GREENEBAUM

GREENEBAUM DOLL & MCDONALD PLLC

Paul B. Whitty
Direct (502) 587-3655 Fax (502) 540-2260 E-mail pbw@gdm.com

February 26, 2009

Kentucky Public Service Commission
Attn: Ryan Gatewood, Director
Division of Filings
211 Sower Blvd.
P.O. Box 615
Frankfort, KY 40602-0615

RE: Application to Construct Wireless Communications Facility
Location: Highway 60 & Williams Keene Road
Reed, Henderson County, KY 42451
Applicant: Powertel/Memphis Inc. d/b/a T-Mobile Kentucky
Site Name: Reed
Case No.: 2009-00067

Dear Mr. Gatewood:

On behalf of our client, Powertel/Memphis, Inc. d/b/a T-Mobile Kentucky, we are herewith submitting an original and five (5) copies of an Application for Certificate of Public Convenience and Necessity for Construction of a Wireless Communications Facility proposed for the above location in Henderson County, Kentucky. Also enclosed are two (2) additional copies of this cover letter.

Please do not hesitate to contact me if you have any questions or comments concerning this filing, or if you need any additional material.

Sincerely,

Paul B. Whitty
Attorney for T-Mobile Kentucky

PBW/abf

Enclosures

3275169_1 doc

UNIFORM APPLICATION AND COMPLIANCE DOCUMENTS
for
Powertel/Memphis, Inc. d/b/a T-Mobile Kentucky
Highway 60 & Williams Keene Road
Reed, Henderson County, Kentucky 42451
9LV0460D – "Reed"
250' Self Support Tower
Case No. 2009-00067

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1. Application for Certificate of Public Convenience and Necessity for Construction of a Wireless Communications Facility, with the following Exhibits:

   A. Articles of Incorporation for Powertel/Memphis, Inc.

   B. Documentation of FCC License for Powertel/Memphis, Inc.

   C. Site Plans, Survey & Flood Hazard Map

   D. Tower Design & Foundation Design Drawings

   E. Maps of Proposed Tower and Existing Towers

   F. Character of the Area and Co-Location Report

   G. FAA Application dated 1/7/09 & FAA Approval Letter dated 1/23/09

   H. KAZC Application dated 1/7/09

   I. Geotechnical Engineering Report dated 1/22/09

   J. Directions to Site

   K. Site Lease

   L. Identity & Qualifications of Designers & Construction Personnel

   M. Adjoining Property Owner List with Notice Letters

   N. Government Official Notice Letter

   O. Notices to Be Posted On and Near Site

   P. Notice to Be Advertised in Newspaper

   Q. Search Ring Map

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF	)	
POWERTEL/MEMPHIS, INC., D/B/A T-MOBILE	)	
KENTUCKY FOR ISSUANCE OF A CERTIFICATE	)	
OF PUBLIC CONVENIENCE AND NECESSITY TO	)	
CONSTRUCT A WIRELESS COMMUNICATION	)	DOCKET NO.
FACILITY AT HIGHWAY 60 E. AT WILLIAM-KEENE	)	2009-00067
ROAD, REED, KENTUCKY 42301 IN THE	)	
WIRELESS COMMUNICATIONS LICENSE AREA	)	
IN THE COMMONWEALTH OF KENTUCKY	)	
IN THE COUNTY THE HENDERSON	)	

SITE NAME: REED

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

Powertel/Memphis, Inc., a Delaware corporation, d/b/a T-Mobile Kentucky ("Applicant"), by counsel, pursuant to (i) KRS §§278.020, 278.040, 278.650, 278.665 and the rules and regulations applicable thereto, and (ii) the Telecommunications Act of 1996, respectfully submits this Application requesting issuance of a Certificate of Public Convenience and Necessity ("CPCN") from the Kentucky Public Service Commission ("PSC") to construct, maintain, and operate a Wireless Communications Facility ("WCF") to serve the customers of the Applicant with wireless telecommunications service.

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

1. The complete name and address of the Applicant:

Powertel/Memphis, Inc., d/b/a T-Mobile Kentucky
Four Concourse Parkway, Suite 300
Atlanta, Georgia 30328

2. Applicant proposes construction of an antenna tower for cellular telecommunications services or personal communications services which is to be located in an area outside the jurisdiction of a planning commission, and Applicant submits this Application to the Commission for a Certificate of Public Convenience and Necessity pursuant to KRS §§278.020 (1), 278.650, and 278.655.

3. The Applicant is authorized to conduct business in the Commonwealth of Kentucky. A copy of the Articles of Incorporation for Powertel/Memphis, Inc. is attached hereto as **Exhibit A**.

4. The Applicant is licensed to provide wireless telecommunications service in the Commonwealth of Kentucky. The proposed WCF will serve an area completely within the Applicant's Federal Communications Commission ("FCC") licensed service area. A copy of documentation evidencing the Applicant's FCC license is attached hereto as **Exhibit B**.

5. Public convenience and necessity require the construction of the proposed WCF. The construction of the WCF will bring or improve the Applicant's services to an area currently not served or not adequately served by the Applicant by increasing coverage or capacity and thereby enhancing public access to innovative and competitive wireless telecommunications services. The WCF will provide a necessary link in the Applicant's telecommunications network that is designed to meet the increasing demands for wireless services in Kentucky's wireless communications licensed area. The WCF is an integral link in the Applicant's network design that must be in place to provide adequate coverage to the service area.

6. To address the above-described service needs, Applicant proposes to construct a WCF at Highway 60 E. at Williams-Keene Road, Reed, Kentucky 42301 (37°51'9.19" North

latitude, 87°19'39.04" West longitude), in an area located entirely within the county referenced in the caption of this Application. The property on which the WCF will be located is owned by H. Glenn Williams, Trustee under the H. Glenn Williams Family Living Trust and Judith B. Williams, Trustee under the Judith B. Williams Family Living Trust pursuant to a Deed recorded at Deed Book 553, Page 134 in the office of the Henderson County Clerk. The proposed WCF will consist of a 250-foot tall tower, with a 10-foot tall lightning arrestor attached at the top, for a total height of 260 feet. The WCF will also include concrete foundations to accommodate the placement of the Applicant's proprietary radio electronics equipment. The equipment will be housed in a prefabricated cabinet or shelter that will contain: (i) the transmitting and receiving equipment required to connect the WCF with the Applicant's users in Kentucky, (ii) telephone lines that will link the WCF with the Applicant's other facilities, (iii) battery back-up that will allow the Applicant to operate even after a loss of outside power, and (iv) all other necessary appurtenances. The Applicant's equipment cabinet or shelter will be approved for use in the Commonwealth of Kentucky by the appropriate building inspector having jurisdiction of the site. The WCF compound will be fenced and all access gate(s) will be secured. Further descriptions of the site layout and construction details of the WCF are shown on the site plans and a survey (which includes a 500' vicinity map and Flood Plain Certification) attached hereto as **Exhibit C**; and Tower Design Drawings and Foundation Design Drawings attached hereto as **Exhibit D**. Periodic inspections will be performed on the WCF in accordance with the applicable regulations or requirements of the PSC.

7. A map showing the proposed WCF and all towers within a 1 mile radius, and a map of all towers in the Henderson County area are attached hereto as **Exhibit E**.

8. The site development plans, a vertical profile sketch of the WCF signed and sealed by a professional engineer registered in Kentucky depicting the tower height, as well as a proposed configuration for the antennas of the Applicant and future antenna mounts, foundation design plans, and a description of the standards according to which the tower was designed, and which likewise have been signed and sealed by professional engineers licensed in Kentucky, are also included in **Exhibits C and D** attached hereto.

9. Applicant has considered the likely effects of the installation of the proposed WCF on nearby land uses and values and has concluded that there is no more suitable location reasonably available from which adequate services can be provided, and that there are no reasonably available opportunities to co-locate Applicant's antennas on an existing structure. Applicant has attempted to co-locate on suitable existing structures such as telecommunications towers or other suitable structures capable of supporting Applicant's facilities, and no other suitable or available co-location site was found to be located in the vicinity of the site. Information regarding the Applicant's efforts to achieve co-location in the vicinity is presented as **Exhibit F** attached hereto.

10. A copy of the Determination of No Hazard to Air Navigation issued by the Federal Aviation Administration on January 7, 2009 ("FAA") is attached hereto as **Exhibit G.**

11. A copy of the Kentucky Airport Zoning Commission ("KAZC") Application for Permit to Construct or Alter a Structure also dated January 7, 2009 is attached hereto as **Exhibit H.**

12. The WCF will be registered with the FCC pursuant to applicable federal requirements. Appropriate required FCC signage will be posted on the site upon receipt of the tower registration number.

13. A geotechnical engineering firm, GEM Engineering, Inc., has performed soil boring(s) and subsequent geotechnical engineering studies at the WCF site. A copy of the geotechnical engineering report and evaluation, signed and sealed by a professional engineer registered in the Commonwealth of Kentucky, is attached hereto as **Exhibit I**. The name and address of the geotechnical engineering firm and the professional engineer registered in the Commonwealth of Kentucky who supervised the examination of this WCF site are included as part of this exhibit.

14. Clear directions to the proposed WCF site from the County seat are attached hereto as **Exhibit J**. The name and telephone number of the preparer of **Exhibit J** is included as part of this exhibit.

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

16. Personnel directly responsible for the design and construction of the proposed WCF are well qualified and experienced and are listed in **Exhibit L** attached hereto. All tower designs meet or exceed applicable laws and regulations. Timothy L. Hardy, a professional engineer registered in Kentucky, with Hardy Engineering Inc., prepared the site plans and construction drawings. Ta-Wen Lee, a professional engineer licensed in Kentucky , prepared the tower design standards. Buford H. Evans, Jr., a professional engineer licensed in Kentucky, prepared the foundation drawings.

17. The Construction Management Company for the proposed facility is Mittrix Engineering, and the Project Manager will be Jeremy Potts.

18. Flood Zone data is included and certified by a licensed professional surveyor for the Commonwealth of Kentucky on Page C2 of the Site Survey which is included in **Exhibit C** attached hereto.

19. The possibility of high winds has been considered in the design of this tower. The tower has been designed and engineered by professional engineers using computer assistance and the same accepted codes and standards as are typically used for high-rise building construction.

20. The site development plan signed and sealed by a professional engineer registered in Kentucky was prepared by Timothy L. Hardy. The site survey was performed by Frank L. Selinger, II, a licensed professional surveyor for the Commonwealth of Kentucky, and Page C-1 of the Survey included in **Exhibit C** is drawn to a scale of no less than one inch equals 200 feet, and identifies every owner of real estate within 500 feet of the proposed tower (according to the records maintained by the Henderson County Property Valuation Administrator). Every structure and every easement within 500 feet of the proposed tower or within 200 feet of the access road including intersection with the public street system is illustrated in the Survey included in **Exhibit C.**

21. Applicant has notified every person who, according to the records of the Henderson County Property Valuation Administrator, owns property which is within 500 feet of the proposed tower or contiguous to the site property, by certified mail, return receipt requested, of the proposed construction. All notified property owners have been given the docket number under which the proposed Application will be processed and have been informed of their right to

request intervention. A list of the nearby property owners who received the notices, together with copies of the certified letters, are attached hereto as **Exhibit M**.

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

23. Two notice signs meeting the requirements prescribed by 807 KAR 5:063, Section 1(2), that measure at least two (2) feet in height and four (4) feet in width and that contain all required language in letters of required height, have been posted, one in a visible location on the proposed site and one on the nearest public road. Such signs shall remain posted for at least two (2) weeks after filing of the Application, and a copy of the posted text is attached hereto as **Exhibit O**.

24. Notice of the location of the proposed facility has also been published in a newspaper of general circulation in the county in which the WCF is proposed to be located. A copy of the wording for the newspaper ad is attached hereto as **Exhibit P**.

25. The general area where the proposed facility is to be located is rural farmland. There are no residential structures located within a 500-foot radius of the proposed tower location. See additional information at **Exhibit F.**

26. The process that was used by the Applicant's radio frequency engineers in selecting the site for the proposed WCF was consistent with the general process used for

selecting all other existing and proposed WCF facilities within the proposed network design area. Applicants radio frequency engineers have conducted studies and tests in order to develop a highly efficient network that is designed to serve the Federal Communications Commission licensed service area. The engineers determined an optimum area for the placement of the proposed facility in terms of elevation and location to provide the best quality service to customers in the service area. A radio frequency design search area prepared in reference to these radio frequency studies was considered by the Applicant when searching for sites for its antennas that would provide the coverage deemed necessary by the Applicant. Before beginning the site acquisition process, Applicant carefully evaluated locations within the search area for co-location opportunities on existing structures, and no suitable towers or other existing tall structures were found in the immediate area that would meet the technical requirements for the element of the telecommunications network to be provided by the proposed facility. A map of the area in which the tower is proposed to be located which is drawn to scale and clearly depicts the necessary search area within which the site should be located pursuant to radio frequency requirements is attached hereto as **Exhibit Q.**

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

28. All responses and requests associated with this Application may be directed to:

Paul B. Whitty
Greenebaum Doll & McDonald, PLLC
3500 National City Tower
101 South Fifth Street
Louisville, Kentucky 40202
Telephone: (502) 587-3655
Facsimile: (502) 540-2260
pbw@gdm.com

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

Respectfully submitted,

Paul B. Whitty
Greenebaum Doll & McDonald, PLLC
3500 National City Tower
101 South Fifth Street
Louisville, Kentucky 40202
Telephone: (502) 587-3655
Facsimile: (502) 540-2260
Attorney for Powertel/Memphis, Inc.
d/b/a T-Mobile Kentucky

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Delaware

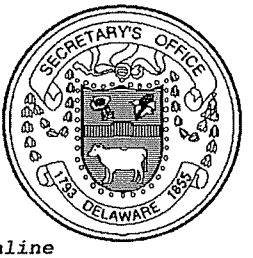
The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF MERGER, WHICH MERGES:

"POWERTEL/KENTUCKY, INC.", A DELAWARE CORPORATION,

WITH AND INTO "POWERTEL/MEMPHIS, INC." UNDER THE NAME OF "POWERTEL/MEMPHIS, INC.", A CORPORATION ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF DELAWARE, AS RECEIVED AND FILED IN THIS OFFICE THE TWENTY-FIRST DAY OF DECEMBER, A.D. 2005, AT 11:30 O'CLOCK A.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE EFFECTIVE DATE OF THE AFORESAID CERTIFICATE OF MERGER IS THE FIRST DAY OF JANUARY, A.D. 2006, AT 12:30 O'CLOCK A.M.



Jeffrey W. Bullock, Secretary of State

2447268 8100M

090058743

AUTHENTICATION: 7095216

DATE: 01-22-09

You may verify this certificate online at corp.delaware.gov/authver.shtml

State of Delaware
Secretary of State
Division of Corporations
Delivered 11:30 AM 12/21/2005
FILED 11:30 AM 12/21/2005
SRV 051046113 - 2447268 FILE

STATE OF DELAWARE
CERTIFICATE OF MERGER OF
DOMESTIC CORPORATIONS

Pursuant to Title 8, Section 251(c) of the Delaware General Corporation Law, the undersigned corporation executed the following Certificate of Merger:

FIRST: The name of the surviving corporation is Powertel/Memphis, Inc., and the name of the corporation being merged into this surviving corporation is Powertel/Kentucky, Inc.

SECOND: The Agreement of Merger has been approved, adopted, certified, executed and acknowledged by each of the constituent corporations.

THIRD: The name of the surviving corporation is Powertel/Memphis, Inc. a Delaware corporation.

FOURTH: The Certificate of Incorporation of the surviving corporation shall be its Certificate of Incorporation.

FIFTH: The merger is to become effective on January 1, 2006 at 12:30 a.m.

SIXTH: The Agreement of Merger is on file at 12920 SE 38th Street, Bellevue, WA 98006, the place of business of the surviving corporation.

SEVENTH: A copy of the Agreement of Merger will be furnished by the surviving corporation on request, without cost, to any stockholder of the constituent corporations.

IN WITNESS WHEREOF, said surviving corporation has caused this certificate to be signed by an authorized officer, the 15th day of December, A.D., 2005.

By: /S/ David A. Miller
Authorized Officer

Name: David A. Miller
Print or Type

Title: Senior Vice President

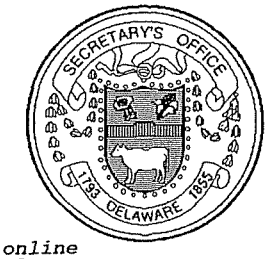
Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF INCORPORATION OF "POWERTEL/KENTUCKY, INC.", FILED IN THIS OFFICE ON THE TWENTY-FIFTH DAY OF JULY, A.D. 1997, AT 9 O'CLOCK A.M.

2777736 8100

090058743



Jeffrey W. Bullock, Secretary of State

AUTHENTICATION: 7095212

DATE: 01-22-09

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
SECRETARY OF STATE
DIVISION OF CORPORATIONS
FILED 09:00 AM 07/25/1997
971248091 - 2777736

CERTIFICATE OF INCORPORATION

OF

POWERTEL/KENTUCKY, INC.

1. NAME

The name of this corporation is Powertel/Kentucky, Inc. (the "Corporation").

2. REGISTERED OFFICE AND AGENT

The registered office of the Corporation shall be located at 1013 Centre Road, Wilmington, Delaware 19805 in the County of New Castle. The registered agent of the Corporation at such address shall be Corporation Service Company.

3. PURPOSE AND POWERS

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware (the "Delaware General Corporation Law"). The Corporation shall have all power necessary or helpful to engage in such acts and activities.

4. CAPITAL STOCK

4.1. Authorized Shares

The total number of shares of all classes of stock that the Corporation shall have the authority to issue is One Thousand (1,000) shares of voting common stock, all of one class, having a par value of $.01 per share ("Common Stock").

4.2. Common Stock

4.2.1. Relative Rights

Each share of Common Stock shall have the same relative rights as and be identical in all respects to all the other shares of Common Stock.

4.2.2. Dividends

Whenever there shall have been paid, or declared and set aside for payment, to the holders of shares of any class of stock having preference over the Common Stock as to the payment of dividends, the full amount of dividends and of sinking fund or retirement payments, if any, to which such holders are respectively entitled in preference to the Common Stock, then dividends may be paid on the Common Stock and on any class or series of stock entitled to participate therewith as to dividends, out of any assets legally available for the payment of dividends thereon, but only when and as declared by the Board of Directors of the Corporation.

4.2.3. Dissolution, Liquidation, Winding Up

In the event of any dissolution, liquidation, or winding up of the Corporation, whether voluntary or involuntary, the holders of the Common Stock shall become entitled to participate in the distribution of any assets of the Corporation remaining after the Corporation shall have paid, or set aside for payment, to the holders of any class of stock having preference over the Common Stock in the event of dissolution, liquidation or winding up the full preferential amounts (if any) to which they are entitled.

4.2.4. Voting Rights

Each holder of shares of Common Stock shall be entitled to attend all special and annual meetings of the stockholders of the Corporation and, share for share and without regard to class, together with the holders of all other classes of stock entitled to attend such meetings and to vote (except any class or series of stock having special voting rights), to cast one vote for each outstanding share of Common Stock so held upon any matter or thing (including, without limitation, the election of one or more directors) properly considered and acted upon by the stockholders.

5. INCORPORATOR; INITIAL DIRECTORS

5.1. Incorporator

The name and mailing address of the incorporator (the "Incorporator") is Jill F. Dorsey, Vice President/General Counsel, Powertel, Inc., 1233 O.G. Skinner Dr., West Point, GA 31833. The powers of the Incorporator shall terminate upon the filing of this Certificate of Incorporation.

5.2. Initial Directors

The following persons, having the following mailing addresses, shall serve as the directors of the Corporation until the first annual meeting of the stockholders of the Corporation or until their successors are elected and qualified:

NAME	MAILING ADDRESS
Fred G. Astor, Jr.	1233 O.G. Skinner Dr. West Point, Georgia 31833
Allen E. Smith	1233 O.G. Skinner Dr. West Point, Georgia 31833
Michael P. Tatom	1233 O.G. Skinner Dr. West Point, Georgia 31833

6. BOARD OF DIRECTORS

6.1. Number; Election

The number of directors of the Corporation shall be such number as from time to time shall be fixed by, or in the manner provided in, the bylaws of the Corporation. Unless and except to the extent that the bylaws of the Corporation shall otherwise require, the election of directors of the Corporation need not be by written ballot.

6.2. Limitation of Liability

No director of the Corporation shall be liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, provided that this provision shall not eliminate or limit the liability of a director (a) for any breach of the director's duty of loyalty to the Corporation or its stockholders; (b) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law; (c) for the types of liability set forth in Section 174 of the Delaware General Corporation Law; or (d) for any transaction from which the director received any improper personal benefit.

7. INDEMNIFICATION

To the extent permitted by law, the Corporation shall fully indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding (whether civil, criminal, administrative or investigative) by reason of the fact that such person is or was a director or officer or employee or agent of the Corporation, or is or was serving at the request of the Corporation as a director or officer or employee or agent of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding.

The Corporation shall advance expenses (including attorneys' fees) incurred by a director or officer in advance of the final disposition of such action, suit or proceeding upon the receipt of an undertaking by or on behalf of the director or officer to repay such amount if it shall ultimately be determined that such director or officer is not entitled to indemnification.

The Corporation shall advance expenses (including attorneys' fees) incurred by an employee or agent in advance of the final disposition of such action, suit or proceeding upon such terms and conditions, if any, as the Board of Directors deems appropriate.

8. AMENDMENT OF BYLAWS

In furtherance and not in limitation of the powers conferred by the Delaware General Corporation Law, the Board of Directors of the Corporation is expressly authorized and empowered to adopt, amend and repeal the bylaws of the Corporation.

IN WITNESS WHEREOF, the undersigned, being the Incorporator hereinabove named, for the purpose of forming a corporation pursuant to the Delaware General Corporation Law, hereby certifies that the facts hereinabove stated are truly set forth, and accordingly executes this Certificate of Incorporation as of this 25 day of July, 1997.

Jill F. Dorsey
Incorporator

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "INTERCEL MEMPHIS MTA, INC.", CHANGING ITS NAME FROM "INTERCEL MEMPHIS MTA, INC." TO "POWERTEL/MEMPHIS, INC.", FILED IN THIS OFFICE ON THE SEVENTEENTH DAY OF JULY, A.D. 1996, AT 9 O'CLOCK A.M.

Jeffrey W. Bullock, Secretary of State

2447268 8100

AUTHENTICATION: 7095215

090058743

DATE: 01-22-09

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
SECRETARY OF STATE
DIVISION OF CORPORATIONS
FILED 09:00 AM 07/17/1996
960207691 - 2447268

CERTIFICATE OF AMENDMENT

OF

CERTIFICATE OF INCORPORATION

OF

INTERCEL MEMPHIS MTA, INC.

InterCel Memphis MTA, Inc. (the "Corporation"), a corporation organized and existing under the General Corporation Law of the State of Delaware, does hereby certify as follows:

FIRST: That in accordance with the requirements of Section 242 of the General Corporation Law of the State of Delaware, the Board of Directors of the Corporation, acting by written consent signed by all of the directors of the Corporation pursuant to Section 141(f) of the General Corporation Law of the State of Delaware, duly adopted resolutions: (1) proposing and declaring advisable the changing of the Corporation's name to "Powertel/Memphis, Inc.," (2) proposing and declaring advisable the amendment of the Certificate of Incorporation of the Corporation to reflect such change and (3) recommending that such name change and amendment be submitted to the sole stockholder of the Corporation for consideration, action and approval.

SECOND: That the amendment to the Certificate of Incorporation of the Corporation is as follows:

ARTICLE FIRST of the Certificate of Incorporation of the Corporation is hereby amended to read in its entirety as follows:

"FIRST. The name of the corporation is Powertel/Memphis, Inc. (the "Corporation")."

THIRD. That thereafter, pursuant to resolution of the Board of Directors, the sole stockholder of the Corporation, acting by written consent in accordance with Sections 228 and 229 of the General Corporation law of the State of Delaware, duly approved such name change and the aforesaid amendment to the Certificate of Incorporation of the Corporation to reflect such name change.

FOURTH: That the aforesaid amendment to the Certificate of Incorporation of the Corporation was duly adopted in accordance with the provisions of Sections 141(f), 228, 229 and 242 of the General Corporation Law of the State of Delaware.

FIFTH: That upon this Certificate of Amendment of Certificate of Incorporation becoming effective, the name of the Corporation shall be changed to "Powertel/Memphis, Inc."

IN WITNESS WHEREOF, InterCel Memphis MTA, Inc has caused this Certificate of Amendment of Certificate of Incorporation to be signed by Allen E. Smith, its President, and attested by Fred G. Astor, Jr., its Secretary, on July 9, 1996.

By: _____
Allen E. Smith
President

Attest:

_____
Fred G. Astor, Jr.
Secretary

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "SOUTH ATLANTIC PCS CORPORATION", CHANGING ITS NAME FROM "SOUTH ATLANTIC PCS CORPORATION" TO "INTERCEL MEMPHIS MTA, INC.", FILED IN THIS OFFICE ON THE TWENTIETH DAY OF FEBRUARY, A.D. 1996, AT 9:05 O'CLOCK A.M.

Jeffrey W. Bullock, Secretary of State

2447268 8100

AUTHENTICATION: 7095214

090058743

DATE: 01-22-09

You may verify this certificate online at corp.delaware.gov/authver.shtml

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STATE OF DELAWARE
SECRETARY OF STATE
DIVISION OF CORPORATIONS
FILED 09:05 AM 02/20/1996
960046648 - 2447268

CERTIFICATE OF AMENDMENT

OF

CERTIFICATE OF INCORPORATION

OF

SOUTH ATLANTIC PCS CORPORATION

South Atlantic PCS Corporation (the "Corporation"), a corporation organized and existing under the General Corporation Law of the State of Delaware, does hereby certify as follows:

FIRST: That in accordance with the requirements of Section 242 of the General Corporation Law of the State of Delaware, the Board of Directors of the Corporation, acting by written consent signed by all of the directors of the Corporation pursuant to Section 141(f) of the General Corporation Law of the State of Delaware, duly adopted resolutions: (1) proposing and declaring advisable the changing of the Corporation's name to "InterCel Memphis MTA, Inc.," (2) proposing and declaring advisable the amendment of the Certificate of Incorporation of the Corporation to reflect such change and (3) recommending that such name change and amendment be submitted to the sole stockholder of the Corporation for consideration, action and approval.

SECOND: That the amendment to the Certificate of Incorporation of the Corporation is as follows:

> ARTICLE FIRST of the Certificate of Incorporation of the Corporation is hereby amended to read in its entirety as follows:
>
> "FIRST. The name of the corporation is InterCel Memphis MTA, Inc. (the "Corporation")."

THIRD: That thereafter, pursuant to resolution of the Board of Directors, the sole stockholder of the Corporation, acting by written consent in accordance with Sections 228 and 229 of the General Corporation Law of the State of Delaware, duly approved such name change and the aforesaid amendment to the Certificate of Incorporation of the Corporation to reflect such name change.

FOURTH: That the aforesaid amendment to the Certificate of Incorporation of the Corporation was duly adopted in accordance with the provisions of Sections 141(f), 228, 229 and 242 of the General Corporation Law of the State of Delaware.

FIFTH: That upon this Certificate of Amendment of Certificate of Incorporation becoming effective, the name of the Corporation shall be changed to "InterCel Memphis MTA, Inc."

IN WITNESS WHEREOF, South Atlantic PCS Corporation has caused this Certificate of Amendment of Certificate of Incorporation to be signed by Nicholas J. Jebbia, its Executive Vice President, and attested by Fred G. Astor, Jr., its Secretary, on February 21, 1996.

By: _____
Nicholas J. Jebbia
Executive Vice President

Attest:

_____
Fred G. Astor, Jr.
Secretary

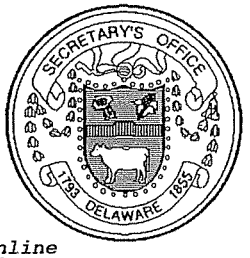
Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF INCORPORATION OF "SOUTH ATLANTIC PCS CORPORATION", FILED IN THIS OFFICE ON THE TWENTY-SIXTH DAY OF OCTOBER, A.D. 1994, AT 9:30 O'CLOCK A.M.

2447268 8100

090058743



Jeffrey W. Bullock, Secretary of State

AUTHENTICATION: 7095213

DATE: 01-22-09

You may verify this certificate online at corp.delaware.gov/authver.shtml

5

STATE OF DELAWARE
SECRETARY OF STATE
DIVISION OF CORPORATIONS
FILED 09:30 AM 10/26/1994
944204072 - 2447268

CERTIFICATE OF INCORPORATION

OF

SOUTH ATLANTIC PCS CORPORATION

* * * * * *

FIRST. The name of the corporation is South Atlantic PCS Corporation (the "Corporation").

SECOND. The address of the registered office of the Corporation in the State of Delaware is 32 Loockerman Square, Suite L-100, in the City of Dover, Kent County, Delaware 19904. The name of its registered agent at such address is The Prentice-Hall Corporation System, Inc.

THIRD. The nature of the business or purposes to be conducted or promoted by the Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware.

FOURTH. The total number of shares of stock which the Corporation shall have authority to issue is 1,000 shares of Common Stock with a par value of One Cent ($.01) per share.

FIFTH. The Corporation is to have perpetual existence.

SIXTH. In furtherance and not in limitation of the powers conferred by the laws of the State of Delaware:

A. The Board of Directors of the Corporation is expressly authorized to adopt, amend or repeal the By-Laws of the Corporation.

B. Elections of directors need not be by written ballot unless the By-Laws of the Corporation shall so provide.

C. The books of the Corporation may be kept at such place within or without the State of Delaware as the By-Laws of the Corporation may provide or as may be designated from time to time by the Board of Directors of the Corporation.

SEVENTH. The Corporation eliminates the personal liability of each member of its Board of Directors to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, provided, however, that, to the extent provided by applicable law, the foregoing shall not eliminate the liability of a director (i) for any breach of such director's duty of loyalty to the Corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of Title 8 of the Delaware Code or (iv) for any transaction from which such director derived an improper personal benefit. No amendment to or repeal of this provision shall apply to or have any effect on the liability or alleged liability of any director for or with respect to any acts or omissions of such director occurring prior to such amendment or repeal.

EIGHTH. The Corporation reserves the right to amend or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon a stockholder herein are granted subject to this reservation.

NINTH. The name and mailing address of the sole incorporator is as follows:

Name	Mailing Address
Suanne M. Garnier	Testa, Hurwitz & Thibeault 53 State Street Boston, MA 02109

I, THE UNDERSIGNED, being the sole incorporator hereinabove named, for the purpose of forming a corporation pursuant to the General Corporation Law of the State of Delaware, do make this certificate, hereby declaring and certifying that this is my act and deed and the facts herein stated are true, and accordingly have hereunto set my hand this 26th day of October, 1994.

Suanne M. Garnier
Sole Incorporator

PARA5675/1.AD2

Federal Communications Commission
Wireless Telecommunications Bureau

Radio Station Authorization (Reference Copy Only)

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

Licensee: Powertel Memphis Licenses, Inc.

ATTN Dan Menser
Powertel Memphis Licenses, Inc.
12920 SE 38th Street
Bellevue, WA 98006

FCC Registration Number (FRN): 0001832807	
Call Sign: KNLH397	**File Number:** 0002907447
Radio Service: CW - PCS Broadband	

Grant Date	**Effective Date**	**Expiration Date**	**Print Date**
04/25/2007	04/25/2007	04/28/2017	11/21/2007

Market Number: BTA263	**Channel Block:** E	**Sub-Market Designator:** 3
Market Name: Louisville, KY		

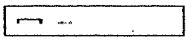
1st Build-out Date	**2nd Build-out Date**	**3rd Build-out Date**	**4th Build-out Date**
04/28/2002			

Special Conditions or Waivers/Conditions

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

To view the geographic areas associated with the license, go to the Universal Licensing System (ULS) homepage at http://wireless.fcc.gov/uls/ and select "License Search". Follow the instruction on how to search for license information

FCC 601 - MB
September 2002



GENERAL NOTES:

1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE COUNTY OF **HENDERSON** REGULATIONS.

2. CONTRACTOR SHALL NOTIFY ALL UTILITIES AT LEAST 24 HOURS PRIOR TO START OF CONSTRUCTION TO VERIFY LOCATION OF ALL UTILITIES SHOWN OR NOT SHOWN.

3. ALL UTILITIES WITHIN ROADWAY SHALL BE BACKFILLED WITH STONE.

4. CONTRACTOR SHALL REPAIR AT HIS EXPENSE DAMAGE TO ANY EXISTING IMPROVEMENTS DURING CONSTRUCTION, SUCH AS, BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, STRIPPING, CURBS, ETC.. REPAIRS SHALL BE EQUAL TO OR BETTER THAN EXISTING CONDITIONS.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL UNUSABLE MATERIALS FROM THE SITE.

6. CONTRACTOR SHALL COORDINATE WITH POWER COMPANY PROVIDING TEMPORARY SERVICE FOR CONSTRUCTION FACILITIES DURING CONSTRUCTION.

7. THE CONTRACTOR IS SPECIFICALLY CAUTIONED ABOUT THE LOCATION AND/OR ELEVATIONS OF EXISTING UTILITIES SHOWN ON THIS DRAWING. THEY ARE BASED UPON RECORDS FROM VARIOUS UTILITY COMPANIES, DEEDS, AND PLATS OF RECORD, AND WHERE POSSIBLE ACTUAL FIELD MEASUREMENTS. THIS INFORMATION IS NOT TO BE TAKEN EXACT OR COMPLETE.

8. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE EXACT LOCATION OF EXISTING UTILITIES WHICH MAY CONFLICT WITH PROPOSED IMPROVEMENTS.

9. THIS PROJECT WILL NOT REQUIRE WATER OR SEWER SERVICE.

10. CONTRACTOR SHALL REMOVE ANY DIRT OR MUD FROM TIRES OF ANY CONSTRUCTION VEHICLES PRIOR TO LEAVING SITE.

11. REFER TO BUILDING/TOWER PLANS FOR PROPOSED DIMENSIONS AND OTHER SPECIFICS WHICH ARE NOT SHOWN.

12. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A PROPER TRAFFIC CONTROL PLAN FOR PUBLIC SAFETY ADJACENT TO CONSTRUCTION SITE. THE TRAFFIC CONTROL PLAN MUST BE IN ACCORDANCE WITH LATEST MUTCD EDITION.

SITE DEVELOPMENT PLANS FOR
POWERTEL / MEMPHIS, INC.
SITE #: 9LV0460D
SITE NAME: REED
SITE ADDRESS: HIGHWAY 60
OWENSBORO, KENTUCKY 42301

SIGNATURE AUTHORIZATIONS:

RF ENGINEER APPROVAL:
SIGNATURE _____ DATE: _____

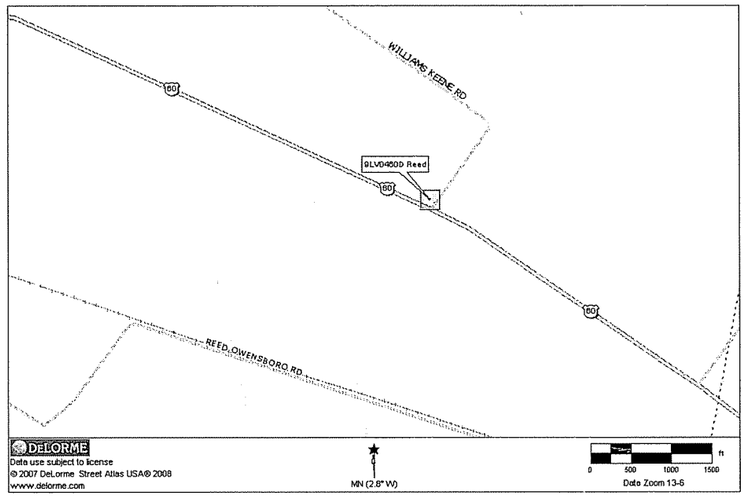
CONSTRUCTION MANAGER APPROVAL:
SIGNATURE _____ DATE: _____

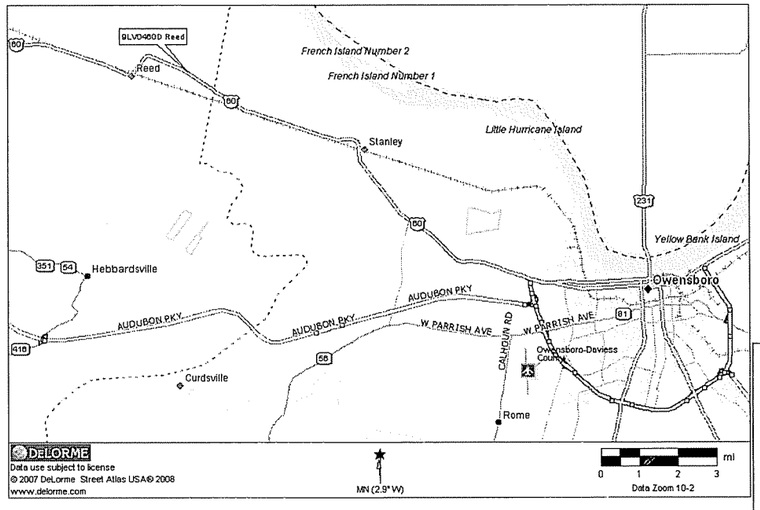
SITE ACQUISITION AGENT APPROVAL:
SIGNATURE _____ DATE: _____

LAND OWNER APPROVAL:
SIGNATURE _____ DATE: _____

OPS APPROVAL:
SIGNATURE _____ DATE: _____

ZONING/PERMITTING APPROVAL:
SIGNATURE _____ DATE: _____





VICINITY MAP
NOT TO SCALE

DIRECTIONS:
FROM DOWNTOWN OWENSBORO, KENTUCKY, GO WEST ON HWY 60 TO WILLIAMS KEENE ROAD. TURN RIGHT ONTO WILLIAMS KEENE ROAD, THE SITE WILL BE ON THE LEFT.

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED PROFESSIONAL ENGINEER

11/2/9

REGISTERED PROFESSIONAL ENGINEER SEAL

ELECTRIC CO.:
KENERGY
PHONE: (800) 844-4832

TELEPHONE CO.:
AT & T

"2C" COORDINATES:
LATITUDE: N 37° 51' 09.19"
LONGITUDE: W -87° 19' 39.04"
GROUND ELEV: 375' AMSL

PERMIT JURISDICTION:
HENDERSON COUNTY

LESSOR:
GLENN AND/OR JUDY WILLIAMS
24335 HIGHWAY 811
OWENSBORO, KENTUCKY 42301
PHONE: (270) 929-3431 OR
(270) 929-3494

LESSEE:
powertel
POWERTEL / MEMPHIS, INC.
LOUISVILLE MARKET
11509 COMMONWEALTH DRIVE,
SUITE 9
LOUISVILLE, KENTUCKY 40299
CONTACT: REAL ESTATE

ENGINEER:
HARDY ENGINEERING, INC.
209 LINDEN STREET
TRUSSVILLE, ALABAMA 35173
CONTACT: TIM HARDY
PHONE: (205) 655-1427
MOBILE: (205) 222-7563

INDEX:

SHEET 1

S1/1 – VICINITY AND 500' STRUCTURAL MAP

S1/2 – U.S.G.S. QUAD MAP

SHEET 2

S2/1 – ABUTTING PROPERTY OWNERS

SHEET 3

S3/1 – PROPOSED LEASE AREA

S3/2 – LEGAL DESCRIPTIONS

S3/3 – FLOOD ZONE DATA

UNDERGROUND UTILITIES

CALL 2 WORKING DAYS

BEFORE YOU DIG

INDIANA 1-800-382-5544

KENTUCKY 1-800-752-6007

UTILITIES PROTECTION SERVICE

NON-MEMBERS MUST CALL DIRECTLY

The utility information shown on this plat, prepared by FSTAN was obtained from existing records and or by field locations. It is the contractor's responsibility to verify their existence and location, and to contact the appropriate utility company for field locations.

0' 30' 60'

(IN FEET)
SCALE: 1" = 30'

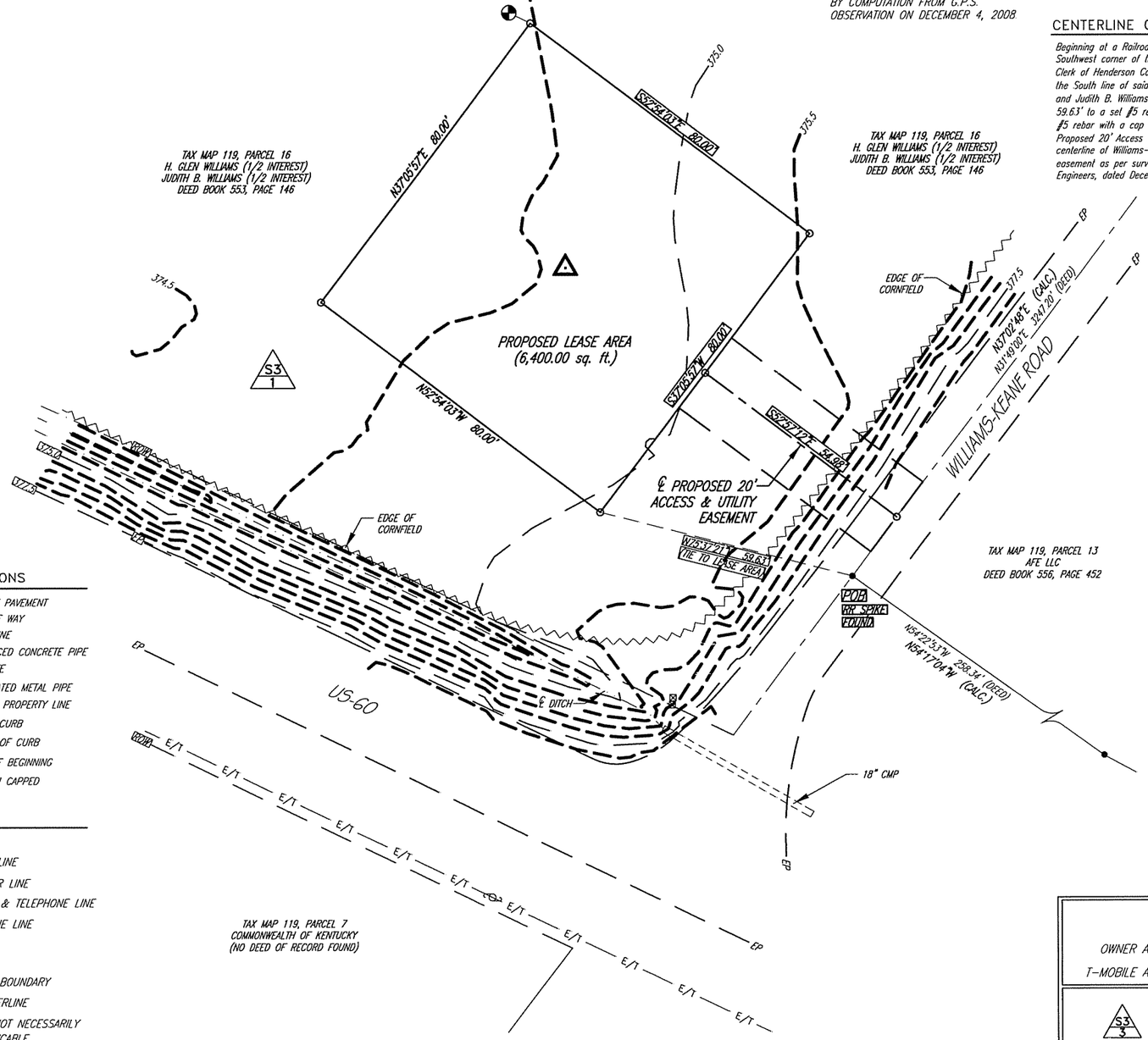
GRID NORTH

TRUE NORTH

-00° 57' 24"

GRID NORTH BY G.P.S. OBSERVATION, ±10 SECONDS

NORTH IS BASED ON THE KENTUCKY STATE PLANE COORDINATE SYSTEM, SOUTH ZONE AND WAS DETERMINED BY COMPUTATION FROM G.P.S. OBSERVATION ON DECEMBER 4, 2008



COORDINATE POINT LOCATION

NAD 1983
LATITUDE: 37° 51' 09.19"
LONGITUDE: 87° 19' 39.04"
NAVD 1988
ELEVATION: 375' AMSL
STATE PLANE COORDINATE XXXXX ZONE
(BLUE MARBLE GEOGRAPHIC CALCULATOR VERSION 5.0)
NORTHING: 2197365.3331
EASTING: 1184953.6721

PROJECT POWER POLE

UTILITY COMPANY: UNKNOWN
IDENTIFICATION #: N/A

PROJECT BENCHMARK

NORTH: 2197421.353
EAST: 1184945.903
ELEVATION: 374.566
LOCATION: BEING AN IPC SET AT THE NORTHERNMOST CORNER OF THE PROPOSED LEASE AREA

SYMBOL LEGEND

- WOOD POWER POLE
- TELEPHONE PEDESTAL
- GUY ANCHOR
- MANHOLE
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- ELECTRIC BOX
- F.P. FENCE POST
- SET ⌀5 REBAR (UNLESS OTHERWISE NOTED)
- EXISTING ⌀5 REBAR (UNLESS OTHERWISE NOTED)

ABBREVIATIONS

EP	EDGE OF PAVEMENT
ROW	RIGHT OF WAY
℄	CENTERLINE
RCP	REINFORCED CONCRETE PIPE
CONC	CONCRETE
CMP	CORRUGATED METAL PIPE
PL	SUBJECT PROPERTY LINE
TC	TOP OF CURB
BC	BOTTOM OF CURB
POB	POINT OF BEGINNING
IPC	IRON PIN CAPPED

LINE LEGEND

- E E E — OVERHEAD ELECTRIC
- G G G — UNDERGROUND GAS LINE
- W W W — UNDERGROUND WATER LINE
- E/T E/T E/T — OVERHEAD ELECTRIC & TELEPHONE LINE
- T T — OVERHEAD TELEPHONE LINE
- X X X — EXISTING FENCE
- XX XX XX — PROPOSED FENCE
- SUBJECT PROPERTY BOUNDARY
- RIGHT OF WAY CENTERLINE

NOTE: SYMBOLS, ABBREVIATIONS, OR LINESTYLES DO NOT NECESSARILY APPEAR ON DRAWING(S) USE ONLY AS APPLICABLE

S3/2 LEGAL DESCRIPTIONS:

This is a description for T-Mobile, of an area to be leased from the property of H. Glen Williams (1/2 interest) and Judith B. Williams (1/2 interest), which is further described as follows:

PROPOSED LEASE AREA

Beginning at a Railroad Spike found in the centerline of Williams-Keane Road, said spike being the Southwest corner of the property conveyed to AFE LLC., in Deed Book 556, Page 452, in the Office of the Clerk of Henderson County, Kentucky, said spike being N 54°17'04" W - 258.34' from a rebar found on the South line of said property; thence traversing the property conveyed to H. Glen Williams (1/2 interest) and Judith B. Williams (1/2 interest) in Deed Book 53, Page 146 in said Clerk's Office N 75°37'21" W - 59.63' to a set ⌀5 rebar with a cap stamped "FSTAN ⌀3282" and the TRUE POINT OF BEGINNING of the Proposed Lease Area; thence N 52°54'03" W - 80.00' to a set ⌀5 rebar with a cap stamped "FSTAN ⌀3282"; thence N 37°05'57" E - 80.00' to a set ⌀5 rebar with a cap stamped "FSTAN ⌀3282"; thence S 52°54'03" E - 80.00' to a set ⌀5 rebar with a cap stamped "FSTAN ⌀3282"; thence S 37°05'57" W - 80.00' to the true point of beginning, containing 6,400.00 square feet as per survey by Frank L. Sellinger, II, PLS No. 3282 with FS/Tan Land Surveyors & Consulting Engineers, dated December 16, 2008.

CENTERLINE OF PROPOSED 20' ACCESS & UTILITY EASEMENT

Beginning at a Railroad Spike found in the centerline of Williams-Keane Road, said spike being the Southwest corner of the property conveyed to AFE LLC., in Deed Book 556, Page 452, in the Office of the Clerk of Henderson County, Kentucky, said spike being N 54°17'04" W - 258.34' from a rebar found on the South line of said property; thence traversing the property conveyed to H. Glen Williams (1/2 interest) and Judith B. Williams (1/2 interest) in Deed Book 53, Page 146 in said Clerk's Office N 75°37'21" W - 59.63' to a set ⌀5 rebar with a cap stamped "FSTAN ⌀3282", thence N 52°54'03" W - 40.00' to a set ⌀5 rebar with a cap stamped "FSTAN ⌀3282" and the TRUE POINT OF BEGINNING of the Proposed 20' Access & Utility Easement, thence S 52°57'12" E - 54.98' to a "MAG" nail set in the centerline of Williams-Keane Road, being also the East line of said Williams property, and the end of the easement as per survey by Frank L. Sellinger, II, PLS No. 3282 with FS/Tan Land Surveyors & Consulting Engineers, dated December 16, 2008.

SURVEYORS NOTES

SOURCE OF BEARING IS A G.P.S. OBSERVATION ON DECEMBER 4, 2008.

SOURCE OF ROTATION BASED ON THE SOUTHWEST PROPERTY LINE OF THE AFE LLC PROPERTY HAVING THE BEARING OF N 54° 22' 53" W PER D.B. 556, PG. 452, AND THE CALCULATED BEARING OF N 54° 17' 04" W.

SITE SHOWN SUBJECT TO RIGHT OF WAYS AND EASEMENTS SHOWN HEREON OR NOT.

NO SEARCH OF PUBLIC RECORDS HAS BEEN PERFORMED BY THIS FIRM TO DETERMINE ANY DEFECTS AND/OR AMBIGUITIES IN THE TITLE OF THE PARENT TRACT.

THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.

EXISTING CONTOURS ARE AT ONE 0.5' INTERVALS.

BASE FLOOD ELEVATION = 384.1' AMSL

LAND SURVEYOR'S CERTIFICATE

Type "A" Survey - Unadjusted linear traverse closure: 1 in 47,900.

TO ALL PARTIES INTERESTED IN TITLE TO PREMISES SURVEYED
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 and plat meets or exceeds the minimum standards of the governing authorities.
This property is subject to any recorded easements or right of ways not shown hereon.

Frank L. Sellinger, II Ky. Reg. No. 3282

REFERENCED AS "EXHIBIT C"

OWNER APPROVAL: _____ DATE: _____

T-MOBILE APPROVAL: _____ DATE: _____

S3/3 *I HAVE REVIEWED THE FLOOD INSURANCE RATE MAPS (FIRM) MAP NO. 21028C0150B DATED 02.06.91 AND THE PROPOSED LEASE AREA DOES APPEAR TO BE IN A FLOOD PRONE AREA. THE PROPOSED LEASE AREA IS LOCATED IN ZONE AE.*

T··Mobile·

FStan
F.S. Land Company
T. Alan Neal Company
Land Surveyors and Consulting Engineers
PO Box 17546 2313/2315 Crittenden Drive
Louisville, KY 40217
Phone: (502) 635-5866 (502) 636-5111
Fax: (502) 636-5263

"SITE SURVEY"

SITE NUMBER: 9LV0460D

SITE NAME: REED

SITE ADDRESS: HWY 60 OWENSBORO, KY 42301

PROPOSED LEASE AREA: AREA = 6,400 sq. ft.

PROPERTY OWNER: H. GLEN WILLIAMS (1/2 INTEREST) JUDITH B. WILLIAMS (1/2 INTEREST) 24335 HWY 811 OWENSBORO, KY 42301

TAX MAP NUMBER: 119

PARCEL NUMBER: 16

SOURCE OF TITLE: DEED BOOK 553, PAGE 146

DWG BY: DJG

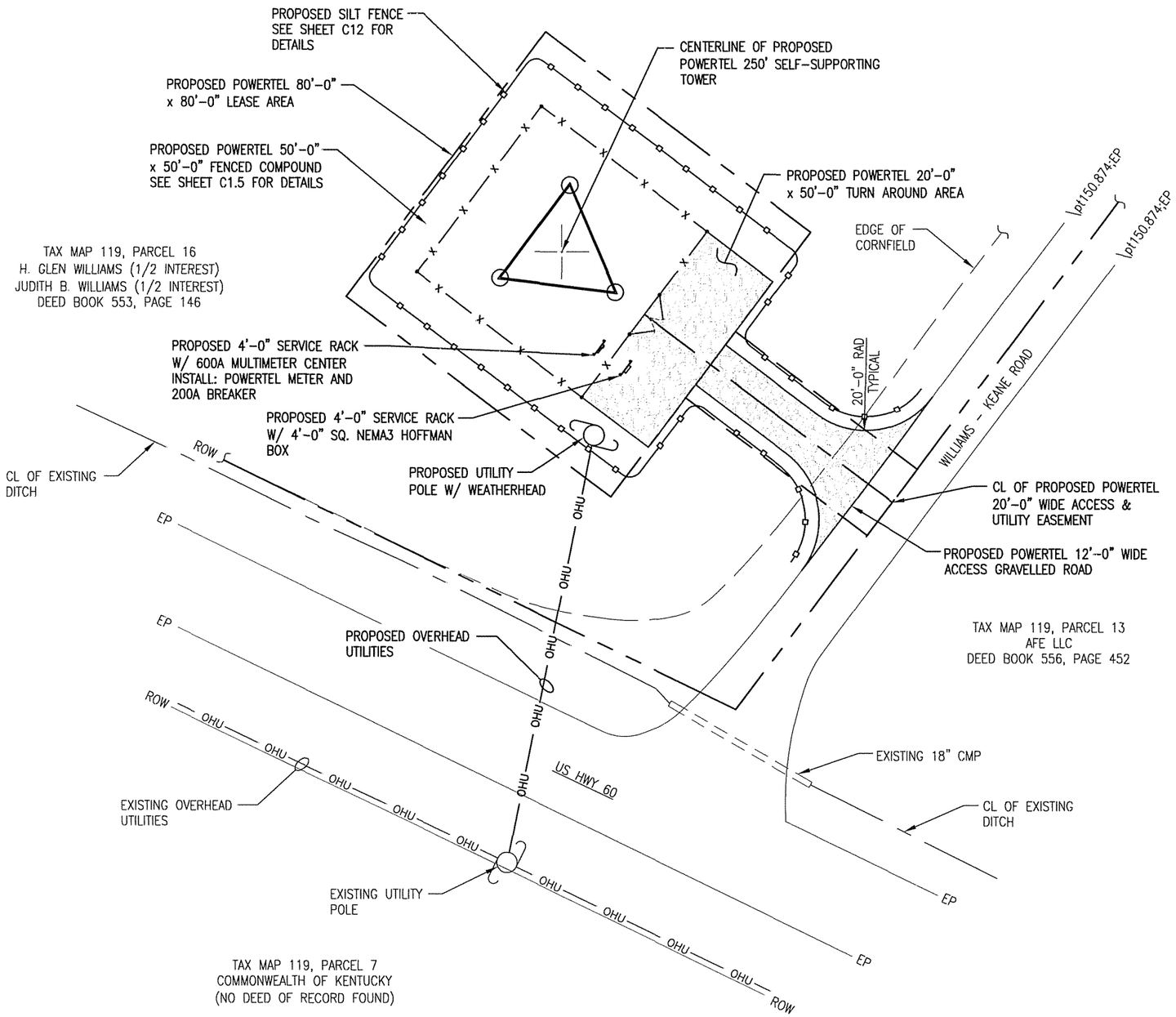
CHKD BY: FSII

DATE: 12.16.08

FSTAN PROJECT NO.: 08-5785

REVISIONS:

C2



OVERALL SITE LAYOUT
(SCALE: 1" = 30'-0")

EROSION PREVENTION AND SEDIMENT CONTROL NOTES:

1. THE APPROVED EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLAN SHALL BE IMPLEMENTED PRIOR TO ANY LAND-DISTURBING ACTIVITY ON THE CONSTRUCTION SITE. ANY MODIFICATIONS TO THE APPROVED EPSC PLAN MUST BE REVIEWED AND APPROVED BY MSD'S PRIVATE DEVELOPMENT REVIEW OFFICE. EPSC BMP'S SHALL BE INSTALLED PER THE PLAN AND MSD STANDARDS.
2. DETENTION BASINS, IF APPLICABLE, SHALL BE CONSTRUCTED FIRST AND SHALL PERFORM AS SEDIMENT BASINS DURING CONSTRUCTION UNTIL THE CONTRIBUTING DRAINAGE AREAS ARE SEEDED AND STABILIZED.
3. ACTIONS MUST BE TAKEN TO MINIMIZE THE TRACKING OF MUD AND SOIL FROM CONSTRUCTION AREAS ONTO PUBLIC ROADWAYS. SOIL TRACKED ONTO THE ROADWAY SHALL BE REMOVED DAILY.
4. SOIL STOCKPILES SHALL BE LOCATED AWAY FROM STREAMS, PONDS, SWALES, AND CATCH BASINS. STOCKPILES SHALL BE SEEDED, MULCHED, AND ADEQUATELY CONTAINED THROUGH THE USE OF SILT FENCE.
5. ALL STREAM CROSSINGS MUST UTILIZE LOW-WATER CROSSING STRUCTURES.
6. WHERE CONSTRUCTION OR LAND DISTURBANCE ACTIVITY WILL OR HAS TEMPORARILY CEASED ON ANY PORTION OF A SITE, TEMPORARY SITE STABILIZATION MEASURES SHALL BE REQUIRED AS SOON AS PRACTICABLE, BUT NO LATER THAN 14 CALENDAR DAYS AFTER THE ACTIVITY HAS CEASED.
7. SEDIMENT-LADEN GROUNDWATER ENCOUNTERED DURING TRENCHING, BORING OR ANY OTHER EXCAVATION ACTIVITIES SHALL BE PUMPED TO A SEDIMENT TRAPPING DEVICE PRIOR TO BEING DISCHARGED INTO A STREAM, POND, SWALE, OR CATCH BASIN.

IMPERVIOUS AREA NOTES:

EXISTING IMPERVIOUS SURFACE = 0.0 SQUARE FEET

PROPOSED IMPERVIOUS SURFACE = 177 SQUARE FEET

TOTAL OF NEW IMPERVIOUS AREA OF SITE = 177 SQUARE FEET

TOTAL AREA OF SITE = 5246.82 SQUARE FEET

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED PROFESSIONAL ENGINEER

11/2/9
REGISTERED PROFESSIONAL ENGINEER SEAL

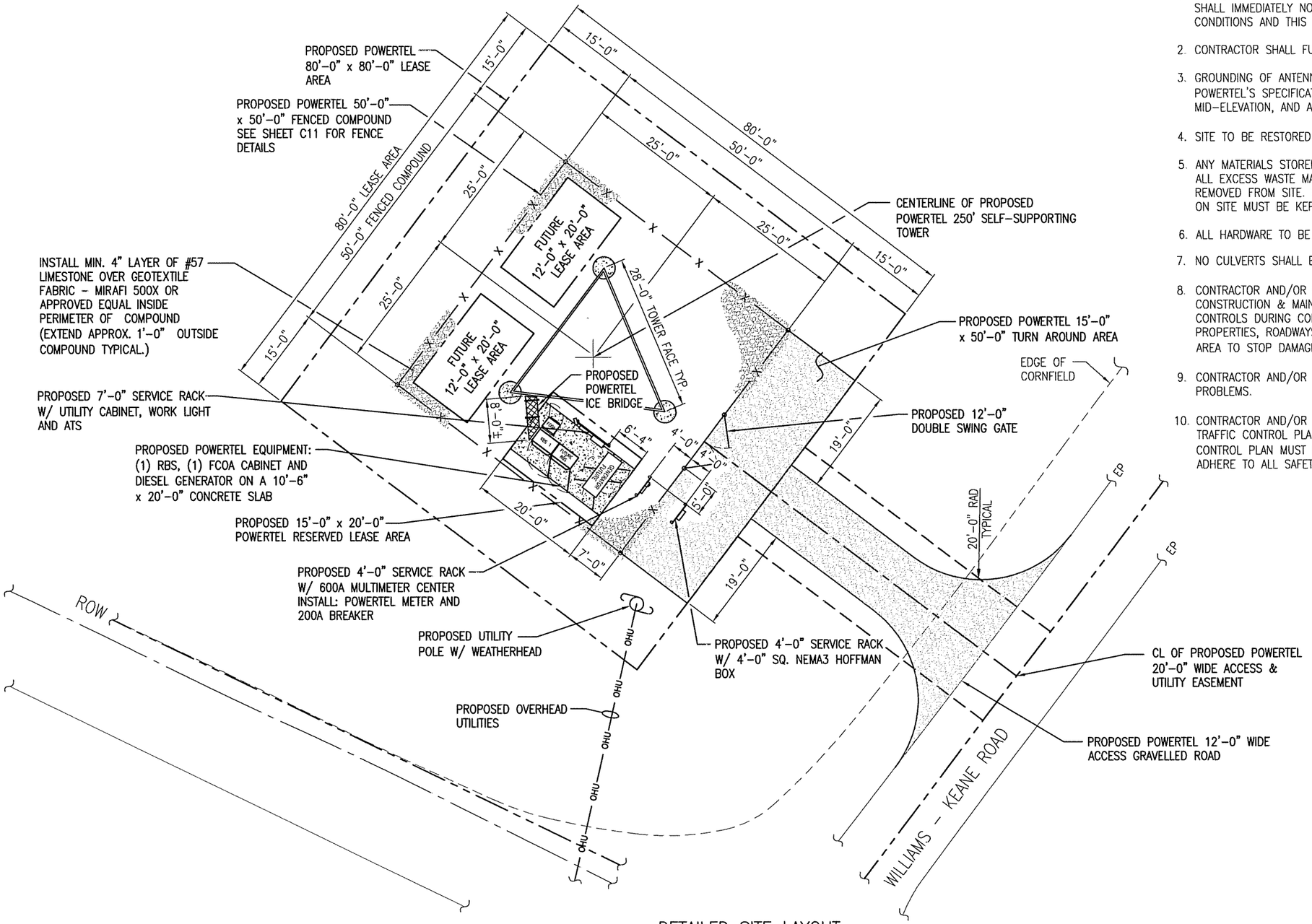
ITEM	REVISION	BY	CHK. BY	DATE

DRAWN BY: J.E. STEGER — DATE: 12-23-08
CHECKED BY: T.L. HARDY — DATE: 12-23-08
APPROVED BY: — DATE:

HARDY ENGINEERING, INC.
ENGINEERING AND CONSULTING
209 LINDEN STREET, P.O. BOX 708
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

OVERALL SITE LAYOUT
9LV0460D SITE: REED
OWENSBORO, KENTUCKY
FOR
POWERTEL / MEMPHIS INC.
LOUISVILLE, KENTUCKY

CAD No: LV0460_C1 | SCALE: AS SHOWN | DWG No: C1



NOTES:

1. BOUNDARY AND EXISTING SITE FEATURES ARE BASED ON FIELD MEASUREMENTS. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THIS DRAWING.
2. CONTRACTOR SHALL FURNISH ALL MATERIALS FOR 600 AMP SERVICE.
3. GROUNDING OF ANTENNAS MOUNTS, COAX, AND EQUIPMENT SHALL BE IN ACCORDANCE WITH POWERTEL'S SPECIFICATIONS. COAX SHALL BE GROUNDED JUST BELOW ANTENNAS, AT MID-ELEVATION, AND AT BOTTOM OF TOWER.
4. SITE TO BE RESTORED BACK TO **SITE OWNER'S** SPECS.
5. ANY MATERIALS STORED ON SITE SHALL BE STORED IN CLOSED OR COVERED CONTAINERS AND ALL EXCESS WASTE MATERIALS WILL BE PROPERLY DISPOSED OF DAILY AND ALL SOILS REMOVED FROM SITE. NOTE **NO** BURNING ON SITE AT ANYTIME. ACCESS TO OTHER CUSTOMERS ON SITE MUST BE KEPT CLEAR.
6. ALL HARDWARE TO BE STAINLESS STEEL, **NO PLATED METAL TO BE USED.**
7. NO CULVERTS SHALL BE INSTALLED.
8. CONTRACTOR AND/OR DEVELOPER SHALL BE RESPONSIBLE FOR CONSTRUCTION & MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS DURING CONSTRUCTION FOR PROTECTION OF ADJACENT PROPERTIES, ROADWAYS, AND WATERWAYS. SILT FENCE SHOULD BE INSTALLED AROUND WORK AREA TO STOP DAMAGE TO OTHER CUSTOMER'S EQUIPMENT.
9. CONTRACTOR AND/OR DEVELOPER ARE RESPONSIBLE FOR PROVIDING SITE FREE OF DRAINAGE PROBLEMS.
10. CONTRACTOR AND/OR DEVELOPER SHALL BE RESPONSIBLE FOR MAINTAINING A PROPER TRAFFIC CONTROL PLAN FOR PUBLIC SAFETY ADJACENT TO CONSTRUCTION SITE. THE TRAFFIC CONTROL PLAN MUST BE IN ACCORDANCE WITH LATEST (AMUTCO) EDITION. CONTRACTOR IS TO ADHERE TO ALL SAFETY GUIDELINES, AND **OSHA** SPECS WHILE ON WORK SITE.

DETAILED SITE LAYOUT

(SCALE: 1" = 20'-0")

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER SEAL

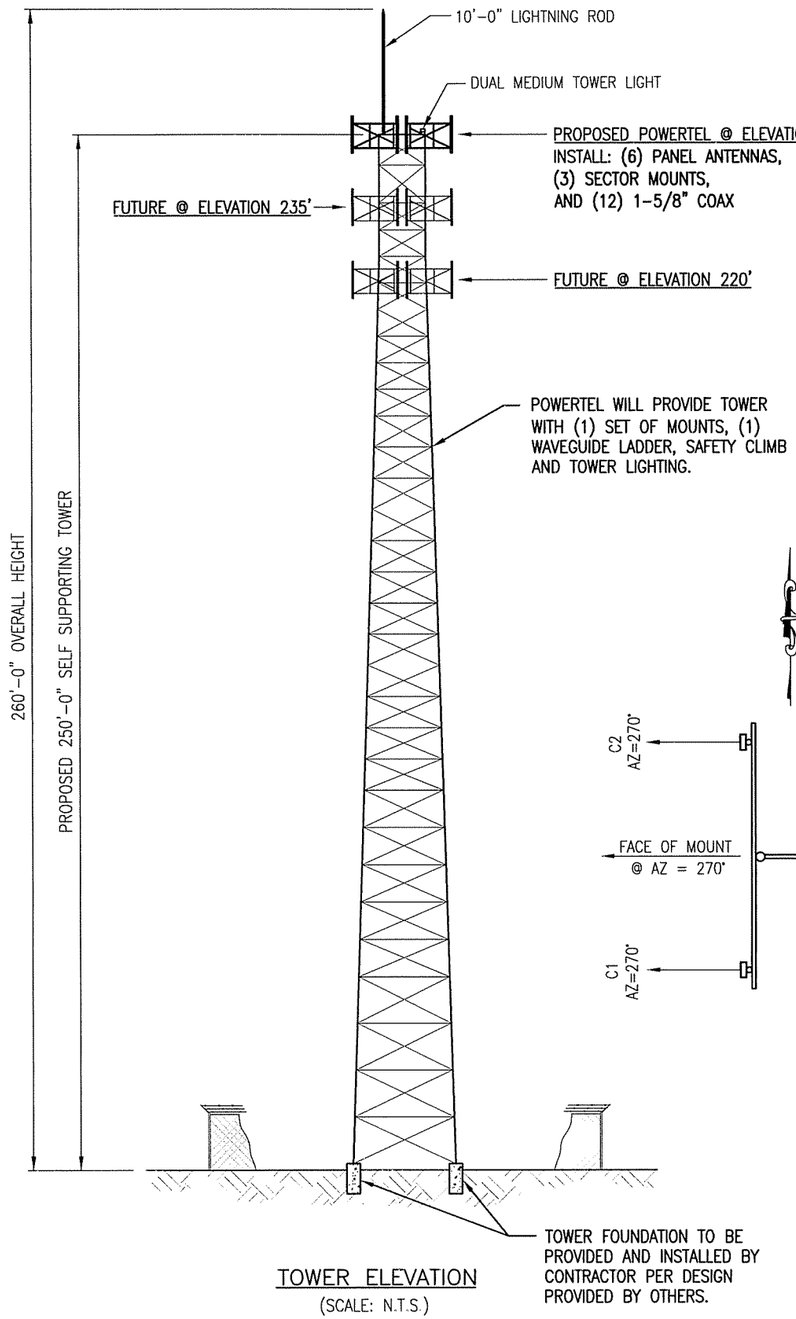
ITEM	REVISIONS	BY	CHK. BY	DATE

DRAWN BY: J.E. STEGER — DATE: 12-23-08
CHECKED BY: T.L. HARDY — DATE: 12-23-08
APPROVED BY: — DATE:

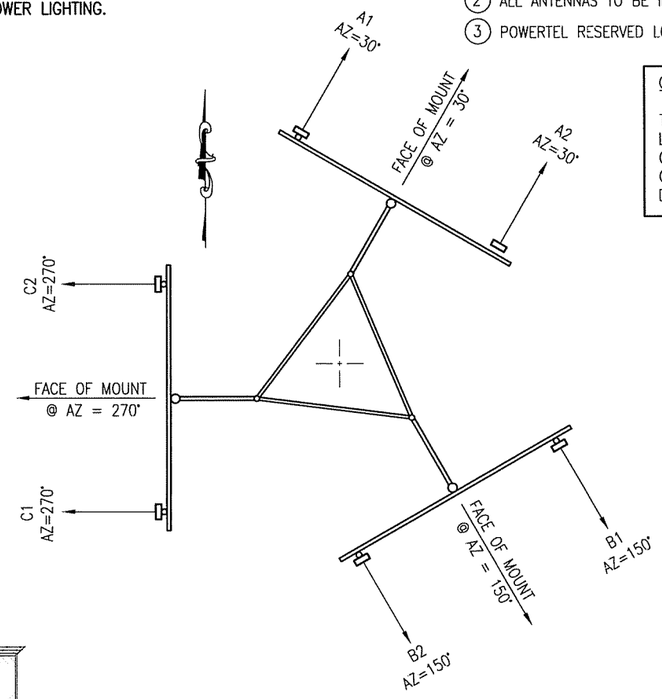
HARDY ENGINEERING, INC.
ENGINEERING AND CONSULTING
209 LINDEN STREET, P.O. BOX 708
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

DWG NAME: DETAILED SITE LAYOUT
9LV0460D SITE: REED
OWENSBORO, KENTUCKY
FOR
POWERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY

CAD No: LV0460_C1.5 | SCALE: AS SHOWN | DWG No. C1.5



TOWER ELEVATION
(SCALE: N.T.S.)



ANTENNA AZIMUTHS
(SCALE: NTS)

ANTENNA AND COAX SCHEDULE

ANTENNA MARK	SECTOR	ANTENNA (1)	COAX FEED LOCATION	AZIMUTH (0° = NORTH)	COAX COLOR CODE	COAX CABLE SIZE	MECHANICAL DOWN TILT (2)	ELECTRICAL DOWN TILT	RADIATION CENTER
A1	A	TMBX-6517-R2M	BOTTOM	30°	TX/RX - RED-RED-RED TX/RX - RED	(4) 1 5/8"ø	0°	2°	250'
A2	A	TMBX-6517-R2M	BOTTOM	30°	TX/RX - RED-RED-RED-RED TX/RX - RED-RED		0°	2°	250'
A3									
B1	B	TMBX-6517-R2M	BOTTOM	150°	TX/RX - BLUE-BLUE-BLUE TX/RX - BLUE	(4) 1 5/8"ø	0°	2°	250'
B2	B	TMBX-6517-R2M	BOTTOM	150°	TX/RX - BLUE-BLUE-BLUE-BLUE TX/RX - BLUE-BLUE		0°	2°	250'
B3									
C1	C	TMBX-6517-R2M	BOTTOM	270°	TX/RX - GREEN-GREEN-GREEN TX/RX - GREEN	(4) 1 5/8"ø	0°	2°	250'
C2	C	TMBX-6517-R2M	BOTTOM	270°	TX/RX - GREEN-GREEN-GREEN-GREEN TX/RX - GREEN-GREEN		0°	2°	250'
C3									

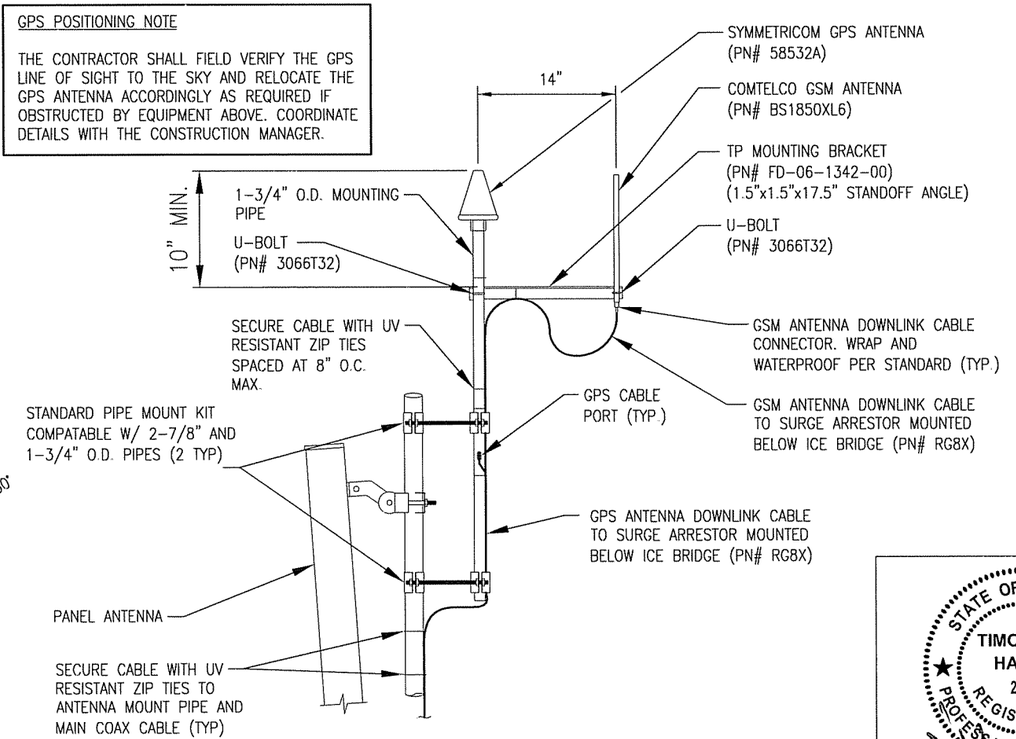
(1) FINAL ANTENNA TYPE TO BE DETERMINED BY POWERTEL, ANTENNAS TO BE PROVIDED BY POWERTEL AND INSTALLED BY CONTRACTOR.

(2) ALL ANTENNAS TO BE INSTALLED WITH DOWNTILT BRACKETS.

(3) POWERTEL RESERVED LOADING: (9) ANTENNAS (AS SHOWN OR EQUIVALENT), (18) 1-5/8" COAX, (6) TMA'S

GPS POSITIONING NOTE

THE CONTRACTOR SHALL FIELD VERIFY THE GPS LINE OF SIGHT TO THE SKY AND RELOCATE THE GPS ANTENNA ACCORDINGLY AS REQUIRED IF OBSTRUCTED BY EQUIPMENT ABOVE. COORDINATE DETAILS WITH THE CONSTRUCTION MANAGER.



GPS/GSM MOUNTING DETAIL
AT ANTENNA RAD. CENTER
(SCALE: N.T.S.)

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER SEAL

ITEM	REVISIONS	BY	CHK. BY	DATE

DRAWN BY: J.E. STEGER — DATE: 12-23-08
CHECKED BY: T.L. HARDY — DATE: 12-23-08
APPROVED BY: — DATE:

HARDY ENGINEERING, INC.
ENGINEERING AND CONSULTING
209 LINDEN STREET, P.O. BOX 708
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

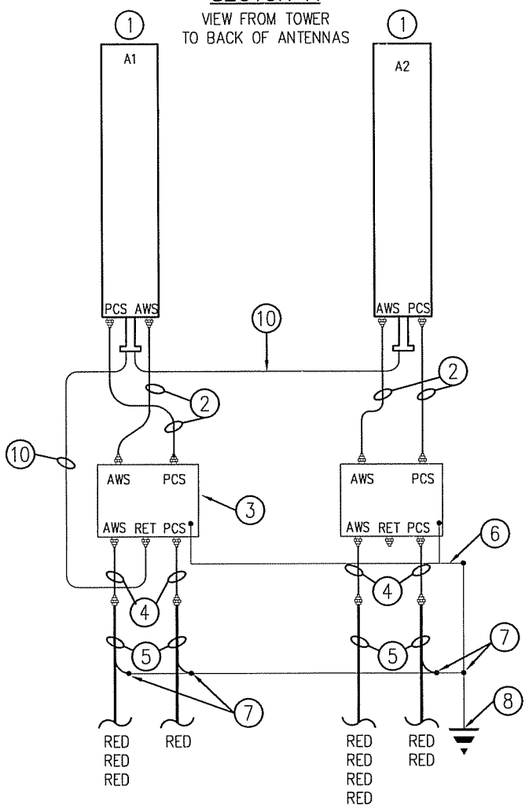
DWG. NAME: TOWER ELEVATION
9LV0460D SITE: REED
OWENSBORO, KENTUCKY
FOR
POWERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY

CAD No: LV0460_C2 | SCALE: AS SHOWN | DWG No: C2

REVISED 12-29-2008

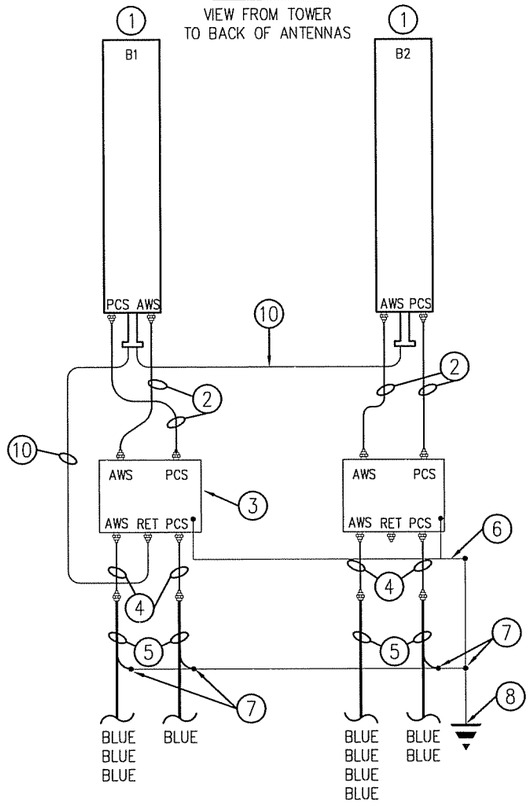
SECTOR A

VIEW FROM TOWER
TO BACK OF ANTENNAS



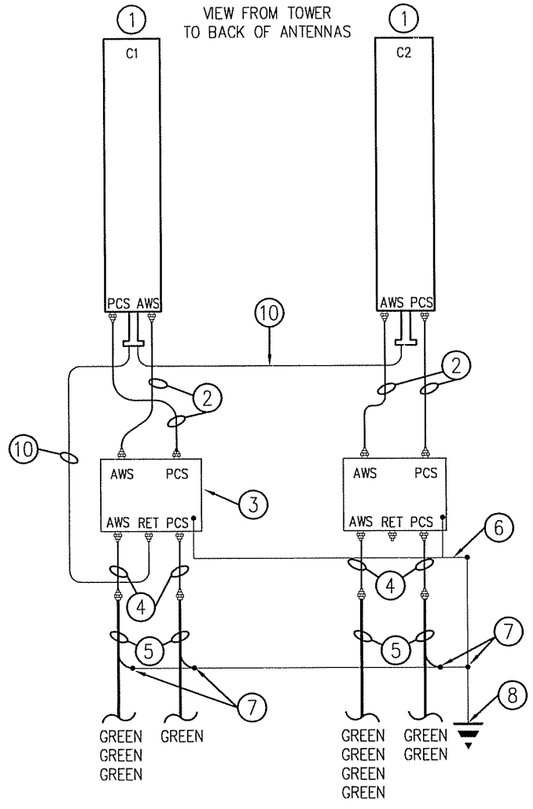
SECTOR B

VIEW FROM TOWER
TO BACK OF ANTENNAS



SECTOR C

VIEW FROM TOWER
TO BACK OF ANTENNAS

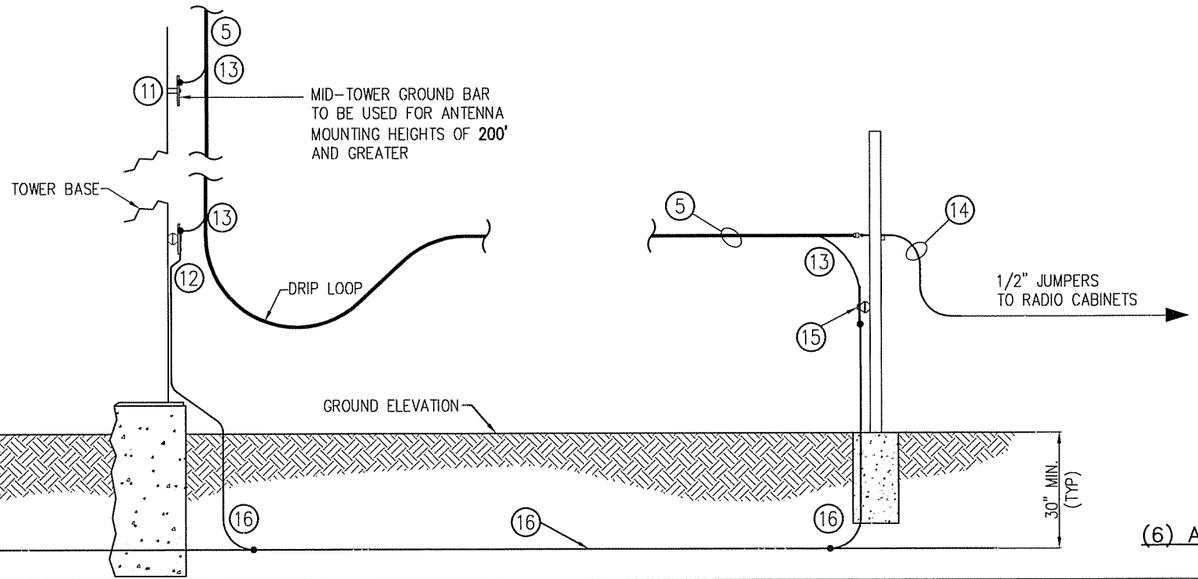


MATERIAL LIST

1. PANEL ANTENNA
2. JUMPER, 1/2"ø x 10'
3. TMA
4. JUMPER, 1/2"ø x 6'
5. COAX, 7/8"ø OR 1 5/8"ø
6. TMA GROUND, #6 THW INSULATED GROUND WIRE
7. COAX GROUND KIT
8. 4" x 14" x 1/4" GROUND BAR MOUNTED TO TOWER
9. (NOT USED)
10. AIS6 CABLE PART NO. ATCB-B01-010
11. GROUND BAR MOUNTED TO TOWER
12. GROUND BAR MOUNTED ON CHERRY INSULATORS
13. COAX GROUND KIT
14. JUMPER, 1/2"ø x 12'
15. GROUND TERMINATION BAR ON CHERRY INSULATORS
16. #2 Cu SOLID TINNED GROUND WIRE

NOTES:

1. FOR EVERYTHING ABOVE THE TOWER BOTTOM BUSS BAR USE SINGLE HOLE LUG WITH HEAT SHRINK ON ANTENNA, TMA, TMA FILTER & 2 HOLE LUG WITH HEAT SHRINK ON BUSS BAR END OF GROUND WIRE.
2. ALL GROUND CONNECTIONS STARTING AT THE TOWER BOTTOM BUSS BAR AND DOWN ARE TO BE EXOTHERMIC WELD OR 2 HOLE CADWELD LUG.
3. NUMBER OF ANTENNAS AND LINES TO BE INSTALLED SHALL BE AS DIRECTED BY THE CONSTRUCTION MANAGER.
4. GROUNDING OF ANTENNAS, MOUNTS, COAX, AND EQUIPMENT SHALL BE IN ACCORDANCE WITH T-MOBILE'S SPECIFICATIONS.



(6) ANTENNA AND (12) COAX GROUNDING DETAIL
(NOT TO SCALE)

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED
PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER SEAL

ITEM	REVISIONS	BY	CHK. BY	DATE

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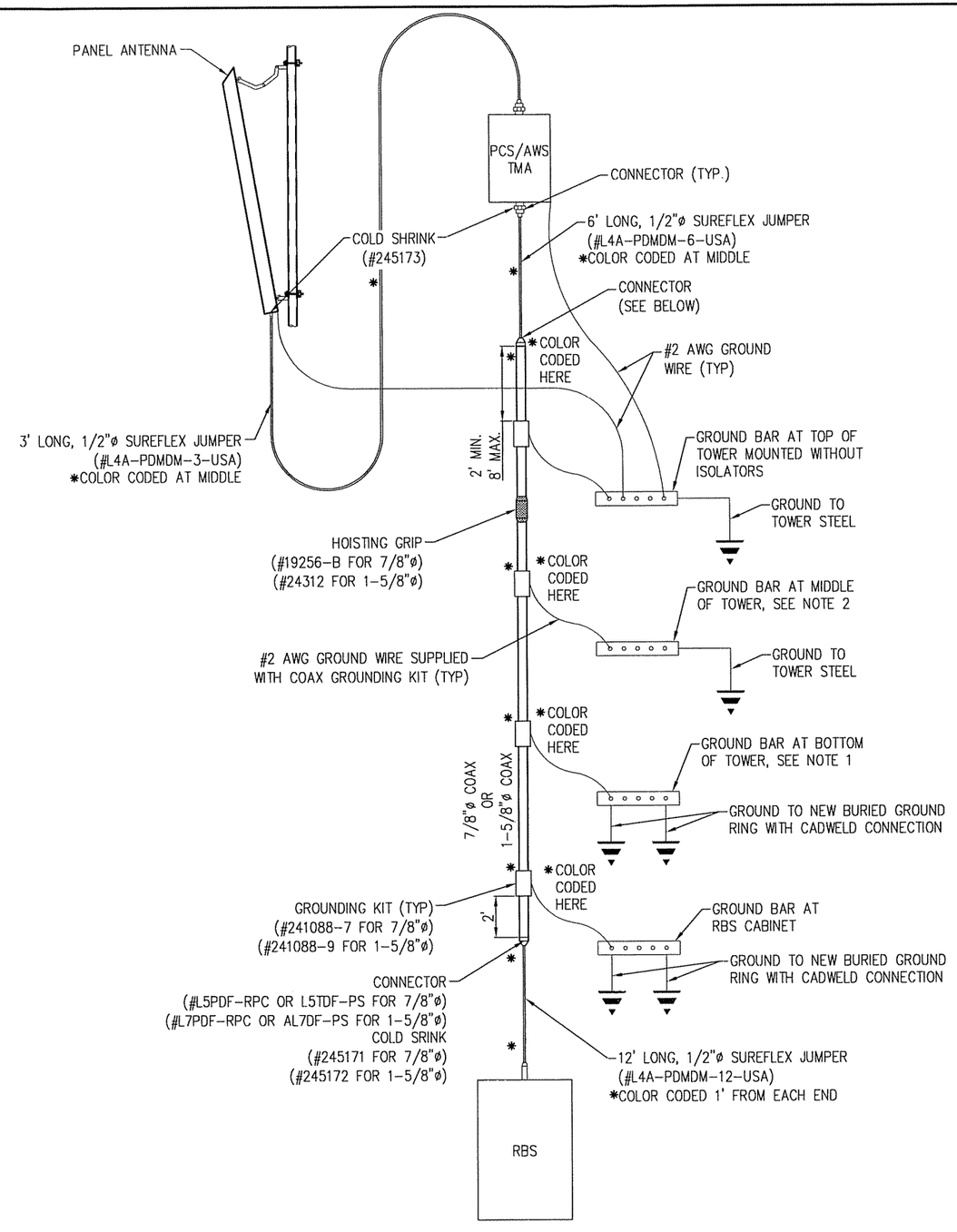
HARDY ENGINEERING, INC.
ENGINEERING AND CONSULTING
209 LINDEN STREET, P.O. BOX 708
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

DWG. NAME: ANTENNA & COAX GROUNDING DETAIL
STANDARD DRAWING
FOR
POWERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY

CAD No: LV0460_C3 | SCALE: AS SHOWN | DWG No: C3

REVISED 11-26-2008



ANTENNA CABLE GROUNDING SCHEMATIC

(NOT TO SCALE)

NOTES

1. ATTACH GROUND BAR TO THE EXISTING TOWER USING STANDARD ADAPTER (ISOLATORS).
2. ATTACH GROUND BAR TO THE EXISTING TOWER USING STANDARD ADAPTER (WITHOUT ISOLATORS). INSTALL ONLY WHEN RAD CENTERS EXCEEDS 200'. (SELF SUPPORT & GUYED TOWERS ONLY)

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED PROFESSIONAL ENGINEER

12-29

REGISTERED PROFESSIONAL ENGINEER SEAL

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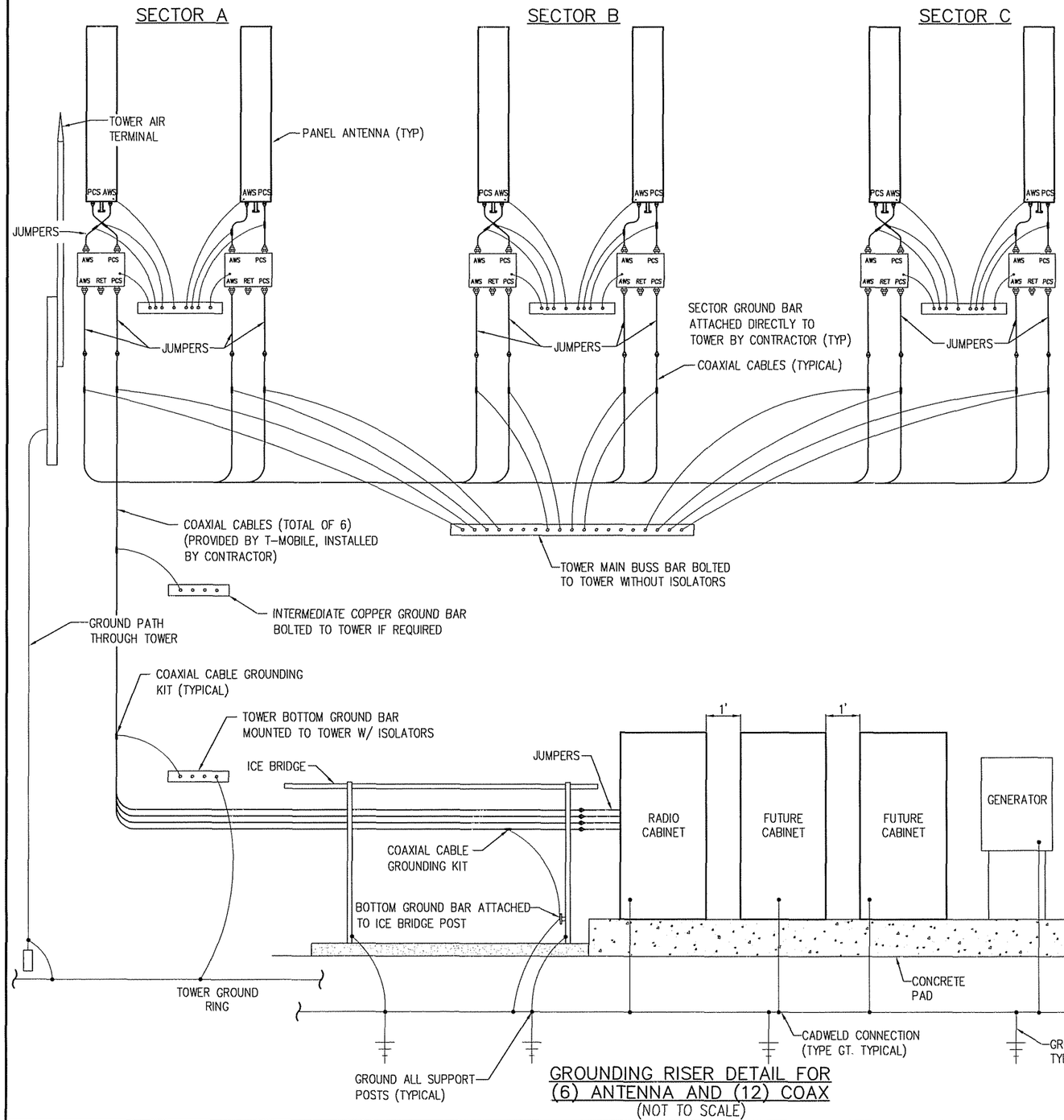
ENGINEERING AND CONSULTING
209 LINDEN STREET, P.O. BOX 708
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

DWG. NAME: COAX GROUNDING DETAIL
STANDARD DRAWING
FOR
POWERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY

CAD No: LV0460_C3.1 | SCALE: AS SHOWN | DWG. No. C3.1



GROUNDING RISER DETAIL FOR (6) ANTENNA AND (12) COAX
(NOT TO SCALE)

REVISED 11-26-2008

GENERAL GROUNDING NOTES

1. SITE GROUNDING SHALL COMPLY WITH POWERTEL GROUNDING STANDARDS, LATEST ADDITION, AND COMPLY WITH POWERTEL GROUNDING CHECKLIST, LATEST VERSION WHEN LOCAL AND NATIONAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN. GROUNDING SHALL BE COMPLETED BEFORE ERECTION OF TOWER.

2 GROUND RODS
A. 5/8"x10' LONG COPPER CLAD STEEL
B. MAXIMUM SPACING 10'-0".
C. TOP SHALL BE A MINIMUM OF 30" BELOW GRADE.

GROUND CONNECTORS
A. #2 AWG BARE TINNED SOLID COPPER UNLESS OTHERWISE NOTED.
B. WHEN DIRECTION OF CONDUCTOR CHANGES, IT SHALL BE DONE GRADUALLY.
C. ALL GROUNDING CONDUCTORS SHALL RUN THROUGH SEAL TIGHT SLEEVES WHEREVER CONDUCTORS RUN THROUGH CONCRETE SLABS.
D. GROUND RINGS SHALL BE BURIED A MINIMUM OF 30" BELOW GRADE AND SHALL BE LOCATED A MINIMUM OF 24" FROM THE OUTSIDE EDGE OF A CABINET, TOWER FOUNDATION AND OTHER SITE OBJECTS.
E. ALL CONNECTIONS SHALL BE EXOTHERMIC (CADWLD OR EQUAL) UNLESS INDICATED OTHERWISE. ALL MATERIALS USED SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND INSTRUCTIONS.
F. CONNECTIONS AT GROUND BARS AND SERVICE DISCONNECTION MEANS SHALL CONSIST OF LUGS CADWELDED TO GROUND CONDUCTORS UNLESS INDICATED OTHERWISE. LUGS SHALL BE ATTACHED TO GROUND BARS USING STAINLESS STEEL OR HOT DIPPED GALVANIZED STEEL BOLTS, NUTS AND LOCK WASHERS.

COAXIAL TRANSMISSION LINE GROUNDING
A. VERTICAL RUNS THAT ARE MORE THAN 200' OR LESS SHALL REQUIRE A GROUNDING KIT AT THE TOP AND BOTTOM OF THE TOWER.
B. VERTICAL RUNS WHICH ARE GREATER THAN 200' SHALL REQUIRE A GROUNDING KIT (IN ADDITION TO THE ABOVE) FROM THE TOP EVERY 150' TOWARDS THE GROUND BAR UNTIL THE DISTANCE IS LESS THAN 150' FROM THE GROUND.
C. SURGE ARRESTOR IS PROVIDED BY OTHERS AND INSTALLED BY CONTRACTOR. CONTRACTOR SHALL MAKE ALL CONNECTIONS REQUIRED FOR INSTALLATION.
D. ALL GROUNDING KITS SHALL BE PROVIDED BY OTHERS AND INSTALLED BY CONTRACTOR.

MISC. ITEMS TO BE CONNECTED TO GROUNDING SYSTEM
A. ANY METAL FENCE POST WITHIN 6'-0" OF GROUND ROAD.
B. TRANSMISSION LINE ENTRANCE HATCH.
C. METAL CABINET PARTS NOT GROUNDED BY THE INTERNAL GROUND RING.
D. METAL FUEL STORAGE TANKS.
E. ANY SIGNIFICANT METAL OBJECT WITHIN 6'-0" OF THE GROUNDING SYSTEM OR ANY OTHER GROUNDED OBJECT.
F. EXTERIOR ICE SHIELDS.
G. STEEL EQUIPMENT PLATFORM.

INSTALLATION AND TESTING
A. CONTRACTOR SHALL NOTIFY CONSTRUCTION MANAGER IMMEDIATELY IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO FIELD CONDITIONS.
B. CONTRACTOR SHALL NOT COVER UP GROUND RING AND CONNECTIONS UNTIL AN INSPECTION HAS BEEN PERFORMED. COORDINATE INSPECTION WITH CONSTRUCTION MANAGER.
C. PROVIDE TESTING OF GROUNDING SYSTEM AS DIRECTED BY THE CONSTRUCTION MANAGER.

THE MAXIMUM ALLOWABLE RESISTANCE READING SHALL BE 5 OHMS TO THE GROUND. IF THE RESISTANCE OF THE ENTIRE GROUND SYSTEM AS MEASURED AT THE MAIN GROUND TEST WELL EXCEEDS 5.0 OHMS THE ELECTRICAL CONTRACTOR AND OWNERS REPRESENTATIVE SHALL BE NOTIFIED SO THAT ADDITIONAL GROUND LOCATIONS CAN BE UTILIZED.

ALL EXPOSED GROUND LEADS TO GROUND RING, PLACED IN CONCRETE, SHALL BE ENCASED IN 3/4" FLEXIBLE CONDUIT, SEALTIGHT OR EQUAL.

ALL GROUND WIRE CONNECTIONS TO EQUIPMENT GROUND RING THAT ARE RUNNING ABOVE GROUND SHALL BE RUN INSIDE SEALTIGHT FLEX CONDUIT.

ALL CONNECTIONS ABOVE GROUND EXCEPT CONNECTIONS TO GROUND BARS OR ARRESTOR BRACKET SHALL BE WITH DOUBLE LUG CONNECTORS. CONNECTIONS TO GROUND BARS AND ARRESTORS SHALL BE CADWELD.

ALL GROUNDING RUNS ON TOWER SHALL BE ROUTED ON THE INSIDE FACE OF THE ICE BRIDGE LADDER.

COMPACT BACKFILL OF ALL TRENCHES FOR GROUND RING. SITE SOIL OR #57 STONE MAY BE USED FOR BACKFILL MATERIALS. CONTRACTOR SHALL OBTAIN APPROVAL FOR BACKFILL MATERIALS FROM CONSTRUCTION MANAGER.

CONTRACTOR SHALL PROVIDE SS FLAT AND LOCK WASHERS AS REQUIRED FOR COMPLETE INSTALLATION OF GROUND LEADS AT GROUND BUSS.

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER SEAL

ITEM	REVISIONS	BY	CHK. BY	DATE

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CHECKED BY: T.L. HARDY — DATE: 12-23-08
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HARDY ENGINEERING, INC.
ENGINEERING AND CONSULTING
209 LINDEN STREET, P.O. BOX 708
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

DWG. NAME: GROUNDING RISER DIAGRAM

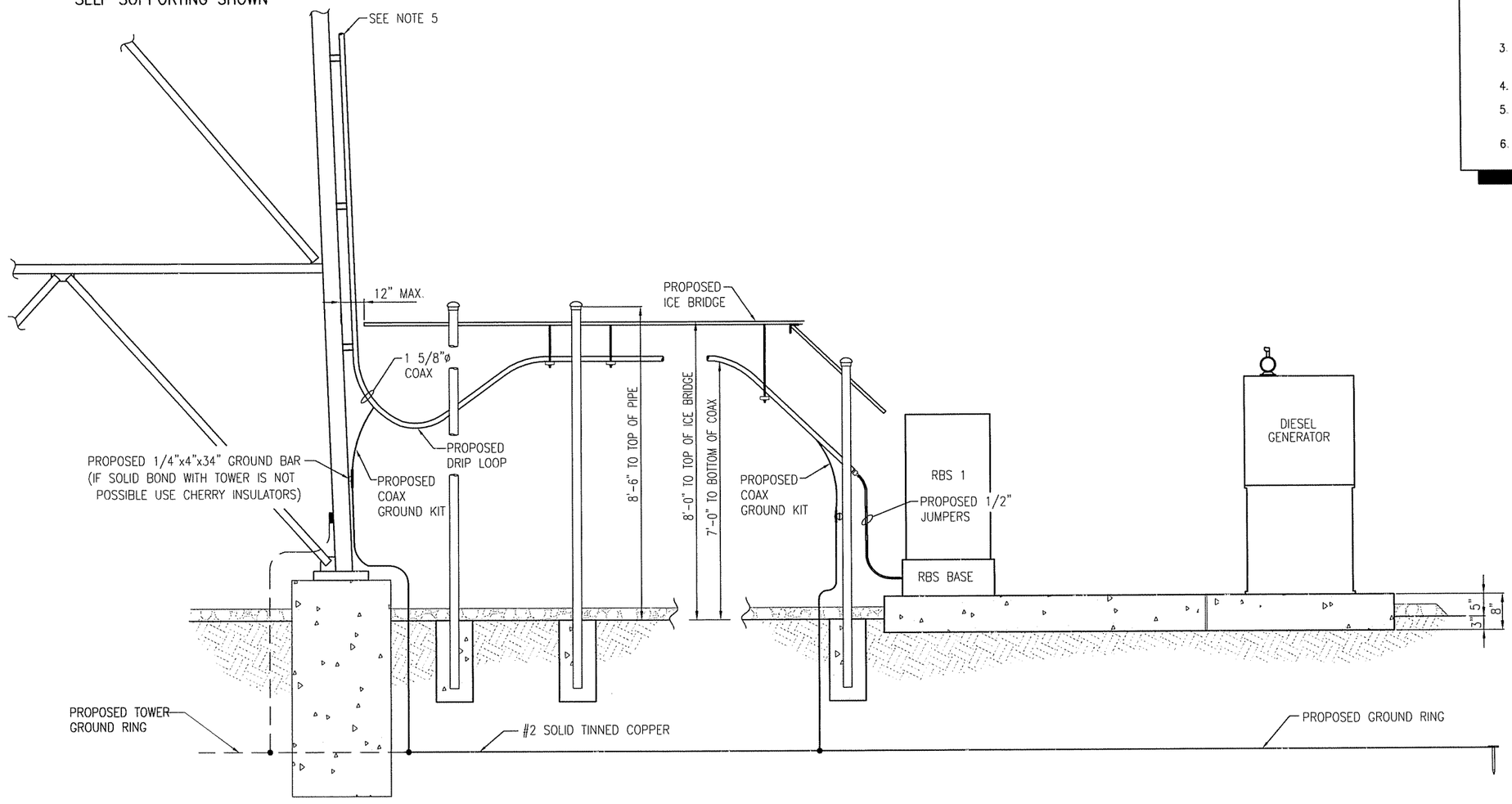
STANDARD DRAWING
FOR
POWERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY

CAD No: LV0460_C3.2 | SCALE: NOT TO SCALE | DWG. No. C3.2

NOTES

1. ALL CONDUIT SHALL BE PVC CONDUIT UNLESS OTHERWISE NOTED.
2. ALL CONDUIT PENETRATING EQUIPMENT PANELS SHALL BE SECURED WITH A GROUNDING BUSHING AND GROUNDED TO EQUIPMENT GROUND BUSS WITH A GROUND LUG.
3. ALL CONDUITS TO BE SECURED WITH CONDUIT BEAM CLAMP O-Z / GEDNEY TYPE "J".
4. PROVIDE A SMOOTH TRANSITION AND DRIP LOOP.
5. ANTENNA END OF 1 5/8"ø COAX SHALL BE SUPPORTED NO MORE THAN 1 FOOT FROM END OF CONNECTOR.
6. 1/2"ø COAX SHALL BE SUPPORTED EVERY 2'-0" TO 2'-6" WITH ANGLE ADAPTORS WITH CLAMP OR EQUIVALENT.

SELF SUPPORTING SHOWN



EQUIPMENT ELEVATION

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER SEAL

ITEM	REVISIONS	BY	CHK. BY	DATE

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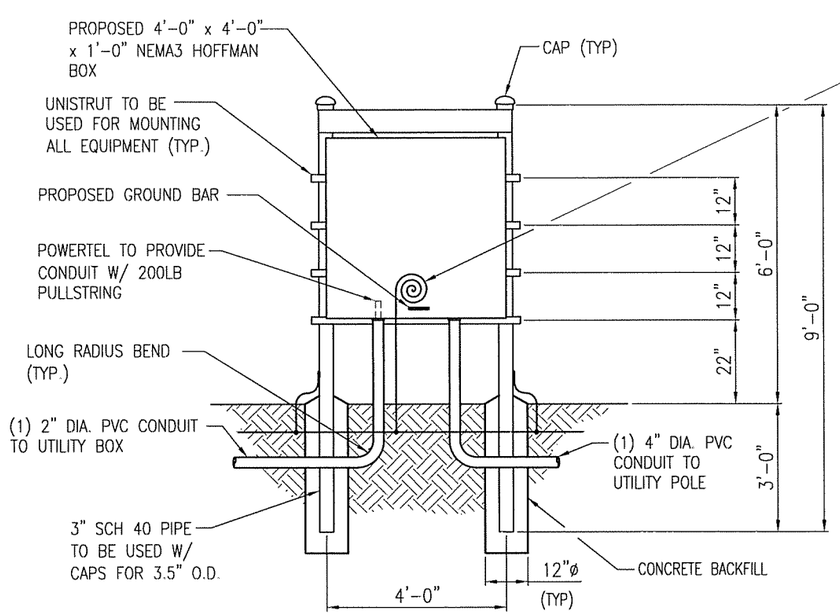
CHECKED BY : T.L. HARDY — DATE : 11-12-08
APPROVED BY : — DATE :

HARDY ENGINEERING, INC.
ENGINEERING AND CONSULTING
209 LINDEN STREET, P.O. BOX 708
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

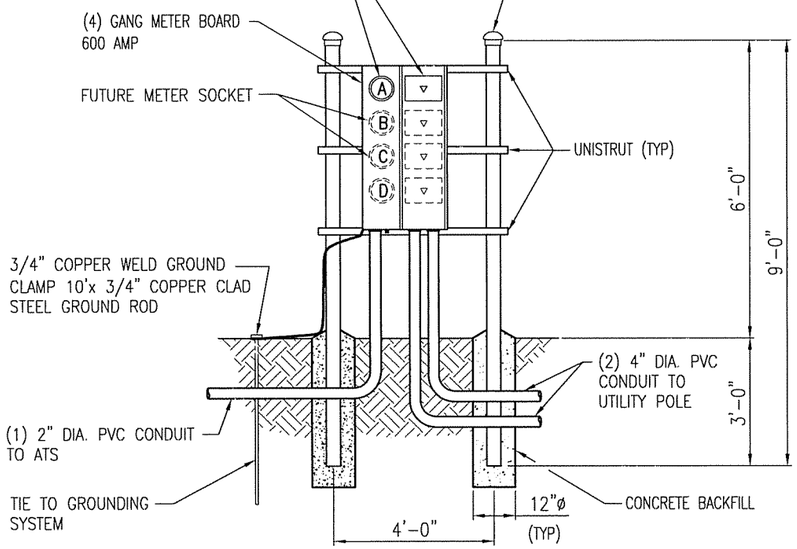
DWG NAME: EQUIPMENT ELEVATION
STANDARD DRAWING
FOR
POWERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY

CAD No: LV0460_C4 | SCALE: NOT TO SCALE | DWG No C4



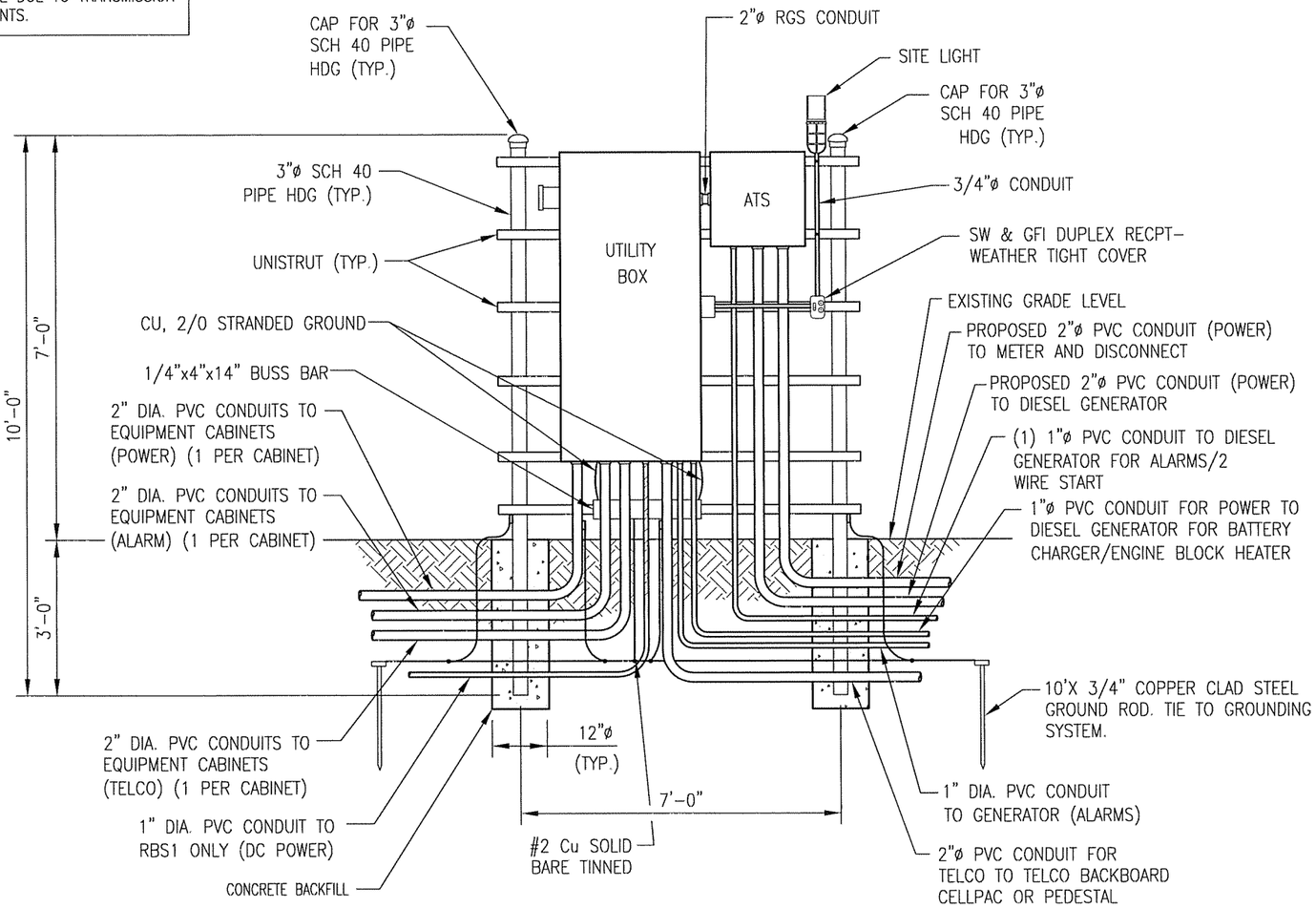
#6 AWG GROUND WIRE (6'-0") WILL BE PLACED & CAD WELDED TO THE GROUND BED OF THE SITE. A GROUND ROD WILL NOT BE ACCEPTABLE DUE TO TRANSMISSION REQUIREMENTS.

(FACING FENCE)



MULTI-TENNANT RACK

(SCALE: N.T.S.)



UTILITY BOX & ATS SERVICE RACK

SCALE: N.T.S.

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
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REGISTERED PROFESSIONAL ENGINEER SEAL

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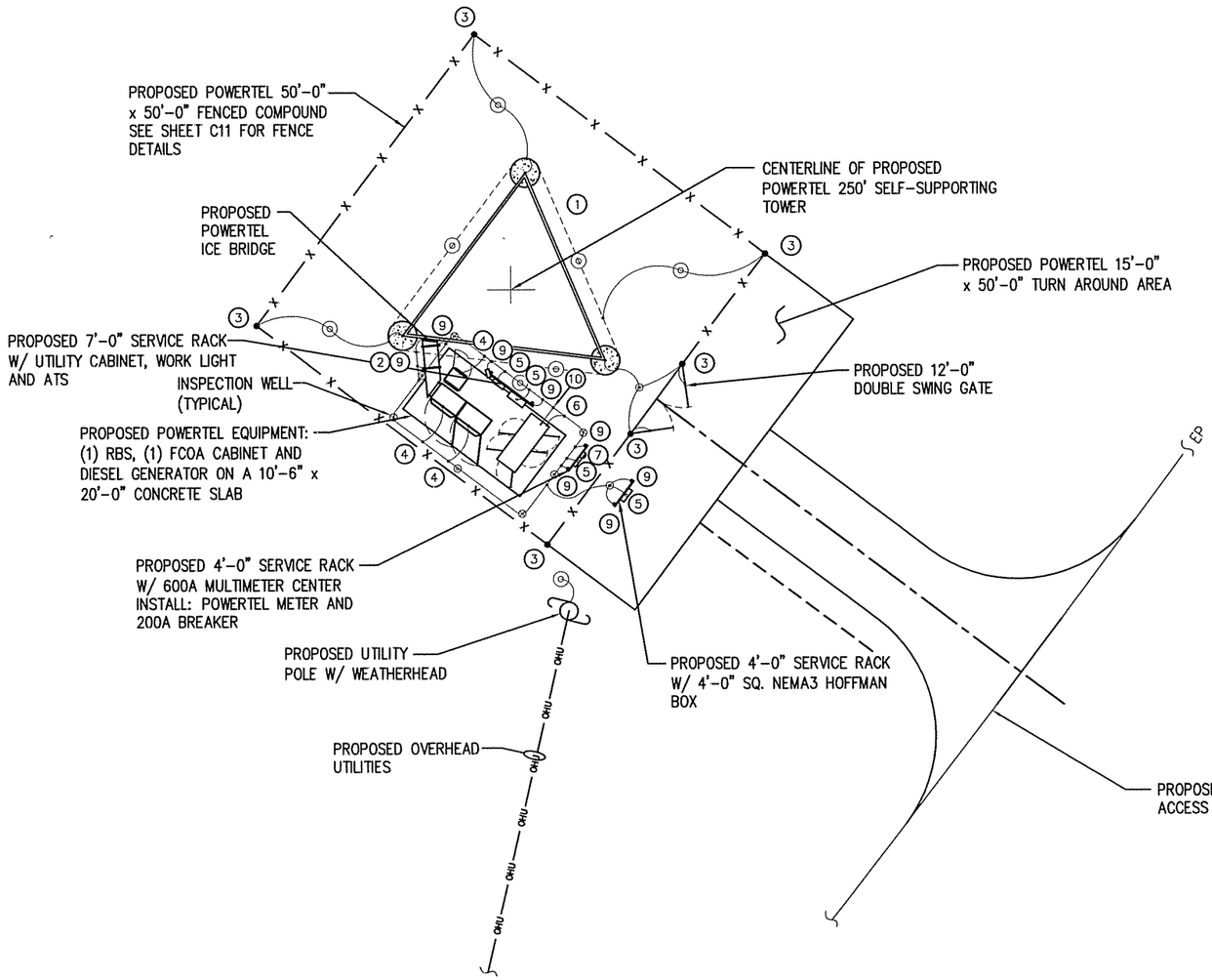
ENGINEERING AND CONSULTING
209 LINDEN STREET
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

DWG. NAME: ELECTRICAL DETAILS
STANDARD DRAWING
FOR
POWERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY

CAD No: LV0460_C5 | SCALE: AS SHOWN | DWG No: C5

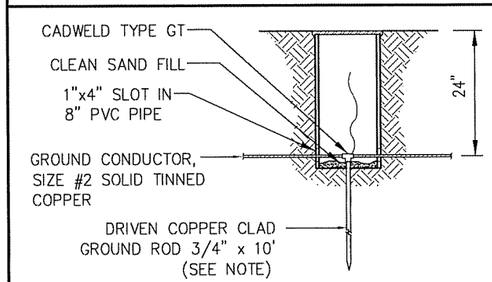


GROUNDING LAYOUT

(SCALE: 1" = 10'-0")

GENERAL NOTES:

1. GROUND RING TO EARTH SHALL BE 5 OHMS OR LESS. ADDITIONAL GROUND RODS MAY HAVE TO BE ADDED TO THE INITIAL 3/4"x10' RODS. USE TEMPORARY BOLTED CONNECTION TO ROD AND PERFORM GROUND RESISTANCE TEST.
2. ALL GROUNDING CONDUCTOR SWEEPS SHALL BE SMOOTH WITH NO SHARP BENDS (8" MIN. BEND RADIUS) SWEEPS SHALL BE CAD-WELDED TO GROUND RING WITH PARALLEL CADWELD.
3. ALL CADWELDS TO BURIED GROUND RING SHALL BE OF PARALLEL TYPE. NO "TEE" CONNECTIONS TO BE USED.
4. USE DE-OX OR NOALOX COMPOUND BETWEEN ALL GROUNDING LUG CONNECTIONS. DO NOT COVER LUGS OR HARDWARE WITH COMPOUND.
5. ALL MOUNTING & CONNECTING HARDWARE FOR GROUNDING TO BE STAINLESS STEEL ONLY, NO PLATED OR GALVANIZED HARDWARE IS TO BE USED.
6. GROUNDING CONDUCTORS TO BE BURIED A MINIMUM OF 30" DEEP UNLESS OTHERWISE SPECIFIED BY LOCAL CODE.
7. ALL GROUNDING CONDUCTORS TO BE BARE STRANDED, SOFT DRAWN COPPER UNLESS OTHERWISE SPECIFIED.
8. USE ONLY 2-HOLE CADWELD LUGS ON ENDS OF GROUNDING CONDUCTORS. DO NOT USE COMPRESSION OR MECHANICAL TYPE LUGS.



INSPECTION WELL DETAIL

VERIFY WITH PROJECT MANAGER FOR NUMBER AND LOCATIONS

CALL-OUT NOTES:

1. PROPOSED TOWER STRUCTURE GROUND RING.
2. CONNECT PROPOSED TOWER RING GROUND TO EQUIPMENT RING GROUND ON BOTH SIDES. KEEP INTERCONNECTING WIRING OF EQUAL LENGTH AND TYPE.
3. FENCE GROUND
4. RBS GROUND, TYP. 2 PLACES, MAIN RBS AND FUTURE. INSTALL: CONTRACTOR TO SUPPLY AND INSTALL LUG IN RBS (2102) AND ATTACH TO #2 STRAND COPPER TYPE THHN (GREEN) WIRE TO CONNECT RBS TO EXTERNAL GROUND RING. REMOVE INSULATION BELOW GRADE.
5. ELECTRICAL AND TELCO EQUIPMENT BUSS BARS.
6. REMOVE PAINT FROM SURFACE OF GENERATOR FRAME BEFORE ATTACHING GROUND CONNECTION. USE DE-OX COMPOUND BETWEEN FRAME AND LUG. AFTER TIGHTENING CONNECTION COVER AREA WITH SPRAY ZINC OR COLD GALVANIZING COMPOUND.
7. NEUTRAL – GROUND BOND AT SERVICE DISCONNECT.
8. MINIMUM SPACING OF EQUIPMENT GROUNDING FROM EQUIPMENT FOUNDATION, 24 INCHES MIN.
9. ICE BRIDGE & SERVICE BOARD POST GROUND, EACH POST TYP.
10. FUEL TANK GROUND

LEGEND

- EXISTING TOWER GROUND RING
- #2 SOLID TINNED COPPER GROUND CONDUCTOR UNLESS OTHERWISE SPECIFIED.
- EXOTHERMIC WELD CONNECTION
- 3/4" x 10' COPPER CLAD STEEL GROUND ROD UNLESS OTHERWISE SPECIFIED.
- #2 SOLID TINNED COPPER FROM EQUIPMENT OR STEEL TO GROUND RING UNLESS OTHERWISE SPECIFIED

PORTIONS OF SITE LAYOUT HAVE BEEN REMOVED FOR CLARITY. REFER TO SHEET C1 FOR COMPLETE SITE LAYOUT

NOTE: CONTRACTOR TO VERIFY ALL PROPOSED UTILITIES BEFORE DIGGING

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER SEAL

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APPROVED BY: DATE:

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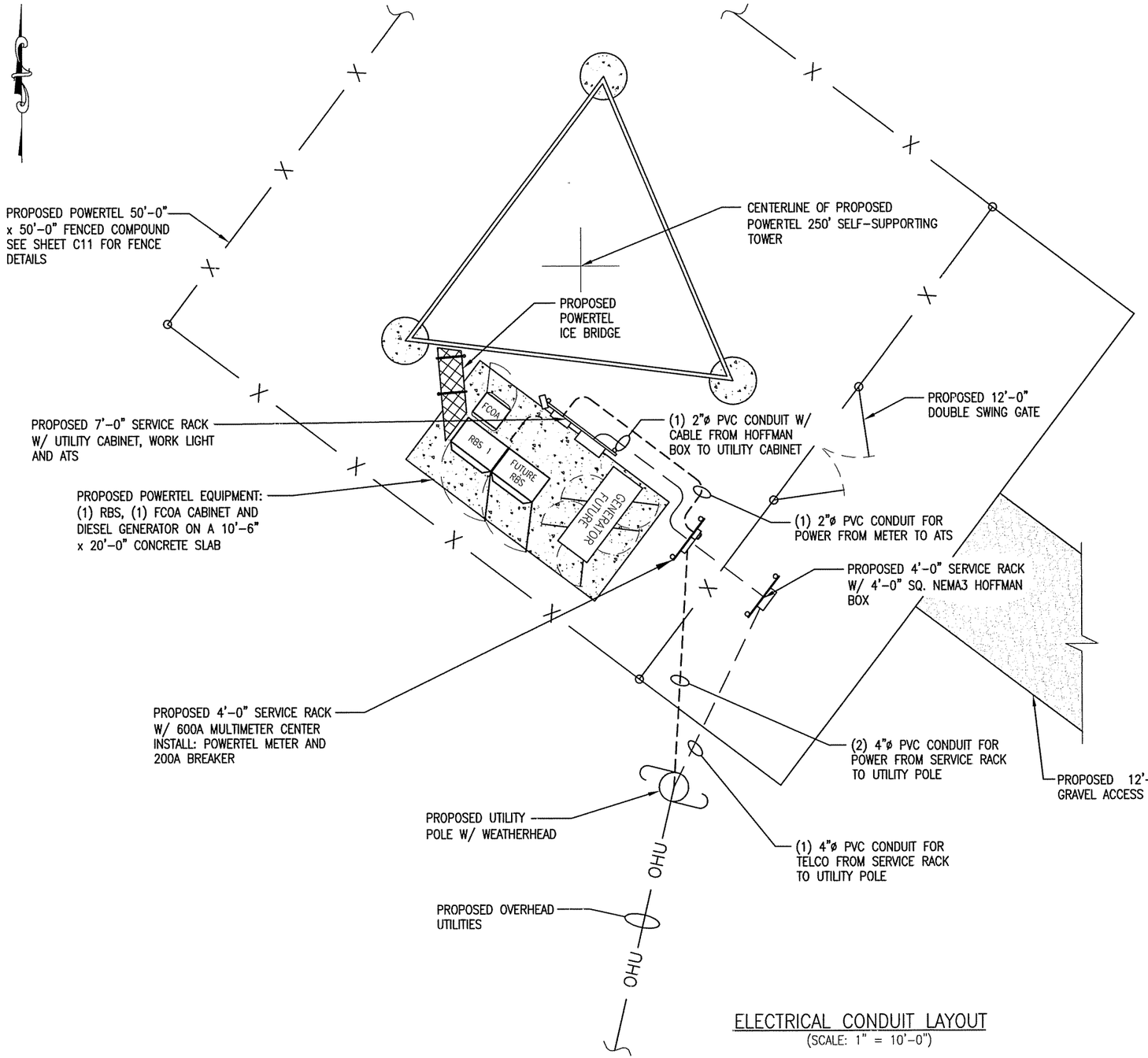
ENGINEERING AND CONSULTING
209 LINDEN STREET
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

DWG. NAME: GROUNDING LAYOUT
9LV0460D SITE: REED
OWENSBORO, KENTUCKY
FOR
POWERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY

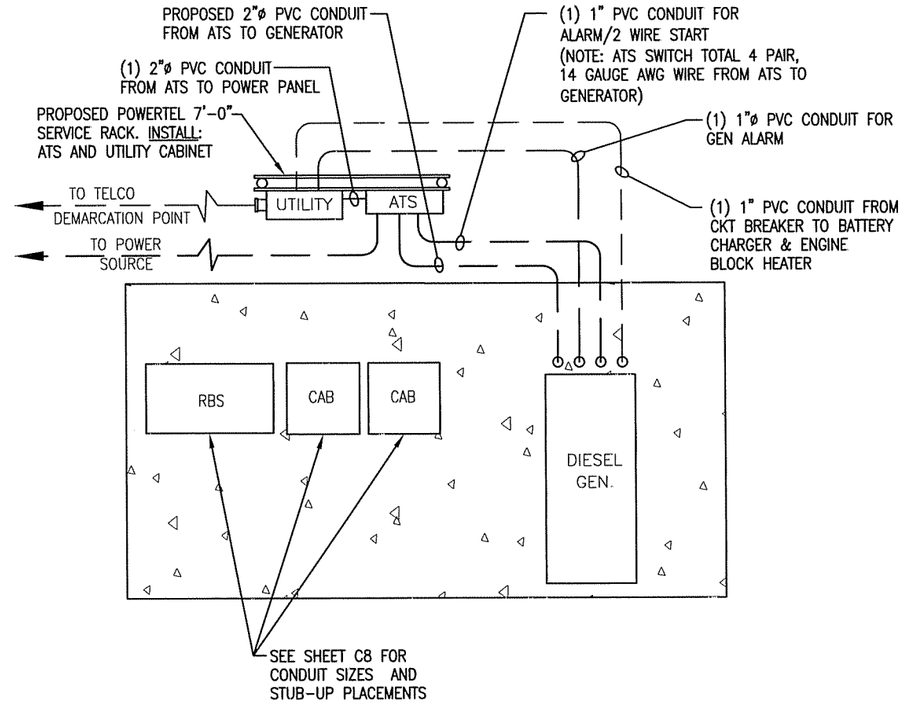
CAD No: LV0460_C6 SCALE: AS SHOWN DWG No. C6



ELECTRICAL CONDUIT LAYOUT
(SCALE: 1" = 10'-0")

NOTES:

1. THIS INSTALLATION SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE AND ANY APPLICABLE LOCAL CODES AND ORDINANCES. SEE LOCAL AUTHORITIES FOR ANY REQUIREMENTS BEYOND THESE LISTED.
2. CONTRACTOR SHALL PROVIDE ALL MATERIALS NECESSARY FOR 200 AMP SERVICE.
3. THE LOCAL UTILITY WILL MAKE THE SERVICE CONNECTIONS.
4. CONTRACTOR TO INSTALL 8 PAIR, 24 GAUGE, (16 WIRES) FOR ALARMS.
5. CONTRACTOR TO EXTEND T-1 FROM HOFFMAN BOX TO PPC.



CONDUIT LAYOUT DETAIL
(N.T.S.)

NOTE: CONTRACTOR TO VERIFY ALL EXISTING UTILITIES BEFORE DIGGING

NOTE:
BOUNDARY AND SITE FEATURES ARE BASED ON FIELD MEASUREMENTS. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THIS DRAWING.

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER SEAL

ITEM	REVISIONS	BY	CHK. BY	DATE

DRAWN BY: J.E. STEGER — DATE: 12-23-08
CHECKED BY: T.L. HARDY — DATE: 12-23-08
APPROVED BY: — DATE:

HARDY ENGINEERING, INC.
ENGINEERING AND CONSULTING
209 LINDEN STREET, P.O. BOX 708
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

DWG. NAME: ELECTRICAL CONDUIT LAYOUT
9LV0460DSITE: REED
OWENSBORO, KENTUCKY
FOR
POWERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY

CAD No: LV0460_C7 | SCALE: AS SHOWN | DWG No: C7

PANEL MOUNTING
200 AMP MAIN BREAKER 10 KAIC

PANEL PNL

200 AMP BUS
120 / 240 VOLT 1 PHASE 3 WIRE

CIRCUIT NUMBER	DIRECTORY	VA ØA	VA ØB	DEVICE MISC	DEVICE R'CEPT	DEVICE LTG	BKR TRIP	BKR POLE	PHASE A B	BKR POLE	BKR TRIP	DEVICE LTG	DEVICE R'CEPT	DEVICE MISC	VA ØA	VA ØB	DIRECTORY	CIRCUIT NUMBER
1	TVSS SURGE PROTECTOR	0					60	2		1	15				400		INSIDE & OUTSIDE GFI R'CEPT	2
3			0															4
5	COOLING FAN	200					10	1		2	50						SPARE	6
7	OUTSIDE LIGHT		400				20	1										8
9	BLANK									2	50						SPARE	10
11	BLANK																BLANK	12
13	BLANK																BLANK	14
15	BLANK																BLANK	16
17	BLANK																BLANK	18
19	BLANK																BLANK	20
21	BLANK																BLANK	22
23	BLANK																BLANK	24
25	BLANK																BLANK	26
27	BLANK																BLANK	28
29	BLANK																BLANK	30
		200	400												400	0		

CONNECTED LOAD (VA)
PHASE A 600
PHASE B 400

TOTAL CONNECTED LOAD = 1.0 KVA = 4.2 AMPS

CASE 1 – 0 CABINETS INSTALLED

PANEL MOUNTING
200 AMP MAIN BREAKER 10 KAIC

PANEL PNL

200 AMP BUS
120 / 240 VOLT 1 PHASE 3 WIRE

CIRCUIT NUMBER	DIRECTORY	VA ØA	VA ØB	DEVICE MISC	DEVICE R'CEPT	DEVICE LTG	BKR TRIP	BKR POLE	PHASE A B	BKR POLE	BKR TRIP	DEVICE LTG	DEVICE R'CEPT	DEVICE MISC	VA ØA	VA ØB	DIRECTORY	CIRCUIT NUMBER
1	TVSS SURGE PROTECTOR	0					60	2		1	15				400		INSIDE & OUTSIDE GFI R'CEPT	2
3			0													4800	RBS-1	4
5	COOLING FAN	200					10	1		2	50				4800			6
7	OUTSIDE LIGHT		400				20	1									SPARE	8
9	BLANK									2	50							10
11	BLANK																BLANK	12
13	BLANK																BLANK	14
15	BLANK																BLANK	16
17	BLANK																BLANK	18
19	BLANK																BLANK	20
21	BLANK																BLANK	22
23	BLANK																BLANK	24
25	BLANK																BLANK	26
27	BLANK																BLANK	28
29	BLANK																BLANK	30
		200	400												5200	4800		

CONNECTED LOAD (VA)
PHASE A 5400
PHASE B 5200

TOTAL CONNECTED LOAD = 10.6 KVA = 44.2 AMPS

CASE 2 – 1 CABINET INSTALLED

PANEL MOUNTING
200 AMP MAIN BREAKER 10 KAIC

PANEL PNL

200 AMP BUS
120 / 240 VOLT 1 PHASE 3 WIRE

CIRCUIT NUMBER	DIRECTORY	VA ØA	VA ØB	DEVICE MISC	DEVICE R'CEPT	DEVICE LTG	BKR TRIP	BKR POLE	PHASE A B	BKR POLE	BKR TRIP	DEVICE LTG	DEVICE R'CEPT	DEVICE MISC	VA ØA	VA ØB	DIRECTORY	CIRCUIT NUMBER
1	TVSS SURGE PROTECTOR	0					60	2		1	15				400		INSIDE & OUTSIDE GFI R'CEPT	2
3			0													4800	RBS-1	4
5	COOLING FAN	200					10	1		2	50				4800			6
7	OUTSIDE LIGHT		400				20	1								4800	RBS-2	8
9	BLANK									2	50				4800			10
11	BLANK															4800	RBS-3	12
13	BLANK														4800			14
15	BLANK																BLANK	16
17	BLANK																BLANK	18
19	BLANK																BLANK	20
21	BLANK																BLANK	22
23	BLANK																BLANK	24
25	BLANK																BLANK	26
27	BLANK																BLANK	28
29	BLANK																BLANK	30
		200	400												14800	14400		

CONNECTED LOAD (VA)
PHASE A 15000
PHASE B 14800

TOTAL CONNECTED LOAD = 29.8 KVA = 124.2 AMPS

CASE 4 – 3 CABINETS INSTALLED

CIRCUIT NUMBER	DIRECTORY	VA ØA	VA ØB	DEVICE MISC	DEVICE R'CEPT	DEVICE LTG	BKR TRIP	BKR POLE	PHASE A B	BKR POLE	BKR TRIP	DEVICE LTG	DEVICE R'CEPT	DEVICE MISC	VA ØA	VA ØB	DIRECTORY	CIRCUIT NUMBER
1	TVSS SURGE PROTECTOR	0					60	2		1	15				400		INSIDE & OUTSIDE GFI R'CEPT	2
3			0													4800	RBS-1	4
5	COOLING FAN	200					10	1		2	50				4800			6
7	OUTSIDE LIGHT		400				20	1								4800	RBS-2	8
9	BLANK									2	50				4800			10
11	BLANK															4800	RBS-3	12
13	BLANK														4800			14
15	BLANK																BLANK	16
17	BLANK																BLANK	18
19	BLANK																BLANK	20
21	BLANK																BLANK	22
23	BLANK																BLANK	24
25	BLANK																BLANK	26
27	BLANK																BLANK	28
29	BLANK																BLANK	30
		200	400												10000	9600		

CONNECTED LOAD (VA)
PHASE A 10200
PHASE B 10000

TOTAL CONNECTED LOAD = 20.2 KVA = 84.2 AMPS

CASE 3 – 2 CABINETS INSTALLED

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER SEAL

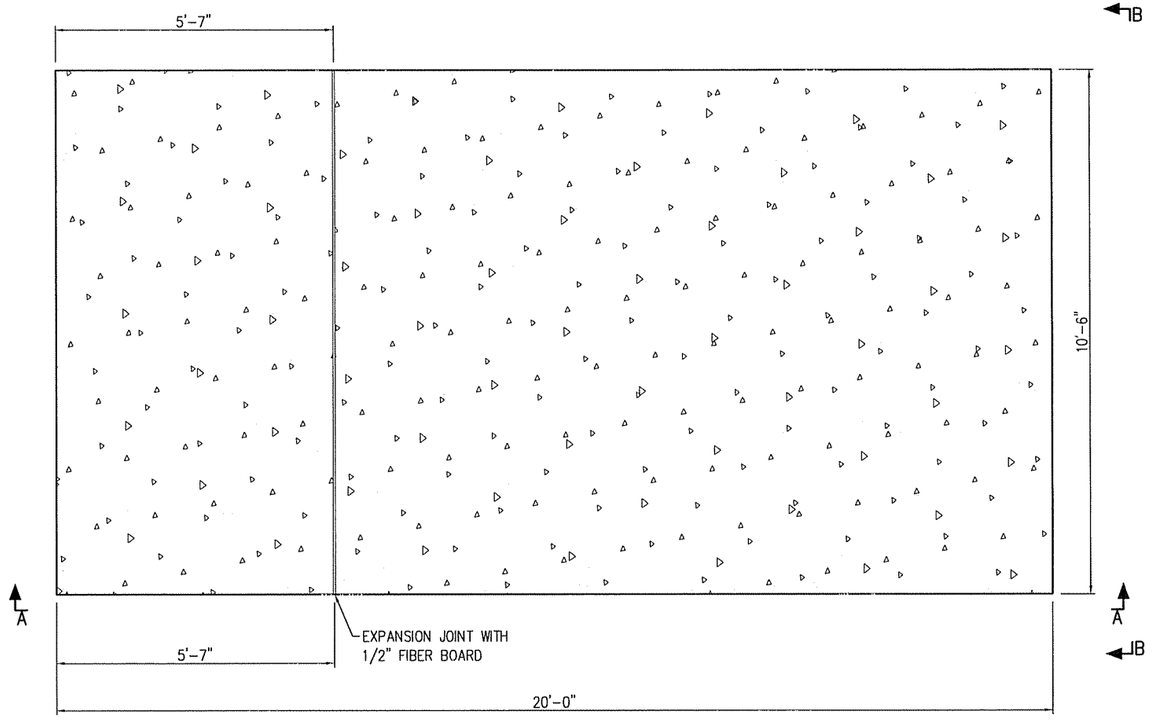
ITEM	REVISIONS	BY	CHK BY	DATE

DRAWN BY: J.E. STEGER DATE: 12-23-08
CHECKED BY: T.L. HARDY DATE: 12-23-08
APPROVED BY: DATE:

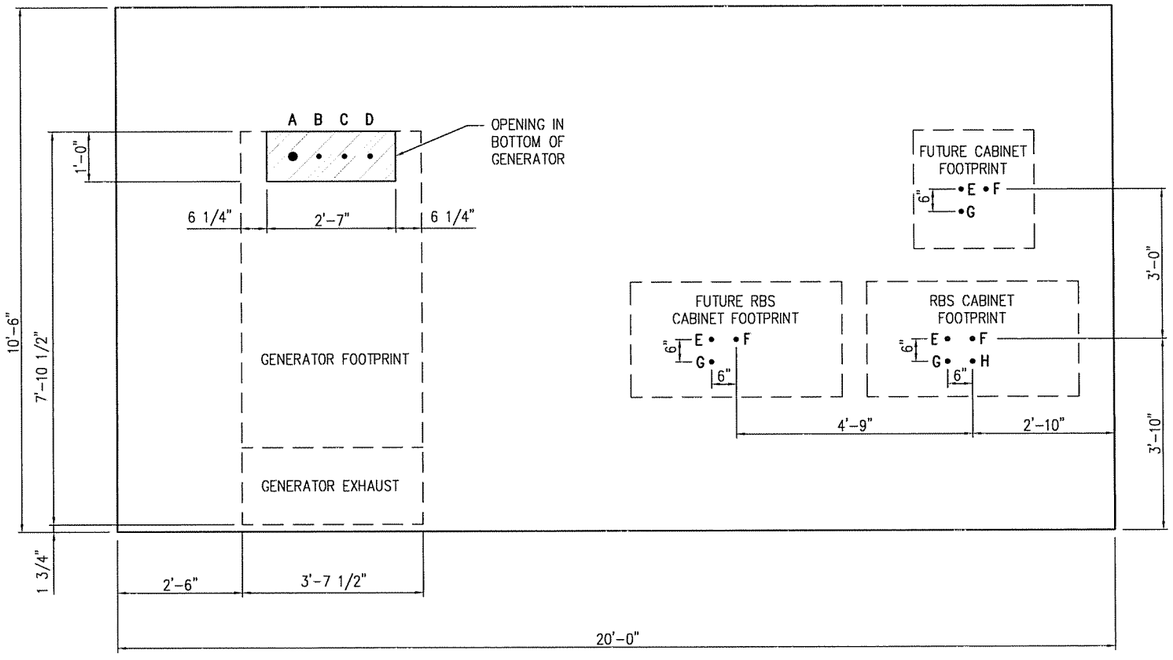
HARDY ENGINEERING, INC.
ENGINEERING AND CONSULTING
209 LINDEN STREET, P.O. BOX 708
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

DWG. NAME: PANEL BOARD CALCULATIONS
STANDARD DRAWING
FOR
POWERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY
CAD No: LV0460_C7.1 SCALE: AS SHOWN DWG. No. C7.1

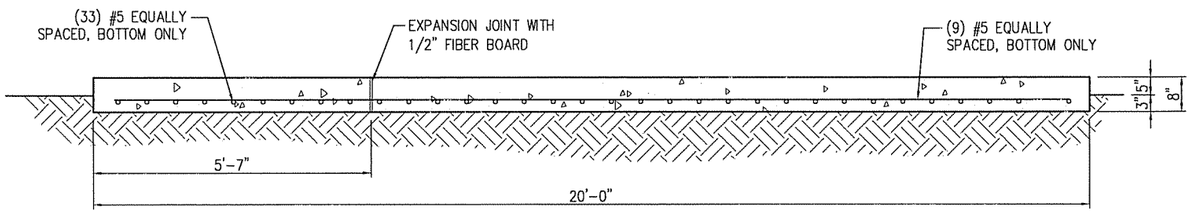
CONDUIT SCHEDULE				
CONDUIT	SIZE (IN.)	FROM	TO	DESCRIPTION
A	2"	GENERATOR	ATS	POWER
B	1"	GENERATOR	UTILITY BOX	BATTERY CHARGER / ENGINE BLOCK HEATER
C	1"	GENERATOR	ATS	ALARMS / 2 WIRE START
D	1"	GENERATOR	UTILITY BOX	ALARMS
E	2"	RADIO CABINET	UTILITY BOX	POWER
F	2"	RADIO CABINET	UTILITY BOX	25 PAIR CABLE / ALARMS
G	1"	RADIO CABINET	UTILITY BOX	ALARMS
H	1"	RADIO CABINET	UTILITY BOX	DC POWER



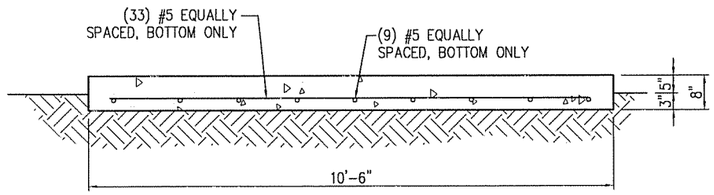
PLAN VIEW
(CONCRETE SLAB)



PLAN VIEW
(GENERATOR AND EQPT PAD)



SECTION A–A



SECTION B–B

STATE OF KENTUCKY
TIMOTHY L.
HARDY
20374
REGISTERED
PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER SEAL

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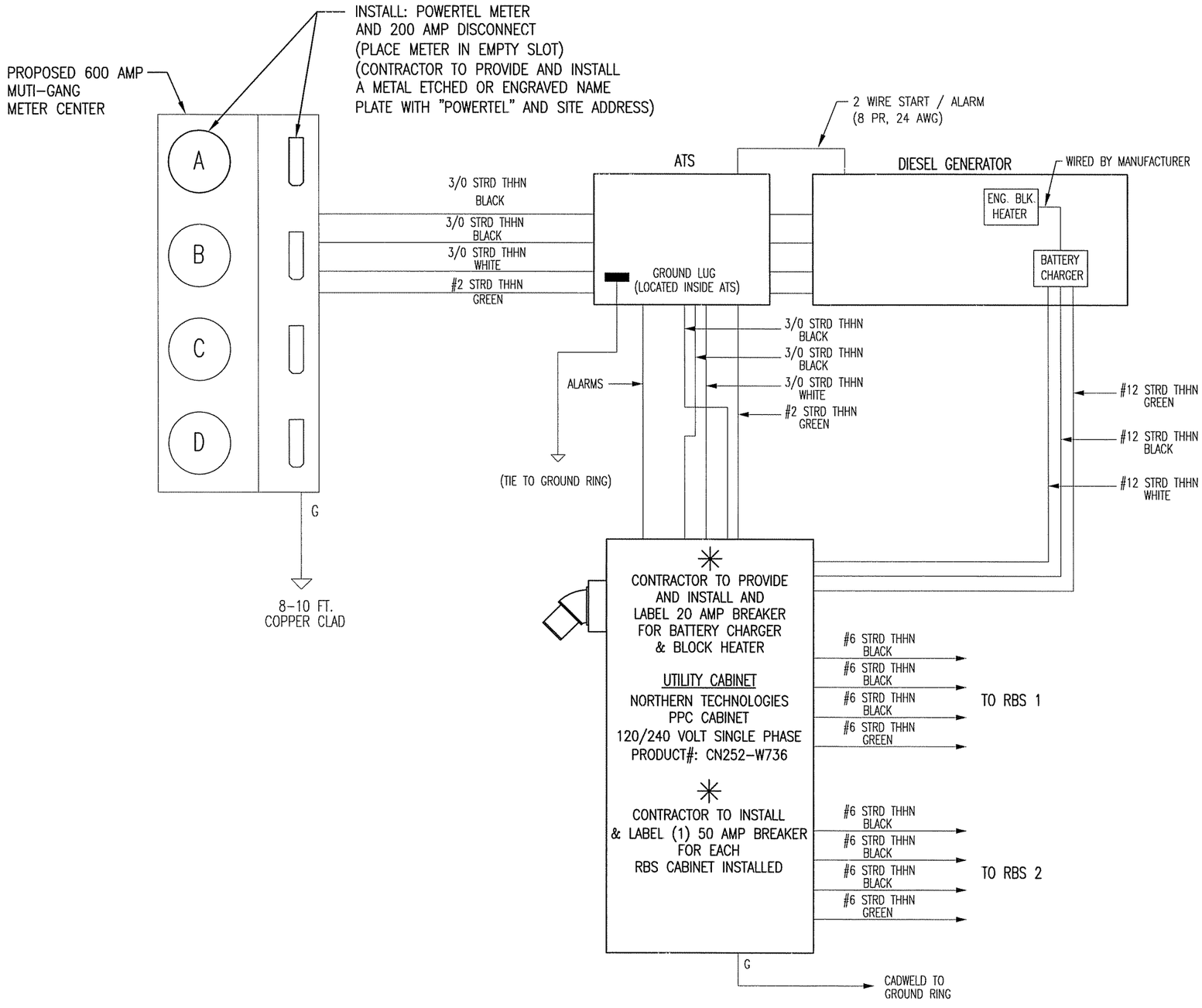
HARDY ENGINEERING, INC.
ENGINEERING AND CONSULTING
209 LINDEN STREET, P.O BOX 708
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

DWG. NAME: CONCRETE FOUNDATION DETAILS

STANDARD DRAWING
FOR
POWERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY

CAD No: LV0460_C8 | SCALE: NONE | DWG No. C8



NOTE 1: WHEN INSTALLING TVSS UNIT, USE 3" LONG 1-1/4" CLOSE NIPPLE. USE LOWEST MOST BREAKER POSITIONS FOR 2P-60A BREAKER AND KEEP ALL WIRING TO TVSS AS SHORT AND DIRECT AS POSSIBLE NO SHARP WIRING BENDS.

NOTE 2: ALL FLEXIBLE OR SEALTITE CONDUITS ARE TO BE METALLIC TYPE ONLY.

NOTE 3: ALL ELECTRICAL NEUTRAL AND GROUNDING CONDUCTORS ARE TO BE SAME SIZE AS CURRENT CARRYING CONDUCTORS.

NOTE 4: USE A GROUNDING BUSHING ON ALL CONDUITS THAT ENTER LOAD CENTERS, GENERATOR AND TELCO ENCLOSURE.

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER SEAL

ITEM	REVISIONS	BY	CHK. BY	DATE

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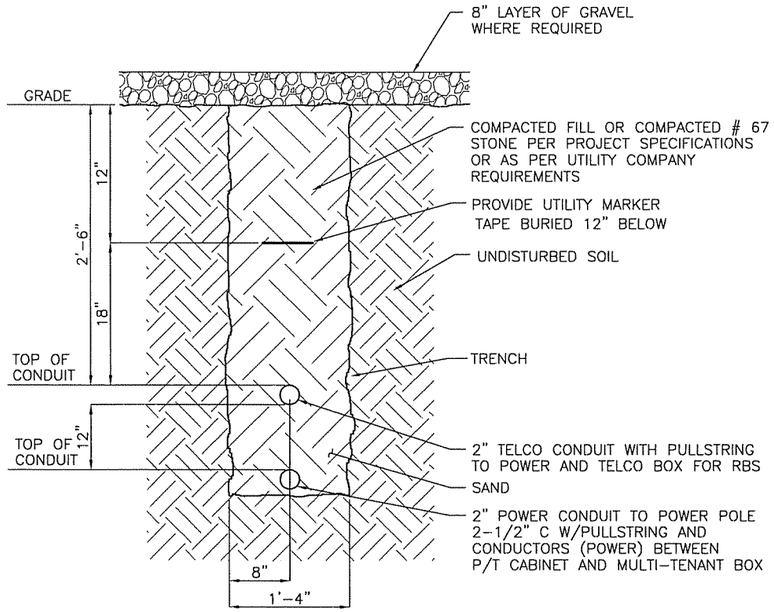
ENGINEERING AND CONSULTING
209 LINDEN STREET, P.O. BOX 708
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

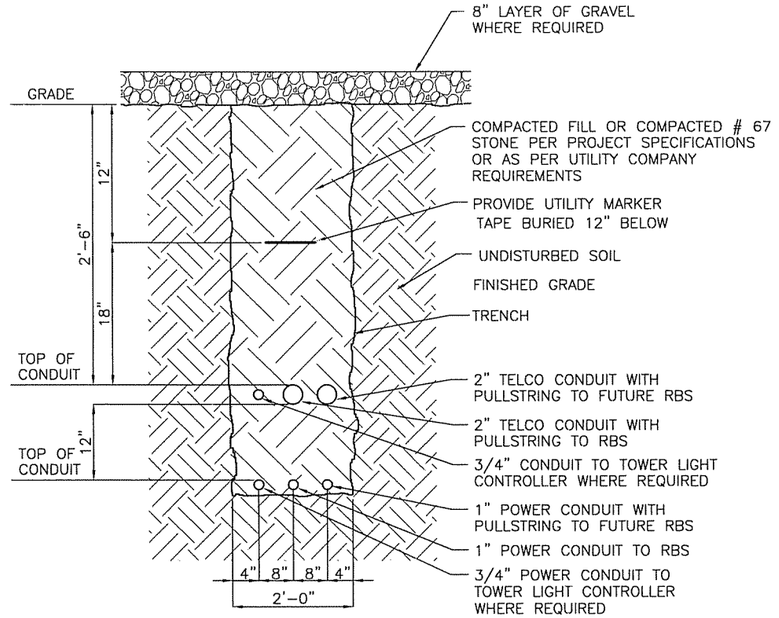
DWG. NAME: WIRING DIAGRAM
STANDARD DRAWING
FOR
POWERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY

CAD No: LV0460_C9 | SCALE: NOT TO SCALE | DWG. No. C9



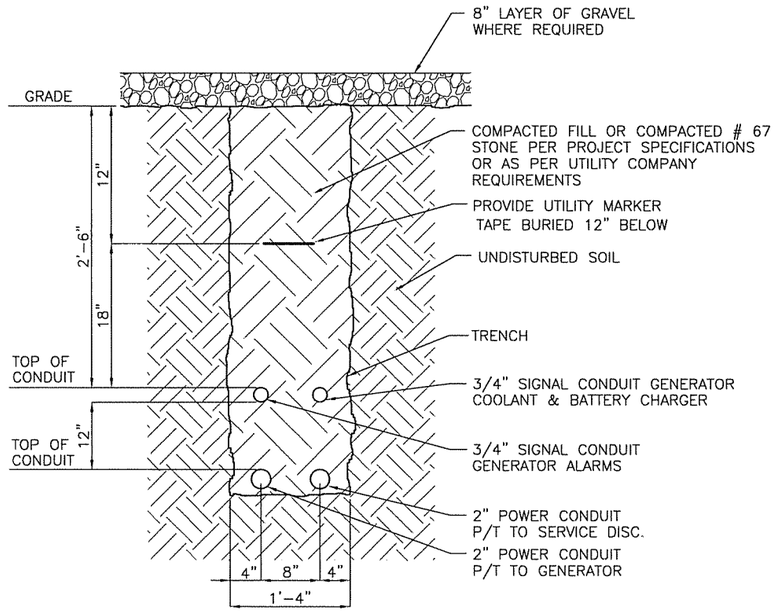
UTILITY TRENCH SECTION

(NOT TO SCALE)



UTILITY TRENCH SECTION

(NOT TO SCALE)



UTILITY TRENCH SECTION

(NOT TO SCALE)

NOTE: ALL BACKFILL IN TRENCH TO BE MECHANICALLY COMPACTED IN LIFTS OF 6 INCHES.

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER SEAL

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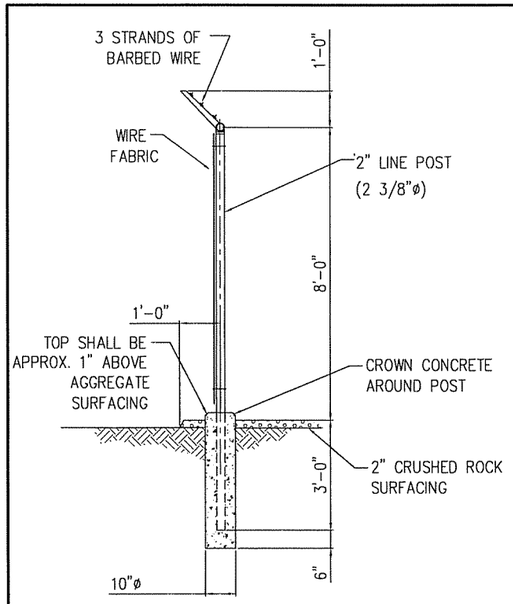
ENGINEERING AND CONSULTING
209 LINDEN STREET
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

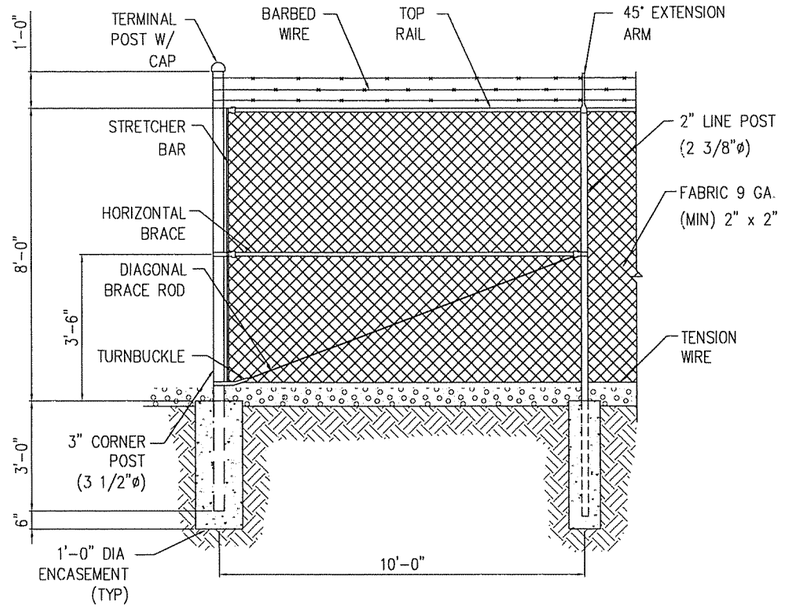
DWG. NAME: UTILITY TRENCH DETAIL

STANDARD DRAWING
FOR
POWERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY

CAD No: LV0460_C10 SCALE: NONE DWG. No. C10

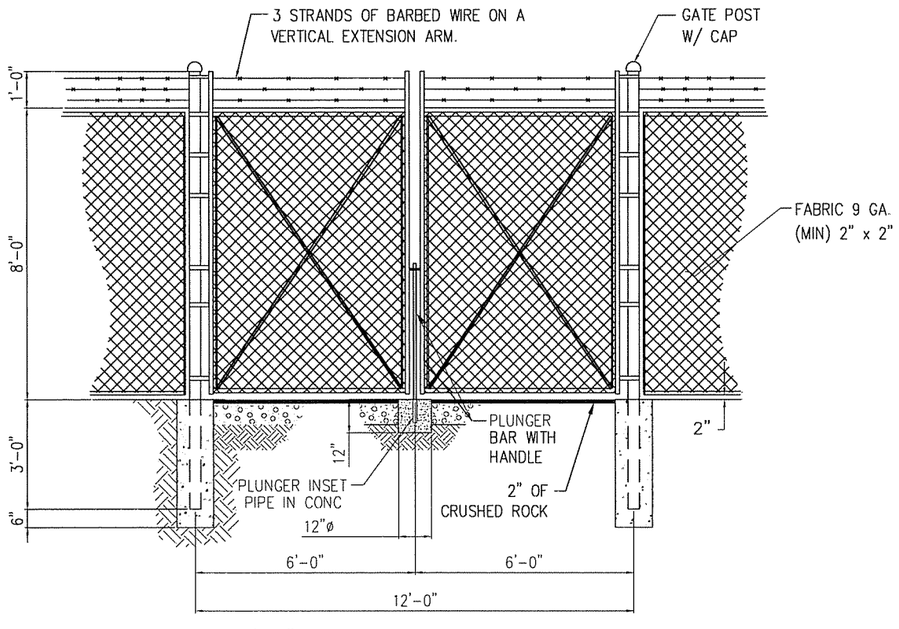


TYPICAL FENCE POST



TYPICAL CORNER POST DETAIL

NOT TO SCALE



12'-0" DOUBLE SWING GATE DETAIL

FENCE TYPE:

SHALL CONSIST OF GALVANIZED STEEL FRAMEWORK AND GALVANIZED STEEL FABRIC WITH A HEIGHT OF 8 FEET AND AN OVERALL HEIGHT OF 9 FEET FROM THE BOTTOM OF THE FABRIC TO THE TOP BARBED WIRE. THE FENCE SHALL HAVE A TOP RAIL, BOTTOM TENSION WIRE, AND THREE STRANDS OF BARBED WIRE MOUNTED ON VERTICAL EXTENSION ARMS. THE UPPER STRAND SHALL BE APPROXIMATLEY 12 INCHES ABOVE THE TOP OF THE FABRIC. POSTS SALL BE SET IN CONCRETE OR IN SLEEVES AS DETAILED.

MATERIALS:

MATERIALS FOR CHAIN LINK FENCING SHALL BE AS FOLLOWS. ALL STEEL OR MALLEABLE IRON PARTS AND ACCESSORIES FOR FRAMEWORK SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH RESIDENTIAL STANDARDS:

FABRIC: RESIDENTIAL FABRIC 11-1/2 GAUGE, 2 1/4 INCH MESH; GALVANIZED ASTM A392, CLASS 2; TWISTED SELVAGE ON TOP, KNUCKLED SELVAGE ON BOTTOM.

COMMERCIAL POST: LINE POST ARE 2ø INCH, SCH. 40, 2 1/2 O.D. PIPE
TERMINAL POSTS (END, CORNER, AND PULL) ARE 2-1/2ø INCH, SCH. 40, 2-7/8 INCH O.D. PIPE
GATE POST (SWING POSTS) ARE GATE OR LEAF 6ft OR LESS, 2-1/2ø INCH, SCH. 40, 2-7/8 INCH O.D. PIPE
GATE OR LEAF OVER 6ft WIDE AND UP TO 13ft, 3-1/2ø INCH, SCH. 40, 4 INCH O.D. PIPE
TOP RAILS ARE 1-5/8 INCH OD (17 GAUGE) PIPE.

MATERIALS: RAIL COUPLINGS: SLEEVE TPE, 6 INCHES EXPANSION SPRING IN EVERY FIFTH COUPLING.
BRACING: PIPE BRACE SAME AS TOP RAIL , WITH 3/8 INCH DIAMETER STEEL ROD TRUSS AND TIGHTENER
POST TOPS: PRESSED STEEL, MALLEABLE IRON WITH PRESSED STEEL EXTENSION ARM, OR ONE-PIECE ALUMINUM CASTING; WITH HOLE FOR TOP RAIL, DESIGNED TO FIT OVER THE OUTSIDE OF THE POST AND TO PREVENT ENTRY OF MOISTURE INTO TUBULAR POST. BARBED WIRE: GALVANIZED, ASTM A121 CLASS 3; THREE 14 GAUGE MINIMUM STEEL WIRES WITH 4 POINT ROUND 14 GAUGE BARBS SPACED 4 INCHES APART.
STRETCHER BARS: STEEL, 3/16 BY 3/4 INCH, OR EQUIVALENT CROSS-SECTIONAL AREA.
FABRIC TIES: ALUMINUM BANDS AND WIRES.
GATE FRAMES: 1-1/2ø INCH, SCH. 40, 1-7/8 INCH OD PIPE.
TENSION WIRE: GALVANIZED OR ALUMINUM COATED COIL SPRING WIRE, 7 GAUGE.

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER SEAL

ITEM	REVISIONS	BY	CHK. BY	DATE

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HARDY ENGINEERING, INC.
ENGINEERING AND CONSULTING
209 LINDEN STREET, P.O. BOX 708
TRUSSVILLE, AL 35173
PHONE: (205) 655-1427 FAX: (205) 661-9027

DWG. NAME: FENCE DETAILS
STANDARD DRAWING
FOR
POERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY

CAD No: LV0460_C11 | SCALE: AS SHOWN | DWG. No. C11

INSTALLATION:

1. THE FENCE SHOULD BE PLACED ACROSS THE SLOPE ALONG A LINE OF UNIFORM ELEVATION (PERPENDICULAR TO THE DIRECTION OF THE FLOW). THE FENCE SHOULD BE LOCATED AT LEAST 10'–0" FROM THE TOE OF STEEP SLOPES TO PROVIDE SEDIMENT STORAGE AND ACCESS FOR MAINTENANCE AND CLEANOUT.

2. A FLAT–BOTTOM TRENCH APPROXIMATELY 4" WIDE AND 8" DEEP, OR A V–SHAPED TRENCH 8" DEEP SHOULD BE EXCAVATED. ON THE DOWN SLOPE SIDE OF THE TRENCH, DRIVE THE 2" x 2" WOOD POSTS AT LEAST 18" INTO THE GROUND, SPACING THEM **NO FURTHER THAN 6'–0" APART.**

3. POSTS SHOULD BE INSTALLED, WITH 1" TO 2" OF THE POST PROTRUDING ABOVE THE TOP OF THE FABRIC AND NO MORE THAN 3'–0" OF THE POST SHOULD PROTRUDE ABOVE THE GROUND. THE MINIMUM FENCE HEIGHT (HEIGHT OF FILTER FABRIC ABOVE GRADE) SHALL BE 18". THE MAXIMUM FENCE HEIGHT (HEIGHT OF FILTER FABRIC ABOVE GRADE) SHALL BE 24 INCHES.

4. THE FILTER FABRIC SHOULD BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHOULD BE WRAPPED TOGETHER ONLY AT A SUPPORT POST WITH BOTH ENDS SECURELY FASTENED TO THE POST, WITH A MINIMUM 6" OVERLAP.

5. EXTRA–STRENGTH FILTER CLOTH (50 POUNDS / LINEAR INCH MINIMUM TENSILE STRENGTH) SHOULD BE USED. A 2" WIDE LATHE SHALL BE STAPLED OVER THE FILTER FABRIC TO SECURELY FASTEN IT TO THE UPSLOPE SIDE OF THE POSTS. THE STAPLES USED SHOULD BE 1.5" HEAVY–DUTY WIRE STAPLES SPACED A MAXIMUM OF 8" APART.

6. PLACE THE BOTTOM 12" OF THE FILTER FABRIC INTO THE 8" DEEP TRENCH, EXTENDING THE REMAINING 4" TOWARDS THE UPSIDE OF THE TRENCH AND BACK FILL THE TRENCH WITH SOIL OR GRAVEL AND COMPACTED.

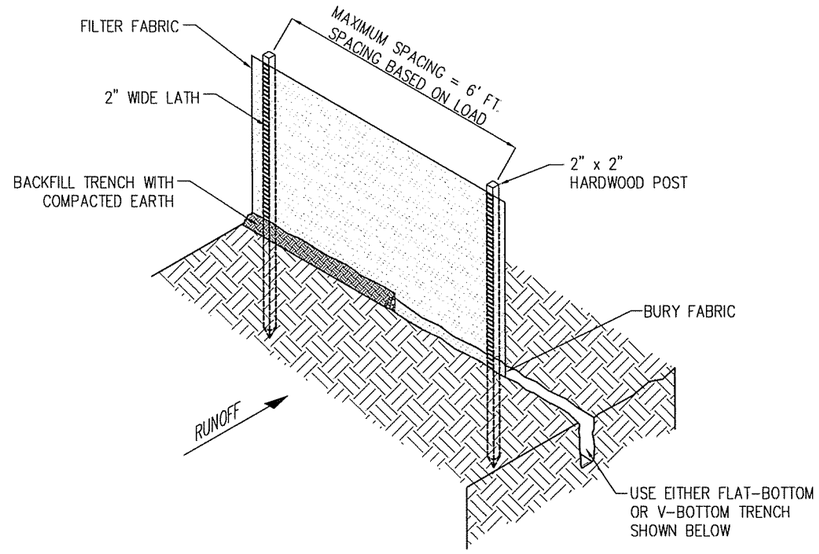
INSPECTION AND MAINTENANCE:

1. INSPECT SILT FENCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24–HOURS AFTER EACH RAINFALL EVENT THAT PRODUCES 1/2" OR MORE OF PRECIPITATION. CHECK FOR AREAS WHERE RUNOFF HAS ERODED A CHANNEL BENEATH THE FENCE, OR WHERE THE FENCE WAS CAUSED TO SAG OR COLLAPSE BY RUNOFF OVER TOPPING THE FENCE.

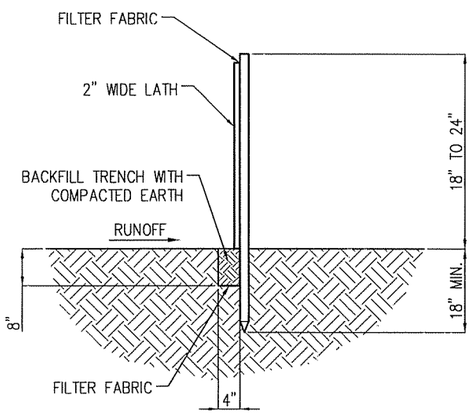
2. IF THE FENCE FABRIC TEARS, BEGINS TO DECOMPOSE, OR IN ANY OTHER WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED SECTION OF FENCE IMMEDIATELY.

3. SEDIMENT MUST BE REMOVED WHEN IT REACHES APPROXIMATELY 1/3 THE HEIGHT OF THE FENCE, ESPECIALLY IF HEAVY RAINS ARE EXPECTED.

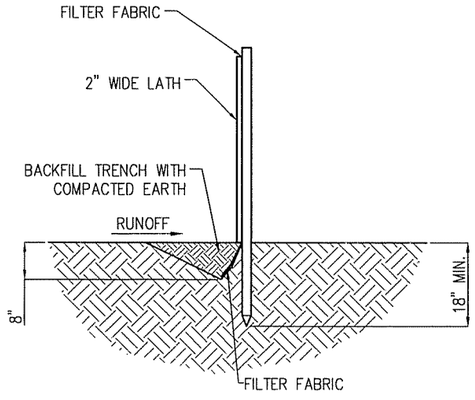
4. SILT FENCE SHOULD BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER TEMPORARY BMPs ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHOULD BE REMOVED OR STABILIZED ON SITE. DISTURBED AREAS RESULTING FROM FENCE REMOVAL SHALL BE PERMANENTLY STABILIZED.



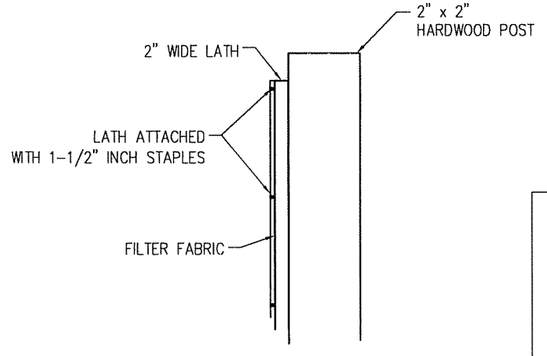
SILT FENCE INSTALLATION



FLAT–BOTTOM TRENCH DETAIL



V–SHAPED TRENCH DETAIL



FABRIC ATTACHMENT DETAIL

STATE OF KENTUCKY
TIMOTHY L. HARDY
20374
REGISTERED PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER SEAL

ITEM	REVISIONS	BY	CHK. BY	DATE

DRAWN BY: J.E. STEGER — DATE: 12–23–08
CHECKED BY: T.L. HARDY — DATE: 12–23–08
APPROVED BY: — DATE:

HARDY ENGINEERING, INC.
ENGINEERING AND CONSULTING
209 LINDEN STREET, P.O. BOX 708
TRUSSVILLE, AL 35173
PHONE: (205) 655–1427 FAX: (205) 661–9027

DWG. NAME: SILT FENCE DETAILS & NOTES

STANDARD DETAILS
FOR
POWERTEL / MEMPHIS, INC.
LOUISVILLE, KENTUCKY

CAD No: LV0460_C12 | SCALE: NTS | DWG No. C12

SHEET 1

S1/1 – VICINITY AND 500' STRUCTURAL MAP

S1/2 – U.S.G.S. QUAD MAP

SHEET 2

S2/1 – ABUTTING PROPERTY OWNERS

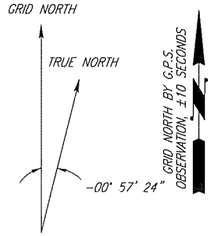
SHEET 3

S3/1 – PROPOSED LEASE AREA

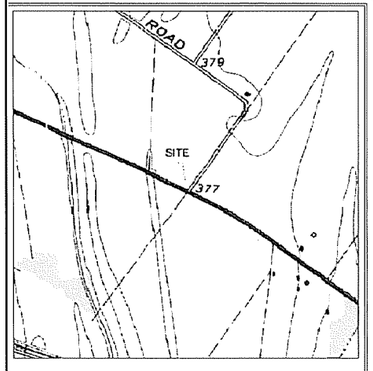
S3/2 – LEGAL DESCRIPTIONS

S3/3 – FLOOD ZONE DATA

* ADJOINING LAND OWNERS LISTED ARE BASED ON PROPERTY VALUATION ADMINISTRATION ("PVA") RECORDS ISSUED BY A REPRESENTATIVE FROM **HENDERSON** COUNTY, TO BE IN COMPLIANCE WITH ALL STATUTORY AND REGULATORY REQUIREMENTS BEFORE THE KENTUCKY PUBLIC SERVICE COMMISSION AND FOR TELECOMMUNICATION USE ONLY.

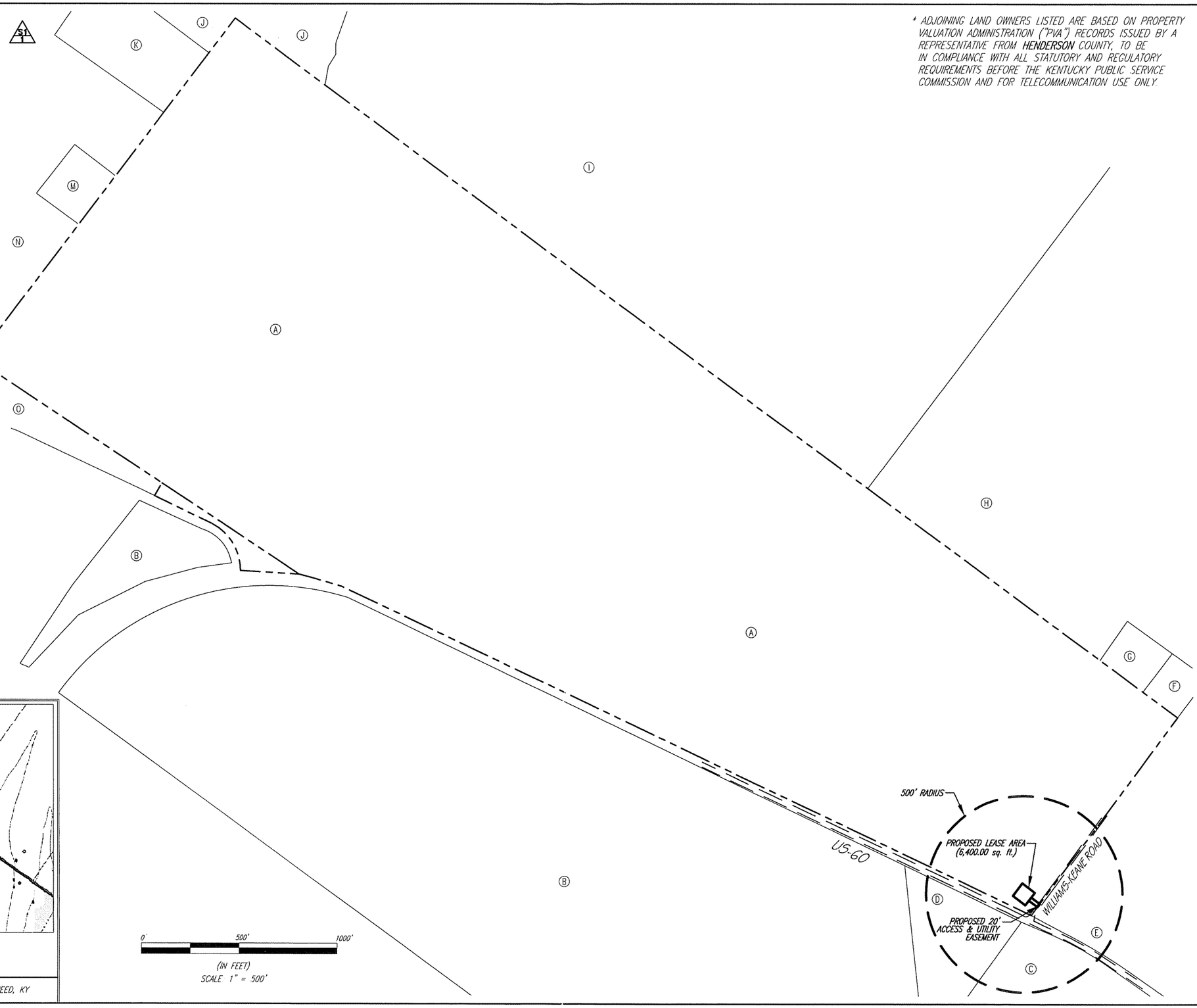


NORTH IS BASED ON THE KENTUCKY STATE PLANE COORDINATE SYSTEM, SOUTH ZONE AND WAS DETERMINED BY COMPUTATION FROM G.P.S. OBSERVATION ON DECEMBER 4, 2008.



S1/2 QUAD MAP
SCALE: 1"=2000'

U.S.G.S. 7 1/2 MINUTE QUAD MAP OF REED, KY



0' 500' 1000'

(IN FEET)
SCALE 1" = 500'

T··Mobile·

F.S. Land Company
T. Alan Neal Company
Land Surveyors and Consulting Engineers
PO Box 17546 2313/2315 Crittenden Drive
Louisville, KY 40217
Phone: (502) 635-5866 (502) 636-5111
Fax: (502) 636-5263

"SITE SURVEY"

SITE NUMBER:
9LV0460D

SITE NAME:
REED

SITE ADDRESS:
HWY 60
OWENSBORO, KY 42301

PROPOSED LEASE AREA
AREA = 6,400 sq. ft

PROPERTY OWNER:
H. GLEN WILLIAMS (1/2 INTEREST)
JUDITH B. WILLIAMS (1/2 INTEREST)
24335 HWY 811
OWENSBORO, KY 42301

TAX MAP NUMBER:
119

PARCEL NUMBER:
16

SOURCE OF TITLE:
DEED BOOK 553, PAGE 146

DWG BY:
DSA

CHKD BY:
FSII

DATE:
12.17.08

FSTAN PROJECT NO:
08-5785

REVISIONS:

C1

SHEET 1

S1/1 – VICINITY AND 500' STRUCTURAL MAP

S1/2 – U.S.G.S. QUAD MAP

SHEET 2

S2/1 – ABUTTING PROPERTY OWNERS

SHEET 3

S3/1 – PROPOSED LEASE AREA

S3/2 – LEGAL DESCRIPTIONS

S3/3 – FLOOD ZONE DATA

S2/1

Ⓐ MAP NO. 119, LOT 16
WILLIAMS, GLENN H. 1/2 INTEREST
WILLIAMS, JUDITH B. 1/2 INTEREST
24335 HWY 811
OWENSBORO, KY 42301
DEED BOOK 553, PAGE 146
ZONING: AG

Ⓑ MAP NO. 119, LOT 06
WILLIAMS, GLENN H. 1/2 INTEREST
WILLIAMS, JUDITH B. 1/2 INTEREST
24335 HWY 811
OWENSBORO, KY 42301
DEED BOOK 553, PAGE 146
ZONING: AG

Ⓒ MAP NO. 119, LOT 08
MULLICAN, GREGORY J. & KIMBERLY
1120 LYDDANE BRIDGE RD.
OWENSBORO, KY 42301
DEED BOOK 530, PAGE 855
ZONING: AG

Ⓓ MAP NO. 119, LOT 07
COMMONWEALTH OF KENTUCKY
NO ADDRESS LISTED
HENDERSON, KY 42420
DEED BOOK 505, PAGE 598
ZONING: AG

Ⓔ MAP NO. 119, LOT 13
AFE, LLC
4301 KINGS RD.
PHILPOT, KY 42366
DEED BOOK 556, PAGE 452
ZONING: AG

Ⓕ MAP NO. 119, LOT 14
PETERSON, JOHN G.
18969 WILLIAMS KEENE RD.
REED, KY 42451
DEED BOOK 560, PAGE 687
ZONING: AG

Ⓖ MAP NO. 119, LOT 15
RALPH, FRANCES
18861 WILLIAMS KEENE RD.
REED, KY 42451
DEED BOOK 421, PAGE 691
ZONING: AG

Ⓗ MAP NO. 119, LOT 54
SMITH, CHARLES F. & MARY J.
444 WIMSATT RD.
OWENSBORO, KY 42301
DEED BOOK 460, PAGE 343
ZONING: AG

Ⓘ MAP NO. 119, LOT 53
RONE, MARK
1605 HWY 279 N.
OWENSBORO, KY 42301
DEED BOOK 251, PAGE 524
ZONING: AG

Ⓙ MAP NO. 119, LOT 50
CHASE, ALLEN E.
23862 HWY 811
OWENSBORO, KY 42301
DEED BOOK 385, PAGE 243
ZONING: AG

Ⓚ MAP NO. 119, LOT 51
HUNDLEY, ANTHONY & CHRISTA
24114 HWY 811
OWENSBORO, KY 42301
DEED BOOK 353, PAGE 568
ZONING: AG

Ⓛ MAP NO. 119, LOT 52.1
MURPHY, JOHN W.
24318 HWY 811
REED, KY 42451
DEED BOOK 345, PAGE 683
ZONING: AG

Ⓜ MAP NO. 119, LOT 52
MURPHY, JOHN W.
24318 HWY 811
REED, KY 42451
DEED BOOK 345, PAGE 685
ZONING: AG

Ⓝ MAP NO. 119, LOT XXX
HEPPLER, THOMAS
% SUSAN H. BAILEY
1251 HUNTSPOINT WAY
HENERSON, KY 42420
DEED BOOK 449, PAGE 650
ZONING: AG

Ⓞ MAP NO. 119, LOT 17
COUNTRY TAVERN INC.
17159 HWY 60 E.
OWENSBORO, KY 42301
DEED BOOK 275, PAGE 795
ZONING: AG

T-Mobile

FSTAN
F.S. Land Company
T. Alan Neal Company
Land Surveyors and Consulting Engineers
PO Box 17546 2313/2315 Crittenden Drive
Louisville, KY 40217
Phone: (502) 635-5866 (502) 636-5111
Fax: (502) 635-5263

"SITE SURVEY"

SITE NUMBER:
9LV0460D

SITE NAME:
REED

SITE ADDRESS:
HWY 60
OWENSBORO, KY 42301

PROPOSED LEASE AREA:
AREA = 6,400 sq. ft.

PROPERTY OWNER:
H. GLEN WILLIAMS (1/2 INTEREST)
JUDITH B. WILLIAMS (1/2 INTEREST)
24335 HWY 811
OWENSBORO, KY 42301

TAX MAP NUMBER:
119

PARCEL NUMBER:
16

SOURCE OF TITLE
DEED BOOK 553, PAGE 146

DWG BY:
DSA

CHKD BY:
FSII

DATE:
12.17.08

FSTAN PROJECT NO.:
08-5785

REVISIONS:

C1.1

SHEET 1

S1/1 – VICINITY AND 500' STRUCTURAL MAP

S1/2 – U.S.G.S. QUAD MAP

SHEET 2

S2/1 – ABUTTING PROPERTY OWNERS

SHEET 3

S3/1 – PROPOSED LEASE AREA

S3/2 – LEGAL DESCRIPTIONS

S3/3 – FLOOD ZONE DATA

COORDINATE POINT LOCATION

NAD 1983
LATITUDE: 37° 51' 09.19"
LONGITUDE: 87° 19' 39.04"
NAVD 1988
ELEVATION: 375' AMSL
STATE PLANE COORDINATE XXXXX ZONE
(BLUE MARBLE GEOGRAPHIC
CALCULATOR VERSION 5.0)
NORTHING: 2197365.3331
EASTING: 1184953.6721

PROJECT POWER POLE

UTILITY COMPANY: UNKNOWN
IDENTIFICATION #: N/A

PROJECT BENCHMARK

NORTH: 2197421.353
EAST: 1184945.903
ELEVATION: 374.566
LOCATION: BEING AN IPC SET AT THE NORTHERNMOST CORNER OF THE PROPOSED LEASE AREA

SYMBOL LEGEND

- WOOD POWER POLE
- TELEPHONE PEDESTAL
- GUY ANCHOR
- MANHOLE
- WV WATER VALVE
- WATER METER
- FIRE HYDRANT
- E ELECTRIC BOX
- F.P. FENCE POST
- SET #5 REBAR (UNLESS OTHERWISE NOTED)
- EXISTING #5 REBAR (UNLESS OTHERWISE NOTED)

ABBREVIATIONS

EP	EDGE OF PAVEMENT
ROW	RIGHT OF WAY
℄	CENTERLINE
RCP	REINFORCED CONCRETE PIPE
CONC	CONCRETE
CMP	CORRUGATED METAL PIPE
PL	SUBJECT PROPERTY LINE
TC	TOP OF CURB
BC	BOTTOM OF CURB
POB	POINT OF BEGINNING
IPC	IRON PIN CAPPED

LINE LEGEND

- E E E — OVERHEAD ELECTRIC
- G G G — UNDERGROUND GAS LINE
- W W W — UNDERGROUND WATER LINE
- E/T E/T E/T — OVERHEAD ELECTRIC & TELEPHONE LINE
- T T — OVERHEAD TELEPHONE LINE
- X X X — EXISTING FENCE
- XX XX XX — PROPOSED FENCE
- SUBJECT PROPERTY BOUNDARY
- RIGHT OF WAY CENTERLINE

NOTE: SYMBOLS, ABBREVIATIONS, OR LINESTYLES DO NOT NECESSARILY APPEAR ON DRAWING(S). USE ONLY AS APPLICABLE

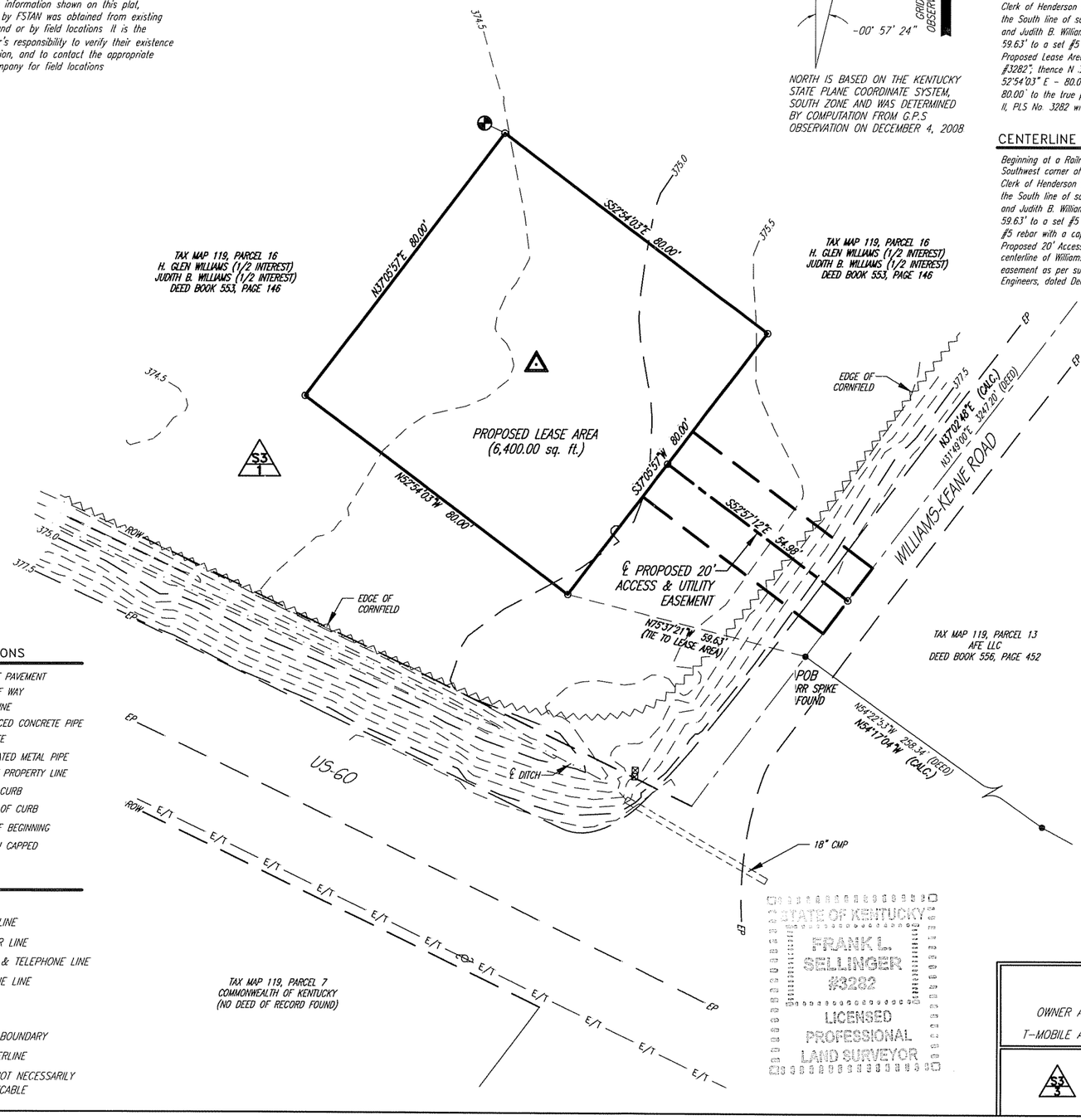
UNDERGROUND UTILITIES
CALL 2 WORKING DAYS
BEFORE YOU DIG
INDIANA 1-800-382-5544
KENTUCKY 1-800-752-6007
UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST CALL DIRECTLY

The utility information shown on this plat, prepared by FSTAN was obtained from existing records and or by field locations. It is the contractor's responsibility to verify their existence and location, and to contact the appropriate utility company for field locations.

0' 30' 60'
(IN FEET)
SCALE 1" = 30'

GRID NORTH
TRUE NORTH
GRID NORTH BY G.P.S. OBSERVATION, ±10 SECONDS
-00° 57' 24"

NORTH IS BASED ON THE KENTUCKY STATE PLANE COORDINATE SYSTEM, SOUTH ZONE AND WAS DETERMINED BY COMPUTATION FROM G.P.S. OBSERVATION ON DECEMBER 4, 2008



TAX MAP 119, PARCEL 16
H. GLEN WILLIAMS (1/2 INTEREST)
JUDITH B. WILLIAMS (1/2 INTEREST)
DEED BOOK 553, PAGE 146

STATE OF KENTUCKY
FRANK L. SELLINGER
#3282
LICENSED PROFESSIONAL LAND SURVEYOR

S3/2 LEGAL DESCRIPTIONS:

This is a description for T-Mobile, of an area to be leased from the property of H. Glen Williams (1/2 interest) and Judith B. Williams (1/2 interest), which is further described as follows:

PROPOSED LEASE AREA

Beginning at a Railroad Spike found in the centerline of Williams-Keane Road, said spike being the Southwest corner of the property conveyed to AFE LLC., in Deed Book 556, Page 452, in the Office of the Clerk of Henderson County, Kentucky, said spike being N 54°17'04" W - 258.34' from a rebar found on the South line of said property, thence traversing the property conveyed to H. Glen Williams (1/2 interest) and Judith B. Williams (1/2 interest) in Deed Book 53, Page 146 in said Clerk's Office N 75°37'21" W - 59.63' to a set #5 rebar with a cap stamped "FSTAN #3282" and the TRUE POINT OF BEGINNING of the Proposed Lease Area, thence N 52°54'03" W - 80.00' to a set #5 rebar with a cap stamped "FSTAN #3282", thence N 37°05'57" E - 80.00' to a set #5 rebar with a cap stamped "FSTAN #3282", thence S 52°54'03" E - 80.00' to a set #5 rebar with a cap stamped "FSTAN #3282", thence S 37°05'57" W - 80.00' to the true point of beginning, containing 6,400.00 square feet as per survey by Frank L. Sellinger, II, PLS No. 3282 with FS/Tan Land Surveyors & Consulting Engineers, dated December 16, 2008.

CENTERLINE OF PROPOSED 20' ACCESS & UTILITY EASEMENT

Beginning at a Railroad Spike found in the centerline of Williams-Keane Road, said spike being the Southwest corner of the property conveyed to AFE LLC., in Deed Book 556, Page 452, in the Office of the Clerk of Henderson County, Kentucky, said spike being N 54°17'04" W - 258.34' from a rebar found on the South line of said property, thence traversing the property conveyed to H. Glen Williams (1/2 interest) and Judith B. Williams (1/2 interest) in Deed Book 53, Page 146 in said Clerk's Office N 75°37'21" W - 59.63' to a set #5 rebar with a cap stamped "FSTAN #3282", thence N 52°54'03" W - 40.00' to a set #5 rebar with a cap stamped "FSTAN #3282" and the TRUE POINT OF BEGINNING of the Centerline of the Proposed 20' Access & Utility Easement, thence S 52°57'12" E - 54.98' to a "MAG" nail set in the centerline of Williams-Keane Road, being also the East line of said Williams property, and the end of the easement as per survey by Frank L. Sellinger, II, PLS No. 3282 with FS/Tan Land Surveyors & Consulting Engineers, dated December 16, 2008.

SURVEYORS NOTES

SOURCE OF BEARING IS A G.P.S. OBSERVATION ON DECEMBER 4, 2008.

SOURCE OF ROTATION BASED ON THE SOUTHWEST PROPERTY LINE OF THE AFE LLC PROPERTY HAVING THE BEARING OF N 54° 22' 53" W PER D.B. 556, PG. 452, AND THE CALCULATED BEARING OF N 54° 17' 04" W.

SITE SHOWN SUBJECT TO RIGHT OF WAYS AND EASEMENTS SHOWN HEREON OR NOT

NO SEARCH OF PUBLIC RECORDS HAS BEEN PERFORMED BY THIS FIRM TO DETERMINE ANY DEFECTS AND/OR AMBIGUITIES IN THE TITLE OF THE PARENT TRACT.

THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.

EXISTING CONTOURS ARE AT ONE 0.5' INTERVALS.

BASE FLOOD ELEVATION = 384.1' AMSL

LAND SURVEYOR'S CERTIFICATE

Type "A" Survey - Unadjusted linear traverse closure: 1 in 47,900.

TO ALL PARTIES INTERESTED IN TITLE TO PREMISES SURVEYED
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 and plot meets or exceeds the minimum standards of the governing authorities
This property is subject to any recorded easements or right of ways not shown hereon.

Frank L. Sellinger, II 12-16-08
Ky. Reg. No. 3282

REFERENCED AS "EXHIBIT C"

OWNER APPROVAL _____ DATE: _____

T-MOBILE APPROVAL _____ DATE: _____

S3/3 I HAVE REVIEWED THE FLOOD INSURANCE RATE MAPS (FIRM) MAP NO. 21028601501B DATED 02.06.91 AND THE PROPOSED LEASE AREA DOES APPEAR TO BE IN A FLOOD PRONE AREA. THE PROPOSED LEASE AREA IS LOCATED IN ZONE AE.

T-Mobile

FS tan
F.S. Land Company
T. Alan Neal Company
Land Surveyors and Consulting Engineers
PO Box 17546 2313/2315 Crittenden Drive
Louisville, KY 40217
Phone: (502) 635-5866 (502) 636-5111
Fax: (502) 636-5263

"SITE SURVEY"

SITE NUMBER:	9LV0460D
SITE NAME:	REED
SITE ADDRESS:	HWY 60 OWENSBORO, KY 42301
PROPOSED LEASE AREA	AREA = 6,400 sq ft
PROPERTY OWNER:	H. GLEN WILLIAMS (1/2 INTEREST) JUDITH B. WILLIAMS (1/2 INTEREST) 2433S HWY 811 OWENSBORO, KY 42301
TAX MAP NUMBER:	119
PARCEL NUMBER:	16
SOURCE OF TITLE:	DEED BOOK 553, PAGE 146
DWG BY:	DJG
CHKD BY:	FSII
DATE:	12.16.08
FSTAN PROJECT NO:	08-5785

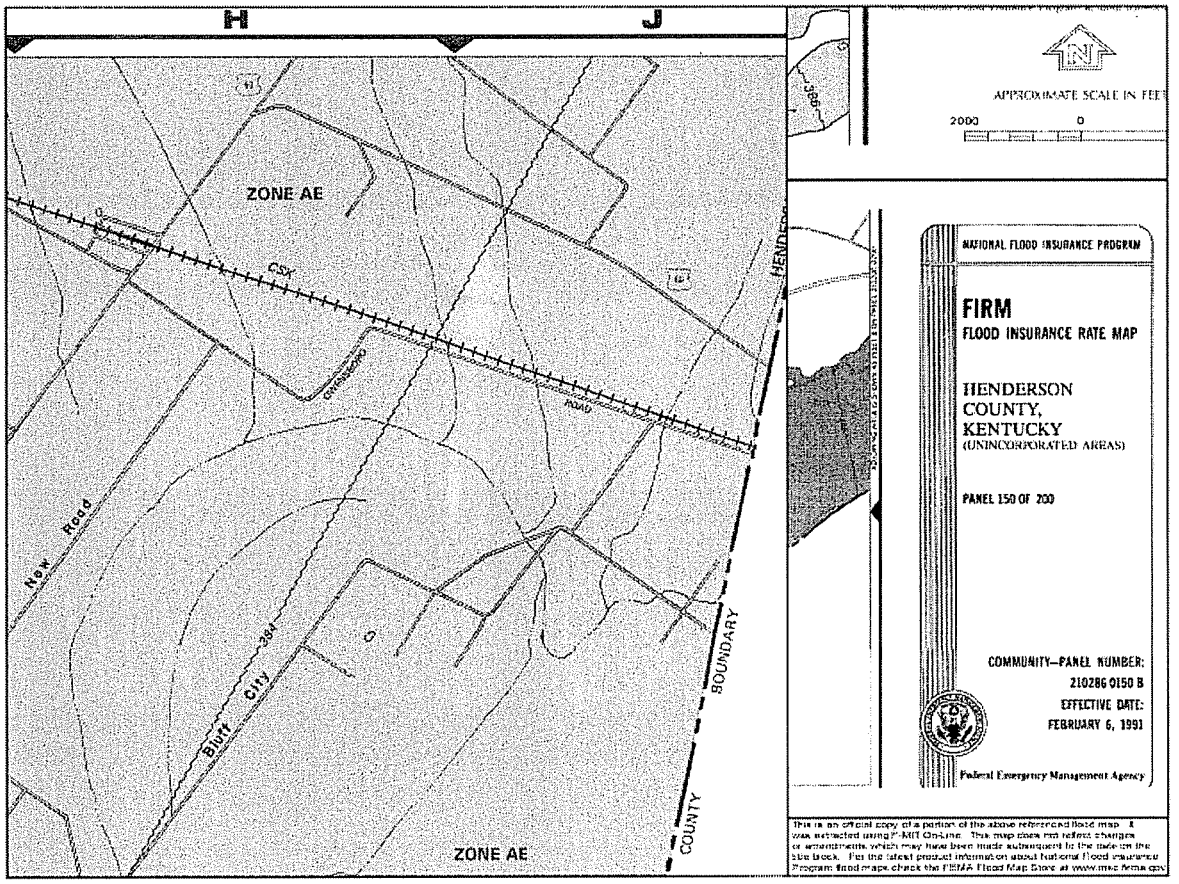
REVISIONS:

C2

T · ·Mobile·

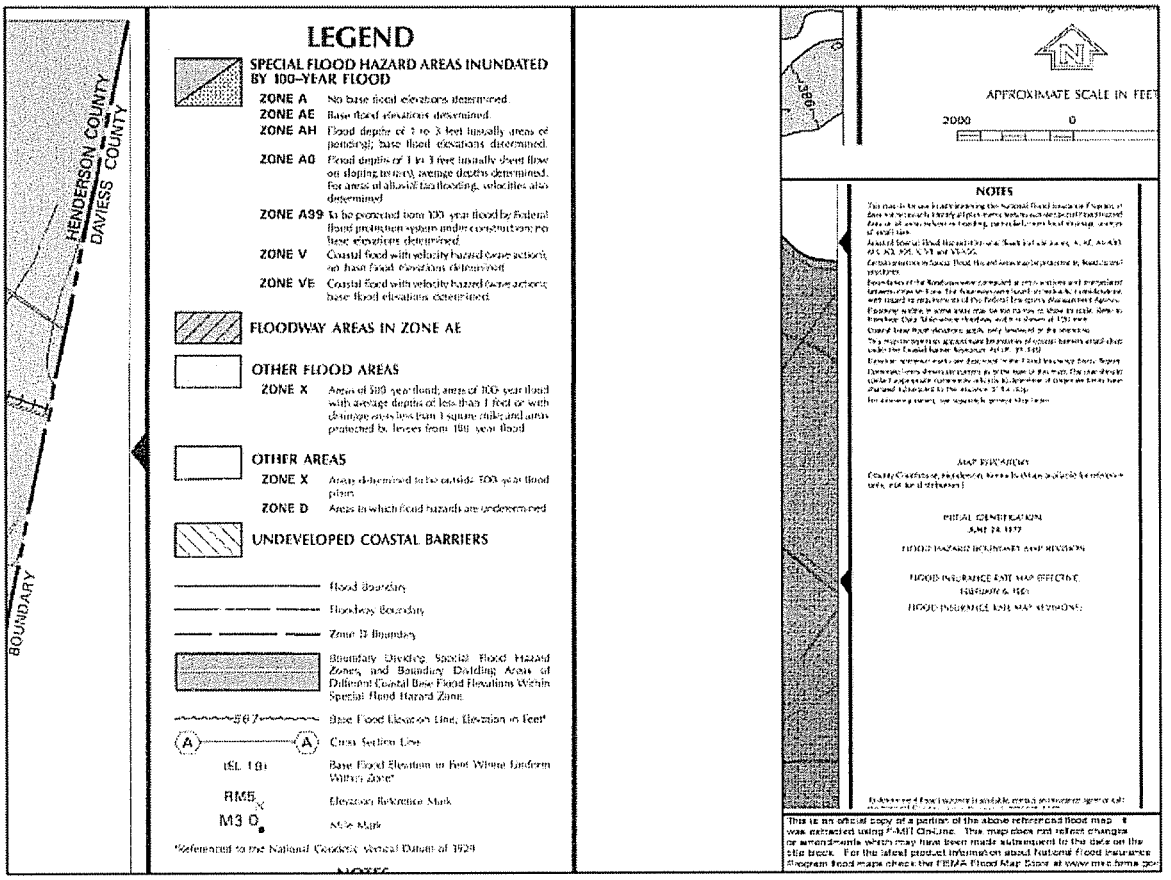
FLOOD MAP (NOT REQUIRED ON ROOFTOPS)

THIS SR IS IN ZONE AE



T··Mobile·

FLOOD MAP LEGEND

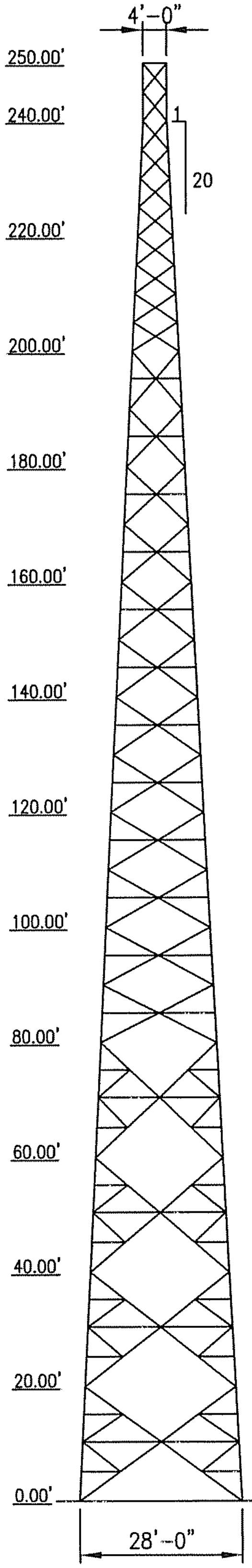


Customer Name: T-MOBILE (TENNESSEE)
Site: 9LV0460 REED- HENDERSON COUNTY, KY

FWT
P.O. BOX 8597 FORT WORTH, TX 76124-0597
PHONE: (800) 433-1816 FAX: (817) 255-8656

ASTM	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 11	Section 12	Section 13
LEGS (ø) — 50 KSI	2	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/4	3 1/2	3 1/2	3 3/4	3 3/4	4
DIAGONALS 36 KSI — A36	Y	Y	Y	C	C	D	D	E	F	CC	DD	DD	DD
GIRTS — A36	B	N/R	N/R	B	B	C	C	D	D	E	F	F	G
INT BRACING — A36	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	D	D	F	F
SUB DIAG. — A36	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	C	C	C	D
SUB GIRTS — A36	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	B	C	C	C
DIAG BOLTS (ø) — A325	2-1/2	2-1/2	2-1/2	2-5/8	2-5/8	2-5/8	2-5/8	2-5/8	2-5/8	2-5/8	2-5/8	2-5/8	2-5/8
RDNT BOLTS (ø) — A325	1-5/8	N/R	N/R	1-5/8	1-5/8	1-5/8	1-5/8	1-5/8	1-5/8	1-5/8	1-5/8	1-5/8	1-5/8
SPLICE BOLTS (ø) — A325	4-5/8	4-5/8	6-5/8	6-3/4	6-3/4	6-7/8	6-1	6-1	6-1	6-1	6-1 1/8	6-1 1/8	N/R
ANCHOR RODS (ø) — A36	(6) - 1 3/4ø x 5'-6" TOTAL ANCHOR ROD LENGTH												

Note: DOUBLE LETTER SIGNIFY BACK TO BACK ANGLES



JOB DATA			
Page 1 of 1		Job No.	J081218001-J
By	HD/tw	Design No.	S08-0471-J
Chk'd By	TW	Date	Dec 18 2008
		Rev. No. 0	Rev. Date
Structure	250-FT SST		
Ref. No.	...-0400\0471\J081218001-J\J081218001-J.out		
Design Standard	ANSI/TIA-222-G-2005 Addendum 1		

GENERAL DESIGN CONDITIONS	
Design Wind Speed: 90.00(mph)	Structure Class: II
Iced Wind Speed: 30.00(mph)	Exposure Category: C
Service Wind Speed: 60.00(mph)	Topographic Category: 1
Ice Thickness: 0.75(in)	-

ANTENNA LIST

No.	Elev.(FT)	Antenna	Mount Type	AZ (°)	COAX
1	250	(1) Lightning Rod		0	
2	250	(4) TMBX-6517-R2M	AM110-P-12'	0	18)LDF7P-50A
3	250	(4) TMBX-6517-R2M	AM110-P-12'	120	
4	250	(4) TMBX-6517-R2M	AM110-P-12'	240	
5	235	(4) TMBX-6517-R2M	AM110-P-12'	0	12)LDF7P-50A
6	235	(4) TMBX-6517-R2M	AM110-P-12'	120	
7	235	(4) TMBX-6517-R2M	AM110-P-12'	240	
8	220	(4) TMBX-6517-R2M	AM110-P-12'	0	12)LDF7P-50A
9	220	(4) TMBX-6517-R2M	AM110-P-12'	120	
10	220	(4) TMBX-6517-R2M	AM110-P-12'	240	

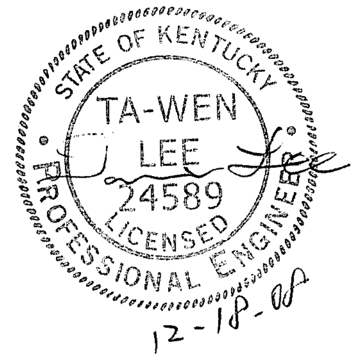
LINEAR APPURTENANCES

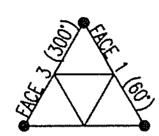
STEP BOLTS ON ONE LEG
(1)-Waveguide Ladder: 0'-250' On Tower Face (AZ): 60 deg
(1)-Waveguide Ladder: 0'-235' On Tower Face (AZ): 180 deg
(1)-Waveguide Ladder: 0'-220' On Tower Face (AZ): 300 deg

COAXIAL LINES DISTRIBUTION

HEIGHT	FACE 1	FACE 2	FACE 3	TOTAL
250'	18D	-	-	18
235'	-	12D	-	12
220'	-	-	12D	12

(D = DOUBLE STACKED)





INTERIOR BRACING
(1) 5/8"ø BOLT EA. END
(EL. 10' to 70')

MEMBER TABLE LEGEND	
D	L3X3X3/16
G	L4X4X1/4
F	L3 1/2X3 1/2X1/4
C	L2 1/2X2 1/2X3/16
E	L3X3X1/4
B	L2X2X3/16
Y	L1 3/4X1 3/4X3/16

FACTORED BASE REACTIONS

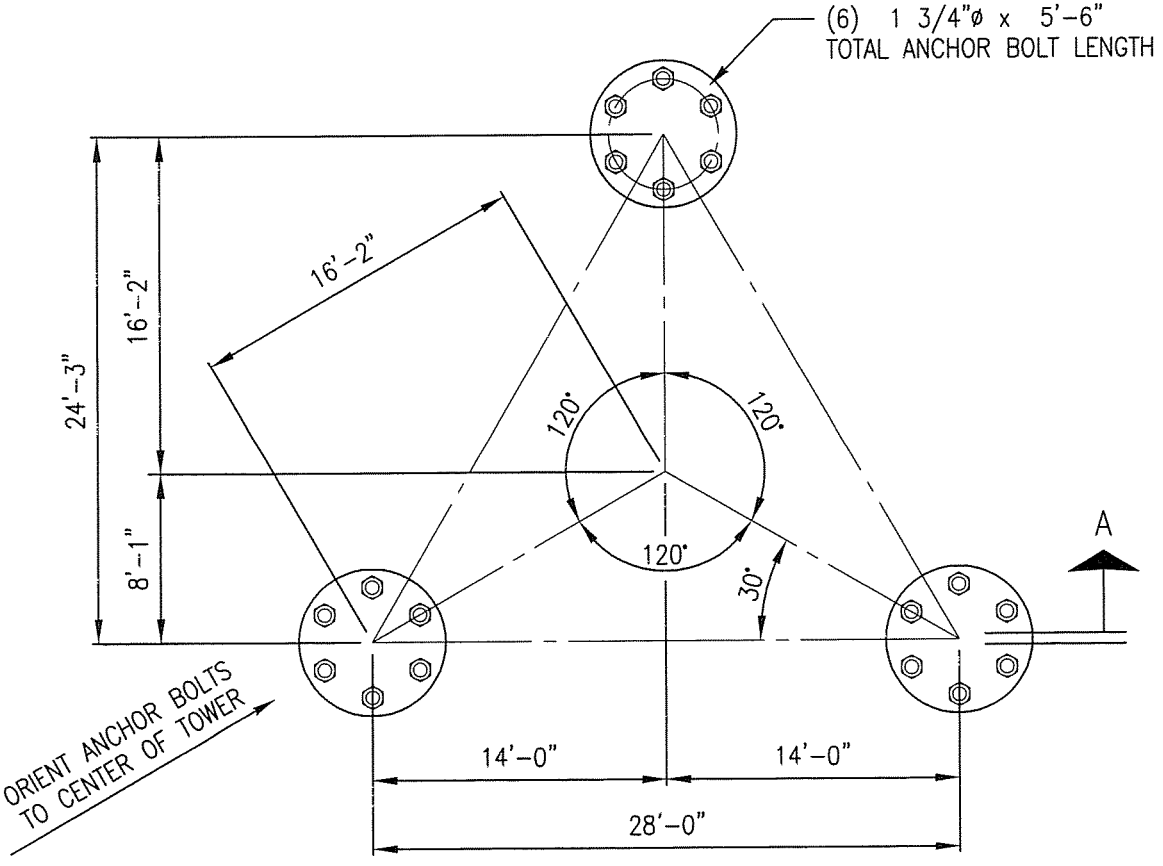
UPLIFT/LEG:	333.7 KIPS.	O.T. MOMENT:	9117.1 FT-KIPS.
COMP./LEG:	400.2 KIPS.	MAX. DOWNLOAD:	54.5 KIPS.
HORIZ./LEG:	40.3 KIPS.	TOTAL SHEAR:	68.1 KIPS.
EST.WEIGHT:	37.5 KIPS. (No SPL or Gussets)		

FIELD NOTES:

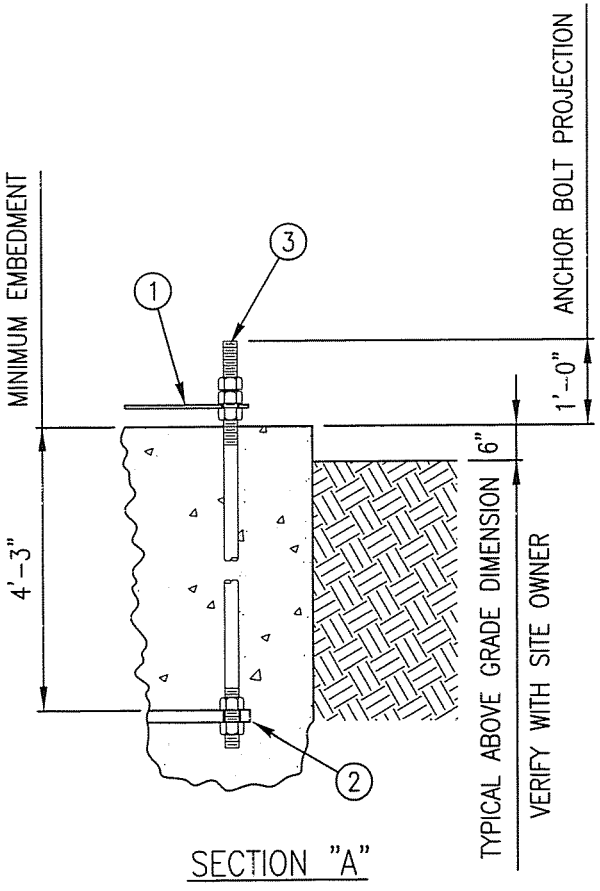
1.) VERIFY TOWER ORIENTATION WITH CUSTOMER.
2.) TOP OF FINISHED CONCRETE MUST BE AT THE SAME ELEVATION UNDER ALL TOWER LEGS.
3.) SEE FOUNDATION DESIGN FOR SPECIFIC INSTALLATION INFORMATION AND DESIGN CRITERIA.
4.) ANCHOR BOLTS TO BE SET WITH FURNISHED ANCHOR BOLT TEMPLATES.
5.) ANCHOR BOLT ORIENTATION – SEE BELOW
6.) ANCHOR BOLT THREADS ABOVE CONCRETE SHOULD BE PROTECTED DURING FOUNDATION INSTALLATION.
7.) REMOVE TOP TEMPLATE PRIOR TO SETTING TOWER BASE SECTION.

BILL OF MATERIAL

ITEM	MARK NO.	QTY.	DESCRIPTION	WEIGHT/lbs
1	------	3	TEMPLATE @ TOP	
2	------	3	ANCHOR PLATE @ BOTTOM	
3	------	18	1 3/4"ø A36 ANCHOR ROD x 5'-6"	
4				
5				
6				
7				
8				
9				
10				
			TOTAL GALVANIZED WEIGHT/lbs	



PLAN VIEW



SECTION "A"

FWT, Inc.
5750 East I-20
Fort Worth, Texas 76119 U.S.A.
(817) 255-3060 FAX (817) 255-8656

REV.	DATE	BY	INIT.	DESCRIPTION

DRAWN BY: TLEE | CHECKED BY: – | CAD FILE: L:\DESIGNS\08-0400\0471\J0...\J081218001-J-AB.DWG|TL|18DEC08|1:25PM | REV. —

SPECIFIC INFORMATION: 9LV0460 REED– HENDERSON COUNTY, KY

SCALE: NONE | DATE: 18-Dec-08 | SHEET NO.: SHEET 1 OF 1

DRAWING TITLE: ANCHOR ROD INSTALLATION

JOB NO.: J081218001-J | DRAWING NO.: AB0000

File: L:\Designs\08-0400\0471\J081218001-J\J081218001-J.out
Contract: S08-0471-J:J081218001-J
Project: 250-FT:SST:13-SECTIONS
Date and Time: 12/18/2008 11:51:47 AM
Revision: 0
Site: 9LV0460 REED- HENDERSON COUNTY, K
Engineer: HD/tw

Section A: PROJECT DATA

Project Title:	250-FT:SST:13-SECTIONS
Customer Name:	T-Mobile (Tennessee)
Site:	9LV0460 REED- HENDERSON COUNTY, KY
Contract No.:	S08-0471-J:J081218001-J
Revision:	0
Engineer:	HD/tw
Date:	Dec 18 2008
Time:	11:49:46 AM
Design Standard:	ANSI/TIA-222-G-2005 Addendum 1

GENERAL DESIGN CONDITIONS

Start wind direction:	0.00 (Deg)
End wind direction:	330.00 (Deg)
Increment wind direction:	30.00 (Deg)
Elevation above ground:	0.00(ft)
Gust Response Factor Gh:	0.85
Structure class:	II
Exposure category:	C
Topographic category:	1
Material Density:	490.1(lbs/ft^3)
Young's Modulus:	29000.0(ksi)
Poisson Ratio:	0.30
Weight Multiplier:	1.03

Minimum Bracing Resistance as per 4.4.1

WIND ONLY CONDITIONS:

Basic Wind Speed (No Ice):	90.00(mph)
Directionality Factor Kd:	0.85
Importance Factor I:	1.00
Wind Load Factor:	1.60
Dead Load Factor:	1.20
Dead Load Factor for Uplift:	0.90

WIND AND ICE CONDITIONS:

Basic Wind Speed (With Ice):	30.00(mph)
Directionality Factor Kd:	0.85
Importance Factor I:	1.00
Ice Thickness:	0.75(in)
Ice Density:	56.19(lbs/ft^3)
Wind Load Factor:	1.00
Dead Load Factor:	1.20
Ice Load Factor:	1.00

WIND ONLY SERVICEABILITY CONDITIONS:

Serviceability Wind Speed:	60.00(mph)
Directionality Factor Kd:	0.85
Importance Factor I:	1.00
Wind Load Factor:	1.00
Dead Load Factor:	1.00

PATTERN LOADING (IF APPLICABLE) CONDITIONS:

Basic Wind Speed (No Ice):	90.00(mph)
Directionality Factor Kd:	0.85

File: L:\Designs\08-0400\0471\J081218001-J\J081218001-J.out
Contract: S08-0471-J:J081218001-J Revision: 0
Project: 250-FT:SST:13-SECTIONS Site: 9LV0460 REED- HENDERSON COUNTY, K
Date and Time: 12/18/2008 11:51:47 AM Engineer: HD/tw

Importance Factor I:	1.00
Wind Load Factor:	1.60
Dead Load Factor:	1.20
Dead Load Factor for Uplift:	0.90

Analysis performed using: TowerSoft Finite Element Analysis Program

File: L:\Designs\08-0400\0471\J081218001-J\J081218001-J.out
Contract: S08-0471-J:J081218001-J
Project: 250-FT:SST:13-SECTIONS
Date and Time: 12/18/2008 11:51:47 AM

Revision: 0
Site: 9LV0460 REED- HENDERSON COUNTY, K
Engineer: HD/tw

Section B: STRUCTURE GEOMETRY

TOWER GEOMETRY

Cross-Section	Height (ft)	Tot Height (ft)	# of Section	Bot Width (in)	Top Width (in)
Triangular	250.00	250.00	13	336.00	48.00

SECTION GEOMETRY

Sec #	Sec. Name	Elevation Bottom (ft)	Elevation Top (ft)	Widths Bottom (in)	Widths Top (in)	Legs (lbs)	Brcg. (lbs)	Masses Sec.Brc (lbs)	Masses Int.Brc (lbs)	Masses Sect. (lbs)	Masses Database (lbs)	Brcg. Clear. (in)
13	2X20A000040410	240.00	250.00	48	48	438	197	0	0	634	489	0.787
12	4X20A000040620	220.00	240.00	72	48	847	369	0	0	1217	1101	0.787
11	4X22A000060820	200.00	220.00	96	72	1027	449	0	0	1476	3029	0.787
10	GX25C000081020	180.00	200.00	120	96	1167	510	135	0	1812	3274	0.787
9	GX27C000101220	160.00	180.00	144	120	1403	563	165	0	2130	2114	0.787
8	GX30D000121420	140.00	160.00	168	144	1659	752	246	0	2657	2657	0.787
7	GX32D000141620	120.00	140.00	192	168	1936	827	284	0	3047	3053	0.787
6	GX32E000161820	100.00	120.00	216	192	1954	1194	390	0	3538	4762	0.787
5	GX35F000182020	80.00	100.00	240	216	2252	1527	436	0	4214	5331	0.787
4	BX35CCD0202220	60.00	80.00	264	240	2247	1099	750	120	4215	5816	0.787
3	BX37DDD0222420	40.00	60.00	288	264	2675	1398	916	132	5120	5328	0.787
2	BX37DDF0242620	20.00	40.00	312	288	2541	1468	985	222	5215	8186	0.787
1	BX40DDF0262820	0.00	20.00	336	312	2970	1541	1192	240	5943	7030	0.787
Total Mass:						23116	11893	5497	713	41220	52169	

PANEL GEOMETRY

Sec#	Pnl#	Type	SecBrcg	Mid. Horiz Continuous	Horiz	Height (ft)	Bottom Width (in)	Top Width (in)	Plan Bracing	Hip Bracing	Gusset Plate Area (ft^2)	Gusset Plate Weight (lbs)
13	2	X	(None)		Yes	5.0	48.0	48.0	(None)	(None)	0.850	17.35
13	1	X	(None)		None	5.0	48.0	48.0	(None)	(None)	0.850	17.35
12	4	X	(None)		None	5.0	54.0	48.0	(None)	(None)	0.737	15.02
12	3	X	(None)		None	5.0	60.0	54.0	(None)	(None)	0.737	15.02
12	2	X	(None)		None	5.0	66.0	60.0	(None)	(None)	0.737	15.02
12	1	X	(None)		None	5.0	72.0	66.0	(None)	(None)	0.737	15.02
11	4	X	(None)		None	5.0	78.0	72.0	(None)	(None)	0.753	15.34
11	3	X	(None)		None	5.0	84.0	78.0	(None)	(None)	0.753	15.34
11	2	X	(None)		None	5.0	90.0	84.0	(None)	(None)	0.753	15.34
11	1	X	(None)		None	5.0	96.0	90.0	(None)	(None)	0.753	15.34
10	2	X	2-Subdiv.	No	None	10.0	108.0	96.0	(None)	(None)	1.055	21.54
10	1	X	2-Subdiv.	No	None	10.0	120.0	108.0	(None)	(None)	1.055	21.54
9	2	X	2-Subdiv.	No	None	10.0	132.0	120.0	(None)	(None)	1.200	24.50
9	1	X	2-Subdiv.	No	None	10.0	144.0	132.0	(None)	(None)	1.200	24.50
8	2	X	2-Subdiv.	No	None	10.0	156.0	144.0	(None)	(None)	1.345	27.46
8	1	X	2-Subdiv.	No	None	10.0	168.0	156.0	(None)	(None)	1.345	27.46
7	2	X	2-Subdiv.	No	None	10.0	180.0	168.0	(None)	(None)	1.491	30.42
7	1	X	2-Subdiv.	No	None	10.0	192.0	180.0	(None)	(None)	1.491	30.42
6	2	X	2-Subdiv.	No	None	10.0	204.0	192.0	(None)	(None)	1.636	33.38
6	1	X	2-Subdiv.	No	None	10.0	216.0	204.0	(None)	(None)	1.636	33.38
5	2	X	2-Subdiv.	No	None	10.0	228.0	216.0	(None)	(None)	1.200	36.34
5	1	X	2-Subdiv.	No	None	10.0	240.0	228.0	(None)	(None)	1.200	36.34
4	1	X	4-Subdiv.	Yes	None	20.0	264.0	240.0	2-Subdiv.	(None)	3.488	71.15
3	1	X	4-Subdiv.	Yes	None	20.0	288.0	264.0	2-Subdiv.	(None)	3.681	112.70

2	1	X	4-Subdiv.	Yes	None	20.0	312.0	288.0	2-Subdiv.	(None)	3.396	69.31
1	1	X	4-Subdiv.	Yes	None	20.0	336.0	312.0	2-Subdiv.	(None)	3.418	104.58

MEMBER PROPERTIES

Sec/ Pnl	Type	Description	Steel Grade	Conn. Type	Bolt #-Size	Bolt Grade	End Dist.	Edge Dist.	Gusset Thick.	Bolt Space	Dble Member Spacing Mem.	Dble Member Spacing Stitch Bolt
					(in)		(in)	(in)	(in)	(in)	(in)	(ft)
13/2	Leg	SR 2	A572 gr.50	Tension	4-0.625	A325X						
13/2	Diag	L1 3/4x1 3/4x3/16	A36	Bolted	2-0.500	A325X	1.125	0.750	0.250	3.000		
13/2	Horiz	L2x2x3/16	A36	Bolted	1-0.625	A325X	1.250	0.875	0.250	1.875		
13/1	Leg	SR 2	A572 gr.50	Tension	4-0.625	A325X						
13/1	Diag	L1 3/4x1 3/4x3/16	A36	Bolted	2-0.500	A325X	1.125	0.750	0.250	3.000		
12/4	Leg	SR 2	A572 gr.50	Tension	4-0.625	A325X						
12/4	Diag	L1 3/4x1 3/4x3/16	A36	Bolted	2-0.500	A325X	1.125	0.750	0.250	3.000		
12/3	Leg	SR 2	A572 gr.50	Tension	4-0.625	A325X						
12/3	Diag	L1 3/4x1 3/4x3/16	A36	Bolted	2-0.500	A325X	1.125	0.750	0.250	3.000		
12/2	Leg	SR 2	A572 gr.50	Tension	4-0.625	A325X						
12/2	Diag	L1 3/4x1 3/4x3/16	A36	Bolted	2-0.500	A325X	1.125	0.750	0.250	3.000		
12/1	Leg	SR 2	A572 gr.50	Tension	4-0.625	A325X						
12/1	Diag	L1 3/4x1 3/4x3/16	A36	Bolted	2-0.500	A325X	1.125	0.750	0.250	3.000		
11/4	Leg	SR 2 1/4	A572 gr.50	Tension	6-0.625	A325X						
11/4	Diag	L1 3/4x1 3/4x3/16	A36	Bolted	2-0.500	A325X	1.125	0.750	0.250	3.000		
11/3	Leg	SR 2 1/4	A572 gr.50	Tension	6-0.625	A325X						
11/3	Diag	L1 3/4x1 3/4x3/16	A36	Bolted	2-0.500	A325X	1.125	0.750	0.250	3.000		
11/2	Leg	SR 2 1/4	A572 gr.50	Tension	6-0.625	A325X						
11/2	Diag	L1 3/4x1 3/4x3/16	A36	Bolted	2-0.500	A325X	1.125	0.750	0.250	3.000		
11/1	Leg	SR 2 1/4	A572 gr.50	Tension	6-0.625	A325X						
11/1	Diag	L1 3/4x1 3/4x3/16	A36	Bolted	2-0.500	A325X	1.125	0.750	0.250	3.000		
10/2	Leg	SR 2 1/2	A572 gr.50	Tension	6-0.750	A325X						
10/2	Diag	L2 1/2x2 1/2x3/16	A36	Bolted	2-0.625	A325X	1.250	1.250	0.250	3.000		
10/2	SecH1	L2x2x3/16	A36	Bolted	1-0.625	A325X	1.250	0.875	0.250	1.875		
10/1	Leg	SR 2 1/2	A572 gr.50	Tension	6-0.750	A325X						
10/1	Diag	L2 1/2x2 1/2x3/16	A36	Bolted	2-0.625	A325X	1.250	1.250	0.250	3.000		
10/1	SecH1	L2x2x3/16	A36	Bolted	1-0.625	A325X	1.250	0.875	0.250	1.875		
9/2	Leg	SR 2 3/4	A572 gr.50	Tension	6-0.750	A325X						
9/2	Diag	L2 1/2x2 1/2x3/16	A36	Bolted	2-0.625	A325X	1.250	1.250	0.250	3.000		
9/2	SecH1	L2x2x3/16	A36	Bolted	1-0.625	A325X	1.250	0.875	0.250	1.875		
9/1	Leg	SR 2 3/4	A572 gr.50	Tension	6-0.750	A325X						
9/1	Diag	L2 1/2x2 1/2x3/16	A36	Bolted	2-0.625	A325X	1.250	1.250	0.250	3.000		
9/1	SecH1	L2x2x3/16	A36	Bolted	1-0.625	A325X	1.250	0.875	0.250	1.875		
8/2	Leg	SR 3	A572 gr.50	Tension	6-0.875	A325X						
8/2	Diag	L3x3x3/16	A36	Bolted	2-0.625	A325X	1.250	1.500	0.250	3.000		
8/2	SecH1	L2 1/2x2 1/2x3/16	A36	Bolted	1-0.625	A325X	1.250	1.250	0.250	1.875		
8/1	Leg	SR 3	A572 gr.50	Tension	6-0.875	A325X						
8/1	Diag	L3x3x3/16	A36	Bolted	2-0.625	A325X	1.250	1.500	0.250	3.000		
8/1	SecH1	L2 1/2x2 1/2x3/16	A36	Bolted	1-0.625	A325X	1.250	1.250	0.250	1.875		
7/2	Leg	SR 3 1/4	A572 gr.50	Tension	6-1.000	A325X						
7/2	Diag	L3x3x3/16	A36	Bolted	2-0.625	A325X	1.250	1.500	0.250	3.000		
7/2	SecH1	L2 1/2x2 1/2x3/16	A36	Bolted	1-0.625	A325X	1.250	1.250	0.250	1.875		

7/1	Leg	SR 3 1/4	A572 gr.50Tension	6-1.000	A325X					
7/1	Diag	L3x3x3/16	A36 Bolted	2-0.625	A325X	1.250	1.500	0.250	3.000	
7/1	SecH1	L2 1/2x2 1/2x3/16	A36 Bolted	1-0.625	A325X	1.250	1.250	0.250	1.875	
6/2	Leg	SR 3 1/4	A572 gr.50Tension	6-1.000	A325X					
6/2	Diag	L3x3x1/4	A36 Bolted	2-0.625	A325X	1.250	1.500	0.250	3.000	
6/2	SecH1	L3x3x3/16	A36 Bolted	1-0.625	A325X	1.250	1.500	0.250	1.875	
6/1	Leg	SR 3 1/4	A572 gr.50Tension	6-1.000	A325X					
6/1	Diag	L3x3x1/4	A36 Bolted	2-0.625	A325X	1.250	1.500	0.250	3.000	
6/1	SecH1	L3x3x3/16	A36 Bolted	1-0.625	A325X	1.250	1.500	0.250	1.875	
5/2	Leg	SR 3 1/2	A572 gr.50Tension	6-1.000	A325X					
5/2	Diag	L3 1/2x3 1/2x1/4	A36 Bolted	2-0.625	A325X	1.250	1.750	0.250	3.000	
5/2	SecH1	L3x3x3/16	A36 Bolted	1-0.625	A325X	1.250	1.500	0.250	1.875	
5/1	Leg	SR 3 1/2	A572 gr.50Tension	6-1.000	A325X					
5/1	Diag	L3 1/2x3 1/2x1/4	A36 Bolted	2-0.625	A325X	1.250	1.750	0.250	3.000	
5/1	SecH1	L3x3x3/16	A36 Bolted	1-0.625	A325X	1.250	1.500	0.250	1.875	
4/1	Leg	SR 3 1/2	A572 gr.50Tension	6-1.000	A325X					
4/1	Diag	2L2 1/2x2 1/2x3/16	A36 Bolted	2-0.625	A325X	1.250	1.250	0.250	3.000	0.250 4.00
4/1	SecD1	L2 1/2x2 1/2x3/16	A36 Bolted	1-0.625	A325X	1.250	1.250	0.250	1.875	
4/1	SecD2	L2 1/2x2 1/2x3/16	A36 Bolted	1-0.625	A325X	1.250	1.250	0.250	1.875	
4/1	SecH1	L3x3x1/4	A36 Bolted	1-0.625	A325X	1.250	1.500	0.250	1.875	
4/1	SecH2	L2x2x3/16	A36 Bolted	1-0.625	A325X	1.250	0.875	0.250	1.875	
4/1	SecH3	L2x2x3/16	A36 Bolted	1-0.625	A325X	1.250	0.875	0.250	1.875	
4/1	PlanH1	L3x3x3/16	A36 Bolted	1-0.625	A325X	1.125	1.500	0.375	1.875	
3/1	Leg	SR 3 3/4	A572 gr.50Tension	6-1.125	A325X					
3/1	Diag	2L3x3x3/16	A36 Bolted	2-0.625	A325X	1.250	1.500	0.375	3.000	0.375 4.00
3/1	SecD1	L2 1/2x2 1/2x3/16	A36 Bolted	1-0.625	A325X	1.250	1.250	0.375	1.875	
3/1	SecD2	L2 1/2x2 1/2x3/16	A36 Bolted	1-0.625	A325X	1.250	1.250	0.375	1.875	
3/1	SecH1	L3 1/2x3 1/2x1/4	A36 Bolted	1-0.625	A325X	1.250	1.750	0.375	1.875	
3/1	SecH2	L2 1/2x2 1/2x3/16	A36 Bolted	1-0.625	A325X	1.250	1.250	0.375	1.875	
3/1	SecH3	L2 1/2x2 1/2x3/16	A36 Bolted	1-0.625	A325X	1.250	1.250	0.375	1.875	
3/1	PlanH1	L3x3x3/16	A36 Bolted	1-0.625	A325X	1.125	1.500	0.375	1.875	
2/1	Leg	SR 3 3/4	A572 gr.50Tension	6-1.125	A325X					
2/1	Diag	2L3x3x3/16	A36 Bolted	2-0.625	A325X	1.250	1.500	0.375	3.000	0.375 4.00
2/1	SecD1	L2 1/2x2 1/2x3/16	A36 Bolted	1-0.625	A325X	1.250	1.250	0.375	1.875	
2/1	SecD2	L2 1/2x2 1/2x3/16	A36 Bolted	1-0.625	A325X	1.250	1.250	0.375	1.875	
2/1	SecH1	L3 1/2x3 1/2x1/4	A36 Bolted	1-0.625	A325X	1.250	1.750	0.375	1.875	
2/1	SecH2	L2 1/2x2 1/2x3/16	A36 Bolted	1-0.625	A325X	1.250	1.250	0.375	1.875	
2/1	SecH3	L2 1/2x2 1/2x3/16	A36 Bolted	1-0.625	A325X	1.250	1.250	0.375	1.875	
2/1	PlanH1	L3 1/2x3 1/2x1/4	A36 Bolted	1-0.625	A325X	1.125	1.750	0.375	1.875	
1/1	Leg	SR 4	A572 gr.50Tension	6-1.250	A325X					
1/1	Diag	2L3x3x3/16	A36 Bolted	2-0.625	A325X	1.250	1.500	0.375	3.000	0.375 4.00
1/1	SecD1	L3x3x3/16	A36 Bolted	1-0.625	A325X	1.250	1.500	0.375	1.875	
1/1	SecD2	L3x3x3/16	A36 Bolted	1-0.625	A325X	1.250	1.500	0.375	1.875	
1/1	SecH1	L4x4x1/4	A36 Bolted	1-0.625	A325X	1.250	2.000	0.375	1.875	
1/1	SecH2	L2 1/2x2 1/2x3/16	A36 Bolted	1-0.625	A325X	1.250	1.250	0.375	1.875	
1/1	SecH3	L2 1/2x2 1/2x3/16	A36 Bolted	1-0.625	A325X	1.250	1.250	0.375	1.875	
1/1	PlanH1	L3 1/2x3 1/2x1/4	A36 Bolted	1-0.625	A325X	1.125	1.750	0.375	1.875	

File: L:\Designs\08-0400\0471\J081218001-J\J081218001-J.out
Contract: S08-0471-J:J081218001-J
Revision: 0
Project: 250-FT:SST:13-SECTIONS
Site: 9LV0460 REED- HENDERSON COUNTY, K
Date and Time: 12/18/2008 11:51:47 AM
Engineer: HD/tw

Section C: ANTENNA DATA

Structure Azimuth from North: 0

ANTENNAS

Ant No.	Elev. (ft)	Antenna (#) Type	Ant. Azim.	Mount. Radius (ft)	Mount Type	Mount Azim.	Tx Line (#)Type	Mounting Pipe Size (in)	Mounting Pipe Length (ft) Full	Mounting Pipe Length (ft) Shielded	Ka
1	250.00	(1) Lightning Rod Vert. Offset 0.00 (ft)	0	0.00		0					1.00
2	250.00	(4) TMBX-6517-R2M Vert. Offset 0.00 (ft)	0	6.30	AM110-P-12'	0	(18)LDF7P-50A	2.375	7.00	6.91	0.80
3	250.00	(4) TMBX-6517-R2M Vert. Offset 0.00 (ft)	120	6.30	AM110-P-12'	120		2.375	7.00	6.91	0.80
4	250.00	(4) TMBX-6517-R2M Vert. Offset 0.00 (ft)	240	6.30	AM110-P-12'	240		2.375	7.00	6.91	0.80
5	235.00	(4) TMBX-6517-R2M Vert. Offset 0.00 (ft)	0	6.88	AM110-P-12'	0	(12)LDF7P-50A	2.375	7.00	6.91	0.80
6	235.00	(4) TMBX-6517-R2M Vert. Offset 0.00 (ft)	120	6.88	AM110-P-12'	120		2.375	7.00	6.91	0.80
7	235.00	(4) TMBX-6517-R2M Vert. Offset 0.00 (ft)	240	6.88	AM110-P-12'	240		2.375	7.00	6.91	0.80
8	220.00	(4) TMBX-6517-R2M Vert. Offset 0.00 (ft)	0	7.46	AM110-P-12'	0	(12)LDF7P-50A	2.375	7.00	6.91	0.80
9	220.00	(4) TMBX-6517-R2M Vert. Offset 0.00 (ft)	120	7.46	AM110-P-12'	120		2.375	7.00	6.91	0.80
10	220.00	(4) TMBX-6517-R2M Vert. Offset 0.00 (ft)	240	7.46	AM110-P-12'	240		2.375	7.00	6.91	0.80

ANTENNA AND MOUNT WIND AREAS AND WEIGHTS

Ant No.	Antenna/Mount	Frontal Bare Area (ft)^2	Lateral Bare Area (ft)^2	Frontal Iced Area (ft)^2	Lateral Iced Area (ft)^2	Weight Bare (lbs)	Weight Iced (lbs)	Frequency GHz	Allowable Gh Signal Loss dB	Mount Ka
1	Lightning Rod	0.75	0.75	4.57	4.57	14.00	76.85	N/A	N/A	0.85
2	TMBX-6517-R2M	6.02	3.80	8.95	6.64	16.00	161.06	N/A	N/A	0.85
2	AM110-P-12'	14.60	7.54	18.57	9.99	707.00	1542.68			0.75
3	TMBX-6517-R2M	6.02	3.80	8.95	6.64	16.00	161.06	N/A	N/A	0.85
3	AM110-P-12'	14.60	7.54	18.57	9.99	707.00	1542.68			0.75
4	TMBX-6517-R2M	6.02	3.80	8.95	6.64	16.00	161.06	N/A	N/A	0.85
4	AM110-P-12'	14.60	7.54	18.57	9.99	707.00	1542.68			0.75
5	TMBX-6517-R2M	6.02	3.80	8.93	6.62	16.00	160.11	N/A	N/A	0.85
5	AM110-P-12'	14.60	7.54	18.57	9.99	707.00	1538.41			0.75
6	TMBX-6517-R2M	6.02	3.80	8.93	6.62	16.00	160.11	N/A	N/A	0.85
6	AM110-P-12'	14.60	7.54	18.57	9.99	707.00	1538.41			0.75
7	TMBX-6517-R2M	6.02	3.80	8.93	6.62	16.00	160.11	N/A	N/A	0.85
7	AM110-P-12'	14.60	7.54	18.57	9.99	707.00	1538.41			0.75
8	TMBX-6517-R2M	6.02	3.80	8.92	6.60	16.00	159.10	N/A	N/A	0.85
8	AM110-P-12'	14.60	7.54	18.57	9.99	707.00	1533.88			0.75
9	TMBX-6517-R2M	6.02	3.80	8.92	6.60	16.00	159.10	N/A	N/A	0.85
9	AM110-P-12'	14.60	7.54	18.57	9.99	707.00	1533.88			0.75
10	TMBX-6517-R2M	6.02	3.80	8.92	6.60	16.00	159.10	N/A	N/A	0.85
10	AM110-P-12'	14.60	7.54	18.57	9.99	707.00	1533.88			0.75

File: L:\Designs\08-0400\0471\J081218001-J\J081218001-J.out
Contract: S08-0471-J:J081218001-J
Project: 250-FT:SST:13-SECTIONS
Date and Time: 12/18/2008 11:51:47 AM
Revision: 0
Site: 9LV0460 REED- HENDERSON COUNTY, K
Engineer: HD/tw

Section D: TRANSMISSION LINE DATA

Transmission Lines Position

No.	Bot El (ft)	Top El (ft)	Desc.	Radius (ft)	Az.	Orient.	No.	No. of Rows	Part of Face	Vert.	Antenna	User Ka
1	0.00	250.00	LDF7P-50A	13.37	60.00	7.20	18	2		No	TMBX-6517-R2M	
2	0.00	235.00	LDF7P-50A	13.37	180.00	127.20	12	2		No	TMBX-6517-R2M	
3	0.00	220.00	LDF7P-50A	13.37	300.00	247.20	12	2		No	TMBX-6517-R2M	

Transmission Lines Details

No.	Desc.	Width (in)	Depth (in)	Unit Mass (lb/ft)	Line Spacing (in)	Row Spacing (in)
1	LDF7P-50A	2.01	2.01	0.92	2.500	2.000
2	LDF7P-50A	2.01	2.01	0.92	2.500	2.000
3	LDF7P-50A	2.01	2.01	0.92	2.500	2.000

File: L:\Designs\08-0400\0471\J081218001-J\J081218001-J.out
Contract: S08-0471-J:J081218001-J
Revision: 0
Project: 250-FT:SST:13-SECTIONS
Site: 9LV0460 REED- HENDERSON COUNTY, K
Date and Time: 12/18/2008 11:51:47 AM
Engineer: HD/tw

Section E: LADDER DATA

Ladder Position

No.	Bot El (ft)	Top El (ft)	Width (in)	Height (in)	Az.	Radius (ft)	Orient.	Part Of Face
1	0.00	250.00	18.00	48.00	60.00	13.85	6.00	No
2	0.00	235.00	18.00	48.00	180.00	13.65	126.00	No
3	0.00	220.00	18.00	48.00	300.00	13.65	246.00	No

Ladder Details

No.	Rung Desc.	Rail Desc.
1	(None)	L1x1x1/4
2	(None)	L1x1x1/4
3	(None)	L1x1x1/4

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Contract: S08-0471-J:J081218001-J
Project: 250-FT:SST:13-SECTIONS
Date and Time: 12/18/2008 11:51:47 AM

Revision: 0
Site: 9LV0460 REED- HENDERSON COUNTY, K
Engineer: HD/tw

Section G: WIND LOAD DATA

Load Combination: Wind Only

Wind Direction: 0.00 (deg)

Wind Pressure

Section	Panel	Bot Elev (ft)	Top Elev (ft)	Kz	Kzt	Wind Pressure (psf)	Ice Thickness (tiz) (in)
13	2	245.00	250.00	1.53	1.00	36.68	0.000
	1	240.00	245.00	1.53	1.00	36.52	0.000
12	4	235.00	240.00	1.52	1.00	36.36	0.000
	3	230.00	235.00	1.51	1.00	36.20	0.000
	2	225.00	230.00	1.50	1.00	36.03	0.000
	1	220.00	225.00	1.50	1.00	35.87	0.000
11	4	215.00	220.00	1.49	1.00	35.69	0.000
	3	210.00	215.00	1.48	1.00	35.52	0.000
	2	205.00	210.00	1.48	1.00	35.34	0.000
	1	200.00	205.00	1.47	1.00	35.16	0.000
10	2	190.00	200.00	1.46	1.00	34.88	0.000
	1	180.00	190.00	1.44	1.00	34.50	0.000
9	2	170.00	180.00	1.42	1.00	34.10	0.000
	1	160.00	170.00	1.41	1.00	33.68	0.000
8	2	150.00	160.00	1.39	1.00	33.24	0.000
	1	140.00	150.00	1.37	1.00	32.77	0.000
7	2	130.00	140.00	1.35	1.00	32.28	0.000
	1	120.00	130.00	1.33	1.00	31.77	0.000
6	2	110.00	120.00	1.30	1.00	31.21	0.000
	1	100.00	110.00	1.28	1.00	30.62	0.000
5	2	90.00	100.00	1.25	1.00	29.98	0.000
	1	80.00	90.00	1.22	1.00	29.29	0.000
4	1	60.00	80.00	1.17	1.00	28.12	0.000
3	1	40.00	60.00	1.09	1.00	26.19	0.000
2	1	20.00	40.00	0.98	1.00	23.52	0.000
1	1	0.00	20.00	0.85	1.00	20.36	0.000

Calculated Effective Wind Areas

Sec.	Pan.	Flat Area (ft^2)	App.Flat Area (ft^2)	Round Area (ft^2)	App.Round Area (ft^2)	Area Ice (ft^2)	Solid. Ratio	Flat Drag	Round Drag	Flat Dir	Round Dir	Eff. Area (ft^2)
13	2	3.33	0.00	1.67	0.00	0.00	0.24	2.47	1.44	0.80	1.00	8.98
	1	2.68	0.00	1.67	0.00	0.00	0.21	2.57	1.48	0.80	1.00	7.97
12	4	2.61	0.00	1.67	0.00	0.00	0.19	2.62	1.50	0.80	1.00	7.98
	3	2.71	0.00	1.67	0.00	0.00	0.18	2.67	1.52	0.80	1.00	8.34
	2	2.82	0.00	1.67	0.00	0.00	0.17	2.71	1.55	0.80	1.00	8.70
	1	2.93	0.00	1.67	0.00	0.00	0.16	2.75	1.56	0.80	1.00	9.06
11	4	3.05	0.00	1.88	0.00	0.00	0.15	2.76	1.57	0.80	1.00	9.69
	3	3.17	0.00	1.88	0.00	0.00	0.15	2.79	1.58	0.80	1.00	10.04
	2	3.29	0.00	1.88	0.00	0.00	0.14	2.81	1.59	0.80	1.00	10.40
	1	3.41	0.00	1.88	0.00	0.00	0.13	2.83	1.60	0.80	1.00	10.75
10	2	7.86	0.00	4.17	0.00	0.00	0.14	2.82	1.59	0.80	1.00	24.35
	1	8.30	0.00	4.17	0.00	0.00	0.13	2.85	1.61	0.80	1.00	25.68
9	2	8.90	0.00	4.59	0.00	0.00	0.13	2.86	1.62	0.80	1.00	27.82
	1	9.38	0.00	4.59	0.00	0.00	0.12	2.89	1.63	0.80	1.00	29.16
8	2	11.83	0.00	5.01	0.00	0.00	0.13	2.84	1.61	0.80	1.00	34.92

	1	12.44	0.00	5.01	0.00	0.00	0.13	2.86	1.62	0.80	1.00	36.54
7	2	13.19	0.00	5.43	0.00	0.00	0.13	2.86	1.62	0.80	1.00	38.98
	1	13.82	0.00	5.43	0.00	0.00	0.12	2.88	1.63	0.80	1.00	40.62
6	2	15.27	0.00	5.43	0.00	0.00	0.12	2.87	1.62	0.80	1.00	43.89
	1	15.95	0.00	5.43	0.00	0.00	0.12	2.88	1.63	0.80	1.00	45.64
5	2	17.93	0.00	5.84	0.00	0.00	0.13	2.86	1.62	0.80	1.00	50.48
	1	18.70	0.00	5.84	0.00	0.00	0.12	2.87	1.62	0.80	1.00	52.40
4	1	30.01	0.00	11.69	0.00	0.00	0.10	2.97	1.68	0.80	1.00	90.96
3	1	36.34	0.00	12.52	0.00	0.00	0.10	2.94	1.66	0.80	1.00	106.42
2	1	38.14	0.00	12.52	0.00	0.00	0.10	2.96	1.67	0.80	1.00	111.38
1	1	42.74	0.00	13.36	0.00	0.00	0.10	2.95	1.67	0.80	1.00	123.25

Calculated Effective UDL Wind Areas

Sec.	Pan.	Flat Area (ft^2)	Round Area (ft^2)	Flat Drag	Round Drag	Ka	Eff. Area (ft^2)
13	2	4.38	0.00	1.60	1.20	0.62	4.31
	1	4.38	0.00	1.60	1.20	0.62	4.31
12	4	4.38	0.00	1.60	1.20	0.62	4.31
	3	11.26	0.00	1.57	1.20	0.64	11.42
	2	11.26	0.00	1.57	1.20	0.64	11.42
	1	11.26	0.00	1.57	1.20	0.64	11.42
11	4	14.85	0.00	1.58	1.20	0.66	15.57
	3	14.85	0.00	1.58	1.20	0.66	15.57
	2	14.85	0.00	1.58	1.20	0.66	15.57
	1	14.85	0.00	1.58	1.20	0.66	15.57
10	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
9	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
8	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
7	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
6	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
5	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
4	1	59.41	0.00	1.58	1.20	0.66	62.28
3	1	59.41	0.00	1.58	1.20	0.66	62.28
2	1	59.41	0.00	1.58	1.20	0.66	62.28
1	1	59.41	0.00	1.58	1.20	0.66	62.28

App. Concentrated Loads

Ant.	Description	Qty	Mount Desc.	Elev. (ft)	CaAc X-Dir E-W (ft^2)	CaAc Y-Dir N-S (ft^2)	XForce E-W (Kips)	YForce N-S (Kips)	ZForce (Kips)	M-x (kipsft)	M-y (kipsft)	M-z (kipsft)
1	Lightning Rod	1		250	0.00	-0.75	0.00	-0.03	-0.01	0.00	0.00	0.00
2	TMBX-6517-R2M	4	AM110-P-12'	250	0.00	-30.28	0.00	-1.11	-0.87	-3.28	0.00	0.00
3	TMBX-6517-R2M	4	AM110-P-12'	250	0.00	-24.92	0.00	-0.92	-0.87	1.64	2.84	-5.70
4	TMBX-6517-R2M	4	AM110-P-12'	250	0.00	-24.92	0.00	-0.92	-0.87	1.64	-2.84	5.70
5	TMBX-6517-R2M	4	AM110-P-12'	235	0.00	-30.28	0.00	-1.10	-0.87	-3.58	0.00	0.00

6	TMBX-6517-R2M	4	AM110-P-12'	235	0.00	-24.92	0.00	-0.90	-0.87	1.79	3.10	-6.14
7	TMBX-6517-R2M	4	AM110-P-12'	235	0.00	-24.92	0.00	-0.90	-0.87	1.79	-3.10	6.14
8	TMBX-6517-R2M	4	AM110-P-12'	220	0.00	-30.28	0.00	-1.08	-0.87	-3.88	0.00	0.00
9	TMBX-6517-R2M	4	AM110-P-12'	220	0.00	-24.92	0.00	-0.89	-0.87	1.94	3.36	-6.57
10	TMBX-6517-R2M	4	AM110-P-12'	220	0.00	-24.92	0.00	-0.89	-0.87	1.94	-3.36	6.57

Load Combination: Wind Only - Max Tension

Wind Direction: 0.00 (deg)

Wind Pressure

Section	Panel	Bot Elev (ft)	Top Elev (ft)	Kz	Kzt	Wind Pressure (psf)	Ice Thickness (tiz) (in)
13	2	245.00	250.00	1.53	1.00	36.68	0.000
	1	240.00	245.00	1.53	1.00	36.52	0.000
12	4	235.00	240.00	1.52	1.00	36.36	0.000
	3	230.00	235.00	1.51	1.00	36.20	0.000
	2	225.00	230.00	1.50	1.00	36.03	0.000
	1	220.00	225.00	1.50	1.00	35.87	0.000
11	4	215.00	220.00	1.49	1.00	35.69	0.000
	3	210.00	215.00	1.48	1.00	35.52	0.000
	2	205.00	210.00	1.48	1.00	35.34	0.000
	1	200.00	205.00	1.47	1.00	35.16	0.000
10	2	190.00	200.00	1.46	1.00	34.88	0.000
	1	180.00	190.00	1.44	1.00	34.50	0.000
9	2	170.00	180.00	1.42	1.00	34.10	0.000
	1	160.00	170.00	1.41	1.00	33.68	0.000
8	2	150.00	160.00	1.39	1.00	33.24	0.000
	1	140.00	150.00	1.37	1.00	32.77	0.000
7	2	130.00	140.00	1.35	1.00	32.28	0.000
	1	120.00	130.00	1.33	1.00	31.77	0.000
6	2	110.00	120.00	1.30	1.00	31.21	0.000
	1	100.00	110.00	1.28	1.00	30.62	0.000
5	2	90.00	100.00	1.25	1.00	29.98	0.000
	1	80.00	90.00	1.22	1.00	29.29	0.000
4	1	60.00	80.00	1.17	1.00	28.12	0.000
3	1	40.00	60.00	1.09	1.00	26.19	0.000
2	1	20.00	40.00	0.98	1.00	23.52	0.000
1	1	0.00	20.00	0.85	1.00	20.36	0.000

Calculated Effective Wind Areas

Sec.	Pan.	Flat Area (ft^2)	App.Flat Area (ft^2)	Round Area (ft^2)	App.Round Area (ft^2)	Area Ice (ft^2)	Solid. Ratio	Flat Drag	Round Drag	Flat Dir	Round Dir	Eff. Area (ft^2)
13	2	3.33	0.00	1.67	0.00	0.00	0.24	2.47	1.44	0.80	1.00	8.98
	1	2.68	0.00	1.67	0.00	0.00	0.21	2.57	1.48	0.80	1.00	7.97
12	4	2.61	0.00	1.67	0.00	0.00	0.19	2.62	1.50	0.80	1.00	7.98
	3	2.71	0.00	1.67	0.00	0.00	0.18	2.67	1.52	0.80	1.00	8.34
	2	2.82	0.00	1.67	0.00	0.00	0.17	2.71	1.55	0.80	1.00	8.70
	1	2.93	0.00	1.67	0.00	0.00	0.16	2.75	1.56	0.80	1.00	9.06
11	4	3.05	0.00	1.88	0.00	0.00	0.15	2.76	1.57	0.80	1.00	9.69
	3	3.17	0.00	1.88	0.00	0.00	0.15	2.79	1.58	0.80	1.00	10.04

	2	3.29	0.00	1.88	0.00	0.00	0.14	2.81	1.59	0.80	1.00	10.40
	1	3.41	0.00	1.88	0.00	0.00	0.13	2.83	1.60	0.80	1.00	10.75
10	2	7.86	0.00	4.17	0.00	0.00	0.14	2.82	1.59	0.80	1.00	24.35
	1	8.30	0.00	4.17	0.00	0.00	0.13	2.85	1.61	0.80	1.00	25.68
9	2	8.90	0.00	4.59	0.00	0.00	0.13	2.86	1.62	0.80	1.00	27.82
	1	9.38	0.00	4.59	0.00	0.00	0.12	2.89	1.63	0.80	1.00	29.16
8	2	11.83	0.00	5.01	0.00	0.00	0.13	2.84	1.61	0.80	1.00	34.92
	1	12.44	0.00	5.01	0.00	0.00	0.13	2.86	1.62	0.80	1.00	36.54
7	2	13.19	0.00	5.43	0.00	0.00	0.13	2.86	1.62	0.80	1.00	38.98
	1	13.82	0.00	5.43	0.00	0.00	0.12	2.88	1.63	0.80	1.00	40.62
6	2	15.27	0.00	5.43	0.00	0.00	0.12	2.87	1.62	0.80	1.00	43.89
	1	15.95	0.00	5.43	0.00	0.00	0.12	2.88	1.63	0.80	1.00	45.64
5	2	17.93	0.00	5.84	0.00	0.00	0.13	2.86	1.62	0.80	1.00	50.48
	1	18.70	0.00	5.84	0.00	0.00	0.12	2.87	1.62	0.80	1.00	52.40
4	1	30.01	0.00	11.69	0.00	0.00	0.10	2.97	1.68	0.80	1.00	90.96
3	1	36.34	0.00	12.52	0.00	0.00	0.10	2.94	1.66	0.80	1.00	106.42
2	1	38.14	0.00	12.52	0.00	0.00	0.10	2.96	1.67	0.80	1.00	111.38
1	1	42.74	0.00	13.36	0.00	0.00	0.10	2.95	1.67	0.80	1.00	123.25

Calculated Effective *UDL* Wind Areas

Sec.	Pan.	Flat Area (ft^2)	Round Area (ft^2)	Flat Drag	Round Drag	Ka	Eff. Area (ft^2)
13	2	4.38	0.00	1.60	1.20	0.62	4.31
	1	4.38	0.00	1.60	1.20	0.62	4.31
12	4	4.38	0.00	1.60	1.20	0.62	4.31
	3	11.26	0.00	1.57	1.20	0.64	11.42
	2	11.26	0.00	1.57	1.20	0.64	11.42
	1	11.26	0.00	1.57	1.20	0.64	11.42
11	4	14.85	0.00	1.58	1.20	0.66	15.57
	3	14.85	0.00	1.58	1.20	0.66	15.57
	2	14.85	0.00	1.58	1.20	0.66	15.57
	1	14.85	0.00	1.58	1.20	0.66	15.57
10	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
9	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
8	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
7	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
6	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
5	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
4	1	59.41	0.00	1.58	1.20	0.66	62.28
3	1	59.41	0.00	1.58	1.20	0.66	62.28
2	1	59.41	0.00	1.58	1.20	0.66	62.28
1	1	59.41	0.00	1.58	1.20	0.66	62.28

App. Concentrated Loads

Ant.	Description	Qty	Mount	Desc.	Elev. (ft)	CaAc X-Dir E-W	CaAc Y-Dir N-S	XForce E-W (Kips)	YForce N-S (Kips)	ZForce (Kips)	M-x (kipsft)	M-y (kipsft)	M-z (kipsft)

					(ft^2)	(ft^2)						
1	Lightning Rod	1		250	0.00	-0.75	0.00	-0.03	-0.01	0.00	0.00	0.00
2	TMBX-6517-R2M	4	AM110-P-12'	250	0.00	-30.28	0.00	-1.11	-0.87	-3.28	0.00	0.00
3	TMBX-6517-R2M	4	AM110-P-12'	250	0.00	-24.92	0.00	-0.92	-0.87	1.64	2.84	-5.70
4	TMBX-6517-R2M	4	AM110-P-12'	250	0.00	-24.92	0.00	-0.92	-0.87	1.64	-2.84	5.70
5	TMBX-6517-R2M	4	AM110-P-12'	235	0.00	-30.28	0.00	-1.10	-0.87	-3.58	0.00	0.00
6	TMBX-6517-R2M	4	AM110-P-12'	235	0.00	-24.92	0.00	-0.90	-0.87	1.79	3.10	-6.14
7	TMBX-6517-R2M	4	AM110-P-12'	235	0.00	-24.92	0.00	-0.90	-0.87	1.79	-3.10	6.14
8	TMBX-6517-R2M	4	AM110-P-12'	220	0.00	-30.28	0.00	-1.08	-0.87	-3.88	0.00	0.00
9	TMBX-6517-R2M	4	AM110-P-12'	220	0.00	-24.92	0.00	-0.89	-0.87	1.94	3.36	-6.57
10	TMBX-6517-R2M	4	AM110-P-12'	220	0.00	-24.92	0.00	-0.89	-0.87	1.94	-3.36	6.57

Load Combination Wind and Ice

Wind Direction 0.00 (deg)

Wind Pressure

Section	Panel	Bot Elev (ft)	Top Elev (ft)	Kz	Kzt	Wind Pressure (psf)	Ice Thickness (tiz) (in)
13	2	245.00	250.00	1.53	1.00	2.55	1.836
	1	240.00	245.00	1.53	1.00	2.54	1.832
12	4	235.00	240.00	1.52	1.00	2.53	1.828
	3	230.00	235.00	1.51	1.00	2.51	1.824
	2	225.00	230.00	1.50	1.00	2.50	1.821
	1	220.00	225.00	1.50	1.00	2.49	1.816
11	4	215.00	220.00	1.49	1.00	2.48	1.812
	3	210.00	215.00	1.48	1.00	2.47	1.808
	2	205.00	210.00	1.48	1.00	2.45	1.804
	1	200.00	205.00	1.47	1.00	2.44	1.799
10	2	190.00	200.00	1.46	1.00	2.42	1.793
	1	180.00	190.00	1.44	1.00	2.40	1.783
9	2	170.00	180.00	1.42	1.00	2.37	1.773
	1	160.00	170.00	1.41	1.00	2.34	1.763
8	2	150.00	160.00	1.39	1.00	2.31	1.752
	1	140.00	150.00	1.37	1.00	2.28	1.740
7	2	130.00	140.00	1.35	1.00	2.24	1.728
	1	120.00	130.00	1.33	1.00	2.21	1.715
6	2	110.00	120.00	1.30	1.00	2.17	1.700
	1	100.00	110.00	1.28	1.00	2.13	1.685
5	2	90.00	100.00	1.25	1.00	2.08	1.668
	1	80.00	90.00	1.22	1.00	2.03	1.650
4	1	60.00	80.00	1.17	1.00	1.95	1.618
3	1	40.00	60.00	1.09	1.00	1.82	1.565
2	1	20.00	40.00	0.98	1.00	1.63	1.487
1	1	0.00	20.00	0.85	1.00	1.41	1.332

Calculated Effective Wind Areas

Sec.	Pan.	Flat Area (ft^2)	App.Flat Area (ft^2)	Round Area (ft^2)	App.Round Area (ft^2)	Area Ice (ft^2)	Solid. Ratio	Flat Drag	Round Drag	Flat Dir	Round Dir	Eff. Area (ft^2)
13	2	3.29	0.00	1.67	0.00	7.99	0.62	1.79	1.36	0.80	1.00	17.83

	1	2.61	0.00	1.67	0.00	6.73	0.53	1.87	1.31	0.80	1.00	14.88
12	4	2.55	0.00	1.67	0.00	6.83	0.50	1.90	1.30	0.80	1.00	14.94
	3	2.65	0.00	1.67	0.00	7.04	0.46	1.95	1.30	0.80	1.00	15.46
	2	2.76	0.00	1.67	0.00	7.25	0.43	2.01	1.30	0.80	1.00	16.06
	1	2.87	0.00	1.67	0.00	7.46	0.41	2.05	1.31	0.80	1.00	16.69
11	4	3.00	0.00	1.88	0.00	7.68	0.39	2.08	1.32	0.80	1.00	17.59
	3	3.12	0.00	1.88	0.00	7.91	0.37	2.12	1.33	0.80	1.00	18.26
	2	3.24	0.00	1.88	0.00	8.14	0.36	2.16	1.33	0.80	1.00	18.95
	1	3.36	0.00	1.88	0.00	8.37	0.34	2.19	1.34	0.80	1.00	19.64
10	2	7.73	0.00	4.17	0.00	16.03	0.32	2.24	1.36	0.80	1.00	41.30
	1	8.18	0.00	4.17	0.00	16.65	0.30	2.30	1.38	0.80	1.00	43.70
9	2	8.78	0.00	4.59	0.00	17.26	0.29	2.34	1.39	0.80	1.00	46.75
	1	9.26	0.00	4.59	0.00	17.90	0.27	2.38	1.40	0.80	1.00	49.16
8	2	11.69	0.00	5.01	0.00	18.52	0.28	2.36	1.40	0.80	1.00	54.96
	1	12.30	0.00	5.01	0.00	19.15	0.27	2.39	1.41	0.80	1.00	57.58
7	2	13.05	0.00	5.43	0.00	19.76	0.26	2.41	1.42	0.80	1.00	60.84
	1	13.68	0.00	5.43	0.00	20.37	0.25	2.44	1.43	0.80	1.00	63.44
6	2	15.12	0.00	5.43	0.00	20.97	0.25	2.44	1.43	0.80	1.00	67.29
	1	15.81	0.00	5.43	0.00	21.55	0.24	2.47	1.44	0.80	1.00	69.93
5	2	17.78	0.00	5.84	0.00	22.09	0.24	2.46	1.43	0.80	1.00	75.00
	1	18.55	0.00	5.84	0.00	22.61	0.24	2.48	1.44	0.80	1.00	77.72
4	1	29.67	0.00	11.69	0.00	44.67	0.20	2.59	1.49	0.80	1.00	145.33
3	1	35.97	0.00	12.52	0.00	45.37	0.20	2.59	1.49	0.80	1.00	160.80
2	1	37.79	0.00	12.52	0.00	45.27	0.19	2.63	1.51	0.80	1.00	166.79
1	1	42.40	0.00	13.36	0.00	42.51	0.18	2.67	1.52	0.80	1.00	175.44

Calculated Effective UDL Wind Areas

Sec.	Pan.	Flat Area (ft^2)	Round Area (ft^2)	Flat Drag	Round Drag	Ka	Eff. Area (ft^2)
13	2	5.91	3.06	1.57	1.20	0.40	5.17
	1	5.91	3.05	1.57	1.20	0.49	6.33
12	4	5.90	3.05	1.57	1.20	0.52	6.67
	3	14.30	6.08	1.56	1.20	0.63	18.56
	2	14.29	6.07	1.56	1.20	0.65	19.28
	1	14.28	6.05	1.56	1.20	0.67	19.86
11	4	19.38	9.06	1.56	1.20	0.71	29.12
	3	19.37	9.04	1.56	1.20	0.71	29.09
	2	19.36	9.02	1.56	1.20	0.71	29.06
	1	19.35	9.00	1.56	1.20	0.71	29.03
10	2	38.67	17.93	1.56	1.20	0.71	57.95
	1	38.62	17.83	1.56	1.20	0.71	57.81
9	2	38.57	17.73	1.56	1.20	0.71	57.66
	1	38.52	17.63	1.56	1.20	0.71	57.51
8	2	38.47	17.52	1.56	1.20	0.71	57.34
	1	38.41	17.40	1.57	1.20	0.71	57.17
7	2	38.35	17.28	1.57	1.20	0.71	56.98
	1	38.28	17.15	1.57	1.20	0.71	56.78
6	2	38.21	17.00	1.57	1.20	0.71	56.57
	1	38.13	16.85	1.57	1.20	0.70	56.34
5	2	38.05	16.68	1.57	1.20	0.70	56.09
	1	37.96	16.50	1.57	1.20	0.70	55.81
4	1	75.60	32.36	1.57	1.20	0.70	110.68
3	1	75.06	31.29	1.57	1.20	0.70	109.08
2	1	74.28	29.73	1.57	1.20	0.70	106.75

1	1	72.73	26.64	1.57	1.20	0.70	102.12

App. Concentrated Loads

Ant.	Description	Qty	Mount Desc.	Elev. (ft)	CaAc X-Dir E-W (ft^2)	CaAc Y-Dir N-S (ft^2)	XForce E-W (Kips)	YForce N-S (Kips)	ZForce (Kips)	M-x (kipsft)	M-y (kipsft)	M-z (kipsft)
1	Lightning Rod	1		250	0.00	-4.57	0.00	-0.01	-0.01	0.00	0.00	0.00
2	TMBX-6517-R2M	4	AM110-P-12'	250	0.00	-52.59	0.00	-0.13	-0.87	-3.28	0.00	0.00
3	TMBX-6517-R2M	4	AM110-P-12'	250	0.00	-49.07	0.00	-0.13	-0.87	1.64	2.84	-0.79
4	TMBX-6517-R2M	4	AM110-P-12'	250	0.00	-49.07	0.00	-0.13	-0.87	1.64	-2.84	0.79
5	TMBX-6517-R2M	4	AM110-P-12'	235	0.00	-52.45	0.00	-0.13	-0.87	-3.58	0.00	0.00
6	TMBX-6517-R2M	4	AM110-P-12'	235	0.00	-48.92	0.00	-0.12	-0.87	1.79	3.10	-0.85
7	TMBX-6517-R2M	4	AM110-P-12'	235	0.00	-48.92	0.00	-0.12	-0.87	1.79	-3.10	0.85
8	TMBX-6517-R2M	4	AM110-P-12'	220	0.00	-52.31	0.00	-0.13	-0.87	-3.88	0.00	0.00
9	TMBX-6517-R2M	4	AM110-P-12'	220	0.00	-48.76	0.00	-0.12	-0.87	1.94	3.36	-0.91
10	TMBX-6517-R2M	4	AM110-P-12'	220	0.00	-48.76	0.00	-0.12	-0.87	1.94	-3.36	0.91

Load Combination: Wind Only - Serviceability

Wind Direction: 0.00 (deg)

Wind Pressure

Section	Panel	Bot Elev (ft)	Top Elev (ft)	Kz	Kzt	Wind Pressure (psf)	Ice Thickness (tiz) (in)
13	2	245.00	250.00	1.53	1.00	10.19	0.000
	1	240.00	245.00	1.53	1.00	10.14	0.000
12	4	235.00	240.00	1.52	1.00	10.10	0.000
	3	230.00	235.00	1.51	1.00	10.06	0.000
	2	225.00	230.00	1.50	1.00	10.01	0.000
	1	220.00	225.00	1.50	1.00	9.96	0.000
11	4	215.00	220.00	1.49	1.00	9.92	0.000
	3	210.00	215.00	1.48	1.00	9.87	0.000
	2	205.00	210.00	1.48	1.00	9.82	0.000
	1	200.00	205.00	1.47	1.00	9.77	0.000
10	2	190.00	200.00	1.46	1.00	9.69	0.000
	1	180.00	190.00	1.44	1.00	9.58	0.000
9	2	170.00	180.00	1.42	1.00	9.47	0.000
	1	160.00	170.00	1.41	1.00	9.35	0.000
8	2	150.00	160.00	1.39	1.00	9.23	0.000
	1	140.00	150.00	1.37	1.00	9.10	0.000
7	2	130.00	140.00	1.35	1.00	8.97	0.000
	1	120.00	130.00	1.33	1.00	8.82	0.000
6	2	110.00	120.00	1.30	1.00	8.67	0.000
	1	100.00	110.00	1.28	1.00	8.51	0.000
5	2	90.00	100.00	1.25	1.00	8.33	0.000
	1	80.00	90.00	1.22	1.00	8.14	0.000
4	1	60.00	80.00	1.17	1.00	7.81	0.000
3	1	40.00	60.00	1.09	1.00	7.28	0.000
2	1	20.00	40.00	0.98	1.00	6.53	0.000
1	1	0.00	20.00	0.85	1.00	5.65	0.000

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Contract: S08-0471-J:J081218001-J
Revision: 0
Project: 250-FT:SST:13-SECTIONS
Site: 9LV0460 REED- HENDERSON COUNTY, K
Date and Time: 12/18/2008 11:51:47 AM
Engineer: HD/tw

Calculated Effective Wind Areas

Sec.	Pan.	Flat Area (ft^2)	App.Flat Area (ft^2)	Round Area (ft^2)	App.Round Area (ft^2)	Area Ice (ft^2)	Solid. Ratio	Flat Drag	Round Drag	Flat Dir	Round Dir	Eff. Area (ft^2)
13	2	3.33	0.00	1.67	0.00	0.00	0.24	2.47	1.44	0.80	1.00	8.98
	1	2.68	0.00	1.67	0.00	0.00	0.21	2.57	1.48	0.80	1.00	7.97
12	4	2.61	0.00	1.67	0.00	0.00	0.19	2.62	1.50	0.80	1.00	7.98
	3	2.71	0.00	1.67	0.00	0.00	0.18	2.67	1.52	0.80	1.00	8.34
	2	2.82	0.00	1.67	0.00	0.00	0.17	2.71	1.55	0.80	1.00	8.70
	1	2.93	0.00	1.67	0.00	0.00	0.16	2.75	1.56	0.80	1.00	9.06
11	4	3.05	0.00	1.88	0.00	0.00	0.15	2.76	1.57	0.80	1.00	9.69
	3	3.17	0.00	1.88	0.00	0.00	0.15	2.79	1.58	0.80	1.00	10.04
	2	3.29	0.00	1.88	0.00	0.00	0.14	2.81	1.59	0.80	1.00	10.40
	1	3.41	0.00	1.88	0.00	0.00	0.13	2.83	1.60	0.80	1.00	10.75
10	2	7.86	0.00	4.17	0.00	0.00	0.14	2.82	1.59	0.80	1.00	24.35
	1	8.30	0.00	4.17	0.00	0.00	0.13	2.85	1.61	0.80	1.00	25.68
9	2	8.90	0.00	4.59	0.00	0.00	0.13	2.86	1.62	0.80	1.00	27.82
	1	9.38	0.00	4.59	0.00	0.00	0.12	2.89	1.63	0.80	1.00	29.16
8	2	11.83	0.00	5.01	0.00	0.00	0.13	2.84	1.61	0.80	1.00	34.92
	1	12.44	0.00	5.01	0.00	0.00	0.13	2.86	1.62	0.80	1.00	36.54
7	2	13.19	0.00	5.43	0.00	0.00	0.13	2.86	1.62	0.80	1.00	38.98
	1	13.82	0.00	5.43	0.00	0.00	0.12	2.88	1.63	0.80	1.00	40.62
6	2	15.27	0.00	5.43	0.00	0.00	0.12	2.87	1.62	0.80	1.00	43.89
	1	15.95	0.00	5.43	0.00	0.00	0.12	2.88	1.63	0.80	1.00	45.64
5	2	17.93	0.00	5.84	0.00	0.00	0.13	2.86	1.62	0.80	1.00	50.48
	1	18.70	0.00	5.84	0.00	0.00	0.12	2.87	1.62	0.80	1.00	52.40
4	1	30.01	0.00	11.69	0.00	0.00	0.10	2.97	1.68	0.80	1.00	90.96
3	1	36.34	0.00	12.52	0.00	0.00	0.10	2.94	1.66	0.80	1.00	106.42
2	1	38.14	0.00	12.52	0.00	0.00	0.10	2.96	1.67	0.80	1.00	111.38
1	1	42.74	0.00	13.36	0.00	0.00	0.10	2.95	1.67	0.80	1.00	123.25

Calculated Effective UDL Wind Areas

Sec.	Pan.	Flat Area (ft^2)	Round Area (ft^2)	Flat Drag	Round Drag	Ka	Eff. Area (ft^2)
13	2	4.38	0.00	1.60	1.20	0.62	4.31
	1	4.38	0.00	1.60	1.20	0.62	4.31
12	4	4.38	0.00	1.60	1.20	0.62	4.31
	3	11.26	0.00	1.57	1.20	0.64	11.42
	2	11.26	0.00	1.57	1.20	0.64	11.42
	1	11.26	0.00	1.57	1.20	0.64	11.42
11	4	14.85	0.00	1.58	1.20	0.66	15.57
	3	14.85	0.00	1.58	1.20	0.66	15.57
	2	14.85	0.00	1.58	1.20	0.66	15.57
	1	14.85	0.00	1.58	1.20	0.66	15.57
10	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
9	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
8	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
7	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14

6	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
5	2	29.71	0.00	1.58	1.20	0.66	31.14
	1	29.71	0.00	1.58	1.20	0.66	31.14
4	1	59.41	0.00	1.58	1.20	0.66	62.28
3	1	59.41	0.00	1.58	1.20	0.66	62.28
2	1	59.41	0.00	1.58	1.20	0.66	62.28
1	1	59.41	0.00	1.58	1.20	0.66	62.28

App. Concentrated Loads

Ant.	Description	Qty	Mount Desc.	Elev. (ft)	CaAc X-Dir E-W (ft^2)	CaAc Y-Dir N-S (ft^2)	XForce E-W (Kips)	YForce N-S (Kips)	ZForce (Kips)	M-x (kipsft)	M-y (kipsft)	M-z (kipsft)
1	Lightning Rod	1		250	0.00	-0.75	0.00	-0.01	-0.01	0.00	0.00	0.00
2	TMBX-6517-R2M	4	AM110-P-12'	250	0.00	-30.28	0.00	-0.31	-0.87	-3.28	0.00	0.00
3	TMBX-6517-R2M	4	AM110-P-12'	250	0.00	-24.92	0.00	-0.25	-0.87	1.64	2.84	-1.58
4	TMBX-6517-R2M	4	AM110-P-12'	250	0.00	-24.92	0.00	-0.25	-0.87	1.64	-2.84	1.58
5	TMBX-6517-R2M	4	AM110-P-12'	235	0.00	-30.28	0.00	-0.31	-0.87	-3.58	0.00	0.00
6	TMBX-6517-R2M	4	AM110-P-12'	235	0.00	-24.92	0.00	-0.25	-0.87	1.79	3.10	-1.71
7	TMBX-6517-R2M	4	AM110-P-12'	235	0.00	-24.92	0.00	-0.25	-0.87	1.79	-3.10	1.71
8	TMBX-6517-R2M	4	AM110-P-12'	220	0.00	-30.28	0.00	-0.30	-0.87	-3.88	0.00	0.00
9	TMBX-6517-R2M	4	AM110-P-12'	220	0.00	-24.92	0.00	-0.25	-0.87	1.94	3.36	-1.82
10	TMBX-6517-R2M	4	AM110-P-12'	220	0.00	-24.92	0.00	-0.25	-0.87	1.94	-3.36	1.82

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Contract: S08-0471-J:J081218001-J
Revision: 0
Project: 250-FT:SST:13-SECTIONS
Site: 9LV0460 REED- HENDERSON COUNTY, K
Date and Time: 12/18/2008 11:51:47 AM
Engineer: HD/tw

Section H: STRUCTURE DISPLACEMENT DATA

Load Combination Max Envelope

Wind Direction Maximum displacements

Node	Elev. (ft)	N-S Disp (in)	W-E Disp (in)	Vert.Disp (in)	N-S Rot (Deg)	W-E Rot (Deg)	Twist (Deg)
81	250.0	29.1	29.0	-0.4	1.12	1.13	0.03
78	245.0	27.9	27.8	-0.4	1.12	1.13	0.03
75	240.0	26.7	26.7	-0.4	1.10	1.11	-0.03
72	235.0	25.6	25.5	-0.4	1.10	1.10	0.03
69	230.0	24.4	24.3	-0.4	1.08	1.08	-0.03
66	225.0	23.3	23.2	-0.4	1.04	1.05	0.03
63	220.0	22.2	22.1	-0.4	1.03	1.03	-0.02
60	215.0	21.1	21.0	-0.4	1.00	1.00	0.02
57	210.0	20.1	20.0	-0.4	0.97	0.97	-0.02
54	205.0	19.1	19.0	-0.4	0.94	0.94	0.02
51	200.0	18.1	18.0	-0.4	0.89	0.89	-0.02
48	190.0	16.2	16.1	-0.4	0.82	0.82	0.03
45	180.0	14.5	14.4	-0.4	0.77	0.77	-0.02
42	170.0	12.9	12.8	-0.3	0.71	0.71	0.02
39	160.0	11.4	11.3	-0.3	0.65	0.65	-0.01
36	150.0	10.0	9.9	-0.3	0.60	0.60	0.01
33	140.0	8.8	8.7	-0.3	0.56	0.55	-0.01
30	130.0	7.6	7.5	-0.3	0.52	0.52	0.01
27	120.0	6.5	6.4	-0.3	0.46	0.46	-0.01
24	110.0	5.5	5.5	-0.2	0.43	0.42	0.01
21	100.0	4.6	4.6	-0.2	0.37	0.37	-0.01
18	90.0	3.9	3.8	-0.2	0.34	0.34	0.01
15	80.0	3.1	3.1	-0.2	0.31	0.30	-0.01
12	60.0	1.9	1.8	-0.1	0.21	0.21	0.03
9	40.0	1.0	0.9	-0.1	0.16	0.15	-0.01
6	20.0	0.3	-0.3	0.0	0.07	-0.07	0.03
3	0.0	0.0	0.0	0.0	0.00	0.00	0.00

Load Combination Wind Only

Wind Direction Maximum displacements

Node	Elev. (ft)	N-S Disp (in)	W-E Disp (in)	Vert.Disp (in)	N-S Rot (Deg)	W-E Rot (Deg)	Twist (Deg)
81	250.0	29.1	29.0	-0.1	1.12	1.13	0.03
78	245.0	27.9	27.8	-0.1	1.12	1.13	0.03
75	240.0	26.7	26.7	-0.1	1.10	1.11	-0.03
72	235.0	25.6	25.5	-0.1	1.10	1.10	0.03
69	230.0	24.4	24.3	-0.1	1.08	1.08	-0.03
66	225.0	23.3	23.2	-0.1	1.04	1.05	0.03
63	220.0	22.2	22.1	-0.1	1.03	1.03	-0.02
60	215.0	21.1	21.0	-0.1	1.00	1.00	0.02
57	210.0	20.1	20.0	-0.1	0.97	0.97	-0.02
54	205.0	19.1	19.0	-0.1	0.94	0.94	0.02
51	200.0	18.1	18.0	-0.1	0.89	0.89	-0.02
48	190.0	16.2	16.1	-0.1	0.82	0.82	0.03
45	180.0	14.5	14.4	-0.1	0.77	0.77	-0.02
42	170.0	12.9	12.8	-0.1	0.71	0.71	0.02
39	160.0	11.4	11.3	-0.1	0.65	0.65	-0.01
36	150.0	10.0	9.9	-0.1	0.60	0.60	0.01

33	140.0	8.8	8.7	-0.1	0.56	0.55	-0.01
30	130.0	7.6	7.5	-0.1	0.52	0.52	0.01
27	120.0	6.5	6.4	-0.1	0.46	0.46	-0.01
24	110.0	5.5	5.5	-0.1	0.43	0.42	0.01
21	100.0	4.6	4.6	-0.1	0.37	0.37	-0.01
18	90.0	3.9	3.8	-0.1	0.34	0.34	0.01
15	80.0	3.1	3.1	-0.1	0.31	0.30	-0.01
12	60.0	1.9	1.8	0.0	0.21	0.21	0.03
9	40.0	1.0	0.9	0.0	0.16	0.15	-0.01
6	20.0	0.3	-0.3	0.0	0.07	-0.07	0.03
3	0.0	0.0	0.0	0.0	0.00	0.00	0.00

Load Combination Wind Only - Max Tension

Wind Direction Maximum displacements

Node	Elev. (ft)	N-S Disp (in)	W-E Disp (in)	Vert.Disp (in)	N-S Rot (Deg)	W-E Rot (Deg)	Twist (Deg)
81	250.0	29.1	29.0	-0.1	1.12	1.13	0.03
78	245.0	27.9	27.8	-0.1	1.12	1.13	0.03
75	240.0	26.7	26.7	-0.1	1.10	1.11	-0.03
72	235.0	25.6	25.5	-0.1	1.10	1.10	0.03
69	230.0	24.4	24.3	-0.1	1.08	1.08	-0.03
66	225.0	23.3	23.2	-0.1	1.04	1.05	0.03
63	220.0	22.2	22.1	-0.1	1.03	1.03	-0.02
60	215.0	21.1	21.0	-0.1	1.00	1.00	0.02
57	210.0	20.1	20.0	-0.1	0.97	0.97	-0.02
54	205.0	19.1	19.0	-0.1	0.94	0.94	0.02
51	200.0	18.1	18.0	-0.1	0.89	0.89	-0.02
48	190.0	16.2	16.1	-0.1	0.82	0.82	0.03
45	180.0	14.5	14.4	-0.1	0.77	0.77	-0.02
42	170.0	12.9	12.8	-0.1	0.71	0.71	0.02
39	160.0	11.4	11.3	-0.1	0.65	0.65	-0.01
36	150.0	10.0	9.9	-0.1	0.60	0.60	0.01
33	140.0	8.8	8.7	-0.1	0.56	0.55	-0.01
30	130.0	7.6	7.5	-0.1	0.52	0.52	0.01
27	120.0	6.5	6.4	-0.1	0.46	0.46	-0.01
24	110.0	5.5	5.5	-0.1	0.43	0.42	0.01
21	100.0	4.6	4.6	-0.1	0.37	0.37	-0.01
18	90.0	3.9	3.8	0.0	0.34	0.34	0.01
15	80.0	3.1	3.1	0.0	0.31	0.30	-0.01
12	60.0	1.9	1.8	0.0	0.21	0.21	0.03
9	40.0	1.0	0.9	0.0	0.16	0.15	-0.01
6	20.0	0.3	-0.3	0.0	0.07	-0.07	0.03
3	0.0	0.0	0.0	0.0	0.00	0.00	0.00

Load Combination Wind and Ice

Wind Direction Maximum displacements

Node	Elev. (ft)	N-S Disp (in)	W-E Disp (in)	Vert.Disp (in)	N-S Rot (Deg)	W-E Rot (Deg)	Twist (Deg)
81	250.0	3.6	3.6	-0.4	0.14	0.14	0.00
78	245.0	3.5	3.4	-0.4	0.14	0.14	0.00
75	240.0	3.3	3.3	-0.4	0.14	0.14	0.00
72	235.0	3.2	3.1	-0.4	0.14	0.14	0.00

69	230.0	3.0	3.0	-0.4	0.14	0.14	0.00
66	225.0	2.9	2.8	-0.4	0.13	0.13	0.00
63	220.0	2.7	2.7	-0.4	0.13	0.13	0.00
60	215.0	2.6	2.6	-0.4	0.13	0.12	0.00
57	210.0	2.5	2.4	-0.4	0.12	0.12	0.00
54	205.0	2.3	2.3	-0.4	0.12	0.12	0.00
51	200.0	2.2	2.2	-0.4	0.11	0.11	0.00
48	190.0	2.0	2.0	-0.4	0.10	0.10	0.00
45	180.0	1.8	1.8	-0.4	0.10	0.09	0.00
42	170.0	1.6	1.6	-0.3	0.09	0.09	0.00
39	160.0	1.4	1.4	-0.3	0.08	0.08	0.00
36	150.0	1.2	1.2	-0.3	0.07	0.07	0.00
33	140.0	1.1	1.0	-0.3	0.07	0.07	0.00
30	130.0	0.9	0.9	-0.3	0.06	0.06	0.00
27	120.0	0.8	0.8	-0.3	0.06	0.06	0.00
24	110.0	0.7	0.7	-0.2	0.05	0.05	0.00
21	100.0	0.6	0.5	-0.2	0.05	0.04	0.00
18	90.0	0.5	0.5	-0.2	0.04	0.04	0.00
15	80.0	0.4	0.4	-0.2	0.04	0.04	0.00
12	60.0	0.2	0.2	-0.1	0.03	0.02	0.00
9	40.0	0.1	0.1	-0.1	0.02	0.02	0.00
6	20.0	0.0	0.0	0.0	0.01	-0.01	0.00
3	0.0	0.0	0.0	0.0	0.00	0.00	0.00

Load Combination Wind Only - Serviceability

Wind Direction Maximum displacements

Node	Elev. (ft)	N-S Disp (in)	W-E Disp (in)	Vert.Disp (in)	N-S Rot (Deg)	W-E Rot (Deg)	Twist (Deg)
81	250.0	8.1	8.1	-0.1	0.31	0.31	-0.01
78	245.0	7.8	7.7	-0.1	0.31	0.31	0.01
75	240.0	7.4	7.4	-0.1	0.31	0.31	-0.01
72	235.0	7.1	7.1	-0.1	0.31	0.31	0.01
69	230.0	6.8	6.8	-0.1	0.30	0.30	-0.01
66	225.0	6.5	6.4	-0.1	0.29	0.29	0.01
63	220.0	6.2	6.1	-0.1	0.29	0.29	-0.01
60	215.0	5.9	5.8	-0.1	0.28	0.28	0.01
57	210.0	5.6	5.6	-0.1	0.27	0.27	-0.01
54	205.0	5.3	5.3	-0.1	0.26	0.26	0.01
51	200.0	5.0	5.0	-0.1	0.25	0.25	-0.01
48	190.0	4.5	4.5	-0.1	0.23	0.23	0.01
45	180.0	4.0	4.0	-0.1	0.21	0.21	0.00
42	170.0	3.6	3.6	-0.1	0.20	0.20	0.01
39	160.0	3.2	3.1	-0.1	0.18	0.18	0.00
36	150.0	2.8	2.8	-0.1	0.17	0.17	0.00
33	140.0	2.4	2.4	-0.1	0.15	0.15	0.00
30	130.0	2.1	2.1	-0.1	0.14	0.14	0.00
27	120.0	1.8	1.8	-0.1	0.13	0.13	0.00
24	110.0	1.5	1.5	-0.1	0.12	0.12	0.00
21	100.0	1.3	1.3	-0.1	0.10	0.10	0.00
18	90.0	1.1	1.1	-0.1	0.10	0.10	0.00
15	80.0	0.9	0.9	0.0	0.09	0.08	0.00
12	60.0	0.5	0.5	0.0	0.06	0.06	0.01
9	40.0	0.3	0.3	0.0	0.04	0.04	0.00
6	20.0	0.1	-0.1	0.0	0.02	-0.02	0.01

3	0.0	0.0	0.0	0.0	0.00	0.00	0.00

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Revision: 0
Project: 250-FT:SST:13-SECTIONS
Site: 9LV0460 REED- HENDERSON COUNTY, K
Date and Time: 12/18/2008 11:51:47 AM
Engineer: HD/tw

Section L: STRENGTH ASSESSMENT SORTED DATA

Load Combination: Max Envelope
Wind Direction: Maximum

Sec	Pnl	Elev (ft)	MType	Desc.	Len (ft)	kl/r	Gov. comp. cap. (Kips)	Gov. tens. cap. (Kips)	Max Compr. (Kips)	Max Tens. (Kips)	Asses. Ratio
13	2	245.00	Leg	SR 2	5.00	120.0	49.3	82.3	3.5	1.4	0.07
13	1	240.00	Leg	SR 2	5.00	120.0	49.3	82.3	8.9	6.7	0.18
12	4	235.00	Leg	SR 2	5.01	120.2	49.1	82.3	14.2	11.6	0.29
12	3	230.00	Leg	SR 2	5.01	120.2	49.1	82.3	21.9	16.8	0.45
12	2	225.00	Leg	SR 2	5.01	120.2	49.1	82.3	30.7	25.1	0.62
12	1	220.00	Leg	SR 2	5.01	120.2	49.1	82.3	37.6	31.6	0.77
11	4	215.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	47.2	38.8	0.61
11	3	210.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	57.2	47.9	0.74
11	2	205.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	65.8	55.9	0.85
11	1	200.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	74.9	64.2	0.96
10	2	190.00	Leg	SR 2 1/2	10.02	101.8	103.6	182.5	86.8	75.1	0.84
10	1	180.00	Leg	SR 2 1/2	10.02	101.2	104.5	182.5	103.5	90.0	0.99
9	2	170.00	Leg	SR 2 3/4	10.02	91.6	144.7	182.5	118.9	103.9	0.82
9	1	160.00	Leg	SR 2 3/4	10.02	91.3	145.4	182.5	134.8	117.8	0.93
8	2	150.00	Leg	SR 3	10.02	83.4	191.5	251.8	150.0	131.1	0.78
8	1	140.00	Leg	SR 3	10.02	83.0	192.2	251.8	165.7	144.5	0.86
7	2	130.00	Leg	SR 3 1/4	10.02	76.5	243.5	330.3	181.0	157.7	0.74
7	1	120.00	Leg	SR 3 1/4	10.02	76.4	243.8	330.3	196.8	171.0	0.81
6	2	110.00	Leg	SR 3 1/4	10.02	76.2	244.2	330.3	212.5	184.2	0.87
6	1	100.00	Leg	SR 3 1/4	10.02	76.1	244.7	330.3	228.6	197.5	0.93
5	2	90.00	Leg	SR 3 1/2	10.02	70.5	301.2	330.3	244.6	210.7	0.81
5	1	80.00	Leg	SR 3 1/2	10.02	70.5	301.2	330.3	261.1	224.1	0.87
4	1	60.00	Leg	SR 3 1/2	20.03	68.7	306.8	330.3	285.2	243.7	0.93
3	1	40.00	Leg	SR 3 3/4	20.03	64.1	368.4	416.3	318.3	270.2	0.86
2	1	20.00	Leg	SR 3 3/4	20.03	64.1	368.4	416.3	351.2	296.1	0.95
1	1	0.00	Leg	SR 4	20.03	60.1	434.5	528.0	384.1	321.6	0.88
13	2	245.00	Diag	L1 3/4x1 3/4x3/16	6.40	100.2	11.8	17.9	1.8	1.9	0.15
13	1	240.00	Diag	L1 3/4x1 3/4x3/16	6.40	100.2	11.8	17.9	2.2	2.2	0.19
12	4	235.00	Diag	L1 3/4x1 3/4x3/16	6.56	107.2	11.0	17.9	1.9	1.8	0.17
12	3	230.00	Diag	L1 3/4x1 3/4x3/16	6.90	112.0	10.4	17.9	3.4	3.4	0.33
12	2	225.00	Diag	L1 3/4x1 3/4x3/16	7.25	117.0	9.8	17.9	3.3	3.3	0.34
12	1	220.00	Diag	L1 3/4x1 3/4x3/16	7.62	122.2	9.1	17.9	3.2	3.2	0.35
11	4	215.00	Diag	L1 3/4x1 3/4x3/16	8.01	127.2	8.6	17.9	4.3	4.3	0.51
11	3	210.00	Diag	L1 3/4x1 3/4x3/16	8.40	132.7	7.9	17.9	4.2	4.3	0.53
11	2	205.00	Diag	L1 3/4x1 3/4x3/16	8.81	138.3	7.3	17.9	4.3	4.2	0.58
11	1	200.00	Diag	L1 3/4x1 3/4x3/16	9.22	144.1	6.7	17.9	4.3	4.3	0.63
10	2	190.00	Diag	L2 1/2x2 1/2x3/16	13.13	146.3	9.5	21.6	5.9	5.8	0.62
10	1	180.00	Diag	L2 1/2x2 1/2x3/16	13.80	152.7	8.7	21.6	5.8	5.9	0.67
9	2	170.00	Diag	L2 1/2x2 1/2x3/16	14.50	159.2	8.0	21.6	6.0	5.9	0.75
9	1	160.00	Diag	L2 1/2x2 1/2x3/16	15.24	166.2	7.4	21.6	6.1	6.1	0.83
8	2	150.00	Diag	L3x3x3/16	16.01	148.4	11.2	22.8	6.4	6.4	0.57
8	1	140.00	Diag	L3x3x3/16	16.80	154.7	10.3	22.8	6.7	6.7	0.65
7	2	130.00	Diag	L3x3x3/16	17.62	160.9	9.5	22.8	7.0	7.0	0.74
7	1	120.00	Diag	L3x3x3/16	18.45	167.4	8.8	22.8	7.4	7.4	0.84
6	2	110.00	Diag	L3x3x1/4	19.30	174.0	10.7	30.4	7.8	7.7	0.72
6	1	100.00	Diag	L3x3x1/4	20.16	180.8	10.0	30.4	8.1	8.1	0.81
5	2	90.00	Diag	L3 1/2x3 1/2x1/4	21.03	164.2	14.2	30.4	8.5	8.5	0.60
5	1	80.00	Diag	L3 1/2x3 1/2x1/4	21.92	170.2	13.2	30.4	8.9	8.9	0.68

4	1	60.00	Diag	2L2 1/2x2 1/2x3/16	29.01	182.9	12.2	43.2	11.9	11.8	0.98
3	1	40.00	Diag	2L3x3x3/16	30.48	155.8	20.3	45.7	12.4	12.3	0.61
2	1	20.00	Diag	2L3x3x3/16	32.02	161.5	18.9	45.7	12.9	12.8	0.68
1	1	0.00	Diag	2L3x3x3/16	33.61	167.4	17.6	45.7	13.2	13.2	0.75
13	2	245.00	Horiz	L2x2x3/16	4.00	113.8	11.6	8.3	0.7	0.7	0.08
10	2	190.00	SecH1	L2x2x3/16	4.26	131.1	9.3	8.3	2.2	2.2	0.26
10	1	180.00	SecH1	L2x2x3/16	4.76	146.4	7.5	8.3	2.6	2.6	0.35
9	2	170.00	SecH1	L2x2x3/16	5.26	161.7	6.1	8.3	2.8	2.8	0.45
9	1	160.00	SecH1	L2x2x3/16	5.75	177.0	5.1	8.3	3.1	3.1	0.61
8	2	150.00	SecH1	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	3.3	3.3	0.38
8	1	140.00	SecH1	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	3.6	3.6	0.48
7	2	130.00	SecH1	L2 1/2x2 1/2x3/16	7.25	177.6	6.4	10.9	3.7	3.7	0.57
7	1	120.00	SecH1	L2 1/2x2 1/2x3/16	7.75	189.8	5.6	10.9	4.0	4.0	0.71
6	2	110.00	SecH1	L3x3x3/16	8.25	167.8	8.7	11.1	4.3	4.3	0.49
6	1	100.00	SecH1	L3x3x3/16	8.75	178.0	7.8	11.1	4.6	4.6	0.60
5	2	90.00	SecH1	L3x3x3/16	9.25	188.2	7.0	11.1	4.7	4.7	0.68
5	1	80.00	SecH1	L3x3x3/16	9.75	198.3	6.3	11.1	5.0	5.0	0.80
4	1	60.00	SecH1	L3x3x1/4	10.51	213.8	7.1	14.8	5.4	5.4	0.76
4	1	60.00	SecH2	L2x2x3/16	5.26	161.7	6.1	8.3	5.4	5.4	0.88
4	1	60.00	SecH3	L2x2x3/16	5.26	161.7	6.1	8.3	5.4	5.4	0.88
4	1	60.00	SecD1	L2 1/2x2 1/2x3/16	6.91	169.1	7.1	10.9	3.7	3.7	0.52
4	1	60.00	SecD2	L2 1/2x2 1/2x3/16	7.60	186.0	5.9	10.9	3.7	3.7	0.63
4	1	60.00	PlanH1	L3x3x3/16	10.48	213.1	5.4	9.8	0.1	0.1	0.01
3	1	40.00	SecH1	L3 1/2x3 1/2x1/4	11.51	200.1	9.5	14.8	5.7	5.7	0.60
3	1	40.00	SecH2	L2 1/2x2 1/2x3/16	5.75	140.9	10.2	10.9	5.7	5.7	0.56
3	1	40.00	SecH3	L2 1/2x2 1/2x3/16	5.75	140.9	10.2	10.9	5.7	5.7	0.56
3	1	40.00	SecD1	L2 1/2x2 1/2x3/16	7.29	178.5	6.4	10.9	3.8	3.8	0.60
3	1	40.00	SecD2	L2 1/2x2 1/2x3/16	7.95	194.8	5.4	10.9	3.8	3.8	0.71
3	1	40.00	PlanH1	L3x3x3/16	11.48	233.5	4.5	9.8	0.1	0.1	0.02
2	1	20.00	SecH1	L3 1/2x3 1/2x1/4	12.51	217.5	8.1	14.8	6.3	6.3	0.78
2	1	20.00	SecH2	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	6.3	6.3	0.73
2	1	20.00	SecH3	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	6.3	6.3	0.73
2	1	20.00	SecD1	L2 1/2x2 1/2x3/16	7.68	188.2	5.7	10.9	4.1	4.1	0.71
2	1	20.00	SecD2	L2 1/2x2 1/2x3/16	8.33	203.9	4.9	10.9	4.1	4.1	0.83
2	1	20.00	PlanH1	L3 1/2x3 1/2x1/4	12.48	217.0	8.1	13.1	0.1	0.1	0.01
1	1	0.00	SecH1	L4x4x1/4	13.51	202.6	10.7	14.8	6.6	6.6	0.62
1	1	0.00	SecH2	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	6.6	6.6	0.89
1	1	0.00	SecH3	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	6.6	6.6	0.89
1	1	0.00	SecD1	L3x3x3/16	8.09	164.5	9.1	11.1	4.1	4.1	0.45
1	1	0.00	SecD2	L3x3x3/16	8.71	177.2	7.8	11.1	4.1	4.1	0.53
1	1	0.00	PlanH1	L3 1/2x3 1/2x1/4	13.48	234.5	6.9	13.1	0.1	0.1	0.01

Load Combination: Wind Only
Wind Direction: Maximum

Sec	Pnl	Elev (ft)	MType	Desc.	Len (ft)	kl/r	Gov. comp. cap. (Kips)	Gov. tens. cap. (Kips)	Max Compr. (Kips)	Max Tens. (Kips)	Asses. Ratio
13	2	245.00	Leg	SR 2	5.00	120.0	49.3	82.3	3.5	1.1	0.07
13	1	240.00	Leg	SR 2	5.00	120.0	49.3	82.3	8.9	6.3	0.18
12	4	235.00	Leg	SR 2	5.01	120.2	49.1	82.3	14.2	11.3	0.29
12	3	230.00	Leg	SR 2	5.01	120.2	49.1	82.3	21.9	16.2	0.45

12	2	225.00	Leg	SR 2	5.01	120.2	49.1	82.3	30.7	24.4	0.62
12	1	220.00	Leg	SR 2	5.01	120.2	49.1	82.3	37.6	30.8	0.77
11	4	215.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	47.2	37.7	0.61
11	3	210.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	57.2	46.7	0.74
11	2	205.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	65.8	54.8	0.85
11	1	200.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	74.9	62.9	0.96
10	2	190.00	Leg	SR 2 1/2	10.02	101.8	103.6	182.5	86.8	73.8	0.84
10	1	180.00	Leg	SR 2 1/2	10.02	101.2	104.5	182.5	103.5	88.5	0.99
9	2	170.00	Leg	SR 2 3/4	10.02	91.6	144.7	182.5	118.9	102.2	0.82
9	1	160.00	Leg	SR 2 3/4	10.02	91.3	145.4	182.5	134.8	116.0	0.93
8	2	150.00	Leg	SR 3	10.02	83.4	191.5	251.8	150.0	129.1	0.78
8	1	140.00	Leg	SR 3	10.02	83.0	192.2	251.8	165.7	142.4	0.86
7	2	130.00	Leg	SR 3 1/4	10.02	76.5	243.5	330.3	181.0	155.3	0.74
7	1	120.00	Leg	SR 3 1/4	10.02	76.4	243.8	330.3	196.8	168.5	0.81
6	2	110.00	Leg	SR 3 1/4	10.02	76.2	244.2	330.3	212.5	181.4	0.87
6	1	100.00	Leg	SR 3 1/4	10.02	76.1	244.7	330.3	228.6	194.6	0.93
5	2	90.00	Leg	SR 3 1/2	10.02	70.5	301.2	330.3	244.6	207.5	0.81
5	1	80.00	Leg	SR 3 1/2	10.02	70.5	301.2	330.3	261.1	220.6	0.87
4	1	60.00	Leg	SR 3 1/2	20.03	68.7	306.8	330.3	285.2	239.9	0.93
3	1	40.00	Leg	SR 3 3/4	20.03	64.1	368.4	416.3	318.3	265.8	0.86
2	1	20.00	Leg	SR 3 3/4	20.03	64.1	368.4	416.3	351.2	291.1	0.95
1	1	0.00	Leg	SR 4	20.03	60.1	434.5	528.0	384.1	315.9	0.88
13	2	245.00	Diag	L1 3/4x1 3/4x3/16	6.40	100.2	11.8	17.9	1.8	1.9	0.15
13	1	240.00	Diag	L1 3/4x1 3/4x3/16	6.40	100.2	11.8	17.9	2.2	2.2	0.19
12	4	235.00	Diag	L1 3/4x1 3/4x3/16	6.56	107.2	11.0	17.9	1.9	1.8	0.17
12	3	230.00	Diag	L1 3/4x1 3/4x3/16	6.90	112.0	10.4	17.9	3.4	3.4	0.33
12	2	225.00	Diag	L1 3/4x1 3/4x3/16	7.25	117.0	9.8	17.9	3.3	3.3	0.34
12	1	220.00	Diag	L1 3/4x1 3/4x3/16	7.62	122.2	9.1	17.9	3.2	3.2	0.35
11	4	215.00	Diag	L1 3/4x1 3/4x3/16	8.01	127.2	8.6	17.9	4.3	4.2	0.51
11	3	210.00	Diag	L1 3/4x1 3/4x3/16	8.40	132.7	7.9	17.9	4.2	4.3	0.53
11	2	205.00	Diag	L1 3/4x1 3/4x3/16	8.81	138.3	7.3	17.9	4.3	4.2	0.58
11	1	200.00	Diag	L1 3/4x1 3/4x3/16	9.22	144.1	6.7	17.9	4.2	4.3	0.63
10	2	190.00	Diag	L2 1/2x2 1/2x3/16	13.13	146.3	9.5	21.6	5.9	5.8	0.62
10	1	180.00	Diag	L2 1/2x2 1/2x3/16	13.80	152.7	8.7	21.6	5.8	5.9	0.67
9	2	170.00	Diag	L2 1/2x2 1/2x3/16	14.50	159.2	8.0	21.6	6.0	5.9	0.75
9	1	160.00	Diag	L2 1/2x2 1/2x3/16	15.24	166.2	7.4	21.6	6.1	6.1	0.83
8	2	150.00	Diag	L3x3x3/16	16.01	148.4	11.2	22.8	6.4	6.3	0.57
8	1	140.00	Diag	L3x3x3/16	16.80	154.7	10.3	22.8	6.7	6.7	0.65
7	2	130.00	Diag	L3x3x3/16	17.62	160.9	9.5	22.8	7.0	7.0	0.74
7	1	120.00	Diag	L3x3x3/16	18.45	167.4	8.8	22.8	7.4	7.4	0.84
6	2	110.00	Diag	L3x3x1/4	19.30	174.0	10.7	30.4	7.8	7.7	0.72
6	1	100.00	Diag	L3x3x1/4	20.16	180.8	10.0	30.4	8.1	8.1	0.81
5	2	90.00	Diag	L3 1/2x3 1/2x1/4	21.03	164.2	14.2	30.4	8.5	8.5	0.60
5	1	80.00	Diag	L3 1/2x3 1/2x1/4	21.92	170.2	13.2	30.4	8.9	8.9	0.68
4	1	60.00	Diag	2L2 1/2x2 1/2x3/16	29.01	182.9	12.2	43.2	11.9	11.7	0.98
3	1	40.00	Diag	2L3x3x3/16	30.48	155.8	20.3	45.7	12.4	12.3	0.61
2	1	20.00	Diag	2L3x3x3/16	32.02	161.5	18.9	45.7	12.9	12.8	0.68
1	1	0.00	Diag	2L3x3x3/16	33.61	167.4	17.6	45.7	13.2	13.1	0.75
13	2	245.00	Horiz	L2x2x3/16	4.00	113.8	11.6	8.3	0.7	0.7	0.08
10	2	190.00	SecH1	L2x2x3/16	4.26	131.1	9.3	8.3	2.2	2.2	0.26
10	1	180.00	SecH1	L2x2x3/16	4.76	146.4	7.5	8.3	2.6	2.6	0.35
9	2	170.00	SecH1	L2x2x3/16	5.26	161.7	6.1	8.3	2.8	2.8	0.45
9	1	160.00	SecH1	L2x2x3/16	5.75	177.0	5.1	8.3	3.1	3.1	0.61
8	2	150.00	SecH1	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	3.3	3.3	0.38
8	1	140.00	SecH1	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	3.6	3.6	0.48

7	2	130.00	SecH1	L2 1/2x2 1/2x3/16	7.25	177.6	6.4	10.9	3.7	3.7	0.57
7	1	120.00	SecH1	L2 1/2x2 1/2x3/16	7.75	189.8	5.6	10.9	4.0	4.0	0.71
6	2	110.00	SecH1	L3x3x3/16	8.25	167.8	8.7	11.1	4.3	4.3	0.49
6	1	100.00	SecH1	L3x3x3/16	8.75	178.0	7.8	11.1	4.6	4.6	0.60
5	2	90.00	SecH1	L3x3x3/16	9.25	188.2	7.0	11.1	4.7	4.7	0.68
5	1	80.00	SecH1	L3x3x3/16	9.75	198.3	6.3	11.1	5.0	5.0	0.80
4	1	60.00	SecH1	L3x3x1/4	10.51	213.8	7.1	14.8	5.4	5.4	0.76
4	1	60.00	SecH2	L2x2x3/16	5.26	161.7	6.1	8.3	5.4	5.4	0.88
4	1	60.00	SecH3	L2x2x3/16	5.26	161.7	6.1	8.3	5.4	5.4	0.88
4	1	60.00	SecD1	L2 1/2x2 1/2x3/16	6.91	169.1	7.1	10.9	3.7	3.7	0.52
4	1	60.00	SecD2	L2 1/2x2 1/2x3/16	7.60	186.0	5.9	10.9	3.7	3.7	0.63
4	1	60.00	PlanH1	L3x3x3/16	10.48	213.1	5.4	9.8	0.1	0.1	0.01
3	1	40.00	SecH1	L3 1/2x3 1/2x1/4	11.51	200.1	9.5	14.8	5.7	5.7	0.60
3	1	40.00	SecH2	L2 1/2x2 1/2x3/16	5.75	140.9	10.2	10.9	5.7	5.7	0.56
3	1	40.00	SecH3	L2 1/2x2 1/2x3/16	5.75	140.9	10.2	10.9	5.7	5.7	0.56
3	1	40.00	SecD1	L2 1/2x2 1/2x3/16	7.29	178.5	6.4	10.9	3.8	3.8	0.60
3	1	40.00	SecD2	L2 1/2x2 1/2x3/16	7.95	194.8	5.4	10.9	3.8	3.8	0.71
3	1	40.00	PlanH1	L3x3x3/16	11.48	233.5	4.5	9.8	0.1	0.1	0.02
2	1	20.00	SecH1	L3 1/2x3 1/2x1/4	12.51	217.5	8.1	14.8	6.3	6.3	0.78
2	1	20.00	SecH2	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	6.3	6.3	0.73
2	1	20.00	SecH3	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	6.3	6.3	0.73
2	1	20.00	SecD1	L2 1/2x2 1/2x3/16	7.68	188.2	5.7	10.9	4.1	4.1	0.71
2	1	20.00	SecD2	L2 1/2x2 1/2x3/16	8.33	203.9	4.9	10.9	4.1	4.1	0.83
2	1	20.00	PlanH1	L3 1/2x3 1/2x1/4	12.48	217.0	8.1	13.1	0.1	0.1	0.01
1	1	0.00	SecH1	L4x4x1/4	13.51	202.6	10.7	14.8	6.6	6.6	0.62
1	1	0.00	SecH2	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	6.6	6.6	0.89
1	1	0.00	SecH3	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	6.6	6.6	0.89
1	1	0.00	SecD1	L3x3x3/16	8.09	164.5	9.1	11.1	4.1	4.1	0.45
1	1	0.00	SecD2	L3x3x3/16	8.71	177.2	7.8	11.1	4.1	4.1	0.53
1	1	0.00	PlanH1	L3 1/2x3 1/2x1/4	13.48	234.5	6.9	13.1	0.1	0.1	0.01

Load Combination: Wind Only - Max Tension
Wind Direction: Maximum

Sec	Pnl	Elev (ft)	MType	Desc.	Len (ft)	kl/r	Gov. comp. cap. (Kips)	Gov. tens. cap. (Kips)	Max Compr. (Kips)	Max Tens. (Kips)	Asses. Ratio
13	2	245.00	Leg	SR 2	5.00	120.0	49.3	82.3	3.2	1.4	0.06
13	1	240.00	Leg	SR 2	5.00	120.0	49.3	82.3	8.6	6.7	0.18
12	4	235.00	Leg	SR 2	5.01	120.2	49.1	82.3	13.9	11.6	0.28
12	3	230.00	Leg	SR 2	5.01	120.2	49.1	82.3	21.2	16.8	0.43
12	2	225.00	Leg	SR 2	5.01	120.2	49.1	82.3	30.0	25.1	0.61
12	1	220.00	Leg	SR 2	5.01	120.2	49.1	82.3	36.9	31.6	0.75
11	4	215.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	46.2	38.8	0.59
11	3	210.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	56.0	47.9	0.72
11	2	205.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	64.6	55.9	0.83
11	1	200.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	73.6	64.2	0.95
10	2	190.00	Leg	SR 2 1/2	10.02	101.8	103.6	182.5	85.4	75.1	0.82
10	1	180.00	Leg	SR 2 1/2	10.02	101.2	104.5	182.5	102.0	90.0	0.98
9	2	170.00	Leg	SR 2 3/4	10.02	91.6	144.7	182.5	117.3	103.9	0.81
9	1	160.00	Leg	SR 2 3/4	10.02	91.3	145.4	182.5	133.0	117.8	0.91
8	2	150.00	Leg	SR 3	10.02	83.4	191.5	251.8	148.0	131.1	0.77
8	1	140.00	Leg	SR 3	10.02	83.0	192.2	251.8	163.5	144.5	0.85
7	2	130.00	Leg	SR 3 1/4	10.02	76.5	243.5	330.3	178.7	157.7	0.73

7	1	120.00	Leg	SR 3 1/4	10.02	76.4	243.8	330.3	194.3	171.0	0.80
6	2	110.00	Leg	SR 3 1/4	10.02	76.2	244.2	330.3	209.8	184.2	0.86
6	1	100.00	Leg	SR 3 1/4	10.02	76.1	244.7	330.3	225.6	197.5	0.92
5	2	90.00	Leg	SR 3 1/2	10.02	70.5	301.2	330.3	241.4	210.7	0.80
5	1	80.00	Leg	SR 3 1/2	10.02	70.5	301.2	330.3	257.6	224.1	0.86
4	1	60.00	Leg	SR 3 1/2	20.03	68.7	306.8	330.3	281.4	243.7	0.92
3	1	40.00	Leg	SR 3 3/4	20.03	64.1	368.4	416.3	313.9	270.2	0.85
2	1	20.00	Leg	SR 3 3/4	20.03	64.1	368.4	416.3	346.2	296.1	0.94
1	1	0.00	Leg	SR 4	20.03	60.1	434.5	528.0	378.4	321.6	0.87
13	2	245.00	Diag	L1 3/4x1 3/4x3/16	6.40	100.2	11.8	17.9	1.8	1.9	0.15
13	1	240.00	Diag	L1 3/4x1 3/4x3/16	6.40	100.2	11.8	17.9	2.2	2.2	0.19
12	4	235.00	Diag	L1 3/4x1 3/4x3/16	6.56	107.2	11.0	17.9	1.9	1.8	0.17
12	3	230.00	Diag	L1 3/4x1 3/4x3/16	6.90	112.0	10.4	17.9	3.4	3.4	0.33
12	2	225.00	Diag	L1 3/4x1 3/4x3/16	7.25	117.0	9.8	17.9	3.3	3.3	0.34
12	1	220.00	Diag	L1 3/4x1 3/4x3/16	7.62	122.2	9.1	17.9	3.2	3.2	0.35
11	4	215.00	Diag	L1 3/4x1 3/4x3/16	8.01	127.2	8.6	17.9	4.3	4.3	0.50
11	3	210.00	Diag	L1 3/4x1 3/4x3/16	8.40	132.7	7.9	17.9	4.2	4.3	0.53
11	2	205.00	Diag	L1 3/4x1 3/4x3/16	8.81	138.3	7.3	17.9	4.3	4.2	0.58
11	1	200.00	Diag	L1 3/4x1 3/4x3/16	9.22	144.1	6.7	17.9	4.3	4.3	0.63
10	2	190.00	Diag	L2 1/2x2 1/2x3/16	13.13	146.3	9.5	21.6	5.8	5.8	0.61
10	1	180.00	Diag	L2 1/2x2 1/2x3/16	13.80	152.7	8.7	21.6	5.8	5.9	0.67
9	2	170.00	Diag	L2 1/2x2 1/2x3/16	14.50	159.2	8.0	21.6	6.0	5.9	0.75
9	1	160.00	Diag	L2 1/2x2 1/2x3/16	15.24	166.2	7.4	21.6	6.1	6.1	0.83
8	2	150.00	Diag	L3x3x3/16	16.01	148.4	11.2	22.8	6.4	6.4	0.57
8	1	140.00	Diag	L3x3x3/16	16.80	154.7	10.3	22.8	6.7	6.7	0.65
7	2	130.00	Diag	L3x3x3/16	17.62	160.9	9.5	22.8	7.0	7.0	0.74
7	1	120.00	Diag	L3x3x3/16	18.45	167.4	8.8	22.8	7.4	7.4	0.84
6	2	110.00	Diag	L3x3x1/4	19.30	174.0	10.7	30.4	7.7	7.7	0.72
6	1	100.00	Diag	L3x3x1/4	20.16	180.8	10.0	30.4	8.1	8.1	0.81
5	2	90.00	Diag	L3 1/2x3 1/2x1/4	21.03	164.2	14.2	30.4	8.5	8.5	0.60
5	1	80.00	Diag	L3 1/2x3 1/2x1/4	21.92	170.2	13.2	30.4	8.9	8.9	0.68
4	1	60.00	Diag	2L2 1/2x2 1/2x3/16	29.01	182.9	12.2	43.2	11.9	11.8	0.97
3	1	40.00	Diag	2L3x3x3/16	30.48	155.8	20.3	45.7	12.4	12.3	0.61
2	1	20.00	Diag	2L3x3x3/16	32.02	161.5	18.9	45.7	12.9	12.8	0.68
1	1	0.00	Diag	2L3x3x3/16	33.61	167.4	17.6	45.7	13.2	13.2	0.75
13	2	245.00	Horiz	L2x2x3/16	4.00	113.8	11.6	8.3	0.7	0.7	0.08
10	2	190.00	SecH1	L2x2x3/16	4.26	131.1	9.3	8.3	2.2	2.2	0.26
10	1	180.00	SecH1	L2x2x3/16	4.76	146.4	7.5	8.3	2.6	2.6	0.34
9	2	170.00	SecH1	L2x2x3/16	5.26	161.7	6.1	8.3	2.7	2.7	0.45
9	1	160.00	SecH1	L2x2x3/16	5.75	177.0	5.1	8.3	3.1	3.1	0.60
8	2	150.00	SecH1	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	3.2	3.2	0.37
8	1	140.00	SecH1	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	3.5	3.5	0.48
7	2	130.00	SecH1	L2 1/2x2 1/2x3/16	7.25	177.6	6.4	10.9	3.6	3.6	0.57
7	1	120.00	SecH1	L2 1/2x2 1/2x3/16	7.75	189.8	5.6	10.9	4.0	4.0	0.70
6	2	110.00	SecH1	L3x3x3/16	8.25	167.8	8.7	11.1	4.3	4.3	0.49
6	1	100.00	SecH1	L3x3x3/16	8.75	178.0	7.8	11.1	4.6	4.6	0.59
5	2	90.00	SecH1	L3x3x3/16	9.25	188.2	7.0	11.1	4.6	4.6	0.67
5	1	80.00	SecH1	L3x3x3/16	9.75	198.3	6.3	11.1	5.0	5.0	0.79
4	1	60.00	SecH1	L3x3x1/4	10.51	213.8	7.1	14.8	5.3	5.3	0.75
4	1	60.00	SecH2	L2x2x3/16	5.26	161.7	6.1	8.3	5.3	5.3	0.87
4	1	60.00	SecH3	L2x2x3/16	5.26	161.7	6.1	8.3	5.3	5.3	0.87
4	1	60.00	SecD1	L2 1/2x2 1/2x3/16	6.91	169.1	7.1	10.9	3.7	3.7	0.52
4	1	60.00	SecD2	L2 1/2x2 1/2x3/16	7.60	186.0	5.9	10.9	3.7	3.7	0.62
4	1	60.00	PlanH1	L3x3x3/16	10.48	213.1	5.4	9.8	0.1	0.1	0.01
3	1	40.00	SecH1	L3 1/2x3 1/2x1/4	11.51	200.1	9.5	14.8	5.7	5.7	0.59

File: L:\Designs\08-0400\0471\J081218001-J\J081218001-J.out
Contract: S08-0471-J:J081218001-J
Revision: 0
Project: 250-FT:SST:13-SECTIONS
Site: 9LV0460 REED- HENDERSON COUNTY, K
Date and Time: 12/18/2008 11:51:47 AM
Engineer: HD/tw

3	1	40.00	SecH2	L2 1/2x2 1/2x3/16	5.75	140.9	10.2	10.9	5.7	5.7	0.55
3	1	40.00	SecH3	L2 1/2x2 1/2x3/16	5.75	140.9	10.2	10.9	5.7	5.7	0.55
3	1	40.00	SecD1	L2 1/2x2 1/2x3/16	7.29	178.5	6.4	10.9	3.7	3.7	0.59
3	1	40.00	SecD2	L2 1/2x2 1/2x3/16	7.95	194.8	5.4	10.9	3.7	3.7	0.70
3	1	40.00	PlanH1	L3x3x3/16	11.48	233.5	4.5	9.8	0.1	0.1	0.02
2	1	20.00	SecH1	L3 1/2x3 1/2x1/4	12.51	217.5	8.1	14.8	6.2	6.2	0.77
2	1	20.00	SecH2	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	6.2	6.2	0.72
2	1	20.00	SecH3	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	6.2	6.2	0.72
2	1	20.00	SecD1	L2 1/2x2 1/2x3/16	7.68	188.2	5.7	10.9	4.0	4.0	0.70
2	1	20.00	SecD2	L2 1/2x2 1/2x3/16	8.33	203.9	4.9	10.9	4.0	4.0	0.82
2	1	20.00	PlanH1	L3 1/2x3 1/2x1/4	12.48	217.0	8.1	13.1	0.1	0.1	0.01
1	1	0.00	SecH1	L4x4x1/4	13.51	202.6	10.7	14.8	6.5	6.5	0.61
1	1	0.00	SecH2	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	6.5	6.5	0.88
1	1	0.00	SecH3	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	6.5	6.5	0.88
1	1	0.00	SecD1	L3x3x3/16	8.09	164.5	9.1	11.1	4.1	4.1	0.45
1	1	0.00	SecD2	L3x3x3/16	8.71	177.2	7.8	11.1	4.1	4.1	0.52
1	1	0.00	PlanH1	L3 1/2x3 1/2x1/4	13.48	234.5	6.9	13.1	0.1	0.1	0.01

Load Combination Wind and Ice
Wind Direction Maximum

Sec	Pnl	Elev (ft)	MType	Desc.	Len (ft)	kl/r	Gov. comp. cap. (Kips)	Gov. tens. cap. (Kips)	Max Compr. (Kips)	Max Tens. (Kips)	Asses. Ratio
13	2	245.00	Leg	SR 2	5.00	120.0	49.3	82.3	3.5	0.0	0.07
13	1	240.00	Leg	SR 2	5.00	120.0	49.3	82.3	4.7	0.0	0.10
12	4	235.00	Leg	SR 2	5.01	120.2	49.1	82.3	5.9	0.0	0.12
12	3	230.00	Leg	SR 2	5.01	120.2	49.1	82.3	10.2	0.0	0.21
12	2	225.00	Leg	SR 2	5.01	120.2	49.1	82.3	12.1	0.0	0.25
12	1	220.00	Leg	SR 2	5.01	120.2	49.1	82.3	13.7	0.0	0.28
11	4	215.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	18.3	0.0	0.23
11	3	210.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	20.7	0.0	0.27
11	2	205.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	22.6	0.0	0.29
11	1	200.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	24.9	0.0	0.32
10	2	190.00	Leg	SR 2 1/2	10.02	101.8	103.6	182.5	27.6	0.0	0.27
10	1	180.00	Leg	SR 2 1/2	10.02	101.2	104.5	182.5	32.0	0.0	0.31
9	2	170.00	Leg	SR 2 3/4	10.02	91.6	144.7	182.5	35.9	0.0	0.25
9	1	160.00	Leg	SR 2 3/4	10.02	91.3	145.4	182.5	40.2	0.0	0.28
8	2	150.00	Leg	SR 3	10.02	83.4	191.5	251.8	44.1	0.0	0.23
8	1	140.00	Leg	SR 3	10.02	83.0	192.2	251.8	48.5	0.0	0.25
7	2	130.00	Leg	SR 3 1/4	10.02	76.5	243.5	330.3	52.7	0.0	0.22
7	1	120.00	Leg	SR 3 1/4	10.02	76.4	243.8	330.3	57.1	0.0	0.23
6	2	110.00	Leg	SR 3 1/4	10.02	76.2	244.2	330.3	61.5	0.0	0.25
6	1	100.00	Leg	SR 3 1/4	10.02	76.1	244.7	330.3	66.1	0.0	0.27
5	2	90.00	Leg	SR 3 1/2	10.02	70.5	301.2	330.3	70.6	0.0	0.23
5	1	80.00	Leg	SR 3 1/2	10.02	70.5	301.2	330.3	75.4	0.0	0.25
4	1	60.00	Leg	SR 3 1/2	20.03	68.7	306.8	330.3	82.3	0.0	0.27
3	1	40.00	Leg	SR 3 3/4	20.03	64.1	368.4	416.3	92.0	0.0	0.25
2	1	20.00	Leg	SR 3 3/4	20.03	64.1	368.4	416.3	101.7	0.0	0.28
1	1	0.00	Leg	SR 4	20.03	60.1	434.5	528.0	111.4	0.0	0.26
13	2	245.00	Diag	L1 3/4x1 3/4x3/16	6.40	100.2	11.8	17.9	0.2	0.3	0.02
13	1	240.00	Diag	L1 3/4x1 3/4x3/16	6.40	100.2	11.8	17.9	0.3	0.2	0.03
12	4	235.00	Diag	L1 3/4x1 3/4x3/16	6.56	139.3	7.2	17.9	0.4	0.1	0.05 *

12	3	230.00	Diag	L1 3/4x1 3/4x3/16	6.90	147.1	6.5	17.9	0.3	0.4	0.05 *
12	2	225.00	Diag	L1 3/4x1 3/4x3/16	7.25	117.0	9.8	17.9	0.4	0.4	0.04
12	1	220.00	Diag	L1 3/4x1 3/4x3/16	7.62	122.2	9.1	17.9	0.4	0.3	0.05
11	4	215.00	Diag	L1 3/4x1 3/4x3/16	8.01	173.0	4.7	17.9	0.4	0.4	0.09 *
11	3	210.00	Diag	L1 3/4x1 3/4x3/16	8.40	132.7	7.9	17.9	0.5	0.6	0.06
11	2	205.00	Diag	L1 3/4x1 3/4x3/16	8.81	138.3	7.3	17.9	0.6	0.4	0.09
11	1	200.00	Diag	L1 3/4x1 3/4x3/16	9.22	144.1	6.7	17.9	0.5	0.6	0.07
10	2	190.00	Diag	L2 1/2x2 1/2x3/16	13.13	146.3	9.5	21.6	0.9	0.6	0.09
10	1	180.00	Diag	L2 1/2x2 1/2x3/16	13.80	152.7	8.7	21.6	0.7	0.8	0.08
9	2	170.00	Diag	L2 1/2x2 1/2x3/16	14.50	159.2	8.0	21.6	0.9	0.6	0.11
9	1	160.00	Diag	L2 1/2x2 1/2x3/16	15.24	166.2	7.4	21.6	0.8	0.8	0.10
8	2	150.00	Diag	L3x3x3/16	16.01	148.4	11.2	22.8	0.9	0.7	0.08
8	1	140.00	Diag	L3x3x3/16	16.80	154.7	10.3	22.8	0.8	0.8	0.08
7	2	130.00	Diag	L3x3x3/16	17.62	160.9	9.5	22.8	0.9	0.8	0.10
7	1	120.00	Diag	L3x3x3/16	18.45	167.4	8.8	22.8	0.9	0.9	0.10
6	2	110.00	Diag	L3x3x1/4	19.30	174.0	10.7	30.4	1.0	0.8	0.09
6	1	100.00	Diag	L3x3x1/4	20.16	180.8	10.0	30.4	1.0	0.9	0.10
5	2	90.00	Diag	L3 1/2x3 1/2x1/4	21.03	164.2	14.2	30.4	1.1	0.9	0.08
5	1	80.00	Diag	L3 1/2x3 1/2x1/4	21.92	170.2	13.2	30.4	1.1	1.0	0.08
4	1	60.00	Diag	2L2 1/2x2 1/2x3/16	29.01	182.9	12.2	43.2	1.5	1.2	0.13
3	1	40.00	Diag	2L3x3x3/16	30.48	155.8	20.3	45.7	1.5	1.3	0.08
2	1	20.00	Diag	2L3x3x3/16	32.02	161.5	18.9	45.7	1.6	1.3	0.09
1	1	0.00	Diag	2L3x3x3/16	33.61	167.4	17.6	45.7	1.6	1.4	0.09
13	2	245.00	Horiz	L2x2x3/16	4.00	113.8	11.6	8.3	0.1	0.0	0.01
10	2	190.00	SecH1	L2x2x3/16	4.26	131.1	9.3	8.3	0.7	0.7	0.08
10	1	180.00	SecH1	L2x2x3/16	4.76	146.4	7.5	8.3	0.8	0.8	0.11
9	2	170.00	SecH1	L2x2x3/16	5.26	161.7	6.1	8.3	0.8	0.8	0.14
9	1	160.00	SecH1	L2x2x3/16	5.75	177.0	5.1	8.3	0.9	0.9	0.18
8	2	150.00	SecH1	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	1.0	1.0	0.11
8	1	140.00	SecH1	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	1.1	1.1	0.14
7	2	130.00	SecH1	L2 1/2x2 1/2x3/16	7.25	177.6	6.4	10.9	1.1	1.1	0.17
7	1	120.00	SecH1	L2 1/2x2 1/2x3/16	7.75	189.8	5.6	10.9	1.2	1.2	0.21
6	2	110.00	SecH1	L3x3x3/16	8.25	167.8	8.7	11.1	1.3	1.3	0.14
6	1	100.00	SecH1	L3x3x3/16	8.75	178.0	7.8	11.1	1.3	1.3	0.17
5	2	90.00	SecH1	L3x3x3/16	9.25	188.2	7.0	11.1	1.4	1.4	0.20
5	1	80.00	SecH1	L3x3x3/16	9.75	198.3	6.3	11.1	1.5	1.5	0.23
4	1	60.00	SecH1	L3x3x1/4	10.51	213.8	7.1	14.8	1.6	1.6	0.22
4	1	60.00	SecH2	L2x2x3/16	5.26	161.7	6.1	8.3	1.6	1.6	0.25
4	1	60.00	SecH3	L2x2x3/16	5.26	161.7	6.1	8.3	1.6	1.6	0.25
4	1	60.00	SecD1	L2 1/2x2 1/2x3/16	6.91	169.1	7.1	10.9	1.1	1.1	0.15
4	1	60.00	SecD2	L2 1/2x2 1/2x3/16	7.60	186.0	5.9	10.9	1.1	1.1	0.18
4	1	60.00	PlanH1	L3x3x3/16	10.48	213.1	5.4	9.8	0.0	0.0	0.00
3	1	40.00	SecH1	L3 1/2x3 1/2x1/4	11.51	200.1	9.5	14.8	1.7	1.7	0.17
3	1	40.00	SecH2	L2 1/2x2 1/2x3/16	5.75	140.9	10.2	10.9	1.7	1.7	0.16
3	1	40.00	SecH3	L2 1/2x2 1/2x3/16	5.75	140.9	10.2	10.9	1.7	1.7	0.16
3	1	40.00	SecD1	L2 1/2x2 1/2x3/16	7.29	178.5	6.4	10.9	1.1	1.1	0.17
3	1	40.00	SecD2	L2 1/2x2 1/2x3/16	7.95	194.8	5.4	10.9	1.1	1.1	0.20
3	1	40.00	PlanH1	L3x3x3/16	11.48	233.5	4.5	9.8	0.0	0.0	0.01
2	1	20.00	SecH1	L3 1/2x3 1/2x1/4	12.51	217.5	8.1	14.8	1.8	1.8	0.23
2	1	20.00	SecH2	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	1.8	1.8	0.21
2	1	20.00	SecH3	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	1.8	1.8	0.21
2	1	20.00	SecD1	L2 1/2x2 1/2x3/16	7.68	188.2	5.7	10.9	1.2	1.2	0.20
2	1	20.00	SecD2	L2 1/2x2 1/2x3/16	8.33	203.9	4.9	10.9	1.2	1.2	0.24
2	1	20.00	PlanH1	L3 1/2x3 1/2x1/4	12.48	217.0	8.1	13.1	0.0	0.0	0.00
1	1	0.00	SecH1	L4x4x1/4	13.51	202.6	10.7	14.8	1.9	1.9	0.18
1	1	0.00	SecH2	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	1.9	1.9	0.26

1	1	0.00	SecH3	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	1.9	1.9	0.26
1	1	0.00	SecD1	L3x3x3/16	8.09	164.5	9.1	11.1	1.2	1.2	0.13
1	1	0.00	SecD2	L3x3x3/16	8.71	177.2	7.8	11.1	1.2	1.2	0.15
1	1	0.00	PlanH1	L3 1/2x3 1/2x1/4	13.48	234.5	6.9	13.1	0.0	0.0	0.00

Note: The asterisk (*) placed after the assessment ratio marks cases where the diagonal's capacity in X-braced panel without support in crossover point is governing due to Tension/Compression ratio below limit.
The slenderness is calculated as per: ANSI/TIA-222-G, Table 4-6

Load Combination: Wind Only - Serviceability
Wind Direction: Maximum

Sec	Pnl	Elev (ft)	MType	Desc.	Len (ft)	kl/r	Gov. comp. cap. (Kips)	Gov. tens. cap. (Kips)	Max Compr. (Kips)	Max Tens. (Kips)	Asses. Ratio
13	2	245.00	Leg	SR 2	5.00	120.0	49.3	82.3	1.6	0.0	0.03
13	1	240.00	Leg	SR 2	5.00	120.0	49.3	82.3	3.2	1.1	0.06
12	4	235.00	Leg	SR 2	5.01	120.2	49.1	82.3	4.7	2.4	0.10
12	3	230.00	Leg	SR 2	5.01	120.2	49.1	82.3	7.5	3.0	0.15
12	2	225.00	Leg	SR 2	5.01	120.2	49.1	82.3	10.1	5.2	0.21
12	1	220.00	Leg	SR 2	5.01	120.2	49.1	82.3	12.1	6.9	0.25
11	4	215.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	15.5	8.1	0.20
11	3	210.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	18.4	10.4	0.24
11	2	205.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	20.9	12.6	0.27
11	1	200.00	Leg	SR 2 1/4	5.01	106.8	77.8	123.5	23.6	14.7	0.30
10	2	190.00	Leg	SR 2 1/2	10.02	101.8	103.6	182.5	27.1	17.5	0.26
10	1	180.00	Leg	SR 2 1/2	10.02	101.2	104.5	182.5	32.1	21.3	0.31
9	2	170.00	Leg	SR 2 3/4	10.02	91.6	144.7	182.5	36.7	24.8	0.25
9	1	160.00	Leg	SR 2 3/4	10.02	91.3	145.4	182.5	41.4	28.2	0.29
8	2	150.00	Leg	SR 3	10.02	83.4	191.5	251.8	46.0	31.5	0.24
8	1	140.00	Leg	SR 3	10.02	83.0	192.2	251.8	50.8	34.8	0.26
7	2	130.00	Leg	SR 3 1/4	10.02	76.5	243.5	330.3	55.5	38.0	0.23
7	1	120.00	Leg	SR 3 1/4	10.02	76.4	243.8	330.3	60.3	41.2	0.25
6	2	110.00	Leg	SR 3 1/4	10.02	76.2	244.2	330.3	65.1	44.3	0.27
6	1	100.00	Leg	SR 3 1/4	10.02	76.1	244.7	330.3	70.1	47.4	0.29
5	2	90.00	Leg	SR 3 1/2	10.02	70.5	301.2	330.3	75.1	50.5	0.25
5	1	80.00	Leg	SR 3 1/2	10.02	70.5	301.2	330.3	80.2	53.6	0.27
4	1	60.00	Leg	SR 3 1/2	20.03	68.7	306.8	330.3	87.8	58.1	0.29
3	1	40.00	Leg	SR 3 3/4	20.03	64.1	368.4	416.3	98.2	64.0	0.27
2	1	20.00	Leg	SR 3 3/4	20.03	64.1	368.4	416.3	108.7	69.7	0.30
1	1	0.00	Leg	SR 4	20.03	60.1	434.5	528.0	119.3	75.1	0.27
13	2	245.00	Diag	L1 3/4x1 3/4x3/16	6.40	100.2	11.8	17.9	0.5	0.5	0.04
13	1	240.00	Diag	L1 3/4x1 3/4x3/16	6.40	100.2	11.8	17.9	0.6	0.6	0.05
12	4	235.00	Diag	L1 3/4x1 3/4x3/16	6.56	107.2	11.0	17.9	0.6	0.5	0.05
12	3	230.00	Diag	L1 3/4x1 3/4x3/16	6.90	112.0	10.4	17.9	1.0	0.9	0.09
12	2	225.00	Diag	L1 3/4x1 3/4x3/16	7.25	117.0	9.8	17.9	0.9	0.9	0.09
12	1	220.00	Diag	L1 3/4x1 3/4x3/16	7.62	122.2	9.1	17.9	0.9	0.9	0.10
11	4	215.00	Diag	L1 3/4x1 3/4x3/16	8.01	127.2	8.6	17.9	1.2	1.2	0.14
11	3	210.00	Diag	L1 3/4x1 3/4x3/16	8.40	132.7	7.9	17.9	1.2	1.2	0.15
11	2	205.00	Diag	L1 3/4x1 3/4x3/16	8.81	138.3	7.3	17.9	1.2	1.1	0.17
11	1	200.00	Diag	L1 3/4x1 3/4x3/16	9.22	144.1	6.7	17.9	1.2	1.2	0.17
10	2	190.00	Diag	L2 1/2x2 1/2x3/16	13.13	146.3	9.5	21.6	1.7	1.6	0.17

10	1	180.00	Diag	L2 1/2x2 1/2x3/16	13.80	152.7	8.7	21.6	1.6	1.6	0.18
9	2	170.00	Diag	L2 1/2x2 1/2x3/16	14.50	159.2	8.0	21.6	1.7	1.6	0.21
9	1	160.00	Diag	L2 1/2x2 1/2x3/16	15.24	166.2	7.4	21.6	1.7	1.7	0.23
8	2	150.00	Diag	L3x3x3/16	16.01	148.4	11.2	22.8	1.8	1.7	0.16
8	1	140.00	Diag	L3x3x3/16	16.80	154.7	10.3	22.8	1.9	1.9	0.18
7	2	130.00	Diag	L3x3x3/16	17.62	160.9	9.5	22.8	2.0	1.9	0.21
7	1	120.00	Diag	L3x3x3/16	18.45	167.4	8.8	22.8	2.0	2.0	0.23
6	2	110.00	Diag	L3x3x1/4	19.30	174.0	10.7	30.4	2.2	2.1	0.20
6	1	100.00	Diag	L3x3x1/4	20.16	180.8	10.0	30.4	2.3	2.2	0.23
5	2	90.00	Diag	L3 1/2x3 1/2x1/4	21.03	164.2	14.2	30.4	2.4	2.3	0.17
5	1	80.00	Diag	L3 1/2x3 1/2x1/4	21.92	170.2	13.2	30.4	2.5	2.5	0.19
4	1	60.00	Diag	2L2 1/2x2 1/2x3/16	29.01	182.9	12.2	43.2	3.3	3.2	0.27
3	1	40.00	Diag	2L3x3x3/16	30.48	155.8	20.3	45.7	3.5	3.4	0.17
2	1	20.00	Diag	2L3x3x3/16	32.02	161.5	18.9	45.7	3.6	3.5	0.19
1	1	0.00	Diag	2L3x3x3/16	33.61	167.4	17.6	45.7	3.7	3.6	0.21
13	2	245.00	Horiz	L2x2x3/16	4.00	113.8	11.6	8.3	0.2	0.2	0.02
10	2	190.00	SecH1	L2x2x3/16	4.26	131.1	9.3	8.3	0.7	0.7	0.08
10	1	180.00	SecH1	L2x2x3/16	4.76	146.4	7.5	8.3	0.8	0.8	0.11
9	2	170.00	SecH1	L2x2x3/16	5.26	161.7	6.1	8.3	0.9	0.9	0.14
9	1	160.00	SecH1	L2x2x3/16	5.75	177.0	5.1	8.3	1.0	1.0	0.19
8	2	150.00	SecH1	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	1.0	1.0	0.12
8	1	140.00	SecH1	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	1.1	1.1	0.15
7	2	130.00	SecH1	L2 1/2x2 1/2x3/16	7.25	177.6	6.4	10.9	1.1	1.1	0.18
7	1	120.00	SecH1	L2 1/2x2 1/2x3/16	7.75	189.8	5.6	10.9	1.2	1.2	0.22
6	2	110.00	SecH1	L3x3x3/16	8.25	167.8	8.7	11.1	1.3	1.3	0.15
6	1	100.00	SecH1	L3x3x3/16	8.75	178.0	7.8	11.1	1.4	1.4	0.18
5	2	90.00	SecH1	L3x3x3/16	9.25	188.2	7.0	11.1	1.4	1.4	0.21
5	1	80.00	SecH1	L3x3x3/16	9.75	198.3	6.3	11.1	1.5	1.5	0.25
4	1	60.00	SecH1	L3x3x1/4	10.51	213.8	7.1	14.8	1.7	1.7	0.23
4	1	60.00	SecH2	L2x2x3/16	5.26	161.7	6.1	8.3	1.7	1.7	0.27
4	1	60.00	SecH3	L2x2x3/16	5.26	161.7	6.1	8.3	1.7	1.7	0.27
4	1	60.00	SecD1	L2 1/2x2 1/2x3/16	6.91	169.1	7.1	10.9	1.1	1.1	0.16
4	1	60.00	SecD2	L2 1/2x2 1/2x3/16	7.60	186.0	5.9	10.9	1.1	1.1	0.19
4	1	60.00	PlanH1	L3x3x3/16	10.48	213.1	5.4	9.8	0.0	0.0	0.00
3	1	40.00	SecH1	L3 1/2x3 1/2x1/4	11.51	200.1	9.5	14.8	1.8	1.8	0.19
3	1	40.00	SecH2	L2 1/2x2 1/2x3/16	5.75	140.9	10.2	10.9	1.8	1.8	0.17
3	1	40.00	SecH3	L2 1/2x2 1/2x3/16	5.75	140.9	10.2	10.9	1.8	1.8	0.17
3	1	40.00	SecD1	L2 1/2x2 1/2x3/16	7.29	178.5	6.4	10.9	1.2	1.2	0.18
3	1	40.00	SecD2	L2 1/2x2 1/2x3/16	7.95	194.8	5.4	10.9	1.2	1.2	0.22
3	1	40.00	PlanH1	L3x3x3/16	11.48	233.5	4.5	9.8	0.0	0.0	0.01
2	1	20.00	SecH1	L3 1/2x3 1/2x1/4	12.51	217.5	8.1	14.8	2.0	2.0	0.24
2	1	20.00	SecH2	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	2.0	2.0	0.23
2	1	20.00	SecH3	L2 1/2x2 1/2x3/16	6.25	153.1	8.7	10.9	2.0	2.0	0.23
2	1	20.00	SecD1	L2 1/2x2 1/2x3/16	7.68	188.2	5.7	10.9	1.3	1.3	0.22
2	1	20.00	SecD2	L2 1/2x2 1/2x3/16	8.33	203.9	4.9	10.9	1.3	1.3	0.26
2	1	20.00	PlanH1	L3 1/2x3 1/2x1/4	12.48	217.0	8.1	13.1	0.0	0.0	0.00
1	1	0.00	SecH1	L4x4x1/4	13.51	202.6	10.7	14.8	2.1	2.1	0.19
1	1	0.00	SecH2	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	2.1	2.1	0.28
1	1	0.00	SecH3	L2 1/2x2 1/2x3/16	6.75	165.4	7.4	10.9	2.1	2.1	0.28
1	1	0.00	SecD1	L3x3x3/16	8.09	164.5	9.1	11.1	1.3	1.3	0.14
1	1	0.00	SecD2	L3x3x3/16	8.71	177.2	7.8	11.1	1.3	1.3	0.16
1	1	0.00	PlanH1	L3 1/2x3 1/2x1/4	13.48	234.5	6.9	13.1	0.0	0.0	0.00

File: L:\Designs\08-0400\0471\J081218001-J\J081218001-J.out
Contract: S08-0471-J:J081218001-J
Revision: 0
Project: 250-FT:SST:13-SECTIONS
Site: 9LV0460 REED- HENDERSON COUNTY, K
Date and Time: 12/18/2008 11:51:47 AM
Engineer: HD/tw

Section M: SECTION PROPERTIES DATA

Sec	Pan	Memb. Type	Steel Grade	Conn. Type	Bolts	Bolt Size (in)	Bolt Grade	End Dist. (in)	Gusset Thick. (in)	kl/r	Comp Cap. (Kips)	Tens Cap. (Kips)	Bolt Cap. (Kips)	Bear. Cap. (Kips)	Block Shear (Kips)
13	2	Leg	A572 gr.50	Tension	4	0.625	A325X	0.938	N/A	120.0	49.3	141.5	82.3T	N/A	N/A
13	2	Diag	A36	Bolted	2	0.500	A325X	1.125	0.250	100.2	11.8	17.9	19.4S	20.6	19.1
13	2	Horiz	A36	Bolted	1	0.625	A325X	1.250	0.250	113.8	11.6	20.3	15.2S	11.1	8.3
13	1	Leg	A572 gr.50	Tension	4	0.625	A325X	0.938	N/A	120.0	49.3	141.5	82.3T	N/A	N/A
13	1	Diag	A36	Bolted	2	0.500	A325X	1.125	0.250	100.2	11.8	17.9	19.4S	20.6	19.1
12	4	Leg	A572 gr.50	Tension	4	0.625	A325X	0.938	N/A	120.2	49.1	141.5	82.3T	N/A	N/A
12	4	Diag	A36	Bolted	2	0.500	A325X	1.125	0.250	107.2	11.0	17.9	19.4S	20.6	19.1
12	3	Leg	A572 gr.50	Tension	4	0.625	A325X	0.938	N/A	120.2	49.1	141.5	82.3T	N/A	N/A
12	3	Diag	A36	Bolted	2	0.500	A325X	1.125	0.250	112.0	10.4	17.9	19.4S	20.6	19.1
12	2	Leg	A572 gr.50	Tension	4	0.625	A325X	0.938	N/A	120.2	49.1	141.5	82.3T	N/A	N/A
12	2	Diag	A36	Bolted	2	0.500	A325X	1.125	0.250	117.0	9.8	17.9	19.4S	20.6	19.1
12	1	Leg	A572 gr.50	Tension	4	0.625	A325X	0.938	N/A	120.2	49.1	141.5	82.3T	N/A	N/A
12	1	Diag	A36	Bolted	2	0.500	A325X	1.125	0.250	122.2	9.1	17.9	19.4S	20.6	19.1
11	4	Leg	A572 gr.50	Tension	6	0.625	A325X	0.938	N/A	106.8	77.8	179.0	123.5T	N/A	N/A
11	4	Diag	A36	Bolted	2	0.500	A325X	1.125	0.250	127.2	8.6	17.9	19.4S	20.6	19.1
11	3	Leg	A572 gr.50	Tension	6	0.625	A325X	0.938	N/A	106.8	77.8	179.0	123.5T	N/A	N/A
11	3	Diag	A36	Bolted	2	0.500	A325X	1.125	0.250	132.7	7.9	17.9	19.4S	20.6	19.1
11	2	Leg	A572 gr.50	Tension	6	0.625	A325X	0.938	N/A	106.8	77.8	179.0	123.5T	N/A	N/A
11	2	Diag	A36	Bolted	2	0.500	A325X	1.125	0.250	138.3	7.3	17.9	19.4S	20.6	19.1
11	1	Leg	A572 gr.50	Tension	6	0.625	A325X	0.938	N/A	106.8	77.8	179.0	123.5T	N/A	N/A
11	1	Diag	A36	Bolted	2	0.500	A325X	1.125	0.250	144.1	6.7	17.9	19.4S	20.6	19.1
10	2	Leg	A572 gr.50	Tension	6	0.750	A325X	1.125	N/A	101.8	103.6	221.1	182.5T	N/A	N/A
10	2	Diag	A36	Bolted	2	0.625	A325X	1.250	0.250	146.3	9.5	26.5	30.4S	24.2	21.6
10	2	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.250	131.1	9.3	20.3	15.2S	11.1	8.3
10	1	Leg	A572 gr.50	Tension	6	0.750	A325X	1.125	N/A	101.2	104.5	221.1	182.5T	N/A	N/A
10	1	Diag	A36	Bolted	2	0.625	A325X	1.250	0.250	152.7	8.7	26.5	30.4S	24.2	21.6
10	1	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.250	146.4	7.5	20.3	15.2S	11.1	8.3
9	2	Leg	A572 gr.50	Tension	6	0.750	A325X	1.125	N/A	91.6	144.7	267.5	182.5T	N/A	N/A
9	2	Diag	A36	Bolted	2	0.625	A325X	1.250	0.250	159.2	8.0	26.5	30.4S	24.2	21.6
9	2	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.250	161.7	6.1	20.3	15.2S	11.1	8.3
9	1	Leg	A572 gr.50	Tension	6	0.750	A325X	1.125	N/A	91.3	145.4	267.5	182.5T	N/A	N/A
9	1	Diag	A36	Bolted	2	0.625	A325X	1.250	0.250	166.2	7.4	26.5	30.4S	24.2	21.6
9	1	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.250	177.0	5.1	20.3	15.2S	11.1	8.3
8	2	Leg	A572 gr.50	Tension	6	0.875	A325X	1.313	N/A	83.4	191.5	318.4	251.8T	N/A	N/A
8	2	Diag	A36	Bolted	2	0.625	A325X	1.250	0.250	148.4	11.2	32.8	30.4S	24.2	22.8
8	2	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.250	153.1	8.7	26.5	15.2S	11.1	10.9
8	1	Leg	A572 gr.50	Tension	6	0.875	A325X	1.313	N/A	83.0	192.2	318.4	251.8T	N/A	N/A
8	1	Diag	A36	Bolted	2	0.625	A325X	1.250	0.250	154.7	10.3	32.8	30.4S	24.2	22.8
8	1	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.250	165.4	7.4	26.5	15.2S	11.1	10.9
7	2	Leg	A572 gr.50	Tension	6	1.000	A325X	1.500	N/A	76.5	243.5	373.6	330.3T	N/A	N/A
7	2	Diag	A36	Bolted	2	0.625	A325X	1.250	0.250	160.9	9.5	32.8	30.4S	24.2	22.8
7	2	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.250	177.6	6.4	26.5	15.2S	11.1	10.9
7	1	Leg	A572 gr.50	Tension	6	1.000	A325X	1.500	N/A	76.4	243.8	373.6	330.3T	N/A	N/A
7	1	Diag	A36	Bolted	2	0.625	A325X	1.250	0.250	167.4	8.8	32.8	30.4S	24.2	22.8
7	1	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.250	189.8	5.6	26.5	15.2S	11.1	10.9

6	2	Leg	A572 gr.50	Tension	6	1.000	A325X	1.500	N/A	76.2	244.2	373.6	330.3T	N/A	N/A
6	2	Diag	A36	Bolted	2	0.625	A325X	1.250	0.250	174.0	10.7	43.6	30.4S	32.2	30.4
6	2	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.250	167.8	8.7	32.8	15.2S	11.1	13.0
6	1	Leg	A572 gr.50	Tension	6	1.000	A325X	1.500	N/A	76.1	244.7	373.6	330.3T	N/A	N/A
6	1	Diag	A36	Bolted	2	0.625	A325X	1.250	0.250	180.8	10.0	43.6	30.4S	32.2	30.4
6	1	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.250	178.0	7.8	32.8	15.2S	11.1	13.0
5	2	Leg	A572 gr.50	Tension	6	1.000	A325X	1.500	N/A	70.5	301.2	433.3	330.3T	N/A	N/A
5	2	Diag	A36	Bolted	2	0.625	A325X	1.250	0.250	164.2	14.2	51.9	30.4S	32.2	32.0
5	2	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.250	188.2	7.0	32.8	15.2S	11.1	13.0
5	1	Leg	A572 gr.50	Tension	6	1.000	A325X	1.500	N/A	70.5	301.2	433.3	330.3T	N/A	N/A
5	1	Diag	A36	Bolted	2	0.625	A325X	1.250	0.250	170.2	13.2	51.9	30.4S	32.2	32.0
5	1	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.250	198.3	6.3	32.8	15.2S	11.1	13.0
4	1	Leg	A572 gr.50	Tension	6	1.000	A325X	1.500	N/A	68.7	306.8	433.3	330.3T	N/A	N/A
4	1	Diag	A36	Bolted	2	0.625	A325X	1.250	0.250	182.9	12.2	53.0	60.7S	48.5	43.2
4	1	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.250	213.8	7.1	43.6	15.2S	14.8	17.2
4	1	SecH2	A36	Bolted	1	0.625	A325X	1.250	0.250	161.7	6.1	20.3	15.2S	11.1	8.3
4	1	SecH3	A36	Bolted	1	0.625	A325X	1.250	0.250	161.7	6.1	20.3	15.2S	11.1	8.3
4	1	SecD1	A36	Bolted	1	0.625	A325X	1.250	0.250	169.1	7.1	26.5	15.2S	11.1	10.9
4	1	SecD2	A36	Bolted	1	0.625	A325X	1.250	0.250	186.0	5.9	26.5	15.2S	11.1	10.9
4	1	PlanH1	A36	Bolted	1	0.625	A325X	1.125	0.375	213.1	5.4	32.8	15.2S	9.8	12.6
3	1	Leg	A572 gr.50	Tension	6	1.125	A325X	1.688	N/A	64.1	368.4	497.4	416.3T	N/A	N/A
3	1	Diag	A36	Bolted	2	0.625	A325X	1.250	0.375	155.8	20.3	65.6	60.7S	48.5	45.7
3	1	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.375	200.1	9.5	51.9	15.2S	14.8	19.9
3	1	SecH2	A36	Bolted	1	0.625	A325X	1.250	0.375	140.9	10.2	26.5	15.2S	11.1	10.9
3	1	SecH3	A36	Bolted	1	0.625	A325X	1.250	0.375	140.9	10.2	26.5	15.2S	11.1	10.9
3	1	SecD1	A36	Bolted	1	0.625	A325X	1.250	0.375	178.5	6.4	26.5	15.2S	11.1	10.9
3	1	SecD2	A36	Bolted	1	0.625	A325X	1.250	0.375	194.8	5.4	26.5	15.2S	11.1	10.9
3	1	PlanH1	A36	Bolted	1	0.625	A325X	1.125	0.375	233.5	4.5	32.8	15.2S	9.8	12.6
2	1	Leg	A572 gr.50	Tension	6	1.125	A325X	1.688	N/A	64.1	368.4	497.4	416.3T	N/A	N/A
2	1	Diag	A36	Bolted	2	0.625	A325X	1.250	0.375	161.5	18.9	65.6	60.7S	48.5	45.7
2	1	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.375	217.5	8.1	51.9	15.2S	14.8	19.9
2	1	SecH2	A36	Bolted	1	0.625	A325X	1.250	0.375	153.1	8.7	26.5	15.2S	11.1	10.9
2	1	SecH3	A36	Bolted	1	0.625	A325X	1.250	0.375	153.1	8.7	26.5	15.2S	11.1	10.9
2	1	SecD1	A36	Bolted	1	0.625	A325X	1.250	0.375	188.2	5.7	26.5	15.2S	11.1	10.9
2	1	SecD2	A36	Bolted	1	0.625	A325X	1.250	0.375	203.9	4.9	26.5	15.2S	11.1	10.9
2	1	PlanH1	A36	Bolted	1	0.625	A325X	1.125	0.375	217.0	8.1	51.9	15.2S	13.1	19.4
1	1	Leg	A572 gr.50	Tension	6	1.250	A325X	1.875	N/A	60.1	434.5	565.9	528.0T	N/A	N/A
1	1	Diag	A36	Bolted	2	0.625	A325X	1.250	0.375	167.4	17.6	65.6	60.7S	48.5	45.7
1	1	SecH1	A36	Bolted	1	0.625	A325X	1.250	0.375	202.6	10.7	60.2	15.2S	14.8	22.6
1	1	SecH2	A36	Bolted	1	0.625	A325X	1.250	0.375	165.4	7.4	26.5	15.2S	11.1	10.9
1	1	SecH3	A36	Bolted	1	0.625	A325X	1.250	0.375	165.4	7.4	26.5	15.2S	11.1	10.9
1	1	SecD1	A36	Bolted	1	0.625	A325X	1.250	0.375	164.5	9.1	32.8	15.2S	11.1	13.0
1	1	SecD2	A36	Bolted	1	0.625	A325X	1.250	0.375	177.2	7.8	32.8	15.2S	11.1	13.0
1	1	PlanH1	A36	Bolted	1	0.625	A325X	1.125	0.375	234.5	6.9	51.9	15.2S	13.1	19.4

File: L:\Designs\08-0400\0471\J081218001-J\J081218001-J.out
Contract: S08-0471-J:J081218001-J
Revision: 0
Project: 250-FT:SST:13-SECTIONS
Site: 9LV0460 REED- HENDERSON COUNTY, K
Date and Time: 12/18/2008 11:51:47 AM
Engineer: HD/tw

Section N: LEG REACTION DATA

Load Combination: Max Envelope
Wind Direction: Maximum

Force-Y Download (Kips)	Force-Y Uplift (Kips)	Shear-X (Kips)	Shear-Z (Kips)	Max Shear (Kips)
400.16	333.72			40.27

Load Combination: Wind Only
Wind Direction: Maximum

Support	Force-Y Download (Kips)	Force-Y Uplift (Kips)	Shear-X (Kips)	Shear-Z (Kips)	Max Shear (Kips)
	400.16	327.69			40.27

Load Combination: Wind Only - Max Tension
Wind Direction: Maximum

Support	Force-Y Download (Kips)	Force-Y Uplift (Kips)	Shear-X (Kips)	Shear-Z (Kips)	Max Shear (Kips)
	394.13	333.72			39.94

Load Combination: Wind and Ice
Wind Direction: Maximum

Support	Force-Y Download (Kips)	Force-Y Uplift (Kips)	Shear-X (Kips)	Shear-Z (Kips)	Max Shear (Kips)
	116.11	0.00			8.55

Load Combination: Wind Only - Serviceability
Wind Direction: Maximum

Support	Force-Y Download (Kips)	Force-Y Uplift (Kips)	Shear-X (Kips)	Shear-Z (Kips)	Max Shear (Kips)
	123.40	78.78			11.87

File: L:\Designs\08-0400\0471\J081218001-J\J081218001-J.out
Contract: S08-0471-J:J081218001-J
Revision: 0
Project: 250-FT:SST:13-SECTIONS
Site: 9LV0460 REED- HENDERSON COUNTY, K
Date and Time: 12/18/2008 11:51:47 AM
Engineer: HD/tw

Section 0: TOWER FOUNDATION DATA

Load Combination: Max Envelope
Wind Direction: Maximum

Axial Load (Kips)	Shear Load-X (Kips)	Shear Load-Z (Kips)	Total Shear (Kips)	Moment-X (Kipsft)	Moment-Y (Kipsft)	Moment-Z (Kipsft)	Total Moment (Kipsft)
54.45	34.05	58.99	68.11	7896.04	-4.45	-4557.94	9117.13
54.45	34.05	58.99	68.11	7896.04	-4.45	-4557.94	9117.13

Load Combination: Wind Only
Wind Direction: Maximum

Axial Load (Kips)	Shear Load-X (Kips)	Shear Load-Z (Kips)	Total Shear (Kips)	Moment-X (Kipsft)	Moment-Y (Kipsft)	Moment-Z (Kipsft)	Total Moment (Kipsft)
72.57	34.03	58.96	68.08	7895.95	-4.45	-4557.61	9116.90
72.57	34.03	58.96	68.08	7895.95	-4.45	-4557.61	9116.90

Load Combination: Wind Only - Max Tension
Wind Direction: Maximum

Axial Load (Kips)	Shear Load-X (Kips)	Shear Load-Z (Kips)	Total Shear (Kips)	Moment-X (Kipsft)	Moment-Y (Kipsft)	Moment-Z (Kipsft)	Total Moment (Kipsft)
54.45	34.05	58.99	68.11	7896.04	-4.45	-4557.94	9117.13
54.45	34.05	58.99	68.11	7896.04	-4.45	-4557.94	9117.13

Load Combination: Wind and Ice
Wind Direction: Maximum

Axial Load (Kips)	Shear Load-X (Kips)	Shear Load-Z (Kips)	Total Shear (Kips)	Moment-X (Kipsft)	Moment-Y (Kipsft)	Moment-Z (Kipsft)	Total Moment (Kipsft)
219.67	3.76	6.52	7.53	904.41	-0.24	-513.44	1039.99
219.67	3.76	6.52	7.53	904.41	-0.24	-513.44	1039.99

Load Combination: Wind Only - Serviceability
Wind Direction: Maximum

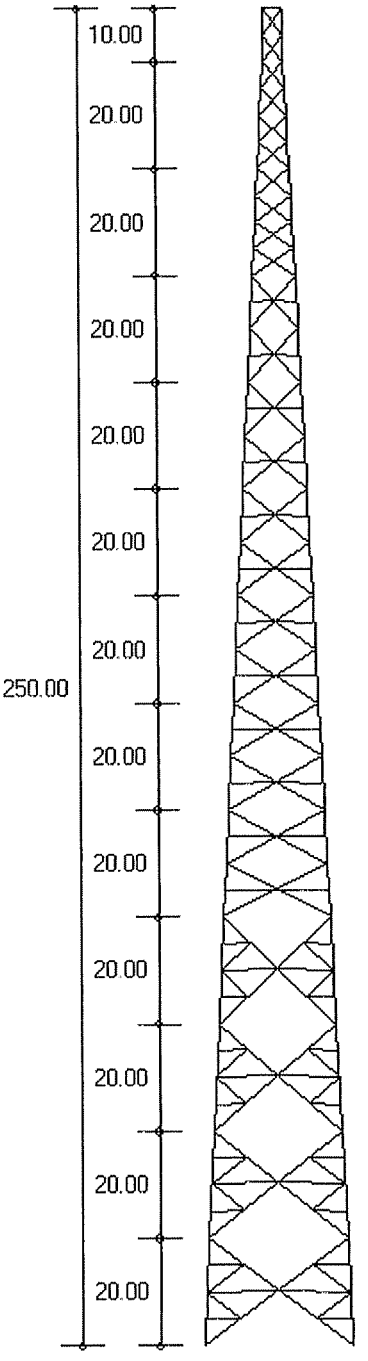
Axial Load (Kips)	Shear Load-X (Kips)	Shear Load-Z (Kips)	Total Shear (Kips)	Moment-X (Kipsft)	Moment-Y (Kipsft)	Moment-Z (Kipsft)	Total Moment (Kipsft)
56.96	9.16	15.88	18.33	2193.09	-1.20	-1265.28	2531.91
56.96	9.16	15.88	18.33	2193.09	-1.20	-1265.28	2531.91

File: L:\Designs\08-0400\0471\J081218001-J\J081218001-J.out
Contract: S08-0471-J:J081218001-J
Revision: 0
Project: 250-FT:SST:13-SECTIONS
Site: 9LV0460 REED- HENDERSON COUNTY, K
Date and Time: 12/18/2008 11:51:47 AM
Engineer: HD/tw

DESIGN SPECIFICATION

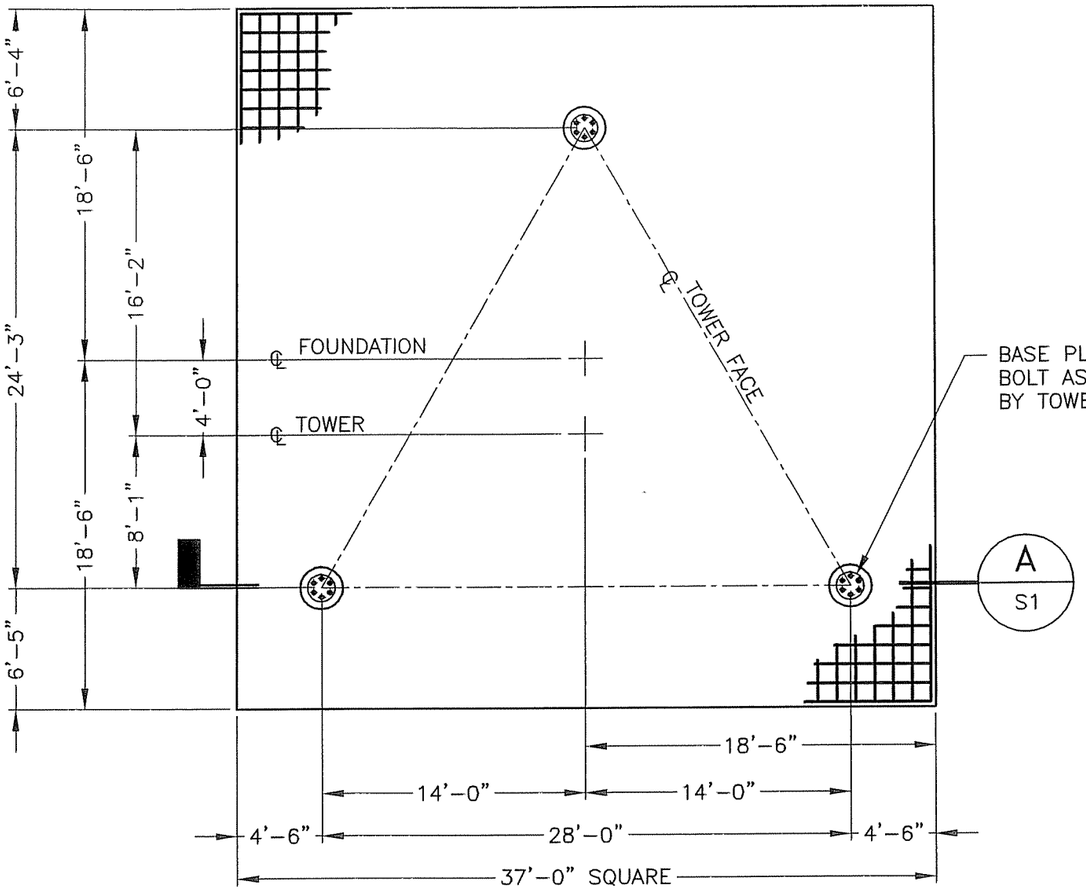
Design Standard: ANSI/TIA-222-G-2005 Add.1
Basic Wind Speed (No Ice) = 90.0 (mph)
Basic Wind Speed (With Ice) = 30.0 (mph)
Design Ice Thickness = 0.75 (in)
Structure Class = II
Exposure Category = C
Topographic Category = 1

Sct.	Length (ft)	Top Width (in)	Bot Width (in)
1	20.00	312.00	336.00
2	20.00	288.00	312.00
3	20.00	264.00	288.00
4	20.00	240.00	264.00
5	20.00	216.00	240.00
6	20.00	192.00	216.00
7	20.00	168.00	192.00
8	20.00	144.00	168.00
9	20.00	120.00	144.00
10	20.00	96.00	120.00
11	20.00	72.00	96.00
12	20.00	48.00	72.00
13	10.00	48.00	48.00

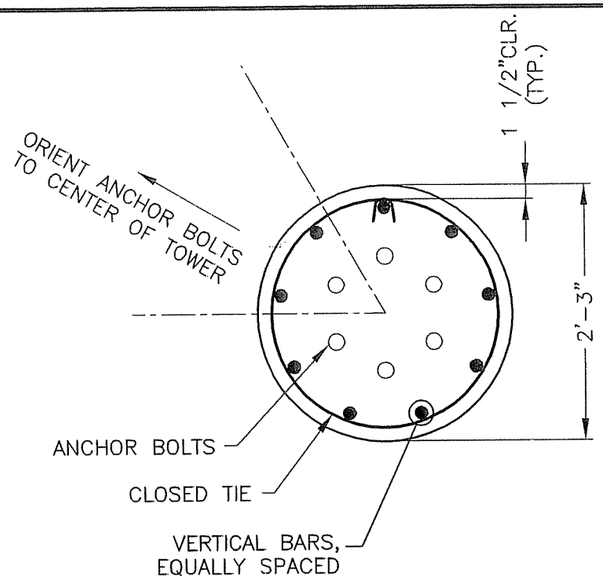


MAXIMUM BASE REACTIONS

	Bare	Iced
Download (Kips)	400.2	116.1
Uplift (Kips)	333.7	0.0
Shear (Kips)	40.3	8.6



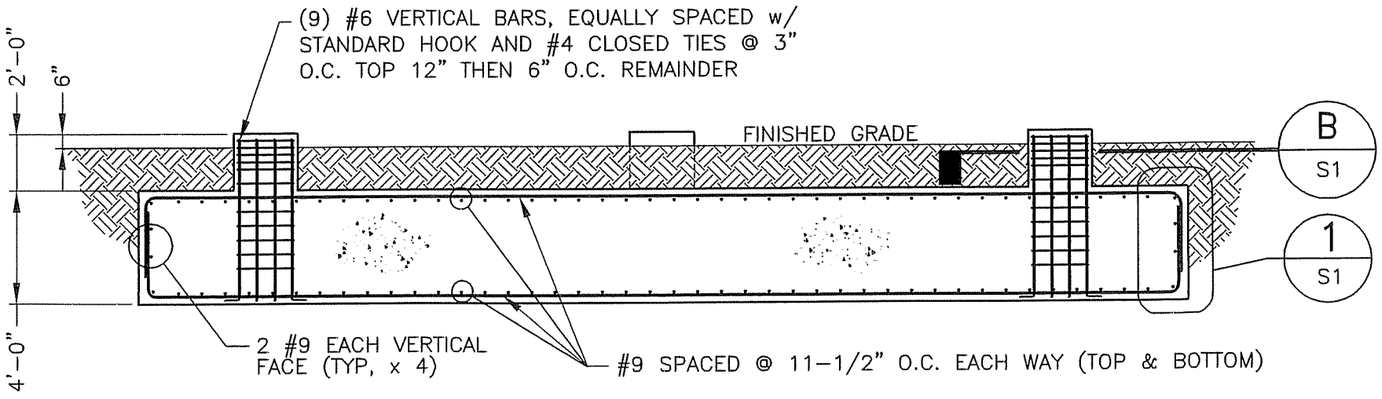
FOUNDATION PLAN
1/8"=1'-0"



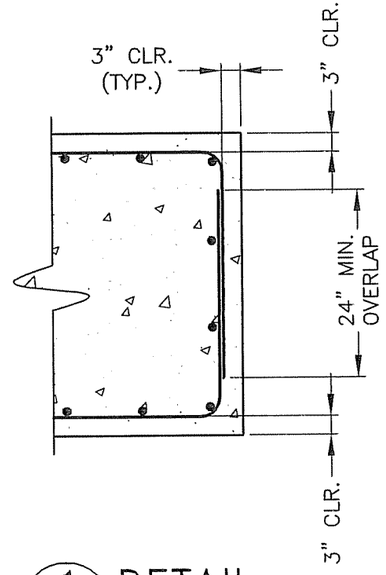
B S1 SECTION
3/4"=1'-0"

NOTE:

BASE PLATE AND ANCHOR BOLT ASSEMBLY PROVIDED BY TOWER MANUFACTURER AND SET BY CONTRACTOR.



A S1 SECTION
3/16"=1'-0"



1 S1 DETAIL
1/2"=1'-0"

FACTORED FOUNDATION DESIGN LOADS:

OTM = 9,117.1 KIP-FT
TOTAL SHEAR = 68.1 KIPS
MAX. AXIAL = 54.5 KIPS

STATE OF KENTUCKY
BUFORD H. [illegible] JR.
19839
LICENSED PROFESSIONAL ENGINEER
01/30/09

WALKER ENGINEERING INCORPORATED
ATLANTA · BIRMINGHAM
8451 Dunwoody Place, Building 8, Sandy Springs, Georgia 30350
(770) 641-7306 Fax: (770) 587-2196 www.walkerengineer.com

REV.	DATE	BY

ENGINEER: TTG
DRAWN BY: BMC
CHECKED BY: BHE
ORIG. ISSUE DATE: 01/30/09

SITE No: 9LV0460
SITE NAME: REED
WEI JOB No: 0901-38
FDN
MITTRIX
250ft FWT SST FOUNDATION
FOUNDATION PLAN, SECTION, & DETAIL
U.S. 60 & WILLIAMS-KEENE ROAD
HENDERSON COUNTY, REED, KY

SCALE: AS NOTED
THIS DWG SET CONSISTS OF: 2 SHEETS S1 THRU S2
DRAWING No.: S1

ACAD FILE: S:\PROJ\TWRS\MITTRIX\DWGS\MITTRIX-312FDN

GENERAL NOTES

G1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS. ALL DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.

G2. THE SIZE AND SPACING OF STRUCTURAL ELEMENTS SHALL NOT BE CHANGED WITHOUT THE ENGINEER'S APPROVAL.

G3. DETAILS SHOWN ARE TYPICAL; THEREFORE, SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.

G4. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.

G5. ALL STRUCTURAL AND NON-STRUCTURAL ITEMS SHALL BE TEMPORARILY BRACED DURING CONSTRUCTION UNTIL ALL STRUCTURAL ELEMENTS THAT ARE REQUIRED FOR STABILITY, SUCH AS LATERAL BRACING, ANCHOR BOLTS, ETC., HAVE BEEN INSTALLED.

G6. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS OF EXISTING UTILITIES, GROUND DRAINS, DRAIN PIPES, VENTS, OR ANY OTHER MECHANICAL DEVICES PRESENT BEFORE COMMENCING WORK. CONTRACTOR SHALL PROTECT EXISTING FACILITIES, UTILITIES, COAX AND UTILITY LINES FROM DAMAGE. NOTIFY ENGINEER IMMEDIATELY OF ANY CONFLICTS ARISING FROM THIS VERIFICATION.

G7. INCORRECTLY FABRICATED, DAMAGED, MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION.

G8. CONTRACTOR(S) SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.

G9. CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE OSHA REGULATIONS, AND PER THE 2007 KENTUCKY BUILDING CODE (IBC 2006), AND ANSI/TIA-222-G, AND SHALL BE PERFORMED ONLY IN "GOOD WEATHER". GOOD WEATHER MEANS LITTLE OR NO WIND AND RAIN AND MINIMUM TEMPERATURE OF 50 DEGREES F. CONTACT ENGINEER FOR ADDITIONAL INSTRUCTIONS IF "GOOD WEATHER" CANNOT BE ACHIEVED.

G10. DESIGN WIND SPEED IS 90 MPH PER ANSI/TIA-222-G.

SHOP FABRICATION DRAWING SUBMITTAL

F1. THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER IS RESPONSIBLE FOR ASSURING THAT ALL SUBMITTALS COMPLY WITH THE LATEST PROJECT PLANS, SPECIFICATIONS, GOVERNING CODES AND REGULATIONS, AND IS SOLELY RESPONSIBLE FOR CONFIRMING ALL QUANTITIES, DIMENSIONS, FABRICATION TECHNIQUES, AND COORDINATING WORK WITH ALL TRADES.

F2. SHOP DRAWINGS SHALL BE SUBMITTED IN A TIMELY MANNER TO ALLOW ADEQUATE TIME FOR PROCESSING.

F3. ALL SUBMITTALS ARE TO BE ACCOMPANIED BY A LETTER OF TRANSMITTAL.

F4. ALL SHOP DRAWINGS MUST BEAR EVIDENCE OF THE CONTRACTOR'S APPROVAL PRIOR TO SUBMITTAL.

F5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER PRIOR TO FABRICATION.

REINFORCED CONCRETE NOTES

C1. CONCRETE SHALL CONFORM TO ACI 301 & 318, AND SHALL HAVE A COMPRESSIVE STRENGTH OF 4000 PSI AFTER 28 DAYS.

C2. AGGREGATES SHALL BE CLEAN AND WELL-GRADED WITH A MAXIMUM SIZE OF 1-1/2". CONCRETE COMPRESSIVE TESTS SHALL CONFORM TO ASTM C39.

C3. USE NORMAL WEIGHT CONCRETE.

C4. USE ASTM A615 GRADE 60 FOR ALL CONCRETE REINFORCING STEEL.

C5. ALL CONCRETE REINFORCEMENT SHALL BE ACCURATELY PLACED, RIGIDLY SUPPORTED, AND FIRMLY TIED IN PLACE WITH BAR SUPPORTS AND SPACERS IN ACCORDANCE WITH ACI 301 & 318.

C6. MAXIMUM PERMISSIBLE SLUMP = 4".

C7. APPLY A WATER REPELLENT SEALANT TO ALL EXPOSED CONCRETE SURFACES. USE W.R. MEADOWS "SEAL-TIGHT #1200," OR EQUIVALENT, APPLIED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

C8. FIELD-VERIFY SOIL PARAMETERS PRIOR TO CONSTRUCTION, AND REPORT ANY DISCREPANCIES TO THE ENGINEER. SOIL PARAMETERS FOR FOUNDATION DESIGN WERE OBTAINED FROM THE "GEOTECHNICAL EXPLORATION REPORT", DATED 01/22/09, BY GEM ENGINEERING, INC., GEM PROJECT No. G-2990.

STATE OF KENTUCKY
BUFORD H. EVANS
LICENSED PROFESSIONAL ENGINEER
Buford H Evans
01/30/09

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REV.	DATE	BY

ENGINEER: TTG
DRAWN BY: BMC
CHECKED BY: BHE
ORIG. ISSUE DATE: 01/30/09

SITE No: 9LV0460
SITE NAME: REED
WEI JOB No: 0901-38 | FDN

MITTRIX
250ft FWT SST FOUNDATION
NOTES

U.S. 60 & WILLIAMS-KEENE ROAD
HENDERSON COUNTY, REED, KY

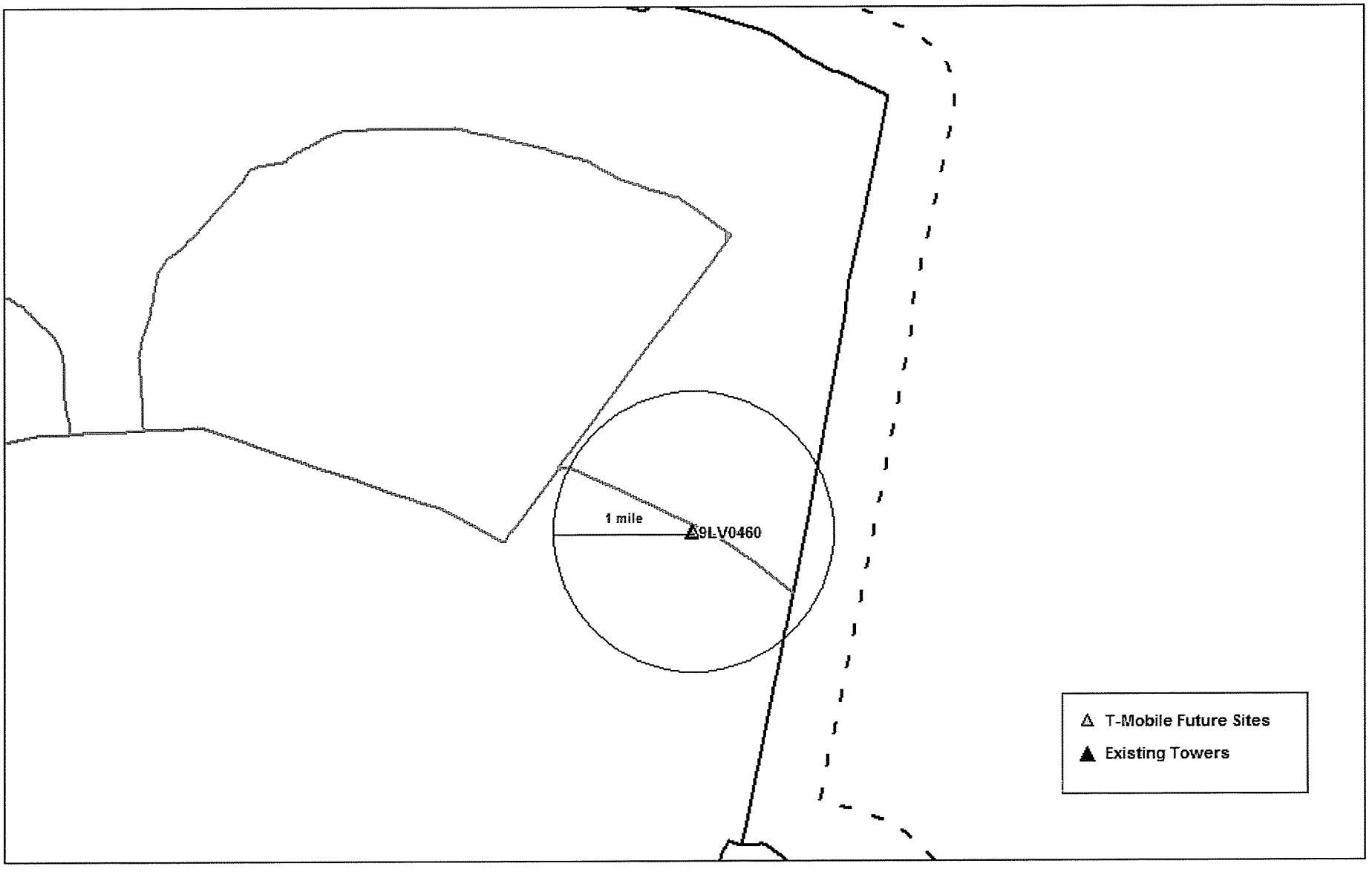
SCALE: AS NOTED

THIS DWG SET CONSISTS OF:
2 SHEETS
S1 THRU S2

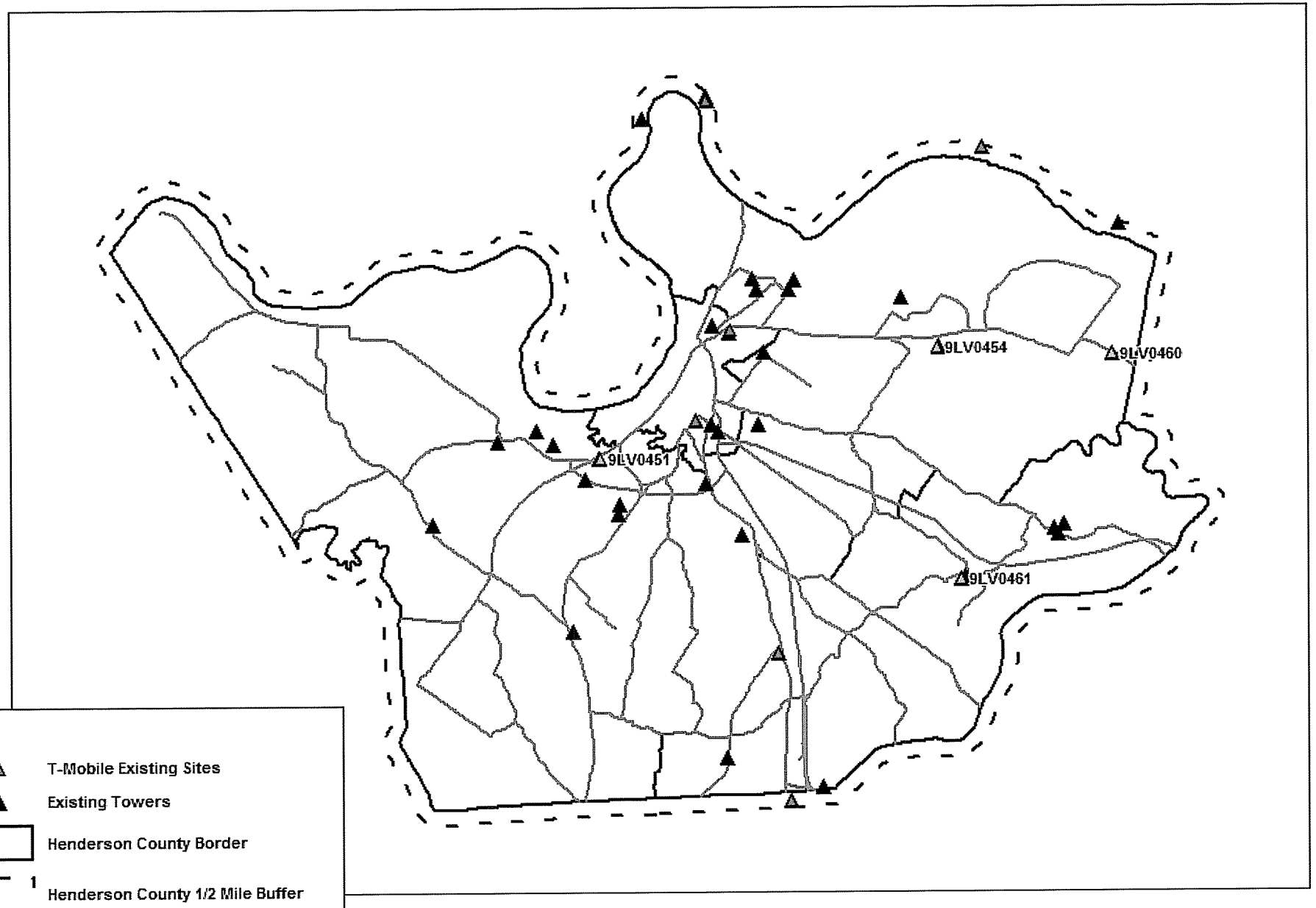
DRAWING No.: S2

ACAD FILE: S:\PROJ\TWRS\MITTRIX\DWGS\MITTRIX-312FDN

T-Mobile USA Site Map
9LV0460 1 Mile Radius



T-Mobile USA Site Map
Henderson County Kentucky



F

9LV0460/Reed
Statement

Powertel/Memphis Inc., doing business as T-Mobile USA, Inc., proposes to construct a 250' Self Support Tower in the vicinity of Hwy. 60 E. and Williams Keene Road, Henderson County, KY 42451. There is an existing guyed tower across Hwy. 60 that has available space for co-location. The tower is owned by the Commonwealth of Kentucky and the rent was quoted in excess of $13,000 per month, which is approximately 8-10 times the median rental rate paid for co-location on existing structures. This rental amount is not economically reasonable or feasible for T-Mobile to pay.

The general character of the area is predominately agricultural with very little rural residential. The specific property of the proposed tower location is being utilized to raise corn crops. There is adequate access from public right-of-way and utilities at the proposed location. In researching this area, the conclusion is that there is no more suitable location reasonably available from which adequate service to the area can be provided. T-Mobile USA will meet all noticing, publication and posting requirements.

3272950_1.doc

Notice of Proposed Construction or Alteration - Off Airport

Project Name: T-MOB-000110434-09 **Sponsor:** T-Mobile

Details for Case : Reed LV0460 - REED

Show Project Summary

Case Status

ASN: 2009-ASO-54-OE
Status: Accepted
Date Accepted: 01/07/2009
Date Determined:
Letters: None
Documents 01/07/2009 9LV0460D - R

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
if Temporary : Months: Days:
Work Schedule - Start: 03/01/2009
Work Schedule - End: 09/30/2009
State Filing: Filed with State

Structure Summary

Structure Type: Antenna Tower
Structure Name: Reed
FCC Number:
Prior ASN:

Structure Details

Latitude: 37° 51' 9.19" N
Longitude: 87° 19' 39.04" W
Horizontal Datum: NAD83
Site Elevation (SE): 375 (nearest foot)
Structure Height (AGL): 260 (nearest foot)
Requested Marking/Lighting: Dual-red and medium intensity
Other :
Recommended Marking/Lighting:
Nearest City: Owensboro
Nearest State: Kentucky
Description of Location: Rural area in central KY.
Description of Proposal: Proposing a 250' self support tower with a 10' lightning arrestor.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	I
806	824	MHz	500	
824	849	MHz	500	
851	866	MHz	500	
869	894	MHz	500	
896	901	MHz	500	
901	902	MHz	7	
930	931	MHz	3500	
931	932	MHz	3500	
932	932.5	MHz	17	
935	940	MHz	1000	
940	941	MHz	3500	
1850	1910	MHz	1640	
1930	1990	MHz	1640	
2305	2310	MHz	2000	
2345	2360	MHz	2000	

Specific Frequencies

FStan

Land Surveyors and Consulting Engineers

Formerly F.S. Land & T. Alan Neal Companies

T-MOBILE

Date: December 12, 2008

T-Mobile
Attn: Hamlet Hope
11509 Commonwealth Drive
Louisville, Ky. 40299

Re:	FAA "2-C" Letter	
	T-Mobile/Louisville PCS Site Name:	Reed
	T-Mobile/Louisville PCS Site No.:	9LV0460
	Property Owner:	Williams, Glenn and Judy
	T-Mobile /Louisville PCS Site Locale:	Hwy 60 & Williams Keene Rd., Owensboro, KY 42301
	FSTAN Project No:	08-5785

Dear Hamlet,

This is to advise you that we have conducted a Global Positioning System (GPS) Observation for this project in order to establish a geographical position and elevation for the proposed antenna at this location.

The base station used for the GPS observation is described as follows: Station designated "T 333 RESET"and stamped "HA0662", in Owensboro West, KY.

Horizontal values are based upon the following datum: NAD 83
Vertical values are based upon the following datum: NGVD 29

Geographic Coordinates of the Self Support Tower are as follows:

LATITUDE: 37° 51' 09.19" NORTH LONGITUDE: 87° 19' 39.04" WEST

Ground elevation at the site is 375 FEET (AMSL)
Height of proposed monopole is 250 FEET (AGL)
Height of proposed lightning arrestor is 260 FEET (AGL)
Overall height elevation is 635 FEET (AMSL)

The accuracy of the above stated "Self Support Tower " values meet or exceed "2-C" accuracy as required by the Federal Aviation Administration (horizontal accuracy ± 50 feet, vertical accuracy ± 20 feet).

Kentucky State Plane Coordinates (Southern Zone) were established with Trimble Global Positioning Systems (GPS) receivers. This site has ties to the National Geodetic Reference System established by the National Geodetic Survey, formerly the U.S. Coast & Geodetic Survey by measurements to PID Station "HA0662".

If you have any questions concerning this information please contact us at any time.

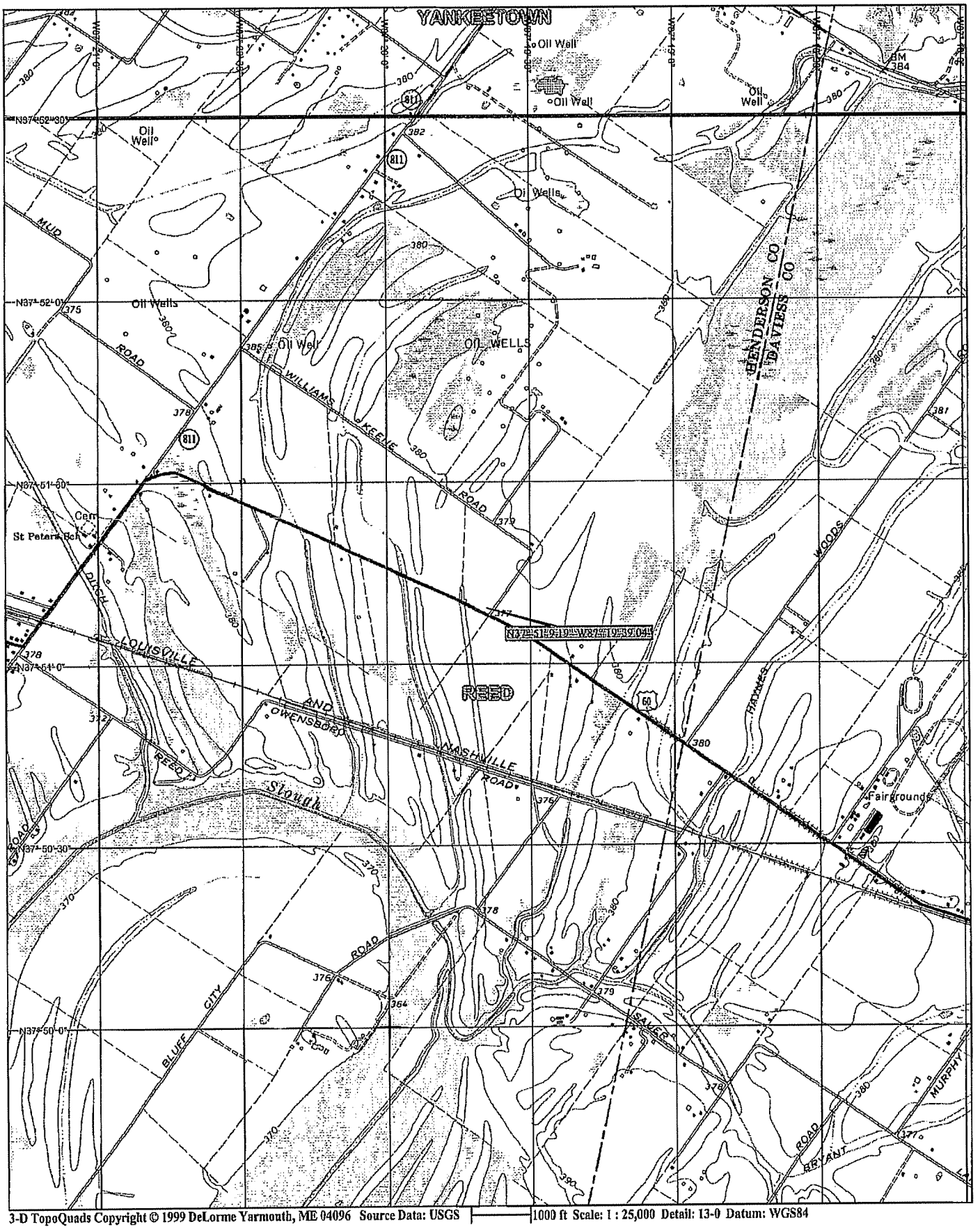
Sincerely,

STATE OF KENTUCKY
FRANK L. SELLINGER
#3282
LICENSED PROFESSIONAL LAND SURVEYOR

CONSULTANT

Frank L. Sellinger, PLS No. 3282
FStan Land Surveyors and Consulting Engineers
2315 Crittenden Drive, Louisville, Ky. 40217
Phone: 502-635-5866 Fax: 502-636-5263

9LV4460 - Reed



1000 ft Scale: 1 : 25,000 Detail: 13-0 Datum: WGS84

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

Aeronautical Study No.
2009-ASO-54-OE

Issued Date: 01/23/2009

Ken Bischoff
T-Mobile
11509 Commonwealth Drive, Suite 9
Louisville, KY 40299

**** 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 9LV0460D Reed
Location:	Owensboro, KY
Latitude:	37-51-09.19N NAD 83
Longitude:	87-19-39.04W
Heights:	260 feet above ground level (AGL)
	635 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 07/23/2010 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 (770) 909-4370. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2009-ASO-54-OE.

Signature Control No: 613065-107922988 (DNE)
Cesar Perez
Specialist

Attachment(s)
Frequency Data

Frequency Data for ASN 2009-ASO-54-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP 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

Kentucky

TC 56-50E (Rev. 02/05)

Kentucky Transportation Cabinet, Kentucky Airport Zoning Commission, 200 Mero Street, Frankfort, KY 40622

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

INSTRUCTIONS INCLUDED

Kentucky Aeronautical Study Number

1. APPLICANT -- Name, Address, Telephone, Fax, etc.
T-Mobile USA
Attn:Ken Bischoff
11509 Commonwealth Drive
Louisville, KY 40299

2. Representative of Applicant -- Name, Address, Telephone, Fax
T-Mobile USA
Attn:Kevin Blewitt
11509 Commonwealth Drive
Louisville, KY 40299
Phone: (502) 297-6207, Fax (502) 297-6251

3. Application for: ☒ New Construction ☐ Alteration ☐ Existing

4. Duration: ☒ Permanent ☐ Temporary (Months _____ Days _____)

5. Work Schedule: Start 3/1/2009 End 9/30/2009

6. Type: ☒ Antenna Tower ☐ Crane ☐ Building ☐ Power Line
☐ Landfill ☐ Water Tank ☐ Other _____

7. Marking/Painting and/or Lighting Preferred:
☐ Red Lights and Paint ☒ Dual - Red & Medium Intensity White
☐ White - Medium Intensity ☐ Dual - Red & High Intensity White
☐ White - High Intensity ☐ Other _____

8. FAA Aeronautical Study Number 2009-ASO-54-OE

9. Latitude: 37 ° 51 ' 09 . 19 "

10. Longitude: 87 ° 19 ' 39 . 04 "

11. Datum: ☒ NAD83 ☐ NAD27 ☐ Other _____

12. Nearest Kentucky City: Owensboro County Daviess

13. Nearest Kentucky public use or Military airport:
OWB: Owensboro-Daviess

14. Distance from #13 to Structure: 59667ft

15. Direction from #13 to Structure: 131.83 degrees

16. Site Elevation (AMSL): 375.00 Feet

17. Total Structure Height (AGL): 260.00 Feet

18. Overall Height (#16 + #17) (AMSL): 635.00 Feet

19. Previous FAA and/or Kentucky Aeronautical Study Number(s):

20. Description of Location: (Attach USGS 7.5 minute Quadrangle Map or an Airport layout Drawing with the precise site marked and any certified survey)
Intersection of Hwy 60 and Williams Keene Rd., Owensboro, KY 42301

21. Description of Proposal:
Erection of a self support tower.

22. Has a "NOTICE OF CONSTRUCTION OR ALTERATION" (FAA Form 7460-1) been filed with the Federal Aviation Administration?
☐ No ☒ Yes, When January 07, 2009

CERTIFICATION: I hereby certify that all the above statements made by me are true, complete and correct to the best of my knowledge and belief.

Kevin Blewitt, Senior RF Engineer		1/7/2009
Printed Name and Title	Signature	Date

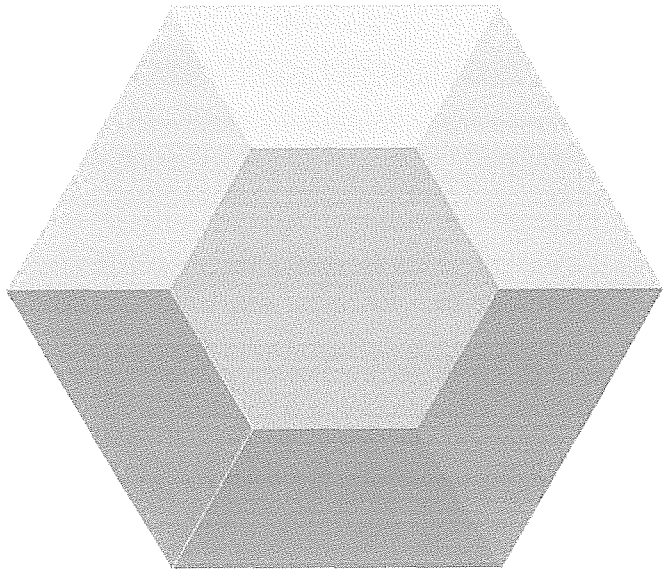
PENALTIES: Persons failing to comply with Kentucky Revised Statutes (KRS 183.861 through 183.990) and Kentucky Administrative Regulations (602 KAR 050:Series) are liable for fines and/or imprisonment as set forth in KRS 183.990(3). Non-compliance with Federal Aviation Administration Regulations may result in further penalties.

Commission Action:

☐ Chairman, KAZC ☐ Administrator, KAZC

☐ Approved

☐ Disapproved _____ Date _____



GEM Engineering, Inc.

GEOTECHNICAL ENVIRONMENTAL & MATERIALS SERVICES

GEOTECHNICAL EXPLORATION REPORT

Reed Cell Tower Site
U.S. 60 and Williams-Keene Road
Reed, Kentucky

GEM Project No. G-2990

January 22, 2009

T-Mobile South, LLC
3800 Ezell Road, Suite 815
Nashville, Tennessee 37211

Attention: Mr. Dean Davis

Subject: Geotechnical Exploration Report
Reed Cell Tower
Reed, Kentucky
GEM Project G-2990

Dear Mr. Davis:

GEM Engineering, Inc. (GEM) has completed the geotechnical exploration for the referenced project. These services were authorized and conducted in general accordance with GEM Proposal No. GP-3249, dated December 30, 2008.

The purpose of this exploration was to obtain and evaluate subsurface information for the specific project described in this report in order to identify geotechnical issues that may affect the proposed construction and to develop design and construction recommendations for site preparation and foundations.

We appreciate the opportunity to serve as your geotechnical consultants for this project. We look forward to future association with you on this and other projects.

Sincerely,
GEM Engineering, Inc.

Mark Jones

Mark Jones, E.I.T.
Staff Engineer

Mark Jones for

Samantha Schardein, P. E.
Senior Engineer
Kentucky License No. 20438

Table of Contents

Appendix

- Site Vicinity Map
- Boring Location Plan
- Soil & Rock Classification
- Boring Legend
- Boring Records
- Field Procedures
- Laboratory Procedures

1.0 Executive Summary

The following conditions were characteristic of the encountered site and subsurface conditions:

- The site consisted of an existing cornfield with relatively flat topography.
- Topsoil was approximately 8 to 10 inches thick and underlain by low to moderate plasticity, firm to stiff, silty clay that extended 4.0 to 10.1 feet below the surface.
- The low plasticity clay in one boring was underlain by high plasticity clay that extended to 9.9 feet below the surface.
- Poorly graded, slightly silty sands were encountered below the clays. Sands varied from loose to medium dense and were fine to medium grained.
- Groundwater was encountered approximately 14.0 to 14.5 feet below existing grades.
- Borings extended to the termination depth of 40.5 feet without encountering refusal.

Our exploration disclosed the following geotechnical considerations that must be incorporated in planning, budgeting, design, and construction:

- Agricultural Use
- Alluvial Deposits
- Plastic Clays
- Reuse of On-site Soils
- Degradable Soils
- Weather Considerations
- Subgrade Improvement

Key geotechnical recommendations for this project are summarized below:

- Anticipate subgrade improvement of existing near surface soils if construction occurs between November and May.
- Anticipate and design for the tower foundation and any other foundation elements of the project (e.g. utility building, backup generator, etc. if planned) to accommodate periodic flooding and saturated conditions.
- Embed the foundation for the tower a minimum of 3 feet below final grades to minimize moisture variation of any high plasticity clays exposed at the bearing surface.
- The proposed tower may be supported by spread foundations bearing on stiff undisturbed clay or controlled fill with a net allowable design bearing pressure of 2,000 psf or on drilled piers.
- A Site Class of "D" should be used in seismic design analysis per the 2007 Kentucky Building Code.
- All foundation excavations should be evaluated by a GEM representative during construction to confirm that encountered conditions are consistent with the findings of this exploration.

Details of our findings and recommendations are included in subsequent sections of this report. This report should be read in its entirety and any questions presented to GEM for clarification prior to using any of our findings and recommendations.

2.0 Project Information

Summary of Proposed New Construction	
Structure Description	Three-leg lattice cell tower.
Foundation Loads	Not provided. Assumed to be less than 50 kips per leg in compression and 20 kips in uplift.
Maximum Foundation Cut	4 ± feet (assumed).
Mass Grading	2 ± feet (assumed).
Project Information Sources	**Conversations/E-mail:** - Richard Rhudy, Environmental Corporation of America. **Documents Provided:** - "Site Survey," prepared by F.S. Land Company / T. Alan Neal Company, dated December 16, 2008, provided by Richard Rhudy.

3.0 Site Information

Summary of Existing Site Conditions	
Site Location	Northwest corner of intersection of U.S. 60 and Williams-Keene Road in Reed, Kentucky.
General Description	Existing corn field.
Topography	Relatively Flat.
Ground Cover	Corn stumps and shredded stalks on topsoil.
Surface Water Drainage	Poor.
Existing Utilities	Underground telephone lines were marked along the north side of U.S. 60 and on the west side of Williams-Keene Road. No utilities were located in the proposed 80-foot square lease area.

4.0 Site Geology

Underlying Formation[1]		
FORMATION	**DESCRIPTION**	**KARST RISK[2,3]**
Alluvium	Sand, silt, and gravel: Sand, white to very light gray and light-yellowish-gray, generally very fine to medium but coarser in lower part, locally micaceous, mostly quartz and chert grains but some dark minerals and coal particles; in places contains gravel and is interbedded with silt. Silt, light-brown, light-gray, and locally light-greenish-gray, clayey to sandy; most common in upper part of deposit. Gravel composed mainly of yellowish-brown chert and white quartz as subangular to well rounded granules and pebbles but also includes dark igneous and metamorphic rocks and some ironstone and sandstone; occurs mainly in lower part of deposit and locally forms basal bed. Most of these sediments derived from glacial outwash.	Non-karst

[1] Source: *Geologic Map of the Reed Quadrangle, Kentucky,* published by the United States Geological Survey and the Kentucky Geological Survey Geologic Information Service website.

[2] Karst is topography commonly formed over limestone and characterized by sinkholes, irregular rock conditions, underground drainage, springs, and caves.

[3] The karst risk level is based on the tendency for the site to develop or have karst features as shown on the Kentucky

Underlying Formation[1]

Geological Survey Geologic Information Service Karst Potential Map and is not necessarily indicative of the actual presence or absence of existing karst activity at the site.

5.0 Subsurface Conditions

Summary of Subsurface Exploration[1]	
Boring Method	Hollow stem augers.
Sampling Method	Standard Penetration Testing (ASTM D-1586).
Number of Borings	Two (2) soil test borings.
Boring Locations	Locations of the tower centerline and three legs had been staked by the surveyor. Refer to Boring Location Plan for specific locations.
Boring Depths	Refer to Boring Records in Appendix.
Groundwater	Water level measurement on drill rod/splitspoon sampler during drilling.
Logging Method	Full-time presence of a GEM engineer to observe, direct, and document the drilling, sampling and testing results, and encountered conditions.

[1] Detailed descriptions of the exploration methods are listed in the Field Procedures section of the Appendix.

Summary of Subsurface Conditions [1]	
Surface Materials	TOPSOIL – 8 to 10 inches.
Zone 1	CL – grayish brown mottled reddish to orange brown, firm to stiff, low to moderate plasticity, moist, silty clay. Extended 4.0 to 10.1 feet below existing grades.
Zone 2	CH – orange brown mottled medium gray, stiff, high plasticity, moist, silty clay. Encountered in one boring and extended 9.9 feet below existing grades.
Zone 3	SP – mottled tan and reddish brown to orange brown to medium gray, loose to medium dense, fine to medium grained, poorly graded, moist to wet, slightly silty sand. Extended beneath clays to termination depths.
Refusal	No refusal encountered.
Groundwater	Groundwater was encountered between 14.0 to 14.5 feet beneath the surface.

[1] This summary is generalized and does not describe the actual conditions in all borings. All zones do not occur at each location. Depths are approximate. Detailed descriptions of the encountered materials are listed on the Boring Records in the Appendix.

Laboratory Test Results[1]					
Soil Type	Moisture Content	Liquid Limit	Plastic Limit	Plasticity Index	Unified Soil Classification
Zone 1	25.4% to 32.7%	44	22	22	CL
Zone 2	25.8% to 29.1%	64	28	36	CH
Zone 3	10.5% to 14.5%	--	--	--	--

[1] A more detailed summary of the laboratory test results is included on the Boring Records in the Appendix. Detailed descriptions of the laboratory test methods are listed in the Laboratory Procedures section of the Appendix.

6.0 Geotechnical Considerations

Analysis of the provided project information, observed site conditions, encountered subsurface conditions, and our past experience with similar projects, revealed the following important geotechnical considerations. These considerations must be properly addressed in planning, budgeting, design, and

construction phases to reduce impacts on construction cost, completion schedule, performance of the tower and site improvements, and long-term maintenance of the proposed construction. Our recommendations for addressing these concerns are provided in subsequent sections of this report.

Agricultural Use

- The proposed lease area was located in an existing corn field.
- Soft soils, organic soils, poorly drained soils, and old drain tiles commonly are associated with past agricultural activities.
- The upper zone of agricultural land typically is low in density and high in moisture. These conditions were evidenced on this project by lower penetration values near the surface (Standard Penetration Test blows) and elevated moisture contents in the near surface soils (as high as 32.7%).
- The past agricultural activities may necessitate moisture conditioning, undercutting and/or recompaction of the existing surface soils if exposed at final grades or if fill is to be placed over them, especially if construction occurs during the wetter parts of the year.
- Pockets of soils with a high organic matter (if encountered below the predominant topsoil depths) must be removed.
- Old drain tiles commonly have water trapped in them and often are surrounded by soft, organic soils.
- When drain tiles are damaged during construction, the release of the trapped water can cause problems (e.g., saturation of subgrade soils or the release of water in foundation or utility excavations). These conditions, if they occur, typically are addressed during construction based on the specifics of the individual situation.
- These conditions should be anticipated and included in site preparation planning and budgeting and construction scheduling.
- The impact of past agricultural activities on-site can be reduced by scheduling site work during the drier months of the year.

Alluvial Deposits

- These deposits are comprised of interbedded and intermixed clay, silt, sand, and gravel.
- These deposits typically easily degrade under construction traffic and include soft, saturated, poorly consolidated zones. These conditions can adversely impact design and construction if not properly anticipated or addressed.
- These deposits can vary significantly in character and consistency over relatively short distances, impacting both design and construction considerations.
- Our design recommendations have been adjusted to account for the natural variation in these materials, but this natural variation will necessitate more detailed and careful observation of subgrades and foundations during construction.
- Construction quality control testing can detect variations that can affect foundation performance and help define required remediation, if required.
- We strongly recommend that GEM be involved in construction monitoring to better detect variations that can affect subgrade performance and the recommendations provided in this report.

Plastic Clays

- Plastic clays (i.e., plasticity index greater than 35 – generally designated as "CH" in report and on boring logs) are susceptible to potential volume changes (shrink/swell problems) with changes in moisture. Accordingly, it is advisable to reduce the potential for moisture changes to the soil because of the shrink/swell concerns and the possible impact on the proposed structure.

- Our experience has been that the volume changes associated with the high plasticity clays in the project vicinity typically can produce cosmetic and/or nuisance issues (e.g., floor heave or door problems in the utility building). Movement may be cyclic (shrink when dry, swell when wet), continuing to produce minor distortions that require increased maintenance or repair. Typically, the volume changes are not of the magnitude to result in severe structural damage.
- Most of the effects of plastic clays can be greatly reduced by employing the design and construction recommendations described in this report.

Reuse of On-site Soils

- In general, the on-site soils (with the exception of topsoil) encountered in the borings and likely to be removed in possible cut areas appeared suitable for reuse as controlled fill provided the soils are moisture conditioned to appropriate moisture contents for compaction.
- Reuse of the on-site soils will be subject to the weather considerations described subsequently and the actual character of the materials encountered. Significant moisture conditioning should be anticipated during wetter periods of the year.

Degradable Soils

- Most of the soils on-site are susceptible to degradation with exposure to the effects of weathering. Degradable soils readily lose strength, become unstable, and "pump" when subjected to construction equipment, especially under wet conditions.
- Undercutting and/or stabilization of unstable clay soils could have a cost impact on the project, especially if not properly addressed in the project documents (e.g., definition of what is unsuitable and whose responsibility maintenance of these soils is once stabilized) or if not properly addressed during construction (e.g., subjected to repeated construction traffic with no protection).

Weather Considerations

- Conducting site work during periods of cool and/or wet weather (typically November to May) can be problematic for sites in the project region.
- Proper compaction of clay fill generally is very difficult to achieve during periods of cool and/or wet weather. Some drying, mixing, or chemical treatment of the soils would be necessary to obtain workable moisture contents for the on-site soils or proposed borrow materials if placed during the cool, wet seasons.
- If compaction of clay fill takes place under wet weather conditions, increased earthwork costs, an extended construction schedule, and soil improvement (replacement or stabilization) likely would be required. In addition, reuse of the site soils may be severely limited.
- Surface soils also tend to be softer during wet weather conditions due to the excess moisture in the near surface soils. Weather-softened surface soils tend to result in more undercutting and/or stabilization than would be required during dry weather conditions, which increases site development costs.
- It generally is recommended to include provisions in the project specifications to include definitions and unit rates for subgrade stabilization, removal of unsuitable soils, and replacement of unsuitable soils with controlled fill appropriate for use during the anticipated construction season.

Subgrade Improvement

- Widespread subgrade improvement should be anticipated if construction occurs during the wetter periods of the year.
- The level of improvement (if required) likely will increase if:

- Construction traffic is concentrated along localized unstabilized routes.
- Earthwork occurs during cool, wet periods (typically November through May).

➢ Subgrade improvement alternatives, if required, include but are not limited to:
- Scarification, drying, and recompaction of surface materials.
- Removal of unsuitable materials and replacement with controlled fill.
- Chemical stabilization (e.g., kiln dust, lime, or Portland cement).

➢ Some of the subgrade improvement alternatives provided above are affected by the weather considerations described previously. For example, scarification, drying, and recompaction of surface materials would be difficult during the cool, wet months of the year.

➢ The type of subgrade improvement chosen should take weather limitations, or other limitations unique to each method, into consideration.

7.0 Recommendations

The recommendations contained within this report are based on many factors, including, but not limited to, the subsurface conditions encountered in the borings, our interpretation of these conditions, our understanding of project information, and our past experience with similar structures and subsurface conditions. The limitations outlined in Section 8.0 of this report should be carefully considered prior to using any of the recommendations contained within this report.

Our recommendations are based on the assumption that GEM will be retained to provide construction phase engineering and monitoring services to confirm that conditions are consistent with our analyses. Our knowledge of the site conditions, the basis for the design recommendations, and the acceptance criteria required to achieve design parameters can result in a reduction in unanticipated conditions and costly change orders. In order to reduce the possibility of encountering problems, the recommendations contained within this report should be fully implemented.

7.01 Planning

- Adjust project plans, specifications, schedules and budgets to incorporate the issues discussed in Section 6.0 and the recommendations provided herein.

7.02 Subgrade Preparation

Stripping:

- Materials required to be stripped:
  - Vegetation, large root zones, organic material, and excessively wet, desiccated, frozen, contaminated or otherwise unsuitable materials.
- Minimum extent of stripping: 5 feet beyond the proposed construction limits.
- Stripped material not meeting controlled fill requirements should be considered for reuse in landscaped areas only.

Subgrade Evaluation:

- Proofroll the site in the presence of a GEM representative with a pneumatic-tired vehicle (e.g., triaxial dump truck) loaded as recommended by the GEM representative.
- Proofroll subgrades prior to filling or after excavation to grade.
- Proofroll slab subgrades prior to granular base placement.

- Any areas judged by the GEM representative to deflect excessively during proofrolling should be remediated in accordance with the recommendations provided at that time.
- Prepare subgrades with a slight slope to maintain surface drainage.

Other Measures:

- Roll subgrade surfaces smooth if rain is expected.
- Slope final subgrades away from the proposed structure.
- Rough grade subgrades high to allow for removal of degraded soil.
- Remove any soil frozen or softened by rain.

7.03 Plastic Clays

- The measures provided below will significantly reduce the likelihood the proposed construction will be impacted by the presence of plastic clays. However, if the risk associated with plastic clays is not acceptable, then no plastic clays (i.e., plasticity index greater than 35) should be present within 2 feet of the proposed subgrade or foundations.
- The measures described below will significantly reduce, but not eliminate, the concerns associated with the plastic clays.
  - To reduce potential moisture variation in foundation soils, the embedment depth for foundations should be increased in accordance with the recommendations provided in a subsequent section.
  - If plastic clays are exposed at the subgrade and are allowed to dry out, the subgrade should be moisture conditioned prior to base placement (i.e., at or up to 2 % above the optimum moisture content as determined by ASTM D-698).
  - Foundations must be placed the same day they are excavated or covered with a mud mat.
  - Roof drains should not outlet within 25 feet of the proposed structure, unless the surface is impervious (such as concrete).
  - The subgrade should be rough graded high to allow for removal of desiccated or saturated soil immediately prior to stone base placement.
  - Proper drainage should be provided around the proposed construction (e.g., slope the surface away from the tower and utility building).
  - The utility slab subgrade should be sloped to drain.

7.04 Controlled Fill

Subgrade Requirements:

- Subgrade proofrolled and any required improvements completed.

Fill Material Requirements:

- No deleterious debris.
- No rock pieces larger than 3 inches.
- Less than 5% organic material (loss on ignition).
- Maximum dry density of at least 100 pcf according to the standard Proctor compaction method (ASTM D-698).
- Acceptable Unified Soil Classifications (USCS):
  - General Fill: CL, ML, GW, GM, GC, GP, SW, SP, SM, and SC.

- Unacceptable USCS classifications: OL, OH, PT, CH and MH.
- Evaluated and approved by GEM prior to construction.

Fill Placement Guidelines:

- Minimum compaction:
  - 98 % standard Proctor maximum dry density (ASTM D-698) for fill supporting foundations or other structures.
- Moisture Content:
  - Within 2 % of optimum (ASTM D-698).
- Maximum loose lift thickness: 8 inches.
- Compaction test frequency:
  - One test per lift for each 5,000 square feet of fill placed.
  - Minimum of 3 tests per lift.
- Compact and test each lift prior to placing additional lifts.
- Scarify smoothed fill surfaces prior to placing the next lift.
- Maintain positive surface drainage on fill surfaces during placement to preclude ponding of water.
- Roll fill surfaces smooth if rain is expected.
- Rough grade high to allow for removal of degraded surface soils if fill will be exposed to adverse weather conditions.
- Do not place fill on a frozen subgrade. At a minimum, remove frozen material, or allow to thaw and then recompact.

7.05 Foundation Recommendations

General Comments:

- The proposed cell tower may be supported on either spread foundations or drilled piers.
- The foundation excavations should be evaluated by GEM to confirm that conditions are consistent with those encountered in this exploration at the time of construction.
- Anticipate and design for the tower foundation and any other foundation elements of the project (e.g. utility building, backup generator, etc. if planned) to accommodate periodic flooding and saturated conditions.

7.06 Spread Foundation Recommendations

Recommended Bearing Material:

- Suitable stiff, undisturbed soils.
- Controlled fill.

Maximum Net Allowable Bearing Pressures:

- 2,000 psf.
- The recommended net allowable bearing pressure may be increased 33 percent for transient loading.

Minimum Foundation Bearing Depth:

- Foundations subject to freezing/moisture variations: 36 inches below adjacent grade$^{\nabla}$.

∇ The 2007 Kentucky Building Code requires a minimum foundation embedment depth of 24 inches for foundations subject to freezing in Henderson County. However, a minimum embedment of 36 inches is recommended to minimize moisture variation of plastic clays that may be exposed at design bearing elevation.

Minimum Foundation Widths:

- Continuous Wall Footings: 18 inches.
- Isolated Column Footings: 24 inches.

Estimated Settlement Potential:

- Maximum Total Settlement: 1 inch*.
- Maximum Differential Settlement: ¾ inch*.

* The estimated settlement potential is based on the following: empirical guidelines for the project soil types and consistencies; the assumption that GEM will evaluate each foundation excavation during construction; and the provided project information. Actual settlements will depend on site preparation and conditions at each foundation location.

Lateral Foundation Loads:

- Transient lateral loads on foundations can be analyzed using the following design parameters:
  - Active equivalent fluid pressure: 50 psf per foot of depth.
  - At-rest equivalent fluid pressure: 70 psf per foot of depth.
  - Passive equivalent fluid pressure: 300 psf per foot of depth.
  - Ultimate Base Shear Resistance and Adhesion: 400 psf (concrete on undisturbed clay).
- Desiccation or disturbance may result in soil voids or cracks adjacent to foundations, reducing passive and uplift resistance. As a result, for these calculations, the upper two feet of soils should be assumed not to be in contact with the foundation.
- These design parameters do not include factors of safety. Appropriate factors of safety should be included in all designs.
- Ignore passive earth pressure if the soil against the sides of the foundations may not be present during any point in the life of the structure (e.g., the soil could be excavated or be subject to erosion).

Construction Guidelines:

- The bearing conditions of all foundations should be evaluated by a GEM representative at the time of construction to confirm the presence of adequate bearing soils and to provide recommendations for the remediation of unsuitable soils, if present. This evaluation should be performed before any reinforcing steel is placed in the excavations.
- Concrete should be placed the same day the foundations are excavated to reduce degradation of the bearing surface due to exposure. Alternatively, a "mud mat" of lean concrete should be placed to protect the bearing surface.
- Disturbed, degraded or loose material should be removed from the excavation bottoms prior to concrete placement.

7.07 Drilled Pier Recommendations

General Comments:

- Heaving sands were encountered below approximately 14 feet. Slurry drilling or other appropriate loading of the drilled pier excavation to counteract the heaving sands will be required if drilled piers extend into the heaving sands.
- Casing of drilled piers will be required.

Recommended Design Parameters:

Recommended Design Parameters					
Soil Type		All Clay	Sand	Sand	Sand
Depth Below Existing Grades		0-10 ft	10-14 ft	14-25 ft	25-40 ft
Moist Unit Weight (pcf)[1]		120	110	110	115
Long Term	Angle of Internal Friction (degrees)	25	28	28	30
	Cohesion (psf)	0	0	0	0
Short Term	Angle of Internal Friction (degrees)	0	28	28	30
	Cohesion (psf)	1,000	0	0	0
Adhesion (psf)		500 psf[2]	0	0	0
Friction Angle Between Soil & Pier (degrees)		0	18	18	20
Lateral Subgrade Modulus (pci)		250	25	20	60

[1] The moist unit weight should be adjusted as appropriate (e.g., if soil is below the groundwater level).
[2] *If drilling slurry is used, the adhesion should be reduced to 300 psf.*

Pier Construction Tolerances:

- Dimensional tolerances for center of pier, top of pier, diameters, plumbness, base deviation from horizontal, reinforcement, etc. to be established by the structural engineer.

Construction Requirements:

- Subsurface conditions of all drilled pier foundations must be evaluated by a GEM representative at the time of construction to confirm conditions are consistent with our assumptions.
- The bottom of the drilled pier should be visually evaluated to confirm that the base is free from significant loose material, soil, water or other unsuitable materials.
- Bottom preparation will be evaluated from the ground surface by checking plumbness with a hanging weight and cleanliness with visual methods (direct or reflected light).
- The following guidelines should be used during concrete placement:
  - The concrete slump should be between 5 and 8 inches.
  - The bearing surface should be cleaned of loose debris.
  - A positive head of concrete should be maintained during casing removal to prevent contamination.
  - The maximum allowable water level should be 2 inches or less during placement unless tremie methods are used.
  - Pumping to remove water in the on-site sands is not recommended. Concrete should be placed using tremie methods for this situation.
  - Tremie methods will have to be employed if slurry is used to counteract heaving sands.
  - Maintain a positive head of concrete above the water level outside of the casing during casing removal.

- The following guidelines should be used if tremie methods are required:
  - Pump or tremie concrete to bottom of excavation.
  - Maintain a minimum 5-foot hose or tremie embedment into concrete during placement.

7.08 Seismic Design

Recommended Seismic Design Site Class: "D"

- Reference: 2007 Kentucky Building Code.
- The recommended site class was based on an analysis of site subsurface conditions using empirical relationships between in-situ or laboratory test results and material properties.

8.0 Limitations

There are certain limitations inherent to all geotechnical explorations and reports. These limitations are discussed below. They should be fully considered prior to using any of the recommendations in this report.

Our geotechnical exploration identified the subsurface conditions that existed only at the locations and times that that the borings were advanced. Given the natural variable characteristics of soil and rock, conditions may vary over short distances, change with time, or be affected by natural events, such as floods or earthquakes, or by human activity, such as past land use or new construction. As such, the information generated during our geotechnical exploration may not be representative of all conditions that may exist on the project site now or in the future. We use our professional judgment to render an opinion about the subsurface conditions that may exist in the areas of the site not specifically tested during our exploration based on our review of available field and laboratory data and our past experience with similar subsurface conditions. However, the subsurface conditions encountered during construction may vary from the assumed conditions. Variations in the subsurface conditions between our borings and in unexplored areas of the site could affect our interpretations. Thus, it is important to retain GEM to provide construction monitoring services based on our involvement in the project, our knowledge about the site, and our knowledge relating to the assumptions and recommendations contained within this report.

The recommendations contained within this report are dependent on many factors, including, but not limited to, the project information provided by others and the specific conditions encountered during our exploration. If any of the project information contained within this report is incorrect or changed at a later date or if the location or nature of the structures or facility components changes, GEM should be notified and given the chance to assess the impact of the changes. We cannot and do not accept responsibility or liability for any problems that occur because we were not given the opportunity to properly assess changes to the project. *The recommendations contained in this report must not be considered valid unless our firm reviews any such changes and any required modifications to our recommendations are verified in writing.*

Our recommendations are dependent on several factors including, but not limited to, our review of project drawings and specifications prior to construction and observation of actual conditions during construction. We strongly recommend that GEM be retained to review pertinent portions of the project plans and specifications.

This report should be reproduced in its entirety only. Portions of this report should not be separated and used by others. It should be noted that this report was not prepared for the purpose of bid development and should not be used as such.

This geotechnical report is unique and was based on client needs and project requirements for the specific project described in this report. As such, no one other than who the report was intended and prepared for should rely on this report or the information contained within the report without first consulting with GEM. This report is not valid for any purpose or project except as described in this report.

This report and our recommendations were prepared using the generally accepted standards of geotechnical engineers practicing in this region. No other warranty is expressed or implied.

Appendix

Site Vicinity Map

Boring Location Plan

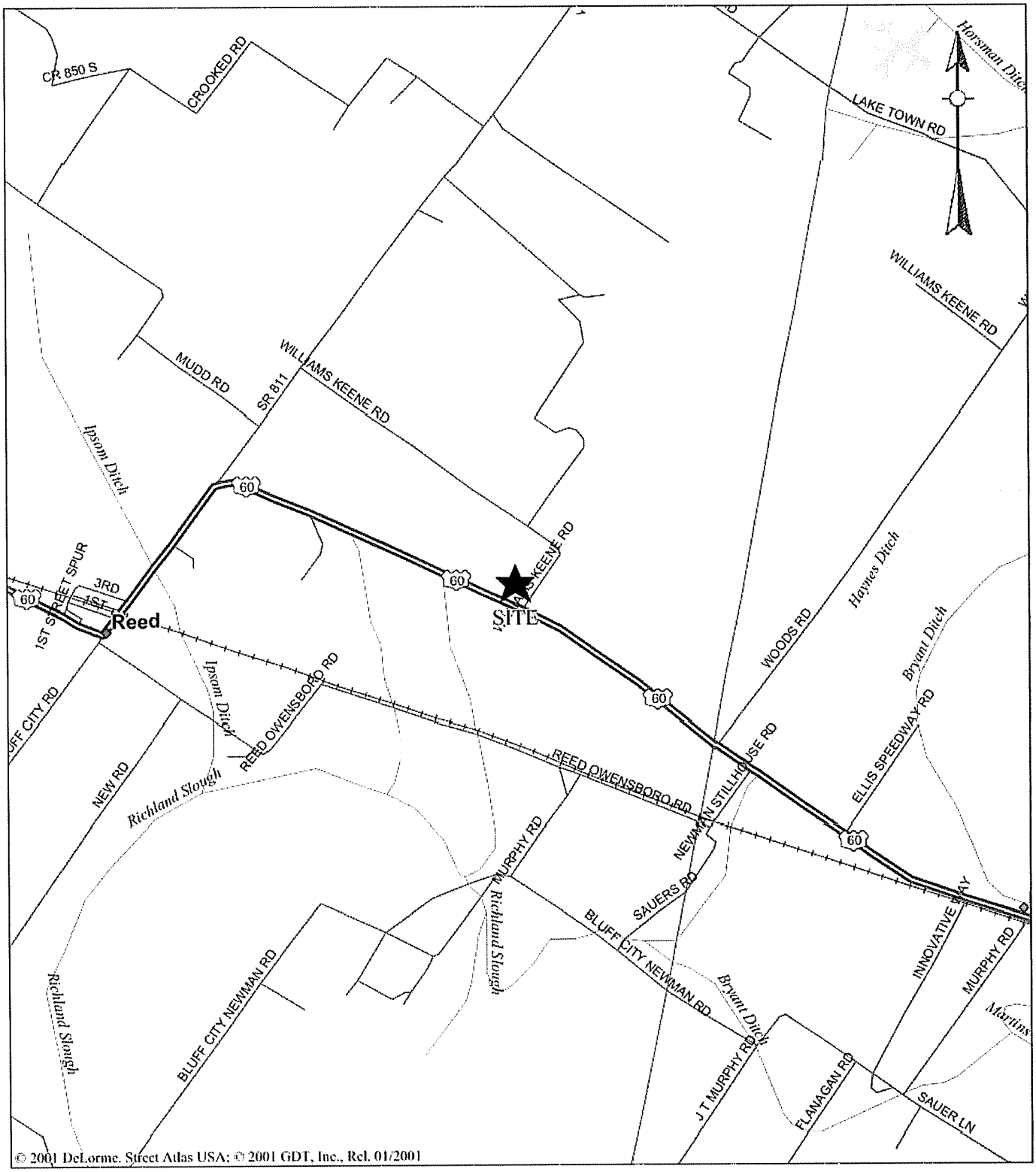
Soil & Rock Classification

Boring Legend

Boring Records

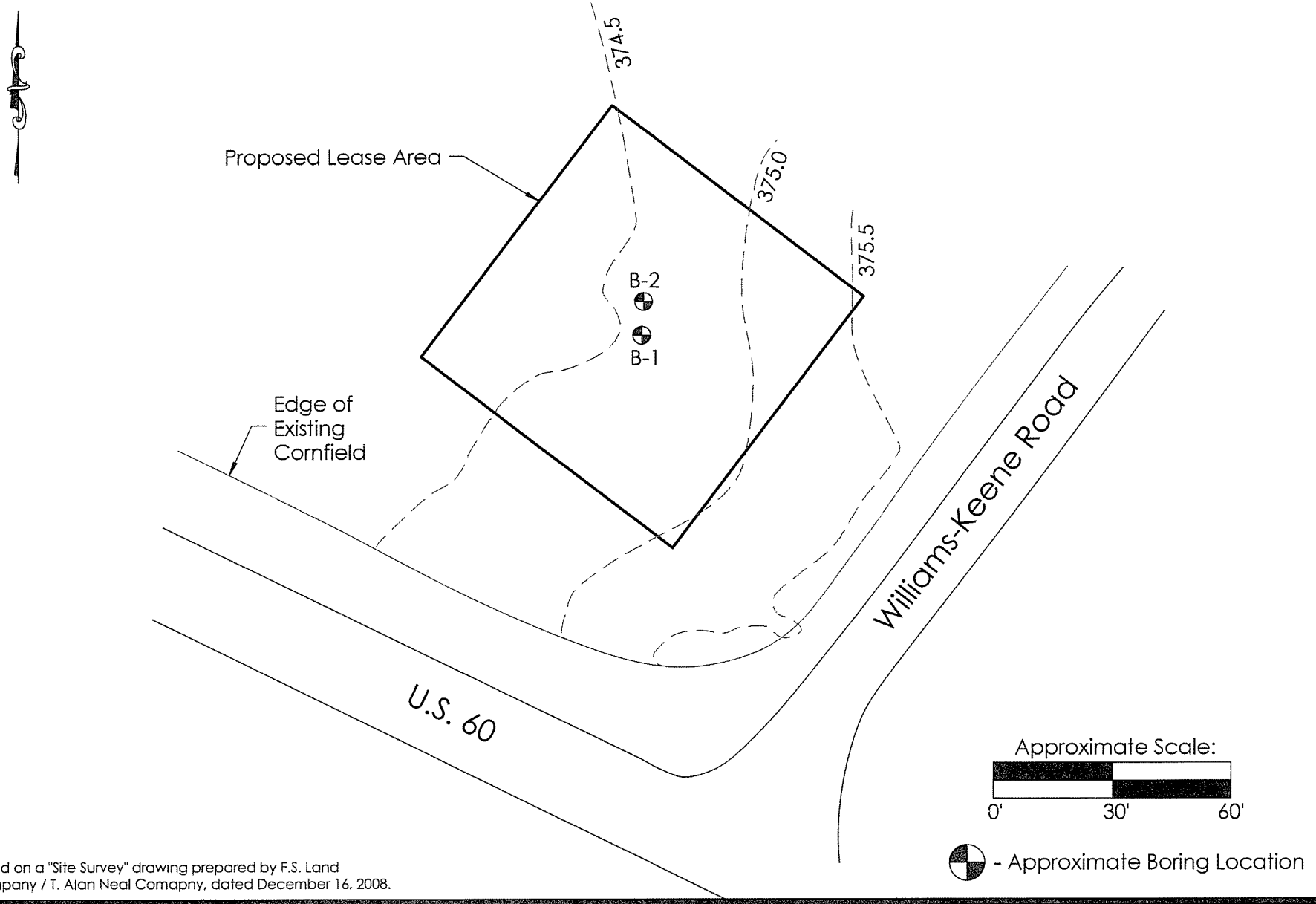
Field Procedures

Laboratory Procedures



Site Vicinity Map
Reed Cell Tower Site
U.S. 60 and Williams-Keene Road
Reed, Kentucky
GEM Project No. G-2990

GEM Engineering, Inc.
1762 Watterson Trail
Louisville, Kentucky 40299
Tel (502) 493-7100 Fax (502) 493-8190



Based on a "Site Survey" drawing prepared by F.S. Land Company / T. Alan Neal Comapny, dated December 16, 2008.

Boring Location Plan Reed Cell Tower U.S. 60 and Williams-Keene Road Reed, Kentucky	Project No.: G-2990	Drawn By: MLJ	GEM Engineering, Inc. 1762 Watterson Trail Louisville, Kentucky 40299 Tel. (502) 493-7100
	Drawing No.: 2990A	Checked By: SLS	
	Date: 1/9/2009	Scale: 1" = 30'	

GEM Engineering, Inc.

Geotechnical Environmental & Materials Services

SOIL & ROCK CLASSIFICATION

SOIL CLASSIFICATION

MAJOR DIVISIONS			SYMBOLS	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE	GRAVEL AND GRAVELLY SOILS	Clean Gravels	GW	Well graded gravels, gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
		Gravels with fines	GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	SAND AND SANDY SOILS	Clean Sands	SW	Well graded sands, gravelly sands, little or no fines
			SP	Poorly graded sands, gravelly sand, little or no fines
		Sands with fines	SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE	SILTS AND CLAYS	Liquid Limit less than 50	ML	Inorganic silts, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to moderate plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS	Liquid Limit greater Than 50	MH	Inorganic silts, micaeceous or diatomaceous fine sand or silty soils
			CH	Inorganic clays of high plasticity
			OH	Organic clays of moderate to high plasticity, organic silts
HIGHLY ORGANIC SOILS			PT	Peat, humus, swamp soils with high organic contents

SOIL CONSISTENCY (N-values below based on manual hammer – Divide N-values below by 1.5 for automatic hammer)

COARSE GRAINED SOILS	
N-Value	**Relative Density**
0-4	Very loose
4-10	Loose
10-30	Medium dense
30-50	Dense
>50	Very dense

FINE GRAINED SOILS		
N-Value	**Consistency**	**Field Identification**
0-2	Very soft	Easily penetrated several inches by fist
3-4	Soft	Easily penetrated several inches by thumb
5-7	Firm	Can be penetrated several inches by thumb with moderate effort
8-15	Stiff	Readily indented by thumb but penetrated only with great effort
16-30	Very stiff	Readily indented by thumbnail
>30	Hard	Indented with difficulty by thumbnail

SOIL PARTICLE SIZES

Description	Size Limits	Familiar Example
Boulder	12 inches or more	Larger than basketball
Cobble	3 - 12 inches	Orange to basketball
Coarse gravel	¾ - 3 inches	Grape to orange
Fine gravel	4.75 mm (No. 4 sieve) - ¾ inch	Pea to grape
Coarse sand	2-4.75 mm (No. 10 to 4 sieve)	Rock Salt
Medium sand	0.42-2 mm (No. 40 to 10 sieve)	Table Salt
Fine sand	0.075-0.42 mm (No. 200 to 40 sieve)	Powdered sugar
Silt/Clay/Fines	Less than 0.075 mm (No. 200)	Not visible to naked eye

RELATIVE PROPORTIONS

Description	Percent
Trace	1 – 10
Little	11 – 20
Some	21 – 35
And	36 - 50

ROCK CONTINUITY

Description	Core Recovery (%)
Incompetent	0-40
Competent	40-70
Fairly Continuous	70-90
Continuous	90-100

ROCK QUALITY DESIGNATION

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

ROCK BEDDING

Description	Thickness (in)
Parting	< 0.3
Band	0.3-2.5
Thin Bed	2.5-6.0
Medium bed	6.0-12.0
Thick bed	12.0-36.0
Massive	> 36.0

ROCK HARDNESS

Description	Definition
Very soft	Can be broken with fingers
Soft	Can be scratched with fingernail; only edges can be broken with fingers
Moderately hard	Can be easily scratched with knife; cannot be scratched with fingernail
Hard	Difficult to scratch with knife; hard hammer blow to break specimen
Very hard	Cannot be scratched with knife; several hard hammer blows to break specimen

ROCK WEATHERING (Descriptions for rock core samples)

Description	Definition
Completely	Rock decomposed to soil; rock fabric and structure completely destroyed
Highly	Most minerals are decomposed; texture indistinct but fabric preserved; strength greatly reduced
Moderately	Discoloration throughout and weaker minerals decomposed; texture preserved but strength less than unweathered rock
Slightly	Discoloration around open fractures; strength preserved
Unweathered	No sign of decomposition

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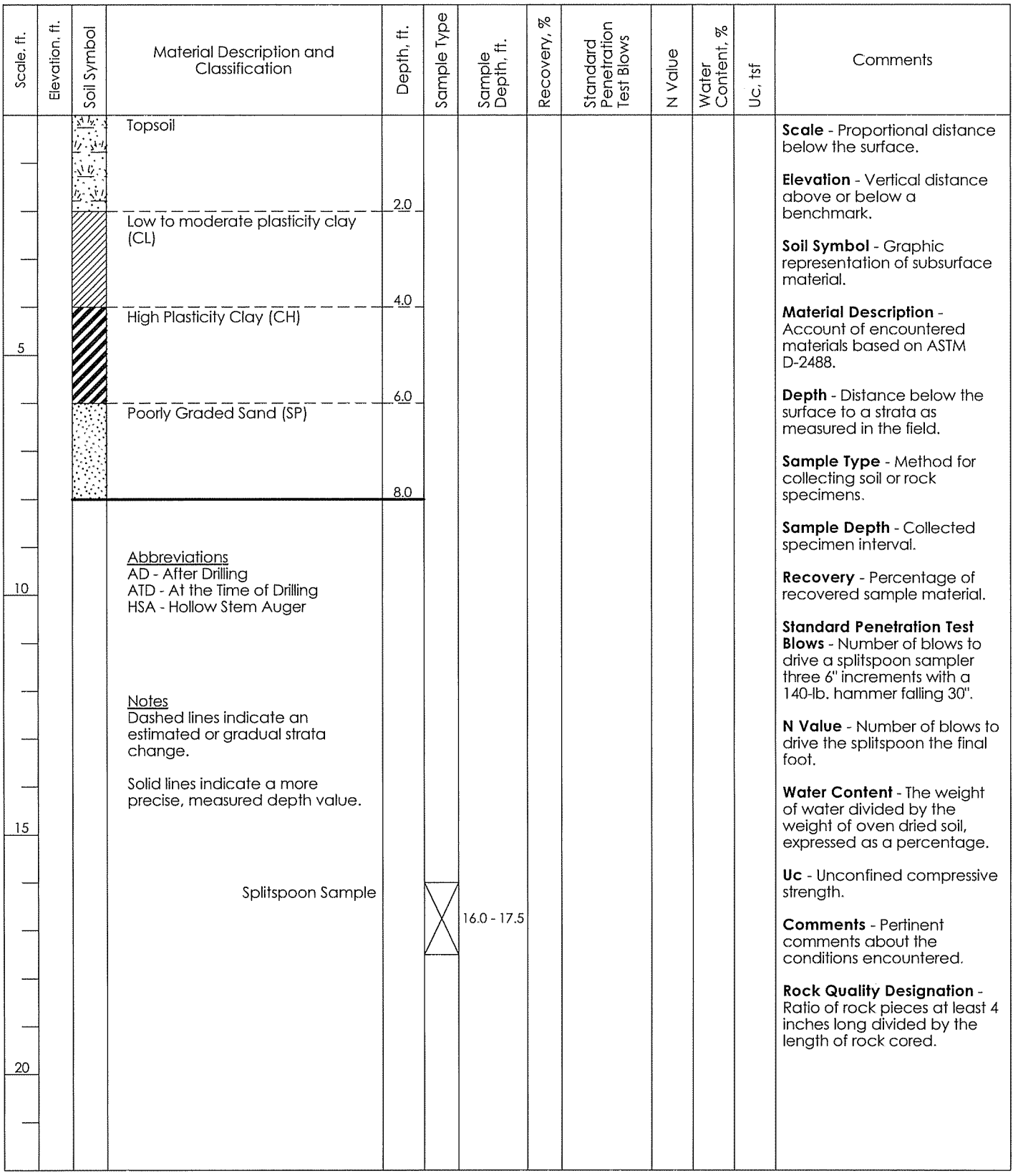
BORING LEGEND



Scale - Proportional distance below the surface.

Elevation - Vertical distance above or below a benchmark.

Soil Symbol - Graphic representation of subsurface material.

Material Description - Account of encountered materials based on ASTM D-2488.

Depth - Distance below the surface to a strata as measured in the field.

Sample Type - Method for collecting soil or rock specimens.

Sample Depth - Collected specimen interval.

Recovery - Percentage of recovered sample material.

Standard Penetration Test Blows - Number of blows to drive a splitspoon sampler three 6" increments with a 140-lb. hammer falling 30".

N Value - Number of blows to drive the splitspoon the final foot.

Water Content - The weight of water divided by the weight of oven dried soil, expressed as a percentage.

Uc - Unconfined compressive strength.

Comments - Pertinent comments about the conditions encountered.

Rock Quality Designation - Ratio of rock pieces at least 4 inches long divided by the length of rock cored.

Remarks: Additional information about the surface, subsurface or other conditions that could impact the exploration results.

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BORING RECORD

Project Name	**Reed Cell Tower Site**			Boring No.	B-1 (Tower Centerline)
Location	**Reed, Kentucky**			Project No.	G-2990
Client	**Environmental Corporation of America**			Elevation	374.5 (a)
Driller	R. Mathes	Rig Type	B-53	Started	1/09/2009
Drill Method	HSA	Hammer Type	Automatic	Completed	1/09/2009
Groundwater	14.5 ft. ATD			Logged By	M. Jones
				Weather	Clear, Windy, 30s

Scale, ft.	Elevation, ft.	Soil Symbol	Material Description and Classification	Depth, ft.	Sample Type	Sample Depth, ft.	Recovery, %	Standard Penetration Test Blows	N Value	Water Content, %	Uc, tsf	Comments
			TOPSOIL	0.8								
			CLAY, silty, grayish brown mottled orange to reddish brown, firm to stiff, low to moderate plasticity, moist, (CL), with trace organics			0.0 - 1.5	83	1-2-3	5			
						1.5 - 3.0	88	1-2-3	5	32.6		
	370					4.0 - 5.5	88	1-3-3	6	29.1		
5						6.5 - 8.0	100	2-3-4	7	25.4		Atterberg Limits: Liquid Limit = 44 Plastic Limit = 22 Plasticity Index = 22
	365					9.0 - 10.5	94	2-3-4	7	10.5		
10				10.1								
			SAND, slightly silty, mottled tan and reddish brown, loose to medium dense, fine to medium grained, poorly graded, moist, (SP)									
	360		▽ - Wet, loose									Heaving sands encountered below 14 feet
15						14.0 - 15.5	94	3-3-2	5			
	355											
20						19.0 - 20.5	100	1-1-2	3			

Remarks: (a) Elevations interpolated to the nearest ±0.5 foot based on a "Site Survey," drawing prepared by F.S. Land Company / T. Alan Neal Comapny, dated December 16, 2008.

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Scale, ft.	Elevation, ft.	Soil Symbol	Material Description and Classification	Depth, ft.	Sample Type	Sample Depth, ft.	Recovery, %	Standard Penetration Test Blows	N Value	Water Content, %	Uc, tsf	Comments
			SAND, slightly silty, mottled tan and reddish brown, loose to medium dense, fine to medium grained, poorly graded, moist, (SP) *(continued)*									
	350		- With trace coarse sand below 24 feet		X	24.0 - 25.5	76	2-3-4	7			
25												
	345				X	29.0 - 30.5	83	4-4-5	9			
30			- Mostly medium gray below 30 feet									
	340				X	34.0 - 35.5	76	5-8-7	15			
35												
	335				X	39.0 - 40.5	76	2-3-2	5			
40				40.5								
			Boring Terminated									

Remarks: (a) Elevations interpolated to the nearest ±0.5 foot based on a "Site Survey," drawing prepared by F.S. Land Company / T. Alan Neal Comapny, dated December 16, 2008.

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BORING RECORD

Project Name	**Reed Cell Tower Site**			Boring No.	B-2 (North Leg)
Location	**Reed, Kentucky**			Project No.	G-2990
Client	**Environmental Corporation of America**			Elevation	374.5 (a)
Driller	R. Mathes	Rig Type	B-53	Started	1/09/2009
Drill Method	HSA	Hammer Type	Automatic	Completed	1/09/2009
Groundwater	14 ft. ATD			Logged By	M. Jones
				Weather	Clear, Windy, 30s

Scale, ft.	Elevation, ft.	Soil Symbol	Material Description and Classification	Depth, ft.	Sample Type	Sample Depth, ft.	Recovery, %	Standard Penetration Test Blows	N Value	Water Content, %	Uc, tsf	Comments
			TOPSOIL	0.7								
			CLAY, silty, grayish brown mottled reddish to orange brown, firm to stiff, low plasticity, moist, (CL)			0.0 - 1.5	88	1-2-3	5			
						1.5 - 3.0	94	2-3-3	6	32.7		
	370		CLAY, silty, orange brown mottled medium gray, stiff, high plasticity, moist, (CH)	4.0		4.0 - 5.5	83	2-3-4	7	29.1		Atterberg Limits: Liquid Limit = 64 Plastic Limit = 28 Plasticity Index = 36
5						6.5 - 8.0	88	2-3-3	6	25.8		
	365		SAND, slightly silty, orange brown, medium dense, fine to medium grained, poorly graded, moist, (SP)	9.9		9.0 - 10.5	88	2-3-4	7	14.5		
10												
	360		▽ - Wet			14.0 - 15.5	94	3-4-2	6			Heaving sands encountered below 14 feet.
15												
	355					19.0 - 20.5	100	3-4-4	8			
20												

Remarks: (a) Elevations interpolated to the nearest ±0.5 foot based on a "Site Survey," drawing prepared by F.S. Land Company / T. Alan Neal Comapny, dated December 16, 2008.

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Scale, ft.	Elevation, ft.	Soil Symbol	Material Description and Classification	Depth, ft.	Sample Type	Sample Depth, ft.	Recovery, %	Standard Penetration Test Blows	N Value	Water Content, %	Uc, tsf	Comments
			SAND, slightly silty, orange brown, medium dense, fine to medium grained, poorly graded, moist, (SP) *(continued)*									
25	350				X	24.0 - 25.5	33	3-5-4	9			
30	345		- Medium gray below 29 feet		X	29.0 - 30.5	76	3-3-4	7			
35	340				X	34.0 - 35.5	94	5-8-9	17			
40	335				X	39.0 - 40.5	94	4-5-6	11			
				40.5								

Remarks: (a) Elevations interpolated to the nearest ±0.5 foot based on a "Site Survey," drawing prepared by F.S. Land Company / T. Alan Neal Comapny, dated December 16, 2008.

Field Procedures

General

GEM conducts field sampling and testing procedures in general accordance with methods of the American Society for Testing Materials (ASTM) and widely accepted geotechnical engineering standards. A brief description of the procedures we utilize is provided in the following paragraphs.

Soil Borings (ASTM D-1452)

Soil borings are made with hollow stem augers or continuous augers that are mechanically advanced by a powered drill rig. At selected depths, soil samples are obtained with either a split-barrel sampler or a thin wall tube sampler. Soil borings are advanced to refusal, or to maximum depths as defined in our scope of work. All boring data, including sampling intervals, penetration resistances, soil classifications, and groundwater observations, are presented on the attached Boring Records.

Boring Locations and Elevations

Boring locations typically are selected by our project manager. The project manager establishes the boring locations in the field by pacing or measuring distances, and estimating angles relative to existing site landmarks. When topographic plans of the site are provided, the project manager estimates the surface elevation of the boring locations using available information. Surveying to determine the exact locations and elevations of the borings is beyond the scope of typical geotechnical studies; therefore, the boring locations and elevations should be considered approximate.

Standard Penetration Test (SPT) Split-Barrel Samples (ASTM D-1586)

A split-barrel or "splitspoon" is inserted into the borehole to obtain soil samples. The sampler is driven three, 6-inch increments with a 140-pound hammer falling from a height of 30 inches. The "standard penetration resistance" or "N-value" is the number of hammer blows required to drive the sampler the final 12 inches. The N-value, when properly evaluated, is an index of soil strength and/or density. Upon completion of each standard penetration test, the sampler is brought to the surface and the tube is opened to expose the recovered soil. Our project manager examines the sample, records the soil description and other pertinent information, and places a representative portion of the soil into a sealed container for transportation to our laboratory.

Water Level Readings

Water level readings are taken in each borehole upon the completion of drilling. In low permeability soils, such as silts and clays, the water level in the boreholes takes many hours to stabilize. Therefore, water level readings obtained during fieldwork may not be representative of actual groundwater levels. Groundwater levels may be dependent upon recent rainfall activity and other site-specific factors. Since these conditions may change with time, the water level information presented on the Boring Records represents the conditions only at the time each measurement was taken.

Boring Records

Our interpretation of the conditions encountered at each location is indicated on the Boring Records, which are prepared from the observations of the GEM field engineer or geologist during drilling or excavation, our engineering review of the soil samples obtained, the results of laboratory testing on selected samples, and our experience with similar subsurface conditions. Soil descriptions are made using the Unified Soil Classification System and/or ASTM D-2488 as

guides. The depths designating strata changes are estimations and are only representative of depths at that specific boring location. In many geologic settings, the transition between strata is gradual. A Boring Record Legend, which defines the symbols and other pertinent information presented on the Boring Records, is provided with this report. The subsurface conditions indicated on our Boring Records represent only the conditions encountered at the specific boring location at the time of our exploration. The groundwater observations were made at the time of drilling and may vary with changes in the season and weather.

Laboratory Procedures

General

Laboratory tests are generally conducted to satisfy one or more of the following objectives: (1) confirmation of visual-manual soil identification; (2) determination of index values used to estimate soil engineering properties (i.e., strength, compressibility and permeability); or (3) direct measurement of specific soil properties. The tests selected for a given project are dependent on the subsurface conditions encountered, as well as specific project requirements, such as structural loads and planned grade changes.

Description and Identification of Soils (Visual-Manual Procedure) (ASTM D-2488)

The Visual-Manual Procedure provides a general guide to the engineering properties of soils and enables the engineer to apply past experience to current situations. Samples obtained during the field exploration are examined and visually described and identified by a geotechnical engineer or geologist. The soils are typically identified according to predominant particle size (clay, silt, sand, etc.), consistency (based on apparent stiffness and the number of blows from standard penetration tests), color, moisture and group symbol (CL, CH, SP, SC, etc.). Unless otherwise indicated, the soil descriptions in this report are based on the Visual-Manual Procedure.

Classification of Soils for Engineering Purposes - Unified Soil Classification System (ASTM D-2487)

The Visual-Manual Procedure described above is primarily qualitative. The Unified Soil Classification System (USCS) is used when precise soil classification is required. The USCS is based on laboratory determination of particle-size characteristics, liquid limit, and plasticity index. Using these test results, the soil can be classified according to the Unified Classification System, which provides an index for estimating soil behavior.

Water (Moisture) Content of Soil (ASTM D-2216)

Moisture content is one of the most important index properties used in establishing a correlation between soil behavior and soil properties such as strength and compressibility. The moisture content, along with the liquid and plastic limits, is used to express the relative consistency or liquidity index of a soil. Increasing moisture contents typically reflect lower strengths for a given soil. The soil moisture content is the ratio, expressed as a percentage, of the mass of "pore" or "free" water in a given mass of soil to the mass of the solid soil. Moisture content samples are taken from the sealed container obtained during the field exploration phase of a project. Each sample is weighed, and then placed in an oven set to 110°C $\pm$ 5°. Each sample remains in the oven until the free moisture evaporates. Each dried sample is removed from the oven, allowed to cool, and then weighed. The moisture content is computed by dividing the weight of evaporated water by the weight of the dry sample.

Liquid Limit, Plastic Limit, and Plasticity Index of Soils (ASTM D-4318)

Depending upon the relative moisture content, a fine-grained soil may occur in a liquid, plastic (semi-solid), or solid state. In current usage, the liquid limit (LL) and plastic limit (PL) of a soil are referred to as the "Atterberg Limits", which establish the approximate moisture contents at which the soil changes state. This test method is an integral part of several engineering classification systems to characterize the fine-grained fractions of soils. It is also used with other soil properties to correlate with engineering behavior such as compressibility, permeability, compactability, shrink-swell, and shear strength. The liquid limit is the moisture content at which a soil becomes sufficiently "wet" to behave as a heavy viscous fluid (i.e., transition from plastic to liquid state). It is defined as the moisture content at which the soil, when placed in a standard brass bowl,

makes a 1/2-inch closure in a groove cut through the soil after the bowl is dropped 25 times at a specified height and rate. The plastic limit is the moisture content at which the soil begins to lose its plasticity (i.e., transition from plastic to solid state). It is defined as the lowest moisture content at which the soil can be rolled into 1/8-inch diameter threads without crumbling. The plasticity index (PI) is the difference between the liquid limit and the plastic limit, and is the range of moisture content over which a soil deforms as a plastic material.

MAPQUEST

T-Mobile/ "Reed" Site/Case No. 2009-00067
Directions from County Seat/County Judge Executive Office at 20 N. Main Street, Henderson, Kentucky to Cell Tower Site at US60 & Williams Keene Road, in Reed, Kentucky
Directions printed by:
Theresa A. Tharp, Paralegal
Greenebaum Doll & McDonald PLLC
3500 National City Tower
Louisville, Kentucky 40202 (502) 587-3748

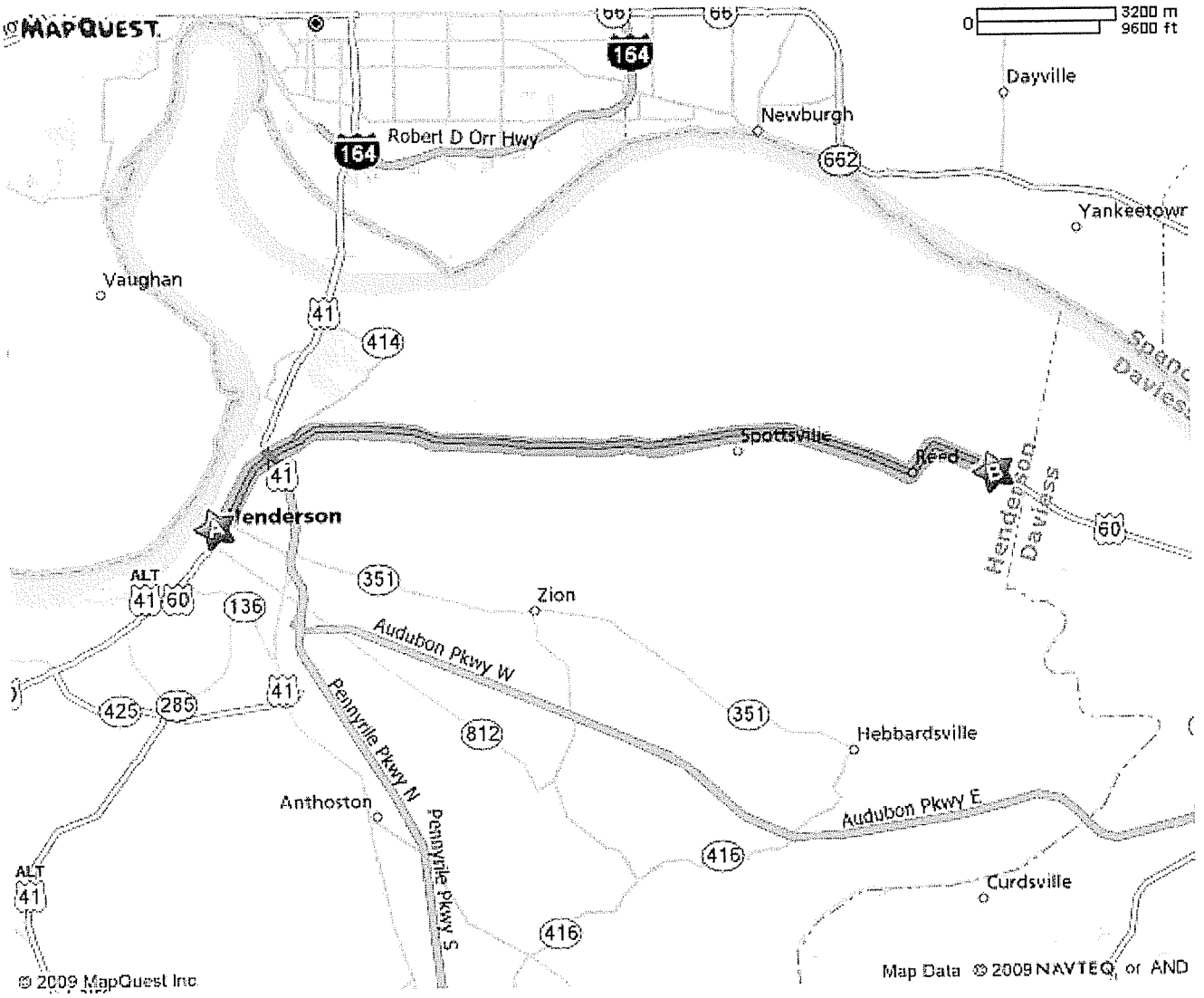
Total Time: 23 minutes **Total Distance: 16.01 miles**

A: 20 N Main St, Henderson, KY 42420-3199

START	**1:** Start out going NORTHEAST on N MAIN ST toward 1ST ST.	0.0 mi
	2: Turn RIGHT onto 1ST ST.	0.2 mi
	3: Turn LEFT onto US-41 ALT/US-60/N GREEN ST. Continue to follow US-60.	14.6 mi
	4: Turn SLIGHT RIGHT to stay on US-60.	1.2 mi
END	**5:** End at Us Highway 60 E & Williams Keene Rd Reed, KY 42451	

B: Us Highway 60 E & Williams Keene Rd, Reed, KY 42451

Total Time: 23 minutes **Total Distance: 16.01 miles**



SITE LEASE WITH OPTION

THIS SITE LEASE WITH OPTION (this "Lease") is by and between H. Glenn Williams, Trustee under the H. Glenn Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee and Judith B. Williams, Trustee under the Judith B. Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee ("Landlord") and Powertel/Memphis, Inc., a Delaware corporation ("Tenant").

1 Option to Lease.

~~(a) In consideration of the payment of~~ ~~by Tenant to Landlord, Landlord hereby grants to Tenant an option to lease a portion of the real property described in the attached Exhibit A (the "Property"), on the terms and conditions set forth herein (the "Option"). The Option shall be for an initial term of twelve (12) months, commencing on the Effective Date (as defined below) (the "Option Period"). The Option Period may be extended by Tenant for an additional twelve (12) months upon written notice to Landlord and ~~ ~~anal Option Fee") at any time prior to the end of the Option Period.~~

(b) During the Option Period and any extension thereof, and during the Initial Term and any Renewal Term (as those terms are defined below) of this Lease, Landlord agrees to cooperate with Tenant in obtaining, at Tenant's expense, all licenses and permits or authorizations required for Tenant's use of the Premises (as defined below) from all applicable government and/or regulatory entities (including, without limitation, zoning and land use authorities, and the Federal Communications Commission ("FCC") ("Governmental Approvals"), including all land use and zoning permit applications, and Landlord agrees to cooperate with and to allow Tenant, at no cost to Landlord, to obtain a title report, zoning approvals and variances, land-use permits. Landlord expressly grants to Tenant a right of access to the Property to perform any surveys, soil tests, and other engineering procedures or environmental investigations ("Tests") on the Property deemed necessary or appropriate by Tenant to evaluate the suitability of the Property for the uses contemplated under this Lease. During the Option Period and any extension thereof, and during the Initial Term or any Renewal Term of this Lease, Landlord agrees that it will not interfere with Tenant's efforts to secure other licenses and permits or authorizations that relate to other property. During the Option Period and any extension thereof, Tenant may exercise the Option by so notifying Landlord in writing, at Landlord's address in accordance with Section 12 hereof.

(c) If Tenant exercises the Option, then Landlord hereby leases to Tenant that portion of the Property sufficient for placement of the Antenna Facilities (as defined below), together with all necessary space and easements for access and utilities, as generally described and depicted in the attached Exhibit B (collectively referred to hereinafter as the "Premises"). The Premises, located at Hwy 60 and Williams Keene Rd, Owensboro, Henderson, KY 42501, comprises approximately 6,400 square feet.

2 Term. The initial term of this Lease shall be five (5) years commencing on the date of exercise of the Option (the "Commencement Date"), and terminating at midnight on the last day of the initial term (the "Initial Term").

3 Renewal. Tenant shall have the right to extend this Lease for five (5) additional and successive five-year terms (each a "Renewal Term") on the same terms and conditions as set forth herein. This Lease shall automatically renew for each successive Renewal Term unless Tenant notifies Landlord, in writing, of Tenant's intention not to renew this Lease, at least thirty (30) days prior to the expiration of the Initial Term or any Renewal Term. If Tenant shall remain in possession of the Premises at the expiration of this Lease or any Renewal Term without a written agreement, such tenancy shall be deemed a month-to-month tenancy under the same terms and conditions of this Lease.

4 Rent.

(a) From and after the Commencement Date, Tenant shall pay Landlord or designee, as rent, ~~ier~~ month ("Rent"). The first payment of Rent shall be due within twenty (20) days following the Commencement Date and shall be prorated based on the days remaining in the month following the Commencement Date, and thereafter Rent will be payable monthly in advance by the fifth day of each month to Landlord at the address specified in Section 12 below. If this Lease is terminated for any reason (other than a default by Tenant) at a time other than on the last day of a month, Rent shall be prorated as of the date of termination and all prepaid Rent shall be immediately refunded to Tenant. Landlord, its successors, assigns and/or designee, if any, will submit to Tenant any documents required by Tenant in connection with the payment of Rent, including, without limitation, an IRS Form W-9.

(b) During the Initial Term and any Renewal Terms ,

5 Permitted Use. The Premises may be used by Tenant for the transmission and reception of radio communication signals and for the construction, installation, operation, maintenance, repair, removal or replacement of related facilities, including, without limitation, tower and base, antennas, microwave dishes, equipment shelters and/or cabinets and related activities.

6 Interference. Tenant shall not use the Premises in any way which interferes with the use of the Property by Landlord or lessees or licensees of Landlord with rights in the Property prior in time to Tenant's (subject to Tenant's rights under this Lease, including, without limitation, non-interference). Similarly, Landlord shall not use, nor shall Landlord permit its lessees, licensees, employees, invitees or agents to use, any portion of the Property in any way which interferes with the operations of Tenant. Such interference shall be deemed a material breach by the interfering party, who shall, upon written notice from the other, be responsible for terminating said interference. In the event any such interference does not

cease promptly, the parties acknowledge that continuing interference may cause irreparable injury and, therefore, the injured party shall have the right, in addition to any other rights that it may have at law or in equity, to bring a court action to enjoin such interference or to terminate this Lease immediately upon written notice.

7. Improvements; Utilities; Access.

~~(a) Tenant shall have the right, at its expense, to erect and maintain on the Premises improvements, personal property and facilities necessary to operate its communications system, including, without limitation, radio transmitting and receiving antennas, microwave dishes, tower and base, equipment shelters and/or cabinets and related cables and utility lines and a location based system, as such location based system may be required by any county, state or federal agency/department, including, without limitation, additional antenna(s), coaxial cable, base units and other associated equipment (collectively, the "Antenna Facilities"). Tenant shall have the right to alter, replace, expand, enhance and upgrade the Antenna Facilities at any time during the term of this Lease. Tenant shall cause all construction to occur lien free and in compliance with all applicable laws and ordinances. Landlord acknowledges that it shall neither interfere with any aspects of construction nor attempt to direct construction personnel as to the location of or method of installation of the Antenna Facilities and the Easements (as defined below). The Antenna Facilities shall remain the exclusive property of Tenant and shall not be considered fixtures. Tenant shall have the right to remove the Antenna Facilities at any time during and upon the expiration or termination of this Lease.~~

(b) Tenant, at its expense, may use any and all appropriate means of restricting access to the Antenna Facilities, including, without limitation, the construction of a fence.

(c) Tenant shall, at Tenant's expense, keep and maintain the Antenna Facilities now or hereafter located on the Property in commercially reasonable condition and repair during the term of this Lease, normal wear and tear and casualty excepted. Upon termination or expiration of this Lease, the Premises shall be returned to Landlord in good, usable condition, normal wear and tear and casualty excepted.

(d) Tenant shall have the right to install utilities, at Tenant's expense, and to improve the present utilities on the Property (including, but not limited to, the installation of emergency power generators). Landlord agrees to use reasonable efforts in assisting Tenant to acquire necessary utility service. Tenant shall, wherever practicable, install separate meters for utilities used on the Property by Tenant. In the event separate meters are not installed, Tenant shall pay the periodic charges for all utilities attributable to Tenant's use, at the rate charged by the servicing utility. Landlord shall diligently correct any variation, interruption or failure of utility service.

(e) As partial consideration for Rent paid under this Lease, Landlord hereby grants Tenant easements on, under and across the Property for ingress, egress, utilities and access (including access for the purposes described in Section 1) to the Premises adequate to install and maintain utilities, including, but not limited to, the installation of power and telephone service cable, and to service the Premises and the Antenna Facilities at all times during the Initial Term of this Lease and any Renewal Term (collectively, the "Easements"). The Easements provided hereunder shall have the same term as this Lease.

(f) Tenant shall have 24-hours-a-day, 7-days-a-week access to the Premises at all times during the Initial Term of this Lease and any Renewal Term, at no charge to Tenant.

~~(g) Landlord shall maintain and repair all access roadways from the nearest public roadway to the Premises 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.~~

8. Termination. Except as otherwise provided herein, this Lease may be terminated, without any penalty or further liability as follows:

(a) upon thirty (30) days' written notice by Landlord if Tenant fails to cure a default for payment of amounts due under this Lease within such thirty (30) day period;

(b) immediately upon written notice by Tenant if Tenant notifies Landlord of any unacceptable results of any Tests prior to Tenant's installation of the Antenna Facilities on the Premises, or if Tenant does not obtain, maintain, or otherwise forfeits or cancels any license (including, without limitation, an FCC license), permit or any Governmental Approval necessary to the installation and/or operation of the Antenna Facilities or Tenant's business;

(c) upon thirty (30) days' written notice by Tenant if Tenant determines that the Property or the Antenna Facilities are inappropriate or unnecessary for Tenant's operations for economic or technological reasons;

(d) immediately upon written notice by Tenant if the Premises or the Antenna Facilities are destroyed or damaged so as in Tenant's reasonable judgment to substantially and adversely affect the effective use of the Antenna Facilities. In such event, all rights and obligations of the parties shall cease as of the date of the damage or destruction, and Tenant shall be entitled to the reimbursement of any Rent prepaid by Tenant. If Tenant elects to continue this Lease, then all Rent shall abate until the Premises and/or the Antenna Facilities are restored to the condition existing immediately prior to such damage or destruction; or

(e) at the time title to the Property transfers to a condemning authority pursuant to a taking of all or a portion of the Property sufficient in Tenant's determination to render the Premises unsuitable for Tenant's use. Landlord and Tenant shall each be entitled to pursue their own separate awards with respect to such taking. Sale of all or part of the Property to a purchaser with the power of eminent domain in the face of the exercise of the power shall be treated as a taking by condemnation.

9. Default and Right to Cure. Notwithstanding anything contained herein to the contrary and without waiving any other rights granted to it at law or in equity, each party shall have the right, but not the obligation, to terminate this Lease on written notice pursuant to Section 12 hereof, to take effect immediately, if the other party fails to perform any covenant or commits a material breach of this Lease and fails to diligently pursue a cure thereof to its completion after thirty (30) days' written notice specifying such failure of performance or default.

10. Taxes. Landlord shall pay when due all real property taxes for the Property, including the Premises. In the event that Landlord fails to pay any such real property taxes or other fees and assessments, Tenant shall have the right, but not the obligation, to pay such owed amounts and deduct them from Rent amounts due under this Lease. Notwithstanding the foregoing, Tenant shall pay any personal property tax, real property tax or any other tax or fee which is directly attributable to the presence or installation of Tenant's Antenna Facilities, only for so long as this Lease remains in effect. If Landlord receives notice of any personal property or real property tax assessment against Landlord, which may affect Tenant and is directly attributable to Tenant's installation, Landlord shall provide timely notice of the assessment to Tenant sufficient to allow Tenant to consent to or challenge such assessment, whether in a Court, administrative proceeding, or other venue, on behalf of Landlord and/or Tenant. Further, Landlord shall provide to Tenant any and all documentation associated with the assessment and shall execute any and all documents reasonably necessary to effectuate the intent of this Section 10. In the event real property taxes are assessed against Landlord or Tenant for the Premises or the Property, Tenant shall have the right, but not the obligation, to terminate this Lease without further liability after thirty (30) days' written notice to Landlord, provided Tenant pays any real property taxes assessed as provided herein.

11. Insurance and Subrogation and Indemnification.

(a) Tenant will maintain Commercial General Liability Insurance in amounts of One Million and no/100 Dollars ($1,000,000.00) per occurrence and Two Million and no/100 Dollars ($2,000,000.00) aggregate. Tenant may satisfy this requirement by obtaining the appropriate endorsement to any master policy of liability insurance Tenant may maintain.

(b) Landlord and Tenant hereby mutually release each other (and their successors or assigns) from liability and waive all right of recovery against the other for any loss or damage covered by their respective first party property insurance policies for all perils insured thereunder. In the event of such insured loss, neither party's insurance company shall have a subrogated claim against the other.

(c) Subject to the property insurance waivers set forth in subsection 11(b), Landlord and Tenant each agree to indemnify and hold harmless the other party from and against any and all claims, damages, costs and expenses, including reasonable attorney fees, to the extent caused by or arising out of the negligent acts or omissions or willful misconduct in the operations or activities on the Property by the indemnifying party or the employees, agents, contractors, licensees, tenants and/or subtenants of the indemnifying party, or a breach of any obligation of the indemnifying party under this Lease. The indemnifying party's obligations under this section are contingent upon its receiving prompt written notice of any event giving rise to an obligation to indemnify the other party and the indemnified party's granting it the right to control the defense and settlement of the same.

(d) Notwithstanding anything to the contrary in this Lease, the parties hereby confirm that the provisions of this Section 11 shall survive the expiration or termination of this Lease.

(e) Tenant shall not be responsible to Landlord, or any third-party, for any claims, costs or damages (including, fines and penalties) attributable to any pre-existing violations of applicable codes, statutes or other regulations governing the Property.

12. Notices. All notices, requests, demands and other communications shall be in writing and are effective three (3) days after deposit in the U.S. mail, certified and postage paid, or upon receipt if personally delivered or sent by next-business-day delivery via a nationally recognized overnight courier to the addresses set forth below. Landlord or Tenant may from time to time designate any other address for this purpose by providing written notice to the other party.

If to Tenant, to:
T-Mobile USA, Inc.
12920 SE 38th Street
Bellevue, WA 98006
Attn: PCS Lease Administrator

With a copy to:
Attn: Legal Dept.

And with a copy to:
Powertel/Memphis, Inc.
3800 Ezell
Nashville, TN 37211
Attn: Lease Administration Manager

With a copy to:
Attn: Legal Dept.

If to Landlord, to:
Glenn and Judy Williams
24335 HWY 811
Owensboro, KY 42301

And with a copy to:

Send Rent payments to:
Glenn and Judy Williams
24335 HWY 811
Owensboro, KY 42301

13. Quiet Enjoyment, Title and Authority. As of the Effective Date and at all times during the Initial Term and any Renewal Terms of this Lease, Landlord covenants and warrants to Tenant that (i) Landlord has full right, power and authority to execute and perform this Lease; (ii) Landlord has good and unencumbered fee title to the Property free and clear of any liens or mortgages, except those heretofore disclosed in writing to Tenant and which will not interfere with Tenant's rights to or use of the Premises; (iii) execution and performance of this Lease will not violate any laws, ordinances, covenants, or the provisions of any mortgage, lease, or other agreement binding on Landlord; and (iv) Tenant's quiet enjoyment of the Premises or any part thereof shall not be disturbed as long as Tenant is not in default beyond any applicable grace or cure period.

14. Environmental Laws. Landlord represents that it has no knowledge of any substance, chemical or waste (collectively, "Hazardous Substance") on the Property that is identified as hazardous, toxic or dangerous in any applicable federal, state or local law or regulation. Landlord and Tenant shall not introduce or use any Hazardous Substance on the Property in violation of any applicable law. Landlord shall be responsible for, and shall promptly conduct any investigation and remediation as required by any applicable environmental laws, all spills or other releases of any Hazardous Substance not caused solely by Tenant, that have occurred or which may occur on the Property. Each party agrees to defend, indemnify and hold harmless the other from and against any and all administrative and judicial actions and rulings, claims, causes of action, demands and liability (collectively, "Claims") including, but not limited to, damages, costs, expenses, assessments, penalties, fines, losses, judgments and reasonable attorney fees that the indemnitee may suffer or incur due to the existence of any Hazardous Substances on the Property or the migration of any Hazardous Substance to other properties or the release of any Hazardous Substance into the environment (collectively, "Actions"), that relate to or arise from the indemnitor's activities on the Property. Landlord agrees to defend, indemnify and hold Tenant harmless from Claims resulting from Actions on the Property not caused by Landlord or Tenant prior to and during the Initial Term and any Renewal Term. The indemnifications in this section specifically include, without limitation, costs incurred in connection with any investigation of site conditions or any cleanup, remedial, removal or restoration work required by any governmental authority. This Section 14 shall survive the termination or expiration of this Lease.

15. Assignment and Subleasing. Tenant shall have the right to assign or otherwise transfer this Lease and the Easements (as defined above) granted herein upon written notice to Landlord. Upon such assignment, Tenant shall be relieved of all liabilities and obligations hereunder and Landlord shall look solely to the assignee for performance under this Lease and all obligations hereunder. Tenant may sublease the Premises, upon written notice to Landlord.

Landlord shall have the right to assign or otherwise transfer this Lease and the Easements granted herein, upon written notice to Tenant except for the following; any assignment or transfer of this Lease which is separate and distinct from a transfer of Landlord's entire right, title and interest in the Property, shall require the prior written consent of Tenant which may be withheld in Tenant's sole discretion. Upon Tenant's receipt of (i) an executed deed or assignment and (ii) an IRS Form W-9 from assignee, and subject to Tenant's consent, if required, Landlord shall be relieved of all liabilities and obligations hereunder and Tenant shall look solely to the assignee for performance under this Lease and all obligations hereunder.

Additionally, notwithstanding anything to the contrary above, Landlord or Tenant may, upon notice to the other, grant a security interest in this Lease (and as regards the Tenant, in the Antenna Facilities), and may collaterally assign this Lease (and as regards the Tenant, in the Antenna Facilities) to any mortgagees or holders of security interests, including their successors or assigns (collectively "Secured Parties"). In such event, Landlord or Tenant, as the case may be, shall execute such consent to leasehold financing as may reasonably be required by Secured Parties.

16. Successors and Assigns. This Lease and the Easements granted herein shall run with the land, and shall be binding upon and inure to the benefit of the parties, their respective successors, personal representatives and assigns.

17. Waiver of Landlord's Lien. Landlord hereby waives any and all lien rights it may have, statutory or otherwise, concerning the Antenna Facilities or any portion thereof, which shall be deemed personal property for the purposes of this Lease, whether or not the same is deemed real or personal property under applicable laws, and Landlord gives Tenant and Secured Parties the right to remove all or any portion of the same from time to time, whether before or after a default under this Lease, in Tenant's and/or Secured Party's sole discretion and without Landlord's consent.

18. Miscellaneous.

(a) The prevailing party in any litigation arising hereunder shall be entitled to reimbursement from the other party of its reasonable attorneys' fees and court costs, including appeals, if any.

(b) This Lease constitutes the entire agreement and understanding of the parties, and supersedes all offers, negotiations and other agreements with respect to the subject matter and property covered by this Lease. Any amendments to this Lease must be in writing and executed by both parties.

(c) Landlord agrees to cooperate with Tenant in executing any documents necessary to protect Tenant's rights in or use of the Premises. A Memorandum of Lease in substantially the form attached hereto as Exhibit C may be recorded in place of this Lease by Tenant.

(d) In the event the Property is encumbered by a mortgage or deed of trust, Landlord agrees, upon request of Tenant, to obtain and furnish to Tenant a non-disturbance and attornment agreement for each such mortgage or deed of trust, in a form reasonably acceptable to Tenant.

(e) Tenant may obtain title insurance on its interest in the Premises. Landlord agrees to execute such documents as the title company may require in connection therewith.

(f) This Lease shall be construed in accordance with the laws of the state in which the Property is located, without regard to the conflicts of law principles of such state.

(g) If any term of this Lease is found to be void or invalid, the remaining terms of this Lease shall continue in full force and effect. Any questions of particular interpretation shall not be interpreted against the drafter, but rather in accordance with the fair meaning thereof. No provision of this Lease will be deemed waived by either party unless expressly waived in writing by the waiving party. No waiver shall be implied by delay or any other act or omission of either party. No waiver by either party of any provision of this Lease shall be deemed a waiver of such provision with respect to any subsequent matter relating to such provision.

(h) The persons who have executed this Lease represent and warrant that they are duly authorized to execute this Lease in their individual or representative capacities as indicated.

(i) This Lease may be executed in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute a single instrument.

(j) All Exhibits referred to herein and any Addenda are incorporated herein for all purposes. The parties understand and acknowledge that Exhibits A and B may be attached to this Lease and the Memorandum of Lease, in preliminary form. Accordingly, the parties agree that upon the preparation of final, more complete exhibits, Exhibits A and/or B, as the case may be, may be replaced by Tenant with such final, more complete exhibit(s).

(k) If either party is represented by any broker or any other leasing agent, such party is responsible for all commission fee or other payment to such agent, and agrees to indemnify and hold the other party harmless from all claims by such broker or anyone claiming through such broker.

The effective date of this Lease is the date of execution by the last party to sign (the "Effective Date").

LANDLORD: H. Glenn Williams, Trustee under the H. Glenn Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee

By: H. Glenn Williams

Printed Name: H. Glenn Williams

Title: Trustee

Date: 1-13-09

LANDLORD: Judith B. Williams, Trustee under the Judith B. Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee

By: Judith B. Williams

Printed Name: Judith B. Williams

Title: Trustee

Date: Jan. 13 2009

TENANT: Powertel/Memphis, Inc.

By: _____

Printed Name: Dean Davis

Title: Interim Director of Network Engineering and Operations

Date: _____

T-Mobile Legal Approval

EXHIBIT A
Legal Description

The Property is legally described as follows:

[Enter legal description here or on attachment(s).]

Situated in the County of Henderson and Commonwealth of Kentucky, to wit:

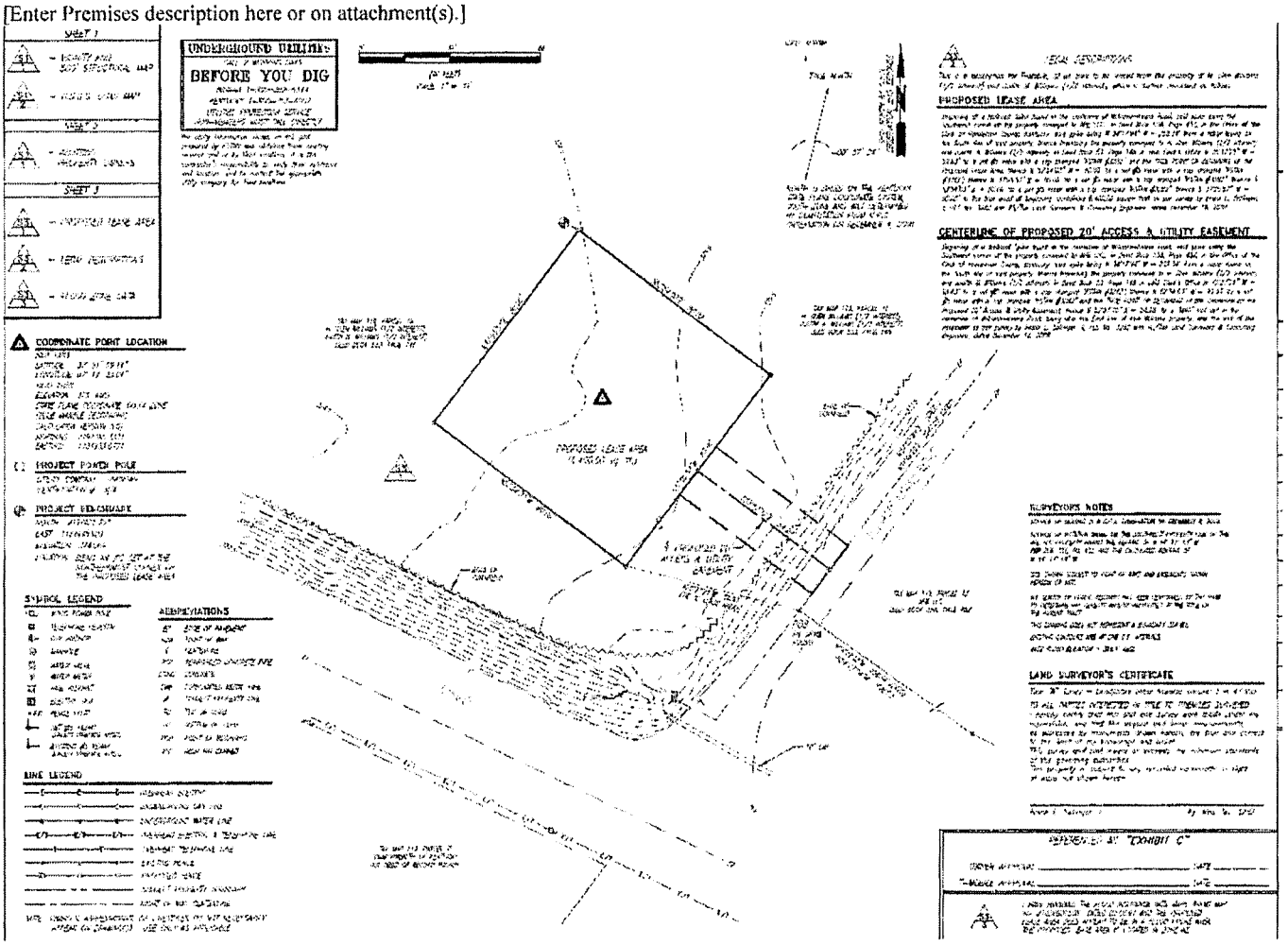
Located in the County of Henderson, State of Kentucky, 16 miles northeast of the City of Henderson, one mile North of Reed, and being all of that portion of the following described tract which lies North of U. S. Highway 60:

Beginning at a stake in the Bluff City Road at the southwest corner of E. T. Smith's farm and running thence south 32 deg. west 132-1/4 poles to a stake in said road; thence south 59 deg. and 22 min. east 66 poles to a stake; thence south 32 deg. west 68 poles to a stake in Bradshaw's line; thence south 59 deg. and 22 min. east 298 poles to a sweet gum, now down in the line of Lots #6 and 7, to a stake; thence north 31 deg. and 49 min. east 196 poles and 20 links to a stake, corner to Beggley; thence north 58-3/4 deg. west 362 poles to the place of beginning, containing 421-34/100 acres, more or less, but subject to all legal highways.

EXHIBIT B

The location of the Premises within the Property (together with access and utilities) is more particularly described and depicted as follows:

[Enter Premises description here or on attachment(s).]



Site Number: 9LV0460
Site Name: Reed
Market: Louisville

Site Lease - version 9.21.07

EXHIBIT C

Memorandum of Lease

Return to after recording:
Powertel/Memphis, Inc.
3800 Ezell
Nashville, TN 37211
Attn: Lease Administration Manager

MEMORANDUM OF LEASE

Assessor's Parcel Number: Map 119-16

Between H. Glenn Williams, Trustee under the H. Glenn Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee and Judith B. Williams, Trustee under the Judith B. Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee ("Landlord") and Powertel/Memphis, Inc. ("Tenant")

A Site Lease with Option (the "Lease") by and between H. Glenn Williams, Trustee under the H. Glenn Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee and Judith B. Williams, Trustee under the Judith B. Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee, ("Landlord") and Powertel/Memphis, Inc., a Delaware corporation ("Tenant") was made regarding a portion of the following property:

See Attached Exhibit "A" incorporated herein for all purposes

The Option is for a term of twelve (12) months after the Effective Date of the Lease (as defined under the Lease), with up to one additional twelve (12) month renewal ("Optional Period").

The Lease is for a term of five (5) years and will commence on the date as set forth in the Lease (the "Commencement Date"). Tenant shall have the right to extend this Lease for five (5) additional and successive five-year terms.

IN WITNESS WHEREOF, the parties hereto have respectively executed this memorandum effective as of the date of the last party to sign.

LANDLORD: H. Glenn Williams, Trustee under the H. Glenn Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee

By: _____

Printed Name: H. Glenn Williams

Title: Trustee

Date: _____

LANDLORD: Judith B. Williams, Trustee under the Judith B. Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee

By: _____

Printed Name: Judith B. Williams

Title: Trustee

Date: _____

TENANT: Powertel/Memphis, Inc.

By: _____

Printed Name: Dean Davis

Title: Interim Director of Network Engineering and Operations

Date: _____

Printed Name: _____

[Notary block for Landlord]

STATE OF _____)
) ss.
COUNTY OF _____)

This instrument was acknowledged before me on _____ by H. Glenn Williams, as Trustee under the H. Glenn Williams Family Living Trust and Judith B. Williams, as Trustee under the Judith B. Williams Family Living Trust..

Dated: _____

_____
Notary Public
Print Name _____
My commission expires _____

(Use this space for notary stamp/seal)

[Notary block for Tenant]

STATE OF _____)
) ss.
COUNTY OF _____)

I certify that I know or have satisfactory evidence that Dean Davis is the person who appeared before me, and said person acknowledged that she signed this instrument, on oath stated that she was authorized to execute the instrument and acknowledged it as the Interim Director of Network Engineering and Operations of Powertel/Memphis, Inc., a Delaware corporation, to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Dated: _____

_____
Notary Public
Print Name _____
My commission expires _____

(Use this space for notary stamp/seal)

Memorandum of Lease Exhibit A
Legal Description

The Property is legally described as follows:

Situated in the County of Henderson and Commonwealth of Kentucky, to wit:

Located in the County of Henderson, State of Kentucky, 16 miles northeast of the City of Henderson, one mile North of Reed, and being all of that portion of the following described tract which lies North of U. S. Highway 60:

Beginning at a stake in the Bluff City Road at the southwest corner of E. T. Smith's farm and running thence south 32 deg. west 132-1/4 poles to a stake in said road; thence south 59 deg. and 22 min. east 66 poles to a stake; thence south 32 deg. west 68 poles to a stake in Bradshaw's line; thence south 59 deg. and 22 min. east 298 poles to a sweet gum, now down in the line of Lots #6 and 7, to a stake; thence north 31 deg. and 49 min. east 196 poles and 20 links to a stake, corner to Beggley; thence north 58-3/4 deg. west 362 poles to the place of beginning, containing 421-34/100 acres, more or less, but subject to all legal highways.

ADDENDUM TO SITE LEASE WITH OPTION
[Additional Terms]

In the event of conflict or inconsistency between the terms of this Addendum and this Lease, the terms of the Addendum shall govern and control. All capitalized terms shall have the same meaning as in this Lease.

Section 1 (a) shall be deleted and replaced as follows:

(a) In consideration of the payment of one thousand and no/100 dollars ($1,000.00) (the "Option Fee") by Tenant to Landlord, Landlord hereby grants to Tenant an option to lease a portion of the real property described in the attached Exhibit A (the "Property"), on the terms and conditions set forth herein (the "Option"). The Option shall be for an initial term of twelve (12) months, commencing on the Effective Date (as defined below) (the "Option Period"). The Option Period may be extended by Tenant for an additional twelve (12) months upon written notice to Landlord and payment of the sum of one thousand and no/100 dollars ($1,000.00) ("Additional Option Fee") at any time prior to the end of the Option Period. If this Lease is not executed by Tenant and returned to Landlord with payment of the Option Fee within ninety (90) days following the execution of Landlord, this Lease shall be null and void.

Section 7 (a) shall be deleted and replaced as follows:

(a) Tenant shall have the right, at its expense, to erect and maintain on the Premises improvements, personal property and facilities necessary to operate its communications system, including, without limitation, radio transmitting and receiving antennas, microwave dishes, tower and base, equipment shelters and/or cabinets and related cables and utility lines and a location based system, as such location based system may be required by any county, state or federal agency/department, including, without limitation, additional antenna(s), coaxial cable, base units and other associated equipment (collectively, the "Antenna Facilities"). Tenant shall have the right to alter, replace, expand, enhance and upgrade the Antenna Facilities at any time during the term of this Lease. Tenant shall cause all construction to occur lien-free and in compliance with all applicable laws and ordinances. Landlord acknowledges that it shall neither interfere with any aspects of construction nor attempt to direct construction personnel as to the location of or method of installation of the Antenna Facilities and the Easements (as defined below). The Antenna Facilities shall remain the exclusive property of Tenant and shall not be considered fixtures. Tenant shall have the right to remove the Antenna Facilities at any time during this Lease. Tenant shall remove all above ground improvements of the Antenna Facilities and all below ground improvements of the Antenna Facilities to a depth of 24" within 90 days following the expiration or early termination of this Lease. Tenant shall continue to pay Rent until completion of removal after expiration or early termination of this Lease.

Section 7 (g) shall be deleted and replaced as follows:

(g) Landlord shall maintain and repair all existing access roadways from the nearest public roadway to the Premises 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. Any new access roadways required by Tenant for access to the Premises will installed, maintained and repaired at the cost of Tenant, except for any damage to such new access roadways caused by Landlord.

LANDLORD: H. Glenn Williams, Trustee under the H. Glenn Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee

By: H. Glenn Williams

Printed Name: H. Glenn Williams

Title: Trustee

Date: 1-13-09

LANDLORD: Judith B. Williams, Trustee under the Judith B. Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee

By: Judith B. Williams

Printed Name: Judith B. Williams

Title: Trustee

Date: Jan. 13 2009

TENANT: Powertel/Memphis, Inc.

Site Number: 9LV0460
Site Name: Reed
Market: Louisville

By: _____

Printed Name: Dean Davis

Title: Interim Director of Network Engineering and Operations

Date: _____

Return to after recording:
Powertel/Memphis, Inc.
3800 Ezell
Nashville, TN 37211
Attn: Lease Administration Manager

MEMORANDUM OF LEASE

Assessor's Parcel Number: Map 119-16

Between H. Glenn Williams, Trustee under the H. Glenn Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee and Judith B. Williams, Trustee under the Judith B. Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee ("Landlord") and Powertel/Memphis, Inc. ("Tenant")

A Site Lease with Option (the "Lease") by and between H. Glenn Williams, Trustee under the H. Glenn Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee and Judith B. Williams, Trustee under the Judith B. Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee, ("Landlord") and Powertel/Memphis, Inc., a Delaware corporation ("Tenant") was made regarding a portion of the following property:

See Attached Exhibit "A" incorporated herein for all purposes

The Option is for a term of twelve (12) months after the Effective Date of the Lease (as defined under the Lease), with up to one additional twelve (12) month renewal ("Optional Period").

The Lease is for a term of five (5) years and will commence on the date as set forth in the Lease (the "Commencement Date"). Tenant shall have the right to extend this Lease for five (5) additional and successive five-year terms.

IN WITNESS WHEREOF, the parties hereto have respectively executed this memorandum effective as of the date of the last party to sign.

LANDLORD: H. Glenn Williams, Trustee under the H. Glenn Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee

By: H. Glenn Williams

Printed Name: H. Glenn Williams

Title: Trustee

Date: 1-19-09

LANDLORD: Judith B. Williams, Trustee under the Judith B. Williams Family Living Trust, an undivided 1/2 interest, or his or her successor trustee

By: Judith B. Williams

Printed Name: Judith B. Williams

Title: Trustee

Date: Jan 14 2009

TENANT: Powertel/Memphis, Inc.

By: _____

Printed Name: Dean Davis

Title: Interim Director of Network Engineering and Operations

Date: _____

Printed Name: _____

Site Number: 9LV0460
Site Name: Reed
Market: Louisville

[Notary block for Landlord]

STATE OF Kentucky)
) ss.
COUNTY OF Daviess)

This instrument was acknowledged before me on 1/14/09 by H. Glenn Williams, as Trustee under the H. Glenn Williams Family Living Trust and Judith B. Williams, as Trustee under the Judith B. Williams Family Living Trust..

Dated: 1/14/09

Erika Leet
Notary Public
Print Name Erika Leet
My commission expires 6/14/10

(Use this space for notary stamp/seal)

[Notary block for Tenant]

STATE OF _____)
) ss.
COUNTY OF _____)

I certify that I know or have satisfactory evidence that Dean Davis is the person who appeared before me, and said person acknowledged that she signed this instrument, on oath stated that she was authorized to execute the instrument and acknowledged it as the Interim Director of Network Engineering and Operations of Powertel/Memphis, Inc., a Delaware corporation, to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Dated: _____

_____
Notary Public
Print Name _____
My commission expires _____

(Use this space for notary stamp/seal)

Memorandum of Lease Exhibit A
Legal Description

The Property is legally described as follows:

Situated in the County of Henderson and Commonwealth of Kentucky, to wit:

Located in the County of Henderson, State of Kentucky, 16 miles northeast of the City of Henderson, one mile North of Reed, and being all of that portion of the following described tract which lies North of U. S. Highway 60:

Beginning at a stake in the Bluff City Road at the southwest corner of E. T. Smith's farm and running thence south 32 deg. west 132-1/4 poles to a stake in said road; thence south 59 deg. and 22 min. east 66 poles to a stake; thence south 32 deg. west 68 poles to a stake in Bradshaw's line; thence south 59 deg. and 22 min. east 298 poles to a sweet gum, now down in the line of Lots #6 and 7, to a stake; thence north 31 deg. and 49 min. east 196 poles and 20 links to a stake, corner to Beggley; thence north 58-3/4 deg. west 362 poles to the place of beginning, containing 421-34/100 acres, more or less, but subject to all legal highways.

Identity and Qualifications of each Person Directly Responsible for the Design of the Wireless Communication Facility

Frank L. Sellinger
Licensed Professional Land Surveyor (KY Lic. #3282)

Jeremy Potts, Construction Manager
Mittrex Engineering

Richard A. Linker, P.E., Geotechnical Engineer
Licensed Professional Engineer (KY Lic. #16420)

Timothy L. Hardy, P.E., Structural Engineer
Registered Professional Engineer (KY Lic. #20374)

Ta-Wen Lee, P.E., Design Engineer
Licensed Professional Engineer (KY Lic. #24589)

Timothy L. Hardy, P.E., A & E Engineer
Registered Professional Engineer (KY Lic. #20374)

Buford H. Evans, Jr., P.E., Foundation Engineer
Licensed Professional Engineer (KY Lic. #19839)

Paul B. Whitty
Direct (502) 587-3655 Fax (502) 540-2260 E-mail pbw@gdm.com

February 27, 2009

VIA CERTIFIED MAIL - RETURN RECEIPT REQUESTED

RE: Notice of Proposed Construction of Wireless Communications Facility
Site Name: Reed/ 9LV0460D
Site Address: Highway 60 at Williams-Keene Road, Reed, Kentucky 42451
Docket No. 2009-00067

Dear Neighbor:

Powertel/Memphis, Inc. d/b/a T-Mobile Kentucky ("T-Mobile") has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on property located at Highway 60E at Williams-Keene Road, Reed, Kentucky 42301. The proposed facility will include a 250-foot tall antenna tower, plus a 10-foot lightning rod and related ground facilities.

This notice is being sent to you because the Henderson County Property Valuation Administrator's records indicate that you may own property that is within 500' of the proposed tower site or contiguous to the property on which the tower is to be located. You have a right to submit testimony to the PSC in writing, or to request intervention in the PSC's proceedings on the application. You may contact the PSC for additional information concerning this matter at: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602, Phone: (502) 564-3940. Please refer to Docket Number 2009-00067 in your correspondence or telephone calls.

We have attached a map showing the site location for the proposed tower. T-Mobile's radio frequency engineers assisted in selecting the proposed site for the tower, based on location and elevation needed to improve coverage and to provide quality service to wireless communications customers in this area. Please feel free to contact me at (502) 587-3655 with any comments or questions.

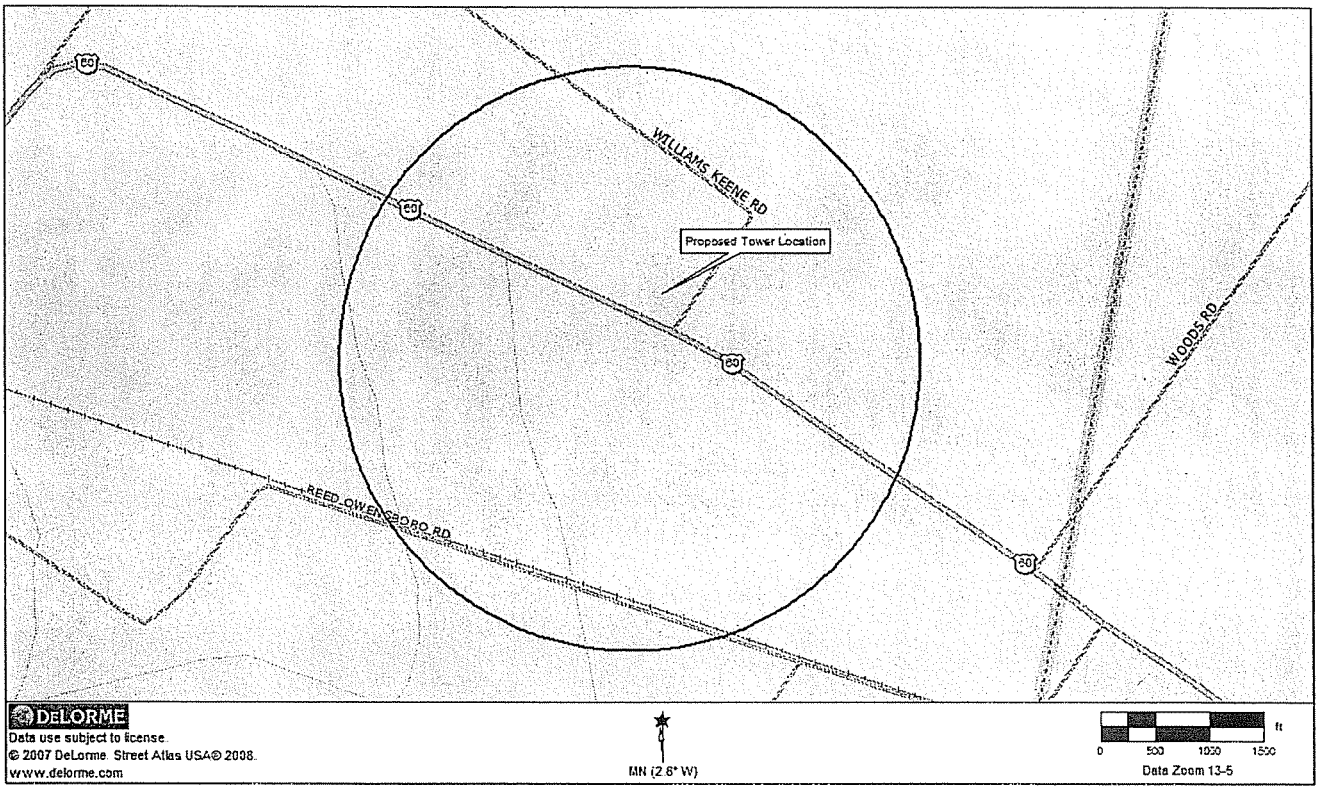
Sincerely,

Paul B. Whitty
Attorney for T-Mobile
PBW/abf
Enclosure

3272543_1.doc

T··Mobile·

MAP FROM RF SHOWING SEARCH AREA WITH CANDIDATE DEPICTED



Notice List
T-Mobile/Henderson
"REED"
US 60 E. & Williams-Keene Road
Reed, Henderson County, KY 42451
Map 119, Parcel 16

ALL PROPERTIES WITHIN 500 FEET OF TOWER SITE OR CONTIGUOUS TO PROPERTY ON WHICH TOWER IS TO BE LOCATED

Map 119, Parcel 7
Commonwealth of Kentucky
No Address in PVA Records

Map 119, Parcel 8
Gregory J. & Kennedy Mullican
1120 Lyddone Bridge Rd.
Owensboro, KY 42301

Map 119, Parcel 13
AFE LLC
4301 Kings Road
Phipot, KY 42366

Map 119, Parcel 14
John G. Peterson
18969 Williams Keene Rd.
Reed, KY 42451

Map 119, Parcel 15
Frances Ralph
18861 Williams Keene Rd.
Reed, KY 42451

Map 119, Parcel 54
Charles F. & Mary J. Smith
444 Wimsatt Rd.
Owensboro, KY 42301

Map 119, Parcel 53
Mark Rone
1605 Hwy. 279 N.
Owensboro, KY 42301

Map 119, Parcel 50
Allen E. Chase
23862 Hwy. 811
Owensboro, KY 42301

Map 119, Parcel 51
Anthony & Christa Hundley
24114 Hwy. 811
Owensboro, KY 42301

Map 119, Parcel xxx
Thomas Heppler
c/o Susan H. Bailey
1251 Huntspoint Way
Henderson, KY 42420

Map 119, Parcels 52 & 52.1
John W. Murphy
24318 Highway 811
Reed, KY 42451

Map 119, Parcel 17
Country Tavern Inc.
17159 Hwy. 60 E.
Owensboro, KY 42301

Map 119, Parcel 6
Glenn H. Williams and
Judith B. Williams
24335 Hwy. 811
Owensboro, KY 42301

GOVERNMENT OFFICIAL:

Hon. Sandy Lee Watkins
Henderson County Judge Executive
20 North Main Street
Henderson, KY 42541

GOVERNMENT OFFICIAL:

Hon. Sandy Lee Watkins
Henderson County Judge Executive
20 North Main Street
Henderson, Kentucky 42541

Paul B. Whitty
Direct (502) 587-3655 Fax (502) 540-2260 E-mail pbw@gdm.com

February 25, 2009

VIA CERTIFIED MAIL - RETURN RECEIPT REQUESTED
Hon. Sandy Lee Watkins
Henderson County Judge Executive
20 N. Main Street
Henderson, KY 42451

RE: Notice of Proposed Construction of Wireless Communications Facility
Site Name: Reed/ 9LV0460D
Site Address: Highway 60 at Williams-Keene Road, Reed, Kentucky 42301
Docket No. 2009-00067

Dear Judge Watkins:

Powertel/Memphis, Inc. d/b/a T-Mobile Kentucky ("T-Mobile") has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on property located at Highway 60E at Williams-Keene Road, Reed, Kentucky 42301. The proposed facility will include a 250-foot tall antenna tower, plus a 10-foot lightning rod and related ground facilities.

You have a right to submit testimony to the PSC in writing, or to request intervention in the PSC's proceedings on the application. You may contact the PSC for additional information concerning this matter at: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602, Phone: (502) 564-3940. Please refer to Docket Number 2009-00067 in your correspondence or telephone calls.

We have attached a map showing the site location for the proposed tower. T-Mobile's radio frequency engineers assisted in selecting the proposed site for the tower, based on location and elevation needed to improve coverage and to provide quality service to wireless communications customers in this area. Please feel free to contact me at (502) 587-3655 with any comments or questions.

Sincerely,

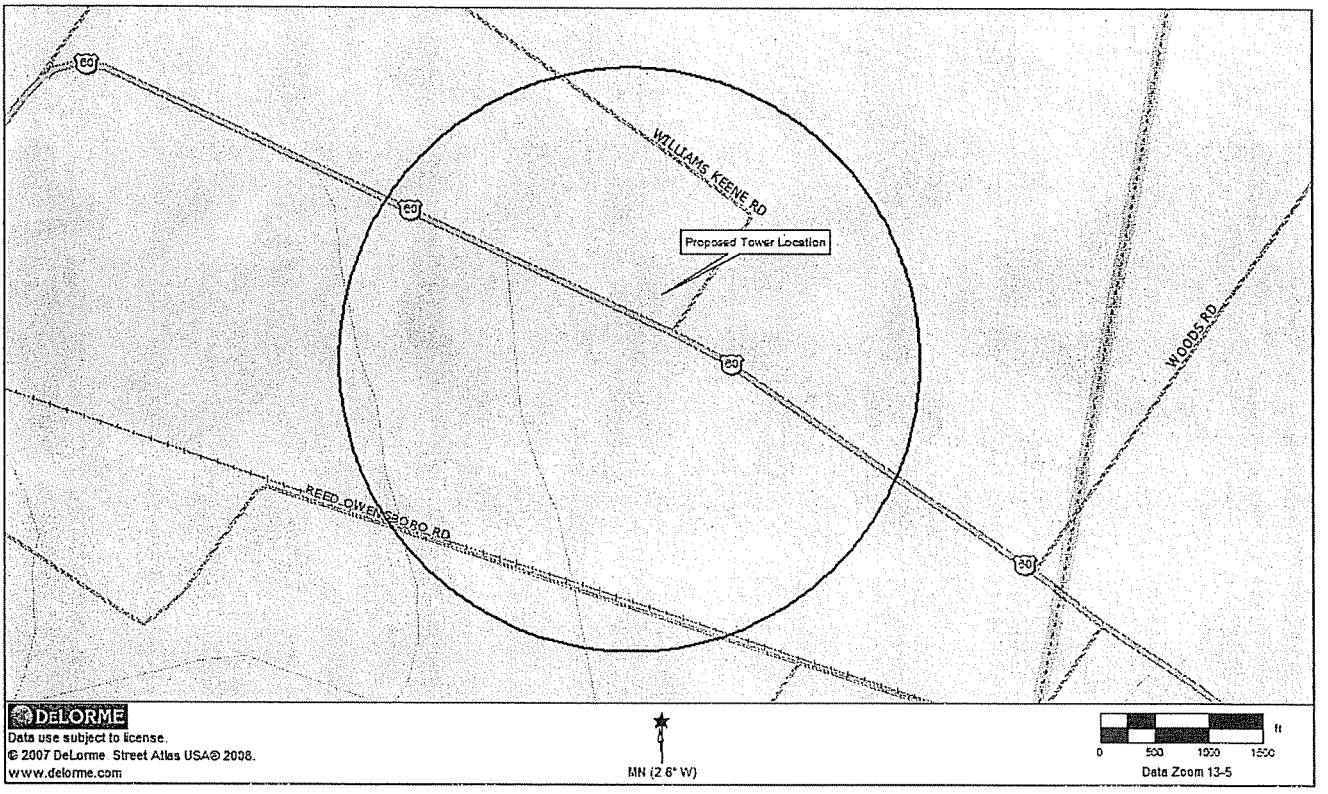
Paul B. Whitty
Attorney for T-Mobile

PBW/abf
Enclosure

3272521_1.doc

T··Mobile··

MAP FROM RF SHOWING SEARCH AREA WITH CANDIDATE DEPICTED



SITE NAME: REED
US 60 & Williams Keene Road
Reed, Kentucky 42451

NOTICE SIGNS

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

Sign to be posted on site:

Powertel/Memphis Inc. d/b/a T-Mobile Kentucky proposes to construct a telecommunications **tower** on this site. If you have questions, please contact Paul B. Whitty, Greenebaum Doll & McDonald, PLLC, 3500 National City Tower, Louisville, Kentucky 40202, (502) 587-3655, or the Executive Director, Public Service Commission, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky, 40602, (502) 564-3940. Please refer to Docket Number 2009-00067 in your correspondence or telephone calls.

Sign to be posted on nearest public road:

Powertel/Memphis Inc. d/b/a T-Mobile Kentucky proposes to construct a telecommunications **tower** near this site. If you have questions, please contact Paul B. Whitty, Greenebaum Doll & McDonald, PLLC, 3500 National City Tower, Louisville, Kentucky 40202, (502) 587-3655, or the Executive Director, Public Service Commission, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky, 40602, (502) 564-3940. Please refer to Docket Number 2009-00067 in your correspondence or telephone calls.

Tharp, Theresa A.

To: Ad for Henderson County Newspaper

Subject: Legal Ad for T-Mobile / Reed / Henderson County

Please place the following legal ad in the _____ Newspaper. We would like for the ad to run on March _____, 2009.

Powertel/Memphis, Inc. d/b/a T-Mobile Kentucky proposes to construct a telecommunications tower at US 60 and Williams Keene Road, in Reed, Henderson County, Kentucky. For questions or comments please contact Paul Whitty, Attorney, Greenebaum Doll & McDonald, PLLC, 3500 National City Tower, Louisville, Kentucky 40202; or Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to Docket Number 2009-00067 in your correspondence.

Please let me know immediately what the cost of this ad will be so that I may make arrangements for payment.

We will need proof of publication, please, and ask that you send same to me at the address shown below.

Thank you for your assistance with this matter.

Theresa A. Tharp
Paralegal
Greenebaum Doll & McDonald, PLLC
3500 National City Tower
Louisville, KY 40202
Office: (502) 587-3748
Fax: (502) 540-2291
Cell: (502) 541-8212
Email: tae@gdm.com

T-Mobile

SARF

Report Date
8/14/08 3:20 pm

Site Search Area Information

Original CER ☐ Yes	CER Date: 8/14/08

Site Location

Site Number:	**9LV0460**	Site Name:	**Reed**
Latitude:	**37° 51' 6.84"**	Budget Year:	**2009**
Longitude:	**87° 19' 43.68"**	Corp Priority:	**3**
Elevation:	**384**	RF Area:	
County:	**Henderson**		
State:	**KY**		
Map Name:			
Map Scale:	**24000**		

Site Parameters

Expected Height:	**250**	Configuration:	**2-2-2**
Minimum Height:	**250**	Orientation:	**30-150-270**
Cabinets:	**2106**	Antennas:	**6**
CGI:	**310-26-26350-04601(2)(3)**	Lines:	**12**

Coverage Objectives

To cover the Roaming BID of Evansville east of Pennyrile Parkway between State Highway 60 and Audubon parkway.

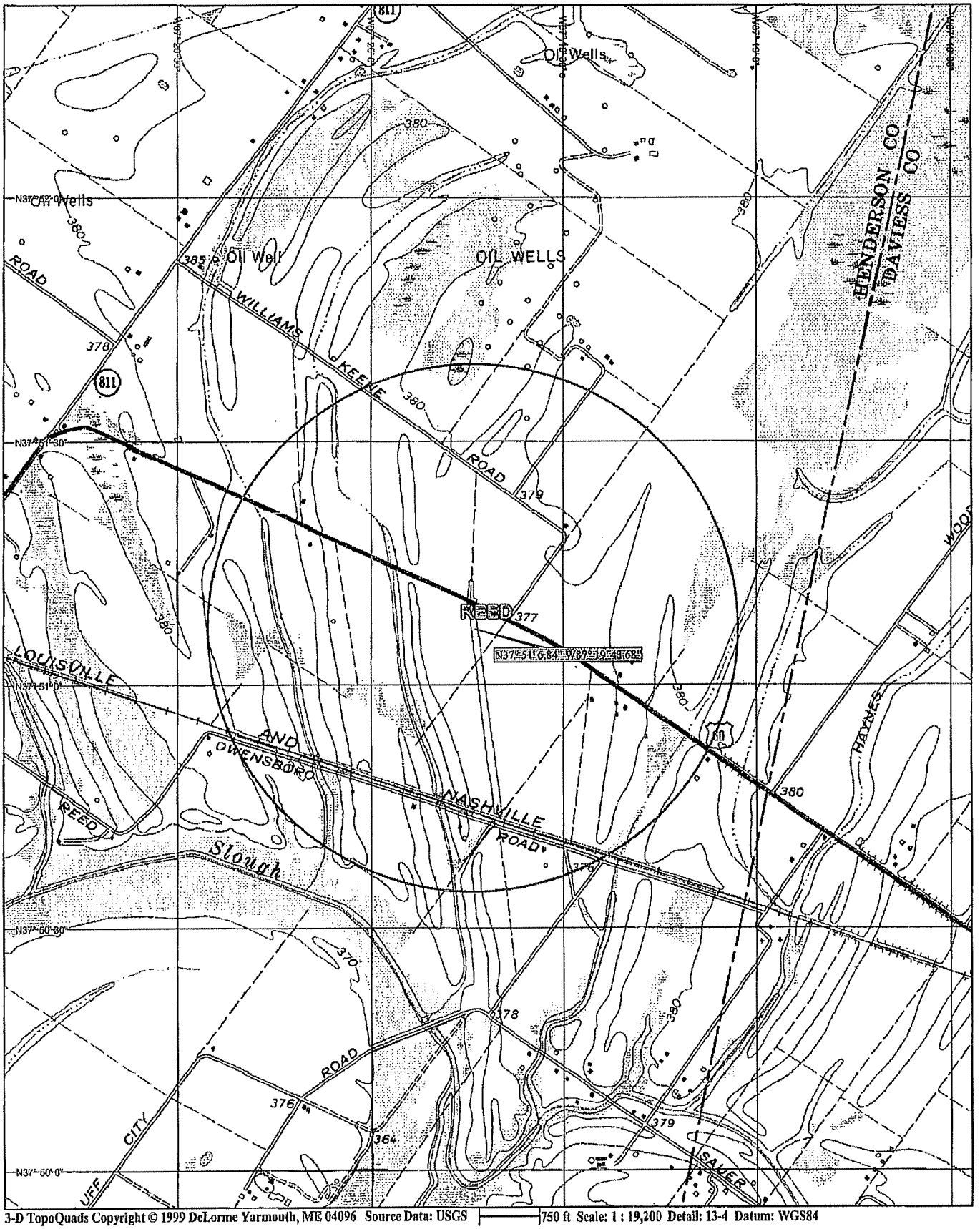
Comments

Contact

RF Design Engineer: **Logan, Lathon** Phone:

9LU#460

12-22-08



T··Mobile··

MAP FROM RF SHOWING SEARCH AREA WITH CANDIDATE DEPICTED