HPC DEVELOPMENT LLC

EM-T-MOBILE-158-090304 ORIGINAL

March 3, 2009

RECEIVED
MAR - 4 2009
CONNECTICUT
SITING COUNCIL

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

Re: Omnipoint Communications, Inc. – exempt modification
880 Post Road East, Westport, Connecticut

Dear Mr. Phelps:

This letter and attachments are submitted on behalf of Omnipoint Communications, Inc. (also referred to herein as "T-Mobile"). T-Mobile is enhancing the capabilities of its wireless system in Connecticut by implementing UMTS technology. In order to do so, T-Mobile will modify antenna and equipment configurations at a number of its existing sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the First Selectman of Westport.

T-Mobile plans to modify the existing facility at 880 Post Road East, Westport owned by the Connecticut Department of Public Safety/Connecticut State Police (coordinates 41°08'15" N, -73°20'07" W). Attached are a compound plan and elevation depicting the planned changes, and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration. Also included is a power density calculation reflecting the modification to T-Mobile's operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will be unaffected. Both T-Mobile's existing and proposed antennas will be located at an approximate center line of 125' AGL on the approximately 180' tower. T-Mobile will add three panel antennas to its existing three antennas, for a total of two per sector, and will add three TMAs, for a total of nine. Six additional coaxial cables also will be added. The proposed modifications will not extend the height of the tower.

2. The proposed changes will not extend the site boundaries. T-Mobile will replace one of its existing cabinets on a concrete pad at the base of the tower. Thus, there will be no effect on the site compound.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed changes will be negligible.

4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site. As indicated on the attached power density calculation, T-Mobile's operations at the site will result in a power density of 7.4553%; the combined site operations will result in a total power density of 28.7453%.

Please feel free to call me at (860) 798-7454 with questions concerning this matter. Thank you for your consideration.

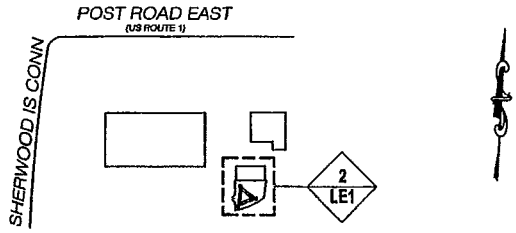
Respectfully yours,

Jennifer Young Gaudet

Jennifer Young Gaudet

cc: Honorable Gordon F. Joseloff, First Selectman, Town of Westport
State of Connecticut Department of Public Safety (underlying property owner)

Attachments

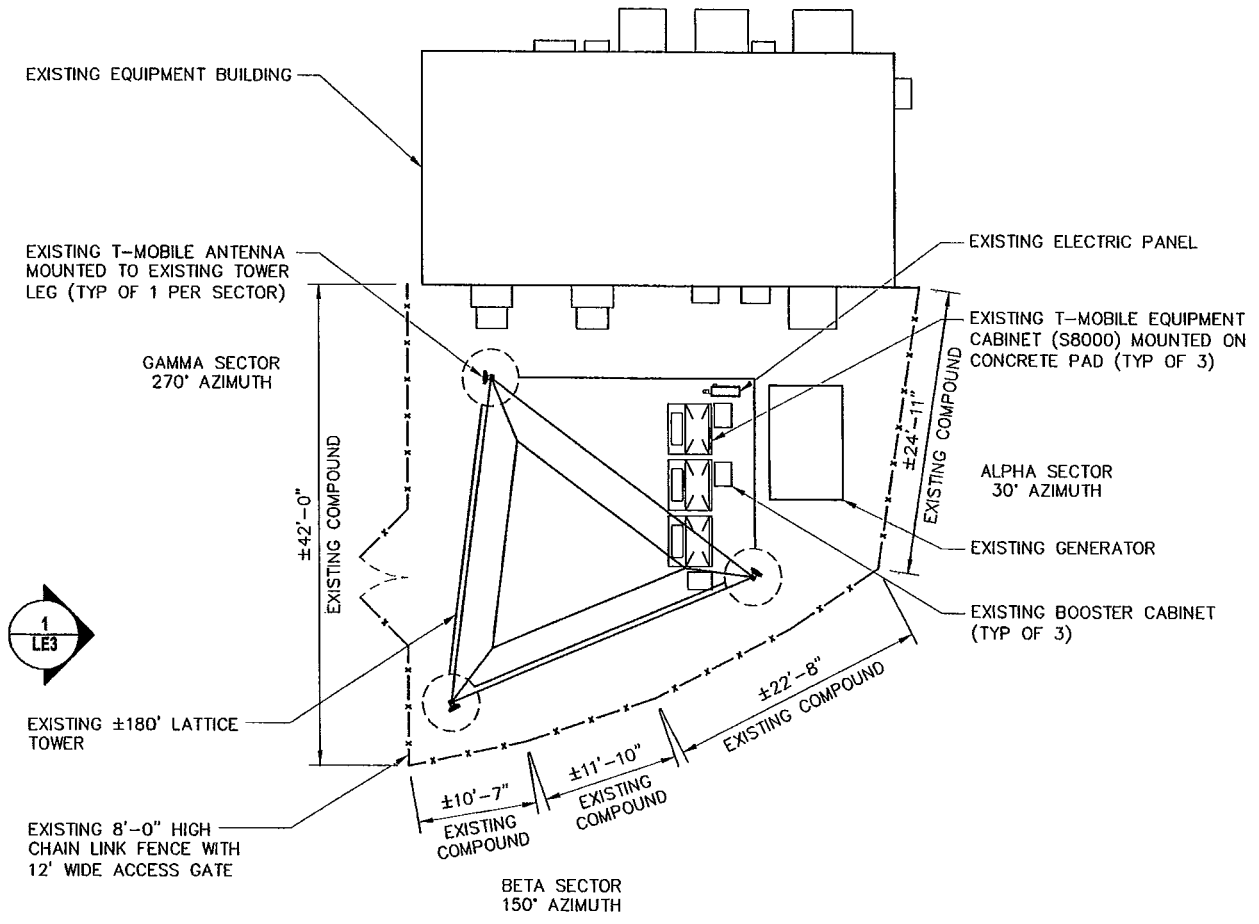


KEY PLAN

SCALE: NTS

1 LE1

NOTE:
1. EXISTING ANTENNAS BY OTHERS NOT SHOWN FOR CLARITY.



EXISTING COMPOUND PLAN

SCALE: 1/16" = 1'-0"

2 LE1

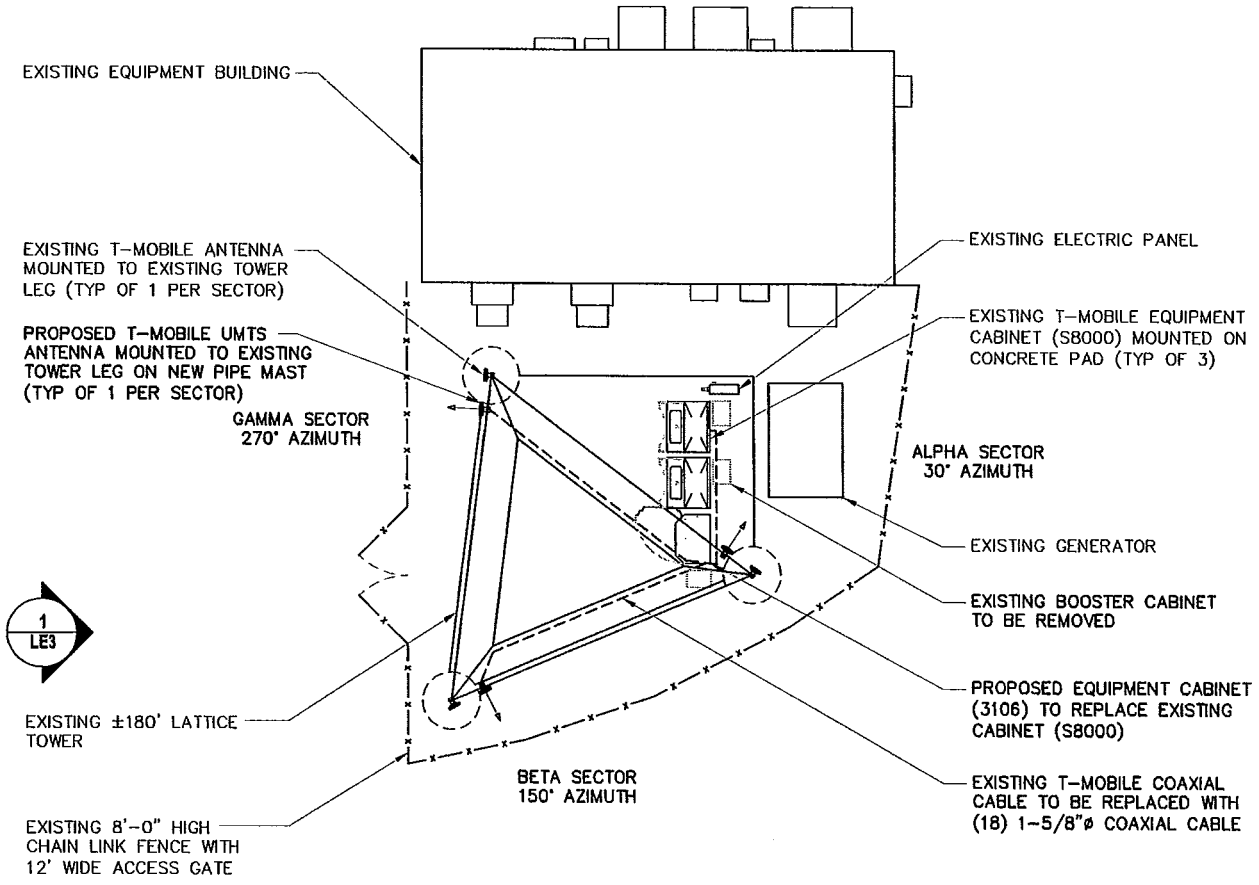
NOTES:
1. LEASE EXHIBITS ARE A CONCEPTUAL DESIGN OF LEASE AGREEMENT ONLY. ACTUAL CONSTRUCTION DOCUMENTS MAY VARY TO COMPLY WITH BUILDING CODES.
2. THE INFORMATION SHOWN IS TAKEN FROM A SURVEY PERFORMED BY "KMB DESIGN GROUP, LLC." DURING SITE VISIT.
3. ELECTRIC/ TELCO SERVICES SHALL BE CONFIRMED PRIOR TO CONSTRUCTION DOCUMENT PHASE.
4. 24 HR. 7 DAYS PER WEEK ACCESS IS REQUIRED FOR SERVICE TECHNICIAN.

KMB DESIGN GROUP
www.kmbdg.com

TITLE: KEY & COMPOUND PLAN		PROJECT: 880 POST ROAD EAST WESTPORT	
CLIENT: Omnipoint		ADDRESS: 880 POST ROAD EAST WESTPORT, CT 06880 FAIRFIELD COUNTY	1 12-8-08 JLS 0 11-20-08 KAM
SITE NO: CT11612B	KMB NO: 350.0004.054	DRAWN BY: KAM	CHECKED BY:

LE1

NOTE:
1. EXISTING ANTENNAS BY OTHERS NOT SHOWN FOR CLARITY.



PROPOSED COMPOUND PLAN

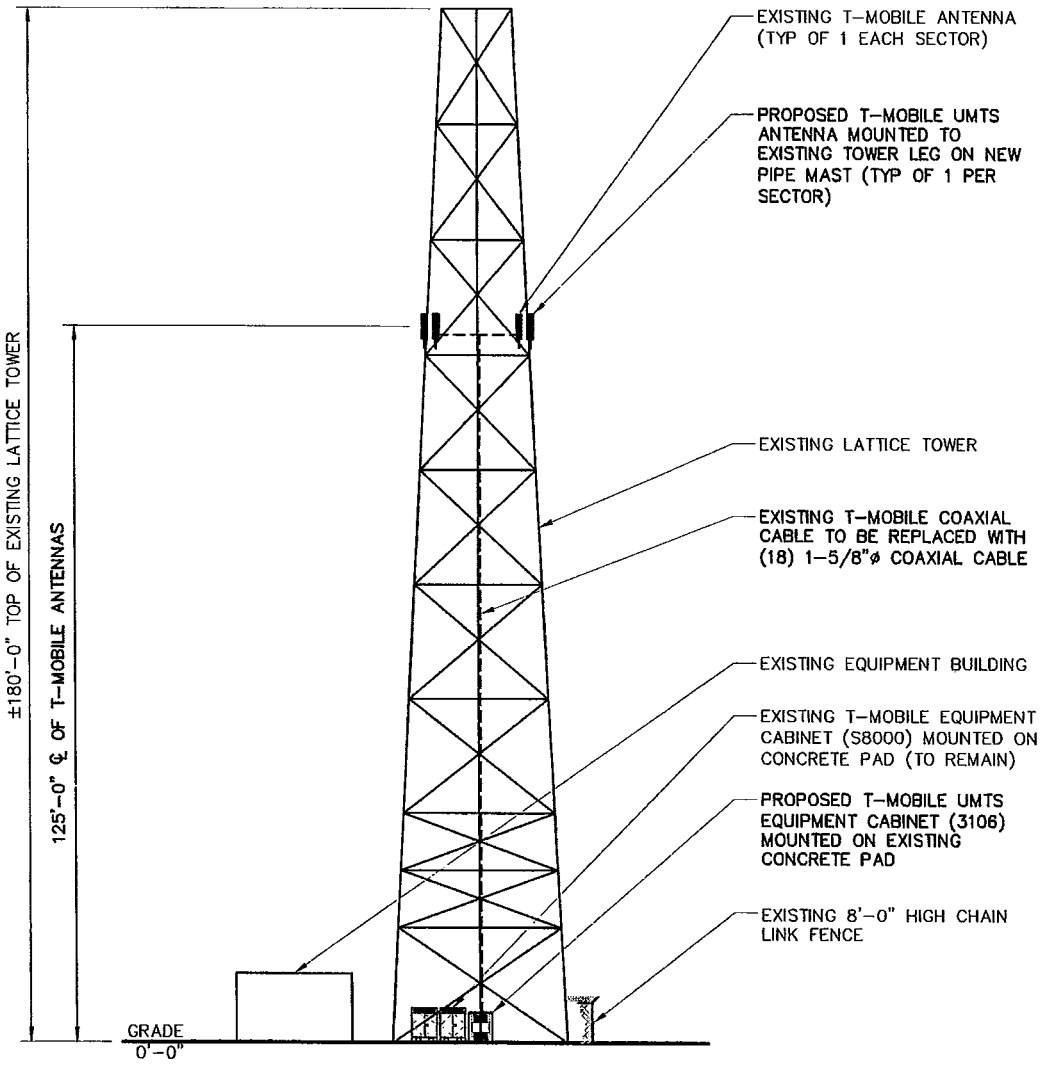
SCALE: 1/16" = 1'-0"

1 LE2

KMB DESIGN GROUP www.kmbdg.com

TITLE: COMPOUND PLAN	PROJECT: 880 POST ROAD EAST WESTPORT		
CLIENT: Omnipoint COMMUNICATIONS, INC.	ADDRESS: 880 POST ROAD EAST WESTPORT, CT 06880 FAIRFIELD COUNTY	1	12-8-08 JLS
		0	11-20-08 KAM
SITE NO: CT11612B	KMB NO: 350.0004.054	DRAWN BY: KAM	CHECKED BY:
			LE2

NOTE:
1. EXISTING ANTENNAS BY OTHERS NOT SHOWN FOR CLARITY.



WEST ELEVATION

SCALE: 1/32" = 1'-0"

1
LE3

KMB DESIGN GROUP
www.kmbdg.com

SITE NO: CT11612B

TITLE: ELEVATION

CLIENT: Omnipoint

KMB NO: 350.0004.054 | DRAWN BY: KAM | CHECKED BY:

PROJECT: 880 POST ROAD EAST WESTPORT

ADDRESS: 880 POST ROAD EAST WESTPORT, CT 06880 FAIRFIELD COUNTY

1	12-8-08	JLS
0	11-20-08	KAM

LE3

Structural Analysis for
KMB Design Group, LLC

180' Self Support Tower

Site Name: Connecticut State Police Tower
Site ID: CT11612-A
Site Address: 880 Post Road East, Westport, CT 06880

FDH Project Number 09-02055E S1

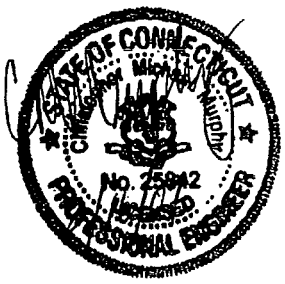
Prepared By:

Krystyn Wagner, EI
Project Engineer

Reviewed By:

Christopher M. Murphy, P.E.
Vice President
CT PE License No. 25842

FDH Engineering, Inc.
2730 Rowland Road, Suite 100
Raleigh, NC 27615
(919)-755-1012
info@fdh-inc.com



February 16, 2009

Prepared pursuant to TIA/EIA-222-F June 1996 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

TABLE OF CONTENTS

2730 Rowland Road, Suite 100, Raleigh, NC 27615 Ph: (919) 755-1012 Fax: (919) 755-1031 info@fdh-inc.com

EXECUTIVE SUMMARY

At the request of KMB Design Group, LLC, FDH Engineering, Inc. performed an analysis of the existing self supported tower located in Westport, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads, pursuant to the *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, TIA/EIA-222-F.* Information pertaining to the existing/proposed antenna loading, current tower geometry, and the member sizes was obtained from:

- Rohn (File No. 26263DL) original design drawings dated February 1, 1991
- URS Corporation (Job No. SAI-007) structural analysis report dated January 4, 2006
- URS Corporation (Job No. F300001748.03) structural analysis report dated March 29, 2001
- URS Corporation (Job No. F300001824.42) Detailed Structural Study and Reinforcement Evaluation dated October 20, 2000
- KMB Design Group, LLC.

The *basic design wind speed* per *TIA/EIA-222-F* standards is 90 mph without ice and 78 mph with 1/2" radial ice.

Conclusions

With the existing and proposed loading from T-Mobile in place at 125 ft, the tower meets the requirements of the *TIA/EIA-222-F* standards. Furthermore, provided the foundations were designed and constructed to support the tower at capacity, the foundations should have the necessary capacity to support the existing and proposed loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH Engineering, Inc. is accurate (i.e., the steel data, tower layout, existing antenna loading, and proposed antenna loading) and that the tower has been properly erected and maintained per the original design drawings.

Recommendation

To ensure the requirements of the *TIA/EIA-222-F* standards are met with the existing and proposed loading in place, we have the following recommendations:

1. Coax lines must be installed as shown in **Figure 1.**
2. The proposed TMAs should be installed behind the proposed panel antennas.

2730 Rowland Road, Suite 100, Raleigh, NC 27615 Ph: (919) 755-1012 Fax: (919) 755-1031 info@fdh-inc.com

APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. *If the actual layout determined in the field deviates from this layout, FDH Engineering, Inc. should be contacted to perform a revised analysis.*

Table 1 – Appurtenance Loading

Existing Loading:

Antenna	Centerline Elevation (ft)	Coax and Lines[1]	Carrier	Mount Type	Description
1-2	180[2]	(2) 7/8"	CSP	Pipe Mount	(2) Celwave PD1142 Omnis
3	177	(1) EW63	CSP	Dish Mount	(1) Celwave PA6-85 Dish
4	170	(1) 7/8"	Verizon	Dish Mount	(1) Andrew PAR6-85 Dish
5	169	(1) 7/8"	CSP	Dish Mount	(1) Andrew P6F-9 Dish
5-17	162	(12) 1-5/8"	Verizon	(3) T-Frames	(6) Decibel DB844H105ESX (6) Antel LPA-185063/8CF
18-23	160[2]	(4) 1-5/8" (2) 7/8"	CSP	(3) Side Arm Mounts	(2) Scala OGT9-806 Omnis (2) Scala AP11-850 (1) Decibel DB222 Dipole (1) Decibel DB536 Omni
24-32	140	(9) 1-5/8"	Cingular BLUE	(3) T-Frames	(9) Dapa 58010 (4) TMAs
33-38	133	(12) 1-1/4"	Cingular	(3) T-Frames	(6) Powerwave 7770.00 (6) Powerwave LGP13519 diplexers (6) Powerwave LGP21401 TMAs
39-41	125[2]	(12) 1-5/8"	T-Mobile	Flush	(3) RFS APX16PV-16PVL (6) TMAs
---	60	(1) 1/2"	Verizon	(1) Standoff	(1) GPS

1 See **Figure 1** for coax location.
2 The elevations of omnis and dipoles are listed to their base elevations.
3 The loading for T-Mobile at 125 ft will be altered. See the proposed loading below.

Proposed Loading:

Antenna	Centerline Elevation (ft)	Coax and Lines	Carrier	Mount Type	Description
1-6	125	(18) 1-5/8"	T-Mobile	(3) T-Frames	(3) RFS APX16PV-16PVL (3) RFS APX16DWV-16DWVS-A20 (9) TMAs

1 This represents the final loading for T-Mobile at 125 ft. According to information provided by KMB, T-Mobile will add (3) RFS APX16DWV-16DWVS-A20 antennas, (3) TMAs, and (6) 1-5/8" coax to their existing loading at 125 ft.

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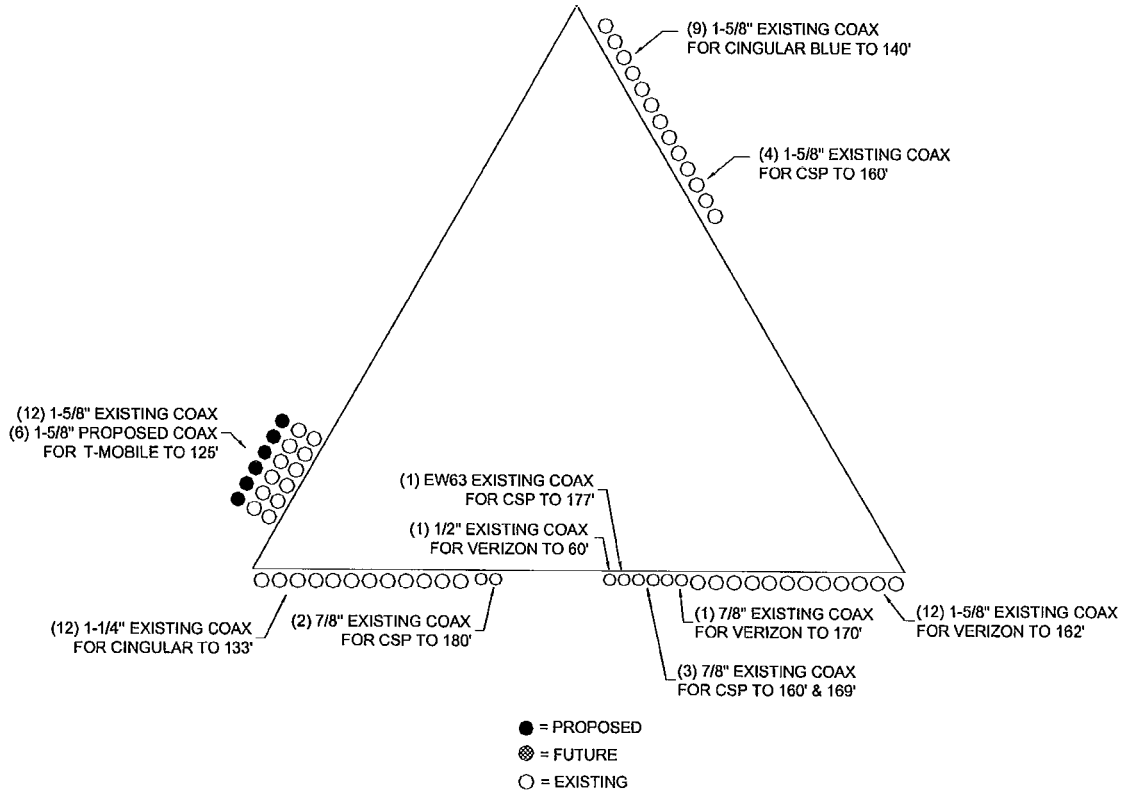

Figure 1 – Coax Layout

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RESULTS

The following yield strength of steel for individual members was used for analysis:

Table 2 - Material Strength

Member Type	Yield Strength
Legs	50 ksi
Bracing	Pipe - 50 ksi Angles – 36 ksi & 50 ksi

Table 3 displays the summary of the ratio (as a percentage) of actual force in the member to their allowable capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its allowable capacity. *Note: Capacities up to 105% are considered acceptable.* **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH Engineering, Inc. should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information

Table 3 – Summary of Working Percentage of Structural Components

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass Fail
T1	180 - 160	Leg	ROHN 3 STD	8.0	Pass
		Diagonal	ROHN 2 STD	28.6	Pass
		Horizontal	ROHN 1.5 STD	12.6 14.8 (b)	Pass
		Top Girt	ROHN 1.5 STD	1.4	Pass
		Inner Bracing	L2x2x1/8	0.8	Pass
T2	160 - 140	Leg	ROHN 4 STD	26.6	Pass
		Diagonal	ROHN 2 STD	47.2	Pass
		Horizontal	ROHN 1.5 STD	22.7 23.4 (b)	Pass
		Inner Bracing	L2x2x1/8	1.6	Pass
T3	140 - 120	Leg	ROHN 5 EH	28.4	Pass
		Diagonal	ROHN 2 EH	69.2	Pass
		Horizontal	ROHN 2 STD	29.2 41.9 (b)	Pass
		Inner Bracing	L2x2x1/8	4.4	Pass
T4	120 - 100	Leg	ROHN 6 EHS	42.4	Pass
		Diagonal	ROHN 2.5 EH	72.9	Pass
		Horizontal	ROHN 2 STD	38.5 46.2 (b)	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	2.2	Pass
T5	100 - 80	Leg	ROHN 6 EH	47.6	Pass

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Section No.	Elevation ft	Component Type	Size	% Capacity	Pass Fail
		Diagonal	ROHN 3 STD	50.8	Pass
		Horizontal	ROHN 2 STD	55.5	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	3.2	Pass
T6	80 - 60	Leg	ROHN 8 EHS	47.9	Pass
		Diagonal	ROHN 3 STD	58.4	Pass
		Horizontal	ROHN 2.5 STD	34.8 53.1 (b)	Pass
		Inner Bracing	L3x3x3/16	2.7	Pass
T7	60 - 40	Leg	ROHN 8 EHS	57.6	Pass
		Diagonal	P3.5x.226	43.6 52.3 (b)	Pass
		Horizontal	ROHN 2.5 STD	49.0 58.1 (b)	Pass
		Inner Bracing	L3 1/2x3 1/2x1/4	1.8	Pass
T8	40 - 20	Leg	ROHN 8 EHS	67.1	Pass
		Diagonal	P3.5x.226	50.9 53.5 (b)	Pass
		Horizontal	ROHN 2.5 STD	65.9	Pass
		Inner Bracing	L3 1/2x3 1/2x1/4	2.4	Pass
T9	20 - 0	Leg	ROHN 8 EH	54.7	Pass
		Diagonal	P3.5x.226	45.1 78.3 (b)	Pass
		Horizontal	P3.5x.226	24.6 65.2 (b)	Pass
		Redund Horz 1 Bracing	ROHN 1.5 STD	23.7	Pass
		Redund Diag 1 Bracing	ROHN 1.5 STD	65.5	Pass
		Redund Hip 1 Bracing	ROHN 1.5 STD	0.1	Pass
		Inner Bracing	ROHN 2 STD	3.4	Pass

*Capacities include 1/3 allowable increase for wind.

Table 4 – Maximum Base Reactions

Load Type	Direction	Current Analysis *(TIA/EIA-222-F)*	Original Design *(ANSI/EIA-222-D)*
Individual Foundation	Horizontal	35 k	---
	Uplift	227 k	277 k
	Compression	266 k	320 k
Overturning Moment		5,811 k-ft	7,010 k-ft

2730 Rowland Road, Suite 100, Raleigh, NC 27615 Ph: (919) 755-1012 Fax: (919) 755-1031 info@fdh-inc.com

GENERAL COMMENTS

This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of KMB Design Group, LLC to verify that the tower modeled and analyzed is the correct structure. If there are substantial modifications made to the appurtenance loading provided by KMB Design Group, LLC, FDH Engineering, Inc. should be notified immediately to perform a revised analysis.

LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.

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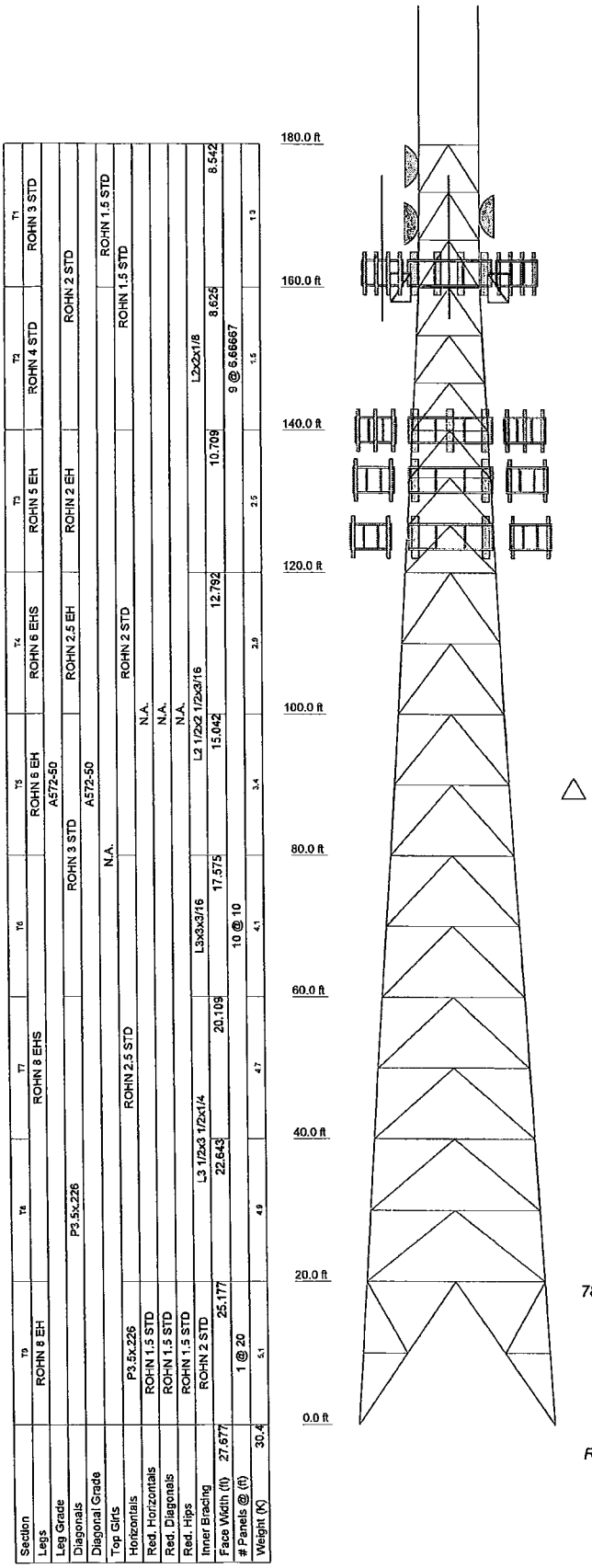
APPENDIX

2730 Rowland Road, Suite 100, Raleigh, NC 27615 Ph: (919) 755-1012 Fax: (919) 755-1031 info@fdh-inc.com



DESIGNED APPURTENANCE LOADING

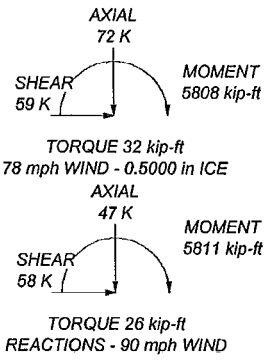
TYPE	ELEVATION	TYPE	ELEVATION
PD1142 (State Police)	180	(2) Diplexer - Powerwave LGP13519 (Cingular)	133
PD1142 (State Police)	180	(2) Diplexer - Powerwave LGP13519 (Cingular)	133
PA6-85 (State Police)	177	(2) Diplexer - Powerwave LGP13519 (Cingular)	133
PAR6-85 (Verizon)	170	(2) TMA - Powerwave LGP21401 (Cingular)	133
P6F-9 (State Police)	169	(2) TMA - Powerwave LGP21401 (Cingular)	133
(2) Antel LPA-185063/8CF w/ Mount Pipe (Verizon)	162	(2) TMA - Powerwave LGP21401 (Cingular)	133
(2) Antel LPA-185063/8CF w/ Mount Pipe (Verizon)	162	15' T-Frame (Cingular)	133
(2) Antel LPA-185063/8CF w/ Mount Pipe (Verizon)	162	15' T-Frame (Cingular)	133
12' Universal T-Frame Sector Mount (Verizon)	162	15' T-Frame (Cingular)	133
12' Universal T-Frame Sector Mount (Verizon)	162	(2) Powerwave 7770.00 w/ Mount Pipe (Cingular)	133
12' Universal T-Frame Sector Mount (Verizon)	162	(2) Powerwave 7770.00 w/ Mount Pipe (Cingular)	133
(2) DB844H105ESX w/Mount Pipe (Verizon)	162	(2) Powerwave 7770.00 w/ Mount Pipe (Cingular)	133
(2) DB844H105ESX w/Mount Pipe (Verizon)	162	RFS APX16PV-16PVL w/ Mount Pipe (T-Mobile)	125
(2) DB844H105ESX w/Mount Pipe (Verizon)	162	RFS APX16PV-16PVL w/ Mount Pipe (T-Mobile)	125
DB536 (State Police)	160	RFS APX16PV-16PVL w/ Mount Pipe (T-Mobile)	125
6' Side Mount Standoff (1) (State Police)	160	12' Universal T-Frame Sector Mount (T-Mobile)	125
6' Side Mount Standoff (1) (State Police)	160	12' Universal T-Frame Sector Mount (T-Mobile)	125
6' Side Mount Standoff (1) (State Police)	160	12' Universal T-Frame Sector Mount (T-Mobile)	125
(2) OGT9-806 (State Police)	160	(3) TMA (T-Mobile)	125
(2) AP11-850 (State Police)	160	(3) TMA (T-Mobile)	125
DB222 (State Police)	160	(3) TMA (T-Mobile)	125
TMA (Cingluar)	140	RFS APX16DWV-16DWV-A20 w/ Mount Pipe (T-Mobile)	125
TMA (Cingluar)	140	RFS APX16DWV-16DWV-A20 w/ Mount Pipe (T-Mobile)	125
(2) TMA (Cingluar)	140	RFS APX16DWV-16DWV-A20 w/ Mount Pipe (T-Mobile)	125
12' Universal T-Frame Sector Mount (Cingluar)	140	GPS (Verizon)	60
12' Universal T-Frame Sector Mount (Cingluar)	140	3' Side Mount Standoff (1) (Verizon)	60
12' Universal T-Frame Sector Mount (Cingluar)	140		
(3) 58010 w/Mount Pipe (Cingluar)	140		
(3) 58010 w/Mount Pipe (Cingluar)	140		
(3) 58010 w/Mount Pipe (Cingluar)	140		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 90 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 78 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 78.3%



FDH Engineering, Inc.
2730 Rowland Road, Suite 100
Raleigh, NC 27615
Phone: (919) 755-1012
FAX: (919) 755-1031

Tower Analysis

Job: *Connecticut State Police Tower, CT11612-A*			
Project: *09-02055E S1*			
Client: KMB Design Group, LLC	Drawn by: Krystyn Wagner	App'd:	
Code: TIA/EIA-222-F	Date: 02/18/09	Scale: NTS	
Path:		Dwg No. E-1	

T-Mobile USA Inc.
35 Griffin Rd South, Bloomfield, CT 06002-1853
Phone: (860) 692-7100
Fax: (860) 692-7159

Technical Memo

To: HPC
From: Farid Marbouh - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CT11612B
Date: March 2, 2009

1. Introduction:

This report is the result of an Electromagnetic Field Intensities (EMF - Power Densities) study for the T-Mobile antenna installation on a Self Support Tower at 880 Post Road East, Westport, CT. This study incorporates the most conservative consideration for determining the practical worst case power density levels that would be theoretically encountered in 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 (1940-1949.8), (2140-2145), (2110-2120)MHz frequency Band.
2) The antenna array consists of three sectors, with 2 antennas per sector.
3) The model number for GSM antenna is APX16PV-16PVL.
3) The model number for UMTS antenna is APX16DWV-16DWV.
4) GSM antenna center line height is 125 ft.
4) UMTS antenna center line height is 125 ft.
5) The maximum transmit power from any GSM sector is 2353.53 Watts Effective Radiated Power (EiRP) assuming 8 channels per sector.
5) The maximum transmit power from any UMTS sector is 2458.61 Watts Effective Radiated Power (EiRP) assuming 2 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 antenna installation on a Self Support Tower at 880 Post Road East, Westport, CT, is 0.07455 mW/cm^2. This value represents 7.455% of the Maximum Permissible Exposure (MPE) standard of 1 milliwatt per square centimeter (mW/cm^2) set forth in the FCC/ANSI/IEEE C95.1-1991. Furthermore, the proposed antenna location for T-Mobile will not interfere with existing public safety communications, AM or FM radio broadcasts, TV, Police Communications, HAM Radio communications or any other signals in the area.
The combined Power Density from other carriers is 21.29%. The combined Power Density for the site is 28.745% of the M.P.E. standard.

Connecticut Market

T-Mobile

Worst Case Power Density

Site:	**CT11612B**
Site Address:	**880 Post Road East**
Town:	**Westport**
Tower Height:	**180 ft.**
Tower Style:	**Self Support Tower**

GSM Data		**UMTS Data**	
Base Station TX output	20 W	**Base Station TX output**	40 W
Number of channels	8	**Number of channels**	2
Antenna Model	APX16PV-16PVL	**Antenna Model**	APX16DWV-16DWV
Cable Size	1 5/8 in.	**Cable Size**	1 5/8 in.
Cable Length	140 ft.	**Cable Length**	140 ft.
Antenna Height	125.0 ft.	**Antenna Height**	125.0 ft.
Ground Reflection	1.6	**Ground Reflection**	1.6
Frequency	1945.0 MHz	**Frequency**	2.1 GHz
Jumper & Connector loss	4.50 dB	**Jumper & Connector loss**	1.50 dB
Antenna Gain	17.8 dBi	**Antenna Gain**	18.0 dBi
Cable Loss per foot	0.0116 dB	**Cable Loss per foot**	0.0116 dB
Total Cable Loss	1.6240 dB	**Total Cable Loss**	1.6240 dB
Total Attenuation	6.1240 dB	**Total Attenuation**	3.1240 dB
Total EIRP per Channel	54.69 dBm	**Total EIRP per Channel**	60.90 dBm
(In Watts)	294.19 W	**(In Watts)**	1229.31 W
Total EIRP per Sector	63.72 dBm	**Total EIRP per Sector**	63.91 dBm
(In Watts)	2353.53 W	**(In Watts)**	2458.61 W
nsg	11.6760	**nsg**	14.8760
Power Density (S) =	**0.036463 mW/cm^2**	**Power Density (S) =**	**0.038090 mW/cm^2**

T-Mobile Worst Case % MPE = 7.4553%

Equation Used :

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

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Co-Location Total

Carrier	**% of Standard**
Verizon	15.2800 %
Cingular	2.9200 %
Sprint	
AT&T Wireless	
Nextel	
MetroPCS	
Other Antenna Systems	3.0900 %
Total Excluding T-Mobile	**21.2900 %**
T-Mobile	7.4553
Total % MPE for Site	**28.7453%**