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

Internet: ct.gov/csc

Daniel F. Caruso
Chairman

December 21, 2010

Jennifer Young Gaudet
HPC Development LLC
46 Mill Plain Road, 2nd Floor
Danbury, CT 06811

RE: **EM-T-MOBILE-137-101130** – T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 107 Wilcox Road, Stonington, Connecticut.

Dear Ms. 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 with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not less than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated November 24, 2010. 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. Thank you for your attention and cooperation.

Very truly yours,

Linda Roberts
Executive Director

LR/CDM/laf

c: The Honorable Ed Haberek Jr., First Selectman, Town of Stonington
Jason Vincent, Town Planner, Town of Stonington
SBA

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Daniel F. Caruso
Chairman

December 3, 2010

The Honorable Ed Haberek Jr.
First Selectman
Town of Stonington
Town Hall
152 Elm Street
P. O. Box 352
Stonington, CT 06378

RE: **EM-T-MOBILE-137-101130** - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 107 Wilcox Road, Stonington, Connecticut.

Dear First Selectman Haberek:

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 17, 2010.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts

Linda Roberts
Executive Director

LR/jbw

Enclosure: Notice of Intent

c: Jason Vincent, Town Planner, Town of Stonington

HPC DEVELOPMENT LLC

EM-T-MOBILE-137-101130

ORIGINAL

November 24, 2010

VIA UPS

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051
Attn: Ms. Linda Roberts, Executive Director

Re: T-Mobile Northeast LLC – exempt modification
107 Wilcox Road, Stonington, Connecticut

Dear Ms. Roberts:

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 is modifying 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 Stonington.

T-Mobile plans to modify the existing facility at 107 Wilcox Road, Stonington, owned by SBA (coordinates 41°20'27.14" N, -71°56'26.34" W). Attached are a compound plan and tower 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 antenna configuration will be mounted at the top antenna location on the tower, with an approximate center line of 96'. T-Mobile will replace three existing antennas with comparable antennas and will replace its existing TMAs with three twin TMAs. 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 the existing platform within the existing compound. Thus, there will be no effect on the site boundaries.

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 13.364%%; the combined site operations will result in a total power density of 19.684%.

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

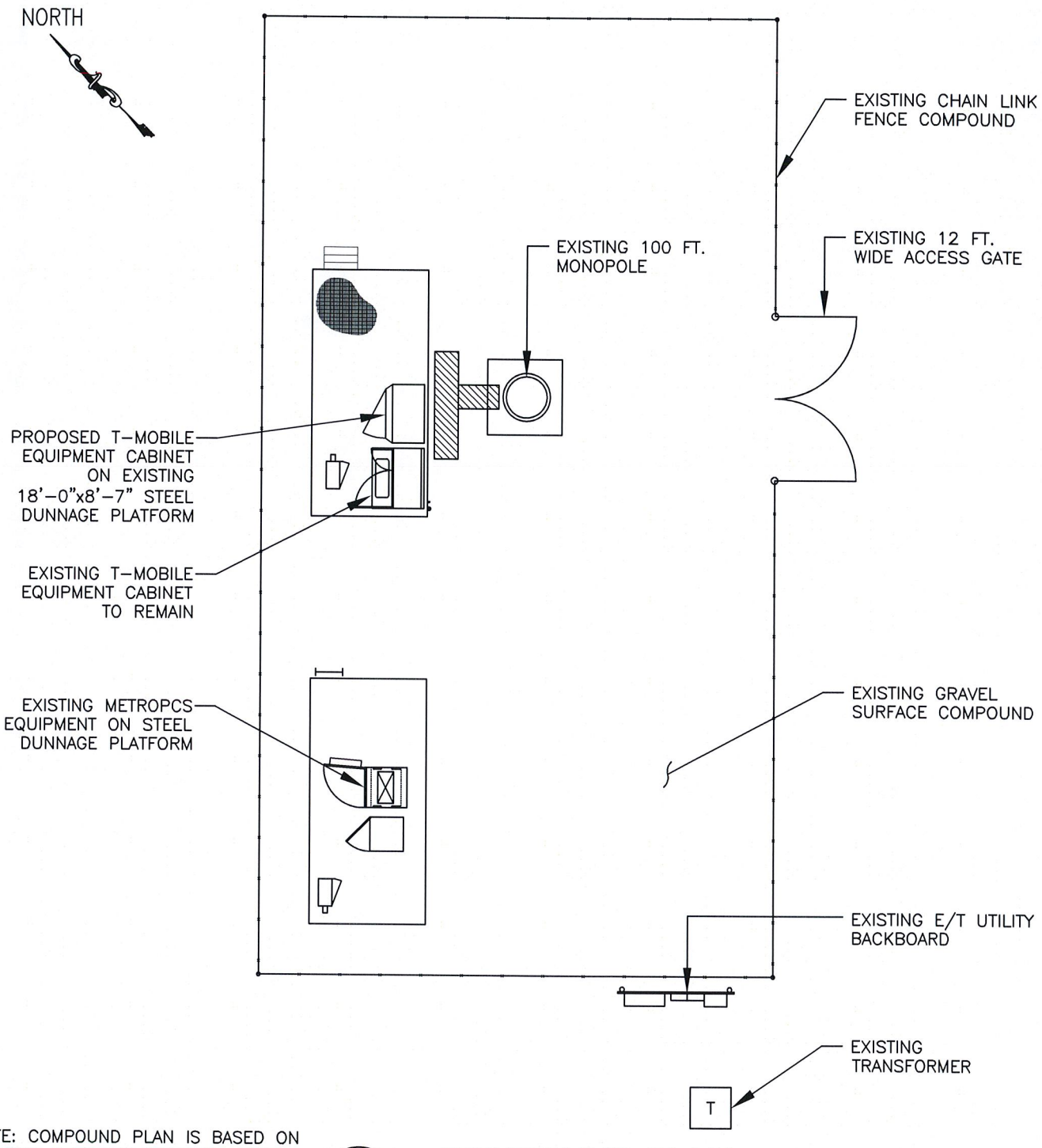
Respectfully yours,

Jennifer Young Gaudet

Jennifer Young Gaudet

cc: Honorable Edward Haberek, Jr., First Selectman, Town of Stonington
JBG Ventures, LLC (underlying property owner)

Attachments



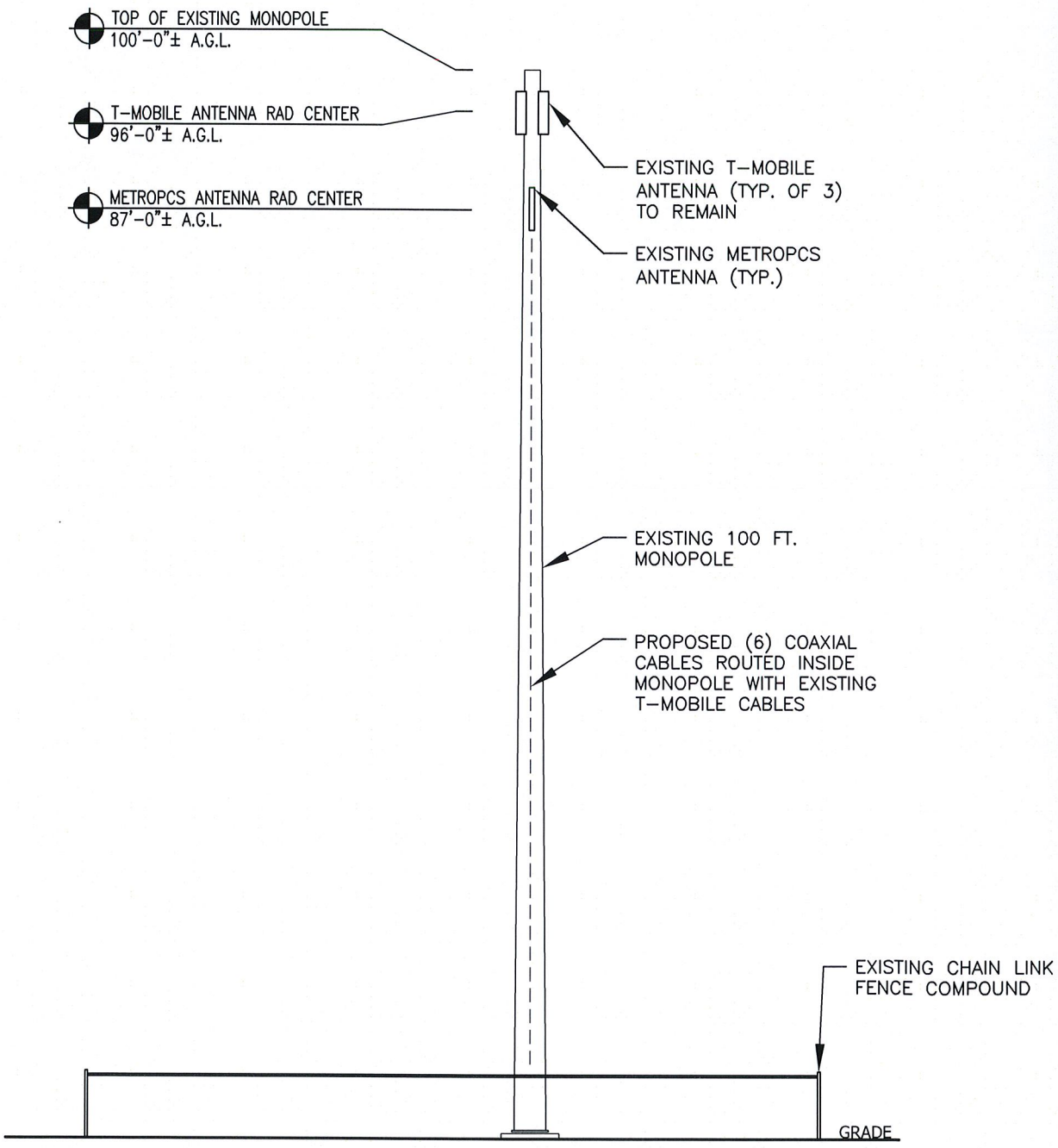
NOTE: COMPOUND PLAN IS BASED ON EXISTING T-MOBILE DRAWINGS DATED 6-29-06 AND A DESIGN VISIT ON 8-3-10 AND IS SUBJECT TO A CURRENT COMPOUND FIELD SURVEY.

1 / LE-2

COMPOUND PLAN

Scale: 3/32"=1'-0"

Approved By: OWNER/SAC: _____ DATE: _____ Approved By: CONSTRUCTION: _____ DATE: _____ Approved By: RF ENGINEER: _____ DATE: _____	Client: **T-MOBILE NORTHEAST LLC** ("T-Mobile Northeast"), a Delaware Limited Liability Company and wholly-owned subsidiary of T-Mobile USA 35 GRIFFIN ROAD SOUTH, BLOOMFIELD, CT 06002	Project: SBA CT13074 CO-LO QUIAMBAUG COVE Address: 107 WILCOX RD. STONINGTON, CT 06378 Site ID: CTNL071B Project Name: UMTS				
On Air Engineering, LLC 88 FOUNDRY POND RD., COLD SPRING, NY 10516	MPC DEVELOPMENT LLC	Drawn: AG	Chkd. by: DW	Date: 11-17-10 V1	Drawing Title: COMPOUND PLAN	Drawing No. LE-2



1 / LE-4 **ELEVATION**

Scale: 1"=15'-0"

NOTE: ANTENNA ELEVATIONS ARE BASED ON A STRUCTURAL ANALYSIS PREPARED BY FDH ENGINEERING FOR SBA NETWORK SERVICES, INC. DATED 11-15-10.

Approved By: OWNER/SAC: _____ DATE: _____ Approved By: CONSTRUCTION: _____ DATE: _____ Approved By: RF ENGINEER: _____ DATE: _____	Client: **T-MOBILE NORTHEAST LLC** ("T-Mobile Northeast"), a Delaware Limited Liability Company and wholly-owned subsidiary of T-Mobile USA 35 GRIFFIN ROAD SOUTH, BLOOMFIELD, CT 06002	Project: SBA CT13074 CO-LO QUIAMBAUG COVE Address: 107 WILCOX RD. STONINGTON, CT 06378 Site ID: CTNL071B Project Name: UMTS	
On Air Engineering, LLC 88 FOUNDRY POND RD., COLD SPRING, NY 10516	HPC DEVELOPMENT LLC	Drawn: AG	Chkd. by: DW
		Date: 11-17-10 V1	Drawing Title: ELEVATION
			Drawing No. LE-4

FDH Engineering, Inc., 2730 Rowland Rd. Raleigh, NC 27615, Ph. 919.755.1012, Fax 919.755.1031

Structural Analysis for SBA Network Services, Inc.

100 ft Monopole

SBA Site Name: Stonington
SBA Site ID: CT13074-A

FDH Project Number 10-11074E S1

Prepared By:

Blake A. Bartok, EI
Project Engineer

Reviewed By:

Christopher M. Murphy, PE
President
CT PE License No. 25842

FDH Engineering, Inc.
2730 Rowland Rd.
Raleigh, NC 27615
(919) 755-1012
info@fdh-inc.com

11/15/10

November 15, 2010

Prepared pursuant to ANSI/TIA-222-G Structural Standard for Antenna Supporting Structures and Antennas

TABLE OF CONTENTS

EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the monopole located in Stonington, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads, pursuant to the *Structural Standard for Antenna Supporting Structures and Antennas, ANSI/TIA-222-G.* Information pertaining to the existing/proposed antenna loading, current tower geometry, and the member sizes was obtained from Sabre Communications Corporation (Job No. 07-07052) Structural Design Report dated July 12, 2006, FDH, Inc. (Job No. 08-07139T) TIA Inspection Report dated September 9, 2008, and SBA Network Services, Inc

The *basic design wind speed* per the *ANSI/TIA-222-G* standard is 120 MPH without ice and 50 MPH with 3/4" radial ice. Ice is considered to increase in thickness with height.

Conclusions

With the current and proposed antennas from T-Mobile in place at 96 ft, the tower meets the requirements of the *ANSI/TIA-222-G* standard provided the **Recommendation** below is satisfied. Furthermore, provided the foundation was designed and constructed to support the original design reactions (see Sabre Job No. 07-07052), the foundation should have the necessary capacity to support the existing and proposed loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH Engineering, Inc. is accurate (i.e. the steel data, tower layout, existing antenna loading, and proposed antenna loading) and that the tower has been properly erected and maintained per the original design drawings.

Recommendation

To ensure the requirements of the *ANSI/TIA-222-G* standard are met with the existing and proposed loading in place, we have the following recommendation:

1. The proposed TMAs should be installed directly behind the proposed panel antennas.

APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. *If the actual layout determined in the field deviates from this layout, FDH Engineering, Inc. should be contacted to perform a revised analysis.*

Table 1 – Appurtenance Loading

Existing Loading:

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines [1]	Carrier	Mount Elevation (ft)	Mount Type
1-3	96[2]	(3) RFS APX16PV-PVL (6) Remec S20057A1 TMAs	(12) 1-1/4" (1) 1/4"	T-Mobile	96	Flush
4-6	87	(3) Kathrein 800 10504	(6) 7/8" (1) 3/8"	Metro PCS	87	Flush

1 Coax installed inside the pole's shaft unless noted otherwise.
2 The loading for T-Mobile at 96 ft will be altered. See the proposed loading below.

Proposed Loading:

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
1-3	96[1]	(3) RFS APX16DWV-16DWV-S (3) Twin PCS/AWS TMAs	(12) 1-1/4" (1) 1/4"	T-Mobile	96	Flush

1 This represents the final configuration for T-Mobile at 96 ft. According to information provided by SBA, T-Mobile will remove their existing antennas and TMAs and install (3) RFS APX16DWV-16DWV-S antennas and (3) Twin PCS/AWS TMAs.

RESULTS

Based on information obtained from the original design drawings, the yield strength of steel for individual members was as follows:

Table 2 - Material Strength

Member Type	Yield Strength
Tower Shaft Sections	65 ksi
Base Plate	60 ksi
Anchor Bolts	75 ksi

Table 3 displays the summary of the ratio (as a percentage) of force in the member to their capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its capacity. **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH Engineering, Inc. should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information.

Table 3 – Summary of Working Percentage of Structural Components

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass Fail
L1	100 - 50	Pole	TP33.42x25.27x0.25	17.5	Pass
L2	50 - 1	Pole	TP40.91x32.2273x0.25	46.5	Pass
		Anchor Bolts	(8) 2.25"ø w/ BC = 46.75"	40.3	Pass
		Base Plate	44.75" Square x 2.25" Thk	35.8	Pass

Table 4 – Maximum Base Reactions

Base Reactions	Current Analysis *(ANSI/TIA-222-G)*	Original Design *(ANSI/TIA-222-G)*
Axial	13 k	24 k
Shear	14 k	20 k
Moment	776 k-ft	1,494 k-ft

GENERAL COMMENTS

This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering, Inc. should be notified immediately to perform a revised analysis.

LIMITATIONS

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

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: Amir Uzzaman - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CTNL071B
Date: November 22, 2010

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 107 Wilcox Rd, Stonington, 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 (1935-1944.8), (1983-1984), (2140-2145)MHz frequency Band.
2) The antenna array consists of three sectors, with 1 antenna per sector.
3) The model number for GSM antenna is APX16DWV-16DWV.
3) The model number for UMTS antenna is APX16DWV-16DWV.
4) GSM antenna center line height is 96 ft.
4) UMTS antenna center line height is 96 ft.
5) The maximum transmit power from any GSM sector is 2340.56 Watts Effective Radiated Power (EiRP) assuming 8 channels per sector.
5) The maximum transmit power from any UMTS sector is 2593.52 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 107 Wilcox Rd, Stonington, CT, is 0.13364 mW/cm^2. This value represents 13.364% 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 6.32%. The combined Power Density for the site is 19.684% of the M.P.E. standard.

Connecticut Market

T-Mobile

Worst Case Power Density

Site:	**CTNL071B**
Site Address:	**107 Wilcox Rd**
Town:	**Stonington**
Tower Height:	**100 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	APX16DWV-16DWV	**Antenna Model**	APX16DWV-16DWV
Cable Size	1 1/4 in.	**Cable Size**	1 1/4 in.
Cable Length	120 ft.	**Cable Length**	120 ft.
Antenna Height	96.0 ft.	**Antenna Height**	96.0 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	18.0 dBi	**Antenna Gain**	18.0 dBi
Cable Loss per foot	0.0154 dB	**Cable Loss per foot**	0.0116 dB
Total Cable Loss	1.8480 dB	**Total Cable Loss**	1.3920 dB
Total Attenuation	6.3480 dB	**Total Attenuation**	2.8920 dB
Total EIRP per Channel	54.66 dBm	**Total EIRP per Channel**	61.13 dBm
(In Watts)	292.57 W	**(In Watts)**	1296.76 W
Total EIRP per Sector	63.69 dBm	**Total EIRP per Sector**	64.14 dBm
(In Watts)	2340.56 W	**(In Watts)**	2593.52 W
nsg	11.6520	**nsg**	15.1080
Power Density (S) =	**0.063395 mW/cm^2**	**Power Density (S) =**	**0.070247 mW/cm^2**

T-Mobile Worst Case % MPE = 13.3642%

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	
Cingular	
Sprint	
AT&T Wireless	
Pocket	
MetroPCS	6.3200 %
Nextel	
Other Antenna Systems	
Total Excluding T-Mobile	**6.3200 %**
T-Mobile	13.3642
Total % MPE for Site	**19.6842%**