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

June 22, 2009

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

RE: **EM-T-MOBILE-043-090514** - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 287 Main Street, East 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. The proposed modifications are to be implemented as specified here and in your notice dated May 13, 2009 and additional information dated June 22, 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

S. Derek Phelps
Executive Director

SDP/MP/laf

c: The Honorable Melody A. Currey, Mayor, Town of East Hartford
Michael J. Dayton, Town Planner, Town of East Hartford
South Grammar Office Complex, LLC

CSC
CONNECTICUT SITING COUNCIL

Perrone, Michael

From: Jennifer Gaudet [jgaudet@hpcdevelop.com]
Sent: Monday, June 22, 2009 2:07 PM
To: Perrone, Michael
Subject: 287 Main St., E. Hartford - revised structural - T-Mobile CT11882
Attachments: CT11882 Letter 6-22-2009.pdf

Mike –

Attached is the revised letter accurately describing the existing and proposed antenna and TMA configuration. There is no change to the calculations provided with the filing.

Please let me know if you have any questions. Thank you.

Jennifer

Jennifer Young Gaudet
HPC Development LLC
53 Lake Avenue Extension
Danbury, CT 06811
Cell: (860) 798-7454
Fax: (203) 797-1137
jgaudet@hpcdevelop.com
www.hpcdevelop.com

URS

June 22, 2009

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

Reference: Existing Roof Mounted Flagpole/Monopole Structural Assessment
HPC/T-Mobile Site Upgrade - CT11882
287 Main Street, East Hartford, CT
URS Project Number: 36917338/HPC-028

Dear Ms. Gaudet,

URS Corporation (URS) has been retained by HPC Development, LLC-T-Mobile to perform a structural review of the existing roof mounted, 23' foot tall, (2) carrier flagpole/monopole at the above mentioned site for it's capability to support an antenna upgrade inside the flagpole. The proposed upgrade is to add three (3) TMAs inside the pole. The existing condition is three (3) RFS APX16PV-16PVL antennas and three (3) TMAs inside the pole. The proposed cabinet shall be located next to the existing equipment on an existing concrete slab on grade.

Our review was based on existing telecommunications drawings provided by the client, a previous structural analysis for the original T-Mobile installation, by Westcott and Mapes, Inc., dated 12/11/04 and a visit to the site to verify the existing conditions of the existing telecommunications installation and building structure.

Our assessment has determined that the existing building is not overstressed in the current state and has the capacity to support the proposed antenna upgrade. This determination is also based upon the original site having been designed, fabricated and installed in compliance with construction documents and State Building Codes.

Should there be any questions, please do not hesitate to contact me at (860)529-8882.

Sincerely,

URS Corporation

Richard Sambor, P.E.
Senior Structural Engineer

cc: ICA, MJE, CF/Book - URS

URS Corporation
500 Enterprise Drive, Suite 3B
Rocky Hill, CT 06067
Tel: 860.529.8882
Fax: 860.529.3991

HPC DEVELOPMENT LLC

EM-T-MOBILE-043-090514

ORIGINAL

May 13, 2009

VIA OVERNIGHT DELIVERY

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

Re: Omnipoint Communications, Inc. – exempt modification
287 Main Street, East 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 East Hartford.

T-Mobile plans to modify the existing facility at 287 Main Street, East Hartford (coordinates 41°44'26.9" N, -72°37'48" W). The building and flagpole tower are owned by South Grammar Office Complex LLC. (The flagpole was previously owned by AT&T, is no longer in use by AT&T, and has been turned over to the underlying property owner.) Attached are an equipment plan and elevation depicting the planned changes, and documentation of the structural sufficiency of the flagpole and underlying structure 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. T-Mobile's existing antennas and TMAs will remain, and three additional TMAs will be installed. The modifications will not extend the height of the flagpole.

2. The proposed changes will not extend the site boundaries. T-Mobile will install one additional cabinet within its existing fenced equipment area adjacent to the building.

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 17.2009%; the combined site operations will result in a total power density of 25.5509%.

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

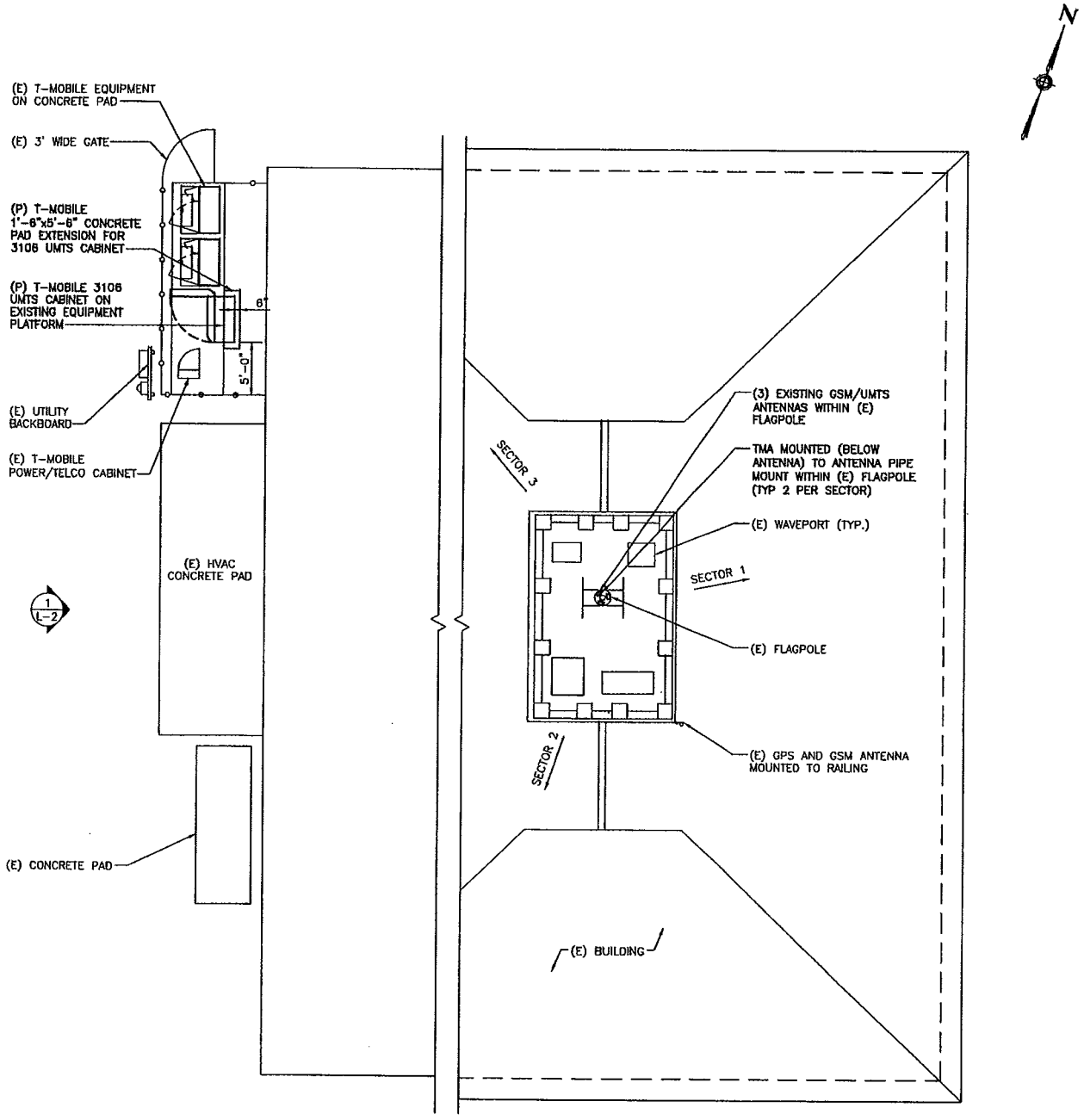
Respectfully yours,

Jennifer Young Gaudet

Jennifer Young Gaudet

cc: Honorable Melody A. Currey, Mayor, Town of East Hartford
South Grammar Office Complex LLC (underlying property owner)

Attachments



1 / L-1 **PARTIAL ROOF PLAN**

SCALE: 1" = 15'-0"

0 5 10 15 30

CT11882H

SITE ID NO: 36917338
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

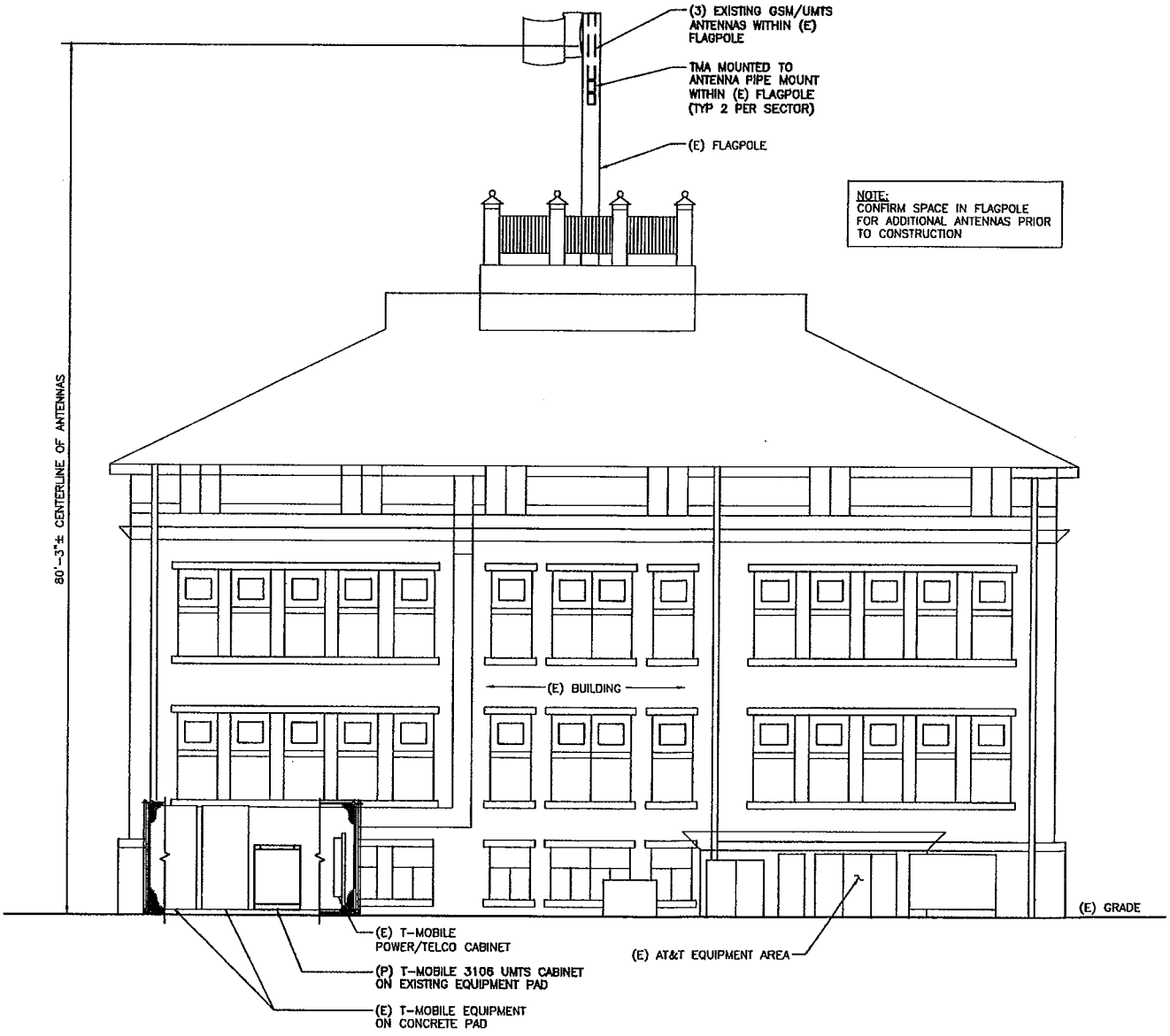
Omnipoint dba
T-Mobile USA
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CONNECTICUT 06002

SITE ADDRESS: CT882/287 MAIN ST_RT
287 MAIN STREET
EAST HARTFORD, CONNECTICUT 06108

REV.	DATE:	DESCRIPTION
V4	05-13-09	FINAL
V3	05-06-09	FINAL

Scale: AS NOTED | Date: 12/01/08
Job No.HPC 028 | File No. L-1 | Dwg. 1 of 2

Dwg. No. L-1



NOTE:
NOT ALL CARRIER ANTENNAS SHOWN FOR CLARITY

1 / L-2 ELEVATION
SCALE: 1" = 15'-0"

0 5 10 15 30

CT11882H

SITE ID NO: 36917338	URS CORPORATION AES	HPC DEVELOPMENT LLC, 53 LAKE AVENUE EXT., DANBURY, CONNECTICUT 06811 FOR Omnipoint dba T-Mobile USA, 35 GRIFFIN ROAD SOUTH, BLOOMFIELD, CONNECTICUT 06002
Designed by: MJE	500 ENTERPRISE DRIVE, ROCKY HILL, CONNECTICUT, 1-(860)-529-8882	SITE ADDRESS: CT882/287 MAIN ST_RT, 287 MAIN STREET, EAST HARTFORD, CONNECTICUT 06108
Drawn by: KAP		
Checked by: ICA		
Approved by:		

REV.	DATE:	DESCRIPTION
V4	05-13-09	FINAL
V3	05-06-09	FINAL

Scale: AS NOTED | Date: 12/01/08 | Job No.HPC 028 | File No. L-2

Dwg. No. L-2 | Dwg. 2 of 2

URS

April 28, 2009

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

Reference: Existing Roof Mounted Flagpole/Monopole Structural Assessment
HPC/T-Mobile Site Upgrade - CT11882
287 Main Street, East Hartford, CT
URS Project Number: 36917338/HPC-028

Dear Ms. Gaudet,

URS Corporation (URS) has been retained by HPC Development, LLC-T-Mobile to perform a structural review of the existing roof mounted, 23' foot tall, (2) carrier flagpole/monopole at the above mentioned site for it's capability to support an antenna swap inside the flagpole. The proposed swap is to replace the three (3) existing RFS APX16PV-16PVL antennas and three (3) TMAs in kind. The proposed cabinet shall be located next to the existing equipment on an existing concrete slab on grade.

Our review was based on existing telecommunications drawings provided by the client, a previous structural analysis for the original T-Mobile installation, by Westcott and Mapes, Inc., dated 12/11/04 and a visit to the site to verify the existing conditions of the existing telecommunications installation and building structure.

Our assessment has determined that the existing building is not overstressed in the current state and the proposed antenna swap will not increase the loading and therefore support the upgrade. This determination is also based upon the original site having been designed, fabricated and installed in compliance with construction documents and State Building Codes.

Should there be any questions, please do not hesitate to contact me at (860)529-8882.

Sincerely,

URS Corporation

Richard Sambor, P.E.
Senior Structural Engineer

cc: ICA, MJE, CF/Book - URS

URS Corporation
500 Enterprise Drive, Suite 3B
Rocky Hill, CT 06067
Tel: 860.529.8882
Fax: 860.529.3991

HPC-028 Southern Pine No 2
Roof Truss Member Capacity

	Member	Size	Length	Axial	Member is in	Compression		Tensile Capacity	TIA-F Increase	% Capacity
						Allowable	Span Used			
	1	2x6	3.295	11.71	Compression	12.4	4	5.98	1.333	0.71
	2	2x6	3	1.82	Tension	12.4	4	5.98	1.333	0.23
	3	2x4	1.362	0.09	Tension	7.08	4	4.33	1.333	0.02
	4	2x6	5.451	11.3	Compression	11.1	6	5.98	1.333	0.76
	5	2x4	5.182	0.56	Compression	4.78	6	4.33	1.333	0.09
	6	2x6	5	1.82	Tension	11.1	6	5.98	1.333	0.23
	7	2x4	3.532	0.26	Tension	7.08	4	4.33	1.333	0.05
	8	2x6	5.447	10.69	Compression	11.1	6	5.98	1.333	0.72
	9	2x4	6.122	0.75	Compression	3.02	8	4.33	1.333	0.19
	10	2x6	5	1.41	Tension	11.1	6	5.98	1.333	0.18
	11	2x4	5.692	0.51	Compression	4.78	6	4.33	1.333	0.08
	12	2x6	6.539	10.71	Compression	9.05	8	5.98	1.333	0.89
	13	2x4	10.236	1.39	Tension	2.02	10	4.33	1.333	0.24
	14	2x6	12	0.64	Compression	5	12	5.98	1.333	0.10
	15	2x6	6.539	9.08	Compression	9.05	8	5.98	1.333	0.75
	16	2x4	10.236	1.24	Compression	1.5	12	4.33	1.333	0.62
	17	2x4	10.892	1.19	Compression	1.5	12	4.33	1.333	0.60
	18	2x6	5	8.36	Compression	11.1	6	5.98	1.333	0.57
	19	2x4	11.985	1.22	Compression	1.5	12	4.33	1.333	0.61
	20	2x6	5	1.36	Compression	11.1	6	5.98	1.333	0.09
	21	2x4	10.892	0.41	Compression	1.5	12	4.33	1.333	0.21
	22	2x6	5	8.36	Compression	11.1	6	5.98	1.333	0.57
	23	2x4	11.937	1.76	Tension	2.02	10	4.33	1.333	0.30
	24	2x6	5	1.92	Compression	11.1	6	5.98	1.333	0.13
	25	2x4	10.839	1.19	Compression	1.5	12	4.33	1.333	0.60
	26	2x6	6.518	9.09	Compression	9.05	8	5.98	1.333	0.75
	27	2x4	10.236	1.23	Compression	1.5	12	4.33	1.333	0.62
	28	2x6	12	1.23	Compression	5	12	5.98	1.333	0.18
Critical--->	29	2x6	6.539	10.71	Compression	9.05	8	5.98	1.333	0.89
	30	2x4	10.236	1.39	Tension	2.02	10	4.33	1.333	0.24
	31	2x4	5.692	0.51	Compression	4.78	6	4.33	1.333	0.08
	32	2x6	5.446	10.69	Compression	11.1	6	5.98	1.333	0.72
	33	2x4	6.122	0.68	Compression	3.02	8	4.33	1.333	0.17
	34	2x6	5	0.78	Tension	11.1	6	5.98	1.333	0.10
	35	2x4	3.532	0.26	Tension	7.08	4	4.33	1.333	0.05
	36	2x6	5.451	11.3	Compression	11.1	6	5.98	1.333	0.76
	37	2x4	5.182	0.56	Compression	4.78	6	4.33	1.333	0.09
	38	2x6	5	1.32	Tension	11.1	6	5.98	1.333	0.17
	39	2x4	1.362	0.09	Tension	7.08	4	4.33	1.333	0.02
	40	2x6	3.295	11.71	Compression	12.4	4	5.98	1.333	0.71
	41	2x6	3	1.11	Tension	12.4	4	5.98	1.333	0.14

Critical Member 0.89

Job HPC-028
Location East Hartford

ASCE 7-02 Wind Loads

Building Exposure =	B	
Height Above Grade =	83	ft
Building Classification =	II	Table 1604.5
Wind Velocity =	95	mph
Equiptment Height =	23	ft
Equiptment Width =	1.83	ft
F/Af = qz*G*Cf =	16.9	psf
F = qz*G*Cf*Af =	712.5	Eq. 6-15
G =	0.85	Section 6.5.8.1
Cf =	0.8	F. 6-19
Af =	42.09	ft^2
qz = 0.00256*Kz*kzt*Kd*V^2*I =	24.896	
Kd =	1	Table 6-4
V =	95	mph
I =	1.15	Table 1604.5
Kz = 2.01*(Z/Zg)^(2/a)	0.937	
Z =	83	
a =	7	Table 6-2
Zg =	1200	Table 6-2
Ktz =	1	Figure 6-4

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 CT11882H
Date: May 5, 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 Rooftop at 287 Main St, East 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 1 antenna per sector.
3) The model number for GSM antenna is APX16PV-16PVL.
3) The model number for UMTS antenna is APX16PV-16PVL.
4) GSM antenna center line height is 80 ft.
4) UMTS antenna center line height is 80 ft.
5) The maximum transmit power from any GSM sector is 2149.22 Watts Effective Radiated Power (EiRP) assuming 8 channels per sector.
5) The maximum transmit power from any UMTS sector is 2144.12 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 Rooftop at 287 Main St, East Hartford, CT, is 0.17201 mW/cm^2. This value represents 17.201% 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 8.35%. The combined Power Density for the site is 25.551% of the M.P.E. standard.

Connecticut Market

T-Mobile

Worst Case Power Density

Site:	**CT11882H**
Site Address:	**287 Main St**
Town:	**East Hartford**
Tower Height:	**55 ft.**
Tower Style:	**Rooftop**

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	APX16PV-16PVL	**Antenna Model**	APX16PV-16PVL
Cable Size	1 5/8 in.	**Cable Size**	1 5/8 in.
Cable Length	174 ft.	**Cable Length**	174 ft.
Antenna Height	80.0 ft.	**Antenna Height**	80.0 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	17.8 dBi	**Antenna Gain**	17.8 dBi
Cable Loss per foot	0.0116 dB	**Cable Loss per foot**	0.0116 dB
Total Cable Loss	2.0184 dB	**Total Cable Loss**	2.0184 dB
Total Attenuation	6.5184 dB	**Total Attenuation**	3.5184 dB
Total EIRP per Channel	54.29 dBm	**Total EIRP per Channel**	60.30 dBm
(In Watts)	268.65 W	**(In Watts)**	1072.06 W
Total EIRP per Sector	63.32 dBm	**Total EIRP per Sector**	63.31 dBm
(In Watts)	2149.22 W	**(In Watts)**	2144.12 W
nsg	11.2816	**nsg**	14.2816
Power Density (S) =	**0.086107 mW/cm^2**	**Power Density (S) =**	**0.085903 mW/cm^2**

T-Mobile Worst Case % MPE = 17.2009%

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	1.0100 %
Sprint	
AT&T Wireless	7.3400 %
Nextel	
MetroPCS	
Other Antenna Systems	
Total Excluding T-Mobile	**8.3500 %**
T-Mobile	17.2009
Total % MPE for Site	**25.5509%**

URS

Job	23' Monopole/Flagpole - East Hartford	Project No.	HPC-028	Page	of
Description	Flag Wind Force Calculation	Computed by	KAB	Sheet 1	of 1
		Checked by		Date 01/22/09	

Wind Velocity(mph) $V := 95$

Width of Flag $W_F := 10 \cdot ft$

Length of Flag $L_F := 15 \cdot ft$

Flag Area $A_F := W_F \cdot L_F$ $A_F = 150 \cdot ft^2$

Navy Formula

$F1 := 0.0003 \cdot A_F \cdot V^{1.9}$ $F1 = 257.57$

National Association of Architectural Metal Manufacturers

$F2 := 0.5 \cdot A_F$ $F2 = 75$

Hoerners Formula

$Cd := 0.08$ when c/b is 1.50

$F3 := 0.00256 \cdot A_F \cdot V^2 \cdot Cd$ $F3 = 277.25$ Controls

$c := 15 \cdot ft$ $b := 10 \cdot ft$