LeBoeuf, Lamb, Greene & MacRae

L.L.P.

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TS-T-MOBILE-062-030709

July 9, 2003

Pamela Katz, Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Request by T-Mobile for an Order to Approve the Shared Use of a Tower Facility at 2895 State Street, Hamden, Connecticut

Dear Chairman Katz and Members of the Council:

Please be advised that LeBoeuf, Lamb, Greene & MacRae, L.L.P. represents Omnipoint Communications, Inc., a subsidiary of T-Mobile USA, Inc. (hereinafter T-Mobile) in the above-referenced matter. Pursuant to Connecticut General Statutes §16-50aa, T-Mobile hereby requests an order from the Connecticut Siting Council ("Council") approving T-Mobile's proposed shared use of an existing tower located at 2895 State Street (Route 5) in Hamden, Connecticut. T-Mobile proposes to install antennas on the existing tower, and the equipment associated with this facility would be located near the base of the tower within the existing compound (see drawing A-1 attached as part of Exhibit B). T-Mobile requests that the Council find that the proposed shared use of the tower satisfies the criteria stated in §16-50aa and issue an order approving the proposed use. The chief elected official of Hamden, Mayor Carl Amento, has been notified via First Class Mail.

Background

T-Mobile operates "Wideband PCS" licenses for the 2-Ghz PCS frequencies for the greater New York City area, including the entire State of Connecticut. Omnipoint is licensed by the Federal Communications Commission (FCC) to provide PCS wireless telecommunications service in Connecticut, which includes the area to be served by the proposed installation.

The tower at 2895 State Street in Hamden is an existing one hundred forty foot (140') monopole. The top of the tower extends to the one hundred forty-four foot six inch (144'-6") elevation above ground level ("AGL") as the foundation extends four feet six inches (4'-6") above the ground. The tower is located in a lowland area near the Quinnipiac River.[1] The coordinates for the site are **Lat 41.36008333 N** and **Long 72.88569444 W.** The tower is located approximately 800 hundred feet (800') east of State Street and approximately eleven hundred feet (1,100') west of the center of the Quinnipiac River which at this point is the Hamden/North Haven town line. The tower is in the area of the "Quinnipiac River flats." The tower is owned by Nextel Communications, Inc., with the underlying landowner being the State Fire Industrial Park, Inc. T-Mobile and the owner have agreed to mutually acceptable terms and conditions for the proposed shared use of this tower, and the owner has authorized T-Mobile to act on its behalf to apply for all necessary local, state and federal permits, approvals and authorizations which may be required for the proposed shared use of this facility. The tower is designed and built to hold multiple carrier antennas at multiple elevations AGL. These elevations are listed on the elevation drawing 3, A-1 attached as part of Exhibit B and are also diagramed in the structural analysis (Exhibit D). Currently, there are telecommunications antennas for Nextel at the one hundred forty-four foot six inch (144'-6") centerline AGL and microwave dishes at one hundred thirty-nine foot six inch (139'-6") elevation AGL and one hundred nineteen foot six inch (119'-6") elevation AGL.

T-Mobile proposes to install an antenna cluster comprised of three (3) sectors, with three (3) antennas per sector for a total of nine (9) antennas. The model number for each antenna is EMS RR65-18-02 DP. The antennas would be mounted on a low profile platform. The proposed antennas would be located at the one hundred thirty-two foot six inch (132'-6") centerline AGL. The antenna mounting plan is shown on drawing 4, A-1 attached as part of Exhibit B. The radio transmission equipment associated with these antennas, three (3) Nortel S8000 BTS cabinets and one (1) power/telco cabinet, would be located near the base of the tower mounted onto the tower foundation within a proposed leased fifteen foot by fifteen foot (15' x 15') square area. A new cable bridge would be installed to run the coaxial cables to the tower. The tower and all of the equipment for all existing and proposed carriers is within an existing compound surrounded by a gated six foot (6') high chain link fence with three strands of barbed wire (shown on drawing 2, A-1, attached as part of Exhibit B). Access to the compound is via an existing access drive from State Street (see drawing 1, A-1). Utilities will be run from existing utility sources approved by the owner via underground conduits and the top of the existing tower foundation (shown in drawing 2, A-1, attached as part of Exhibit B). A new guardrail will be installed by T-Mobile on top of the tower foundation in the area of the proposed equipment.

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[1] To avoid confusion, the elevations represented in this application are figured from the ground, taking in the foundation as part of the overall figure AGL.

C.G.S. §16-50aa (c) (1) provides, in pertinent part, that upon written request for approval of a proposed shared use, "if the council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such shared use." The shared use of the tower satisfies those criteria 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 D. The proposed shared use of this tower therefore is technically feasible.

B. **Legal Feasibility** Under C.G.S. § 16-50aa, the Council has been authorized to issue orders approving the proposed shared use of an existing tower facility such as the facility at State Street in Hamden. This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. C.G.S. § 16-50x(a) vests exclusive jurisdiction over these facilities in the Council, which shall "give such consideration to other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing tower facilities. Under this statutory authority vested in the Council, an order by the Council approving the shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. **Environmental Feasibility** The proposed shared use would have minimal environmental effects, if any, for the following reasons:

1. The proposed installations (i.e., three (3) sectors with one (2) antennas per sector) would have an insignificant incremental visual impact, and would not cause any significant change or alteration in the physical or environmental characteristics of the existing site. In particular, the proposed installations would not increase the height of the actual existing tower, and would not extend the boundaries of the existing compound area. The tower is designed to accommodate multiple carriers.

2. The proposed installations would not increase the noise levels at the existing facility by six decibels or more.

3. Operation of antennas at this site would not exceed the total radio frequency electromagnetic radiation power density level adopted by the American National Standards Institute ("ANSI"). The "worst-case" exposure calculated for operation of this facility (i.e., calculated at the base of the tower, which represents the closest publicly accessible point within the broadcast field of the antennas) will be 0.04522 mW/cm2, which is 4.522% of the Maximum Permissible Emission (MPE). The power density calculation from other existing and proposed carriers is 1.1% of the MPE. T-Mobile's proposal, when combined with all other coverage, accounts for a cumulative power density of 5.622% of the MPE standard. These calculations are based on three (3) sectors of three (3) antennas (or a total of nine antennas) and are attached as Exhibit E.

4. The proposed installations would not require any water or sanitary facilities, or generate air emissions or discharges to water or sanitary facilities or to water bodies. After construction is complete (approximately two (2) weeks), the proposed installations would not generate any traffic other than periodic maintenance visits.

The proposed use of this facility would therefore have a minimal environmental effect, if any, and is environmentally feasible.

D. **Economic Feasibility** As previously mentioned, the owner and T-Mobile have entered into a mutual agreement to share the use of the existing tower on terms agreeable to the parties. The proposed tower sharing is therefore economically feasible.

E. **Public Safety Concerns** As stated above, the existing tower is structurally capable of supporting the proposed T-Mobile antennas. The tower stands on a compound accessible from State Street via an access road. T-Mobile is not aware of any public safety concerns relative to the proposed sharing of the existing tower. In fact, the provision of new or improved phone service through shared use of the existing tower will enhance the safety and welfare of area residents and the public.

Conclusion

For the reasons discussed above, the proposed shared use of the existing tower facility at State Street in Hamden, Connecticut satisfies the criteria stated in C.G.S. §16-50aa, and advances the General Assembly's and the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. T-Mobile therefore respectfully requests that the Council issue an order approving the proposed shared use of this tower.

Thank you for your consideration of this matter.

Respectfully submitted,

T-MOBILE USA, INC.

By: _____

Its Counsel
Stephen J. Humes

Attachments

cc: Mayor Carl Amento

Exhibit A

Site Map
2895 State Street
Hamden, Connecticut

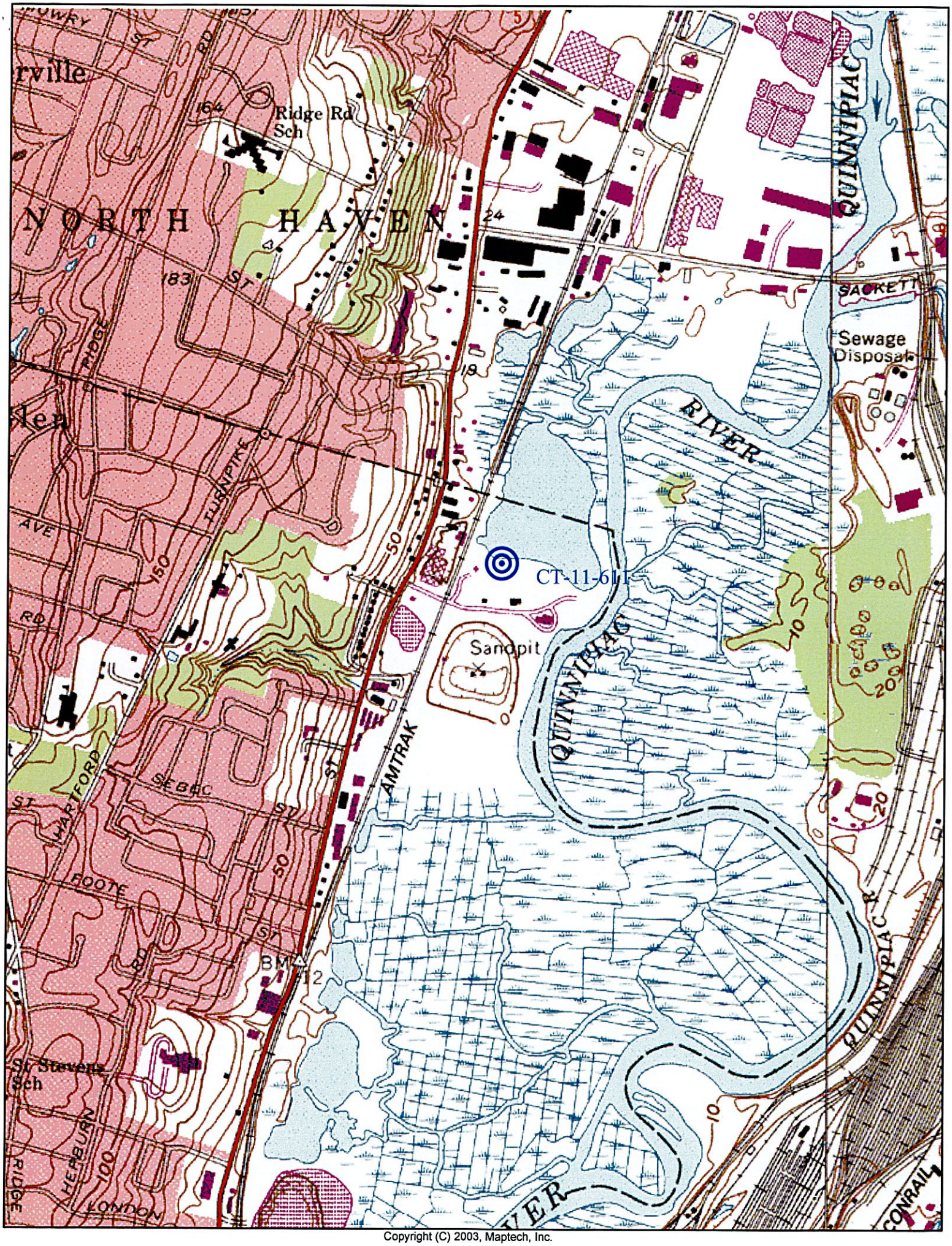
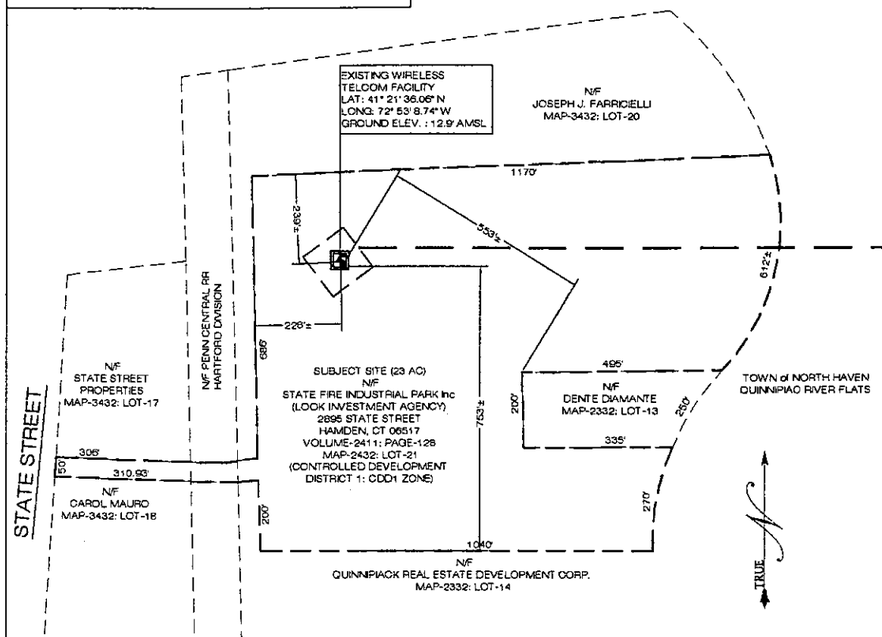


Exhibit B

Design Drawings

2895 State Street
Hamden, Connecticut

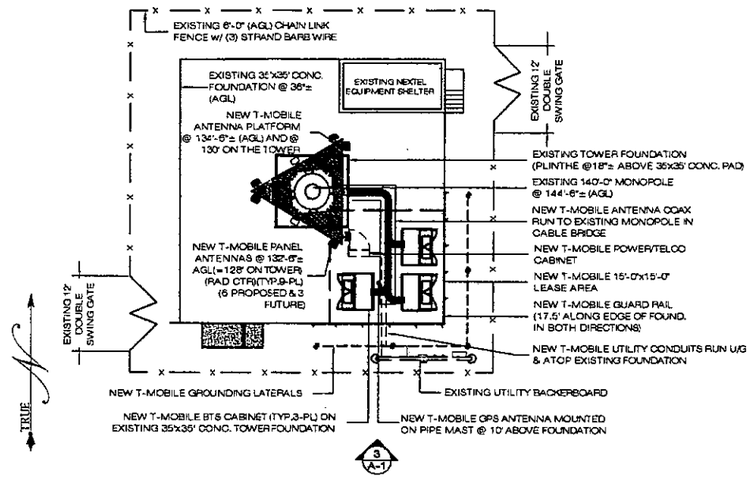
NOTE:
BASE MAPPING FROM TOWN of HAMDEN ASSESSOR's MAPPING & 1"=40'
EXISTING CONDITIONS SURVEY CT 1964 HAMDEN 2895 STATE STREET
HAMDEN, CT DATED: 04/27/99 PREPARED BY DIVERSIFIED TECHNOLOGY
CONSULTANTS of NORTH HAVEN, CT



1 A-1 **PLOT PLAN** SCALE: 1"= 200'-0"

0 100' 200' 400'

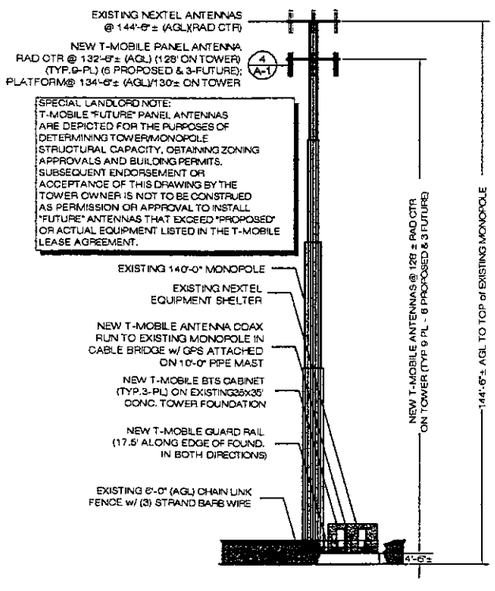
NOTE: ACCESS TO SITE IS FROM EXISTING NEXTEL ACCESS EASEMENT ACROSS SUBJECT TO STATE STREET.



2 A-1 **ENLARGED COMPOUND PLAN** SCALE: 1"= 10'-0"

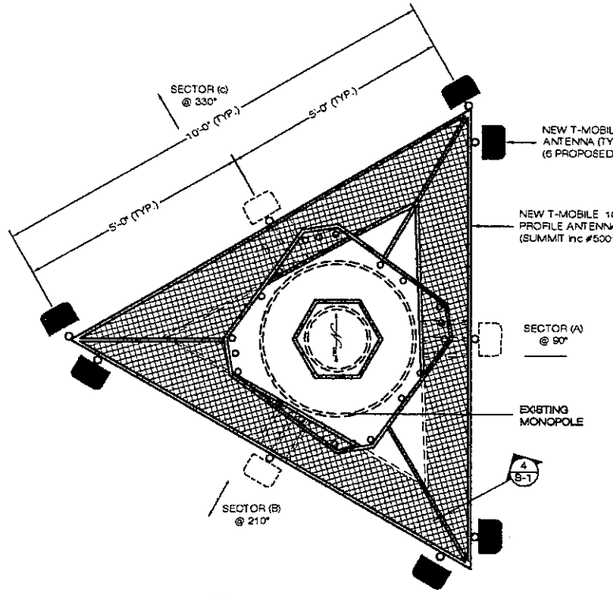
0 5 10 20

NOTE:
EXISTING UTILITY BACKERBOARD
NOT SHOWN FOR CLARITY PURPOSES



3 A-1 **SOUTHERN ELEVATION** SCALE: 1"= 20'-0"

0 10 20 40



4 A-1 **ANTENNA PLATFORM DETAIL** SCALE: NTS

NOTES

1) ALL DIVENSIONS SHOWN THUS ± ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS & ELEVATIONS WHICH EFFECTS THE CONTRACTORS WORK. CONTRACTOR TO VERIFY ALL DIMENSIONS w/ OWNER PRIOR TO CONSTRUCTION.
2) NORTH ARROW SHOWN ON PLANS REFERS TO TRUE NORTH. CONTRACTOR SHALL VERIFY TRUE NORTH & INFORM CONSTRUCTION MANAGER of ANY DISCREPANCIES BEFORE STARTING CONSTRUCTION.
3) THE GENERAL CONTRACTOR and/or HIS SUB CONSULTANT SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS & INSPECTIONS WHICH MAY BE REQ'D FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTRY or LOCAL GOVERNMENT AUTHORITY.
4) ANTENNA INSTALLATION SHALL BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY & ERECTION of RADIO ANTENNAS, TRANSMISSION LINES & SUPPORT STRUCTURES.
5) COAXIAL CABLE CONNECTORS & TRANSMITTER EQUIPMENT SHALL BE PROVIDED BY THE OWNER & IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. A SCHEDULE of OWNER SUPPLIED MATERIALS IS ATTACHED TO THE BID DOCUMENTS (SEE ATTACHMENT K). ALL OTHER HARDWARE TO BE PROVIDED BY THE CONTRACTOR. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.
6) ANY EQUIPMENT THAT IS TO BE PAINTED SHALL BE PAINTED TO MATCH EXISTING. PAINT SHALL BE SHERWIN WILLIAMS, COROTHANE II. SURFACE PREPARATION & APPLICATION SHALL BE IN ACCORDANCE w/ MANF's SPECIFICATIONS & T-MOBILE GUIDELINES.
7) COORDINATION, LAYOUT, & FURNISHING of CONDUIT, CABLE & ALL APPURTENANCES REQ'D FOR PROPER INSTALLATION of ELECTRICAL & TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY of THE CONTRACTOR.
8) EQUIPMENT WILL BE INDEPENDENTLY POWERED w/ SEPARATE METER.
9) PRIOR TO EXCAVATION NEAR TOWER, CONTRACTOR TO CONTACT & COORDINATE w/ PROPERTY OWNER.
10) ALL ACTIVE SEWER, WATER, GAS, ELECTRIC, & OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, & WHERE REQ'D FOR THE PROPER EXECUTION of THE WORK, SHALL BE RELOCATED as DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING or PIER DRILLING AROUND or NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.
11) ALL IN-ACTIVE SEWER, WATER, GAS, ELECTRIC & OTHER UTILITIES, WHICH INTERFERE w/ THE EXECUTION of THE WORK, SHALL BE REMOVED and/or CAPPED, PLUGGED or OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE w/ THE EXECUTION of THE WORK, SUBJECT TO THE APPROVAL of UTILITY COMPANY ENGINEERING.
12) THE AREAS of THE PROPERTY DISTURBED BY THE WORK & NOT COVERED BY THE EQUIPMENT, DRIVEWAY or GRAVEL, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED & COVERED w/ MULCH.
13) THE CONTRACTOR SHALL ESTABLISH & MAINTAIN SOIL EROSION & SEDIMENTATION CONTROLS AT ALL TIMES DURING CONSTRUCTION.
14) ALL UTILITY WORK SHALL BE IN ACCORDANCE w/ LOCAL UTILITY COMPANY REQUIREMENTS & SPECIFICATIONS.
15) PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE REQ'D TO MEET NATIONWIDE STANDARDS FOR WIRELESS COMMUNICATIONS SYSTEMS. T-MOBILE IMPLEMENTATION REQUIRES DEPLOYMENT of EQUIPMENT & ANTENNAS GENERALLY DEPICTED on THIS PLAN, ATTACHED TO or MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINETS. T-MOBILE RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO (E911) EQUIPMENT & LOCATION as TECHNOLOGY EVOLVES TO MEET REQ'D SPECIFICATION.

ABBREVIATIONS

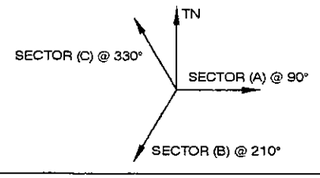
SF	SQUARE FOOT	ADJ	ADJUSTABLE
APPROX	APPROXIMATE	SHT	SHEET
CONC	CONCRETE	SIM	SIMILAR C CONDUIT
CONT	CONTINUOUS	STL	STEEL
CJ	CONSTRUCTION JOINT	TOC	TOP OF CONCRETE
DIA	DIAMETER	TOM	TOP OF MASONRY
DWG	DRAWING	TYP	TYPICAL
EGB	EQUIPMENT GROUND BAR	VIF	VERIFY IN FIELD
EA	EACH	UON	UNLESS OTHERWISE NOTED
ELEC	ELECTRICAL	WWF	WELDED WIRE FABRIC
EL	ELEVATION	BTS	BASE TRANSMISSION STATION
EQ	EQUAL	w/	WITH
EQUIP	EQUIPMENT	LNA	LOW NOISE AMPLIFIER
EXT	EXTERIOR	PCS	PERSONAL COMM. SERVICES
FF	FINISHED FLOOR	A-1	ANTENNA MARK NO.
FG	FINISHED GRADE	&	AND
GA	GAUGE	@	AT
GALV	GALVANIZED	℄	PLATE BAR
GC	GENERAL CONTRACTOR	MIN	MINIMUM
LG	LONG	MTL	METAL
MAX	MAXIMUM	NIC	NOT IN CONTRACT
MECH	MECHANICAL	NTS	NOT TO SCALE
MFR	MANUFACTURER	OC	ON CENTER
MGB	MASTER GROUND	OPP	OPPOSITE
AGL	ABOVE GROUND LEVEL		
ARL	ABOVE ROOF LEVEL		
AFL	ABOVE FLOOR LEVEL		

SYMBOLS AND MATERIALS

NEW ANTENNA
EXISTING ANTENNA
ASPHALT
NEW ACCESS EASEMENT
CONCRETE
ELECTRIC BOX
LIGHT POLE
FND. MONUMENT
SPOT ELEVATION
SET POINT
REVISION
GRID REFERENCE
DETAIL REFERENCE
ELEVATION
SECTIONS & DETAILS

"GROUT or PLASTER
BRICK
MASONRY
CONCRETE
EARTH
GRAVEL
PLYWOOD
SAND
WOOD CONT.
WOOD BLOCKING
STEEL
CENTERLINE
PROPERTY LINE
STEPPED FOOTING
MATCH LINE
WORK POINT
GROUND WIRE
COAXIAL CABLE

ANTENNA ORIENTATION KEY



T-Mobile
100 FILLEY STREET
BLOOMFIELD, CT 06002
OFFICE: (860)-692-7100
FAX: (860)-692-7159

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

STATE OF CONNECTICUT
SCOTT M. CHASSE
No.19728
LICENSED PROFESSIONAL ENGINEER

APPROVALS

LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
A/E _____

PROJECT NO: CT-11-611-B

DRAWN BY: GWA

CHECKED BY: SMC

SUBMITTALS

1	09/19/03	CONSTRUCTION FINAL :SMC
0	06/06/03	CONSTRUCTION :GWA

CT-11-611-B
NEXTEL HAMDEN
2895 STATE STREET
HAMDEN, CT 06517

SHEET TITLE
SITE & COMPOUND PLAN, ELEVATION & DETAILS

SHEET NUMBER
A-1

Exhibit C

Equipment Specifications

2895 State Street

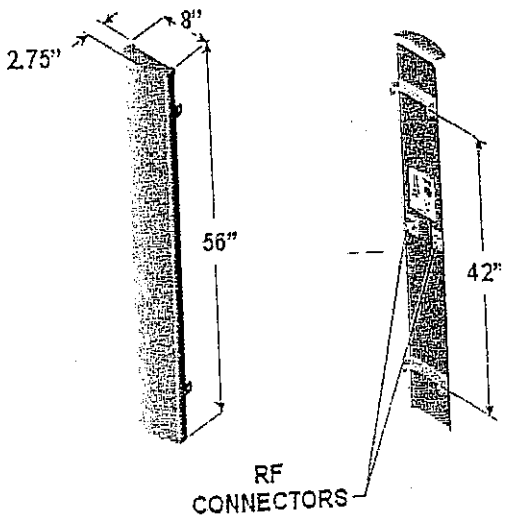
Hamden, Connecticut

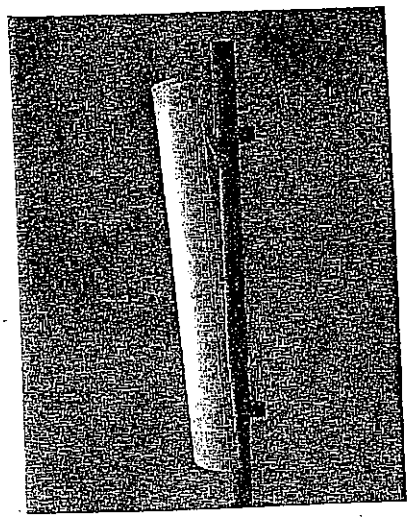
EMS Wireless 65° To be used in urban areas.

OptiRange™ Suppressor™

RR65-18-XXDPL2

1850 MHz - 1990 MHz (PCS)





65° beamwidth

17.5 dBi gain

±45° Dual Pol

56 inch

SPECIFICATIONS

Electrical

Gain	17.5 dBi (15.4 dBd)
Azimuth Beamwidth (-3 dB)	65°
Elevation Beamwidth (-3 dB)	6°
Elevation Sidelobes (Upper)	>18 dB
Front-to-Back Ratio	>25 dB (≥ 30dB Typ.)
Polarization	Slant, ±45
Port-to-Port Isolation	>30 dB
Electrical Downtilt Options	0°, 2°
VSWR	1.35:1 Max
Connectors	2; 7-16 DIN (female)
Power Handling	250 Watts CW
Passive Intermodulation	≤ -147 dBc [2x20W (+43 dBm)]
Lightning Protection	Chassis Ground

Mechanical

Dimensions (L x W x D)	56in x 8in x 2.75in (142 cm x 20.3 cm x 7.0 cm)
Rated Wind Velocity	150 mph (241 km/hr)
Equivalent Flat Plate Area	3.1ft² (.29 m²)
Front Wind Load @ 100 mph (161 kph)	90 lbs (400 N)
Side Wind Load @ 100 mph (161 kph)	31 lbs (139 N)
Weight	18 lbs (8.2 kg)

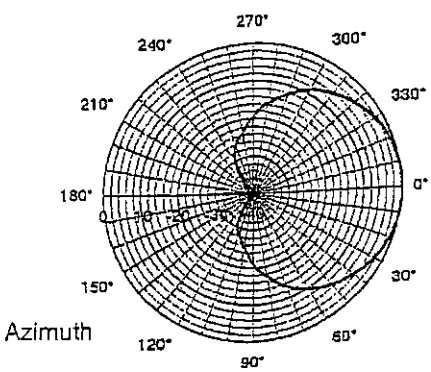
Note: Patent Pending and US Patent number 5, 757, 246.

Values and patterns are representative and variations may occur. Specifications may change without notice due to continuous product enhancements. Digitized pattern data is available from the factory or via the web site www.emswireless.com and reflect all updates.

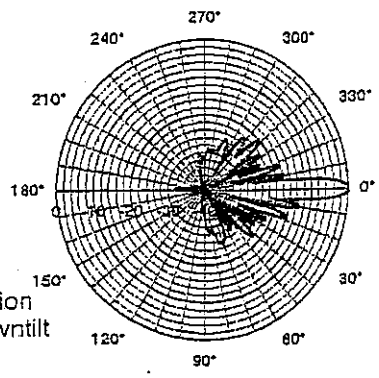
MOUNTING OPTIONS

Model Number	Description	Comments
MTG-P00-10	Standard Mount (Supplied with antenna)	Mounts to Wall or 1.5 inch to 5.0 inch O.D. Pole (3.8 cm to 12.7 cm)
MTG-S02-10	Swivel Mount	Mounting kit providing azimuth adjustment.
MTG-DXX-20*	Mechanical Downtilt Kits	0° - 10° or 0° - 15° Mechanical Downtilt
MTG-CXX-10*	Cluster Mount Kits	3 antennas 120° apart or 2 antennas 180° apart
MTG-C02-10	U-Bolt Cluster Mount Kit	3 antennas 120° apart, 4.5" O.D. pole.
MTG-TXX-10*	Steel Band Mount	Pole diameters 7.5" - 45"

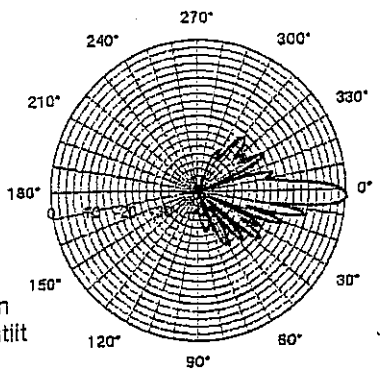
* Model number shown represents a series of products. See mounting options section for specific model number.



Azimuth



Elevation
0° Downtilt



Elevation
2° Downtilt

4.1.1 Dimensions and Weight

Table 1 – Dimensions of the S12000 BTS

	Populated cabinet		Depopulated cabinet	
	(cm)	(in)	(cm)	(in)
Height	191	75.2	172	67.7
Depth	65	25.6	65	25.6
Width	135	53.2	135	53.2

Table 2 – Weight of the S12000 BTS

	Populated cabinet (full configuration)		Depopulated cabinet	
	(kg)	(lb.)	(kg)	(lb.)
S12000	570	1257	200	441

Note: The pallet weights 19kg (42 lb.) and has a height of 13cm (5.1 in)

Note: The height of S12000 Outdoor with the hood open is 256 cm (100.8 in)

The BTS floor print can be found in section 10.2 Appendix B.

4.1.2 Key Cabled Cabinet Components

A low mass, mechanically strong external cabinet housing containing:

- All mechanical sub-racks and mechanical support systems required for the installation, transport and operation of the GSM wireless equipment to be housed within.
- A forced ventilation, low acoustic Direct Ambient Cooling System (DACS)
- An AC/DC power system
- A fixed DC distribution system to power the enclosed electronic equipment
- A Power Amplifier Interconnection module (PA-ICO)
- DRX interconnection modules (DRX ICO) (A&B)
- Combiner interconnection modules (COMICO) (A&B)
- A batteries box

Refer to section 10.1 Appendix A for a general overview of the S12000.

4.1.3 Environmental Requirements

Table 3 – Operational Temperature and Humidity

Normal	Range
Optimized operating temperature	-20°C (-4°F) to 40°C (104°F)
Total operating temperature	-40°C (-40°F) to 50°C (122°F)
Normal Operating humidity	15% to 100% relative humidity (non-condensing)
Absolute humidity	0,26 g/m3 to 36 g/m3

- Storage requirements

The S12000 meets the requirements of reference document R10 class 1.2

- Transport requirements

The S12000 meets the requirements of reference document R11 class 2.2

- Ingress protection

The cabinet shall be weather resistant to prevent ingress of rain, snow, dust and other solid foreign objects to a minimum level of IP55 as specified by reference document R3. The maximum permitted water ingress under test conditions shall be 5ml.

- Noise

LWAd < 63 dB (A) measured in accordance with reference document R8 if $Temp_{ext}$ < 40°C (104°F)

The maximum sound power level emitted from the S12000 Outdoor cabled cabinet, when fully populated and measured in accordance with the requirements of reference document R8, shall not exceed:

- Normal speed operation: 63 dB (A) (when temperature is < 40°C)
- Maximum speed operation: 70 dB (A) (when temperature is >40°C)

Note: The noise may be higher than the one previously indicated due to the real configuration of the site (proximity of walls or any reflecting surfaces). Specific protections against noise can be added to comply with the local recommendations.

- External air flow rate

Normal speed operation: 800 m^3 / hour

Exhibit D

Structural Analysis

2895 State Street
Hamden, Connecticut

ALL-POINTS TECHNOLOGY CORPORATION, P.C.

T-Mobile USA
100 Filley Street
Bloomfield, CT 06002

July 2, 2003

Re: 140' Engineered Endeavors, Inc. Tower
Hamden, Connecticut
T-Mobile Site # CT 11 611B
Nextel Hamden
APT Project # CT107391

Dear Ms. Overbey,

I am writing with regard to your proposed antenna array to be installed on the 140' EEI tower located in Hamden, Connecticut. I evaluated the monopole (EEI file number 5315-PO1) in accordance with EIA/TIA-222-F, *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures*. My evaluation consisted of comparing the design loading shown on the EEI drawings with the following antenna loads:

- (9) EMS DRXX-19-XXDQP and (9) Low-Noise Amplifiers located on a standard mounting platform attached at 130 feet (tower height) and 134.5 feet +/-AGL with antenna rad centers at 128 feet (tower height) and 132.5 feet +/-AGL (note: top of foundation is approx. 4.5 feet AGL); (18) 1-5/8" waveguide cables; and
- (12) ALP-E-9011 antennas on standard mounting frames w/ 1-5/8" waveguide cables at 140', 120', and 110' on the tower and two six-foot diameter microwave dishes at 135 feet and 115 feet on the tower (note: top of foundation is approx. 4.5 feet AGL).

My evaluation indicates the tower and foundation are capable of supporting the specified antenna loads.

We appreciate this opportunity to provide you with our services. Please call if you have any questions.

Sincerely,

All-Points Technology Corporation, P.C.

Scott M. Chasse, P.E.
Principal

STATE OF CONNECTICUT
SCOTT M. CHASSE
No. 18728
LICENSED
PROFESSIONAL ENGINEER

F:_APT FILES\APT_107 T-Mobile NE\CT\390 - Nextel Hamden\CORRESPONDENCE\CT107390 - Str'l Opinion Letter.doc

☑ 3 SADDLEBROOK DRIVE • KILLINGWORTH, CONNECTICUT 06419 • PHONE: 860-663-1697 • FAX: 860-663-0935
☐ 150 OLD WESTSIDE ROAD • NORTH CONWAY, NEW HAMPSHIRE 03860 • PHONE/FAX: 603-356-5214

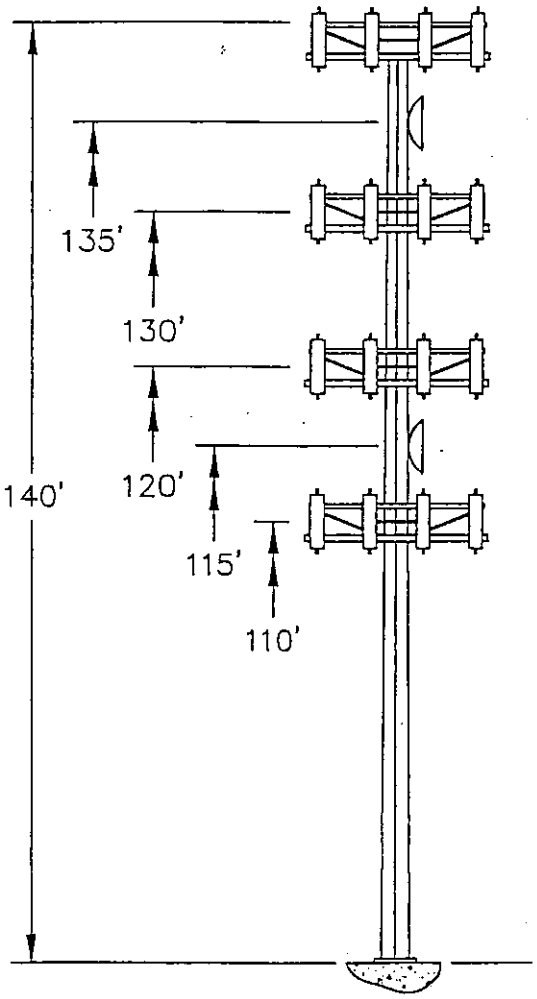
ENGINEERED ENDEAVORS INCORPORATED

Customer NEXTEL/NY | By K. BACON | 08/16/99 (Date)

Structure 140'-0" MONOPOLE | Checked | 5315 (Job/Quote No.)

SITE LOCATION: HAMDEN, CT
SITE NAME: PT1984/HAMDEN

REVISION 1



ANTENNA LOADING:

(12) SWEDCOM ALP-E 9011 ANTENNAS
STANDARD PLATFORM

(1) 2'ø 6 Ghz MICROWAVE @ 135' (FUTURE)

(12) SWEDCOM ALP-E 9011 ANTENNAS @ 130' (FUTURE)
STANDARD PLATFORM @ 130' (FUTURE)

(12) SWEDCOM ALP-E 9011 ANTENNAS @ 120' (FUTURE)
STANDARD PLATFORM @ 120' (FUTURE)

(1) 2'ø 6 Ghz MICROWAVE @ 115' (FUTURE)

(12) SWEDCOM ALP-E 9011 ANTENNAS @ 110' (FUTURE)
STANDARD PLATFORM @ 110' (FUTURE)

DESIGN NOTES:

DESIGNED IN ACCORDANCE WITH TIA/EIA 222-F
85 MPH BASIC WIND SPEED
1/2" RADIAL ICE

CASE I - 50 MPH OPERATIONAL WIND SPEED
ALLOWABLE ROTATION - 4.92° @ 135'-0"

CASE II - 85 MPH BASIC WIND SPEED

CASE III - 75% OF 85 MPH WIND PRESSURE
WITH 1/2" RADIAL ICE

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

STATE OF CONNECTICUT * MICHAEL R. MOREL * No. 21220 * LICENSED PROFESSIONAL ENGINEER *

10/13/00

ENGINEERED ENDEAVORS, INC.

7610 Jenther Drive • Mentor, Ohio 44060
Telephone: (440) 918-1101 • Telefax: (440) 918-1108

Exhibit E

Power Density Calculations

2895 State Street

Hamden, Connecticut

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

Technical Memo

To: Karin Hansen
From: Jeetendra Ghare - Radio Frequency Engineer
cc: Overbey Jason
Subject: Power Density Report for CT11611B
Date: July 2, 2003

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 2891 State St, Hamden, 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 RR65-18-02DP.
4) The antenna center line height is 128 ft.
5) The maximum transmit power from any sector is 3067.74 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 2891 State St, Hamden, CT, is 0.04522 mW/cm^2. This value represents 4.522% of the Maximum Permissible Emission (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 1.1%. The combined Power Density for the site is 5.622% of the M.P.E. standard.

New England Market
Connecticut
Worst Case Power Density

Site:	**CT11611B**
Site Address:	**2891 State St**
Town:	**Hamden**
Tower Height:	**140 ft.**
Tower Style:	**Monopole**
Base Station TX output	14 W
Number of channels	8
Antenna Model	EMS RR65-18-02DP
Cable Size	1 5/8 in.
Cable Length	140 ft.
Antenna Height	128.0 ft.
Ground Reflection	1.6
Frequency	1935.0 MHz
Jumper & Connector loss	1.00 dB
Antenna Gain	17.0 dBi
Cable Loss per foot	0.0116 dB
Total Cable Loss	1.6240 dB
Total Attenuation	2.6240 dB
Total EIRP per Channel	55.84 dBm
(In Watts)	383.47 W
Total EIRP per Sector	64.87 dBm
(In Watts)	3067.74 W
nsg	14.3760
Power Density (S) =	**0.045219 mW/cm^2**
T-Mobile USA Worst Case % MPE =	**4.5219%**

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	
Sprint PCS	
AT&T Wireless	
Nextel	1.1000 %
Total Excluding T-Mobile USA	**1.1000 %**
T-Mobile USA	4.5219
Total % MPE for Site	**5.6219%**