HPC DEVELOPMENT

**EM-T-MOBILE-158-090123**

ORIGINAL

January 22, 2009



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

Re: Omnipoint Communications, Inc. – exempt modification
180-182 Bayberry Lane, Westport, 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 First Selectman of Westport.

T-Mobile plans to modify the existing facility at 180-182 Bayberry Lane, Westport (coordinates 41°10'18" N, -73°19'43" 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. The only change to the tower will be the replacement of the three existing TMAs with different TMAs behind the three existing antennas at an approximate center line of 87' AGL on the approximately 140' tower. The modifications will not extend the height of the tower.

2. The proposed changes will not extend the site boundaries. T-Mobile will add one cabinet to the 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 17.0328%; the combined site operations will result in a total power density of 63.5228%.

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

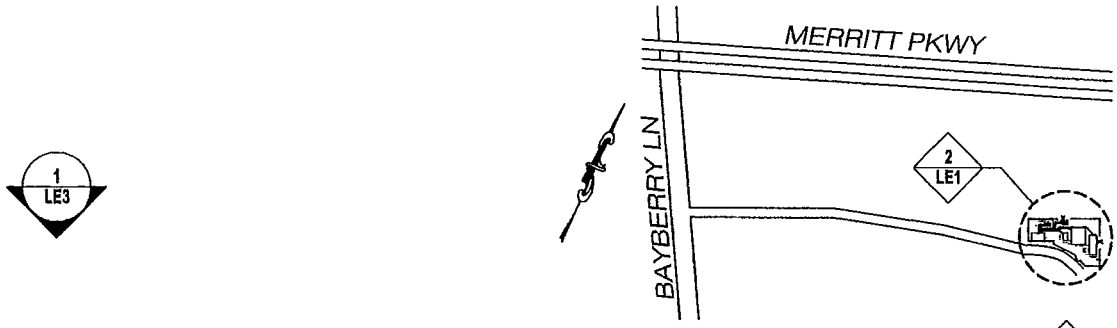
Respectfully yours,

Jennifer Young Gaudet

Jennifer Young Gaudet

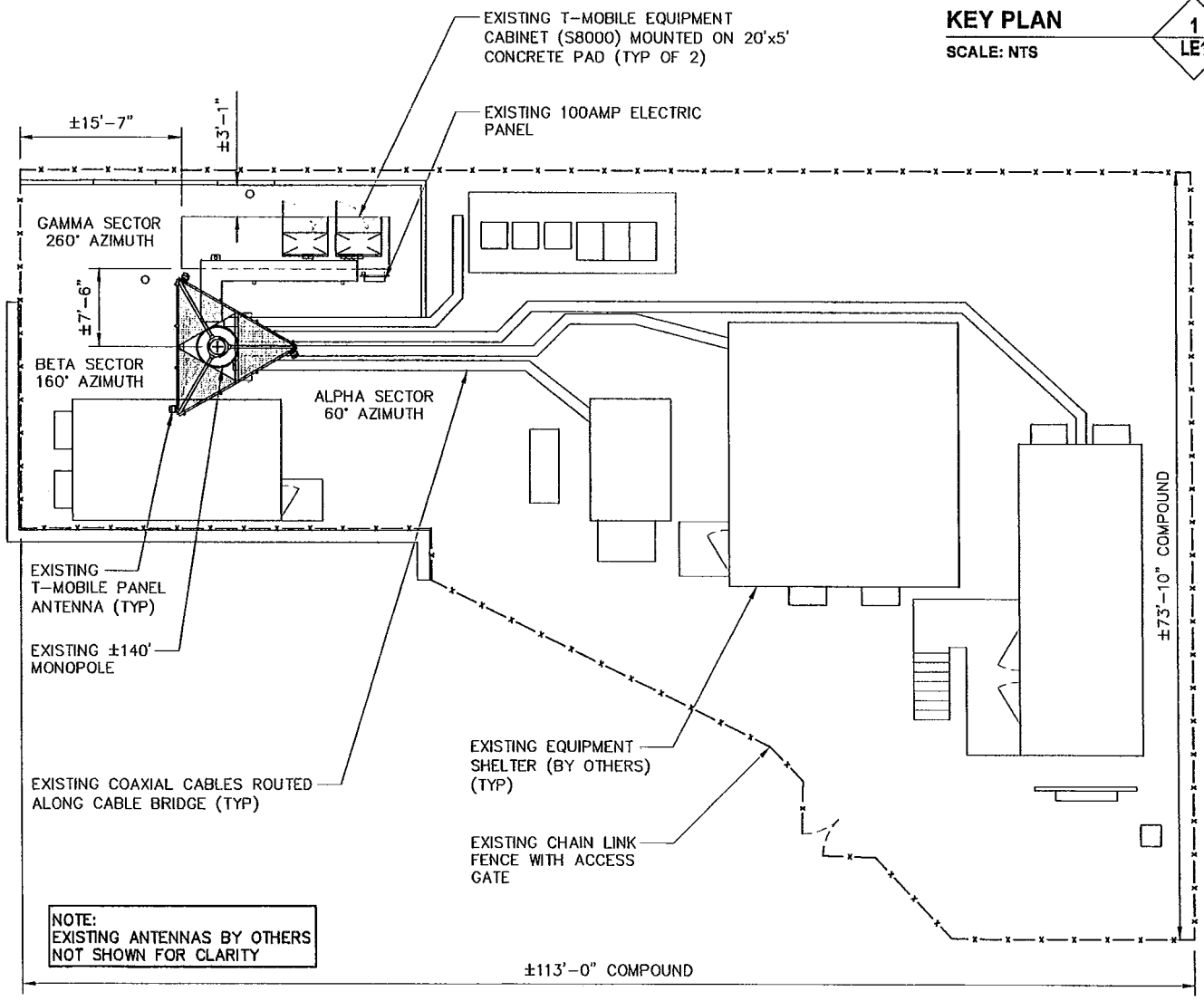
cc: Honorable Gordon F. Joseloff, First Selectman, Town of Westport
(also underlying property owner)

Attachments




1
LE3

**KEY PLAN**
SCALE: NTS
1
LE1




**EXISTING COMPOUND PLAN**
SCALE: 1/16" = 1'-0"
2
LE1

NOTES:
1. LEASE EXHIBITS ARE A CONCEPTUAL DESIGN OF LEASE AGREEMENT ONLY. ACTUAL CONSTRUCTION DOCUMENTS MAY VARY TO COMPLY WITH BUILDING CODES.
2. THE INFORMATION SHOWN IS TAKEN FROM A SURVEY PERFORMED BY "KMB DESIGN GROUP, LLC." DURING SITE VISIT.
3. ELECTRIC/ TELCO SERVICES SHALL BE CONFIRMED PRIOR TO CONSTRUCTION DOCUMENT PHASE.
4. 24 HR. 7 DAYS PER WEEK ACCESS IS REQUIRED FOR SERVICE TECHNICIAN.

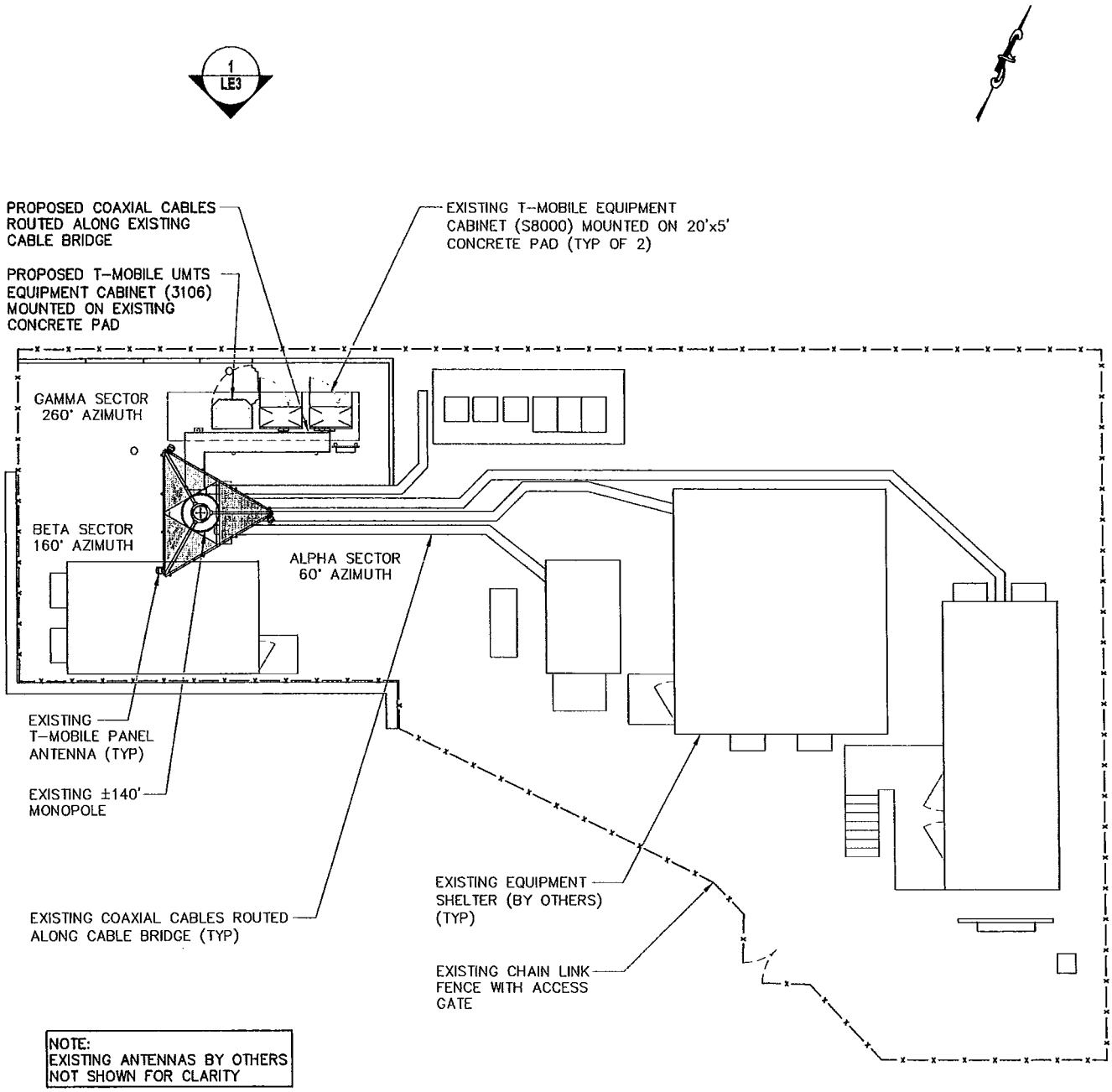
KMB DESIGN GROUP
www.kmbdg.com

| | |
|---|---|
| TITLE: | KEY & COMPOUND PLAN |
| CLIENT: | Omnipoint COMMUNICATIONS, INC. dba T-MOBILE USA 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 |
| PROJECT: | 180A BAYBERRY LANE |
| ADDRESS: | 180A BAYBERRY LANE<br>WESTPORT, CT 06880<br>FAIRFIELD COUNTY |

| | | |
|---|---|---|
| | | |
| 2 | 12-2-08 | MAD |
| 1 | 11-21-08 | CCR |
| 0 | 11-14-08 | CCR |

LE1

| SITE NO: | KMB NO: | DRAWN BY: | CHECKED BY: |
|---|---|---|---|
| CT11323A | 350.0004.012 | CCR | |




## PROPOSED COMPOUND PLAN

SCALE: 1/16" = 1'-0"

1
LE2

KMB DESIGN GROUP
www.kmbdg.com

SITE NO: CT11323A

TITLE: COMPOUND PLAN

CLIENT: Omnipoint
COMMUNICATIONS, INC.
One TARGE LEGAL
55 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

KMB NO: 350.0004.012

DRAWN BY: CCR

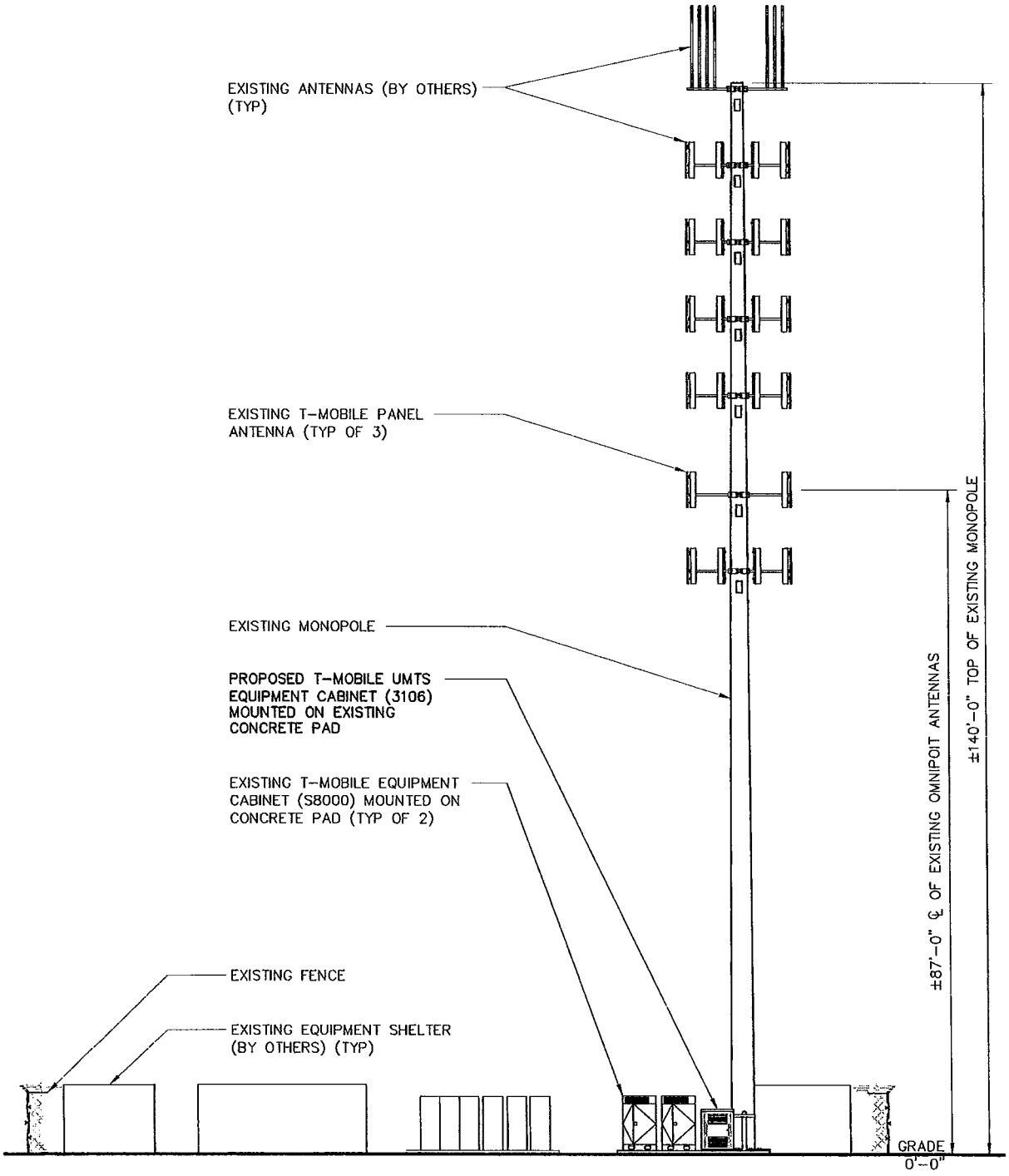
CHECKED BY:

PROJECT: 180A BAYBERRY LANE

ADDRESS: 180A BAYBERRY LANE
WESTPORT, CT 06880
FAIRFIELD COUNTY

| | | |
|---|---|---|
| | | |
| | | |
| 2 | 12-2-08 | MAD |
| 1 | 11-21-08 | CCR |
| 0 | 11-14-08 | CCR |

LE2




**NORTWEST ELEVATION**

**SCALE: 1" = 20'**

1 / LE3

KMB DESIGN GROUP
www.kmbdg.com

| | | | |
|---|---|---|---|
| SITE NO: CT11323A | KMB NO: 350.0004.012 | DRAWN BY: CCR | CHECKED BY: KCJ |

TITLE: ELEVATION

CLIENT: Omnipoint COMMUNICATIONS, INC. dba T-MOBILE USA 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06001

PROJECT: 180A BAYBERRY LANE

ADDRESS: 180A BAYBERRY LANE WESTPORT, CT 06880 FAIRFIELD COUNTY

| | | |
|---|---|---|
| 2 | 12-2-08 | MAD |
| 1 | 11-21-08 | CCR |
| 0 | 11-14-08 | CCR |

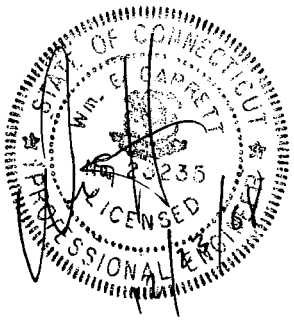
LE3

AMERICAN TOWER

# Structural Analysis Report

| | | |
|---|---|---|
| **Structure** | : | **140 ft PennSummit Monopole** |
| **ATC Site Name** | : | **Wspt-Westport Rebuild CT, CT** |
| **ATC Site Number** | : | **310968** |
| **Proposed Carrier** | : | **T-Mobile** |
| **Carrier Site Name** | : | **CT 323/SS Tower Rebuild** |
| **Carrier Site Number** | : | **CT1123** |
| **County** | : | **Fairfield** |
| **Eng. Number** | : | **42761321** |
| **Date** | : | **December 19, 2008*** |
| **Usage** | : | **69%** |
| **Portholes Required** | : | **No** |

Submitted by:
Esha Shah, E.I.
Design Engineer




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

## Introduction

The purpose of this report is to summarize results of the structural analysis performed on the 140 ft PennSummit Monopole located east of Bayberry Lane Just south of the Merritt Pkwy., Westport, CT 06880, Fairfield County (ATC site #310968). The tower was originally designed and manufactured by PennSummit (PJF Job #29204-0171, dated July 1, 2004).

## 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: 85 mph (Fastest Mile)
Radial Ice: 74 mph (Fastest Mile) w/ ½" ice
Code: ANSI/TIA/EIA-222-F / 2003 International Building Code per Section 1609.1.1, Exception (5) and Section 3108.4 w/ 2005 CT Supplement & 2008 CT Amendments

## Antenna Loads

The following antenna loads were used in the tower analysis.

Existing Antennas

| Elev. (ft) | Qty | Antennas | Mount | Coax (in) | Carrier |
|---|---|---|---|---|---|
| 138.0 | 3 | 6' Omni | Platform w/ Handrails | (3) 1 5/8<br>(2) 7/8 | Westport Fire Dept. |
| | 2 | 8' Omni | | | |
| | 2 | 6' Omni | | (1) 7/8 | US Treasury |
| | 1 | 8' FM Antenna | | (3) 7/8 | Westport Fire Dept. |
| | 1 | 6' Dipole | | | |
| 131.0 | 3 | KMW AM-X-WM-17-65-00T | Low Profile Platform | (6) 1 1/4 | Sprint Nextel |
| | 3 | KMW KMDAPS2020000 | | | |
| 120.0 | 12 | 48" x 8" Panel | Low Profile Platform | (12) 1 1/4 | |
| 100.0 | 12 | 14" x 9" TTA | Low Profile Platform | (12) 1 5/8<br>(1) 0.315 | AT&T Mobility |
| | 6 | Diplexer | | | |
| | 6 | 56" x 6" Panel | | | |
| 76.0 | 6 | 72" x 4" Panel | Low Profile Platform | (12) 1 5/8 | Verizon |
| | 6 | 96" x 8" Panel | | | |

Proposed Antennas

| Elev. (ft) | Qty | Antennas | Mount | Coax (in) | Carrier |
|---|---|---|---|---|---|
| 87.0 | 6 | CCI DTMA-1819-DD-12 | Low Profile Platform | (12) 1 5/8 | T-Mobile |
| | 3 | RFS APX16DWV-16DWV-S-E-ACU | | | |

Install proposed coax inside monopole.

## Results

The maximum structure usage is: 69%

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) | 3,550.0 | 2,377.0 | 67 |
| Shear (kips) | 35.0 | 24.7 | 71 |

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 2003 IBC standards w/ 2005 CT Supplements and 2008 CT Amendments. 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 919-463-6280.

**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.

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 CT11323A
Date: January 20, 2009

**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 Self Support Tower at 180-182 Bayberry Lane, Westport, 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 1 antennas 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 87 ft.
4) UMTS antenna center line height is 87 ft.
5) The maximum transmit power from any GSM sector is 2549.88 Watts Effective Radiated Power (EiRP) assuming 8 channels per sector.
5) The maximum transmit power from any UMTS sector is 2543.84 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 Self Support Tower at 180-182 Bayberry Lane, Westport, CT, is 0.17033 mW/cm^2. This value represents 17.033% 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 46.49%. The combined Power Density for the site is 63.523% of the M.P.E. standard.

## Connecticut Market

T-Mobile

### Worst Case Power Density

| | |
|---|---|
| **Site:** | **CT11323A** |
| **Site Address:** | **180-182 Bayberry Lane** |
| **Town:** | **Westport** |
| **Tower Height:** | **150 ft.** |
| **Tower Style:** | **Self Support Tower** |

| **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** | 110 ft. | **Cable Length** | 110 ft. |
| **Antenna Height** | 87.0 ft. | **Antenna Height** | 87.0 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** | 1.2760 dB | **Total Cable Loss** | 1.2760 dB |
| **Total Attenuation** | 5.7760 dB | **Total Attenuation** | 2.7760 dB |
| **Total EIRP per Channel** | 55.03 dBm | **Total EIRP per Channel** | 61.04 dBm |
| **(In Watts)** | 318.74 W | **(In Watts)** | 1271.92 W |
| **Total EIRP per Sector** | 64.07 dBm | **Total EIRP per Sector** | 64.05 dBm |
| **(In Watts)** | 2549.88 W | **(In Watts)** | 2543.84 W |
| **nsg** | 12.0240 | **nsg** | 15.0240 |
| **Power Density (S) =** | **0.085265 mW/cm^2** | **Power Density (S) =** | **0.085063 mW/cm^2** |

**T-Mobile Worst Case % MPE = 17.0328%**

*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 | 12.5600 % |
| Cingular | 6.7400 % |
| Sprint | 8.4400 % |
| AT&T Wireless | 1.8200 % |
| Nextel | 0.8800 % |
| MetroPCS | |
| Other Antenna Systems | 16.0500 % |
| **Total Excluding T-Mobile** | **46.4900 %** |
| T-Mobile | 17.0328 |
| **Total % MPE for Site** | **63.5228%** |

# 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*


February 10, 2009

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

RE: **EM-T-MOBILE-158-090123** - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 180-182 Bayberry Lane, Westport, 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 January 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 Gordon F. Joseloff, First Selectman, Town of Westport
Laurence Bradley, Director, Planning & Zoning, Town of Westport
Spectrasite Communications

# 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*


January 23, 2009

The Honorable Gordon F. Joseloff
First Selectman
Town of Westport
Town Hall
110 Myrtle Avenue
Westport, CT 06880

RE: **EM-T-MOBILE-158-090123** - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 180-182 Bayberry Lane, Westport, Connecticut.

Dear Mr. Joseloff:

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 6, 2009.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps

S. Derek Phelps
Executive Director

SDP/jb

Enclosure: Notice of Intent

c: Laurence Bradley, Director, Planning & Zoning, Town of Westport