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.state.ct.us/csc/index.htm

September 24, 2003

Stephen J. Humes
LeBoeuf, Lamb, Greene & MacRae
Goodwin Square
225 Asylum Street
Hartford, CT 06103

RE: **TS-T-MOBILE-078-030912** - Omnipoint Communications, Inc., request for an order to approve tower sharing of an existing telecommunications facility located at 1725 Stafford Road (Route 32), Mansfield, Connecticut.

Dear Attorney Humes:

At a public meeting held September 23, 2003, 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 September 12, 2003.

Thank you for your attention and cooperation.

Very truly yours,

Pamela B. Katz, P.E.
Chairman

PBK/laf

c: Honorable Elizabeth Patterson, Mayor, Town of Mansfield
Martin Berliner, Town Manager, Town of Mansfield
Gregory Padick, Town Planner, Town of Mansfield
Christopher B. Fisher, Esq., Cuddy & Feder LLP

LEBOEUF, LAMB, GREENE & MACRAE
L.L.P.
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TS-T-MOBILE-078-030912

September 12, 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 1725 Stafford Road, Mansfield, 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 1725 Stafford Road (Route 32) in Mansfield, 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 Mayor, Elizabeth C. Paterson, and The Town Manager, Martin Berliner, have been notified of this application 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 1725 Stafford Road in Mansfield is an existing one hundred seventy foot (170') monopole. The coordinates for the site are **Lat 41°-50'-09" N and Long 72°-18'-28" W.** The tower is located on the northwest corner of the intersection of Stafford Road (Route 32) and Storrs Road (Route 195) in the northwestern corner of Mansfield where it borders with Coventry (to the west) and Willington (to the north). The tower is owned by TCP Communications, with the underlying landowner being the Town of Mansfield. 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 above ground level ("AGL"). These elevations are listed on the elevation drawing 3, A-1 attached as part of Exhibit B. Currently, there are telecommunications antenna locations planned for other carriers at the one hundred sixty-seven foot (167'-0") centerline AGL, the one hundred fifty-seven foot (157'-0") centerline AGL, the one hundred forty-seven foot (147'-0") centerline AGL, the one hundred twenty-seven foot (127'-0") centerline AGL, and the one hundred seventeen foot (117'-0") centerline 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 RR90-17-02 DP. The antennas would be mounted on a triangular low-profile platform. The antennas would be located at the one hundred thirty-seven foot (137'-0") centerline AGL. The antenna platform detail is shown on drawing 2, A-1 attached as part of Exhibit B. The radio transmission equipment associated with these antennas, three (3) Nortel S12000 BTS cabinets and one (1) power/telco cabinet, would be located near the base of the tower on two proposed five foot by ten foot (5' x 10') concrete pads within a proposed leased ten foot by twenty foot (10' x 20') 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 chain link fence (shown on drawing 1, A-1, attached as part of Exhibit B). Access to the compound is via an existing access drive off of Stafford Road. Utilities will be run from existing utility sources approved by the owner via underground conduits (shown in drawing, A-1, attached as part of Exhibit B).

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 structural analysis concludes that the existing monopole can safely accommodate the proposed T-Mobile antennas. 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 Stafford Road in Mansfield. 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 three (3) 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 0.02172 mW/cm2, which is 2.172% of the Maximum Permissible Emission (MPE). The power density calculation from other existing and proposed carriers is 14.66% of the MPE. T-Mobile's proposal, when combined with all other coverage, accounts for a cumulative power density of 16.832% of the MPE standard. These calculations are based on three (3) sectors of three (3) antennas (or a total of nine (9) 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 generate air emissions or discharges 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 Stafford Road 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 Stafford Road in Mansfield, 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, Elizabeth C. Paterson
Town Manager, Martin Berliner

Exhibit A

Site Map
1725 Stafford Road
Mansfield, Connecticut

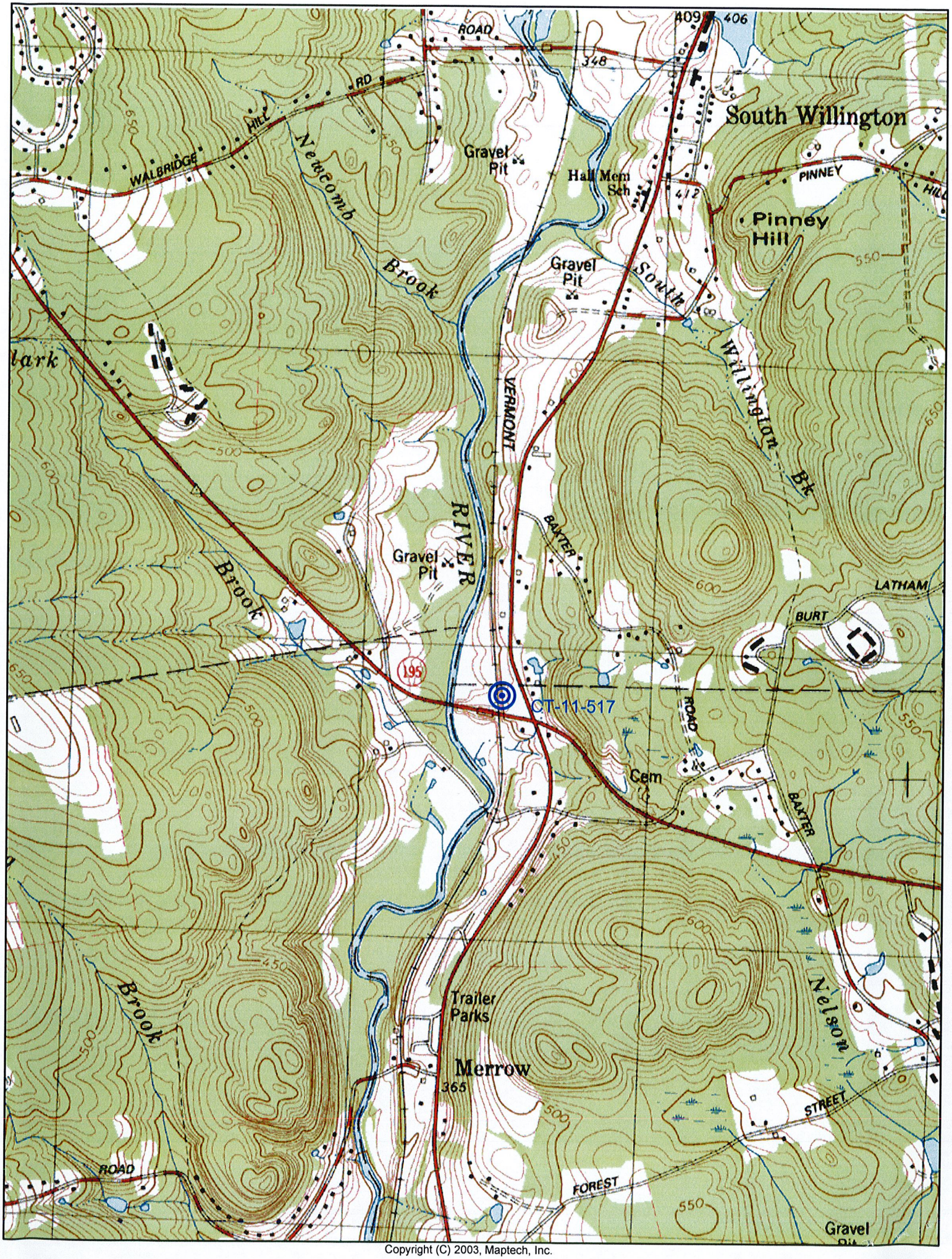
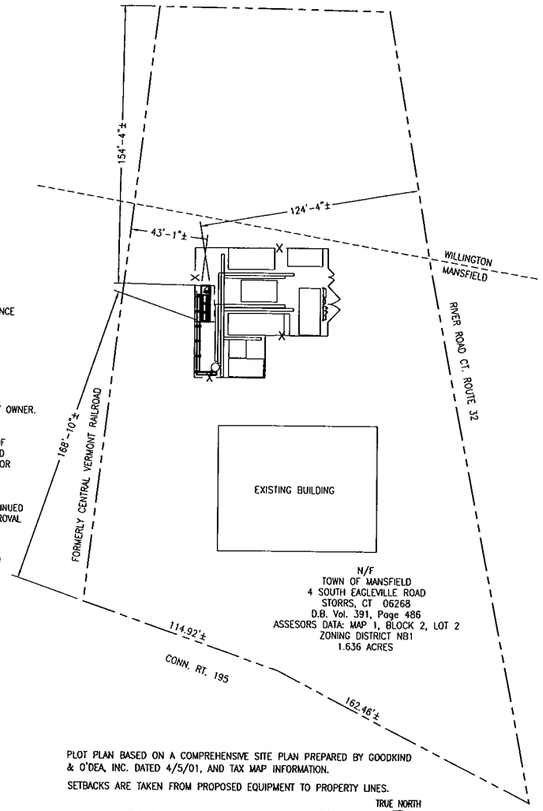


Exhibit B

Design Drawings
1725 Stafford Road
Mansfield, Connecticut

NOTES:

1. ALL DIMENSIONS SHOWN THUS ± ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS WHICH EFFECTS THE CONTRACTORS WORK. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH OWNER PRIOR TO CONSTRUCTION.
2. NORTH ARROW SHOWN ON PLANS REFERS TO TRUE NORTH. CONTRACTOR SHALL VERIFY TRUE NORTH AND 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 AND INSPECTIONS WHICH MAY BE REQUIRED 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 AND ERECTION OF RADIO ANTENNAS, TRANSMISSION LINES AND SUPPORT STRUCTURES.
5. COAXIAL CABLE CONNECTORS AND TRANSMITTER EQUIPMENT SHALL BE PROVIDED BY THE OWNER AND 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 AND APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS AND OMNIPOINT GUIDELINES.
7. COORDINATION, LAYOUT, AND FURNISHING OF CONDUIT, CABLE AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. EQUIPMENT WILL BE INDEPENDENTLY POWERED WITH SEPARATE METER.
9. PRIOR TO EXCAVATION NEAR (E)TOWER, CONTRACTOR TO CONTACT AND COORDINATE WITH PROPERTY OWNER.
10. ALL (E)ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED 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 (E)INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF UTILITY COMPANY ENGINEERING.
12. THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE EQUIPMENT, DRIVEWAY OR GRAVEL, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED AND COVERED WITH MULCH.
13. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN SOIL EROSION AND SEDIMENTATION CONTROLS AT ALL TIMES DURING CONSTRUCTION.
14. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
15. PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE IS REQUIRED TO MEET NATIONWIDE STANDARDS FOR WIRELESS COMMUNICATIONS SYSTEMS. T-MOBILE IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT AND 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 AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIRED SPECIFICATIONS.



N/F
TOWN OF MANSFIELD
4 SOUTH EAGLEVILLE ROAD
STORRS, CT 06268
D.B. Vol. 391, Page 486
ASSESORS DATA: MAP 1, BLOCK 2, LOT 2
ZONING DISTRICT NB1
1.636 ACRES

PLOT PLAN BASED ON A COMPREHENSIVE SITE PLAN PREPARED BY GOODKIND & O'DEA, INC. DATED 4/5/01, AND TAX MAP INFORMATION.

SETBACKS ARE TAKEN FROM PROPOSED EQUIPMENT TO PROPERTY LINES.

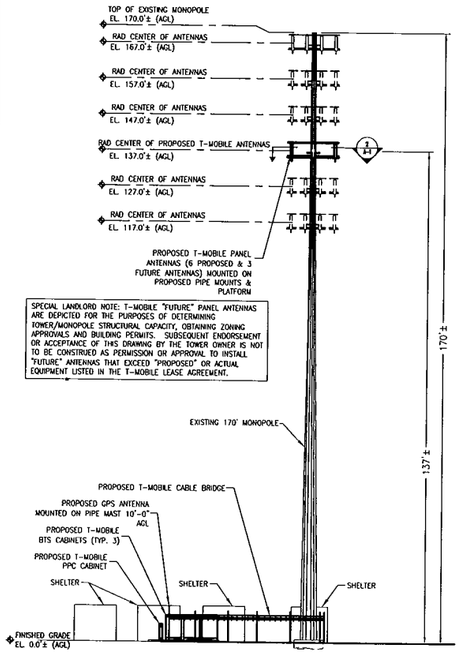
PLOT PLAN

SCALE: 1"=40'

0 20 40 80 160

1 / A-1

TRUE NORTH



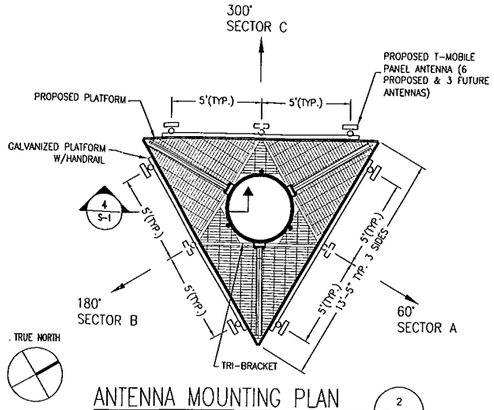
WEST ELEVATION

SCALE: 1"=20'

10' 0 10' 20' 30'

SCALE:

3 / A-1



ANTENNA MOUNTING PLAN

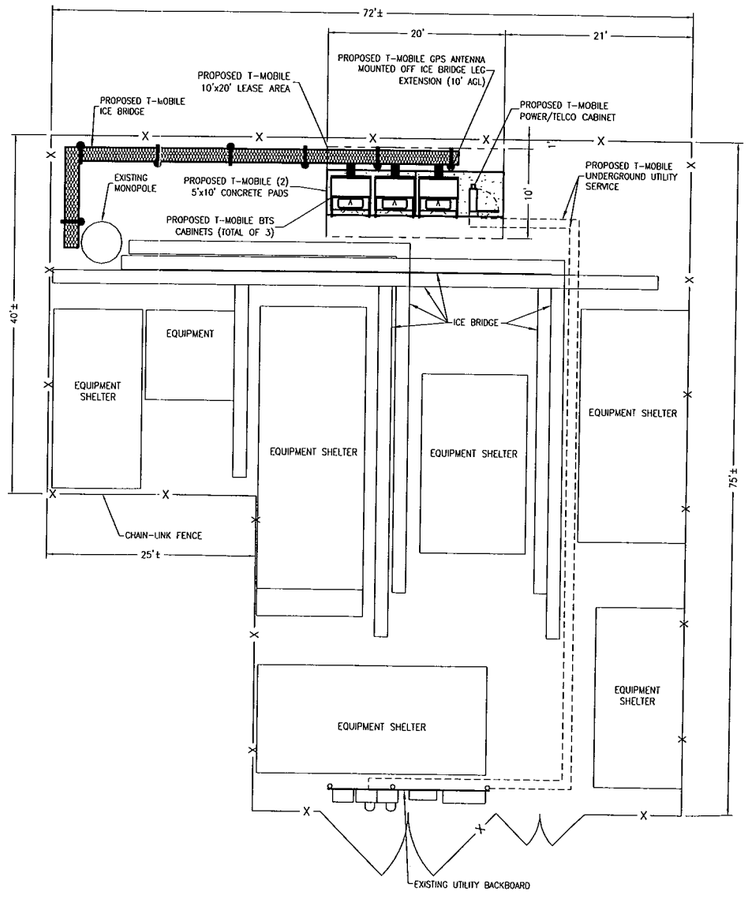
SCALE: 1/4"=1'-0"

2' 0 2' 4' 6'

SCALE:

2 / A-1

3 / A-1



SITE PLAN/EQUIPMENT PLAN

SCALE: 1/8"=1'-0"

4' 0 4' 8' 12'

SCALE:

1 / A-1

TRUE NORTH

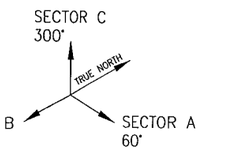
ABBREVIATIONS

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

SYMBOLS AND MATERIALS

- NEW ANTENNA
- EXISTING ANTENNAS
- 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
- (E)BRICK
- (E)MASONRY
- CONCRETE
- EARTH
- GRAVEL
- PLYWOOD
- SAND
- WOOD CONT.
- WOOD BLOCKING
- STEEL
- CENTER LINE
- PROPERTY LINE
- STEPPED FOOTING
- MATCH LINE
- WORK POINT
- GROUND WIRE
- COAXIAL CABLE

ANTENNA ORIENTATION KEY



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BLOOMFIELD, CT 06002
OFFICE: (860)-794-4300
FAX: (860)-692-7159

Dynatek
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5170 Belmont Avenue
Youngstown, Ohio 44505
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Fax: (330) 759-8471
www.dynatektelecom.com

STATE OF CONNECTICUT
DAVID C. BAKER
6/17/03
No. 10032
LICENSED ARCHITECT

APPROVALS

LANDLORD _____

LEASING _____

R.F. _____

ZONING _____

CONSTRUCTION _____

A/E _____

PROJECT NO: 4510

DRAWN BY: M.N.T.

CHECKED BY: D.C.B.

SUBMITTALS

2	6/16/03	CONSTRUCTION REVISIONS
1	6/13/03	CONSTRUCTION REVISIONS
0	6/2/03	CONSTRUCTION

CT-11-517B
TCP MONOPOLE
(CO-LOCATE)

1725 STAFFORD ROAD
MANSFIELD, CT 06268

SHEET TITLE

PLANS AND ELEVATIONS

SHEET NUMBER

A-1

Exhibit C

Equipment Specifications

1725 Stafford Road

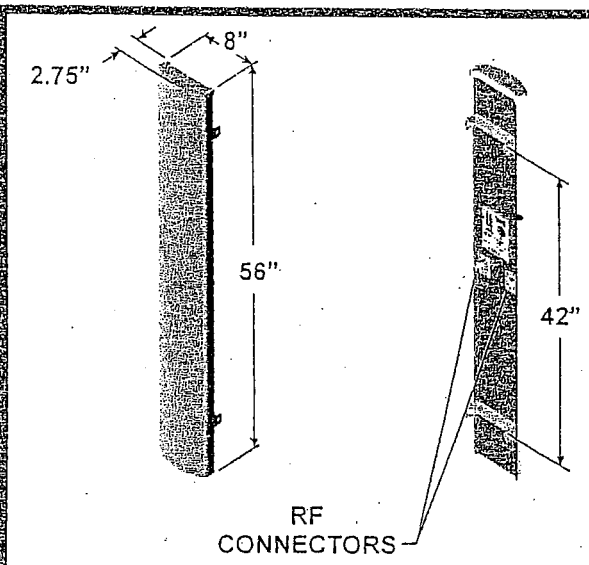
Mansfield, Connecticut

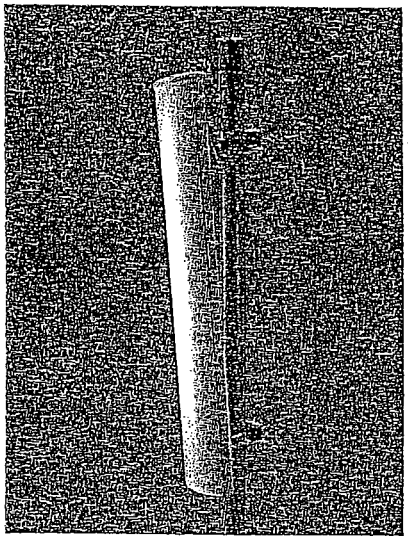
EMS WIRELESS

OptiRange™

RR90-17-XXXP

1850-1990 MHz (PCS)





90° beamwidth

16.5 dBi gain

±45° DualPol™

56 inch

SPECIFICATIONS

Electrical

Azimuth Beamwidth	90°
Elevation Beamwidth	6°
Gain	16.5 dBi (14.4 dBd)
Polarization	Slant, ±45°
Port-to-Port Isolation	≥ 30 dB
Front-to-Back Ratio	≥ 25 dB (≥ 30 dB Typ.)
Electrical Downtilt Options	0°, 2°, 4°, 6°
VSWR	1.35:1 Max
Connectors	2;Type N or 7-16 DIN (female)
Power Handling	250 Watts CW
Passive Intermodulation	<-147 dBc (2 tone @ +43 dBm (20W) ea.)
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)

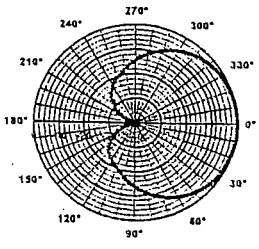
Note: Patent Pending and US Patent number 5, 757, 246.

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.

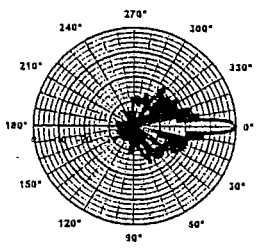
MOUNTING OPTIONS

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"

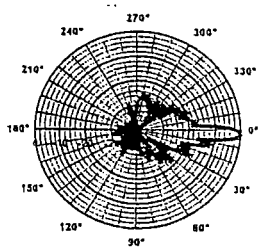
* Model number shown represents a series of products. See mounting options section for specific model number.



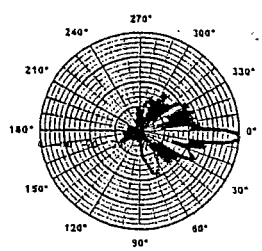
Azimuth



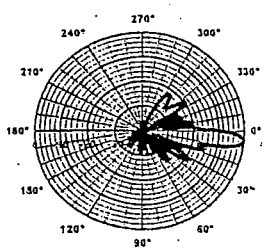
Elevation
0° Downtilt



Elevation
2° Downtilt



Elevation
4° Downtilt



Elevation
6° 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

1725 Stafford Road

Mansfield, Connecticut

CBC Engineers & Associates

ENGINEERING REPORT

TO: Dynatek Telecommunications Services
5170 Belmont Avenue
Youngstown, OH 44505

DATE: June 2, 2003

CBC NO: 4856-1-0603-05

ATTN: Mr. Mark Thompson

Re: Evaluation of 170' Monopole with Nine (9) Proposed T-Mobile Antennas; Site CT-11-517B, Mansfield Center II, Tolland Co., Connecticut; CBC Report No. 4856-1-0603-05

The purpose of this report is to evaluate the above referenced tower for the addition of nine (9) – 72" x 12" x 4" antennas with a platform frame at the 137 foot level. A previous structural evaluation report for this tower prepared by Paul J. Ford and Co. (their Job No. 29202-0365, dated December 6, 2002) was reviewed in conjunction with this evaluation. The existing tower is a 170-ft, 18-sided Monopole with a diameter of 24 to 64.1 inches. The existing antennas currently on the tower include 12 at 120 feet, 12 at 130 feet, 12 at 140 feet, 12 at 150 feet, 12 at 160 feet and 12 at 170 feet. The evaluation of the tower with the proposed antennas was based upon an 85MPH design wind speed per the TIA/EIA-222-F Standard. The calculations are attached in Appendix A. Our review and evaluation indicate the tower and foundation in its current configuration with the proposed antennas meet the requirements of TIA/EIA-222, revision F; the BOCA National Building Code (including section 3108), and the 1999 Connecticut State Building Code Supplement (including section 1609.1).

If you have any questions please contact me.

Respectfully submitted,

CBC Engineers & Associates, Ltd.

STATE OF CONNECTICUT DAVID C. COWHERD LICENSED PROFESSIONAL ENGINEER

David C. Cowherd, M.S., P.E.
CEO and Chief Engineer
DCC/mth
4-Client
1-File

Cowherd, Banner & Carlson Engineers & Associates, Ltd.
125 Westpark Road Centerville, Ohio 45459
Phone: 937-428-6150 FAX: 937-428-6154 Email: cbceng@erinet.com

Exhibit E

Power Density Calculations

1725 Stafford Road

Mansfield, Connecticut

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

Technical Memo

To: Stephen Humes
From: Hassan Syed - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CT11517B
Date: September 11, 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 1725 Stafford Road, Mansfield, 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 137 ft.
5) The maximum transmit power from any sector is 1698.71 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 1725 Stafford Road, Mansfield, CT, is 0.02172 mW/cm^2. This value represents 2.172% 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 14.66%. The combined Power Density for the site is 16.832% of the M.P.E. standard.

New England Market

Connecticut

Worst Case Power Density

T · ·Mobile·

Site:	**CT11517B**
Site Address:	**1725 Stafford Road**
Town:	**Mansfield**
Tower Height:	**170 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	150 ft.
Antenna Height	137.0 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	1.7400 dB
Total Attenuation	6.2400 dB
Total EIRP per Channel	53.27 dBm
(In Watts)	212.34 W
Total EIRP per Sector	62.30 dBm
(In Watts)	1698.71 W
nsg	10.2600
Power Density (S) =	**0.021717 mW/cm^2**
Voicestream Worst Case % MPE =	**2.1717%**

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	10.9400 %
Nextel	
Town Ant.1	1.2400 %
Town Ant.2	1.2400 %
Town Ant.3	1.2400 %
Total Excluding Voicestream	**14.6600 %**
Voicestream	2.1717
Total % MPE for Site	**16.8317%**