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

November 12, 2008

Jennifer Young Gaudet
T-Mobile USA, Inc.
35 Griffin Road S
Bloomfield, CT 06002

RE: **EM-T-MOBILE-023-081023A** – Omnipoint Communications, Inc. a.k.a. T-Mobile notice of intent to modify an existing telecommunication facility located at 650 Albany Turnpike, Canton, 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.

The proposed modifications are to be implemented as specified here and in your notice dated October 22, 2008, 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
Executive Director

SDP/MP/jb

c: The Honorable Richard J. Barlow, First Selectman, Town of Canton
Robert H. Skinner, Chief Administrative Officer, Town of Canton
Neil Pade, Town Planner, Town of Canton
Kenneth C. Baldwin, Esq., Robinson & Cole LLP

STATE OF CONNECTICUT

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Daniel F. Caruso
Chairman

October 24, 2008

The Honorable Richard J. Barlow
First Selectman
Town of Canton
4 Market Street
P. O. Box 168
Collinsville, CT 06022-0168

RE: **EM-T-MOBILE-023-081023A** – Omnipoint Communications, Inc. a.k.a. T-Mobile notice of intent to modify an existing telecommunication facility located at 650 Albany Turnpike, Canton, Connecticut.

Dear Mr. Barlow:

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 7, 2008.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/jb

Enclosure: Notice of Intent

c: Neil Pade, Town Planner, Town of Canton
Paul J. Fetherston, Chief Administrative Officer, Town of Canton

T-Mobile

EM-T-MOBILE-023-081023A

VIA OVERNIGHT DELIVERY

October 22, 2008

ORIGINAL

RECEIVED
OCT 23 2008
CONNECTICUT
SITING COUNCIL

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

Re: Omnipoint Communications, Inc. (T-Mobile) – exempt modification
650 Albany Turnpike, Canton, 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 plans to install antennas and related equipment at the Verizon Wireless site at 650 Albany Turnpike in Canton (coordinates 41°51'02" N, -72°56'55.4" W). 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 Canton.

T-Mobile will install nine antennas at the 100' level of the tower. The antennas will be installed, three per sector, on T-arms; one TMA will be mounted behind two of the antennas in each sector. T-Mobile's equipment cabinets will be placed on a concrete pad near the base of the tower. Attached are a compound plan and elevation depicting the planned changes, and documentation of the structural sufficiency of the tower to accommodate T-Mobile's antennas.

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 top of the tower extends to 120'; T-Mobile's proposed antennas will be located with a center line of 100' AGL.

T-Mobile USA, Inc.
Office: (860) 692-7100
Fax: (860) 692-7159
35 Griffin Rd S
Bloomfield, CT 06002

2. The addition of T-Mobile's equipment will not require any extension of the site boundaries. All equipment will be located within the existing fenced 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 additional cabinets 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 5.6363%; the combined site operations will result in a total power density of 22.506%.

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

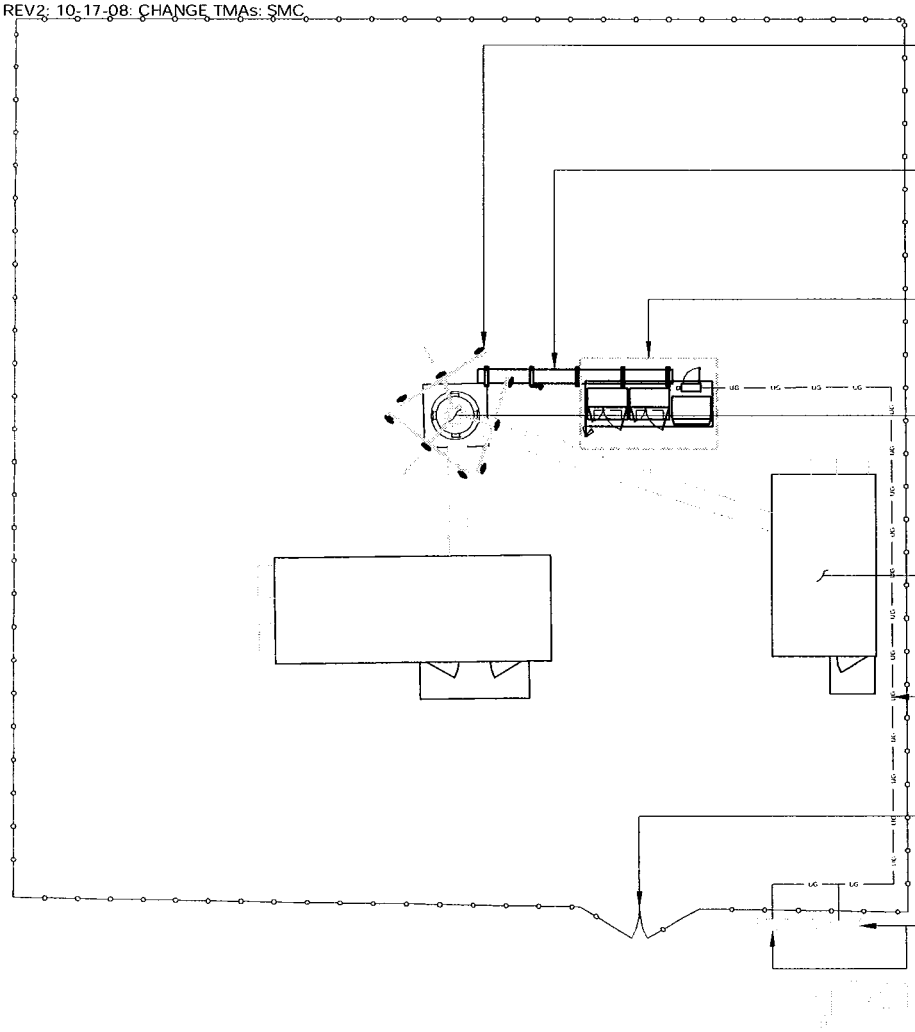
Jennifer Young Gaudet

cc: Richard Barlow, First Selectman, Town of Canton
Edward T. Lally, Jr. (underlying property owner)
Attachments

ALL-POINTS TECHNOLOGY CORPORATION, P.C.	APT FILING NUMBER: CT-255T-170	T-Mobile	T-MOBILE SITE NUMBER
3 SADDLEBROOK DRIVE KILLINGWORTH, CT. 06419 PHONE: (860)-663-1697 FAX: (860)-663-0935 www.allpointstech.com	LE-1	35 GRIFFIN ROAD BLOOMFIELD, CT 06002 OFFICE: (860)-692-7100	CTNH413A
	SCALE: AS NOTED / DRAWN BY: AAJ		VZW - COLLINSVILLE 650 ALBANY TPKE CANTON, CT 06019-3522
	DATE: 08/26/08 / CHECKED BY: SMC		

NOTE:
PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE IS REQUIRED TO MEET NATIONWIDE STANDARDS FOR WIRELESS COMMUNICATIONS SYSTEMS. OMNIPOINT COMMUNICATIONS INC. IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT AND ANTENNAS GENERALLY DEPICTED ON THIS PLAN, ATTACHED TO OR MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINETS. OMNIPOINT COMMUNICATIONS INC. RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO E911 EQUIPMENT AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIRED SPECIFICATIONS.
ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY OMNIPOINT COMMUNICATIONS INC. STRUCTURAL & RF ENGINEERS.
LOCATIONS OF POWER & TELEPHONE FACILITIES ARE SUBJECT TO APPROVAL BY UTILITY COMPANIES.

REV1: 9-11-08: SITE NAME CHANGE: SMC
REV2: 10-17-08: CHANGE TMAs: SMC



PROPOSED T-MOBILE ALPHA, BETA, AND GAMMA ANTENNA SECTORS (9 TOTAL) MOUNTED ON (3) 10' T-ARMS w/ (2) TMAs PER SECTOR (6 TOTAL) @ 100'± AGL (SEE ANTENNA PLAN)

PROPOSED T-MOBILE HORIZONTAL CABLE TRAY TO EXISTING ACCESS PORT W/GPS & GSM ANTENNA

PROPOSED T-MOBILE 150 SF (10'x15') LEASE AREA W/ CABINETS, UTILITY CENTER, SERVICE LIGHT, ON PROPOSED CONCRETE SLAB

EXISTING 120'± AGL MONOPOLE

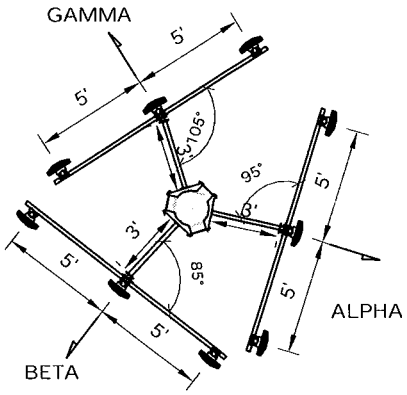
EXISTING CARRIER EQUIPMENT (TYP.)

PROPOSED UNDERGROUND ELECTRICAL AND TELCO SERVICE FROM EXISTING METER CENTER & TELCO DEMARC TO PROPOSED EQUIPMENT AREA

EXISTING 12' GATE

EXISTING MULTIMETER CENTER & TELCO DEMARC ON SERVICE BACKBOARD

COMPOUND PLAN
SCALE : 1" = 20'-0"



ANTENNA PLAN
SCALE : ½" = 1'-0"

ALL-POINTS TECHNOLOGY CORPORATION, P.C.
3 SADDLEBROOK DRIVE
KILLINGWORTH, CT. 06419
PHONE: (860)-663-1697
FAX: (860)-663-0935
www.allpointstech.com

APT FILING NUMBER: CT-255T-170	
LE-2	
SCALE: AS NOTED	DRAWN BY: AAJ
DATE: 08/26/08	CHECKED BY: SMC

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002
OFFICE: (860)-692-7100

T-MOBILE SITE NUMBER
CTNH413A

VZW - COLLINSVILLE
650 ALBANY TPKE
CANTON, CT 06019-3522

NOTE:
PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE IS REQUIRED TO MEET NATIONWIDE STANDARDS FOR WIRELESS COMMUNICATIONS SYSTEMS. OMNIPOINT COMMUNICATIONS INC. IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT AND ANTENNAS GENERALLY DEPICTED ON THIS PLAN, ATTACHED TO OR MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINETS. OMNIPOINT COMMUNICATIONS INC. RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO E911 EQUIPMENT AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIRED SPECIFICATIONS.
ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY OMNIPOINT COMMUNICATIONS INC. STRUCTURAL & RF ENGINEERS.
LOCATIONS OF POWER & TELEPHONE FACILITIES ARE SUBJECT TO APPROVAL BY UTILITY COMPANIES.

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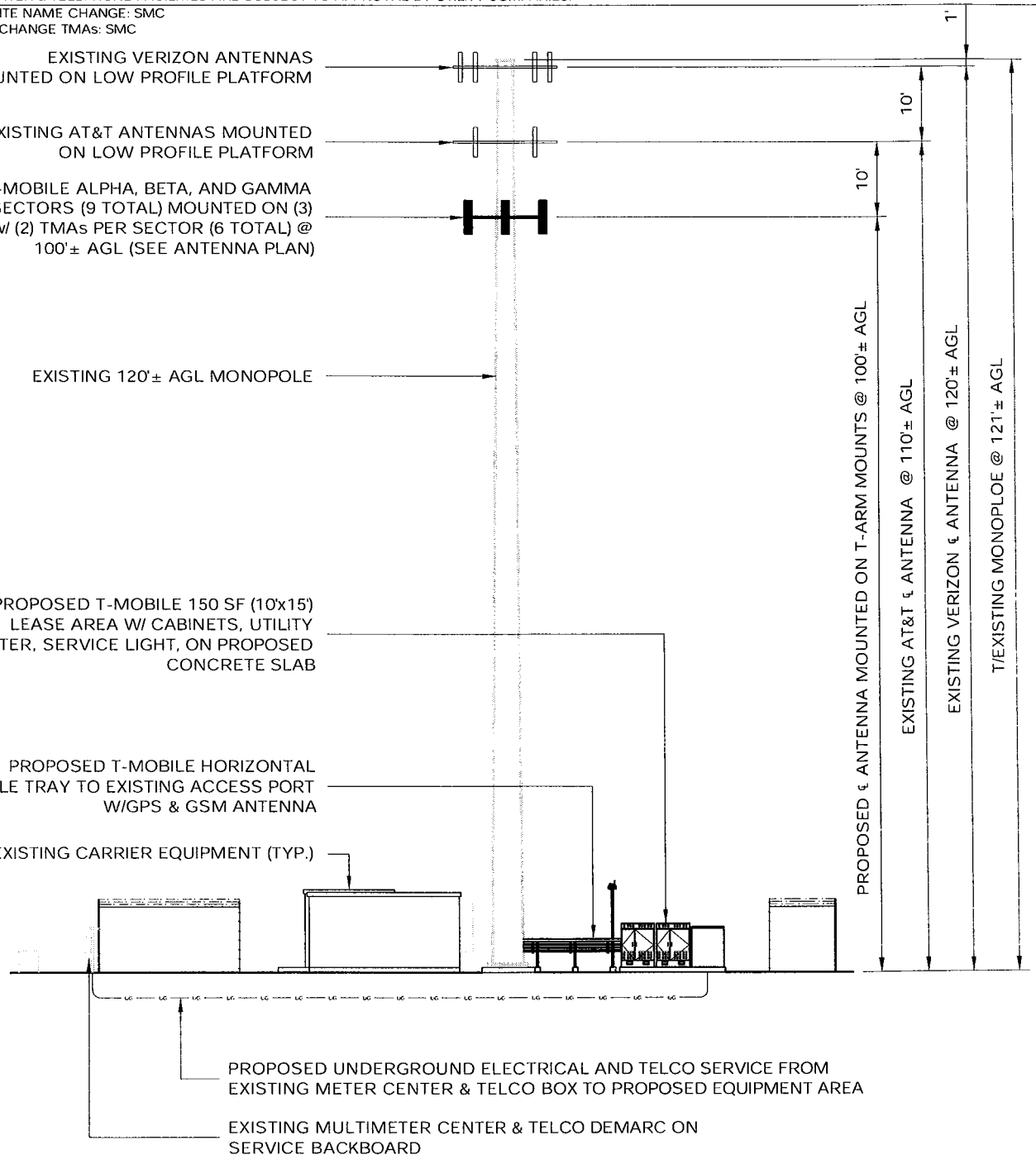


NORTHERN ELEVATION

SCALE : 1" = 20'-0"

NATCOMM INC
CONSULTING ENGINEERS

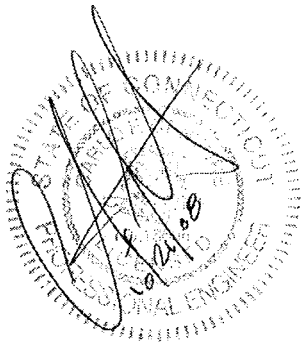
Structural Analysis Report

120' Existing Monopole

Collinsville
650 Albany Turnpike,
Canton, CT

Natcomm Project No. 08136-CO-02

~~Date: October 07, 2008~~
Revision 1: October 21, 2008



Prepared for:

Verizon Wireless
99 East River Road, 9th Floor
East Hartford, CT 06108

p: 203.488.0580
f: 203.488.8587
w: nat-eng.com
63-2 N. Branford Rd.
Branford, CT 06405

Natcomm, Inc.
Structural Monopole Analysis
120' Existing EEI Monopole
Canton, CT
Revision #1 ~ October 21, 2008

Table of Contents

Natcomm, Inc.
Structural Monopole Analysis
120' Existing EEI Monopole
Canton, CT
Revision #1 ~ October 21, 2008

Introduction

The purpose of this report is to summarize the results of the non-linear, P-Δ structural analysis of the antenna installation proposed by T-Mobile on behalf of Verizon Wireless on the existing monopole (tower) located in Canton, Connecticut.

The host tower is a 120-ft, three-section, eighteen sided, tapered monopole extendable to 150ft originally designed and manufactured by Engineered Endeavors Inc (EEI)—job no: 11936-E01, dated September 11, 2003. The tower geometry, structure member sizes and foundation system information were taken from EEI's design report. Antenna and appurtenance information were taken from a previous structural analysis report prepared by URS Corporation, signed and sealed November 5, 2007.

The tower is made up of three (3) tapered vertical sections consisting of A572-65 pole sections. The vertical tower sections are slip joint connected. The diameter of the pole (flat-flat) is 26.9-in at the top and 49.00-in at the base.

T-Mobile is proposing the installation of nine (9) Cellular panel antennas and (6) TMA's on a 13' Low Profile Platform. Refer to the Antenna and Appurtenance Summary below for a detailed description of the proposed antenna configuration.

Antenna and Appurtenance Summary

The existing tower was designed to support several communication antennas. The existing, proposed and future loads considered in this analysis consist of the following:

- VERIZON WIRELESS (Reserved): [1]
  Antennas: Fifteen (15) 72"x12" panel antennas on an existing 14' Low Profile Platform with a RAD center elevation of 120-ft above the existing tower base plate.
  Coax Cables: Fifteen (15) 1-5/8" ∅ coax cables running on the inside of the existing tower.
- AT&T (Existing):
  Antennas: Twelve (12) Kathrein AP14/17-880-1940\065D panel antennas and twelve (12) TMA's on a 12'-6" Low Profile Platform with a RAD center elevation of 110-ft above the existing tower base plate.
  Coax Cables: Twelve (12) 1-5/8" ∅ coax cables running on the inside of the existing tower.
- **T-MOBILE (Proposed):**
  Antennas: Nine (9) RFS APX16DWV-16WV-S-E-ACU panel antennas and Six (6) CCI DTMA-1819-DD-12 TMA's on a 13' Low Profile Platform with a RAD center elevation of 100-ft above the existing tower base plate.
  Coax Cables: Twelve (12) 1-5/8" ∅ coax cables running on the inside of the existing tower.

Note: [1] Reserved Verizon Wireless antenna loading is conservative to allow for future antenna growth. Existing antenna configuration consists of (6) Antel LPA80080/6CF and (6) Andrew DB950F85E-M panel antennas.

Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents or reinforcement drawings.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.
- All coax cables to be installed within tower.
- A new porthole will not be required.

Analysis

The existing tower was analyzed using a comprehensive computer program entitled RISATower. The program analyzes the tower, considering the worst case loading condition. The tower is considered as loaded by concentric forces along the tower shaft, and the model assumes that the shaft members are subjected to bending, axial, and shear forces.

The existing tower was analyzed for 80 mph basic wind speed (fastest mile) with no ice and 75% reduction of wind force with ½ inch accumulative ice to determine stresses in members as per guidelines of TIA/EIA-222-F-96 entitled "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures", the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Allowable Stress Design (ASD).

Tower Loading

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA/EIA-222-F, gravity loads of the tower structure and its components, and the application of ½" radial ice tower structure and its components.

Basic Wind Speed:	Hartford; v = 80 mph (fastest mile)	*[Section 16 of TIA/EIA-222-F-96]*
	Canton; v = 95 mph (3 second gust) equivalent to v = 77.5 mph (fastest mile)	*[Appendix K of the 2005 CT Building Code Supplement]*
	TIA/EIA wind speed controls	
Load Cases:	Load Case 1; 80 mph wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation. This load case typically controls the design of monopole towers.	*[Section 2.3.16 of TIA/EIA-222-F-96]*
	Load Case 2; 69 mph wind speed w/ ½" radial ice plus gravity load – used in calculation of tower stresses. The 69 mph wind speed velocity represents 75% of the wind pressure generated by the 85 mph wind speed. This load case typically controls the design of lattice towers.	*[Section 2.3.16 of TIA/EIA-222-F-96]*
	Load Case 3; Seismic – not checked	*[Section 1610.1.3 of State Bldg. Code 2005] does not control in the design of this structure type*

Natcomm, Inc.
Structural Monopole Analysis
120' Existing EEI Monopole
Canton, CT
Revision #1 ~ October 21, 2008

Tower Capacity

Tower stresses were calculated utilizing the structural analysis software RISATower. Allowable stresses were determined based on Table 5 of the TIA/EIA code with a 1/3 increase per Section 3.1.1.1 of the same code.

Calculated stresses were found to be within allowable limits. In Load Case 1, per RISATower "Section Capacity Table", this tower was found to be at **39.9%** of its total capacity.

Foundation and Anchors

The existing foundation consists of a 7-ft square reinforced concrete pedestal with a 21.5-ft square reinforced concrete pad bearing directly on existing sub grade. The monopole tower is connected to the pedestal by means of twelve (18) 2-1/4" diameter, A615-GR75 anchor bolts embedded approximately 7-ft into the concrete foundation structure.

Review of the foundation and anchor design consisted of verification of applied loads obtained from the tower design calculations and code checks of allowable stresses:

- The tower base reactions developed from the governing Load Case 1 were used in the verification of the foundation and its anchors:
  - Shear Force @ top of pedestal = **16** kips
  - Moment @ top of pedestal = **1366** ft-kips
  - Axial Force @ top of pedestal = **29** kips
- The base plate, anchor bolts and the foundation are within allowable limits.
- Foundation resists two times the calculated wind load per the requirements of Section 3108.4.2 of the 2005 CT State Building Code Supplement to the 2003 International Building Code (IBC).

Conclusion

This analysis shows that the subject tower **is adequate** to support the proposed modified antenna configuration.

The analysis is based, in part, on the information provided to this office by Verizon Wireless. If the existing conditions are different than the information in this report, Natcomm, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:

10/21/08

Carlo P. Centore, PE
Principal ~ Structural Engineer

T-Mobile USA Inc.
100 Filley St, Bloomfield, CT 06002-1853
Phone: (860) 692-7100
Fax: (860) 692-7159

Technical Memo

To: Jennifer Gaudet
From: Scott Heffernan - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CTNH413A
Date: October 4, 2008

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 650 Albany Turnpike, Canton, 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 1935-1985 MHz frequency band.
2) The antenna array consists of three sectors, with 3 antennas per sector.
3) The model number for each antenna is RR90-17-02DP.
4) The antenna center line height is 100 ft.
5) The maximum transmit power from any sector is 2270.02 Watts Effective Radiated Power (EiRP) assuming 8 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 650 Albany Turnpike, Canton, CT, is 0.05636 mW/cm^2. This value represents 5.636% 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.

Total Site MPE %:	22.506%

New England Market

Worst Case Power Density

Site:	**CTNH413A**
Site Address:	**650 Albany Turnpike**
Town:	**Canton**
Tower Height:	**121 ft.**
Tower Style:	**Monopole**
Base Station TX output	25 W
Number of channels	8
Antenna Model	RR90-17-02DP
Cable Size	1 5/8
Cable Length	125 ft.
Antenna Height	100.0 ft.
Ground Reflection	1.6
Frequency	1945.0 MHz
Jumper & Connector loss	4.50 dB
Antenna Gain	16.5 dBi
Cable Loss per foot	0.0116 dB
Total Cable Loss	1.4500 dB
Total Attenuation	5.9500 dB
Total EIRP per Channel	54.53 dBm
(In Watts)	283.75 W
Total EIRP per Sector	63.56 dBm
(In Watts)	2270.02 W
nsg	10.5500
Power Density (S) =	**0.056363 mW/cm^2**
T-Mobile Worst Case % MPE =	**5.6363%**

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

Additional Carrier Information (% MPE)	
AT&T (PCS)	2.54%
AT&T (Cellular)	3.00%
Verizon Wireless (PCS)	3.63%
Verizon Wireless (Cellular)	7.70%
Total % MPE for Site	**22.506%**