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@ct.gov
Internet: ct.gov/csc

Daniel F. Caruso
Chairman

January 18, 2011

Thomas J. Regan, Esq.
Brown Rudnick LLP
CityPlace I, 185 Asylum Street
Hartford, CT 06103

RE: **EM-T-MOBILE-027-101217B** – T-Mobile USA, Inc. notice of intent to modify an existing telecommunications facility located at 46 Meadow Road, Clinton, Connecticut.

Dear Attorney Regan:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not less than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated December 17, 2010. 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. Please be advised that the validity of this action shall expire one year from the date of this letter. 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. Thank you for your attention and cooperation.

Very truly yours,

Linda Roberts

Linda Roberts
Executive Director

LR/CDM/cm

c: The Honorable William Fritz, Jr., First Selectman, Town of Clinton
Thomas Lane, Zoning Enforcement Officer, Town of Clinton

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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Internet: ct.gov/csc

Daniel F. Caruso
Chairman

December 21, 2010

The Honorable William W. Fritz, Jr.
First Selectman
Town of Clinton
54 East Main Street
Clinton, CT 06413

RE: **EM-T-MOBILE-027-101217B** – T-Mobile USA, Inc. notice of intent to modify an existing telecommunications facility located at 46 Meadow Road, Clinton, Connecticut.

Dear First Selectman Fritz:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

If you have any questions or comments regarding this proposal, please call me or inform the Council by January 6, 2011.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts

Linda Roberts
Executive Director

LR/jbw

Enclosure: Notice of Intent

c: Thomas Lane, Zoning Enforcement Officer, Town of Clinton

THOMAS J. REGAN
Direct Dial: (860) 509-6522
tregan@brownrudnick.com

BROWNRUDNICK
CityPlace I
185 Asylum
Street
Hartford
Connecticut
06103
tel 860.509.6500
fax 860.509.6501

EM-T-MOBILE-027-101217B

Via Hand Delivery

December 17, 2010

ORIGINAL

Daniel F. Caruso, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification /Clinton @ 46 Meadow Road

Dear Mr. Caruso:

On behalf of T-Mobile USA, Inc. ("T-Mobile"), enclosed for filing are an original and five (5) copies of T-Mobile's Notice of Exempt Modification for a Facility located at the above-referenced site.

I also enclose herewith a check in the amount of $625.00 representing the filing fee.

I would appreciate it if you would date-stamp the enclosed copy of this transmittal letter and return it to the courier delivering this package.

If you have any questions, please feel free to contact me.

Very truly yours,

BROWN RUDNICK LLP

By: Thomas J. Regan
Thomas J. Regan

Enclosures

cc w/ encl. via 1st Class Mail – William W. Fritz, First Selectman

40279547 v1 - REGANTJ - 025064/0016

CONNECTICUT SITING COUNCIL

In re:		
T-Mobile USA, Inc. Notice to Make an Exempt Modification to an Existing Facility at 46 Meadow Road, Clinton, Connecticut.	:	**EXEMPT MODIFICATION NO. _____**
	:	December 17, 2010

NOTICE OF EXEMPT MODIFICATION

Pursuant to Conn. Agencies Regs. §§ 16-50j-73 and 16-50j-72(b), T-Mobile USA, Inc. ("T-Mobile") hereby gives notice to the Connecticut Siting Council ("Council") and the Town of Clinton of T-Mobile's intent to make an exempt modification to the existing lattice tower (the "Tower") located at 46 Meadow Road in Clinton, Connecticut. Specifically, T-Mobile plans to upgrade its wireless system in Connecticut by implementing its Universal Mobile Telecommunications System ("UMTS"). UMTS is a third-generation ("3G") technology that utilizes a code division multiple access ("CDMA") base to allow for fast and large data transfers. To accomplish this upgrade, T-Mobile must modify its antenna and equipment configurations at many of its existing sites.

Once the UMTS upgrade is complete, T-Mobile will operate on a more unified communication system, allowing international wireless telephones to function world-wide. Furthermore, UMTS will enhance global positioning system ("GPS") navigation capabilities and provide emergency responders with more advanced tracking capabilities. The proposed UMTS technology is compatible with the existing second-generation ("2G") Global System for Mobile Communication ("GSM") currently on the Tower and the proposed upgrade is expected to enhance the existing 2G system. In order to accomplish the upgrade at this site, T-Mobile plans to add UMTS technology and install associated equipment at the base of the Tower.

Under the Council's regulations (Conn. Agencies Regs. § 16-50j-72(b)), T-Mobile's plans do not constitute a modification subject to the Council's review because T-Mobile will not

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185 ASYLUM STREET
HARTFORD, CT 06103
(860) 509-6500

change the height of the Tower, will not extend the boundaries of the site, will not increase the noise levels at the site, and will not increase the total radio frequency electromagnetic radiation power density at the site to levels above applicable standards.

The Tower is a 192-foot, 6-inch lattice tower located at 46 Meadow Road in Clinton, Connecticut (latitude N 41° 16' 30.74", longitude W -72° 29' 51.76"). The Tower is owned by SBA Towers. Multiple carriers are currently located on the Tower. Currently, T-Mobile has 3 GSM panel antennas located on the Tower with a centerline of 192-feet, 6-inches. A site plan with Tower specifications is attached.

T-Mobile plans to install 3 new UMTS antennas and install 6 Tower Mounted Amplifiers ("TMA"). Specifically, T-Mobile plans to install 3 PCS TMA and 3 AWS TMA. The centerline of the new antennas and TMA will remain at 192-feet, 6-inches. T-Mobile will continue to utilize its 6 existing 1-5/8 inch coaxial cables and install 6 additional 1-5/8 inch coax cables.

To confirm the Tower can support these changes, T-Mobile commissioned FDH Engineering Inc. to perform a structural analysis of the Tower (attached). According to the Structural Analysis Report, dated November 2, 2010: "...the foundation should have the necessary capacity to support the existing and proposed loading" (Page 3, Structural Analysis Report).

In addition, T-Mobile proposes to install 1 new UMTS equipment cabinet on its existing 12-foot by 5-foot (approximately) concrete pad. Since T-Mobile's equipment cabinets will be located on the existing concrete pad, no increase in the boundaries of the site will be necessary.

Excluding brief, minor, construction-related noise during the addition of the antennas and the installation of the equipment cabinet, T-Mobile's changes to the Tower will not increase noise levels at the site.

The proposed antennas will not adversely impact the health and safety of the surrounding community or the people working on the Tower. The total radio frequency exposure measured

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around the Tower will be well below the National Council on Radiation Protection and Measurements' ("NCRP") standard adopted by the Federal Communications Commission ("FCC"). The worst-case power density analysis for the antennas, measured at the base of the Tower, indicates that T-Mobile's proposed antennas will emit 2.199% of the NCRP's standard for maximum permissible exposure. A cumulative power density analysis indicates that together, all of the antennas on the Tower will emit 14.97% of the NCRP's standard for maximum permissible exposure. Therefore, the power density levels will be below the FCC mandated radio frequency exposure limits in all locations around the Tower, even with extremely conservative assumptions. The power density analysis is attached.

In conclusion, T-Mobile's proposed plan to add antennas and equipment at this site does not constitute a modification subject to the Council's jurisdiction because T-Mobile will not increase the height of the Tower, will not extend the boundaries of the site, will not increase the noise levels at the site, and the total radio frequency electromagnetic radiation power density will stay within all applicable standards. *See* Conn. Agencies Regs. § 16-50j-72.

T-Mobile USA, Inc.

By: Thomas J. Regan

Thomas J. Regan
Brown Rudnick LLP
185 Asylum Street, CityPlace I
Hartford, CT 06103-3402
Email - tregan@brownrudnick.com
Phone - 860.509.6522 /Fax - 860.509.6501

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185 ASYLUM STREET
HARTFORD, CT 06103
(860) 509-6500

Certificate of Service

This is to certify that on this 17th day of December, 2010, the foregoing Notice of Exempt Modification was sent, via first class mail, to the following:

Town of Clinton
First Selectman William W. Fritz
54 E. Main Street
Clinton, CT 06413

By: Thomas J. Regan
Thomas J. Regan

40279535 v1 - 025064/0016

I RUDNICK LLP
\CE I
LUM STREET
RD, CT 06103
·6500

LEASE EXHIBIT

THIS LEASE PLAN IS DIAGRAMMATIC IN NATURE AND IS INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION AND SIZE OF THE PROPOSED WIRELESS COMMUNICATION FACILITY. THE SITE LAYOUT WILL BE FINALIZED UPON COMPLETION OF SITE SURVEY AND FACILITY DESIGN.

1 / L-1 **SITE PLAN**
SCALE: 1" = 40'

APPROXIMATE NORTH

40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

DESIGNED BY:	CFC
DRAWN BY:	DEB
CHK'D BY:	CFC

A	10/7/10	DEB	FINAL LEASE EXHIBIT
A	10/4/10	DEB	LEASE EXHIBIT - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

CENTEK engineering
Centered on Solutions
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405

T-Mobile

T-MOBILE
CT11429A
48 MEADOW STREET

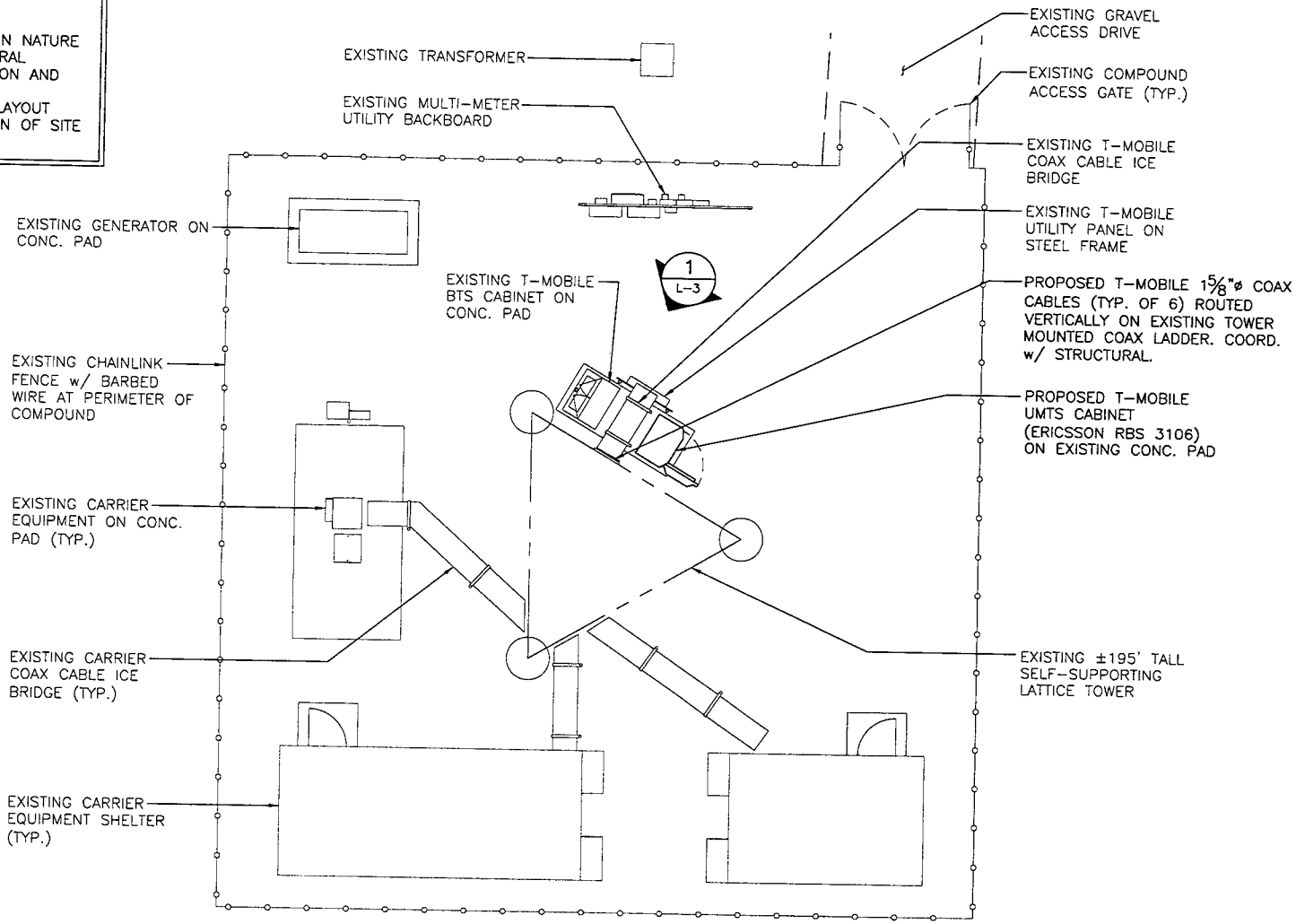
DATE:	10/1/10
SCALE:	AS SHOWN
JOB NO.	10116.C07

LEASE EXHIBIT

SHEET NO.
L-1
Sheet No. 1 of 3

LEASE EXHIBIT

THIS LEASE PLAN IS DIAGRAMMATIC IN NATURE AND IS INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION AND SIZE OF THE PROPOSED WIRELESS COMMUNICATION FACILITY. THE SITE LAYOUT WILL BE FINALIZED UPON COMPLETION OF SITE SURVEY AND FACILITY DESIGN.



1 / L-2 **COMPOUND PLAN**

SCALE: 1" = 10'

TRUE NORTH

10 0 5 10 20 40

(IN FEET)

1 inch = 10 ft.

DESIGNED BY:		CFC
DRAWN BY:		DEB
CHK'D BY:		CFC
A	10/7/10	DEB	FINAL LEASE EXHIBIT
A	10/4/10	CFC	LEASE EXHIBIT - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

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Branford, CT 06405
www.CentekEng.com

T-Mobile

T-MOBILE
CT11429A
48 MEADOW STREET
CLINTON, CT

DATE:	10/1/10
SCALE:	AS SHOWN
JOB NO.	10116.C07

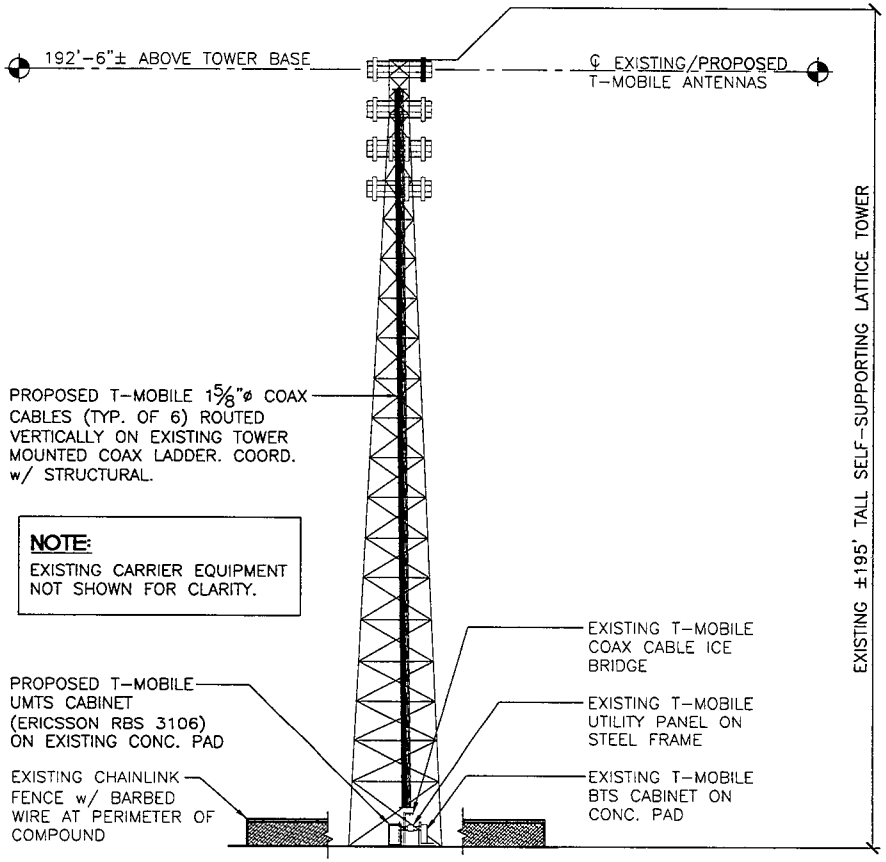
LEASE EXHIBIT

SHEET NO.
L-2
Sheet No. 2 of 3

LEASE EXHIBIT

THIS LEASE PLAN IS DIAGRAMMATIC IN NATURE AND IS INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION AND SIZE OF THE PROPOSED WIRELESS COMMUNICATION FACILITY. THE SITE LAYOUT WILL BE FINALIZED UPON COMPLETION OF SITE SURVEY AND FACILITY DESIGN.

EQUIP. UPGRADE PROJECT SCOPE	
EQUIPMENT TYPE	PROPOSED CHANGES
RADIO CABINET	• (1) EXISTING BTS CABINET ON EXISTING CONC. PAD TO REMAIN. • INSTALL (1) ERICSSON RBS 3106 CABINET ON EXISTING CONC. PAD AS SHOWN HEREIN.
ANTENNAS/ TMAs	• EXISTING (3) EMS RR90-17-02DP PANEL ANTENNAS AND SECTOR FRAME MOUNTS TO REMAIN. • (3) RFS APX16DWV-16DWV-S PANEL ANTENNAS ARE PROPOSED TO BE INSTALLED ON VACANT MOUNT PIPES ON THE EXISTING (3) SECTOR FRAME MOUNTS. • (3) PCS AND (3) AWS TMAs ARE PROPOSED TO BE INSTALLED ON THE (6) EXISTING ANTENNA MOUNT PIPES BEHIND ANTENNAS.
COAX CABLES	• NO CHANGE IS PROPOSED FOR THE (6) EXISTING 1 5/8"ø COAX CABLES ROUTED VERTICALLY ON EXISTING TOWER MOUNTED COAX LADDER. • (6) ADDITIONAL 1 5/8"ø COAX CABLES ARE PROPOSED TO BE ROUTED VERTICALLY ON THE EXISTING TOWER MOUNTED COAX LADDER. ROUTING TO BE COORDINATED WITH THE TOWER STRUCTURAL ANALYSIS TO BE PROVIDED.
COMPOUND LIMITS	• NO CHANGE TO THE LIMITS OF THE EXISTING FENCED COMPOUND IS PROPOSED.



1 / L-3 **NORTH ELEVATION**

SCALE: 1" = 30'

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

DESIGNED BY:	CFC
DRAWN BY:	DEB
CHK'D BY:	CFC

A	10/7/10	DEB	FINAL LEASE EXHIBIT
A	10/1/10	DEB	LEASE EXHIBIT - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

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63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

T-MOBILE
CT11429A
40 MEADOW STREET
CLINTON, CT

DATE: 10/1/10
SCALE: AS SHOWN
JOB NO. 10116.007

LEASE EXHIBIT

SHEET NO.
L-3
Sheet No. 3 of 3

FDH ENGINEERING

FDH Engineering, Inc., 2730 Rowland Rd. Raleigh, NC 27615, Ph. 919.755.1012, Fax 919.755.1031

Structural Analysis for SBA Network Services, Inc.

195' Self Support Tower

SBA Site Name: Clinton 4
SBA Site ID: CT01879-S

FDH Project Number 10-02083E S2

Prepared By:

Krystyn Wagner, EI
Project Engineer

Reviewed By:

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

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Raleigh, NC 27615
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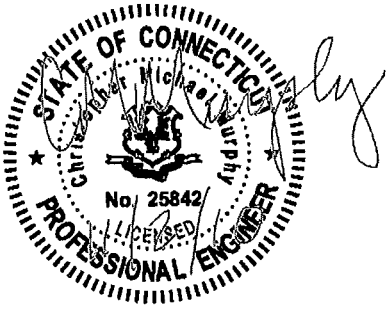


November 2, 2010

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

TABLE OF CONTENTS

EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed an analysis of the existing self supported tower located in Clinton, 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, geotechnical data, current tower geometry, and the member sizes was obtained from Sabre Communications Corporation (Job No. 00-10101) Structural Design Report dated November 23, 1999, Jaworski Geotech, Inc. (Job No. 99500G) Field Soil Screening dated December 13, 1999, and SBA Network Services, Inc.

The *basic design wind speed* per *TIA/EIA-222-F* standards is 85 mph without ice and 61 mph with 1/2" radial ice.

Conclusions

With the existing and proposed loading from T-Mobile in place at 192.5 ft, the tower meets the requirements of the *TIA/EIA-222-F* standards provided the **Recommendations** listed below are satisfied. Furthermore, provided the foundation was designed and constructed to support the original design reactions (see Sabre Job No. 00-10101), the foundation 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.

Recommendations

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 directly behind the existing/proposed panel antennas.

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 No.	Antenna Elevation (ft)	Description	Coax and Lines [1]	Carrier	Mount Elevation (ft)	Mount Type
1-12	192.5[2,3]	(12) EMS RR90-17-02DP (6) Allen Telecom FE15501P77/75 TMAs	(12) 1-5/8"	T-Mobile	192	(3) T-Frames
13	186.5	(1) Sinclair SD312HL Dipole	(1) 7/8"	Town of Clinton	183	(1) Standoff (C_AA_A = 2.72 ft²)
14	182.3	(1) Celwave PD1151 Omni	(1) 7/8"	Town of Clinton	174.5	(1) Standoff (C_AA_A = 2.72 ft²)
15-26	182[4]	(12) Decibel DB980G90	(12) 1-5/8"	Sprint	182	(3) T-Frames
27	176.5	(1) Sinclair SD312HL Dipole	(1) 7/8"	Town of Clinton	173	(1) Standoff (C_AA_A = 2.72 ft²)
28	166.5	(1) Sinclair SD312HL Dipole	(1) 7/8"	Town of Clinton	163	(1) Standoff (C_AA_A = 2.72 ft²)
29-40	162	(6) Decibel DB844H80E-XY (6) Decibel DB948F85T2E-M	(12) 1-5/8"	Verizon	162	(3) T-Frames
41-52	152	(9) CSS DUO1417-8686 (3) Powerwave 7770 (6) ADC Cleargain Dual Banc 800/1900 TMAs (3) CSS Dual Band Combiners (3) Powerwave LGP13519 Diplexers	(15) 1-5/8"	AT&T	152	(3) T-Frames
53	100	(1) Radiowaves RDH4518A Dish	(2) Cat5	Town of Clinton	100	(1) Pipe Mount

1. See **Figure 1** for coax location.
2. T-Mobile currently has (6) antennas, (6) TMAs, and (6) coax installed at 192 ft. According to information provided by SBA, T-Mobile may install up to (12) antennas, (6) TMAs, and (12) coax.
3. The loading for T-Mobile at 192.5 ft will be altered. See the proposed loading below.
4. Sprint currently has (6) antennas and (6) coax installed at 182 ft. According to information provided by SBA, Sprint may install up to (12) antennas and (12) coax. Analysis performed with total leased loading in place.

Proposed Loading:

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
1-12	192.5[1]	(9) EMS RR90-17-02DP (3) RFS APX16DWV-16DWV-S (3) Twin PCS TMAs (3) Twin AWS TMAs	(12) 1-5/8"	T-Mobile	192	(3) T-Frames

1. This represents the final loading for T-Mobile at 192.5 ft. According to information provided by SBA, T-Mobile will remove (3) EMS RR90-18-02DP antennas and (6) TMAs and install (3) RFS APX16DWV-16DWV-S antennas, (3) Twin PCS TMAs, and (3) Twin AWS TMAs. Analysis performed with total leased loading in place.

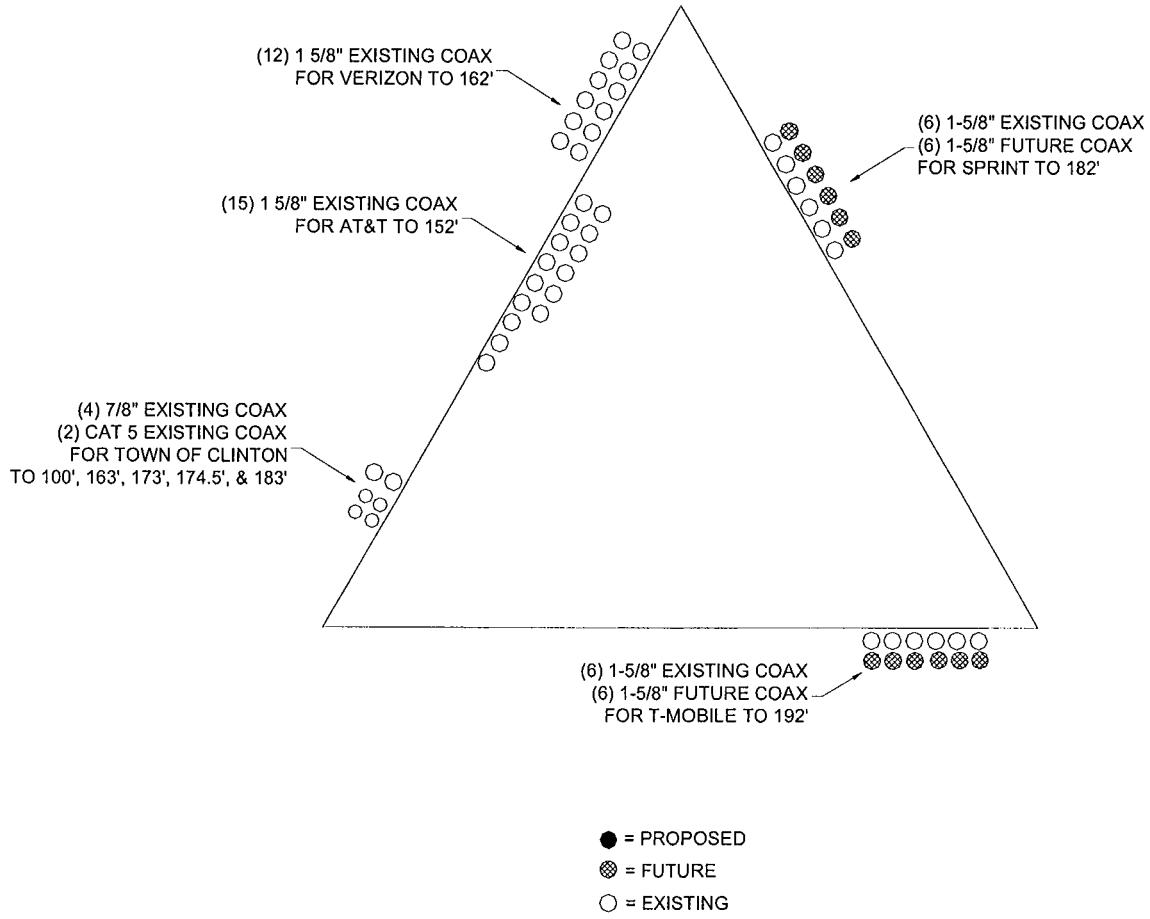


Figure 1 – Coax Layout

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
Diagonals	36 ksi
Horizontals	36 ksi

Table 3 displays the summary of the ratio (as a percentage) of force in the member to their capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its capacity. **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 – Working Percentage of Structural Components

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass Fail
T1	195 - 180	Leg	P2x.154	41.2	Pass
		Diagonal	L1 3/4x1 3/4x3/16	28.6 30.4 (b)	Pass
		Top Girt	L1 3/4x1 3/4x3/16	4.1	Pass
T2	180 - 160	Leg	P3x.216	56.0	Pass
		Diagonal	L1 3/4x1 3/4x3/16	55.3	Pass
		Top Girt	L1 3/4x1 3/4x3/16	7.1	Pass
T3	160 - 140	Leg	P3x.3	77.8	Pass
		Diagonal	L2x2x3/16	79.1	Pass
T4	140 - 120	Leg	P4x.337	76.5	Pass
		Diagonal	L2 1/2x2 1/2x3/16	69.4	Pass
T5	120 - 100	Leg	P5x.375	66.4	Pass
		Diagonal	L2 1/2x2 1/2x3/16	93.3	Pass
T6	100 - 80	Leg	P6x.28	84.5	Pass
		Diagonal	L3x3x3/16	73.3	Pass
T7	80 - 70	Leg	P6x.432	67.4	Pass
		Diagonal	L3x3x1/4	87.1	Pass
T8	70 - 60	Leg	P6x.432	72.8	Pass
		Diagonal	L3x3x1/4	96.9	Pass
T9	60 - 50	Leg	P8x.322	71.7	Pass
		Diagonal	L3x3 1/2x1/4	86.8	Pass
T10	50 - 40	Leg	P8x.322	76.5	Pass
		Diagonal	L3x3 1/2x1/4	98.3	Pass
T11	40 - 30	Leg	P8x.322	81.3	Pass
		Diagonal	L3 1/2x3 1/2x1/4	86.4	Pass
T12	30 - 20	Leg	P8x.322	85.9	Pass
		Diagonal	L3 1/2x3 1/2x1/4	94.0	Pass
T13	20 - 0	Leg	P8x.5	62.9	Pass
		Diagonal	L3 1/2x4x1/4	99.5	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 *(TIA/EIA-222-F)*
Individual Foundation	Horizontal	29 k*	29 k
	Uplift	241 k	258 k
	Compression	280 k	306 k
Overturning Moment	---	5,289 k-ft	5,764 k-ft

* Per our experience with projects of a similar nature, the horizontal load will not control the foundation.

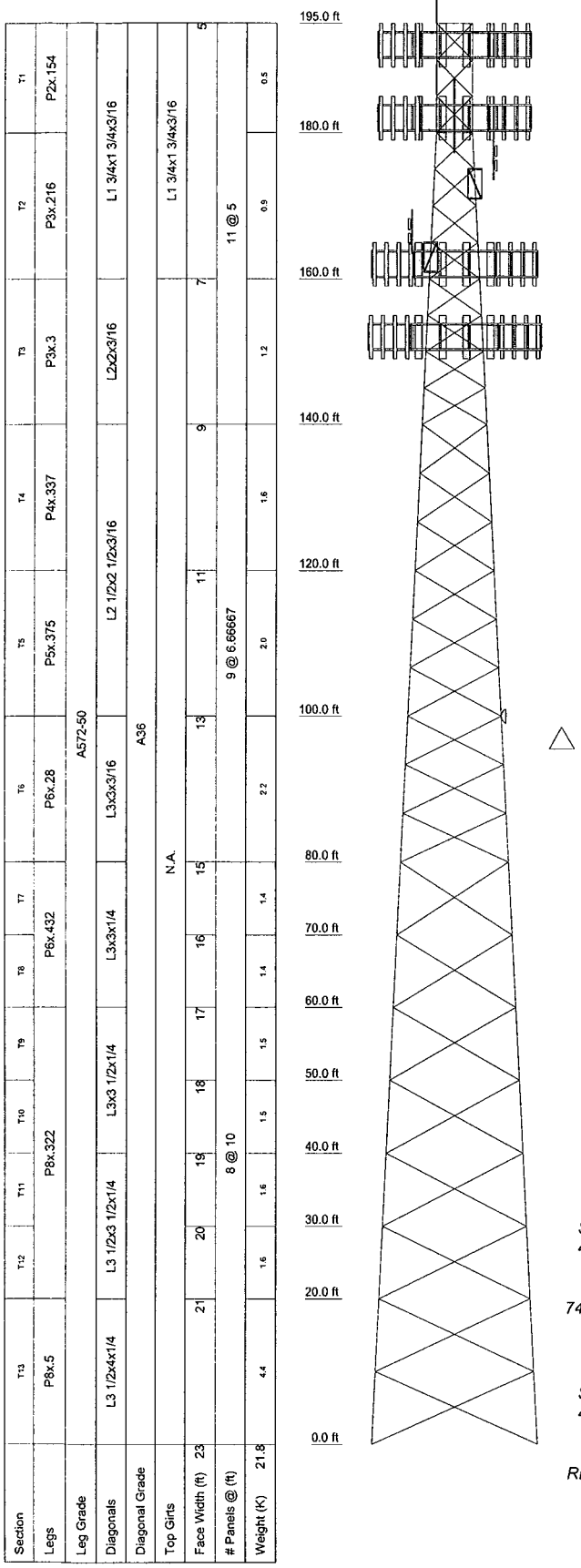
GENERAL COMMENTS

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 SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, 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.

APPENDIX



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	200	(2) DB844H80E-XY w/Mount Pipe (Verizon)	162
RFS APX16DWV-16DWV-S w/ Mount Pipe (T-Mobile)	192	(2) DB948F85T2E-M w/Mount Pipe (Verizon)	162
(3) RR90-17-02DP w/Mount Pipe (T-Mobile)	192	(2) DB948F85T2E-M w/Mount Pipe (Verizon)	162
RFS APX16DWV-16DWV-S w/ Mount Pipe (T-Mobile)	192	(2) DB844H80E-XY w/Mount Pipe (Verizon)	162
(3) RR90-17-02DP w/Mount Pipe (T-Mobile)	192	Sector Mount [SM 602-3] (Verizon)	162
RFS APX16DWV-16DWV-S w/ Mount Pipe (T-Mobile)	192	(2) DB948F85T2E-M w/Mount Pipe (Verizon)	162
Twin PCS TMA (T-Mobile)	192	(2) DB844H80E-XY w/Mount Pipe (Verizon)	162
Twin AWS TMA (T-Mobile)	192	Diplexer - Powerwave LGP13519 (ATI)	152
Twin PCS TMA (T-Mobile)	192	Diplexer - Powerwave LGP13519 (ATI)	152
Twin AWS TMA (T-Mobile)	192	Diplexer - Powerwave LGP13519 (ATI)	152
Twin PCS TMA (T-Mobile)	192	Combiner (ATI)	152
Twin AWS TMA (T-Mobile)	192	Combiner (ATI)	152
Sector Mount [SM 602-3] (T-Mobile)	192	Combiner (ATI)	152
(3) RR90-17-02DP w/Mount Pipe (T-Mobile)	192	Sector Mount [SM 411-3] (ATI)	152
Sinclair SD312HL (Town of Clinton)	183	(3) DUO1417-8686 w/Mount Pipe (ATI)	152
Side Arm Mount [SO 302-1] (Town of Clinton)	183	Powerwave 7770 w/ Mount Pipe (ATI)	152
Sector Mount [SM 602-3] (Sprint)	182	(3) DUO1417-8686 w/Mount Pipe (ATI)	152
(4) DB980G90E-M w/Mount Pipe (Sprint)	182	Powerwave 7770 w/ Mount Pipe (ATI)	152
(4) DB980G90E-M w/Mount Pipe (Sprint)	182	Powerwave 7770 w/ Mount Pipe (ATI)	152
(4) DB980G90E-M w/Mount Pipe (Sprint)	182	(2) 800/1900 TMA (ATI)	152
PD1151 (Town of Clinton)	174.5	(3) DUO1417-8686 w/Mount Pipe (ATI)	152
Side Arm Mount [SO 302-1] (Town of Clinton)	174.5	(2) 800/1900 TMA (ATI)	152
Sinclair SD312HL (Town of Clinton)	173	(2) 800/1900 TMA (ATI)	152
Side Arm Mount [SO 302-1] (Town of Clinton)	173	Pipe Mount (Town of Clinton)	100
Sinclair SD312HL (Town of Clinton)	163	RDH4518A (Town of Clinton)	100
Side Arm Mount [SO 302-1] (Town of Clinton)	163		

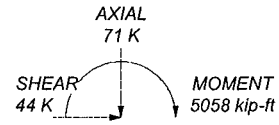
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

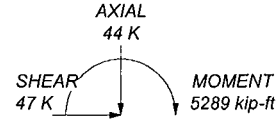
TOWER DESIGN NOTES

1. Tower is located in Middlesex County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 99.5%

MAX. CORNER REACTIONS AT BASE:
DOWN: 280 K
UPLIFT: -241 K
SHEAR: 29 K



TORQUE 24 kip-ft
74 mph WIND - 0.5000 in ICE



TORQUE 24 kip-ft
REACTIONS - 85 mph WIND

FDH Engineering, Inc.
2730 Rowland Road
Raleigh, North Carolina
Phone: (919) 755-1012
FAX: (919) 755-1031
Tower Analysis

Job: Clinton 4, CT01879-S			
Project: 10-02083E S2			
Client: SBA	Drawn by: Krystyn Wagner		App'd:
Code: TIA/EIA-222-F	Date: 11/02/10		Scale: NTS
Path:			Dwg No. E-1

T-Mobile

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

Technical Memo

To: Transcend
From: Amir Uzzaman - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CT11429A
Date: December 15, 2010

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 46 Meadow Road, Clinton, 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 (1935-1944.8), (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 RR90-17-02DP.
3) The model number for UMTS antenna is APX16DWV-16DWV.
4) GSM antenna center line height is 192.5 ft.
4) UMTS antenna center line height is 192.5 ft.
5) The maximum transmit power from any GSM sector is 1447.17 Watts Effective Radiated Power (EiRP) assuming 8 channels per sector.
5) The maximum transmit power from any UMTS sector is 2039.34 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 46 Meadow Road, Clinton, CT, is 0.02199 mW/cm^2. This value represents 2.199% 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 12.76938%. The combined Power Density for the site is 14.969% of the M.P.E. standard.

Connecticut Market

T-Mobile

Worst Case Power Density

Site:	CT11429A
Site Address:	46 Meadow Road
Town:	Clinton
Tower Height:	195 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	RR90-17-02DP	Antenna Model	APX16DWV-16DWV
Cable Size	1 5/8 in.	Cable Size	1 5/8 in.
Cable Length	210 ft.	Cable Length	210 ft.
Antenna Height	192.5 ft.	Antenna Height	192.5 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	16.5 dBi	Antenna Gain	18.0 dBi
Cable Loss per foot	0.0116 dB	Cable Loss per foot	0.0116 dB
Total Cable Loss	2.4360 dB	Total Cable Loss	2.4360 dB
Total Attenuation	6.9360 dB	Total Attenuation	3.9360 dB
Total EIRP per Channel	52.57 dBm	Total EIRP per Channel	60.08 dBm
(In Watts)	180.90 W	(In Watts)	1019.67 W
Total EIRP per Sector	61.61 dBm	Total EIRP per Sector	63.09 dBm
(In Watts)	1447.17 W	(In Watts)	2039.34 W
nsg	9.5640	nsg	14.0640
Power Density (S) =	0.009128 mW/cm^2	Power Density (S) =	0.012863 mW/cm^2

T-Mobile Worst Case % MPE = 2.1991%

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
Sprint	3.4043 %
Verizon	4.2037 %
Verizon	0.8221 %
Cingular UMTS	1.3620 %
Cingular GSM	1.6126 %
Cingular	1.3648 %
Other Antenna Systems	
Total Excluding T-Mobile	**12.7694 %**
T-Mobile	2.1991
Total % MPE for Site	**14.9685%**