STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

December 14, 2009

Jennifer Young Gaudet
Project Manager
HPC Development LLC
46 Mill Plain Road
Danbury, CT 06811

RE: **EM-T-MOBILE-057-091103** – T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 636 Riversville Road, Greenwich, Connecticut.

Dear Mrs. Gaudet:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated October 28, 2009, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/MP/laf

c: The Honorable Peter J. Tesei, First Selectman, Town of Greenwich
Diane Fox, Planning & Zoning Director, Town of Greenwich
Christopher B. Fisher, Esq., Cuddy & Feder LLP

G:\EM\T-MOBILE\Greenwich\dc121409RiversvilleRd.DOC

CSC
CONNECTICUT SITING COUNCIL

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Ten Franklin Square, New Britain, CT 06051
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November 17, 2009

The Honorable Peter J. Tesei
First Selectman
Town of Greenwich
Town Hall
101 Field Point Road
P. O. Box 2540
Greenwich, CT 06836-2540

RE: **EM-T-MOBILE-057-091103** – T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 363 Riversville Road, Greenwich, Connecticut.

Dear First Selectman Tesei:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

If you have any questions or comments regarding this proposal, please call me or inform the Council by December 1, 2009.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps

S. Derek Phelps
Executive Director

SDP/jbw

Enclosure: Notice of Intent

c: Diane Fox, Planning & Zoning Director, Town of Greenwich

CSC
CONNECTICUT SITING COUNCIL

HPC DEVELOPMENT LLC

EM-T-MOBILE-057-091103

ORIGINAL October 28, 2009

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051
Attn: Mr. S. Derek Phelps, Executive Director

RECEIVED
NOV - 3 2009
CONNECTICUT
SITING COUNCIL

Re: T-Mobile Northeast LLC – exempt modification
363 Riversville Road, Greenwich, Connecticut

Dear Mr. Phelps:

This letter and attachments are submitted on behalf of T-Mobile Northeast LLC ("T-Mobile"). T-Mobile is enhancing the capabilities of its wireless system in Connecticut by implementing UMTS technology. In order to do so, T-Mobile will modify antenna and equipment configurations at a number of its existing sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the First Selectman of Greenwich.

T-Mobile plans to modify the existing facility at 363 Riversville Road, Greenwich owned by AT&T (coordinates 41°03'59.25" N, -73°40'18.64" W). Attached are a compound plan and elevation depicting the planned changes, and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration. Also included is a power density calculation reflecting the modification to T-Mobile's operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will be unaffected. Both T-Mobile's existing and proposed antennas will be located at an approximate center line of 163' AGL, at the top of the existing 160' tower. T-Mobile's platform currently supports six antennas and six TMAs; T-Mobile will add three antennas and three TMAs, one each per sector, for a total of nine each, and will add six coaxial cables. The proposed modifications will not extend the height of the tower.

2. The proposed changes will not extend the site boundaries. T-Mobile will install one additional cabinet on its existing concrete pad, for a total of two cabinets. Thus, there will be no effect on the overall site.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed changes will be negligible.

4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site. As indicated on the attached power density calculation, T-Mobile's operations at the site will result in a power density of 3.318%; the combined site operations will result in a total power density of 20.628%.

Please feel free to call me at (860) 798-7454 with questions concerning this matter. Thank you for your consideration.

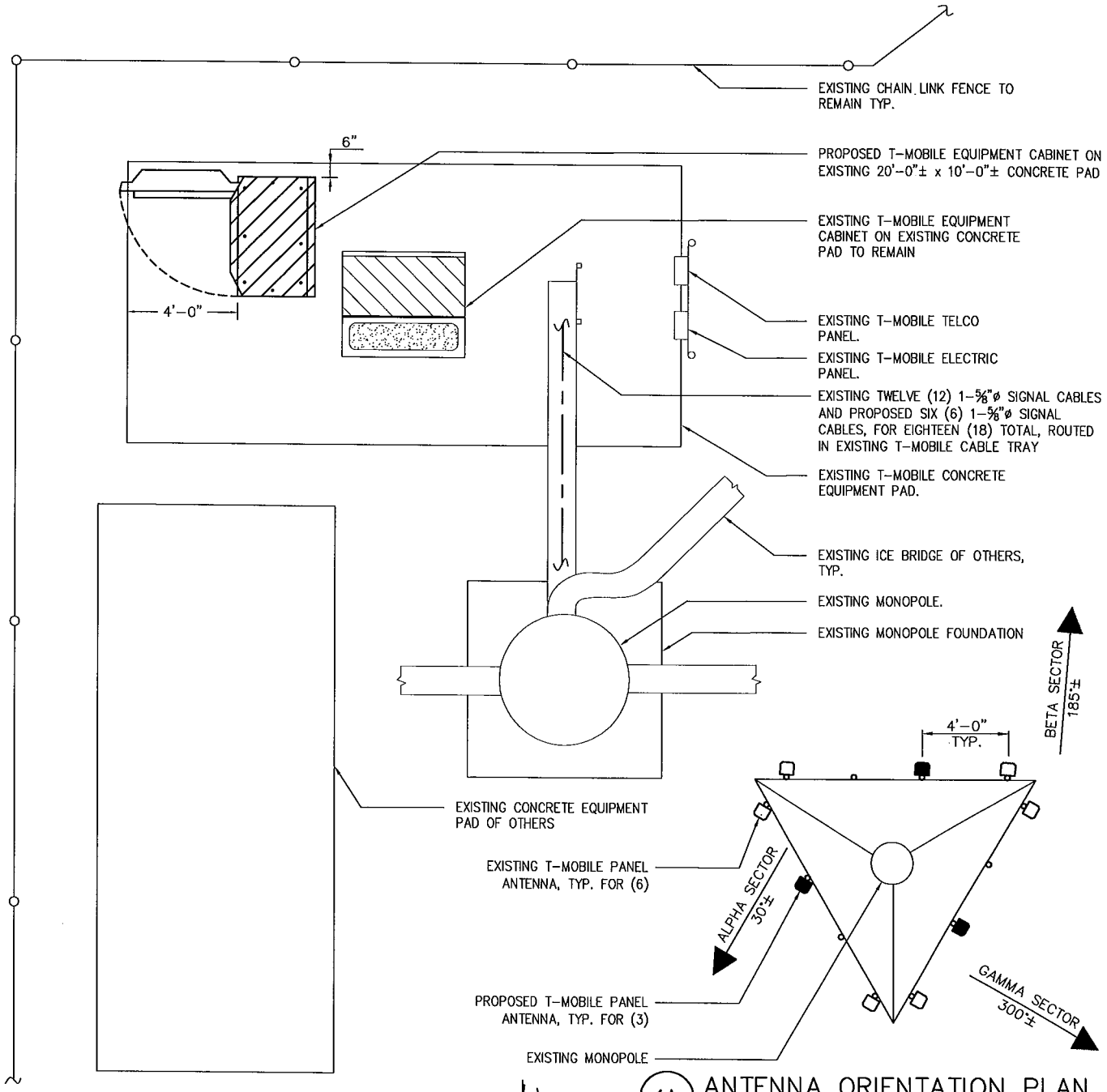
Respectfully yours,

Jennifer Young Gaudet

Jennifer Young Gaudet

cc: Honorable Peter Tesei, First Selectman, Town of Westport
Greenwich Council, Boy Scouts of America (underlying property owner)

Attachments



1A ANTENNA ORIENTATION PLAN
SCALE: 1/4" = 1'-0"

TN MN

1 PART COMPOUND PLAN
SCALE: 3/16" = 1'-0"

REFERENCE:
EXISTING FEATURES, PROPERTY INFORMATION, ETC. SHOWN ON THIS COMPOUND PLAN WERE TAKEN FROM LIMITED FIELD OBSERVATIONS AND DRAWINGS ENTITLED "SITE LAYOUT" PREPARED BY ARCHNET ARCHITECTS, INC. 670 NORTH BEERS STREET, BUILDING 2, HOLMDEL, NJ 07733, (732) 739-3200 LAST REVISED MAY 13 1998 FOR OCS'S CELL SITE INSTALLATION AT THE SUBJECT PROPERTY.

LANDLORD'S INITIALS _____ DATE _____

S C S **STRUCTURAL CONSULTING SERVICES, P.C.**
67 FEDERAL ROAD, BLDG A, BROOKFIELD, CT 06804
TEL: 203.740.7578 FAX: 203.775.5670

CLIENT
Omnipoint dba T-Mobile USA
35 GIFFIN ROAD SOUTH
BLOOMFIELD CT 06002

No.	ISSUE OR REVISION	DATE
2	ISSUED FOR REVIEW	12/15/08
1	ISSUED FOR REVIEW	11/14/08

PROJECT TITLE
T-MOBILE ID CT11069A
BOY SCOUTS
363 RIVERSVILLE ROAD
GREENWICH, CT

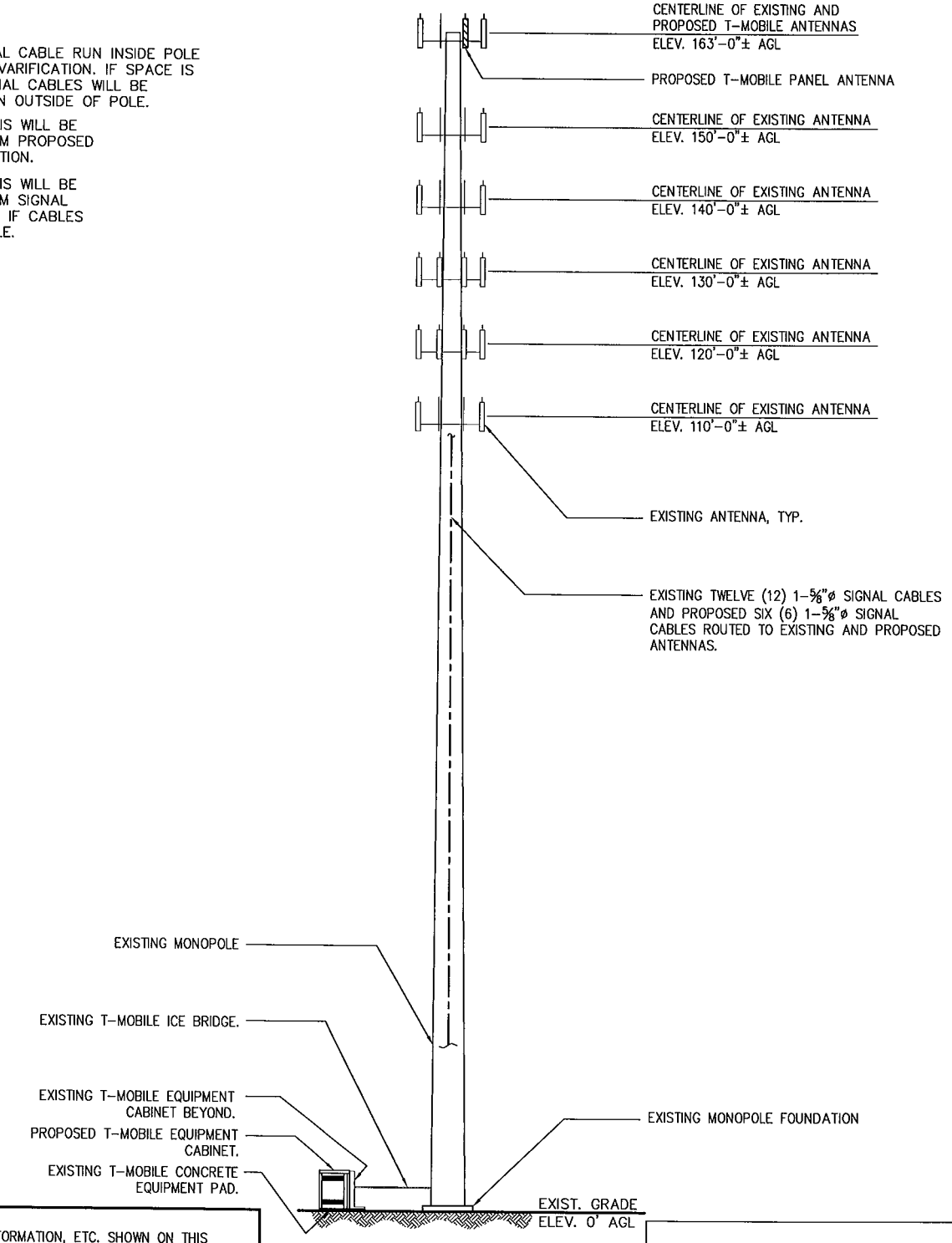
DRAWING TITLE
LEASE EXHIBIT (1 OF 2)

DATE	11/14/08
DRAWN BY	JH
CHECKED BY	AMC
SCALE	AS NOTED
PROJECT NO.	HPC0001

DRAWING NO.
LE-1

NOTES:

1) FEASIBILITY OF SIGNAL CABLE RUN INSIDE POLE WILL REQUIRE FIELD VARIFICATION. IF SPACE IS NOT AVAILABLE, SIGNAL CABLES WILL BE REQUIRED TO RUN ON OUTSIDE OF POLE.
2) STRUCTURAL ANALYSIS WILL BE REQUIRED TO CONFIRM PROPOSED ANTENNA CONFIGURATION.
3) STRUCTURAL ANALYSIS WILL BE REQUIRED TO CONFIRM SIGNAL CABLE WIND LOADING IF CABLES RUN OUTSIDE OF POLE.



REFERENCE:
EXISTING FEATURES, PROPERTY INFORMATION, ETC. SHOWN ON THIS MONOPOLE ELEVATION WERE TAKEN FROM LIMITED FIELD OBSERVATIONS AND DRAWINGS ENTITLED "EXTERIOR ELEVATIONS" PREPARED BY URS CORPORATION AES, 795 BROOK STREET, BUILDING 5, ROCKY HILL, CT 06067, (860) 529-8882 LAST REVISED APRIL 10, 2003 FOR T-MOBIL'S CELL SITE INSTALLATION AT THE SUBJECT PROPERTY.

2 SOUTH SITE ELEVATION
SCALE: 3/64" = 1'-0"

LANDLORD'S INITIALS _____ DATE _____

S C S **STRUCTURAL CONSULTING SERVICES, P.C.**
67 FEDERAL ROAD, BLDG A, BROOKFIELD, CT 06804
TEL: 203.740.7578 FAX: 203.775.5670

CLIENT: **Omnipoint dba T-Mobile USA**
35 GIFFIN ROAD SOUTH
BLOOMFIELD CT 06002

No.	ISSUE OR REVISION	DATE
2	ISSUED FOR REVIEW	12/15/08
1	ISSUED FOR REVIEW	11/14/08

PROJECT TITLE: **T-MOBILE ID CT11069A**
BOY SCOUTS
363 RIVERSVILLE ROAD
GREENWICH, CT

DRAWING TITLE: **LEASE EXHIBIT (2 OF 2)**

DATE	11/14/08
DRAWN BY	JH
CHECKED BY	AMC
SCALE	AS NOTED
PROJECT NO.	HPC0001

DRAWING NO.: **LE-2**

at&t
Martin Jelleme
AT&T Mobility
5405 Windward Pkwy
Alpharetta, GA 30004
(770) 708-6124

GPD ASSOCIATES
Kevin Clements
520 South Main St., Suite 2531
Akron, OH 44311
(330) 572-2195
kclements@gpdgroup.com

GPD# 2009268.09 Rev. 1
October 23, 2009

REVISED STRUCTURAL ANALYSIS REPORT

AT&T DESIGNATION:	**Site USID:**	**26225**
	Site FA:	**10034990**
	Site Name:	**GREENWICH NORTH**
T-MOBILE DESIGNATION:	**Site Name:**	**Greenwich/ Boy Scouts 2**
	Site Number:	**CT11069A**
ANALYSIS CRITERIA:		**TIA/EIA-222-F & 2003 IBC** **85-mph with 0" ice** **74-mph with 1/2" ice**
SITE DATA:		**363 Riversville Road, Greenwich, CT 06831, Fairfield County** **Latitude 41° 3' 59.58" N, Longitude 73° 40' 17.111" W** **160' Monopole**

Mr. Jelleme,

GPD is pleased to submit this Revised Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the addition of the following proposed loading configuration:

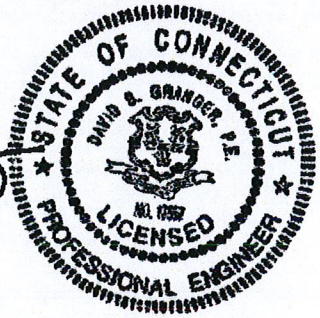
Elev. 163' (3) RFS APX16DWV-16DWVS-A20 Antennas on an existing 13' LP Platform w/ (6) 1-5/8" internal coax
(3) RFS ATMAA1412D-1A20 Tower Mounted Amplifiers mounted behind the antennas

Based on our analysis we have determined the design of the **tower and its foundation are sufficient** for the proposed, existing, and reserved loadings as referenced in Appendix A.

We at GPD appreciate the opportunity of providing our continuing professional services to you and AT&T. If you have any questions please do not hesitate to call.

Respectfully submitted,

David B. Granger, P.E.
Connecticut #: 17557



SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing structure is capable of carrying the proposed loading configuration as specified by T-Mobile to AT&T. This report was commissioned by Mr. Martin Jelleme of AT&T.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	62.4%	Pass
Base Plate	58.5%	Pass
Anchor Rods	52.7%	Pass
Flange @ 150'	9.8%	Pass
Flange Bolts	10.8%	Pass
Foundation	55.1%	Pass

ANALYSIS METHOD

RISA Tower (Version 5.3.1.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information.

DOCUMENTS PROVIDED

Document	Remarks	Source
Preliminary Tower Summary	T-Mobile Co-location document	Siterra
Site Lease Application	T-Mobile Application, dated 1/8/09	Siterra
Tower Mapping	GPD Associates & MTSI Northeast, dated 2/18/09	Siterra
Previous Analysis	GPD Associates Project #: 2009260.71, dated 2/26/09	Siterra
Original Tower Drawings	EEI Project #: 5590, dated 4/10/03	Siterra
Geotechnical Report	WEI Project #: 2009-895, dated 9/4/09	GPD
Foundation Investigation	WEI Project #: 2009-895, dated 9/4/09	GPD

ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the monopole. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The monopole shaft sizes and shape are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations. If no data is available, the foundation system is not verified. In the case of absent foundation data, it is the tower owner's responsibility to insure that the foundation system is adequate to support the structure with its new reactions.
6. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
7. All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report.
8. Tower Mounted Amplifiers are assumed to be installed behind antennas.
9. All existing loading was obtained from a previous analysis by GPD Associates Project #: 2009260.71, dated 2/26/09, the provided Preliminary Tower Summary, tower photos, and a tower mapping done by GPD Associates & MTSI Northeast dated, 2/18/09 and is assumed to be accurate.
10. All proposed coax is assumed to be internal to the monopole

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD Associates should be allowed to review any new information to determine its effect on the structural integrity of the tower.

DISCLAIMER OF WARRANTIES

The engineering services rendered by GPD ASSOCIATES in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD ASSOCIATES does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD ASSOCIATES provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD ASSOCIATES, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

GPD ASSOCIATES makes no warranties, expressed and/or implied in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD ASSOCIATES will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD ASSOCIATES pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

Tower Analysis Summary Form

General Info

Site Name	GREENWICH NORTH
Site Number	26225
FA Number	10034990
Date of Analysis	10/23/2009
Company Performing Analysis	GPD

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

Tower Info	Description	Date
Tower Type (G, SST, MP)	MP	
Tower Height (top of steel AGL)	160'	
Tower Manufacturer	EEI	
Tower Model	n/a	
Tower Design	EEI Project #: 5590	4/10/2003
Foundation Design	n/a	
Geotech Report	WEI Project #: 2009-895	9/4/2009
Tower Mapping	GPD Associates & MTSI Northeast	2/18/2009
Previous Structual Analysis	GPD Associates project #: 2009260.71	2/26/2009
Foundation Mapping	WEI Project #: 2009-895	9/4/2009

Design Parameters

Design Code Used	TIA/EIA-222-F
Location of Tower (County, State)	Fairfield, Conecticut
Basic Wind Speed (mph)	85-fastest
Ice Thickness (in)	0.5"
Structure Classification (I, II, III)	
Exposure Category (B, C, D)	
Topographic Category (1 to 5)	

Analysis Results (% Maximum Usage)

Existing/Reserved + Future + Proposed Condition	
Tower	62.4%
Foundation	55.1%
Guy Wire	n/a

Steel Yield Strength (ksi)

Pole	65
Base Plate	60
Anchor Rods	75

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Internal / External
T-Mobile	160	163	6	Panel	EMS	RR90-17-02DP	40,185,310	1	Unknown	13' LP Platform	12	Unknown	1-5/8"	Internal
T-Mobile	160	163	6	TMA	Communication Components	DTMA-1819-DD-12	40,185,310			on same mount				
AT&T Mobility	148	154	6	Panel	Powerwave	RA21.7770.00	30,150,270	1	Unknown	13' LP Platform	12	Unknown	1-5/8"	Internal
AT&T Mobility	148	154	12	TMA	Powerwave	LGP 21401	30,150,270			on same mount				
Verizon	141.5	141.5	6	Panel	Decibel	DB844H80E-XY	20,140,260	1	Unknown	13' LP Platform	12	Unknown	1-5/8"	Internal
Verizon	141.5	141.5	6	Panel	Antel	LPA-1850801/12CF	20,140,260			on same mount	1	Unknown	1-1/4"	Internal
Nextel	131	131	12	Panel	Decibel	DB4H9E	20,140,260	1	Unknown	13' LP Platform	12	Unknown	1-5/8"	Internal
Nextel	131	131									3	Unknown	1/2"	Internal
Sprint	122	122	6	Panel	Decibel	DB980F90E-M		1	Unknown	13' LP Platform	6	Unknown	1-5/8"	Internal
Sprint	72	73	1	Panel	Unknown	GPS	110	1	Unknown	4' Standoff	1	Unknown	1/2"	Internal

Proposed Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Internal / External
T-Mobile	160	163	3	Panel	RFS	APX16DWV-16DWVS-A21	100,220,330			on existing mount	6	LDF7-50A	1-5/8"	Internal
T-Mobile	160	163	3	TMA	RFS	ATMAA1412D-1A20	100,220,330			on existing mount				

Note: The proposed loading is in addition to the existing loading at the same elevation

Future Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Internal / External
AT&T Mobility	148	154	3	Panel	Powerwave	7770	30,150,270			on existing mount				

Note: Future loading shall be in addition to the existing/reserved loading at the same elevation.

Revision:3
Date: 2/18/09

T-Mobile

T-Mobile USA Inc.
35 Griffin Rd South, Bloomfield, CT 06002-1853
Phone: (860) 692-7100
Fax: (860) 692-7159

Technical Memo

To: HPC
From: Farid Marbouh - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CT11069A
Date: October 28, 2009

1. Introduction:

This report is the result of an Electromagnetic Field Intensities (EMF - Power Densities) study for the T-Mobile antenna installation on a Monopole at 363 Riversville Rd. Boy Scouts of America, Greenwich, CT. This study incorporates the most conservative consideration for determining the practical combined worst case power density levels that would be theoretically encountered from locations surrounding the transmitting location.

2. Discussion:

The following assumptions were used in the calculations:

1) The emissions from T-Mobile transmitters are in the (1940-1949.8), (2140-2145), (2110-2120)MHz frequency Band.
2) The antenna array consists of three sectors, with 3 antennas per sector.
3) The model number for GSM antenna is RR90-17-02DP.
3) The model number for UMTS antenna is APX16DWV-16DWV.
4) GSM antenna center line height is 163 ft.
4) UMTS antenna center line height is 163 ft.
5) The maximum transmit power from any GSM sector is 1547.11 Watts Effective Radiated Power (EiRP) assuming 8 channels per sector.
5) The maximum transmit power from any UMTS sector is 2180.17 Watts Effective Radiated Power (EiRP) assuming 2 channels per sector.
6) All the antennas are simultaneously transmitting and receiving, 24 hours a day.
7) Power levels emitting from the antennas are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
8) The average ground level of the studied area does not change significantly with respect to the transmitting location.

Equations given in "FCC OET Bulletin 65, Edition 97-01" were then used with the above information to perform the calculations.

3. Conclusion:

Based on the above worst case assumptions, the power density calculation from the T-Mobile antenna installation on a Monopole at 363 Riversville Rd. Boy Scouts of America, Greenwich, CT, is 0.03318 mW/cm^2. This value represents 3.318% of the Maximum Permissible Exposure (MPE) standard of 1 milliwatt per square centimeter (mW/cm^2) set forth in the FCC/ANSI/IEEE C95.1-1991. Furthermore, the proposed antenna location for T-Mobile will not interfere with existing public safety communications, AM or FM radio broadcasts, TV, Police Communications, HAM Radio communications or any other signals in the area.

The combined Power Density from other carriers is 17.31%. The combined Power Density for the site is 20.628% of the M.P.E. standard.

Connecticut Market

T-Mobile

Worst Case Power Density

Site:	**CT11069A**	
Site Address:	**363 Riversville Rd.**	**Boy Scouts of America**
Town:	**Greenwich**	
Tower Height:	**160 ft.**	
Tower Style:	**Monopole**	

GSM Data		**UMTS Data**	
Base Station TX output	20 W	Base Station TX output	40 W
Number of channels	8	Number of channels	2
Antenna Model	RR90-17-02DP	Antenna Model	APX16DWV-16DWV
Cable Size	1 5/8 in.	Cable Size	1 5/8 in.
Cable Length	185 ft.	Cable Length	185 ft.
Antenna Height	163.0 ft.	Antenna Height	163.0 ft.
Ground Reflection	1.6	Ground Reflection	1.6
Frequency	1945.0 MHz	Frequency	2.1 GHz
Jumper & Connector loss	4.50 dB	Jumper & Connector loss	1.50 dB
Antenna Gain	16.5 dBi	Antenna Gain	18.0 dBi
Cable Loss per foot	0.0116 dB	Cable Loss per foot	0.0116 dB
Total Cable Loss	2.1460 dB	Total Cable Loss	2.1460 dB
Total Attenuation	6.6460 dB	Total Attenuation	3.6460 dB
Total EIRP per Channel	52.86 dBm	Total EIRP per Channel	60.37 dBm
(In Watts)	193.39 W	(In Watts)	1090.08 W
Total EIRP per Sector	61.90 dBm	Total EIRP per Sector	63.38 dBm
(In Watts)	1547.11 W	(In Watts)	2180.17 W
nsg	9.8540	nsg	14.3540
Power Density (S) =	**0.013770 mW/cm^2**	**Power Density (S) =**	**0.019405 mW/cm^2**

T-Mobile Worst Case % MPE = 3.3175%

Equation Used :

$$S = \frac{(1000)(grf)^2(Power)*10^{(nsg/10)}}{4\pi(R)^2}$$

Office of Engineering and Technology (OET) Bulletin 65, Edition 97-01, August 1997

Co-Location Total

Carrier	% of Standard
Verizon	6.0200 %
Cingular	4.5600 %
Sprint	3.3500 %
AT&T Wireless	
Pocket	
MetroPCS	
Nextel	3.3800 %
Other Antenna Systems	
Total Excluding T-Mobile	**17.3100 %**
T-Mobile	3.3175
Total % MPE for Site	**20.6275%**