



Daniel F. Caruso
Chairman

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

November 8, 2010

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

RE: **EM-T-MOBILE-152-101020** - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 85 Miner Lane, Waterford, 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 October 19, 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 Daniel M. Steward, First Selectman, Town of Waterford
Thomas V. Wagner, Planning Director, Town of Waterford
American Tower Corporation



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Daniel F. Caruso
Chairman

October 21, 2010

The Honorable Daniel M. Steward
First Selectman
Town of Waterford
Town Hall
15 Rope Ferry Road
Waterford, CT 06385

RE: **EM-T-MOBILE-152-101020** - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 85 Miner Lane, Waterford, Connecticut.

Dear First Selectman Steward:

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 November 4, 2010.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts
Executive Director

LR/jbw

Enclosure: Notice of Intent

c: Thomas V. Wagner, Planning Director, Town of Waterford



EM-T-MOBILE-152-101020

October 19, 2010

VIA OVERNIGHT DELIVERY

ORIGINAL

RECEIVED
OCT 20 2010
CONNECTICUT
SITING COUNCIL

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

Re: T-Mobile Northeast LLC – exempt modification
85 Miner Lane, Waterford, 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 Waterford.

T-Mobile plans to modify the existing facility at 5 Miner Lane, Waterford, owned by American Tower Corp. (coordinates 41°19’44” N, -72°07’30” 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 antennas will be mounted above at the top of the tower, with an approximate center line of approximately 130’ on the 195’ tower. T-Mobile will add three panel antennas, three TMAs and six coaxial cables to its existing configuration. 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 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 6.659%; the combined site operations will result in a total power density of 18.079%.

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

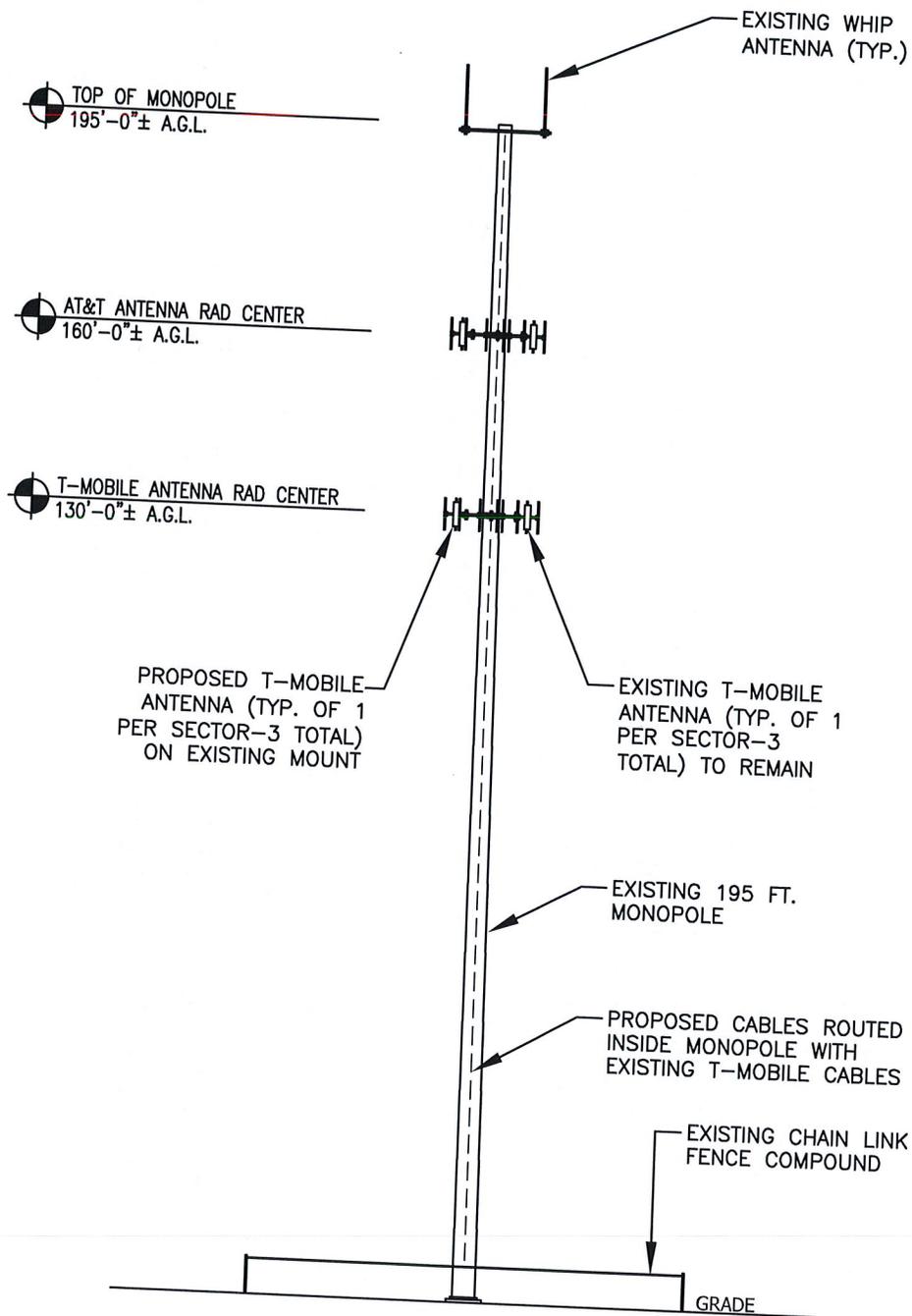
Respectfully yours,



Jennifer Young Gaudet

cc: Honorable Daniel Steward, First Selectman, Town of Waterford
(Town of Waterford is underlying property owner)

Attachments



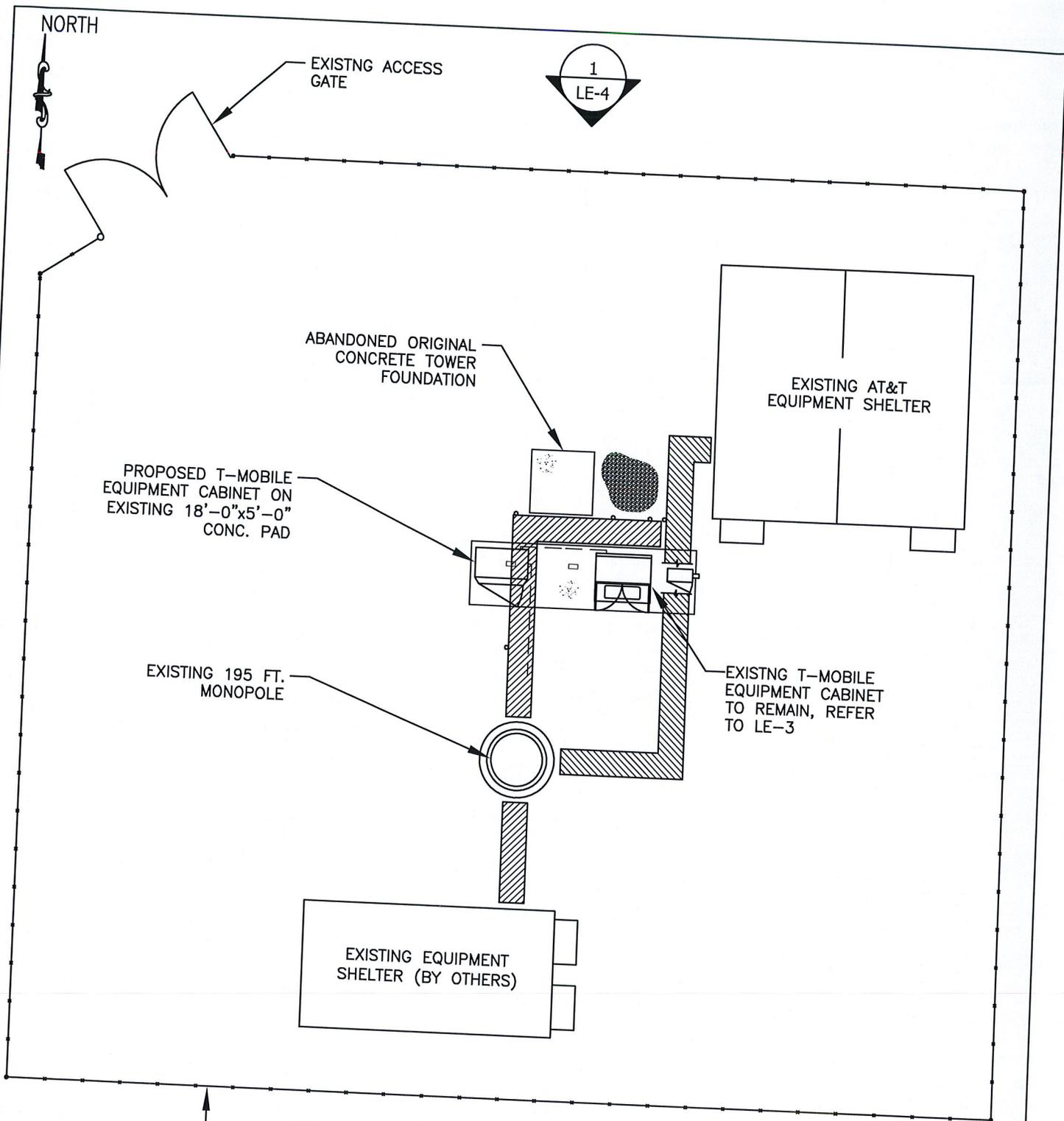
NOTE: STRUCTURE HEIGHT TAKEN FROM AMERICAN TOWER WEBSITE; T-MOBILE RAD CENTER TAKEN FROM T-MOBILE RFDS DATA SHEET; PRIOR T-MOBILE DRAWINGS DATED 3-6-04 INDICATE A TOWER STRUCTURE HEIGHT OF 153 FT. WHICH APPEARS TO BE INCORRECT

1
LE-4

NORTH ELEVATION

Scale: 1"=30'-0"

Approved By: OWNER/SAC: _____ 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: AMERICAN TOWER 310972 CO-LO
Approved By: CONSTRUCTION: _____ DATE: _____	Address: 85 MINER LANE WATERFORD, CT 06385	Site ID: CT11641A
Approved By: RF ENGINEER: _____ DATE: _____	Drawn: AG	Checked by: DW
On Air Engineering, LLC 88 FOUNDRY POND RD., COLD SPRING, NY 10516	DATE: 10-06-10 V1	Drawing Title: NORTH ELEVATION
		Drawing No. LE-4



1
LE-4

1
LE-2

COMPOUND PLAN

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

NOTE: COMPOUND PLAN IS BASED ON EXISTING T-MOBILE DRAWINGS DATED 3-6-04 AND A DESIGN VISIT ON 8-3-10 AND IS SUBJECT TO A CURRENT COMPOUND FIELD SURVEY.

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: AMERICAN TOWER 310972 CO-LO
 Address: 85 MINER LANE
 WATERFORD, CT 06385
 Site ID: CT11641A
 Project Name: UMTS

On Air Engineering, LLC
 88 FOUNDRY POND RD., COLD SPRING, NY 10516



Drawn: AG
 Chkd. by: DW
 Date: 10-06-10 V1

Drawing Title:
COMPOUND PLAN

Drawing No.
LE-2



PASSED

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 180 ft. monopole
ATC Site Name : Waterford Rebuild CT, CT
ATC Site Number : 310972
Proposed Carrier : T-Mobile
Carrier Site Name : Spectrasite Waterford
Carrier Site Number : CT11641
County : New London
Eng. Number : 45823421
Date : September 29, 2010
Usage : 85% Pole shaft, 86% Anchor bolts, 59%
Base plate

Submitted by:
Robert Keith
Project Engineer

American Tower Engineering Services
8505 Freeport Parkway
Suite 135
Irving, TX 75063
Phone: 972-999-8900





AMERICAN TOWER®
CORPORATION

Structural Analysis Report

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Submitted by:
Robert Keith
Project Engineer

American Tower Engineering Services
8505 Freeport Parkway
Suite 135
Irving, TX 75063
Phone: 972-999-8900

Introduction

The purpose of this report is to summarize results of the structural analysis on the 180 ft. monopole located at Waterford Rebuild CT, CT, New London County (ATC site # 310972). The tower was originally designed and manufactured by FWT (Drawing # 23766000 dated July 18, 2001) as a 148'-7 1/2" pole. The tower has been extended to 180 ft. per ATC modification Job# 442108F2 dated 11/9/09.

Analysis

The existing tower was analyzed using Semaan Engineering Solutions, Inc., Software. The analysis assumes that the tower is in good, undamaged, and non-corroded condition. A 5% overstress is allowed in the existing structural members to account for program variances.

Basic Wind Speed: 100.0 mph (Fastest Mile)
Radial Ice: 86.6 mph (Fastest Mile) w/ 1/2" ice Concurrent
Standard/Code: TIA/EIA-222-F / 2003 IBC Section 1609.1.1, Exception (4) and Section 3108.4 / 2005 & 2008 CT Supplement

Antenna Loads

The following antenna loads were used in the tower analysis.

Existing Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax (I/O)	Carrier
180.0	1	dbSpectra ATS8TMA10	Low Profile Platform	-	Town of Waterford
	2	Sinclair SC488		(2) 1 5/8 (I)	
170.0	3	KMW HB-X-WM-17-65-00T	Flush Mount	(6) 1 5/8 (I)	Clearwire Corporation
	3	KMW HB-X-WM-17-65-00T-TTLNA		-	
160.0	3	Antel BXA-80063/4CF	Low Profile Platform	(3) 1 5/8 (I)	Verizon Wireless
	6	Antel LPA-80063/6CF 5		(6) 1 5/8 (I)	
	3	Antel BXA-185063/12CF 2°		(3) 1 5/8 (I)	
150.0	6	Powerwave LGP21902	Low Profile Platform	-	AT&T Mobility
	6	Powerwave LGP17201		-	
	6	Allgon 7770.00		(12) 1 1/4 (I)	
	6	RCU		-	
	1	Celwave 3167A		(1) 1 5/8 (I)	USA Mobility

Antenna Loads (continued)

Proposed Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax (I/O)	Carrier
130.0	3	RFS APX16DWV-16DWV-S-E-ACU	(3) T-Arm	(12) 1 5/8 (I)	T-Mobile
	3	EMS DR85-17-02DPL2Q		(6) 1 5/8 (I)	
	6	RFS ATMAA1412D-1A20		-	

The proposed antennas will use existing and new transmission lines that are to be installed inside the pole shaft.

Results

The existing 180 ft. monopole with the existing and proposed antennas is structurally acceptable per TIA/EIA-222 Rev F standards. The maximum structure usage is: 85% Pole shaft, 86% Anchor bolts, 59% Base plate.

Pole Reactions	Original Design Reactions	Current Analysis Reactions	% Of Design
Moment (ft-kips)	5,552.1	4,763.4	85.8
Shear (kips)	45.7	39.9	87.3

The structure base reactions resulting from the current analysis do not exceed the ones shown on the original structural drawings and are, therefore, acceptable.

Conclusion

The existing monopole and its foundation were found to be adequate to support the existing and proposed antennas with the transmission line distribution as described above while meeting the requirements of the code or standard as specified in this report.

If you have any questions or require additional information, please call (972) 999-8900.

Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

- Information supplied by the client regarding the structure itself, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to ATC Engineering Services and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated; and we, therefore, assume that their capacity has not significantly changed from the "as new" condition.

All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/EIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Engineering Services is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

Technical Memo

To: HPC
From: Amir Uzzaman - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CT11641A
Date: October 18, 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 85 Miner Lane, Waterford, 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 2 antennas 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 130 ft.
- 4) UMTS antenna center line height is 130 ft.
- 5) The maximum transmit power from any GSM sector is 2336.25 Watts Effective Radiated Power (EiRP) assuming 8 channels per sector.
- 5) The maximum transmit power from any UMTS sector is 2330.72 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 85 Miner Lane, Waterford, CT, is 0.06659 mW/cm². This value represents 6.659% of the Maximum Permissible Exposure (MPE) standard of 1 milliwatt per square centimeter (mW/cm²) 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 11.42%. The combined Power Density for the site is 18.079% of the M.P.E. standard.

Connecticut Market



Worst Case Power Density

Site: CT11641A
Site Address: 85 Miner Lane
Town: Waterford
Tower Height: 158 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 5/8 in.	Cable Size	1 5/8 in.
Cable Length	160 ft.	Cable Length	160 ft.
Antenna Height	130.0 ft.	Antenna Height	130.0 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	0.0116 dB	Cable Loss per foot	0.0116 dB
Total Cable Loss	1.8560 dB	Total Cable Loss	1.8560 dB
Total Attenuation	6.3560 dB	Total Attenuation	3.3560 dB
Total EIRP per Channel (In Watts)	54.65 dBm 292.03 W	Total EIRP per Channel (In Watts)	60.66 dBm 1165.36 W
Total EIRP per Sector (In Watts)	63.69 dBm 2336.25 W	Total EIRP per Sector (In Watts)	63.67 dBm 2330.72 W
nsg	11.6440	nsg	14.6440
Power Density (S) = 0.033335 mW/cm ²		Power Density (S) = 0.033256 mW/cm ²	
T-Mobile Worst Case % MPE =		6.6591%	

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
Cingular UMTS	1.3100 %
Cingular GSM	3.1000 %
Cingular GSM	1.3100 %
Town of Waterford	0.2000 %
Town of Waterford	0.2000 %
USA Mobility	0.2500 %
Springwitch Paging	2.3100 %
Cingular Yagi	2.7400 %
Total Excluding T-Mobile	11.4200 %
T-Mobile	6.6591
Total % MPE for Site	18.0791%