

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@po.state.ct.us

Web Site: www.ct.gov/csc

June 25, 2004

Karina Fournier
Zoning Department
T-Mobile
100 Filley Street
Bloomfield, CT 06002

RE: **TS-T-MOBILE-077-040609** - Omnipoint Communications, Inc. request for an order to approve tower sharing at an existing telecommunications facility located at 239 Middle Turnpike East, Manchester, Connecticut.

Dear Ms. Fournier:

At a public meeting held June 23, 2004, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures. 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. Any additional change to this facility may require an explicit request to this agency pursuant to General Statutes § 16-50aa or notice pursuant to Regulations of Connecticut State Agencies Section 16-50j-73, as applicable. Such request or 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.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction.

The proposed shared use is to be implemented as specified in your letter dated June 9, 2004.

Thank you for your attention and cooperation.

Very truly yours,


Pamela B. Katz, P.E.
Chairman

PBK/laf

c: Honorable Stephen T. Cassano, Mayor, Town of Manchester
Thomas R. O'Marra, Zoning Enforcement Officer, Town of Manchester
Thomas J. Regan, Esq., Brown Rudnick Berlack Israels LLP
Christopher B. Fisher, Esq., Cuddy & Feder LLP



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SITING COUNCIL

100 Filley Street, Bloomfield, CT 06002
860-692-7145 fax 860-692-7159

June 9, 2004

BY HAND

Pamela B. Katz, Chairman and
Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: **Tower Sharing Request by T-Mobile**
239 Middle Turnpike East, Manchester, Connecticut
Latitude: 41 47 3.84 / Longitude:72 30 41.76

Dear Ms. Katz and Members of the Siting Council:

Pursuant to Connecticut General Statutes (C.G.S.) § 16-50aa, T-Mobile USA, Inc. acting through its wholly owned subsidiary Omnipoint Communications, Inc. ("T-Mobile") hereby requests an order from the Connecticut Siting Council ("Council") to approve the proposed shared use of an existing communications tower, located at 239 Middle Turnpike East, in Manchester ("Middle Turnpike East Facility"), owned by the Town of Manchester. T-Mobile and the Town of Manchester have agreed to the shared use of the Middle Turnpike East Facility, as detailed below.

Middle Turnpike East Facility

The Middle Turnpike East Facility consists of a one hundred eighty-three (183) foot high monopole ("Tower") owned and operated by the Town of Manchester. T-Mobile proposes to locate antennas at a mounting height of one hundred sixty-three. The equipment will be located within the existing equipment compound.

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T-Mobile's Facility

As shown on the enclosed plans prepared by Clough, Harbour and associates, including a site plan and tower elevation of the Middle Turnpike East Facility, annexed hereto as Exhibit 1, T-Mobile proposes a shared use of the Facility by placing antennas on the tower and equipment needed to provide personal communications services ("PCS") within the existing site plan. T-Mobile will install nine (9) antennas at the one hundred sixty-three foot level of the Tower. Three (3) associated unmanned equipment cabinets will be located within the existing equipment compound surrounding the tower.

Connecticut General Statutes § 16-50aa provides that, upon written request for shared use approval, an order approving such use shall be issued, "if the council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns." (C.G.S. § 16-50aa(c)(1).) Further, upon approval of such shared use, it is exclusive and no local zoning or land use approvals are required C.G.S. §16-50x. Shared use of the Middle Turnpike East Facility satisfies the approval criteria set forth in C.G.S. § 16-50aa as follows:

- A. Technical Feasibility The existing Tower and compound were designed to accommodate multiple carriers. A structural analysis of the Tower with the proposed T-Mobile installation has been performed and is attached as Exhibit 2. The structural analysis concludes that the tower can safely accommodate the proposed T-Mobile antennas. The proposed shared use of this Tower is technically feasible. Further there is sufficient room at the base of the facility, thus the site plan will not have to be altered.
- B. Legal Feasibility Pursuant to C.G.S. § 16-50aa, the Council has been authorized to issue an order approving shared use of the existing Middle Turnpike East Facility. (C.G.S. § 16-50aa (C)(1)). Under the authority vested in the Council by C.G.S. § 16-50aa, an order by the Council approving the shared use of a tower would permit the Applicant to obtain a building permit for the proposed installation.
- C. Environmental Feasibility The proposed shared use would have a minimal environmental effect, for the following reasons:

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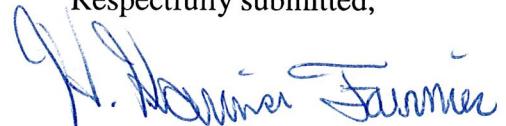
- 1.) The proposed installation would have a de minimis visual impact, and would not cause any significant change or alteration in the physical or environmental characteristics of the existing facility,
 - 2.) The proposed installation by T-Mobile would not increase the height of the tower nor expand the site plan at the Middle Turnpike East Facility and will be of minimal impact to the facility;
 - 3.) The proposed installation would not increase the noise levels at the existing facility boundaries by six decibels or more;
 - 4.) Operation of T-Mobile's antennas at this site would not exceed the total radio frequency electromagnetic radiation power density level adopted by the FCC and Connecticut Department of Health. The "worst case" exposure calculated for the operation of this facility for all carriers would be approximately 26.4% of the standard. See Radio Frequency Technical Memo dated June 1, 2004, prepared by T-Mobile Radio Frequency Engineer, Sumit Nahar, annexed hereto as Exhibit 3;
 - 5.) The proposed shared use of the Middle Turnpike East Facility will not require any water or sanitary facilities, or generate any air emissions or discharges to water bodies. Further, the installation will not generate any traffic other than for periodic maintenance visits.
- D. Economic Feasibility The Applicant and the tower owner have agreed to share use of the Middle Turnpike East Facility on terms agreeable to both parties. The proposed tower sharing is therefore economically feasible.
- E. Public Safety As stated above and evidenced in the Radio Frequency Technical Memo annexed hereto as Exhibit 3, the operation of T-Mobile's antennas at this site would not exceed the total radio frequency electromagnetic radiation power density level adopted by the FCC and Connecticut Department of Health. Further, the addition of T-Mobile's telecommunications service in the Manchester area through shared use of the Middle Turnpike East Facility is expected to enhance the safety and welfare of local residents and travelers through the area resulting in an improvement to public safety in this area.

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Conclusion

As delineated above, the proposed shared use of the Middle Turnpike East Facility satisfies the criteria set forth in C.G.S. § 16-50aa, and advances the General Assembly's and the Siting Council's goal of preventing the proliferation of tower in the State of Connecticut. T-Mobile therefore requests the Siting Council issue an order approving the proposed shared use of the Middle Turnpike East Facility.

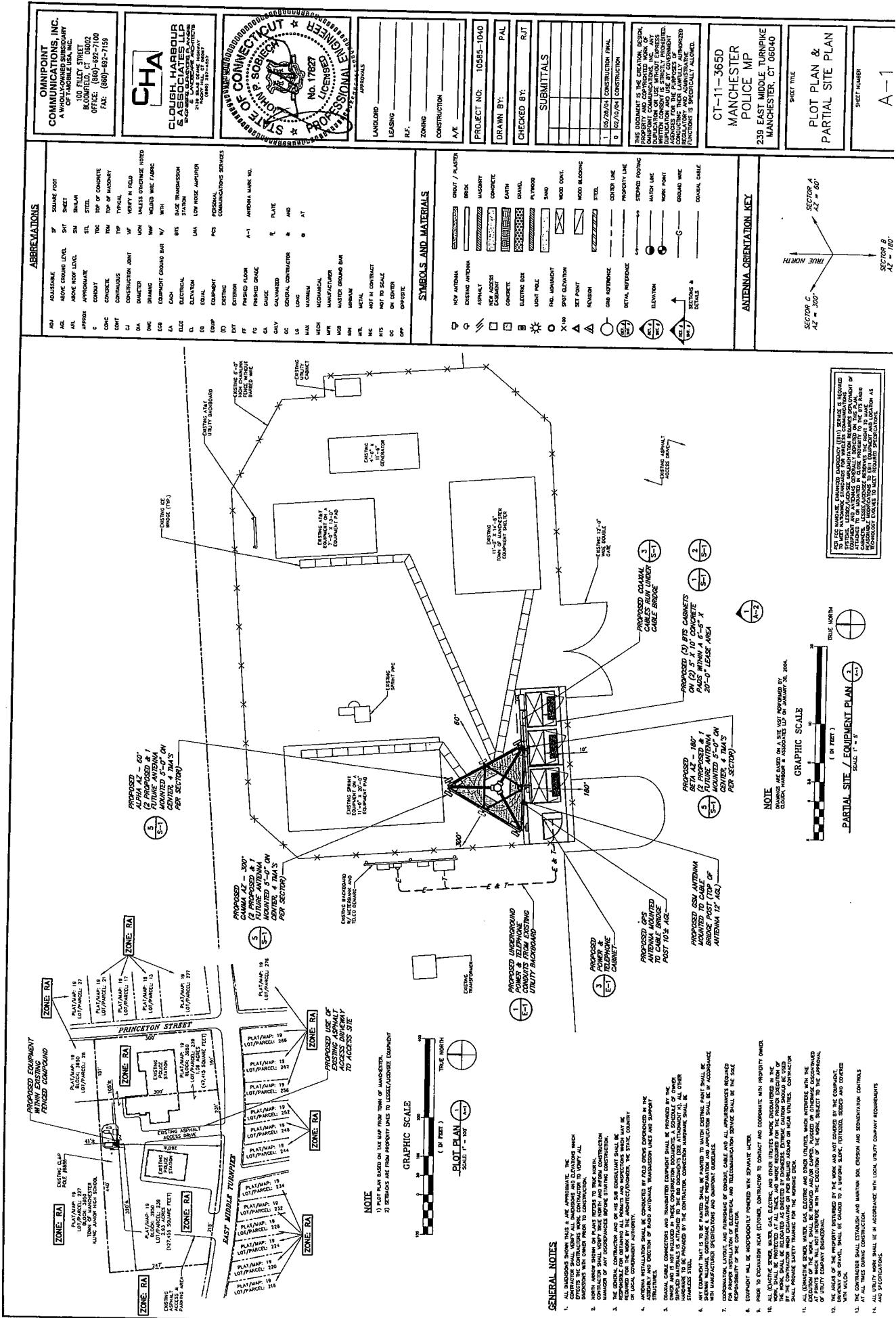
Respectfully submitted,


Karina Fournier
Zoning Dept.
T-Mobile
100 Filley St.
Bloomfield, CT 06002
(860) 692-7145

cc: Mayor, Stephen T. Cassano
Town Manager, Steven Werbner

Exhibit 1

MANCHESTER POLICE MP
239 EAST MIDDLE TURNPIKE
MANCHESTER, CT 06040
CT-11-365D
CO-LOCATE



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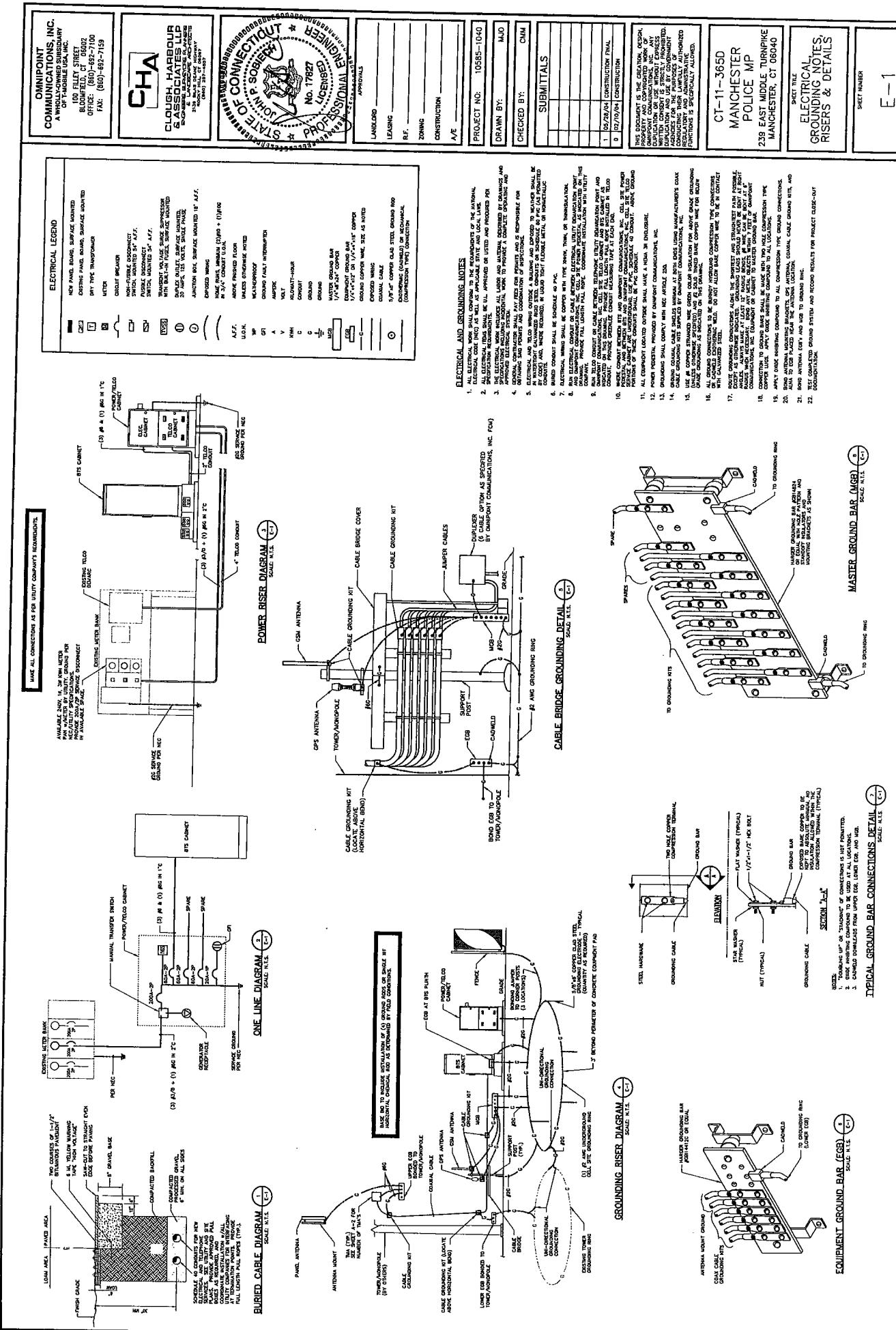
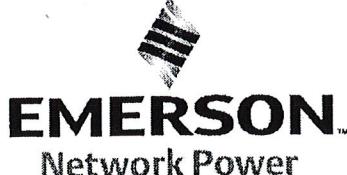


Exhibit 2



May 26, 2004

Engineered Endeavors, Inc.
7610 Jenther Drive
Mentor, OH 44060
USA

T (440) 918 1101
T (888) 270 3855
F (440) 918 1108

Ron Morese
T-Mobile
100 Filley Street
Bloomfield, CT 06002

Reference: Structural review of the existing 183-ft monopole located in Manchester, CT.
T-Mobile site name CT11-365D.
EEI Project No. 12388. Revision I.

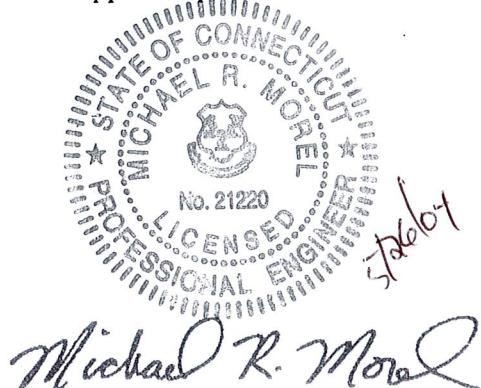
Engineered Endeavors Incorporated (EEI) has evaluated the existing 183-ft monopole located in Manchester, CT for the co-location presented by T-Mobile Corporation (see attached). The monopole was originally designed for a maximum of six (4) carriers with (12) DAPA48000 antennas on low profile platforms and the variety if City, Police and Fire Department antennas as depicted in the attached drawing. The monopole has been evaluated for the maximum design antenna loading including T-Mobile's (9) EMS DR65-19-DPQ antennas with TMA's @163' elevation.

The installation of (9) T-Mobile antennas as described above will not affect the structural capacity of the tower. However, EEI recommends the monopole be reviewed every time another carrier co-locating on the pole if a new loading differs from the original design.

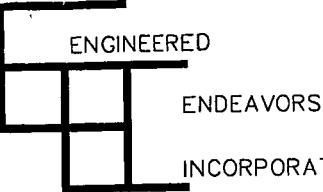
The monopole has (3) 6"x12" handholes @161' elevation above base plate to use for the cables. If any additional ports are required, they can be field installed by following and EEI approved procedure.

Yours truly,
Engineered Endeavors, Inc.

Boris S. Fayman, P.E.
Project Engineer
Enclosure



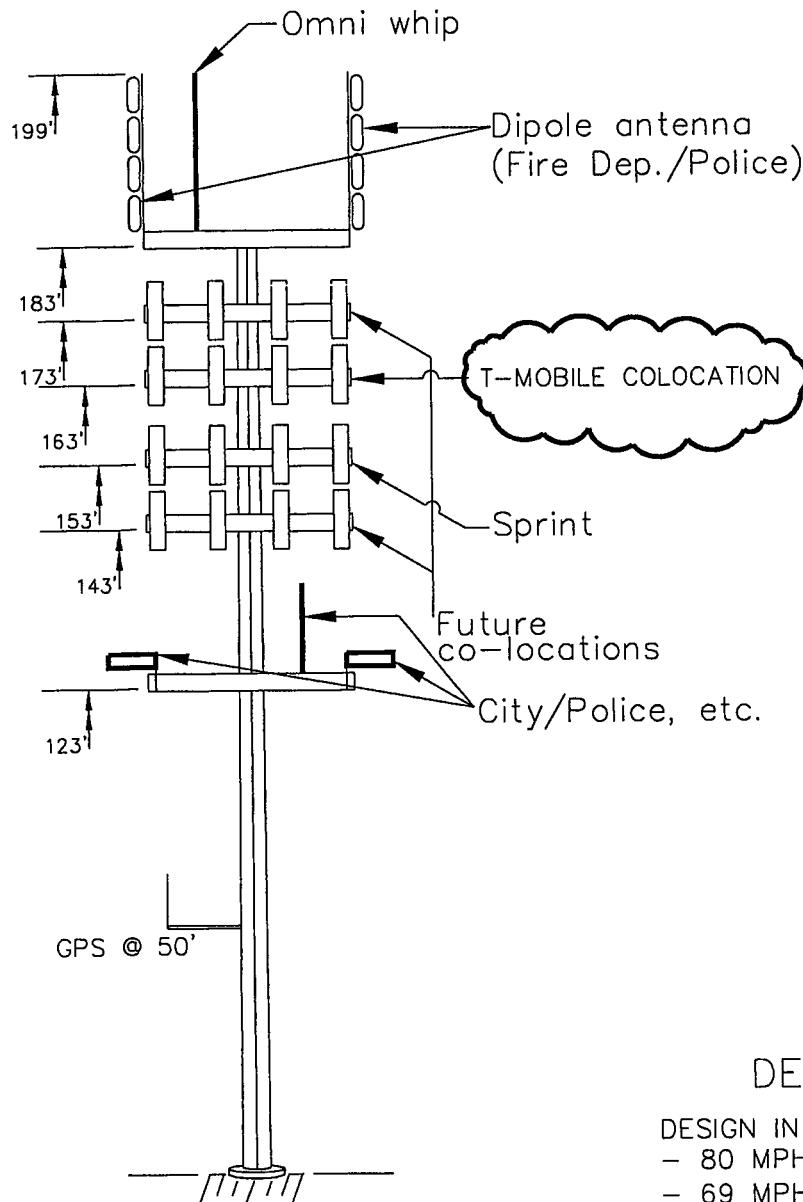
Michael R. Morel, P.E.
Vice-President



Customer T-MOBILE By B.S.FAYMAN 05/26/04
 Structure MONOPOLE Checked _____ Date 12388
INCORPORATED Job/Quote No. _____

SITE LOCATION – HARTFORD CO., CT
 SITE NAME – MANCHESTER/CT11-365D

STRUCTURAL ANALYSIS
 REFERENCE – EEI-9892
 REVISION I



ANTENNA LOADING:

- (12) DAPA48000 @ 173', 143'
ON LOW PROFILE PLATFORMS
- (12) SPRINT DB980F65 @ 153'
ON A LOW PROFILE PLATFORM

City antennas to be installed
on the platforms

PROPOSED CO-LOCATION:

- (9) EMS DP65-19-DPQ & (12) TMA @ 163'
ON A LOW PROFILE PLATFORM

DESIGN NOTES:

DESIGN IN ACCORDANCE WITH EIA 222F
 – 80 MPH BASIC WIND SPEED (NO ICE)
 – 69 MPH WIND SPEED WITH 1/2" RADIAL ICE

DESIGN MEETS 1996 BOCA, 2000 IBC,
 AND THE CONNECTICUT BUILD. CODE.

NOTE: IT IS THE RESPONSIBILITY
 OF THE PURCHASER TO VERIFY
 THAT THE WIND LOADS AND DESIGN
 CRITERIA SPECIFIED MEET THE REQUIREMENTS
 OF ALL LOCAL BUILDING CODES

Exhibit 3



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

Technical Memo

To: Karina Fournier
From: Sumit Nahar - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CT11365D
Date: June 1, 2004

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 239 Middle Turnpike East, Manchester, 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 1935-1945 MHz frequency band.
- 2) The antenna array consists of three sectors, with 3 antennas per sector.
- 3) The model number for each antenna is EMS RR90-17-02DP.
- 4) The antenna center line height is 163 ft.
- 5) The maximum transmit power from any sector is 1547.11 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 239 Middle Turnpike East, Manchester, CT, is 0.01377 mW/cm². This value represents 1.377% of the Maximum Permissible Emission (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 25.02%. The combined Power Density for the site is 26.397% of the M.P.E. standard.

New England Market
Connecticut
Worst Case Power Density

- - T - - Mobile -

Site:	CT11365D
Site Address:	239 Middle Turnpike East
Town:	Manchester
Tower Height:	183 ft.
Tower Style:	Monopole
Base Station TX output	20 W
Number of channels	8
Antenna Model	EMS RR90-17-02DP
Cable Size	1 5/8 in.
Cable Length	185 ft.
Antenna Height	163.0 ft.
Ground Reflection	1.6
Frequency	1935.0 MHz
Jumper & Connector loss	4.50 dB
Antenna Gain	16.5 dBi
Cable Loss per foot	0.0116 dB
Total Cable Loss	2.1460 dB
Total Attenuation	6.6460 dB
Total EIRP per Channel (In Watts)	52.86 dBm 193.39 W
Total EIRP per Sector (In Watts)	61.90 dBm 1547.11 W
nsg	9.8540
Power Density (S) =	0.013770 mW/cm^2
T-Mobile Worst Case % MPE =	1.3770%
<i>Equation Used :</i>	
$S = \frac{(1000(\text{grf})^2(\text{Power}) * 10^{(\text{nsg}10)}}{4\pi(R)^2}$	
<i>Office of Engineering and Technology (OET) Bulletin 65, Edition 97-01, August 1997</i>	

Co-Location Total

Carrier	% of Standard
PD	1.1000 %
Manchester BOE	1.1800 %
Sprint PCS	9.2100 %
AT&T Wireless	5.2700 %
Pub Works	1.5600 %
Town FD	1.4500 %
Hartford City FD	0.7600 %
SP Hotline	1.8200 %
RAFS-TX	2.5000 %
Eight Utilities District	0.1700 %
Total Excluding T-Mobile	25.0200 %
T-Mobile	1.3770
Total % MPE for Site	26.3970%