br>F:(561)279-2097<br>E:DAVID.JATLOW@CINGULAR.COM |                                                                            |  |  |  |
| Ownership and                                                                                     | Qualifications                              |                                                                   |                                                                            |  |  |  |
| Radio Service Typ                                                                                 | be Mobile                                   |                                                                   |                                                                            |  |  |  |
| Regulatory Status                                                                                 | s Common Carrier Intercor                   | nnected Yes                                                       |                                                                            |  |  |  |
| Alien Ownership<br>The Applicant answered "No" to each of the Alien Ownership questions.          |                                             |                                                                   |                                                                            |  |  |  |
| Basic Qualifications<br>The Applicant answered "No" to each of the Basic Qualification questions. |                                             |                                                                   |                                                                            |  |  |  |
| Tribal Land Bidding Credits<br>This license did not have tribal land bidding credits.             |                                             |                                                                   |                                                                            |  |  |  |

Demographics

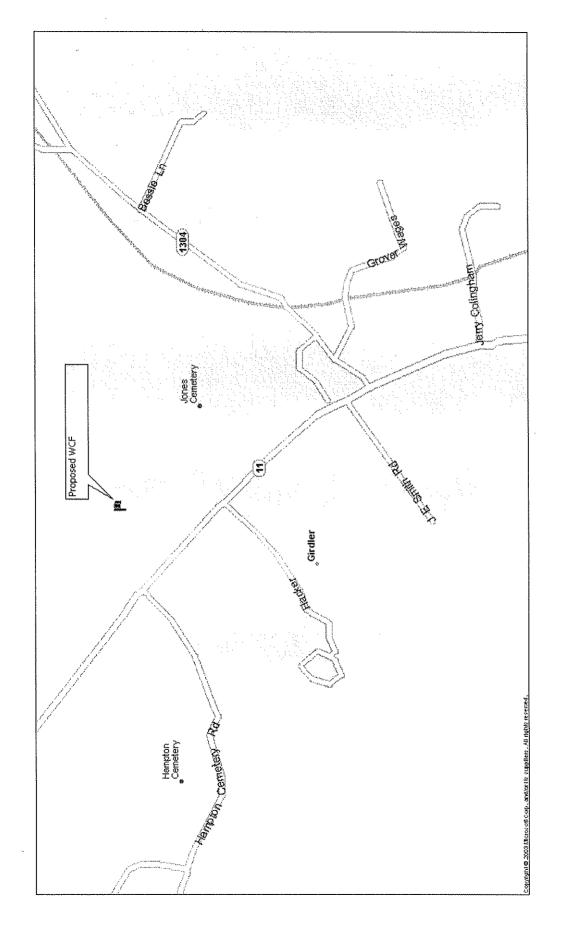
# ULS License

# PCS Broadband License - KNLF251 - New Cingular Wireless PCS, LLC

| Call Sign                                                                                         | KNLF251                                             | Radio Servic                       |                                                                           |  |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------|------------------------------------|---------------------------------------------------------------------------|--|
| Status                                                                                            | Active                                              | Auth Type                          | Regular                                                                   |  |
| Market                                                                                            |                                                     |                                    |                                                                           |  |
| Market                                                                                            | MTA026 - Louisville-Le<br>Evansvill                 | exington- Channel Blo              | ck A                                                                      |  |
| Submarket                                                                                         | 15                                                  | Associated<br>Frequencies<br>(MHz) | 001850.0000000-<br>001865.00000000<br>001930.00000000-<br>001945.00000000 |  |
| Dates                                                                                             |                                                     |                                    |                                                                           |  |
| Grant                                                                                             | 07/07/2005                                          | Expiration                         | 06/23/2015                                                                |  |
| Effective                                                                                         | 09/27/2005                                          | Cancellation                       | 1                                                                         |  |
| Buildout Deadli                                                                                   | ines                                                |                                    |                                                                           |  |
| 1st                                                                                               | 06/23/2000                                          | 2nd                                | 06/23/2005                                                                |  |
| Notification Da                                                                                   | tes                                                 |                                    |                                                                           |  |
| 1st                                                                                               | 07/07/2000                                          | 2nd                                | 02/18/2005                                                                |  |
| Licensee                                                                                          |                                                     |                                    |                                                                           |  |
| FRN                                                                                               | 0003291192                                          | Туре                               | Corporation                                                               |  |
| Licensee                                                                                          |                                                     |                                    |                                                                           |  |
| New Cingular Wireless PCS, LLC<br>5601 LEGACY DRIVE, MS: A-3<br>PLANO, TX 75024<br>ATTN FCC GROUP |                                                     | F:(469)229                         | P:(469)229-7422<br>F:(469)229-7297<br>E:KELLYE.E.ABERNATHY@CINGULAR.COM   |  |
| Contact                                                                                           |                                                     |                                    |                                                                           |  |
| Cingular Wireless LLC<br>Kellye E Abernathy Esq<br>5601 LEGACY DRIVE, MS: A-3<br>PLANO, TX 75024  |                                                     | F:(469)229                         | P:(469)229-7422<br>F:(469)229-7297<br>E:KELLYE.E.ABERNATHY@CINGULAR.COM   |  |
| Ownership and                                                                                     | Qualifications                                      |                                    |                                                                           |  |
| Radio Service Ty                                                                                  | rpe Mobile                                          |                                    |                                                                           |  |
| Regulatory Statu                                                                                  | is Common Carrier                                   | Interconnected                     | Yes                                                                       |  |
| Alien Ownersh<br>The Applicant an                                                                 |                                                     | ne Alien Ownership question        | s.                                                                        |  |
| <b>Basic Qualifica</b><br>The Applicant an                                                        |                                                     | ne Basic Qualification question    | ons.                                                                      |  |
| Tribal Land Bid<br>This license did I                                                             | <b>lding Credits</b><br>not have tribal land biddir | ng credits.                        |                                                                           |  |

Demographics

Exhibit I



Directions to Site: From Barbourville go South on N. Main Street to Daniel Boone Drive (State Route 11) and turn left, proceed on Daniel Boone Drive to State Route 11/US 25 and turn left. Head North on State Route 11 for approximately 7 miles. Site is on right.

Prepared by Briggs Law Office, PSC (502) 254-9756

Market: Lexington Cell Site Number: 098G0127 Cell Site Name: Girdler Fixed Asset Number: 10128760

### **OPTION AND LEASE AGREEMENT**

THIS OPTION AND LEASE AGREEMENT ("Agreement"), dated as of the latter of the signature dates below (the "Effective Date"), is entered into by Mae Lee, a widow, having a mailing address of PO Box 216, Girdler, KY 40906 (hereinafter referred to as "Landlord") and New Cingular Wireless PCS, LLC, a Delaware limited liability company, having a mailing address of 5405 Windward Parkway, Alpharetta, GA 30004 (hereinafter referred to as "Tenant").

#### BACKGROUND

Landlord owns or controls that certain plot, parcel or tract of land, together with all rights and privileges arising in connection therewith, located at N KY highway 11, in the County of Knox, State of Kentucky (collectively, the "**Property**"). Tenant desires to use a portion of the Property in connection with its federally licensed communications business. Landlord desires to grant to Tenant the right to use a portion of the Property in accordance with this Agreement.

The parties agree as follows:

1

#### 1. OPTION TO LEASE.

(a) Landlord grants to Tenant an option (the "**Option**") to lease a certain portion of the Property containing approximately 10,000 square feet including the air space above such room/cabinet/ground space as described on attached **Exhibit 1**, together with unrestricted access for Tenant's uses from the nearest public right-of-way along the Property to the Premises as described on the attached **Exhibit 1** (collectively, the "**Premises**").

During the Option period and any extension thereof, and during the term of this Agreement, (b) Tenant and its agents, engineers, surveyors and other representatives will have the right to enter upon the Property to inspect, examine, conduct soil borings, drainage testing, material sampling, radio frequency testing and other geological or engineering tests or studies of the Property (collectively, the "Tests"), to apply for and obtain licenses, permits, approvals, or other relief required of or deemed necessary or appropriate at Tenant's sole discretion for its use of the Premises and include, without limitation, applications for zoning variances, zoning ordinances, amendments, special use permits, and construction permits (collectively, the "Government Approvals"), initiate the ordering and/or scheduling of necessary utilities, and otherwise to do those things on or off the Property that, in the opinion of Tenant, are necessary in Tenant's sole discretion to determine the physical condition of the Property, the environmental history of the Property, Landlord's title to the Property and the feasibility or suitability of the Property for Tenant's Permitted Use, all at Tenant's expense. Tenant will not be liable to Landlord or any third party on account of any pre-existing defect or condition on or with respect to the Property, whether or not such defect or condition is disclosed by Tenant's inspection. Tenant will restore the Property to its condition as it existed at the commencement of the Option Term (as defined below), reasonable wear and tear and casualty not caused by Tenant excepted. In addition, Tenant shall indemnify, defend and hold Landlord harmless from and against any and all injury, loss, damage or claims arising directly out of Tenant's Tests.

(c) In consideration of Landlord granting Tenant the Option, Tenant agrees to pay Landlord the sum of the ended of the Line of the Constant of

(d) The Option may be sold, assigned or transferred at any time by Tenant to Tenant's parent company or member if Tenant is a limited liability company or any affiliate or subsidiary of, or partner in, Tenant or its parent company or member, or to any third party agreeing to be subject to the terms hereof. Otherwise, the Option may not be sold, assigned or transferred without the written consent of Landlord, such consent not to be unreasonably withheld, conditioned or delayed. From and after the date the Option has been sold, assigned or transferred by Tenant to a third party agreeing to be subject to the terms hereof. Tenant shall immediately be released from any and all liability under this Agreement, including the payment of any rental or other sums due, without any further action.

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

(f) If during the Initial Option Term or any extension thereof, or during the term of this Agreement if the Option is exercised, Landlord decides to subdivide, sell, or change the status of the zoning of the Premises, Property or any of Landlord's contiguous, adjoining or surrounding property (the "Surrounding Property," which includes (without limitation) the remainder of the structure) or in the event of foreclosure, Landlord shall immediately notify Tenant in writing. Any sale of the Property shall be subject to Tenant's rights under this Agreement. Landlord agrees that during the Initial Option Term or any extension thereof, or during the Term of this Agreement if the Option is exercised, Landlord shall not initiate or consent to any change in the zoning of the Premises, Property or Surrounding Property or impose or consent to any other restriction that would prevent or limit Tenant from using the Premises for the uses intended by Tenant as hereinafter set forth in this Agreement.

PERMITTED USE. Tenant may use the Premises for the transmission and reception of 2. communications signals and the installation, construction, maintenance, operation, repair, replacement and upgrade of its communications fixtures and related equipment, cables, accessories and improvements, which may include a suitable support structure, associated antennas, equipment shelters or cabinets and fencing and any other items necessary to the successful and secure use of the Premises (collectively, the "Communication Facility"), as well as the right to test, survey and review title on the Property; Tenant further has the right but not the obligation to add, modify and/or replace equipment in order to be in compliance with any current or future federal, state or local mandated application, including, but not limited to, emergency 911 communication services, at no additional cost to Tenant or Landlord (collectively, the "Permitted Use"). Landlord and Tenant agree that any portion of the Communication Facility that may be conceptually described on Exhibit 1 will not be deemed to limit Tenant's Permitted Use. If Exhibit 1 includes drawings of the initial installation of the Communication Facility, Landlord's execution of this Agreement will signify Landlord's approval of Exhibit 1. For a period of ninety (90) days following the start of construction, Landlord grants Tenant, its subtenants, licensees and sublicensees, the right to use such portions of Landlord's contiguous, adjoining or Surrounding Property as described on Exhibit 1 as may reasonably be required during construction and installation of the Communications Facility. Tenant has the right to install and operate transmission cables from the equipment shelter or cabinet to the antennas, electric lines from the main feed to the equipment shelter or cabinet and communication lines from the main entry point to the equipment shelter or cabinet, and to make Property improvements, alterations, upgrades or additions appropriate for Tenant's use ("Tenant Changes"). Tenant Changes include the right to construct a fence around the Premises and undertake any other appropriate means to secure the Premises at Tenant's expense. Tenant agrees to comply with all applicable governmental laws, rules, statutes and regulations, relating to its use of the Communication Facility on the Property. Tenant has the right to modify, supplement, replace, upgrade, expand the equipment, increase the number of antennas or relocate the Communication Facility within the Premises at any time during the term of this Agreement. Tenant will be allowed to make such alterations to the Property in order to accomplish Tenant's Changes or to insure that Tenant's Communication Facility complies with all applicable federal, state or local laws, rules or regulations. In the event Tenant desires to modify or upgrade the Communication Facility, and Tenant requires an additional portion of the Property (the "Additional Premises") for such modification or upgrade, Landlord agrees to lease to Tenant the Additional Premises, upon the same terms and conditions set forth herein, except that the Rent shall increase, in conjunction with the lease of the Additional Premises by a reasonable amount consistent with rental rates then charged for comparable portions of real property being in the same area. Landlord agrees to take such actions and enter into and deliver to Tenant such documents as Tenant reasonably requests in order to effect and memorialize the lease of the Additional Premises to Tenant.

## 3. <u>TERM.</u>

(a) The initial lease term will be five (5) years ("Initial Term"), commencing on the effective date of written notification by Tenant to Landlord of Tenant's exercise of the Option (the "Term Commencement Date"). The Initial Term will terminate on the fifth  $(5^{th})$  annual anniversary of the Term Commencement Date.

(b) This Agreement will automatically renew for four (4) additional five (5) year term(s) (each five (5) year term shall be defined as the "Extension Term"), upon the same terms and conditions unless the Tenant notifies the Landlord in writing of Tenant's intention not to renew this Agreement at least sixty (60) days prior to the expiration of the existing Term.

(c) If, at least sixty (60) days prior to the end of the fourth  $(4^{th})$  extended term, either Landlord or Tenant has not given the other written notice of its desire that the term of this Agreement end at the expiration of the fourth  $(4^{th})$  extended term, then upon the expiration of the fourth  $(4^{th})$  extended term this Agreement shall continue in force upon the same covenants, terms and conditions for a further term of one (1) year, and for annual terms thereafter until terminated by either party by giving to the other written notice of its intention to so terminate at least six (6) months prior to the end of any such annual term. Monthly rental during such annual terms shall be equal to the rent paid for the last month of the fourth  $(4^{th})$  extended term. If Tenant remains in possession of the Premises after the termination of this Agreement then Tenant will be deemed to be occupying the Premises on a month to month basis (the "Holdover Term"), subject to the terms and conditions of this Agreement.

(d) The Initial Term, the Extension Term and the Holdover Term are collectively referred to as the Term ("Term").

# 4. <u>RENT.</u>

(a) Commencing on the first day of the month following the date that Tenant commences construction (the "Rent Commencement Date"), Tenant will pay the Landlord a monthly rental payment of

("Rent"), at the address set forth above, on or before the fifth (5<sup>th</sup>) day of each calendar month in advance. In partial months occurring after the Rent Commencement Date, Rent will be prorated. The initial Rent payment will be forwarded by Tenant to Landlord within thirty (30) days after the Rent Commencement Date.

(b) In year one (1) of each Extension Term, the monthly Rent will increase by over the Rent paid during the previous Term.

(c) All charges payable under this Agreement such as utilities and taxes shall be billed by Landlord within one (1) year from the end of the calendar year in which the charges were incurred; any charges beyond such period shall not be billed by Landlord, and shall not be payable by Tenant. The foregoing shall not apply to monthly rent which is due and payable without a requirement that it be billed by Landlord. The provisions of the foregoing sentence shall survive the termination or expiration of this Agreement.

#### 5. APPROVALS.

(a) Landlord agrees that Tenant's ability to use the Premises is contingent upon the suitability of the Premises for Tenant's Permitted Use and Tenant's ability to obtain and maintain all Government Approvals. Landlord authorizes Tenant to prepare, execute and file all required applications to obtain Government Approvals for Tenant's Permitted Use under this Agreement and agrees to reasonably assist Tenant with such applications and with obtaining and maintaining the Government Approvals.

(b) Tenant has the right to obtain a title report or commitment for a leasehold title policy from a title insurance company of its choice and to have the Property surveyed by a surveyor of Tenant's choice. In the event Tenant determines, in its sole discretion, due to the title report results or survey results, that the condition

of the Premises is unsatisfactory, Tenant will have the right to terminate this Agreement upon notice to Landlord.

(c) Tenant may also perform and obtain, at Tenant's sole cost and expense, soil borings, percolation tests, engineering procedures, environmental investigation or other tests or reports on, over, and under the Property, necessary to determine if the Tenant's use of the Premises will be compatible with Tenant's engineering specifications, system, design, operations or Government Approvals.

6. **<u>TERMINATION</u>**. This Agreement may be terminated, without penalty or further liability, as follows:

(a) by either party on thirty (30) days prior written notice, if the other party remains in default under Paragraph 15 of this Agreement after the applicable cure periods;

(b) by Tenant upon written notice to Landlord, if Tenant is unable to obtain, or maintain, any required approval(s) or the issuance of a license or permit by any agency, board, court or other governmental authority necessary for the construction or operation of the Communication Facility as now or hereafter intended by Tenant; or if Tenant determines in its sole discretion that the cost of obtaining or retaining the same is commercially unreasonable;

(c) by Tenant upon written notice to Landlord for any reason or no reason, at any time prior to commencement of construction by Tenant; or

(d) by Tenant upon sixty (60) days prior written notice to Landlord for any reason, so long as Tenant pays Landlord a termination fee equal to three (3) months Rent, at the then current rate, provided, however, that no such termination fee will be payable on account of the termination of this Agreement by Tenant under any one or more of Paragraphs 5(b), 6(a), 6(b), 6(c), 8, 11(d), 18, 19 or 23(j) of this Agreement.

# 7. <u>INSURANCE.</u>

Tenant will carry during the Term, at its own cost and expense, the following insurance: (i) "All Risk" property insurance for its property's replacement cost; (ii) commercial general liability insurance with a minimum limit of liability of Two Million Five Hundred Thousand Dollars \$2,500,000 combined single limit for bodily injury or death/property damage arising out of any one occurrence; and (iii) Workers' Compensation Insurance as required by law. The coverage afforded by Tenant's commercial general liability insurance shall apply to Landlord as an additional insured, but only with respect to Landlord's liability arising out of its interest in the Property.

#### 8. INTERFERENCE.

(a) Where there are existing radio frequency user(s) on the Property, the Landlord will provide Tenant with a list of all existing radio frequency user(s) on the Property to allow Tenant to evaluate the potential for interference. Tenant warrants that its use of the Premises will not interfere with existing radio frequency user(s) on the Property so disclosed by Landlord, as long as the existing radio frequency user(s) operate and continue to operate within their respective frequencies and in accordance with all applicable laws and regulations.

(b) Landlord will not grant, after the date of this Agreement, a lease, license or any other right to any third party for the use of the Property, if such use may in any way adversely affect or interfere with the Communication Facility, the operations of Tenant or the rights of Tenant under this Agreement. Landlord will notify Tenant in writing prior to granting any third party the right to install and operate communications equipment on the Property.

(c) Landlord will not use, nor will Landlord permit its employees, tenants, licensees, invitees or agents to use, any portion of the Property in any way which interferes with the Communication Facility, the operations of Tenant or the rights of Tenant under this Agreement. Landlord will cause such interference to cease within twenty-four (24) hours after receipt of notice of interference from Tenant. In the event any such interference does not cease within the aforementioned cure period then the parties acknowledge that Tenant will suffer irreparable injury, and therefore, Tenant will have the right, in addition to any other rights that it may have at law or in equity, for Landlord's breach of this Agreement, to elect to enjoin such interference or to terminate this Agreement upon notice to Landlord.

# 9. INDEMNIFICATION.

(a) Tenant agrees to indemnify, defend and hold Landlord harmless from and against any and all injury, loss, damage or liability (or any claims in respect of the foregoing), costs or expenses (including reasonable attorneys' fees and court costs) arising directly from the installation, use, maintenance, repair or removal of the Communication Facility or Tenant's breach of any provision of this Agreement, except to the extent attributable to the negligent or intentional act or omission of Landlord, its employees, agents or independent contractors.

(b) Landlord agrees to indemnify, defend and hold Tenant harmless from and against any and all injury, loss, damage or liability (or any claims in respect of the foregoing), costs or expenses (including reasonable attorneys' fees and court costs) arising directly from the actions or failure to act of Landlord or its employees or agents, or Landlord's breach of any provision of this Agreement, except to the extent attributable to the negligent or intentional act or omission of Tenant, its employees, agents or independent contractors.

(c) Notwithstanding anything to the contrary in this Agreement, Tenant and Landlord each waives any claims that each may have against the other with respect to consequential, incidental or special damages.

#### 10. WARRANTIES.

(a) Tenant and Landlord each acknowledge and represent that it is duly organized, validly existing and in good standing and has the right, power and authority to enter into this Agreement and bind itself hereto through the party set forth as signatory for the party below.

(b) Landlord represents and warrants that: (i) Landlord solely owns the Property as a legal lot in fee simple, or controls the Property by lease or license; (ii) the Property is not encumbered by any liens, restrictions, mortgages, covenants, conditions, easements, leases, or any other agreements of record or not of record, which would adversely affect Tenant's Permitted Use and enjoyment of the Premises under this Agreement; (iii) as long as Tenant is not in default then Landlord grants to Tenant sole, actual, quiet and peaceful use, enjoyment and possession of the Premises; (iv) Landlord's execution and performance of this Agreement will not violate any laws, ordinances, covenants or the provisions of any mortgage, lease or other agreement binding on the Landlord; and (v) if the Property is or becomes encumbered by a deed to secure a debt, mortgage or other security interest, Landlord will provide promptly to Tenant a mutually agreeable Subordination, Non-Disturbance and Attornment Agreement.

#### 11. ENVIRONMENTAL.

(a) Landlord represents and warrants that the Property is free of hazardous substances as of the date of this Agreement, and, to the best of Landlord's knowledge, the Property has never been subject to any contamination or hazardous conditions resulting in any environmental investigation, inquiry or remediation. Landlord and Tenant agree that each will be responsible for compliance with any and all environmental and industrial hygiene laws, including any regulations, guidelines, standards, or policies of any governmental authorities regulating or imposing standards of liability or standards of conduct with regard to any environmental or industrial hygiene condition or other matters as may now or at any time hereafter be in effect, that are now or were related to that party's activity conducted in or on the Property.

(b) Landlord and Tenant agree to hold harmless and indemnify the other from, and to assume all duties, responsibilities and liabilities at the sole cost and expense of the indemnifying party for, payment of penalties, sanctions, forfeitures, losses, costs or damages, and for responding to any action, notice, claim, order, summons, citation, directive, litigation, investigation or proceeding which is related to (i) the indemnifying party's failure to comply with any environmental or industrial hygiene law, including without limitation any regulations, guidelines, standards or policies of any governmental authorities regulating or imposing standards of liability or standards of conduct with regard to any environmental or industrial hygiene conditions that arise out of or are in any way related to the condition of the Property and activities conducted by the party thereon, unless the environmental conditions are caused by the other party.

(c) The indemnifications of this Paragraph 11 specifically include reasonable costs, expenses and fees incurred in connection with any investigation of Property conditions or any clean-up, remediation, removal

or restoration work required by any governmental authority. The provisions of this Paragraph 11 will survive the expiration or termination of this Agreement.

(d) In the event Tenant becomes aware of any hazardous materials on the Property, or any environmental or industrial hygiene condition or matter relating to the Property that, in Tenant's sole determination, renders the condition of the Premises or Property unsuitable for Tenant's use, or if Tenant believes that the leasing or continued leasing of the Premises would expose Tenant to undue risks of government action, intervention or third-party liability, Tenant will have the right, in addition to any other rights it may have at law or in equity, to terminate the Agreement upon notice to Landlord.

ACCESS. At all times throughout the Term of this Agreement, and at no additional charge to Tenant, 12. Tenant and its employees, agents, and subcontractors, will have twenty-four (24) hour per day, seven (7) day per week pedestrian and vehicular access to and over the Property, from an open and improved public road to the Premises, for the installation, maintenance and operation of the Communication Facility and any utilities serving the Premises. Landlord grants to Tenant an easement for such access and Landlord agrees to provide to Tenant such codes, keys and other instruments necessary for such access at no additional cost to Tenant. Landlord acknowledges that in the event Tenant cannot access the Premises, Tenant shall incur significant damage. If Landlord fails to provide the access granted by this Paragraph 12, such failure shall be a default under this Lease. In connection with such default, in addition to any other rights or remedies available to Tenant under this Lease or at law or equity, Landlord shall pay Tenant, as liquidated damages and not as a penalty, \$500.00 per day in consideration of Tenant's damages, including, but not limited to, its lost profits, until Landlord cures such default. Landlord and Tenant agree that Tenant's damages in the event of a denial of access are difficult, if not impossible, to ascertain, and the liquidated damages set forth herein are a reasonable approximation of such damages. Upon Tenant's request, Landlord will execute a separate recordable easement evidencing this right. In the event any public utility is unable to use the access or easement provided to Tenant then the Landlord agrees to grant additional access or an easement either to Tenant or to the public utility, for the benefit of Tenant, at no cost to Tenant.

13. <u>**REMOVAL/RESTORATION.</u>** All portions of the Communication Facility brought onto the Property by Tenant will be and remain Tenant's personal property and, at Tenant's option, may be removed by Tenant at any time during the Term. Landlord covenants and agrees that no part of the Communication Facility constructed, erected or placed on the Premises by Tenant will become, or be considered as being affixed to or a part of, the Property, it being the specific intention of the Landlord that all improvements of every kind and nature constructed, erected or placed by Tenant on the Premises will be and remain the property of the Tenant and may be removed by Tenant at any time during the Term. Within one hundred twenty (120) days of the termination of this Agreement, Tenant will remove all of Tenant's above-ground improvements and Tenant will, to the extent reasonable, restore the Premises to its condition at the commencement of the Agreement, reasonable wear and tear and loss by casualty or other causes beyond Tenant's control excepted. Notwithstanding the foregoing, Tenant will not be responsible for the replacement of any trees, shrubs or other vegetation, nor will Tenant be required to remove from the Premises or the Property any structual steel or any foundations or underground utilities.</u>

#### 14. MAINTENANCE/UTILITIES.

(a) Tenant will keep and maintain the Premises in good condition, reasonable wear and tear and damage from the elements excepted. Landlord shall maintain and repair all access roadways from the nearest public roadway up to the beginning of the Tenant's access road in a manner sufficient to allow vehicular and pedestrian access at all times, at its sole expense, except for any damage to such roadways caused by Tenant. Tenant shall maintain and repair Tenant's access road to the Communication Facility in a manner sufficient to allow vehicular and pedestrian access at all times, at its sole expense, except for any damage to such roadways caused by Tenant.

(b) Tenant will be responsible for paying on a monthly or quarterly basis all utilities charges for electricity, telephone service or any other utility used or consumed by Tenant on the Premises. In the event Tenant cannot secure its own metered electrical supply, Tenant will have the right, at its own cost and expense,

to submeter from the Landlord. When submetering is required under this Agreement, Landlord will read the meter and provide Tenant with an invoice and usage data on a monthly basis. Landlord agrees that it will not include a markup on the utility charges. Landlord further agrees to provide the usage data and invoice on forms provided by Tenant and to send such forms to such address and/or agent designated by Tenant. Tenant will remit payment within thirty days of receipt of the usage data and required forms. Failure by Landlord to perform this function will limit utility fee recovery by Landlord to a 12-month period. If Tenant submeters electricity from Landlord, Landlord agrees to give Tenant at least 24 hours advanced notice of any planned interruptions of said electricity. Landlord acknowledges that Tenant provides a communication service which requires electrical power to operate and must operate twenty-four (24) hour per day, seven (7) day per week. If the interruption is for an extended period of time, in Tenant's reasonable determination, the Landlord agrees to allow Tenant the right to bring in a temporary source of power for the duration of the interruption. Landlord will fully cooperate with any utility company requesting an easement over, under and across the Property in order for the utility company to provide service to the Tenant. Landlord will not be responsible for interference with, interruption of or failure, beyond the reasonable control of Landlord, of such services to be furnished or supplied by Landlord.

#### 15. DEFAULT AND RIGHT TO CURE.

(a) The following will be deemed a default by Tenant and a breach of this Agreement: (i) nonpayment of Rent if such Rent remains unpaid for more than thirty (30) days after receipt of written notice from Landlord of such failure to pay; or (ii) Tenant's failure to perform any other term or condition under this Agreement within forty-five (45) days after receipt of written notice from Landlord specifying the failure. No such failure, however, will be deemed to exist if Tenant has commenced to cure such default within such period and provided that such efforts are prosecuted to completion with reasonable diligence. Delay in curing a default will be excused if due to causes beyond the reasonable control of Tenant. If Tenant remains in default beyond any applicable cure period, Landlord will have the right to exercise any and all rights and remedies available to it under law and equity.

(b) The following will be deemed a default by Landlord and a breach of this Agreement: (i) failure to provide access to the Premises or to cure an interference problem within twenty-four (24) hours after receipt of written notice of such default; or (ii) Landlord's failure to perform any term, condition or breach of any warranty or covenant under this Agreement within forty-five (45) days after receipt of written notice from Tenant specifying the failure. No such failure, however, will be deemed to exist if Landlord has commenced to cure the default within such period and provided such efforts are prosecuted to completion with reasonable diligence. Delay in curing a default will be excused if due to causes beyond the reasonable control of Landlord. If Landlord remains in default beyond any applicable cure period, Tenant will have the right to exercise any and all rights available to it under law and equity, including the right to cure Landlord's default and to deduct the costs of such cure from any monies due to Landlord from Tenant.

16. <u>ASSIGNMENT/SUBLEASE</u>. Tenant will have the right to assign this Agreement or sublease the Premises and its rights herein, in whole or in part, without Landlord's consent. Upon notification to Landlord of such assignment, Tenant will be relieved of all future performance, liabilities and obligations under this Agreement.

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

If to Tenant:

New Cingular Wireless PCS, LLC Attn: AT&T Network Real Estate Administration Re: Cell Site #: 098G0127; Cell Site Name: Girdler Fixed Asset No: 10128760 PO Box 1630 Alpharetta, GA 30009

For Overnight mail to:

New Cingular Wireless PCS, LLC Attn: AT&T Network Real Estate Administration Re: Cell Site #: 098G0127; Cell Site Name: Girdler Fixed Asset No: 10128760 12555 Cingular Way Alpharetta, GA 30004

With a copy to:New Cingular Wireless PCS, LLC<br/>Attn.: Legal Department<br/>Re: Cell Site #: 098G0127; Cell Site Name: Girdler<br/>Fixed Asset No: 10128760<br/>5565 Glenridge Connector<br/>Suite 1700<br/>Atlanta, GA 30342

If to Landlord: Mae Lee PO Box 216 Girdler, KY 40906

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

- (b) In the event of a change in ownership, transfer or sale of the Property, within ten (10) days of such transfer, Landlord will send the below documents (in section 17(b)(i) to Tenant. In the event Tenant does not receive such appropriate documents, Tenant shall not be responsible for any failure to pay the current landlord
  - (i) a. Old deed to Property
    - b. New deed to Property
    - c. Bill of Sale or Transfer
    - d. Copy of current Tax Bill
    - e. New W-9
    - f. New Payment Direction Form
    - g. Full contact information for new Landlord including all phone numbers

18. <u>CONDEMNATION.</u> In the event Landlord receives notification of any condemnation proceedings affecting the Property, Landlord will provide notice of the proceeding to Tenant within forty-eight (48) hours. If a condemning authority takes all of the Property, or a portion sufficient, in Tenant's sole determination, to render the Premises unsuitable for Tenant, this Agreement will terminate as of the date the title vests in the condemning authority. The parties will each be entitled to pursue their own separate awards in the condemnation proceeds, which for Tenant will include, where applicable, the value of its Communication Facility, moving expenses, prepaid Rent, and business dislocation expenses, provided that any award to Tenant will not diminish Landlord's recovery. Tenant will be entitled to reimbursement for any prepaid Rent on a prorata basis.

19. <u>CASUALTY.</u> Landlord will provide notice to Tenant of any casualty affecting the Property within forty-eight (48) hours of the casualty. If any part of the Communication Facility or Property is damaged by fire or other casualty so as to render the Premises unsuitable, in Tenant's sole determination, then Tenant may terminate this Agreement by providing written notice to the Landlord, which termination will be effective as of the date of such damage or destruction. Upon such termination, Tenant will be entitled to collect all insurance proceeds payable to Tenant on account thereof and to be reimbursed for any prepaid Rent on a prorata basis. If notice of termination is given, or if Landlord or Tenant undertake to rebuild the Communications Facility, Landlord aggress to use its reasonable efforts to permit Tenant to place temporary transmission and reception facilities on the Property at no additional Rent until such time as Tenant is able to activate a replacement transmission facility at another location or the reconstruction of the Communication Facility is completed.

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

21. <u>TAXES</u>. Landlord shall be responsible for payment of all ad valorem taxes levied upon the lands, improvements and other property of Landlord. Tenant shall be responsible for all taxes levied upon Tenant's leasehold improvements (including Tenant's equipment building and tower) on the Premises. Landlord shall provide Tenant with copies of all assessment notices on or including the Premises immediately upon receipt, but in no event later than thirty (30) days after receipt by Landlord. If Landlord fails to provide such notice within such time frame, Landlord shall be responsible for all increases in taxes for the year covered by the assessment. Tenant shall have the right to contest, in good faith, the validity or the amount of any tax or assessment levied against the Premises by such appellate or other proceedings as may be appropriate in the jurisdiction, and may defer payment of such obligations, pay same under protest, or take such other steps as Tenant may deem appropriate. This right shall include the ability to institute any legal, regulatory or informal action in the name of Landlord, Tenant, or both, with respect to the valuation of the Premises. Landlord shall cooperate in the institution and prosecution of any such proceedings and will execute any documents required therefore. The expense of any such proceedings shall be borne by Tenant and any refunds or rebates secured as a result of Tenant's action shall belong to Tenant.

# 22. <u>SALE OF PROPERTY/RIGHT OF FIRST REFUSAL</u>.

If Landlord, at any time during the Term of this Agreement, decides to sell, subdivide or rezone (a) any of the Premises, all or any part of the Property or Surrounding Property, to a purchaser other than Tenant, Landlord shall promptly notify Tenant in writing, and such sale, subdivision or rezoning shall be subject to this Agreement and Tenant's rights hereunder. Landlord agrees not to sell, lease or use any areas of the Property or Surrounding Property for the installation, operation or maintenance of other wireless communications facilities if such installation, operation or maintenance would interfere with Tenant's Permitted Use or communications equipment as determined by radio propagation tests performed by Tenant in its sole discretion, any such testing to be at the expense of Landlord or Landlord's prospective purchaser, and not Tenant. If the radio frequency propagation tests demonstrate levels of interference unacceptable to Tenant, Landlord shall be prohibited from selling, leasing or using any areas of the Property or the Surrounding Property for purposes of any installation, operation or maintenance of any other wireless communications facility or equipment. Landlord shall not be prohibited from the selling, leasing or use of any of the Property or the Surrounding Property for non-wireless communication use. In the event the Property is transferred, the new landlord shall have a duty at the time of such transfer to provide Tenant with a completed IRS Form W-9, or its equivalent, and other related paper work to effect a transfer in Rent to the new landlord. The provisions of this Paragraph 22 shall in no way limit or impair the obligations of Landlord under Paragraph 8 above.

**(b)** If at any time after the Effective Date, Landlord receives a bona fide written offer from a third party seeking an assignment of the rental stream associated with this Agreement ("Purchase Offer"), Landlord shall immediately furnish Tenant with a copy of the Purchase Offer, together with a representation that the Purchase Offer is valid, genuine and true in all respects. Tenant shall have the right within thirty (30) days after it receives such copy and representation to match the Purchase Offer and agree in writing to match the terms of the Purchase Offer. Such writing shall be in the form of a contract substantially similar to the Purchase Offer. If Tenant chooses not to exercise this right of first refusal or fails to provide written notice to Landlord within the thirty (30) day period, Landlord may assign the rental stream pursuant to the Purchase Offer, subject to the terms of this Agreement (including without limitation the terms of this Subparagraph 22(B), to the person or entity that made the Purchase Offer provided that (i) the assignment is on the same terms contained in the Purchase Offer and (ii) the assignment occurs within ninety (90) days of Tenant's receipt of a copy of the Purchase Offer. If such third party modifies the Purchase Offer or the assignment does not occur within such ninety (90) day period, Landlord shall re-offer to Tenant, pursuant to the procedure set forth in this subparagraph 22(b), the assignment on the terms set forth in the Purchase Offer, as amended. The right of first refusal hereunder shall (i) survive any transfer of all or any part of the Property or assignment of all or any part of the Agreement; (ii) bind and inure to the benefit of, Landlord and Tenant and their respective heirs, successors and assigns; (iii) run with the land; and (iv) terminate upon the expiration or earlier termination of this Agreement.

#### 23. MISCELLANEOUS.

(a) **Amendment/Waiver.** This Agreement cannot be amended, modified or revised unless done in writing and signed by an authorized agent of the Landlord and an authorized agent of the Tenant. No provision may be waived except in a writing signed by both parties.

(b) Memorandum/Short Form Lease. Either party will, at any time upon fifteen (15) business days prior written notice from the other, execute, acknowledge and deliver to the other a recordable Memorandum or Short Form of Lease. Either party may record this Memorandum or Short Form of Lease at any time, in its absolute discretion.

(c) **Bind and Benefit**. The terms and conditions contained in this Agreement will run with the Property and bind and inure to the benefit of the parties, their respective heirs, executors, administrators, successors and assigns.

(d) Entire Agreement. This Agreement and the exhibits attached hereto, all being a part hereof, constitute the entire agreement of the parties hereto and will supersede all prior offers, negotiations and agreements with respect to the subject matter of this Agreement.

(e) Governing Law. This Agreement will be governed by the laws of the state in which the Premises are located, without regard to conflicts of law.

(f) **Interpretation.** Unless otherwise specified, the following rules of construction and interpretation apply: (i) captions are for convenience and reference only and in no way define or limit the construction of the terms and conditions hereof; (ii) use of the term "including" will be interpreted to mean "including but not limited to"; (iii) whenever a party's consent is required under this Agreement, except as otherwise stated in the Agreement or as same may be duplicative, such consent will not be unreasonably withheld, conditioned or delayed; (iv) exhibits are an integral part of the Agreement and are incorporated by reference into this Agreement; (v) use of the terms "termination" or "expiration" are interchangeable; (vi) reference to a default will take into consideration any applicable notice, grace and cure periods; and (vii) to the extent there is any issue with respect to any alleged, perceived or actual ambiguity in this Agreement, the ambiguity shall not be resolved on the basis of who drafted the Agreement.

(g) **Estoppel.** Either party will, at any time upon twenty (20) business days prior written notice from the other, execute, acknowledge and deliver to the other a statement in writing (i) certifying that this Agreement is unmodified and in full force and effect (or, if modified, stating the nature of such modification and certifying this Agreement, as so modified, is in full force and effect) and the date to which the Rent and other charges are paid in advance, if any, and (ii) acknowledging that there are not, to such party's knowledge, any uncured defaults on the part of the other party hereunder, or specifying such defaults if any are claimed. Any

such statement may be conclusively relied upon by any prospective purchaser or encumbrance of the Premises. The requested party's failure to deliver such a statement within such time will be conclusively relied upon by the requesting party that (i) this Agreement is in full force and effect, without modification except as may be properly represented by the requesting party, (ii) there are no uncured defaults in either party's performance, and (iii) no more than one month's Rent has been paid in advance.

(h) W-9. Landlord agrees to provide Tenant with a completed IRS Form W-9, or its equivalent, upon execution of this Agreement and at such other times as may be reasonably requested by Tenant.

(i) No Electronic Signature/No Option. The submission of this Agreement to any party for examination or consideration does not constitute an offer, reservation of or option for the Premises based on the terms set forth herein. This Agreement will become effective as a binding Agreement only upon the handwritten legal execution, acknowledgment and delivery hereof by Landlord and Tenant.

(j) Severability. If any term or condition of this Agreement is found unenforceable, the remaining terms and conditions will remain binding upon the parties as though said unenforceable provision were not contained herein. However, if the invalid, illegal or unenforceable provision materially affects this Agreement then the Agreement may be terminated by either party on ten (10) business days prior written notice to the other party hereto.

(k) **Counterparts.** This Agreement may be executed in two (2) or more counterparts, all of which shall be considered on and the same agreement and shall become effective when one or more counterparts have been signed by each of the parties. It being understood that all parties need not sign the same counterpart.

#### [SIGNATURES APPEAR ON THE NEXT PAGE]

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

WITNESSES:

Print Name:

Print Name:

1

"LANDLORD"

By: <Print Name: Mae Lee

Its: <u>Owner</u> Date: <u>7-12-2008</u>

**"TENANT"** 

Name: ERICA L.CLANTON

it Name: Glass

New Cingular Wireless PCS, LLC, a Delaware limited liability company By: AT&T Mobility Corporation Its: Manager By: 1 es William Planta Print Name: Executive Network Its: Ô tions Date:

# [ACKNOWLEDGMENTS APPEAR ON THE NEXT PAGE]

# **TENANT ACKNOWLEDGMENT**

Tennessee ) Williamson STATE OF \_\_\_\_\_ ) ss: COUNTY OF

On the <u>28<sup>TH</sup></u> day of <u>JULY</u>, 2008, before me personally appeared <u>[utilliam Plents</u>, and acknowledged under oath that he is the <u>Executive Director-wetwork</u> of <u>New lingular fletchest fletcut</u>, the <u>a pelewore limited lieblic</u> named in the attached instrument, and as such that authorized to execute this instrument on behalf of the <u>Executive Director</u>.

C) CC 

la XI20 Notary Public: ERICA L. CLANTON My Commission Expires: MAY 8, 2012

FOR INDIVIDUAL:

Name: Mae Lee

STATE OF KE COUNTY OF

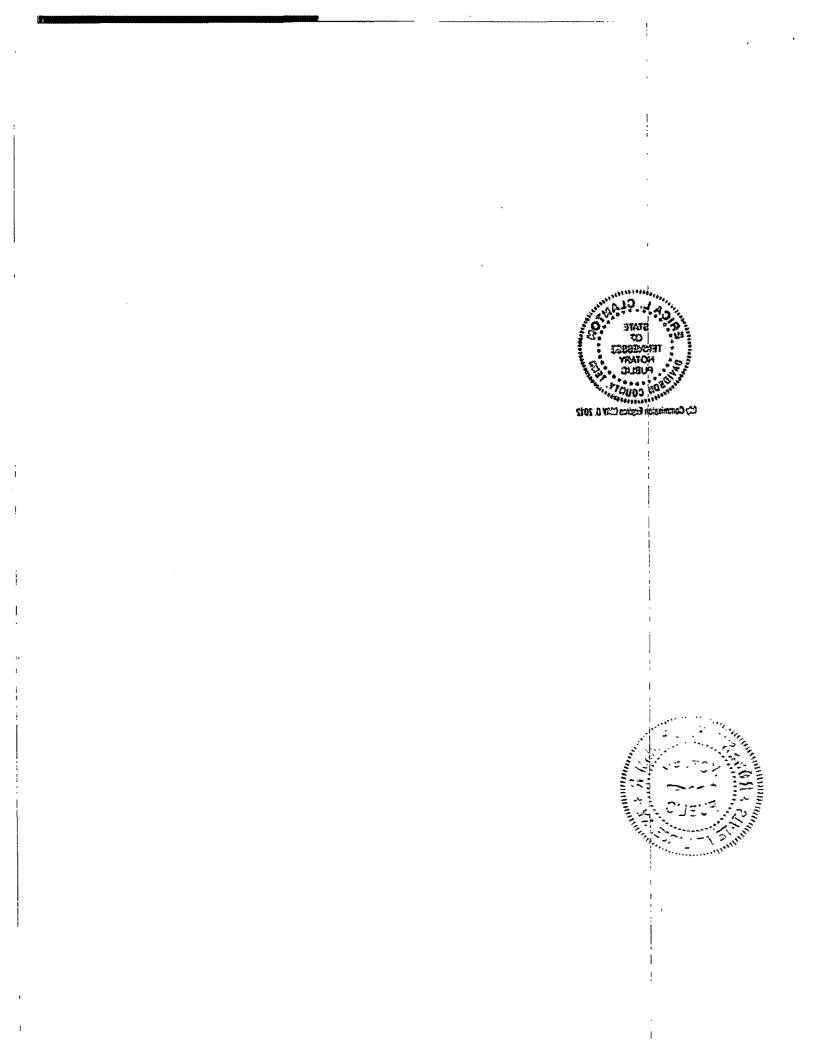


Name: Kel

Notary Public

My Commission Expires: 1-15-2010

[NOTARIAL SEAL]



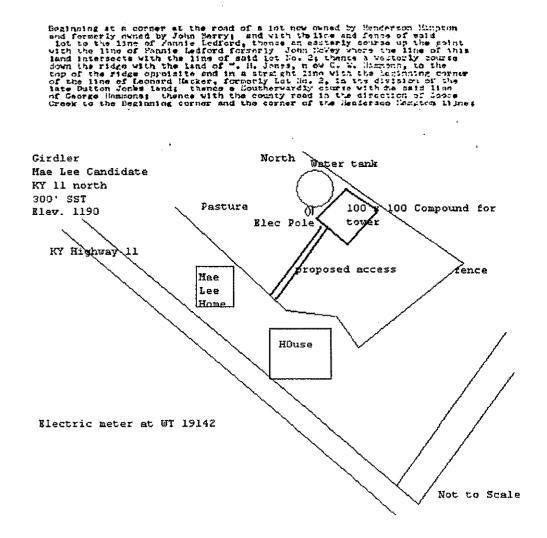
## EXHIBIT 1

#### **DESCRIPTION OF PREMISES**

Page 1 of 1

to the Agreement dated <u>JULY 28</u>, 2008, by and between Mae Lee, a widow, as Landlord, and New Cingular Wireless PSC, LLC, as Tenant.

The Premises are described and/or depicted as follows in the books of the Knox County Clerk in Deed Book 109, Page 250:



#### Notes:

- 1. This Exhibit may be replaced by a land survey and/or construction drawings of the Premises once received by Tenant.
- 2. Any setback of the Premises from the Property's boundaries shall be the distance required by the applicable governmental authorities.
- 3. Width of access road shall be the width required by the applicable governmental authorities, including police and fire departments.
- 4. The type, number and mounting positions and locations of antennas and transmission lines are illustrative only. Actual types, numbers and mounting positions may vary from what is shown above.

Exhibit J

#### 1) TAX MAP 104-40, LOT 34 PARIS & MAE LEE PO 80X 216 GIRDLER, KY 40943

# 2

TAX MAP 120, LOT 6 KNOX COUNTY BOARD OF EDUCATION COURT SQUARE BARBOURVILLE, KY 40906

# 3

TAX MAP 104-40, LOT 40 JOSEPH S & MARY FIELDS PO BOX 241 GIRDLER, KY 40943

# 4

TAX MAP 104-40, LOT 35 CITY OF BARBOURVILLE NO ADDRESS LISTED ON PVA RECORDS BARBOURVILLE, KY 40906

# 5

TAX MAP 104-40, LOT 27 GILBERT & GEORGIA DELPH ESTATE C/O JANE DELPH PO BOX 281 GIRDLER, KY 40943

# 6

TAX MAP 104-40, LOT 36 NANCY HACKER PO BOX 46 GIRDLER, KY 40943

# $\overline{7}$

TAX MAP 104-40, LOT 33 SHEILA A TROUTMAN PO BOX 475 GIRDLER, KY 40943 B TAX MAP 104-40, LOT 33 CHARLES V & SHEILA TROUTMAN 5661 N KY 11 GIRDLER, KY 40943

# 9

TAX MAP 104-40, LOT 37 SHEILA & TONY CALLEBS PO BOX 43 GIRDLER, KY 40943

# (10)

TAX MAP 104-40, LOT 37.02 ROBERT DAVID & VICTORIA HACKER PO BOX 33 GIRDLER, KY 40943

# (11)

TAX MAP 104-40, LOT 39 KIMBERLY JONES ASHER PO BOX 204 GIRDLER, KY 40943

# (12)

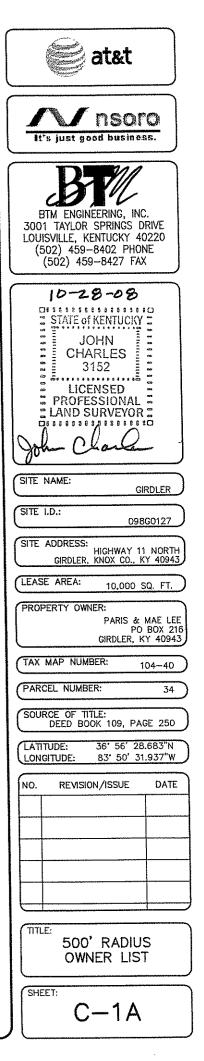
TAX MAP 104-40, LOT 42 VIVIAN MAYNE PO BOX 275 GIRDLER, KY 40943

# 13

TAX MAP 104-40, LOT 43 GEORGE JONES CEMETERY NO ADDRESS LISTED ON PVA RECORDS

#### GENERAL NOTE:

THE PROPERTY OWNERS NAMES, ADDRESS AND DEED INFORMATION SHOWN HEREON WERE OBTAINED FROM THE RECORDS OF KNOX COUNTY, KY PROPERTY VALUATION ADMINISTRATION OFFICE ON 7/31/08. THE PROPERTY VALUATION ADMINISTRATION RECORDS MAY NOT REFLECT THE CURRENT OWNERS AND ADDRESS DUE TO THE INACCURACIES AND TIME LAPSE IN UPDATING FILES. THE COUNTY PROPERTY VALUATION ADMINISTRATION EXPRESSLY DISCLAIMS ANY WARRANTY FOR THE CONTENT AND ANY ERRORS CONTAINED IN THEIR FILES.



# BRIGGS LAW OFFICE, PSC TODD R. BRIGGS 17300 POLO FIELDS LANE LOUISVILLE, KENTUCKY 40245

TELEPHONE (502) 254-9756

FACSIMILE (502) 254-5717

# Notice of Proposed Construction Wireless Telecommunications Facility

Kimberly Jones Asher P.O. Box 204 Girdler, KY 40943

#### Via Certified Mail Return Receipt Requested

Dear Landowner:

New Cingular Wireless PCS, LLC is applying to the Kentucky Public Service Commission (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new wireless telecommunications facility located at Highway 11 North, Girdler, Kentucky 40943. A map showing the location is attached. The proposed facility will include a 300 foot self-support tower, plus related ground facilities.

This notice is being sent to you because the Knox County Property Valuation Administrator's records indicate that you 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.

The Commission invites your comments regarding the proposed construction and wants you to be aware of your right to intervene in the Commission's proceedings on this application. Your comments and request for intervention should be addressed to: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to case number 2008-00458 in any correspondence.

Sincerely,

lale KSy

Todd R. Briggs Counsel for New Cingular Wireless PCS, LLC

#### TODD R. BRIGGS

17300 POLO FIELDS LANE

TELEPHONE (502) 254-9756

FACSIMILE (502) 254-5717

# Notice of Proposed Construction Wireless Telecommunications Facility

Knox County Board of Education Court Square Barbourville, KY 40906

#### Via Certified Mail Return Receipt Requested

Dear Landowner:

New Cingular Wireless PCS, LLC is applying to the Kentucky Public Service Commission (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new wireless telecommunications facility located at Highway 11 North, Girdler, Kentucky 40943. A map showing the location is attached. The proposed facility will include a 300 foot self-support tower, plus related ground facilities.

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Sincerely,

the KBy

Todd R. Briggs Counsel for New Cingular Wireless PCS, LLC

# BRIGGS LAW OFFICE, PSC TODD R. BRIGGS 17300 POLO FIELDS LANE LOUISVILLE, KENTUCKY 40245

TELEPHONE (502) 254-9756

FACSIMILE (502) 254-5717

# Notice of Proposed Construction Wireless Telecommunications Facility

Sheila and Tony Callebs P.O. Box 43 Girdler, KY 40943

#### Via Certified Mail Return Receipt Requested

Dear Landowner:

New Cingular Wireless PCS, LLC is applying to the Kentucky Public Service Commission (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new wireless telecommunications facility located at Highway 11 North, Girdler, Kentucky 40943. A map showing the location is attached. The proposed facility will include a 300 foot self-support tower, plus related ground facilities.

This notice is being sent to you because the Knox County Property Valuation Administrator's records indicate that you 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.

The Commission invites your comments regarding the proposed construction and wants you to be aware of your right to intervene in the Commission's proceedings on this application. Your comments and request for intervention should be addressed to: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to case number 2008-00458 in any correspondence.

Sincerely,

a ng

Todd R. Briggs Counsel for New Cingular Wireless PCS, LLC

# BRIGGS LAW OFFICE, PSC TODD R. BRIGGS 17300 POLO FIELDS LANE LOUISVILLE, KENTUCKY 40245

TELEPHONE (502) 254-9756

FACSIMILE (502) 254-5717

# Notice of Proposed Construction Wireless Telecommunications Facility

Charles V. and Sheila Troutman 5661 N KY 11 Girdler, KY 40943

# Via Certified Mail Return Receipt Requested

Dear Landowner:

New Cingular Wireless PCS, LLC is applying to the Kentucky Public Service Commission (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new wireless telecommunications facility located at Highway 11 North, Girdler, Kentucky 40943. A map showing the location is attached. The proposed facility will include a 300 foot self-support tower, plus related ground facilities.

This notice is being sent to you because the Knox County Property Valuation Administrator's records indicate that you 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.

The Commission invites your comments regarding the proposed construction and wants you to be aware of your right to intervene in the Commission's proceedings on this application. Your comments and request for intervention should be addressed to: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to case number 2008-00458 in any correspondence.

Sincerely,

Juli Rogy

Todd R. Briggs Counsel for New Cingular Wireless PCS, LLC

## TODD R. BRIGGS 17300 POLO FIELDS LANE LOUISVILLE, KENTUCKY 40245

TELEPHONE (502) 254-9756

FACSIMILE (502) 254-5717

# Notice of Proposed Construction Wireless Telecommunications Facility

City of Barbourville Barbourville, KY 40906

#### Via Certified Mail Return Receipt Requested

Dear Landowner:

New Cingular Wireless PCS, LLC is applying to the Kentucky Public Service Commission (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new wireless telecommunications facility located at Highway 11 North, Girdler, Kentucky 40943. A map showing the location is attached. The proposed facility will include a 300 foot self-support tower, plus related ground facilities.

This notice is being sent to you because the Knox County Property Valuation Administrator's records indicate that you 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.

The Commission invites your comments regarding the proposed construction and wants you to be aware of your right to intervene in the Commission's proceedings on this application. Your comments and request for intervention should be addressed to: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to case number 2008-00458 in any correspondence.

Sincerely,

lild i By

Todd R. Briggs Counsel for New Cingular Wireless PCS, LLC

# TODD R. BRIGGS

LOUISVILLE, KENTUCKY 40245

TELEPHONE (502) 254-9756

FACSIMILE (502) 254-5717

# Notice of Proposed Construction Wireless Telecommunications Facility

Gilbert and Georgia Delph Estate c/o Jane Delph P.O. Box 281 Girdler, KY 40943

#### Via Certified Mail Return Receipt Requested

Dear Landowner:

New Cingular Wireless PCS, LLC is applying to the Kentucky Public Service Commission (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new wireless telecommunications facility located at Highway 11 North, Girdler, Kentucky 40943. A map showing the location is attached. The proposed facility will include a 300 foot self-support tower, plus related ground facilities.

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Sincerely,

lell & Gy

Todd R. Briggs Counsel for New Cingular Wireless PCS, LLC

# TODD R. BRIGGS 17300 POLO FIELDS LANE LOUISVILLE, KENTUCKY 40245

TELEPHONE (502) 254-9756

FACSIMILE (502) 254-5717

# Notice of Proposed Construction Wireless Telecommunications Facility

Joseph S. and Mary Fields P.O. Box 241 Girdler, KY 40943

#### Via Certified Mail Return Receipt Requested

Dear Landowner:

New Cingular Wireless PCS, LLC is applying to the Kentucky Public Service Commission (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new wireless telecommunications facility located at Highway 11 North, Girdler, Kentucky 40943. A map showing the location is attached. The proposed facility will include a 300 foot self-support tower, plus related ground facilities.

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Sincerely,

the reg

Todd R. Briggs Counsel for New Cingular Wireless PCS, LLC

# BRIGGS LAW OFFICE, PSC TODD R. BRIGGS 17300 POLO FIELDS LANE LOUISVILLE, KENTUCKY 40245

TELEPHONE (502) 254-9756

FACSIMILE (502) 254-5717

# Notice of Proposed Construction Wireless Telecommunications Facility

Nancy Hacker P.O. Box 46 Girdler, KY 40943

## Via Certified Mail Return Receipt Requested

Dear Landowner:

New Cingular Wireless PCS, LLC is applying to the Kentucky Public Service Commission (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new wireless telecommunications facility located at Highway 11 North, Girdler, Kentucky 40943. A map showing the location is attached. The proposed facility will include a 300 foot self-support tower, plus related ground facilities.

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Sincerely,

the con

Todd R. Briggs Counsel for New Cingular Wireless PCS, LLC

TODD R. BRIGGS

17300 POLO FIELDS LANE

TELEPHONE (502) 254-9756

FACSIMILE (502) 254-5717

# Notice of Proposed Construction Wireless Telecommunications Facility

George Jones Cemetery

Girdler, KY 40943

#### Via Certified Mail Return Receipt Requested

Dear Landowner:

New Cingular Wireless PCS, LLC is applying to the Kentucky Public Service Commission (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new wireless telecommunications facility located at Highway 11 North, Girdler, Kentucky 40943. A map showing the location is attached. The proposed facility will include a 300 foot self-support tower, plus related ground facilities.

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Sincerely,

lell ron

Todd R. Briggs Counsel for New Cingular Wireless PCS, LLC

TODD R. BRIGGS 17300 POLO FIELDS LANE LOUISVILLE, KENTUCKY 40245

TELEPHONE (502) 254-9756

FACSIMILE (502) 254-5717

# Notice of Proposed Construction Wireless Telecommunications Facility

Vivian Mayne P.O. Box 275 Girdler, KY 40943

#### Via Certified Mail Return Receipt Requested

Dear Landowner:

New Cingular Wireless PCS, LLC is applying to the Kentucky Public Service Commission (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new wireless telecommunications facility located at Highway 11 North, Girdler, Kentucky 40943. A map showing the location is attached. The proposed facility will include a 300 foot self-support tower, plus related ground facilities.

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The Commission invites your comments regarding the proposed construction and wants you to be aware of your right to intervene in the Commission's proceedings on this application. Your comments and request for intervention should be addressed to: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to case number <u>2008-00458</u> in any correspondence.

Sincerely,

Weldy

Todd R. Briggs Counsel for New Cingular Wireless PCS, LLC

TODD R. BRIGGS 17300 POLO FIELDS LANE LOUISVILLE, KENTUCKY 40245

TELEPHONE (502) 254-9756

FACSIMILE (502) 254-5717

# Notice of Proposed Construction Wireless Telecommunications Facility

Robert David and Victoria Hacker P.O. Box 33 Girdler, KY 40943

# Via Certified Mail Return Receipt Requested

Dear Landowner:

New Cingular Wireless PCS, LLC is applying to the Kentucky Public Service Commission (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new wireless telecommunications facility located at Highway 11 North, Girdler, Kentucky 40943. A map showing the location is attached. The proposed facility will include a 300 foot self-support tower, plus related ground facilities.

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The Commission invites your comments regarding the proposed construction and wants you to be aware of your right to intervene in the Commission's proceedings on this application. Your comments and request for intervention should be addressed to: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to case number 2008-00458 in any correspondence.

Sincerely,

Mark top

Todd R. Briggs Counsel for New Cingular Wireless PCS, LLC

TODD R. BRIGGS 17300 POLO FIELDS LANE LOUISVILLE, KENTUCKY 40245

TELEPHONE (502) 254-9756

FACSIMILE (502) 254-5717

×.

# **Notice of Proposed Construction** Wireless Telecommunications Facility

Sheila A. Troutman P.O. Box 475 Girdler, KY 40943

# Via Certified Mail Return Receipt Requested

Dear Landowner:

New Cingular Wireless PCS, LLC is applying to the Kentucky Public Service Commission (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new wireless telecommunications facility located at Highway 11 North, Girdler, Kentucky 40943. A map showing the location is attached. The proposed facility will include a 300 foot self-support tower, plus related ground facilities.

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Sincerely,

ereiy,

Todd R. Briggs Counsel for New Cingular Wireless PCS, LLC

Exhibit K

TODD R. BRIGGS 17300 POLO FIELDS LANE LOUISVILLE, KENTUCKY 40245

TELEPHONE (502) 254-9756

FACSIMILE (502) 254-5717

# Via Certified Mail Return Receipt Requested

Honorable J.M. Hall Knox County Judge Executive 401 Court Square Barbourville, KY 40906

#### RE: Notice of Proposal to Construct Wireless Telecommunications Facility Kentucky Public Service Commission--Case No. 2008-00458

Dear Judge Hall:

New Cingular Wireless PCS, LLC is applying to the Kentucky Public Service Commission (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new wireless telecommunications facility located at Highway 11 North, Girdler, Kentucky 40943. A map showing the location is attached. The proposed facility will include a 300 foot self-support tower, plus related ground facilities.

You have a right to submit comments regarding the proposed construction to the Commission or to request intervention in the Commission's proceedings on this application.

Your comments and request for intervention should be addressed to: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to case number 2008-00458 in any correspondence.

Sincerely,

ereiy,

Todd R. Briggs Counsel for New Cingular Wireless PCS, LLC

Exhibit L

# PUBLIC NOTICE

New Cingular Wireless PCS, LLC proposes to construct a telecommunications

# TOWER

near this site. If you have any questions please contact:

or

Briggs Law Office, PSC 17300 Polo Fields Lane Louisville, KY 40245 (502) 254-9756

Executive Director Public Service Commission 211 Sower Boulevard P.O. Box 615 Frankfort, KY 40602

Please refer to Commission's **Case #2008-00458** in your correspondence.

# PUBLIC NOTICE

New Cingular Wireless PCS, LLC proposes to construct a telecommunications

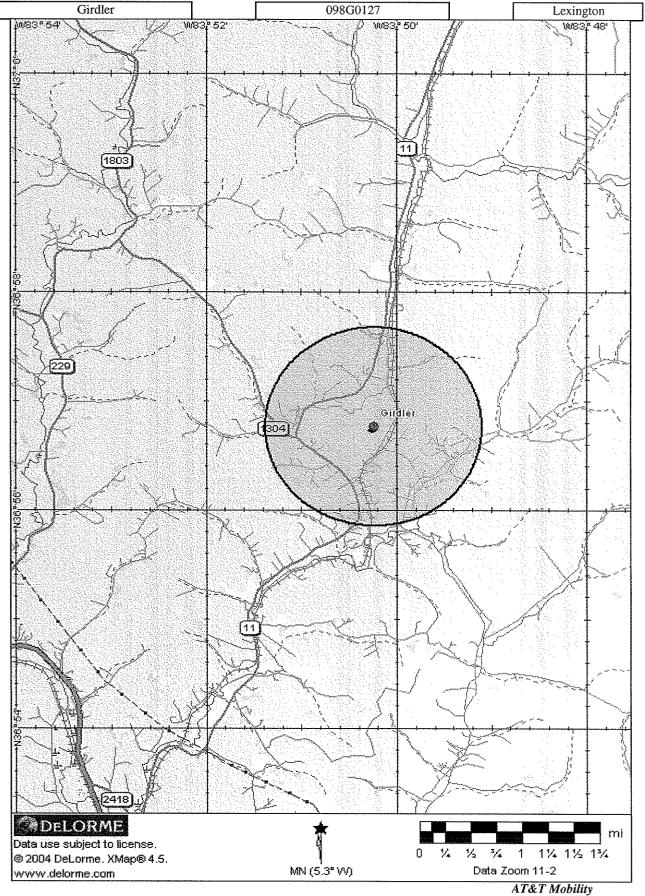
# TOWER

on this site. If you have any questions please contact:

Briggs Law Office, PSC 17300 Polo Fields Lane Or Louisville, KY 40245 (502) 254-9756 Executive Director Public Service Commission 211 Sower Boulevard P.O. Box 615 Frankfort, KY 40602

Please refer to Commission's **Case #2008-00458** in your correspondence.

Exhibit M



KY/TN RF Engineering

Exhibit N



Erika Helle RF Design Engineer East TN and East KY 3585 Workman Road Knoxville, TN 37921 (865) 824-2231

September 22, 2008

Re: Statement of Need: 098G0127 - Girdler

Dear Sir or Madam:

This letter is to state the need of the proposed AT&T site called **Girdler**, to be located in Knox County, KY. The **Girdler** site will improve coverage and reduce interference along Hwy 11, near Girdler, KY, and surrounding areas. The lack of a dominant server in the area causes many quality issues for the customers. With the addition of this site, the customers in the area will experience improved reliability, retainability, and improved access to emergency 911 services.

Evika Helle Erika Helle

RF Design Engineer



Erika Helle RF Design Engineer East TN and East KY 3585 Workman Road Knoxville, TN 37921 (865) 824-2231

September 23 2008

Knox County

Re: RF Emissions Compliance Site: 098G0127 - Girdler

Dear Sir or Madam:

This letter is to serve as a documentation that the proposed AT&T site listed above, to be located in Knox County, Kentucky, has been designed and will be built and operated in accordance with all applicable FCC and FAA regulations.

Erika Helle **RF** Design Engineer