

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](mailto:siting.council@ct.gov)

Internet: [ct.gov/csc](http://ct.gov/csc)

February 13, 2009

Jennifer Young Gaudet  
HPC Development LLC  
53 Lake Avenue Ext.  
Danbury, CT 06811

RE: **EM-T-MOBILE-064-090113B** - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 99-123 Meadow Street, Hartford, 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 with the following conditions:

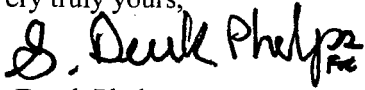
- The coax shall be inside the monopole per page 1 of the structural analysis report dated December 4, 2008 and sealed by Raphael Mohamed, P.E.; and
- The Council shall be notified in writing that the coax was installed as specified.

The proposed modifications are to be implemented as specified here and in your notice dated January 12, 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,

A handwritten signature in black ink that reads "S. Derek Phelps". The signature is written in a cursive style with a small "S.D.P." monogram at the end.

S. Derek Phelps  
Executive Director

SDP/MP/laf

- c: The Honorable Eddie A. Perez, Mayor, City of Hartford
- Lee C. Erdmann, Chief Operating Officer, City of Hartford
- Roger J. O'Brien, Director of Planning, City of Hartford
- American Tower Corporation



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January 21, 2009

The Honorable Eddie A. Perez  
Mayor  
City of Hartford  
Municipal Building  
550 Main Street  
Hartford, CT 06103

RE: **EM-T-MOBILE-064-090113B** - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 99-123 Meadow Street, Hartford, Connecticut.

Dear Mayor Perez:

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 February 4, 2009.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps  
Executive Director

SDP/jb

Enclosure: Notice of Intent

c: Roger J. O'Brien, Director of Planning, City of Hartford  
Lee C. Erdmann, Chief Operating Officer, City of Hartford



EM-T-MOBILE-064-090113B

January 12, 2009

ORIGINAL

RECEIVED  
JAN 13 2009

CONNECTICUT  
SITING COUNCIL

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

Re: Omnipoint Communications, Inc. – exempt modification  
99-123 Meadow Street, Hartford, Connecticut

Dear Mr. Phelps:

This letter and attachments are submitted on behalf of Omnipoint Communications, Inc. (also referred to herein as “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 Mayor of Hartford.

T-Mobile plans to modify the existing facility at 99-123 Meadow Street, Hartford (coordinates 41°44'35.5” N, -72°40'03.1” 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 with an approximate center line of 123’ AGL on the approximately 150’ tower. Three of the nine existing antennas and the six existing TMAs will be replaced. None of the modifications will extend the height of the tower.



Mr. S. Derek Phelps

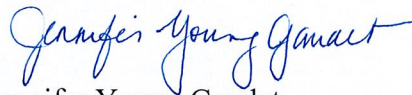
January 12, 2009

Page 2

2. The proposed changes will not extend the site boundaries. T-Mobile will add one cabinet to its existing concrete pad. Thus, there will be no effect on the site compound.
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 7.1488%; the combined site operations will result in a total power density of 37.1688%.

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

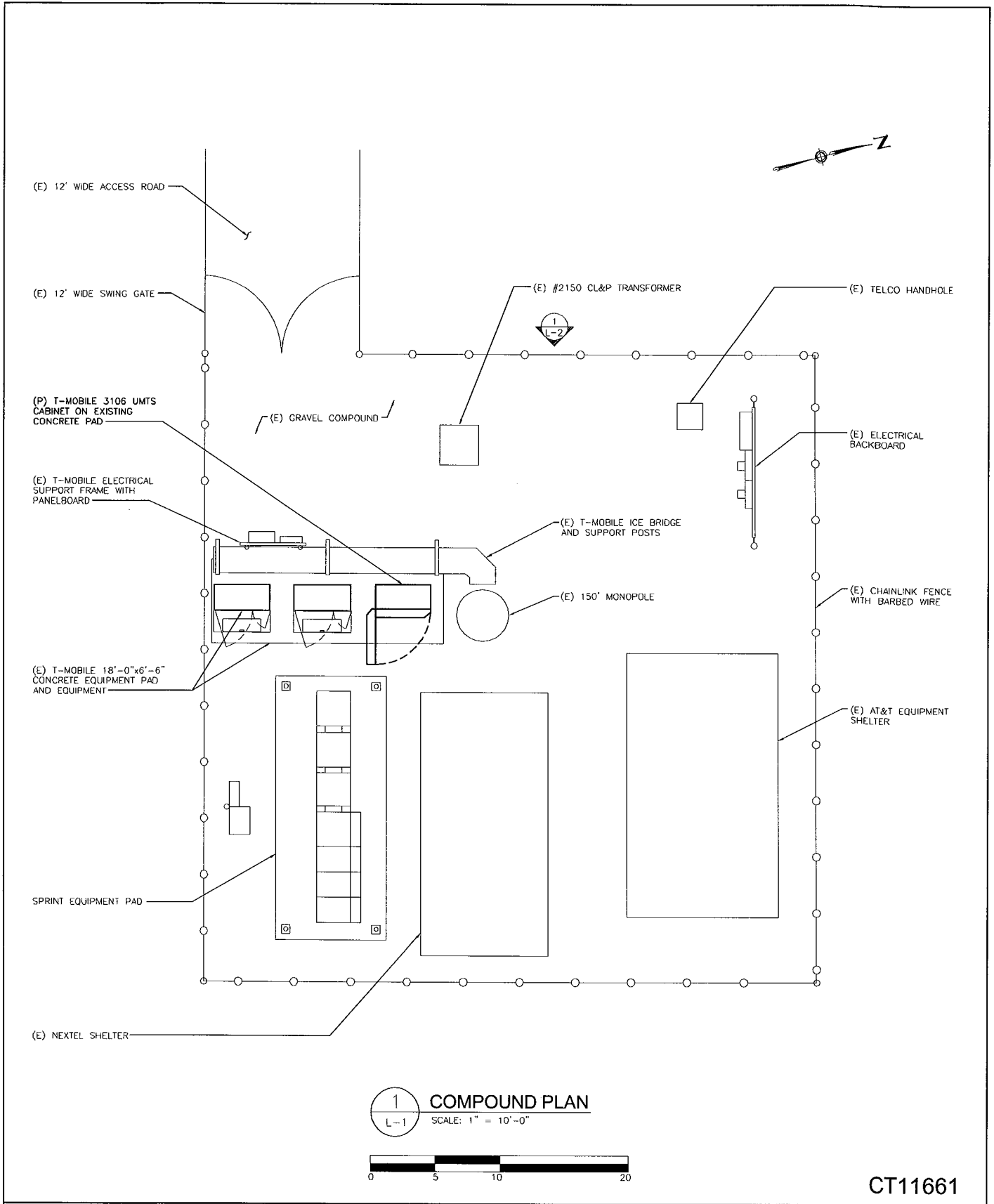
Respectfully yours,



Jennifer Young Gaudet

cc: Honorable Eddie Perez, Mayor, City of Hartford  
Nuccia Amenta (underlying property owner)

Attachments



1  
L-1  
**COMPOUND PLAN**  
SCALE: 1" = 10'-0"



CT11661

SITE ID NO:  
36917332  
Designed by:  
MJE  
Drawn by:  
KAP  
Checked by:  
ICA  
Approved by:

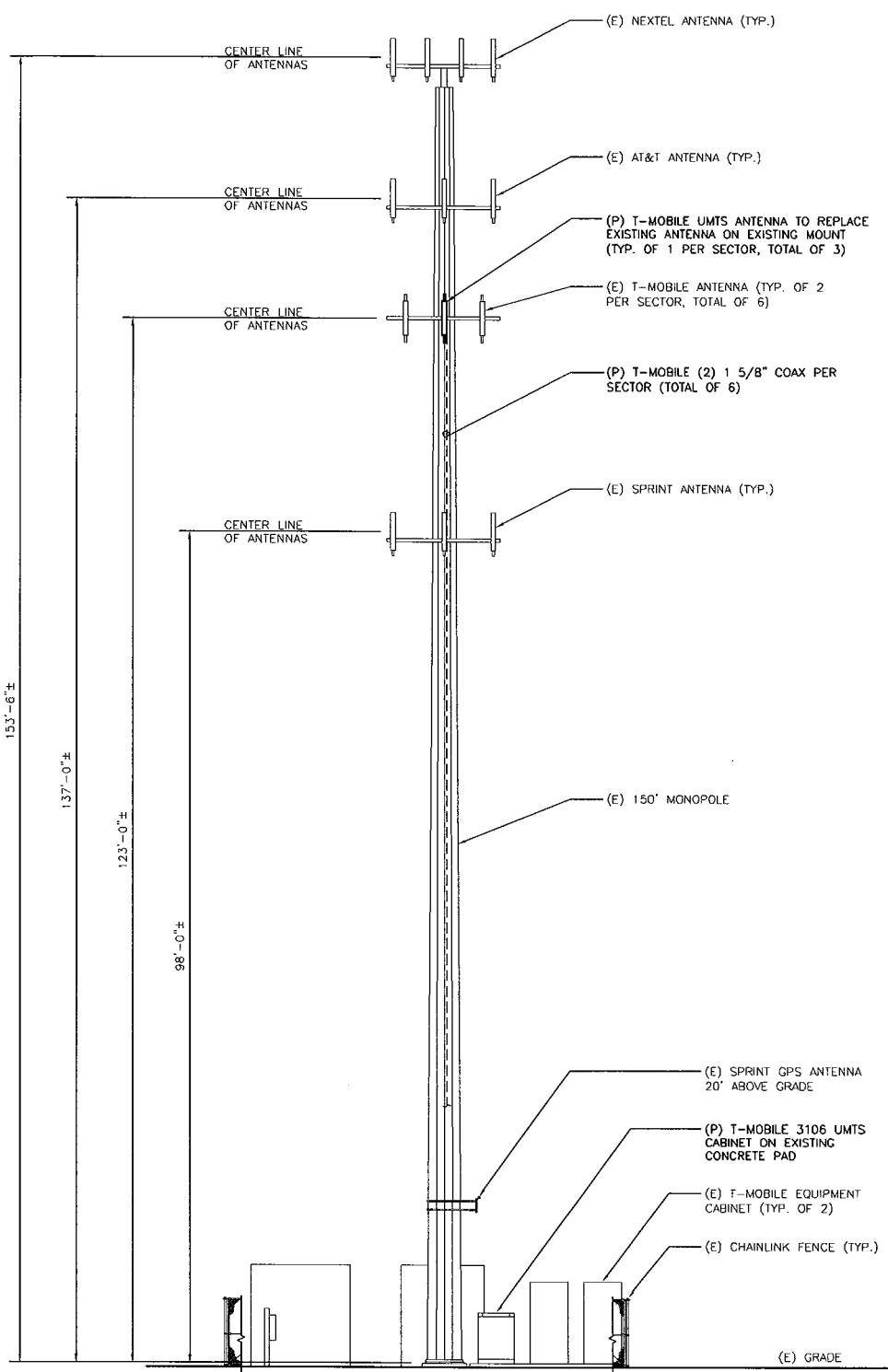
**URS CORPORATION AES**  
500 ENTERPRISE DRIVE  
ROCKY HILL, CONNECTICUT  
1-(860)-529-8882

HPC DEVELOPMENT LLC  
53 LAKE AVENUE EXT.  
DANBURY, CONNECTICUT 06811  
FOR T-Mobile  
35 GRIFFIN ROAD SOUTH  
BLOOMFIELD, CONNECTICUT 06002  
SITE ADDRESS:  
**HARTFORD SOUTH 2/FRNKLN AV**  
123 MEADOW STREET  
HARTFORD, CONNECTICUT 06114

REV.	DATE	DESCRIPTION

Scale: AS NOTED    Date: 11/20/08  
Job No. HPC 022    File No. L-1

Dwg. No.  
**L-1**  
Dwg. 1 of 2



1 ELEVATION  
L-2 SCALE: 1" = 20'-0"



CT11661

SITE ID NO:  
36917332  
Designed by:  
MJE  
Drawn by:  
KAP  
Checked by:  
ICA  
Approved by:

**URS CORPORATION AES**  
500 ENTERPRISE DRIVE  
ROCKY HILL, CONNECTICUT  
1-(800)-529-8882

HPC DEVELOPMENT LLC FOR T-Mobile  
53 LAKE AVENUE EXT. DANBURY, CONNECTICUT 06811  
35 GRIFFIN ROAD SOUTH BLOOMFIELD, CONNECTICUT 06002  
SITE ADDRESS: HARTFORD SOUTH 2/FRNKLN AV  
123 MEADOW STREET  
HARTFORD, CONNECTICUT 06114

REV.	DATE:	DESCRIPTION

Scale: AS NOTED Date: 11/20/08  
Job No. HPC 022 File No. L-2

Dwg. No.  
**L-2**  
Dwg. 2 of 2



**AMERICAN TOWER**

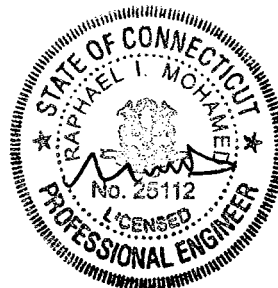
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## Structural Analysis Report

**Structure** : 148 ft FWT Monopole  
**ATC Site Name** : Petro Lock, CT  
**ATC Site Number** : 302468  
**Proposed Carrier** : T-Mobile  
**Carrier Site Name** : Hartford South 2/Franklin Ave  
**Carrier Site Number** : CT11661A  
**County** : Hartford  
**Engineering Number** : 42718921  
**Date** : December 4, 2008\*  
**Usage** : 63%  
**Portholes Required** : No

Submitted by:  
Christopher L. Jolly, E.I.  
Design Engineer

**American Tower Engineering Services**  
400 Regency Forest Drive  
Cary, NC 27518  
Phone: 919-468-0112



12/5/08



**Introduction**

The purpose of this report is to summarize results of the structural analysis performed on the 148 ft FWT Monopole located at 99 Meadow Street, Hartford, Connecticut, 06114, Hartford County (ATC Site No. 302468). The tower was originally designed and manufactured by FWT (Job No. 21719000, dated July 18, 2000).

**Analysis**

The tower was analyzed using Semaan Engineering Solutions, Inc., Software. The analysis assumes that the tower is in good, undamaged, and non-corroded condition.

Basic Wind Speed: 80 mph (Fastest Mile)  
 Radial Ice: 69 mph (Fastest Mile) w/ ½" ice  
 Code: ANSI/TIA-222-F / 2006 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	Carrier
147.0	9	48" x 12" Panels	Platform with Handrails	(9) 1 5/8"	Sprint Nextel
	3	72" x 12" Panels		(3) 1 5/8"	
137.0	9	Allgon 7184	Platform with Handrails	(9) 1 5/8"	AT&T Mobility
123.0	6	EMS RR65-18-02DP	(3) T-Arm	(12) 1 5/8"	T-Mobile
113.0	3	RFS APXV18-206517	(3) T-Arm	(6) 1 5/8"	Youghiogheny
98.0	9	Decibel DB844H90E-A	Low Profile Platform	(18) 1 1/4"	Sprint Nextel
20.0	1	Lucent KS-24019	Flush	(1) 1/2"	

**Proposed Antennas**

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
123.0	3	RFS APX16DWV-16DWVL-C	(3) T-Arms	(6) 1 5/8"	T-Mobile
	6	CCI DTMA-1819-DD-12		--	

Install proposed coax inside monopole.

## Results

The maximum structure usage is: 63%

Additional exit and/or entry ports may be required to accommodate the running of the proposed lines to the proposed antennas. These additional ports **may not** be installed without installation drawings providing the location, size and welding requirements of each port.

To ensure compliance with all conditions of this structural analysis, port installation drawings shall be provided by American Tower's Engineering Department under a subsequent project.

Pole Reactions	Original Design Reactions	Current Analysis Reactions	% Of Design
Moment (ft-kips)	2,489.0	2,487.7	100
Shear (kips)	23.9	23.7	99

The structure base reactions resulting from this analysis are acceptable when compared to the reactions shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

## Conclusion

Based on the analysis results, the structure meets the requirements per TIA/EIA-222-F and 2006 IBC with 2005 & 2008 CT Supplement standards. The tower and foundation can support the existing and proposed antennas with the TX line distribution as described in this report.

If you have any questions or require additional information, please call 919-465-6545.

## **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: Farid Marbough - Radio Frequency Engineer  
cc: Jason Overbey  
Subject: Power Density Report for CT11661A  
Date: December 24, 2008

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### 1. Introduction:

This report is the result of an Electromagnetic Field Intensities (EMF - Power Densities) study for the T-Mobile PCS antenna installation on a Monopole at 123 Meadow Street, Hartford, 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), (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 RR65-18-02DP.
- 3) The model number for UMTS antenna is APX16DWV-16DWV.
- 4) GSM antenna center line height is 123 ft.
- 4) UMTS antenna center line height is 123 ft.
- 5) The maximum transmit power from any GSM sector is 2028.06 Watts Effective Radiated Power (EiRP) assuming 8 channels per sector.
- 5) The maximum transmit power from any UMTS sector is 2432.48 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 PCS antenna installation on a Monopole at 123 Meadow Street, Hartford, CT, is 0.07149 mW/cm<sup>2</sup>. This value represents 7.149% of the Maximum Permissible Exposure (MPE) standard of 1 milliwatt per square centimeter (mW/cm<sup>2</sup>) 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 30.02%. The combined Power Density for the site is 37.169% of the M.P.E. standard.



## Connecticut Market



### Worst Case Power Density

**Site:** CT11661A  
**Site Address:** 123 Meadow Street  
**Town:** Hartford  
**Tower Height:** 130 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	RR65-18-02DP	Antenna Model	APX16DWW-16DWW
Cable Size	1 5/8 in.	Cable Size	1 5/8 in.
Cable Length	144 ft.	Cable Length	144 ft.
Antenna Height	123.0 ft.	Antenna Height	123.0 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	17.2 dBi	Antenna Gain	18.0 dBi
Cable Loss per foot	0.0116 dB	Cable Loss per foot	0.0116 dB
Total Cable Loss	1.6704 dB	Total Cable Loss	1.6704 dB
Total Attenuation	6.1704 dB	Total Attenuation	3.1704 dB
Total EIRP per Channel	54.04 dBm	Total EIRP per Channel	60.85 dBm
(In Watts)	253.51 W	(In Watts)	1216.24 W
Total EIRP per Sector	63.07 dBm	Total EIRP per Sector	63.86 dBm
(In Watts)	2028.06 W	(In Watts)	2432.48 W
nsg	11.0296	nsg	14.8296
Power Density (S) = 0.032503 mW/cm <sup>2</sup>		Power Density (S) = 0.038985 mW/cm <sup>2</sup>	
T-Mobile Worst Case % MPE =		7.1488%	

Equation Used :

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

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

### Co-Location Total

Carrier	% of Standard
Verizon	
Cingular	0.9600 %
Sprint	25.1100 %
AT&T Wireless	1.5800 %
Nextel	2.3700 %
MetroPCS	
Other Antenna Systems	
<b>Total Excluding T-Mobile</b>	<b>30.0200 %</b>
T-Mobile	7.1488
<b>Total % MPE for Site</b>	<b>37.1688%</b>