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

April 27, 2004

Stephen J. Humes, Esq.
LeBoeuf, Lamb, Greene & MacRae LLP
Goodwin Square
225 Asylum Street, 13th Floor
Hartford, CT 06103

RE: **EM-T-MOBILE-142-040330** - Omnipoint Communications, Inc. (T-Mobile) notice of intent to modify an existing telecommunications facility located at 208 Reed Road, Tolland, Connecticut.

Dear Attorney Humes:

At a public meeting held on April 26, 2004, the Connecticut Siting Council (Council) acknowledged 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 March 30, 2004, and revised drawing dated April 22, 2004. 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. 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,

PBK/laf

Pamela B. Katz, P.E.
Chairman

PBK/laf

c: Honorable Richard Field, Town Council Chairman, Town of Tolland
Linda Farmer, Town Planner, Town of Tolland
Thomas F. Flynn III, Nextel Communications, Inc.

G:\em\t-mobile\tolland\dc041504.doc

LeBoeuf, Lamb, Greene & MacRae, L.L.P.*

Goodwin Square
225 Asylum Street, 13th Floor
Hartford, CT 06103
Tel: (860) 293-3500
Fax: (860) 293-3555

FAX

TRANSMISSION

TRANSMISSION PROBLEMS: (860) 293-3722

FROM: Roger J. Cirella	**ID#:** 5344	**DATE:** April 22, 2004
TEL: (860) 293-3722	**PAGES:** 1 of 2	**CLIENT/MATTER NO.:** 07687-00015

TO:	COMPANY:	FAX NO.:	CONFIRMING TELEPHONE NO.:
Mike Perrone	Connecticut Siting Council	(860) 827-2950	(860) 827-2943

Comments/Message:

Mike,

Attached please find a revised drawing reflecting the correct antenna center line. Please let me know if you have any questions. Thanks for your help.

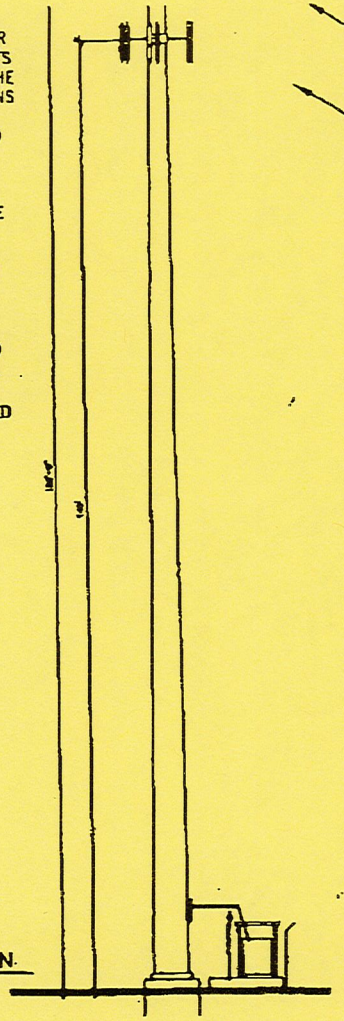
Regards,

Roger

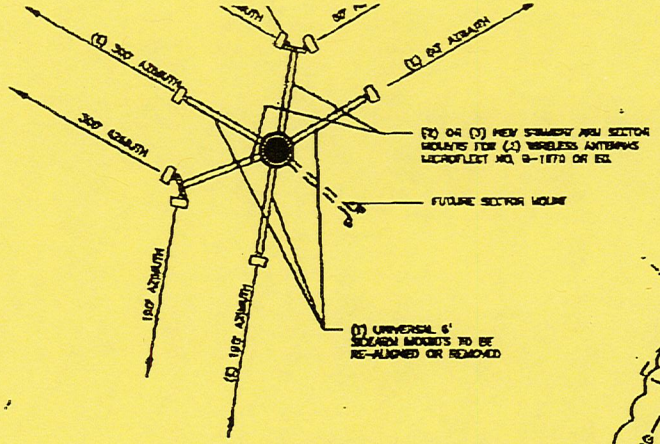
RECEIVED
APR 22 2004
CONNECTICUT
SITING COUNCIL

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.

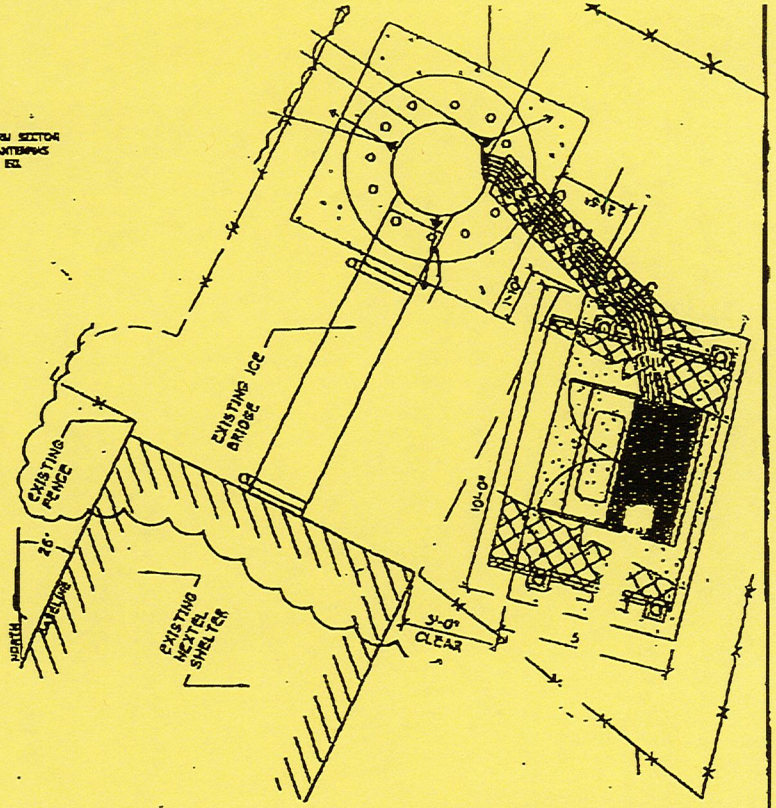
SPECIAL LANDLORD NOTE:
T-MOBILE "FUTURE" PANEL ANTENNAS ARE DEPICTED FOR THE PURPOSES OF DETERMINING TOWER/MONOPOLE STRUCTURAL CAPACITY, OBTAINING ZONING APPROVALS AND BUILDING PERMITS. SUBSEQUENT ENDORSEMENT OR ACCEPTANCE OF THIS DRAWING BY THE TOWER OWNER IS NOT TO BE CONSTRUED AS PERMISSION OR APPROVAL TO INSTALL "FUTURE" ANTENNAS THAT EXCEED "PROPOSED" OR ACTUAL EQUIPMENT LISTED IN THE T-MOBILE LEASE AGREEMENT.



1 MONOPOLE ELEVATION
N.T.S.



2 ANTENNA PLAN @ EL. 140'AGL
N.T.S.



3 COMPOUND PLAN
1/8"=1'-0"

N

APPROXIMATE TRUE NORTH

EM-T-MOBILE-142-040330

LeBoeuf, Lamb, Greene
L.L.P.
A LIMITED LIABILITY PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

NEW YORK
WASHINGTON, D.C.
ALBANY
BOSTON
DENVER
HARRISBURG
HARTFORD
HOUSTON
JACKSONVILLE
LOS ANGELES
NEWARK
PITTSBURGH
SALT LAKE CITY
SAN FRANCISCO

GOODWIN SQUARE
225 ASYLUM STREET, 13TH FLOOR
HARTFORD, CT 06103
(860) 293-3500
FACSIMILE: (860) 293-3555
E-MAIL ADDRESS: STEPHEN.HUMES@LLGM.COM
WRITER'S DIRECT DIAL: (860) 293-3744
WRITER'S DIRECT FACSIMILE: (860) 241-1344

LONDON
(A LONDON-BASED MULTINATIONAL PARTNERSHIP)
PARIS
BRUSSELS
JOHANNESBURG
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(AFFILIATED OFFICE)
TASHKENT
BISHKEK
ALMATY
BEIJING

March 30, 2004

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

Re: Notice of Exempt Modification
208 Reed Road, Tolland, 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. T-Mobile intends to add six (6) RR90-17-XXDP antennas to the existing three (3) antennas for a total of nine (9) RR90-17-XXDP antennas mounted on an existing platform on the existing monopole tower facility at 208 Reed Road in Tolland. Also, 2 more S-8000 cabinets will be added to the existing cabinet for a total of three (3) S-8000 Equipment cabinets. Please accept this letter as notification, pursuant to R.C.S.A. § 16-50j-73, of construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the Town Manager of Tolland, Timothy J. Tieperman.

Background

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

Discussion

The existing facility consists of a one hundred fifty foot (150') monopole tower (see drawing attached as Exhibit B) and surrounding compound. The coordinates for the site are **Lat: 41°-51-11.78** and **Long: 72°-24-21.89**. The tower is in the northwest corner of Tolland. The tower is approximately eight hundred seventy-one feet (871') southeast of Interstate 84, roughly six hundred forty-seven feet (647') northeast of Loehr Road, and approximately eight hundred-five feet (805') southwest of Mt. Spring Road.

T-Mobile's proposal calls for the addition of six (6) antennas to its existing three (3) antennas, creating a total of nine (9) antennas. The proposed configuration is a cluster of (9) nine antennas on a T-Arm Array at the one hundred forty foot (140') centerline above ground level ("AGL"). The model number for the new antennas are RR90-17-XXDP. A new structural analysis of the tower has been completed and is attached as Exhibit D. As stated in the structural analysis, the existing tower structure is capable of supporting the proposed T-Mobile installation. Two (2) new S8000 cabinets will be added to the existing S8000 equipment cabinet for a total of three (3) cabinets. Utilities will be run via underground conduit from those currently in place.

The planned modifications to the Tolland facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modification will not increase the height of T-Mobile's approved antennas on the tower and will not extend the boundaries of the existing compound area. The enclosed tower drawings confirm that the planned changes will not increase the overall height of the tower.

2. The installation of T-Mobile equipment, as reflected on the attached site plan, will not require an extension of the site boundaries.

3. The proposed modification to the facility will not increase the noise levels at the existing facility by six decibels or more. T-Mobile's equipment is self-contained and requires no additional heating, ventilation or cooling equipment.

4. The operation of the additional antennas will not increase the total radio frequency (RF) power density, measured at the site boundary, to a level at or above the applicable standard. The "worst-case" RF power density calculations, for a point at the site boundary, are attached hereto as Exhibit E.

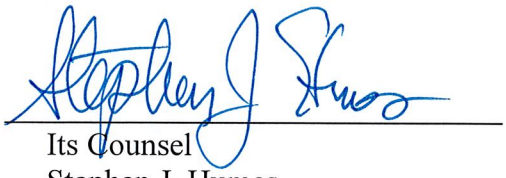
For the foregoing reasons, T-Mobile respectfully submits that the proposed addition of antennas and equipment at the Tolland facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Thank you for your consideration of this matter.

Thank you for your consideration of this matter.

Respectfully submitted,

OMNIPOINT COMMUNICATIONS, INC.

By: 

Its Counsel
Stephen J. Humes

cc: Tolland Town Manager, Timothy J. Tieperman

Exhibit A
Site Map

208 Reed Road

Tolland, Connecticut

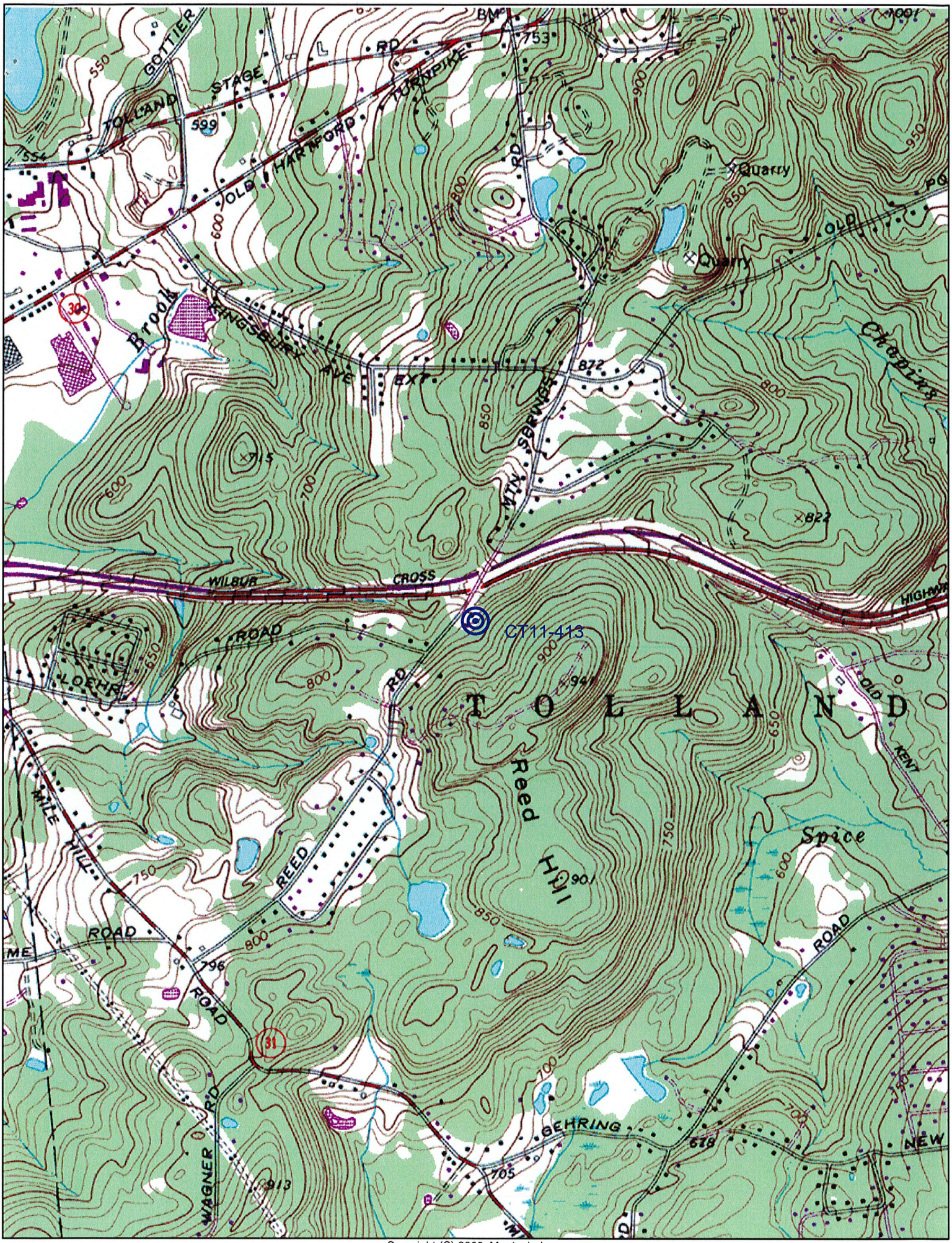


Exhibit B

Design Drawings

208 Reed Road

Tolland, Connecticut

NOTE:
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.

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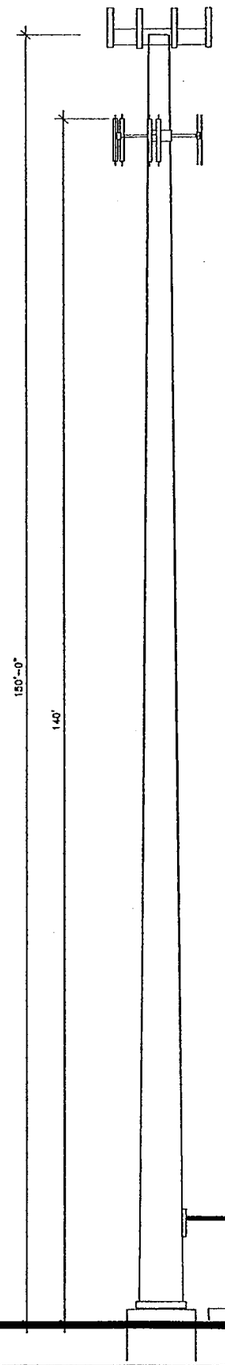
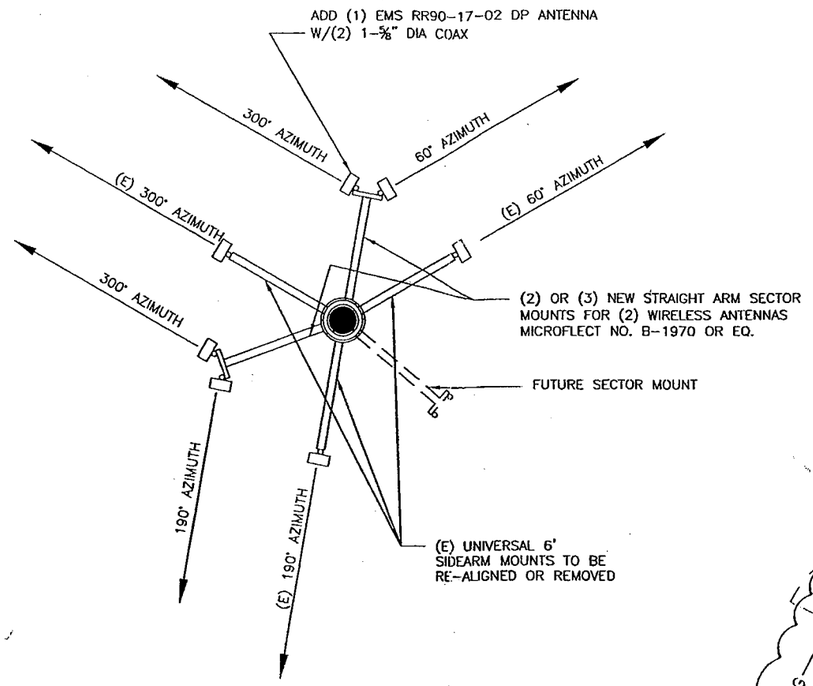
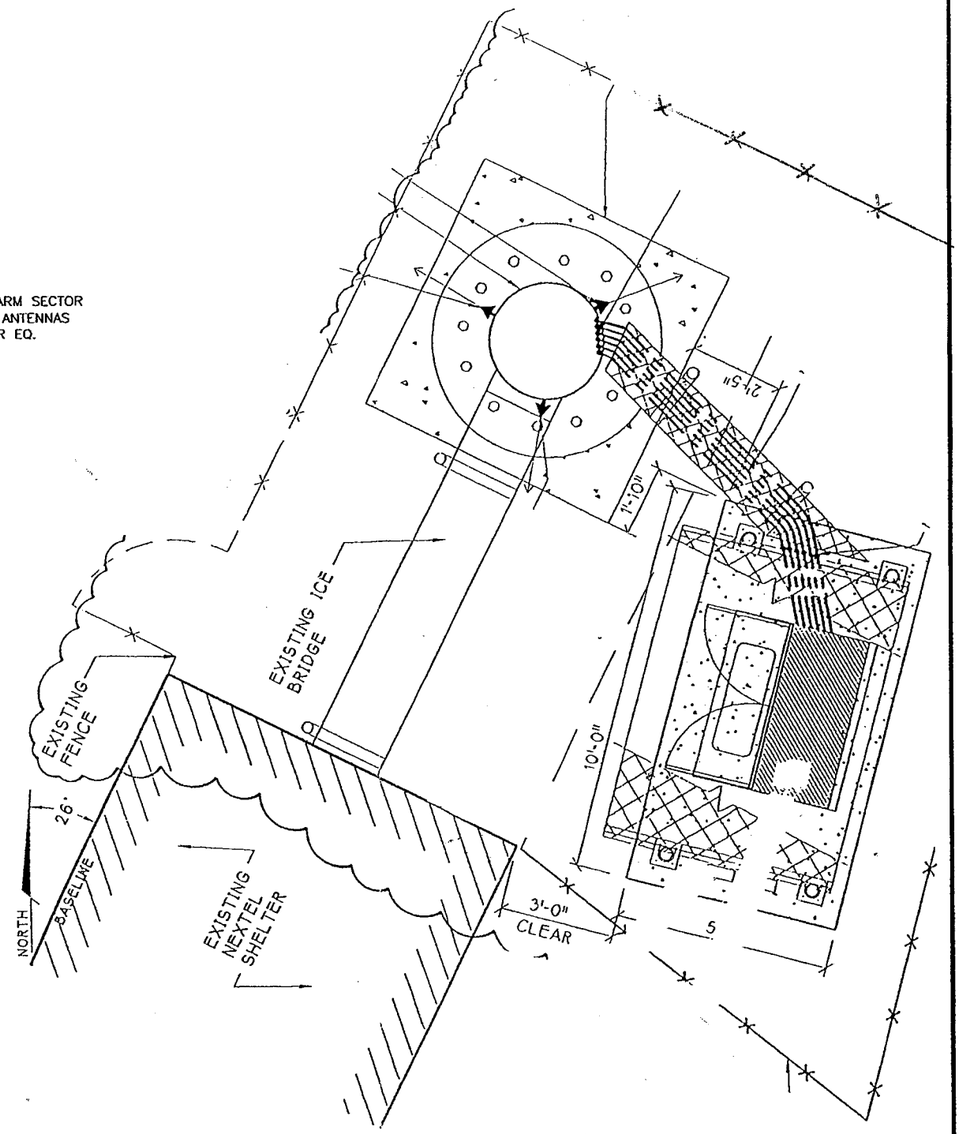


1 MONOPOLE ELEVATION
N.T.S.



2 ANTENNA PLAN @ EL. 137.5' AGL
N.T.S.



3 COMPOUND PLAN
1/4"=1'-0"

N

APPROXIMATE TRUE NORTH

Omnipoint Communications, Inc., a wholly-owned subsidary of T-Mobile USA, Inc. 100 FILLEY STREET BLOOMFIELD, CT. 06002	REVISIONS	DESIGNED BY:	DATE: 11/05/03
		DRAWN BY: MW	SCALE: AS NOTED
		PM:	L-1 Sheet No.
		FILE:	

SITE MODIFICATION

SITE NUMBER: CT11-413D
SITE NAME: TOLLAND/RT 84/X 66
ADDRESS: 208 REED ROAD
TOLLAND CT 06084

Exhibit C

Equipment Specifications

208 Reed Road

Tolland, Connecticut

EMS Wireless

RR90-17-XXDP

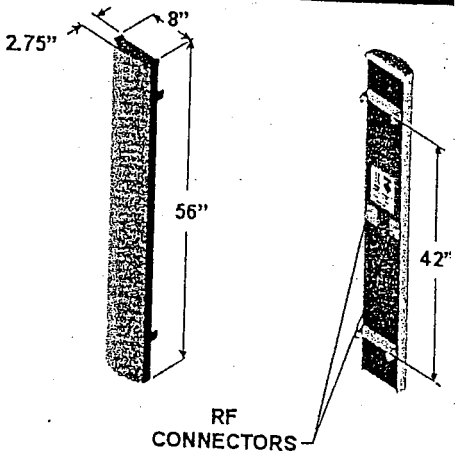
DualPol® Polarization

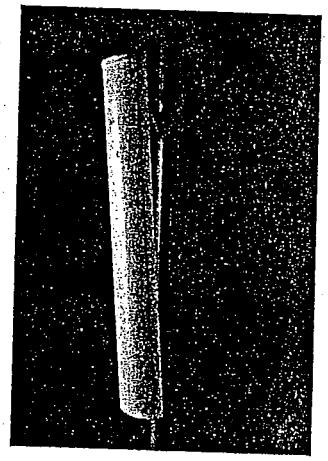
1850 MHz - 1990 MHz

OptiRange™

Electrical Specifications

Azimuth Beamwidth	90°
Elevation Beamwidth	6°
Gain	16.5 dBi (14.4 dBd)
Polarization	Dual Linear Slant (± 45°)
Port-to-Port Isolation	≥ 30 dB
Front-to-Back Ratio	≥ 28 dB (≥ 30 dB Typ.)
Electrical Downtilt Options	0°, 2°, 4°, 6°
VSWR	1.35:1 Max
Connectors	2; 7-16 DIN (female)
Power Handling	250 Watts CW
Passive Intermodulation	≤ -150 dBc [2 x 20 W (+ 43 dBm)]
Lightning Protection	Chassis Ground





Mechanical Specifications

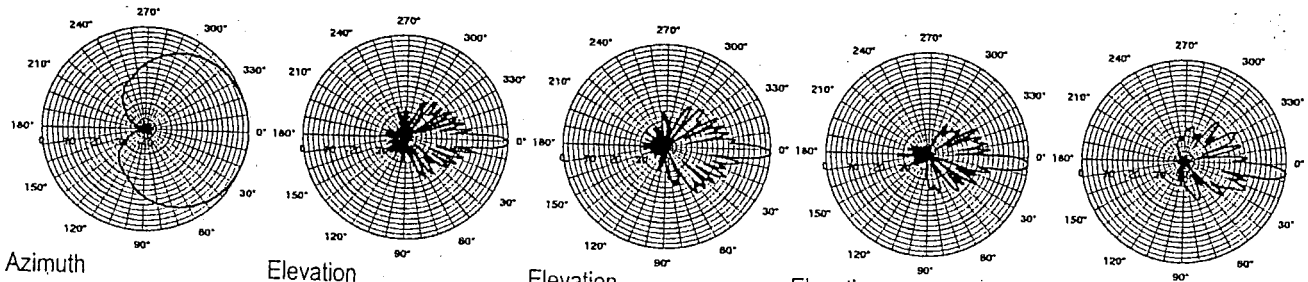
Dimensions (L x W x D)	56 in x 8 in x 2.75 in (142 cm x 20.3 cm x 7.0 cm)
Rated Wind Velocity	150 mph (241 km/hr)
Equivalent Flat Plate Area	3.1ft² (.29 m²)
Front Wind Load @ 100 mph (161 kph)	90 lbs (400 N)
Side Wind Load @ 100 mph (161 kph)	31lbs (139 N)
Weight	18 lbs (8.2 kg)

Mounting Options

MTG-P00-10, MTG-S02-10, MTG-DXX-20*, MTG-CXX-10*, MTG-C02-10, MTG-TXX-10*

*Note: *Model number shown represents a series of products. See Mounting Options section for specific model number.*

Patterns



Azimuth

Elevation 0° Downtilt

Elevation 2° Downtilt

Elevation 4° Downtilt

Elevation 6° Downtilt

Revised 04/05/02

EMS *Wireless*

Mobile Wireless Introduction

Drawing from more than 30 years in the development of highly reliable systems, EMS *Wireless* has applied that knowledge and experience to the needs of commercial wireless communication service providers.

EMS *Wireless* offers a broad selection of innovative base station antennas offering superior performance for all wireless protocols including PCS, cellular, GSM, CDMA, TDMA and IDEN among others.

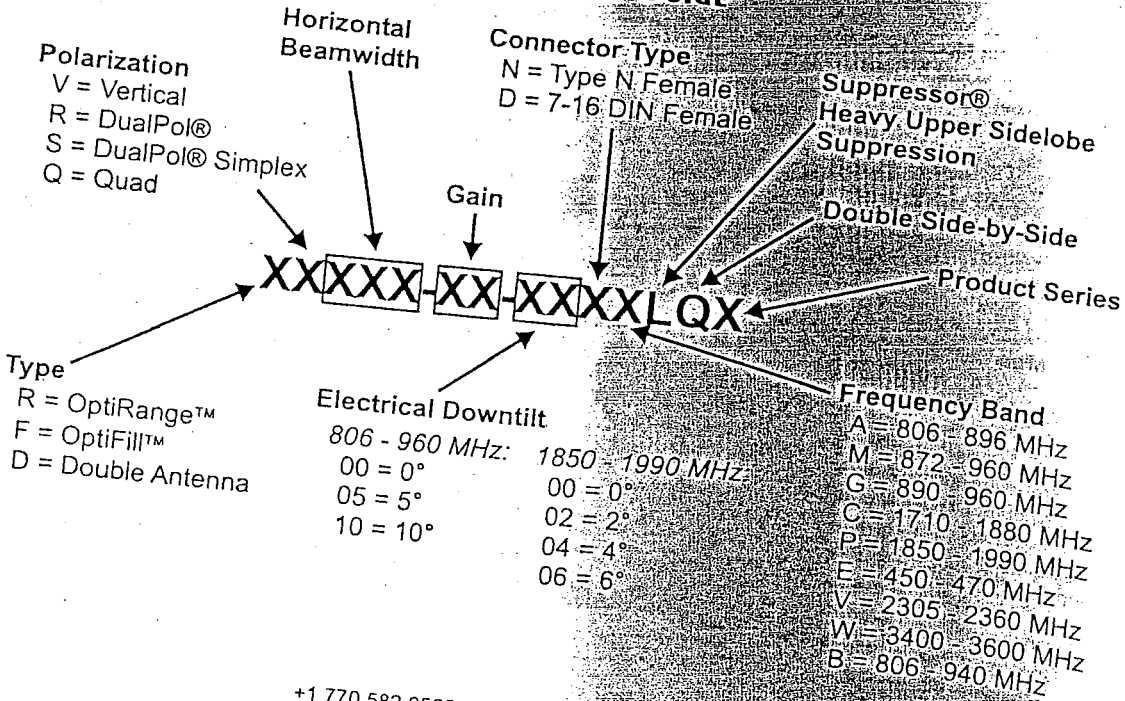
Mobile Wireless Products

Frequency Bands:
- PCS (1850-1990 MHz)
- Cellular (806-960 MHz)
- Dualband (806-896 and 1850-1900 MHz)
- CDMA 450 (450-470 MHz)
- GSM 900 (890-960 MHz)
- GSM 1800 (1710-1880 MHz)
- MMDS (2305-2360 MHz)

Micro AcCELLerator™ Series:
- MTRR75-17-XXXDPL (PCS)
- MTFR90-11-XXXDAL2-CMX (Cellular)

AcCELLerator™ Series:
- 16" AcCELLerator™
- 19" AcCELLerator™
- 30" AcCELLerator™
- 36" AcCELLerator™

Mobile Wireless Standard Model Number Guide

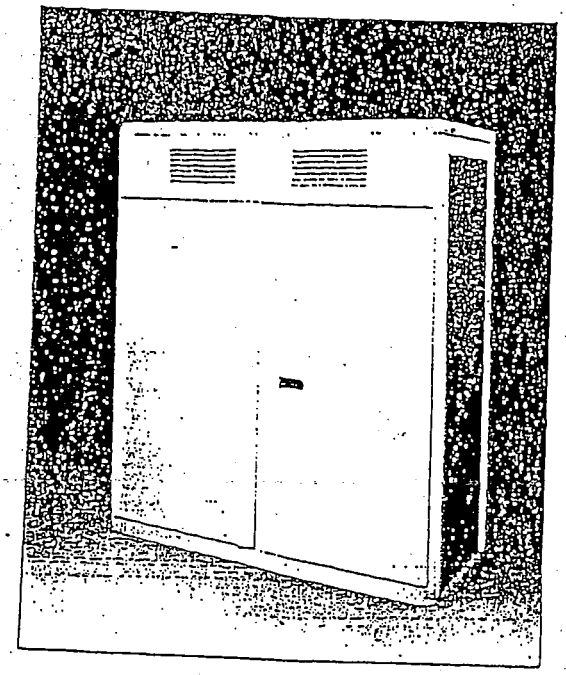


+1 770.582.0555 ext. 5310 • Fax +1 770.729.0036
www.emswireless.com

GSM 900 / DCS 1800 / PCS 1900

NORTEL
NORTHERN TELECOM

S8000 Outdoor Base Transceiver Station



Nortel's S8000 Outdoor Base Transceiver Station has been designed to meet the economic and performance requirements of network operators. Based on a highly integrated RF and digital design, the S8000 Outdoor Base Transceiver Station represents a major technology advancement and delivers all the benefits of a compact, modular, high quality and high performance product.

Nortel's S8000 Outdoor BTS: Radio Performance Leadership - Reduced Site Acquisition and Operating Costs

Installation

- The S8000 Outdoor Base Transceiver Station (BTS) offers compact packaging and requires minimal floor space, only .88 sq m (9.5 sq ft.). Front only access keeps total space required, including maintenance access, to only 1.8 sq m (19.4 sq ft) per cabinet.

Transmission

- Integrated drop and insert connection to the Base Station Controller (BSC) and signaling concentration on the A-bis interface provide significant transmission cost reduction.
- Optional integrated digital microwave radio.

Maintenance

- Highly reliable technology, redundant architecture and integrated battery backup ensure high availability service.
- Front access and interconnections, as well as powerful fault detection, help reduce lifetime maintenance costs.

Industry leading performance

- New RF technology and advanced digital processing techniques provide very high receive sensitivity (-108 dBm guaranteed) and improved diversity gain (up to 6 dB). This provides higher resistance to interference, as well as, improved speech quality and cell coverage.
- Nortel's proven experience in frequency hopping, 1*3 frequency reuse, sophisticated microcellular handover algorithms and support of half-rate vocoders enables the operator to maximize use of available spectrum and deploy fewer cell sites.

Fast network deployment

- The S8000 BTS can be shipped fully equipped and tested, which provides fast network roll out to meet operator time to market requirements.

Modular and flexible configuration

- The S8000 supports eight transceivers (TRX) per cabinet in Omni and sectored configurations. The typical one cabinet S222 configuration may be expanded up to S332 or S422 without an additional cabinet.

• Frequency range		900 MHz GSM
		900 MHz GSM extended
		1800 MHz DCS
		1900 MHz PCS
• Receive sensitivity (guaranteed)		-108 dBm
• Dimensions	Height	1600 mm / 5 ft. 3 in.
	Width	1350 mm / 4 ft. 5 in.
	Depth	650 mm / 2 ft. 1 in.
• Weight	Fully equipped	600 kg / 1300 lbs.
• Capacity		8 TRX per cabinet
		up to 3 cabinets
• Configuration	Trisectorial	up to S888
	Omnidirectional	up to O16
• Amplifier output power		30 W (± 1.5 dB)
• Power control	Static	6 steps of 2 dB
	Dynamic	15 steps of 2 dB
• Frequency hopping		RF synthesized
		baseband
• Supported vocoders		Full rate
		Enhanced full rate
		Half rate
• Encryption algorithms		A5/1 A5/2
• Power supply		230V AC 50/60 Hz
• Power back-up		Integrated battery back-up plus optional battery cabinet allows provisioning up to 8 hours back-up time.
• Operating temperature range		-40°C to +50°C
		-40°F to +122°F

For more information,
please contact your local Nortel account representative.

In the USA:
Northern Telecom
2221 Lakeside Boulevard
Richardson TX 75082
USA
Telephone: 1-800-4 NORTEL
1-800-466-7838 or (214) 684-5935
http://www.nortel.com/wireless

In Canada:
Northern Telecom
2920 Matheson Boulevard East
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Telephone: 1-800-4 NORTEL

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1500 Concord Terrace
Sunrise FL 33323
USA
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#02-01 New Tech Park
Singapore 1955
Telephone: (65) 287-2877

Nortel China Ltd.
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18 Harbour Road, Wanchai
Hong Kong
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In Europe:
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Maidenhead
Berkshire SL6 1AY
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Telephone: (44) (1628) 812000

Nortel Matra Cellular
BP 50
1 place des Frères Montgolfier
78042 Guyancourt Cedex
France
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Nortel Europe
12-12bis rue Jean Jaurès
92807 Puteaux
France
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Publication Reference S80.INS.0696
Printed in France

NORTEL
NORTHERN TELECOM

Exhibit D

Structural Analysis

208 Reed Road

Tolland, Connecticut

EMERSON
Network Power

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

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

Matt Granese
T-Mobile
100 Filley Street
Bloomfield, CT 06002

February 20, 2004

Reference: Structural review of the existing 150-ft monopole located in Tolland, CT.
T-Mobile site CT-11413.
EEI Project No. 12341.Addendum. (Original EEI design No. 3234/4109).

Engineered Endeavors Incorporated (EEI) has evaluated the existing 150-ft monopole located in Tolland, CT for the loads presented by T-Mobile Corporation. The objective of the analysis was to determine if the monopole could have an additional loading at 130' elevation. The monopole was analyzed in accordance with the requirements of the TIA/EIA-222F, 2000 International Building Code, ASD Manual of Steel Construction, and American Concrete Institute Standard ACI 318-02.

The existing monopole was designed by EEI in January 1998 (EEI Project 3238). The monopole was initially designed as a 180-ft pole, but only three lower sections totaling of 125' have been erected. In August of 1998 a 29' extension was added to the pole thus bringing the total height to 150' above ground level. The top section was attached to the pole with a slip-joint connection. The monopole was evaluated per TIA/EIA-222F for wind velocity pressure of 85 *mph (fastest-mile wind)* and 105 *mph* (3-second gust) per 2000 International Building Code and the Connecticut Building Code. The monopole was reviewed a number of times for co-location. Our design is based on the information and photographs provided by T-Mobile. After reviewing the photographs, we consider that the current side arms are located at 140'(±), but not at 130', and the 140' elevation was used in the analysis. This is also confirmed by our structural analysis conducted in March of 1999 (EEI No. 4812). The antenna loading used in the analysis is as the for the following:

- (12) 4 sf PCS antennas @150' on a low profile platform.
- T-Mobile – (9) EMS RR90-17-02DP antennas @140' on a T-arm array. Initially only (4) antennas will be installed.

Results of the analysis.

Monopole. The results of the structural analysis demonstrate that the existing monopole is capable of supporting the referenced above antenna loading. The maximum stresses in the monopole due to wind-induced load occur at the bottom of the pole and reach 50% of maximum allowable. Other sections (from bottom to top) are stressed to 47%, 39%, and 21% accordingly. Note that, if any of the antenna loadings are to be changed by either increasing the quantity of antennas, or antenna elevation, or installation of the additional appurtenances, or different antennas are currently installed on the pole, EEI has to be notified in order to evaluate the structural integrity of the monopole.

EMERSON
Network Power

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

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

Foundation. The foundation was designed by EEI in December of 1997. Table I provides the original (as designed) and new loads for comparison.

Table I.

	Initial loading	New loading
Moment, *ft-kip*	4071.4	2595.4
Horizont. force, *kips*	35.9	27.8
Vertical load, *kips*	37.4	36.7

Engineered Endeavors assumed that the existing foundation was designed and built in accordance with the existing design codes and engineering practice, is in good conditions, and, therefore, should be capable of supporting the monopole with the referenced above antenna loading. It is the client responsibility to verify the conditions of the foundation and compliance with the original design.

This report is intended for use with regard to this specific structure discussed in general herein and any changes in antenna loading shall be brought to EEI's attention so we may determine how this may effect our conclusions and recommendations.

Yours truly,
Engineered Endeavors, Inc.

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

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

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

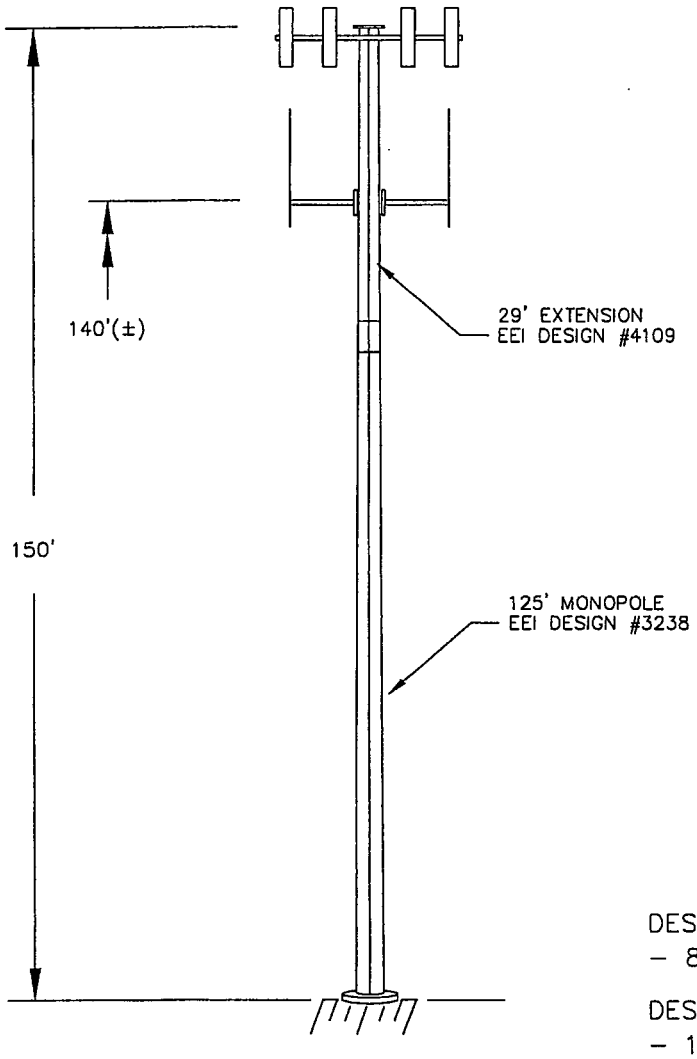
ENGINEERED ENDEAVORS INCORPORATED

Customer T-MOBILE By B. FAYMAN 02/20/2004 (Date)

Structure 150' MONOPOLE Checked ____ 12341 (Job/Quote No.)

SITE LOCATION – TOLLAND COUNTY, CT.
SITE NAME – TOLLAND, CT11413

STRUCTURAL ANALYSIS
REVISION I



ANTENNA LOADING:

EXISTING LOADING:

- (12) PCS ANTENNAS @ TOP
  ON A LOW PROFILE PLATFORM
- (3) RR90-17-00DP ANTENNAS @140'
  ON (3) 6-ft SIDE ARMS

PROPOSED CO-LOCATION:

- MAX OF (9) RR90-17-00DP ANTENNA @130'
  ON A T-ARM ARRAY

INITIAL CO-LOCATION:

- MAX OF (4) RR90-17-00DP ANTENNA @130'

DESIGN NOTES:

DESIGNED IN ACCORDANCE WITH TIA/EIA 222 F
– 85 MPH BASIC WIND SPEED (FASTEST MILE WIND)

DESIGNED IN ACCORDANCE WITH 2000 IBC & CT BC
– 105 MPH BASIC WIND SPEED (3-SECOND GUST)

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

ENGINEERED ENDEAVORS, INC.

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Communications Structure Nonlinear Analysis and Design Program

08:17:08 02-20-2004
Revision 1.3 - 1/22/01
Engineer: BSF

Customer **T-MOBILE**
Job Name **12341 STR. ANALYSIS**
Structure **150' MONOPOLE**
Location **TOLLAND, CT**
Site **CT-11413**

OD BOT	OD TOP	NUM. SIDES	THICK INCH	TAPER IN/FT	LENGTH FT	JOINT INCH	JOINT TYPE	YIELD KSI	WEIGHT LBS	JOINT HEIGHT
31.98	25.60	12	0.3125	0.220	29.00	54.00	SLIP	65.0	2818.	123.25
39.99	30.24	12	0.3750	0.220	44.25	66.00	SLIP	65.0	6295.	84.00
48.26	37.90	12	0.4375	0.220	47.04	79.00	SLIP	65.0	9583.	43.00
56.00	45.81	12	0.5000	0.220	46.29	0.00	BASEPL	65.0	12739.	-0.00
			TOTAL TUBE WEIGHT						31435.	POUNDS
			POLE SHAFT LENGTH						150.00	FEET

E = 29600.0 KSI
UNIT WGT = 0.283 LBS/CU IN
AISC constants are used for stress reductions.
Internal bend radius = 3 X T
Tube diameters are measured flat to flat.
Stresses are calculated across points.
Tube diameters are increased by 1.040 for wind across points.
Drag coefficients are increase by 1.300 for steps on the pole.
AISC Tube Shape Coefficient of 1.000 is applied.
ORIGINAL DATA FILE NAME 12341
REVISED DATA FILE NAME 12341

APPURTENANCES

DESCRIPTION	NUM.	ELEV.	Kz	AREA < WITHOUT ICE	WGT	Ca >	AREA < WITH ICE	WGT	Ca >	FACTOR
PCS ANTENNAS	12	150.	1.541	4.00	100.	1.6000	4.50	150.	1.6000	1.00
LOW PROF. PLATF.	1	150.	1.541	7.50	2100.	2.0000	9.00	3250.	2.0000	1.00
EMS RR90-17	9	140.	1.511	3.11	100.	1.4000	3.56	150.	1.4000	1.00
T-ARM ARRAY	3	140.	1.511	5.00	400.	2.0000	6.00	600.	2.0000	0.70

LOAD CASE 1

DESIGN WIND LOADING

DEAD LOAD FACTOR 1.00 WIND PSF REDUCTION 1.00 RADIAL ICE 0.00 IN.

WIND VELOCITY 85 BOTTOM 33.39 PSF TOP 50.96 PSF
MAX BASE ROTATION 0.00 DEG

APPLIED APPURTENANCE FORCES

	ELEVATION FT	WEIGHT KIPS	WIND KIPS
PCS ANTENNAS	150.00	1.200	3.700
LOW PROF. PLATF.	150.00	2.100	0.723
EMS RR90-17	140.00	0.900	1.851
T-ARM ARRAY	140.00	1.200	0.992

TUBE PROPERTIES			MEMBER FORCES			STRESSES			STRESS	TOTAL	
ELEV FT	DIAM IN	WALL IN	SHEAR K	BENDING K-FT	AXIAL K	AXIAL KSI	BEND. KSI	ALLOW KSI	RATIOS	DEFL IN	TILT DEG
150.00	25.60	0.3125	5.16	0.01	3.51	0.14	0.00	51.99	0.00	48.8	2.76
140.00	27.80	0.3125	9.23	51.56	6.30	0.23	3.33	51.99	0.07	43.1	2.73
131.25	29.73	0.3125	10.28	132.28	7.11	0.24	7.46	51.99	0.15	38.1	2.65
123.25	31.49	0.3125	10.28	214.45	7.11	0.23	10.76	51.99	0.21	33.8	2.55
			TYPE OF JOINT: SLIP JOINT								
123.25	30.74	0.3750	11.70	214.46	9.03	0.25	9.48	51.99	0.19	33.8	2.55
110.00	33.66	0.3750	13.46	369.32	10.79	0.27	13.57	51.99	0.27	27.0	2.33
97.00	36.52	0.3750	15.27	544.18	12.72	0.29	16.94	51.99	0.33	21.0	2.08
84.00	39.38	0.3750	15.27	742.55	12.72	0.27	19.83	51.99	0.39	15.7	1.80
			TYPE OF JOINT: SLIP JOINT								
84.00	38.51	0.4375	17.00	742.55	16.11	0.30	17.88	51.99	0.35	15.7	1.80
73.00	40.93	0.4375	18.48	929.43	18.14	0.32	19.77	51.99	0.39	11.8	1.56
63.00	43.13	0.4375	19.90	1114.16	20.18	0.34	21.30	51.99	0.42	8.8	1.35
53.00	45.33	0.4375	21.30	1313.08	22.32	0.35	22.69	51.99	0.44	6.2	1.12
43.00	47.53	0.4375	21.30	1526.03	22.32	0.34	23.96	51.99	0.47	4.1	0.90
			TYPE OF JOINT: SLIP JOINT								
43.00	46.53	0.5000	22.87	1526.03	26.51	0.36	21.97	51.99	0.43	4.1	0.90
30.00	49.40	0.5000	24.38	1823.30	29.56	0.38	23.26	51.99	0.45	2.0	0.62
20.00	51.60	0.5000	25.72	2067.08	32.35	0.39	24.13	51.99	0.47	0.9	0.41
10.00	53.80	0.5000	27.11	2324.30	35.26	0.41	24.93	51.99	0.49	0.2	0.21
0.00	56.00	0.5000	27.87	2595.38	36.74	0.41	25.66	51.99	0.50	0.0	0.00

REACTION COMPONENTS (KIPS AND FT-KIPS)

TRANSVERSE SHEAR	VERTICAL FORCE	WIND SHEAR	MOMENT ABOUT TRANSVERSE	MOMENT ABOUT VERTICAL	MOMENT ABOUT WIND AXIS
0.000	36.741	-27.871	2595.376	0.000	0.000

LOAD CASE 2

DESIGN WIND W/ICE

DEAD LOAD FACTOR 1.00 WIND PSF REDUCTION 0.75 RADIAL ICE 0.50 IN.

WIND VELOCITY 85 BOTTOM 25.04 PSF TOP 38.22 PSF
MAX BASE ROTATION 0.00 DEG

APPLIED APPURTENANCE FORCES

	ELEVATION FT	WEIGHT KIPS	WIND KIPS
PCS ANTENNAS	150.00	1.800	3.122
LOW PROF. PLATF.	150.00	3.250	0.650
EMS RR90-17	140.00	1.350	1.589
T-ARM ARRAY	140.00	1.800	0.893

TUBE PROPERTIES			MEMBER FORCES			STRESSES			STRESS	TOTAL	
ELEV FT	DIAM IN	WALL IN	SHEAR K	BENDING K-FT	AXIAL K	AXIAL KSI	BEND. KSI	ALLOW KSI	RATIOS	DEFL IN	TILT DEG
150.00	25.60	0.3125	4.43	0.01	5.41	0.21	0.00	51.99	0.00	40.4	2.30
140.00	27.80	0.3125	7.92	44.30	9.48	0.34	2.86	51.99	0.06	35.6	2.27
131.25	29.73	0.3125	8.74	113.57	10.46	0.35	6.41	51.99	0.13	31.5	2.21
123.25	31.49	0.3125	8.74	183.44	10.46	0.33	9.21	51.99	0.18	27.9	2.12
			TYPE OF JOINT: SLIP JOINT								
123.25	30.74	0.3750	9.84	183.44	12.61	0.34	8.11	51.99	0.16	27.9	2.12
110.00	33.66	0.3750	11.20	313.70	14.67	0.37	11.53	51.99	0.23	22.3	1.93
97.00	36.52	0.3750	12.59	459.20	17.26	0.40	14.29	51.99	0.28	17.3	1.72
84.00	39.38	0.3750	12.59	622.78	17.26	0.37	16.63	51.99	0.33	12.9	1.48
			TYPE OF JOINT: SLIP JOINT								
84.00	38.51	0.4375	13.90	622.78	20.44	0.38	14.99	51.99	0.30	12.9	1.48
73.00	40.93	0.4375	15.03	775.67	22.74	0.40	16.50	51.99	0.33	9.7	1.29
63.00	43.13	0.4375	16.11	925.98	25.06	0.42	17.71	51.99	0.35	7.2	1.11
53.00	45.33	0.4375	17.17	1087.02	27.49	0.44	18.79	51.99	0.37	5.1	0.92
43.00	47.53	0.4375	17.17	1258.68	27.49	0.42	19.76	51.99	0.39	3.3	0.74
			TYPE OF JOINT: SLIP JOINT								
43.00	46.53	0.5000	18.35	1258.67	32.04	0.43	18.12	51.99	0.36	3.3	0.74
30.00	49.40	0.5000	19.49	1497.24	35.45	0.45	19.10	51.99	0.38	1.6	0.51
20.00	51.60	0.5000	20.49	1692.10	38.57	0.47	19.75	51.99	0.39	0.7	0.34
10.00	53.80	0.5000	21.53	1897.02	41.83	0.49	20.35	51.99	0.40	0.2	0.17
0.00	56.00	0.5000	22.11	2112.28	43.50	0.49	20.89	51.99	0.41	0.0	0.00

REACTION COMPONENTS (KIPS AND FT-KIPS)

TRANSVERSE SHEAR	VERTICAL FORCE	WIND SHEAR	MOMENT ABOUT TRANSVERSE	MOMENT ABOUT VERTICAL	MOMENT ABOUT WIND AXIS
0.000	43.496	-22.110	2112.281	0.000	0.000

SUMMARY TABLE

ELEV	STRESS RATIO	AXIAL	BENDING	LOADING
150.00	0.01	3.51	0.0	1 DESIGN WIND LOADING
140.00	0.07	6.30	51.6	1 DESIGN WIND LOADING
131.25	0.15	7.11	132.3	1 DESIGN WIND LOADING
123.25	0.21	7.11	214.4	1 DESIGN WIND LOADING
110.00	0.27	10.79	369.3	1 DESIGN WIND LOADING
97.00	0.33	12.72	544.2	1 DESIGN WIND LOADING
84.00	0.39	12.72	742.5	1 DESIGN WIND LOADING
73.00	0.39	18.14	929.4	1 DESIGN WIND LOADING
63.00	0.42	20.18	1114.2	1 DESIGN WIND LOADING
53.00	0.44	22.32	1313.1	1 DESIGN WIND LOADING
43.00	0.47	22.32	1526.0	1 DESIGN WIND LOADING
30.00	0.45	29.56	1823.3	1 DESIGN WIND LOADING
20.00	0.47	32.35	2067.1	1 DESIGN WIND LOADING
10.00	0.49	35.26	2324.3	1 DESIGN WIND LOADING
0.00	0.50	36.74	2595.4	1 DESIGN WIND LOADING

MAXIMUM SUPPORT MOMENT K-FT	2595.38
CORRESPONDING AXIAL FORCE KIPS	36.74
CORRESPONDING SHEAR FORCE KIPS	27.87

BASE PLATE AT ELEVATION	0.00	FEET
TUBE DIAMETER	56.00	INCHES
DESIGN MOMENT	2595.4	KIP FT
DESIGN MOMENT IS	0.	DEGREES FROM THE WIND DIRECTION
BOLTS ARE ON THE KNUCKLES OF THE TUBE		
APPLIED AXIAL FORCE	36.7	KIPS
APPLIED SHEAR	27.87	KIPS

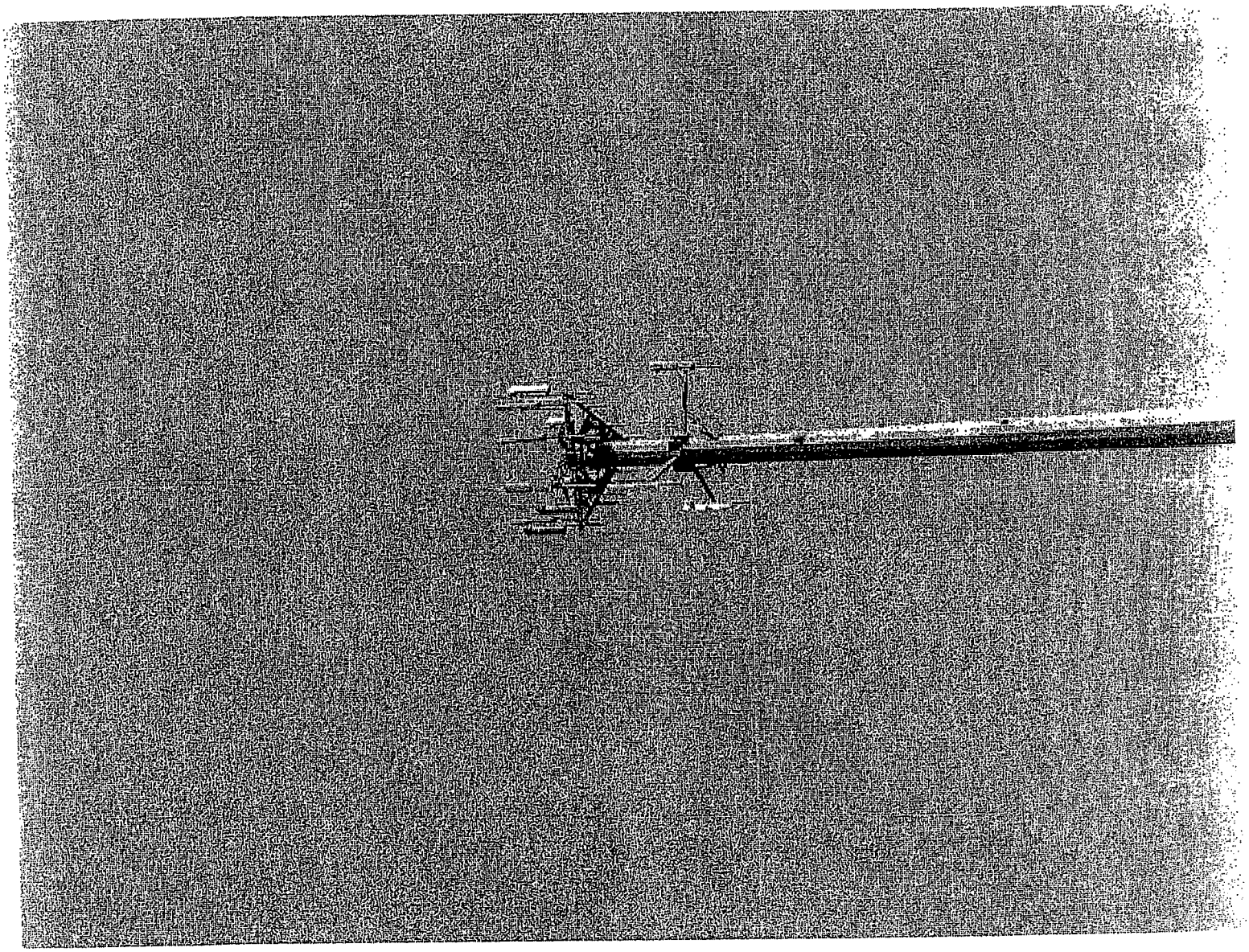
BOLT DATA

BOLT TYPE	A615 GR75	
BOLTS ARE EVENLY SPACED		
DIAMETER	2.250	INCHES
EFFECTIVE AREA	3.250	SQ IN
TOTAL LENGTH	9.0	FEET
MINIMUM EMBEDMENT	4.2	FEET
NUMBER OF BOLTS	24	
BOLT CIRCLE DIAMETER	65.00	INCHES
ALLOWABLE STRESS	60.0	KSI
APPLIED AXIAL STRESS	25.0	KSI
MAX BOLT FORCE	81.4	KIPS
BOLT WEIGHT	3045.6	POUNDS

PLATE DATA

DIAMETER OF PLATE	71.00	INCHES
MATERIAL	A572 GR60	
PROVIDED THICKNESS	2.500	INCHES
REQUIRED THICKNESS	1.548	INCHES
BOLT HOLE DIAMETER	2.625	INCHES
CENTER HOLE SIZE	46.00	INCHES
NET WEIGHT	1533.4	POUNDS
RAW STOCK WEIGHT	3566.5	POUNDS
SURFACE AREA	30.10	SQ FT
ALLOWABLE STRESS	59.99	KSI
MAX APPLIED STRESS	22.99	KSI
CONCRETE STRENGTH	3000.	PSI

Base Plate - use 71.00 inch ROUND x 2.500 inch A572 GR60 with (24) 2.250 diameter x 9.00 foot caged A615 GR75 bolts on a 65.00 inch bolt circle.



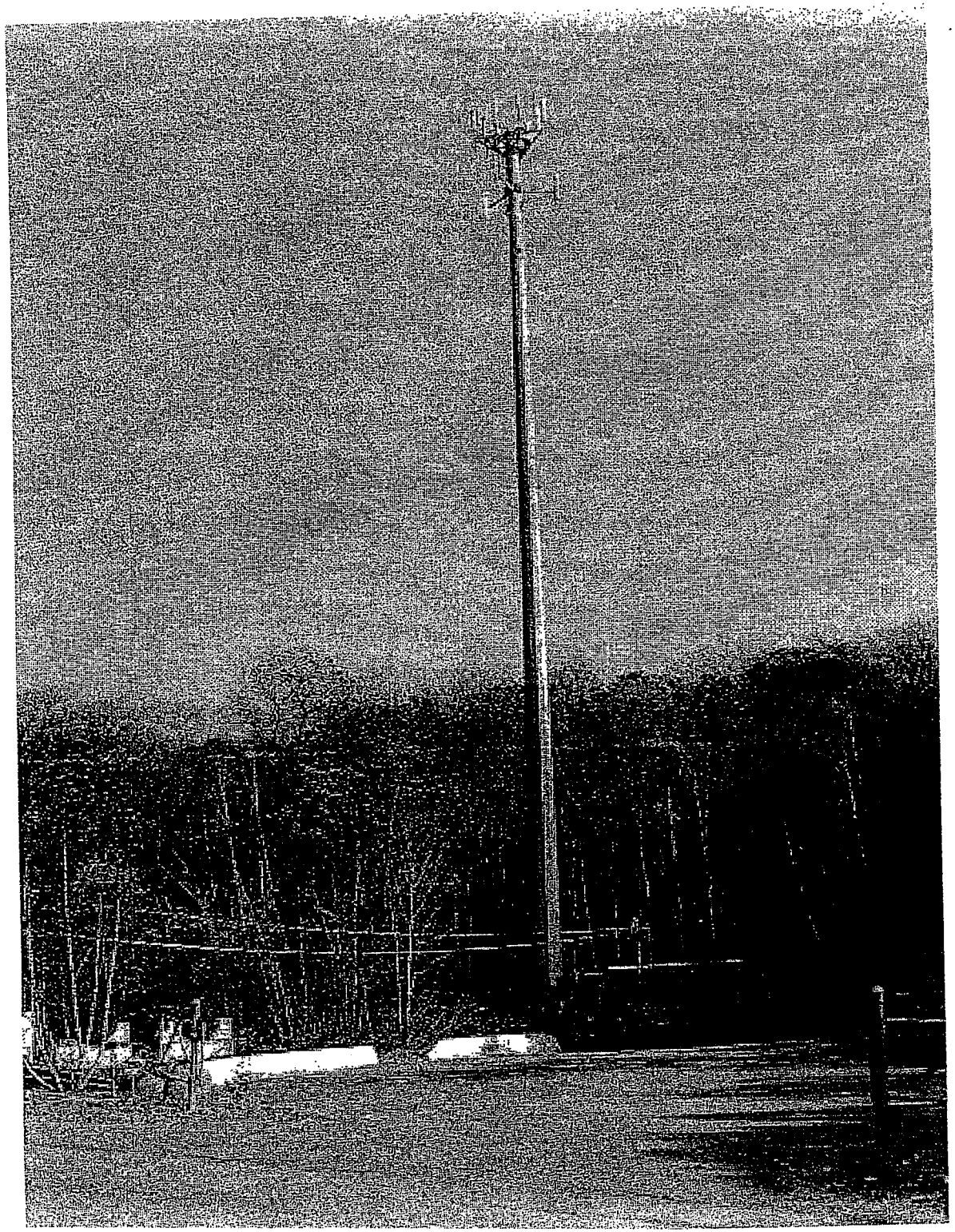


Exhibit E

Power Density Calculations

208 Reed Road

Tolland, Connecticut

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

Technical Memo

To: Maric Burbank
From: Hassan Syed - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CT11413
Date: March 18, 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 208 Reed Road, Tolland, 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 140 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 208 Reed Road, Tolland, CT, is 0.02076 mW/cm^2. This value represents 2.076% 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 2.6%. The combined Power Density for the site is 4.676% of the M.P.E. standard.

New England Market
Connecticut
Worst Case Power Density

T · ·Mobile·

Site:	**CT11413**
Site Address:	**208 Reed Road**
Town:	**Tolland**
Tower Height:	**150 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	140.0 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) =	**0.020755 mW/cm^2**
T-Mobile Worst Case % MPE =	**2.0755%**

Equation Used :

$$S = \frac{(1000)(grf)^2 (Power)(10^{(-g/10)})}{4\pi (R)^2}$$

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	2.6000 %
Town	
Total Excluding T-Mobile	**2.6000 %**
T-Mobile	2.0755
Total % MPE for Site	**4.6755%**