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
www.ct.gov/csc

September 21, 2012

Marcia M. Escobedo, Esq.
Cohen and Wolf, P.C.
1115 Broad Street
Bridgeport, CT 06604

RE: **EM-T-MOBILE-015-120831** – T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 623 Pine Street, Bridgeport, Connecticut.

Dear Attorney Escobedo:

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:

- The tower shall be reinforced in accordance with the recommendations made in the Structural Analysis Report and Tower Reinforcement Drawings & Specifications prepared by KM Consulting Engineers dated August 29, 2012 , and stamped by Michael Bohlinger;
- Prior to antenna installation, a signed letter from a Professional Engineer duly licensed in the State of Connecticut shall be submitted to the Council to certify that the recommended modifications have been completed and the tower and foundation will not exceed 100 percent of the post-construction structural rating;
- 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 August 30, 2012. 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,

LRoberts

Linda Roberts
Executive Director

LR/CDM/jbw

c: The Honorable Bill Finch, Mayor, City of Bridgeport
Michael Nidoh, Planning Director, City of Bridgeport
Robert Knapp

STATE OF CONNECTICUT

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September 6, 2012

The Honorable Bill Finch
Mayor
City of Bridgeport
City Hall Annex
999 Broad Street
Bridgeport, CT 06604

RE: **EM-T-MOBILE-015-120831** – T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 623 Pine Street, Bridgeport, Connecticut.

Dear Mayor Finch:

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 September 20, 2012.

Thank you for your cooperation and consideration.

Very truly yours,

LRoberts

Linda Roberts
Executive Director

LR/jbw

Enclosure: Notice of Intent

c: Michael Nidoh, Planning Director, City of Bridgeport

COHEN and WOLF P.C.
ATTORNEYS AT LAW

EM-T-MOBILE-015-120831 CIA M. ESCOBEDO

REPLY TO:
WRITER'S DIRECT DIAL: (203) 337-4166
E-Mail Address: mescobedo@cohenandwolf.com

August 30, 2012

Ms. Linda Roberts,
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

ORIGINAL

RECEIVED
AUG 31 2012
CONNECTICUT
SITING COUNCIL

Re: Notice of Exempt Modification
Robert Knapp/T-Mobile co-location
T-Mobile Site ID CT11014B
623 Pine Street, Bridgeport CT

Dear Ms. Roberts:

This office represents T-Mobile Northeast LLC ("T-Mobile") and has been retained to file exempt modification filings with the Connecticut Siting Council on its behalf.

In this case, Robert Knapp owns the existing telecommunications tower and related facility at 623 Pine Street, Bridgeport Connecticut (latitude 41.165949/ longitude -73.216986). T-Mobile intends to replace six antennas and add related equipment at this existing facility in Bridgeport ("Bridgeport Facility"). 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 Mayor, Bill Finch.

The existing Bridgeport Facility consists of a 250 foot tower. T-Mobile plans to replace six antennas mounted on the tower at a centerline of 180 feet. T-Mobile will also install a cabinet and run fiber conduit along existing coaxial cables, all within the existing compound area near the base of the tower. (See the plans dated April 19, 2012 attached hereto as Exhibit A). If the tower is modified in accordance with Tower Reinforcement Drawings and Specifications dated August 10, 2012 (attached hereto as Exhibit B) the existing tower will be structurally capable of supporting T-Mobile's proposed use. (See the structural analysis report dated August 29, 2012 and attached hereto as Exhibit C.)

The planned modifications to the Bridgeport 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 the tower. T-Mobile's replacement antennas will be installed at the 180 foot level. The enclosed tower drawing confirms that the proposed modification will not increase the height of the tower.

2. The installation of the T-Mobile equipment in the existing compound, as reflected on the attached site plan, will not require an extension of the site boundaries. T-Mobile's proposed equipment will be located entirely within the existing compound area.

3. The proposed modification to the Facility will not increase the noise levels at the existing facility by six decibels or more.

4. The operation of the replacement antennas will not increase the total radio frequency (RF) power density, measured at the base of the tower, to a level at or above the applicable standard. According to a Radio Frequency Emissions Analysis Report prepared by EBI dated June 5, 2012 T-Mobile's operations would add 0.344% of the FCC Standard. Therefore, the calculated "worst case" power density for the planned combined operation at the site including all of the proposed antennas would be 69.164% of the FCC Standard as calculated for a mixed frequency site as evidenced by the engineering exhibit attached hereto as Exhibit D.

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

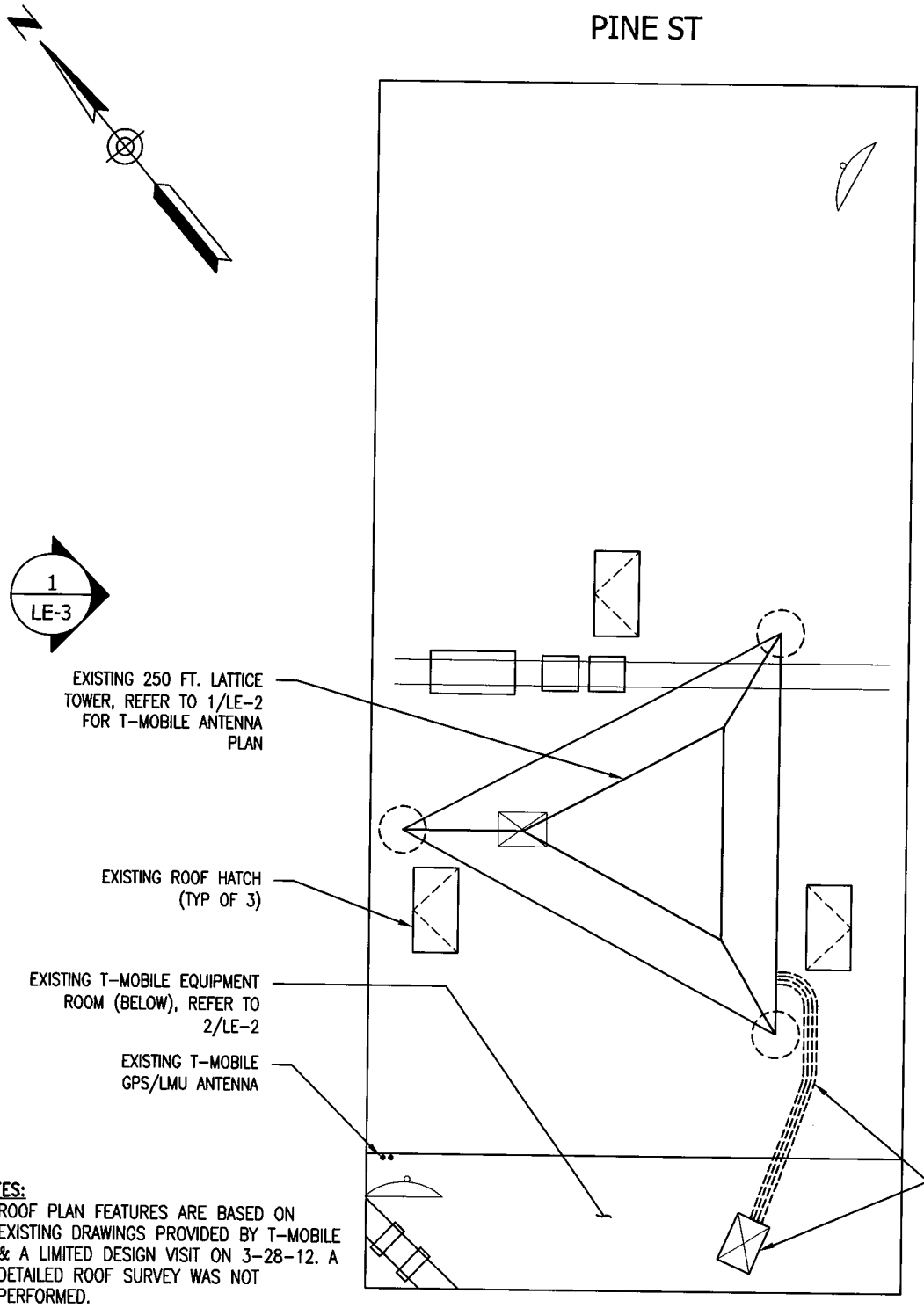
Sincerely,

Marcia M. Escobedo, Esq.

cc: Mayor Bill Finch, City of Bridgeport
Jamie Ford, HPC Wireless (via e-mail)

EXHIBIT A

PINE ST



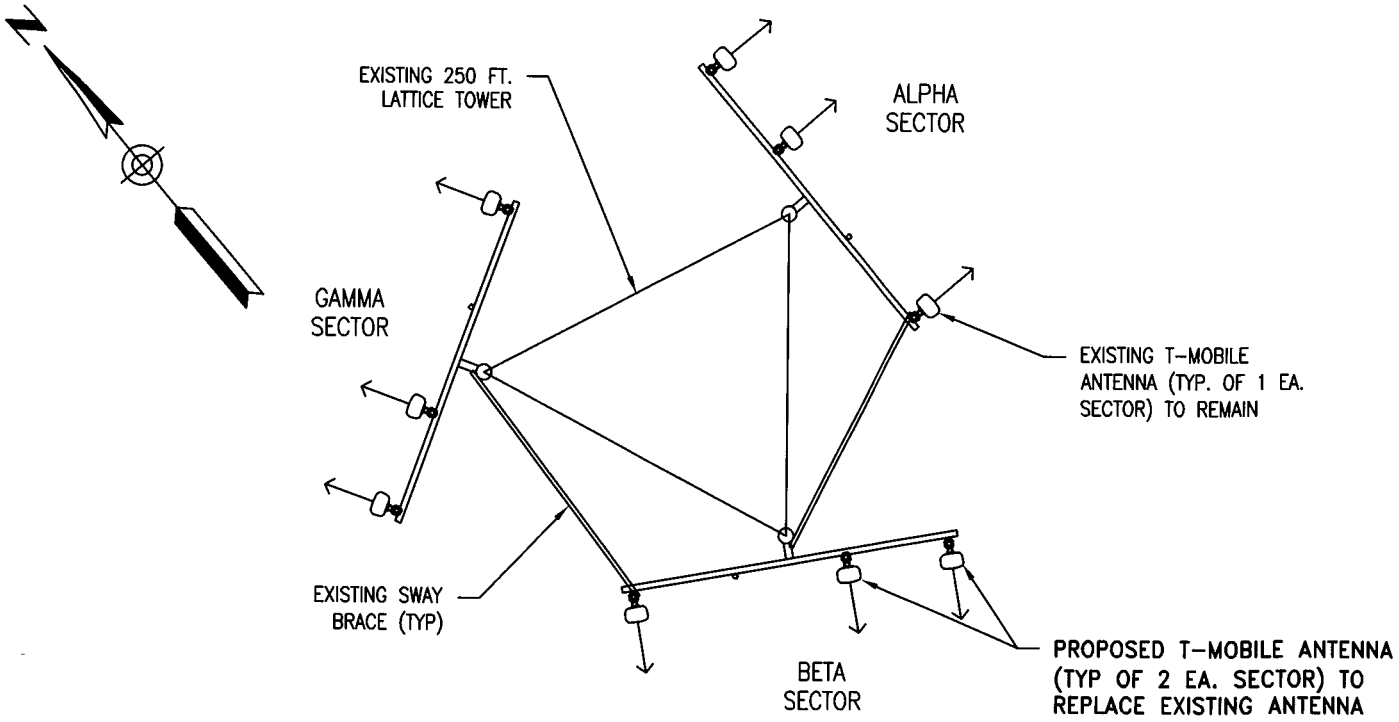
NOTES:

1. ROOF PLAN FEATURES ARE BASED ON EXISTING DRAWINGS PROVIDED BY T-MOBILE & A LIMITED DESIGN VISIT ON 3-28-12. A DETAILED ROOF SURVEY WAS NOT PERFORMED.
2. DESIGN SHOWN IS CONCEPTUAL PENDING COMPLETE STRUCTURAL REVIEW/ANALYSIS.
3. ANTENNA SECTORS MAY INCLUDE VARIOUS AND MULTIPLE COMPONENTS.

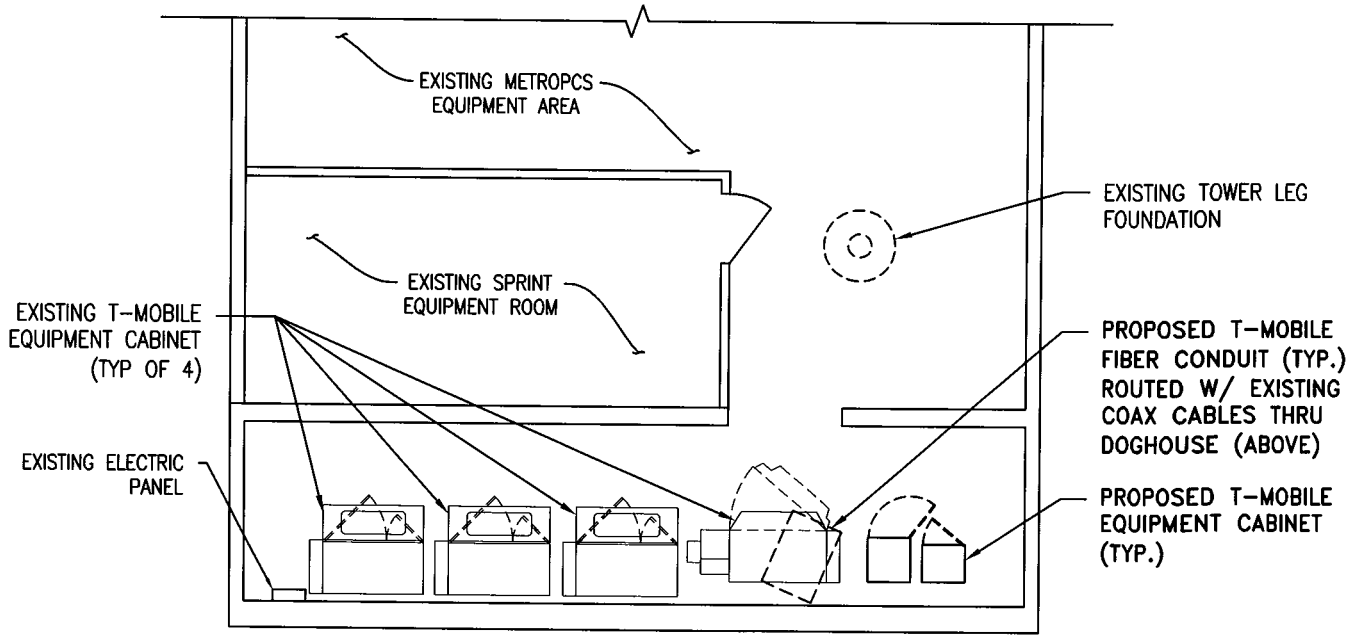
1 / LE-1 **ROOF PLAN**
Scale: 3/32"=1'-0"

CONFIGURATION **2C**

Approved By: OWNER/SAC:_____ DATE:_____ Approved By: CONSTRUCTION:_____ DATE:_____ Approved By: RF ENGINEER:_____ DATE:_____	T-Mobile NORTHEAST LLC ("T-Mobile Northeast", a Delaware Limited Liability Company and wholly-owned subsidiary of T-Mobile USA) 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 Carrier:	HPC WIRELESS SERVICES 46 MILL PLAIN RD. FL 2 DANBURY, CT 06811 Client:	Project: T-MOBILE MODERNIZATION Location: RADIO COMMUNICATIONS CORP. Address: 623 PINE ST. BRIDGEPORT, CT 06605 Site ID: CT11014B
On Air Engineering, LLC 88 FOUNDRY POND ROAD, COLD SPRING, NEW YORK 10516		Drawn: LC / Chkd. by: DW / Date: 04-19-12 V3	Drawing Title: ROOF PLAN / Drawing No.: LE-1



1 / LE-2 **ANTENNA PLAN @ 180'**
Scale: 1/8"=1'-0"



2 / LE-2 **EQUIPMENT PLAN**
Scale: 1/8"=1'-0"

CONFIGURATION
2C

Approved By: OWNER/SAC: _____ DATE: _____
Approved By: CONSTRUCTION: _____ DATE: _____
Approved By: RF ENGINEER: _____ DATE: _____

T-MOBILE NORTHEAST LLC
("T-Mobile Northeast"), a Delaware Limited Liability Company and wholly-owned subsidiary of T-Mobile USA
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
Carrier:

HPQ WIRELESS SERVICES
46 MILL PLAIN RD. FL 2
DANBURY, CT 06811
Client:

Project: T-MOBILE MODERNIZATION
Location: RADIO COMMUNICATIONS CORP.
Address: 623 PINE ST.
BRIDGEPORT, CT 06605
Site ID: CT11014B

On Air Engineering, LLC
88 FOUNDRY POND ROAD, COLD SPRING, NEW YORK 10516

Drawn:	Chkd. by:	Date:	Drawing Title:	Drawing No.
LC	DW	04-19-12 V3	ANTENNA & EQUIPMENT PLANS	LE-2

EXISTING WHIP ANTENNA
ELEV = 272'-0"± A.G.L.

TOP OF EXISTING LATTICE TOWER
ELEV = 250'-0"± A.G.L.

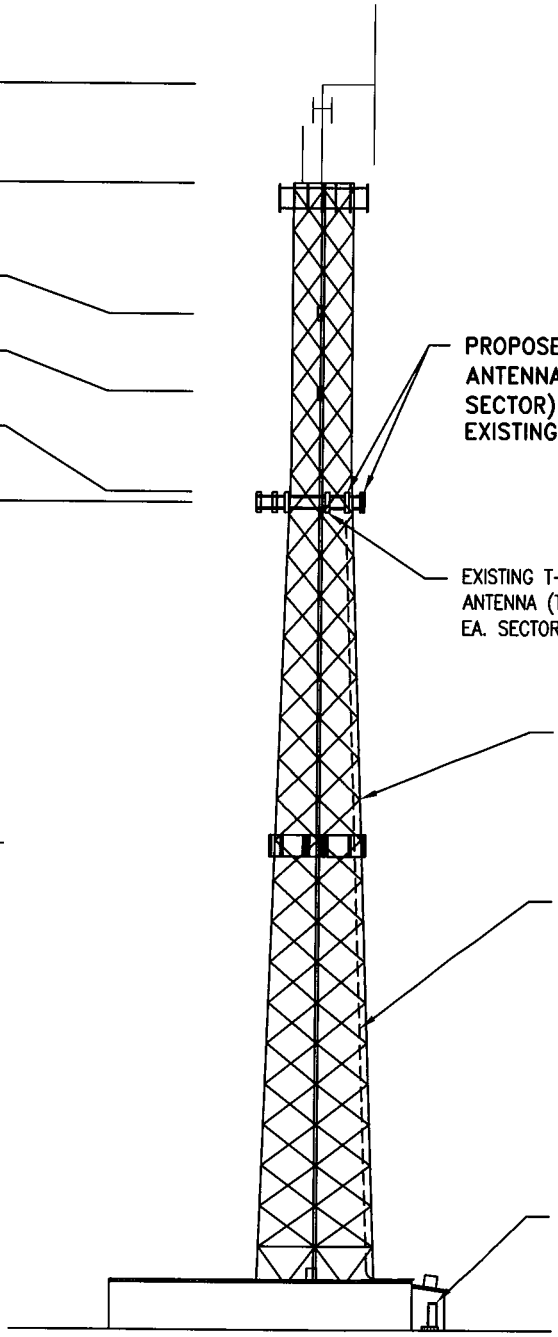
EXISTING ANTENNA CENTERLINE
ELEV = 225'-0"± A.G.L.

EXISTING ANTENNA CENTERLINE
ELEV = 208'-0"± A.G.L.

TOP OF T-MOBILE ANTENNA
ELEV = 182'-4"± A.G.L.

T-MOBILE ANTENNA CENTERLINE
ELEV = 180'-0"± A.G.L.

VERIZON ANTENNA CENTERLINE
ELEV = 110'-0"± A.G.L.



NOTES:

1. ELEVATION HEIGHTS ARE BASED ON EXISTING DRAWINGS PROVIDED BY T-MOBILE & A LIMITED DESIGN VISIT ON 3-28-12.
2. DESIGN SHOWN IS CONCEPTUAL PENDING COMPLETE STRUCTURAL REVIEW/ANALYSIS.
3. ANTENNA SECTORS MAY INCLUDE VARIOUS AND MULTIPLE COMPONENTS.

1 / LE-3 **WEST ELEVATION**
Scale: 1"=40'-0"

CONFIGURATION
2C

Approved By: OWNER/SAC:_____ DATE: _____ Approved By: CONSTRUCTION:_____ DATE: _____ Approved By: RF ENGINEER:_____ DATE: _____	T-MOBILE NORTHEAST LLC ("T-Mobile Northeast"), a Delaware Limited Liability Company and wholly-owned subsidiary of T-Mobile USA 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 Carrier:	HPQ WIRELESS SERVICES 46 MILL PLAIN RD. FL 2 DANBURY, CT 06811 Client:	Project: T-MOBILE MODERNIZATION Location: RADIO COMMUNICATIONS CORP. Address: 623 PINE ST. BRIDGEPORT, CT 06605 Site ID: CT11014B

On Air Engineering, LLC 88 FOUNDRY POND ROAD, COLD SPRING, NEW YORK 10516		Drawn: LC	Chkd. by: DW	Date: 04-19-12 V3	Drawing Title: WEST ELEVATION	Drawing No. LE-3

EXHIBIT B

TOWER REINFORCEMENT DRAWINGS & SPECIFICATIONS

SITE LOCATION: 623 PINE STREET, BRIDGEPORT, CT 06605

SCOPE:
THE PURPOSE OF THESE REINFORCING DETAILS AND SPECIFICATIONS IS TO REINFORCE THE TOWER MEMBERS. AN ANGLE WILL BE BOLTED TO DIAGONALS FROM 8' TO 28' AGL. DIAGONAL BOLTS WILL BE REPLACED FROM 28' TO 48' AGL.

REINFORCING INCLUDES: BOLTING A L4X4X¼" ANGLE TO THE DIAGONALS ON ALL FACES FROM 8' TO 28' AGL USING VERTICAL AND HORIZONTAL ½"ø A-325 HIGH-STRENGTH BOLTS SPACED APPROXIMATELY 2'-11" APART. REPLACING EXISTING ⅞"ø A-325N DIAGONAL BOLTS WITH ⅞"ø A-325X BOLTS ON ALL FACES FROM 28' TO 48' AGL.

THIS REINFORCEMENT IS REQUIRED AFTER ANALYZING THE TOWER. REFER TO STRUCTURAL ANALYSIS DATED JULY 25TH, 2012.

OWNER:

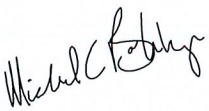
KM Consulting Engineers, Inc.
Wireless Engineering & Project Management
32 West Upper Ferry Road Ewing, NJ 08628
Phone: (609) 538-0400 Fax: (609) 538-8858

CLIENT: T-Mobile

4 SYLVAN WAY
PARSIPPANY, NJ 07054
(973) 943-2465 PH.
(973) 490-3217 FAX

REVISIONS:

NO.	DATE



MICHAEL L. BOHLINGER, PE
CONNECTICUT PROFESSIONAL ENGINEER
LICENSE # 20405 CT

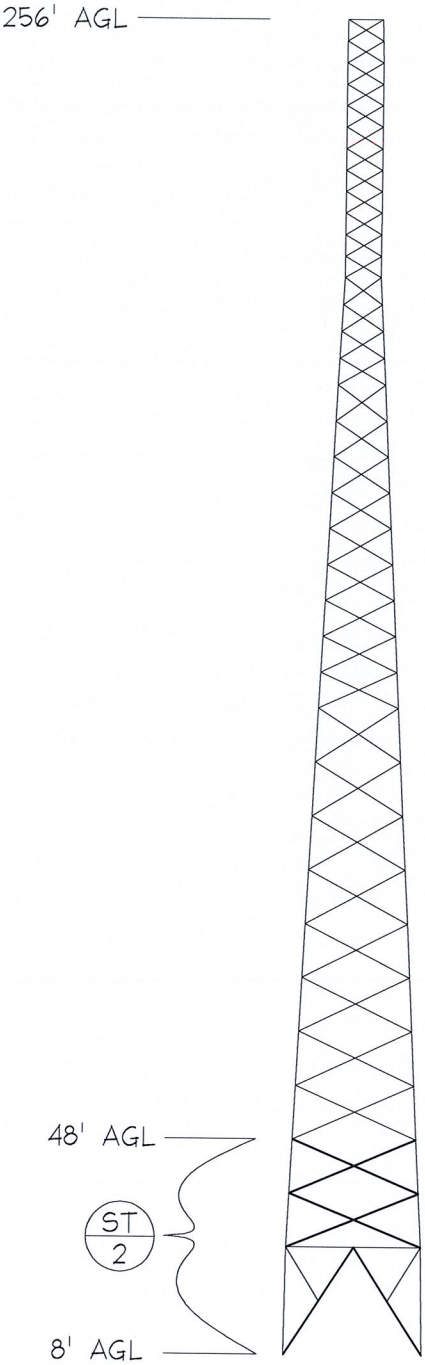
APPROVALS & DATE:
OWNER: _____ DATE: _____
S.A.C.: _____ DATE: _____
R / F.: _____ DATE: _____
CONST.: _____ DATE: _____

PROJECT NAME: BRIDGEPORT

PROJECT ADDRESS: 623 PINE STREET
BRIDGEPORT, CT 06605

DRAWING NO.: **T-1**

PROJECT #:	SITE ID #:	DRAWING TITLE:	P.C.:	CHKD:	DRN:	DATE:
040306.02		TITLE SHEET		MLB	DJA	8/10/12



1 / ST-1 TOWER ELEVATION

SCALE: NTS

OWNER:

KM Consulting Engineers, Inc.
Wireless Engineering & Project Management
32 West Upper Ferry Road Ewing, NJ 08628
Phone: (609) 538-0400 Fax: (609) 538-8858

CLIENT: T-Mobile

4 SYLVAN WAY
PARSIPPANY, NJ 07054
(973) 943-2465 PH.
(973) 490-3217 FAX

REVISIONS:

NO.	DATE

MICHAEL L. BOHLINGER, PE
CONNECTICUT PROFESSIONAL ENGINEER
LICENSE # 20405 CT

APPROVALS & DATE:

OWNER: _____ DATE: _____

S.A.C.: _____ DATE: _____

R / F.: _____ DATE: _____

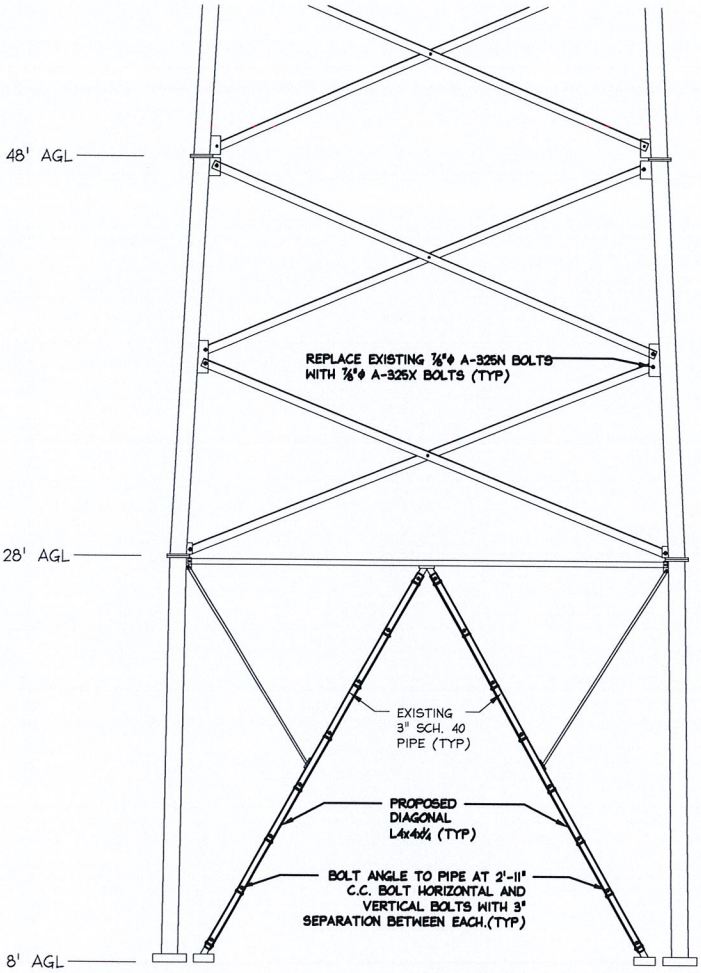
CONST.: _____ DATE: _____

PROJECT NAME: BRIDGEPORT

PROJECT ADDRESS: 623 PINE STREET
BRIDGEPORT, CT 06605

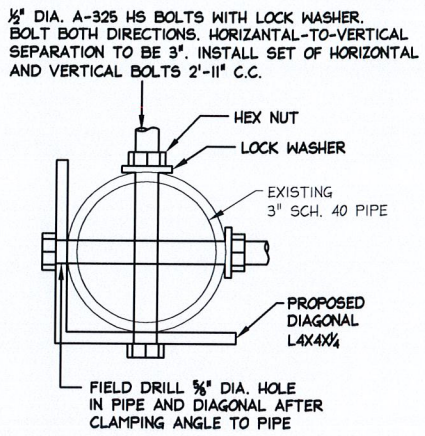
DRAWING NO.: **ST-1**

PROJECT #:	SITE ID #:	DRAWING TITLE:	P.C.:	CHKD:	DRN:	DATE:
040306.02		TOWER ELEVATION		MLB	DJA	8/10/12



1 / ST-2 DIAGONAL REINFORCEMENT: 8'-48' AGL

SCALE: 3/16" = 1'-0"



2 / ST-5 SECTION A-A

SCALE: 6" = 1'

NOTES:
1. ALL MEMBERS, BOLTS HOLES, AND DIMENSIONS MUST BE FIELD VERIFIED PRIOR TO FABRICATION / PROCUREMENT OF REINFORCEMENT MATERIALS. ANY CHANGES TO THESE DRAWINGS AND SPECIFICATIONS OR CHANGES FOUND IN THE FIELD OF EXISTING TOWER MEMBERS MUST BE COMMUNICATED TO KM CONSULTING ENGINEERS INC. PRIOR TO INSTALLING REINFORCEMENT.

2. STEEL: ALL STEEL ANGLE MEMBERS TO BE A-36 HOT-DIP GALVANIZED TO ASTM A-123.

3. IF STEEL ANGLE IS FIELD CUT, ENDS OF STEEL MUST BE SPRAYED WITH COLD GALVANIZE ZRC.

SAFETY NOTICE!
INSTALLATION OF THESE TOWER MODIFICATIONS WILL REQUIRE TOWER CLIMBING AT HEIGHTS WHERE FALLING COULD HARM OR PROVE FATAL TO WORKERS. THESE DRAWINGS INDICATE ONLY THE REINFORCEMENT AND NOT THE MEANS, METHODS, AND REQUIRED CONTRACTOR SAFETY. THESE REINFORCEMENT MEMBERS SHOULD BE INSTALLED BY A QUALIFIED, PROFESSIONAL TOWER CLIMBING COMPANY. KM CONSULTING ENGINEERS INC. TAKES NO RESPONSIBILITY FOR THE CONTRACTORS SAFETY POLICIES, PRACTICES, AND METHODS.

CERTIFICATION OF INSTALLATION:
DURING OR UPON COMPLETION OF THESE MODIFICATIONS TO THE TOWER, A CERTIFICATION LETTER FROM A LICENSED PROFESSIONAL ENGINEER MUST BE SUBMITTED TO THE TOWER OWNER.

NOTES:
ANY INTERFERENCE OF EXISTING TOWER LEG STRUCTURE OR APPURTENANCES TO PROPOSED REINFORCEMENT, CONTRACTOR TO COORDINATE SHIFTING OF REINFORCEMENT ATTACHMENT WITH ENGINEER PRIOR TO INSTALL.

OWNER:

KM Consulting Engineers, Inc.
Wireless Engineering & Project Management
32 West Upper Ferry Road Ewing, NJ 08628
Phone: (609) 538-0400 Fax: (609) 538-8858

CLIENT: T-Mobile

4 SYLVAN WAY
PARSIPPANY, NJ 07054
(973) 943-2465 PH.
(973) 490-3217 FAX

REVISIONS:

NO.	DATE

MICHAEL L. BOHLINGER, PE
CONNECTICUT PROFESSIONAL ENGINEER
LICENSE # 20405 CT

APPROVALS & DATE:
OWNER: _____ DATE: _____
S.A.C.: _____ DATE: _____
R / F.: _____ DATE: _____
CONST.: _____ DATE: _____

PROJECT NAME: BRIDGEPORT

PROJECT ADDRESS:
623 PINE STREET
BRIDGEPORT, CT 06605

DRAWING NO.: ST-2

PROJECT #:	SITE ID #:	DRAWING TITLE:	P.C.:	CHKD:	DRN:	DATE:
040306.02		DIAGONAL REINFORCEMENT		MLB	DJA	8/10/12

SECTION 1704
SPECIAL INSPECTIONS

1704.1 General. Where application is made for construction as described in this section, the owner or the *registered design professional in responsible charge* acting as the owner's agent shall employ one or more *approved agencies* to perform inspections during construction on the types of work listed under Section 1704. These inspections are in addition to the inspections identified in Section 110.

The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the *bUilding official*, for the inspection of the particular type of construction or operation requiring *special inspection*. The *registered design professional in responsible charge* and engineers of record involved in the design of the project are permitted to act as the *approved agency* and their personnel are permitted to act as the special inspector for the work designed by them, provided those personnel meet the qualification requirements of this section to the satisfaction of the *bUilding official*. The special inspector shall provide written documentation to the building official demonstrating his or her competence and relevant experience or training. Experience or training shall be considered relevant when the documented experience or training is related in complexity to the same type of *special inspection* activities for projects of similar complexity and material qualities. These qualifications are in addition to qualifications specified in other sections of this code.

Exceptions:

1. *Special inspections* are not required for work of a minor nature or as warranted by conditions in the jurisdiction as *approved* by the *building official*.
2. *Special inspections* are not required for building components unless the design involves the practice of professional engineering or architecture as defined by applicable state statutes and regulations governing the professional registration and certification of engineers or architects.
3. Unless otherwise required by the *bUilding official*, *special inspections* are not required for Group U occupancies that are accessory to a residential occupancy including, but not limited to, those listed in Section 312.1.

1704.1.1 Statement of special inspections. The applicant shall submit a statement of *special inspections* prepared by the *registered design professional in responsible charge* in accordance with Section 107.1 as a condition for issuance. This statement shall be in accordance with Section 1705.

Exceptions:

1. A statement of *special inspections* is not required for structures designed and constructed in accordance with the conventional construction provisions of Section 2308.
2. The statement of *special inspections* is permitted to be prepared by a qualified person *approved* by the *bUilding official* for construction not designed by a *registered design professional*.

1704.1.2 Report requirement. Special inspectors shall keep records of inspections. The special inspector shall furnish inspection reports to the *building official*, and to the *registered design professional in responsible charge*. Reports shall indicate that work inspected was or was not completed in conformance to *approved construction documents*. Discrepancies shall be brought to the immediate attention of the contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the *building official* and to the *registered design professional in responsible charge* prior to the completion of that phase of the work. A final report documenting required *special inspections* and correction of any discrepancies noted in the inspections shall be submitted at a point in time agreed upon prior to the start of work by the applicant and the *bUilding official*.

1704.2 Inspection of fabricators. Where fabrication of structural load-bearing members and assemblies is being performed

1704.2.1 Fabrication and implementation procedures. The special inspector shall verify that the fabricator maintains detailed fabrication and quality control procedures that provide a basis for inspection control of the workmanship and the fabricator's ability to conform to *approved construction documents* and referenced standards. The special inspector shall review the procedures for completeness and adequacy relative to the code requirements for the fabricator's scope of work.

Exception: *Special inspections* as required by Section 1704.2 shall not be required where the fabricator is *approved* in accordance with Section 1704.2.2.

1704.2.2 Fabricator approval. *Special inspections* required by Section 1704 are not required where the work is done on the premises of a fabricator registered and *approved* to perform such work without *special inspection*. Approval shall be based upon review of the fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an *approved special inspection* agency. At completion of fabrication, the *approved* fabricator shall submit a *certificate of compliance* to the *building official* stating that the work was performed in accordance with the *approved construction documents*.

1704.3 Steel construction. The *special inspections* for steel elements of buildings and structures shall be as required by Section 1704.3 and Table 1704.3.

Exceptions:

1. *Special inspection* of the steel fabrication process shall not be required where the fabricator does not perform any welding, thermal cutting or heating operation of any kind as part of the fabrication process. In such cases, the fabricator shall be required to submit a detailed procedure for material control that demonstrates the fabricator's ability to maintain suitable records and procedures such that, at any time during the fabrication process, the material specification, grade and mill test reports for the main stress-carrying elements are capable of being determined.
2. The special inspector need not be continuously present during welding of the following items, provided the materials, welding procedures and qualifications of welders are verified prior to the start of the work; periodic inspections are made of the work in progress and a visual inspection of all welds is made prior to completion or prior to shipment of shop welding.
   - 2.1. Single-pass fillet welds not exceeding $^{5}/_{16}$ inch (7.9 mm) in size.
   - 2.2. Floor and roof deck welding.
   - 2.3. Welded studs when used for structural diaphragm.
   - 2.4. Welded sheet steel for cold-formed steel members.
   - 2.5. Welding of stairs and railing systems.

1704.3.1 Welding. Welding inspection and welding inspector qualification shall be in accordance with this section.

1704.3.1.1 Structural steel. Welding inspection and welding inspector qualification for structural steel shall be in accordance with AWS D1.1.

1704.3.1.2 Cold-formed steel. Welding inspection and welding inspector qualification for cold-formed steel floor and roof decks shall be in accordance with AWS D1.3.

1704.3.1.3 Reinforcing steel. Welding inspection and welding inspector qualification for reinforcing steel shall be in accordance with AWS D1.4 and ACI 318.

1704.3.2 Details. The special inspector shall perform an inspection of the steel frame to verify compliance with the details shown on the *approved construction documents*, such as bracing, stiffening, member locations and proper application of joint details at each connection.

1704.3.3 High-strength bolts. Installation of high-strength bolts shall be inspected in accordance with AISC 360.

1704.3.3.1 General. While the work is in progress, the special inspector shall determine that the requirements for bolts, nuts, washers and paint; bolted parts and installation and tightening in such standards are met. For bolts requiring pretensioning, the special inspector shall observe the preinstallation testing and calibration procedures when such procedures are required by the installation method or by project plans or specifications; determine that all plies of connected materials have been drawn together and properly snugged and monitor the installation of bolts to verify that the selected procedure for installation is properly used to tighten bolts. For joints required to be tightened only to the snug-tight con-

OWNER:

KM Consulting Engineers, Inc.
Wireless Engineering & Project Management
32 West Upper Ferry Road Ewing, NJ 08628
Phone: (609) 538-0400 Fax: (609) 538-8858

CLIENT: T-Mobile

4 SYLVAN WAY
PARSIPPANY, NJ 07054
(973) 943-2465 PH.
(973) 490-3217 FAX

REVISIONS:

NO.	DATE

APPROVALS & DATE:

OWNER: _____ DATE: _____

S.A.C.: _____ DATE: _____

R / F.: _____ DATE: _____

CONST.: _____ DATE: _____

PROJECT NAME: BRIDGEPORT

PROJECT ADDRESS: 623 PINE STREET
BRIDGEPORT, CT 06605

DRAWING NO.: **ST-3**

MICHAEL L. BOHLINGER, PE
CONNECTICUT PROFESSIONAL ENGINEER
LICENSE # 20405 CT

PROJECT #:	SITE ID #:	DRAWING TITLE:	P.C.:	CHKD:	DRN:	DATE:
040306.02		SPECIAL INSPECTION NOTES		MLB	DJA	8/10/12

TABLE 1704.3
REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD[a]	IBC REFERENCE
1. Material verification of high-strength bolts, nuts and washers:				
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	-	X	AISC 360, Section A3.3 and applicable ASTM material standards	
b. Manufacturer's certificate of compliance required.	-	X	-	-
2. Inspection of high-strength bolting:				
a. Snug-tight joints.	-	X	AISC 360, Section M2.5	1704.3.3
b. Pretensioned and slip-critical joints using turn-of-nut with matchmarking, twist-off bolt or direct tension indicator methods of installation.	-	X		
c. Pretensioned and slip-critical joints using turn-of-nut without matchmarking or calibrated wrench methods of installation.	X	-		
3. Material verification of structural steel and cold-formed steel deck:				
a. For structural steel, identification markings to conform to AISC 360.	-	X	AISC 360, Section M5.5	
b. For other steel, identification markings to conform to ASTM standards specified in the approved construction documents.	-	X	Applicable ASTM material standards	
c. Manufacturer's certified test reports.		X		
4. Material verification of weld filler materials:				
a. Identification markings to conform to AWS specification in the approved construction documents.	-	X	AISC 360, Section A3.5 and applicable AWS A5 documents	-
b. Manufacturer's certificate of compliance required.	-	X	-	-
5. Inspection of welding:				
a. Structural steel and cold-formed steel deck:				
1) Complete and partial joint penetration groove welds.	X	-	AWS D1.1	1704.3.1
2) Multipass fillet welds.	X	-		
3) Single-pass fillet welds > 5/16"	X	-		
4) Plug and slot welds.	X			
5) Single-pass fillet welds ≤ 5/16"	-	X		
6) Floor and roof deck welds.	-	X	AWS D1.3	
b. Reinforcing steel:				
1) Verification of weldability of reinforcing steel other than ASTM A 706.	-	X	AWS D1.4 ACI 318: Section 3.5.2	-
2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement.	X	-		
3) Shear reinforcement.	X	-		
4) Other reinforcing steel.	-	X		
6. Inspection of steel frame joint details for compliance:				
a. Details such as bracing and stiffening.	-	X	-	1704.3.2
b. Member locations.	-	X		
c. Application of joint details at each connection.	-	X		

For SI: 1 inch = 25.4 mm.

OWNER:

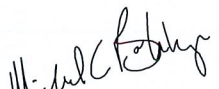
KM Consulting Engineers, Inc.
Wireless Engineering & Project Management
32 West Upper Ferry Road Ewing, NJ 08628
Phone: (609) 538-0400 Fax: (609) 538-8858

CLIENT: T-Mobile

4 SYLVAN WAY
PARSIPPANY, NJ 07054
(973) 943-2465 PH.
(973) 490-3217 FAX

REVISIONS:

NO.	DATE



MICHAEL L. BOHLINGER, PE
CONNECTICUT PROFESSIONAL ENGINEER
LICENSE # 20405 CT

APPROVALS & DATE:
OWNER: _____ DATE: _____
S.A.C.: _____ DATE: _____
R / F.: _____ DATE: _____
CONST.: _____ DATE: _____

PROJECT NAME: BRIDGEPORT

PROJECT ADDRESS: 623 PINE STREET BRIDGEPORT, CT 06605

DRAWING NO.: **ST-4**

PROJECT #:	SITE ID #:	DRAWING TITLE:	P.C.:	CHKD:	DRN:	DATE:
040306.02		SPECIAL INSPECTION NOTES		MLB	DJA	8/10/12

EXHIBIT C

STRUCTURAL ANALYSIS REPORT

for

T-Mobile®

Bridgeport

KM No.: 040306.02

250 Ft. Self Support Tower
Bridgeport, CT

Prepared By:

KM CONSULTING ENGINEERS, INC.
32 West Upper Ferry Rd, Ewing, NJ 08628
Ph: (609) 538-0400 Fax: (609) 538-8858

August 29, 2012

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

T-Mobile
Bridgeport

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

Structure

Owner/Manager: Radio Communications Tower

Location: 623 Pine Street
Bridgeport, CT

Manufacturer: Rohn

Equipment

Existing tower inventory plus the proposed installation are detailed in Section 2.0 "Tower Inventory."

Synopsis

Load Case No. 1: The existing tower superstructure with the current and proposed T-Mobile antenna inventory and proposed reinforcement by KM Consulting Engineers, Inc. Dated August 23rd, 2012.

The existing tower superstructure with reinforcement has sufficient capacity, and therefore meets the current TIA standards. The existing tower superstructure with reinforcement is rated at 97.6%.

Information on the existing foundations has been reviewed. Utilizing the proposed loading reactions of the tower, a foundations analysis indicates that the existing capacity of the foundation will meet the TIA/EIA-222-F and IBC standards. .

- End of Executive Summary -

2.0 TOWER INVENTORY

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Omni antenna	276.5	mounting frames w/stable bar (MetroPCS)	138
yaggi in radom	264	1' dish (Clearwire)	121
Beacon	264	1' dish (Clearwire)	121
Omni antenna	264	1' dish (Clearwire)	121
Omni antenna	264	Panel Antenna w/mount pipe (Clearwire)	118
Top Platform	264	Panel Antenna w/mount pipe (Clearwire)	118
Omni antenna	256 - 239	Panel Antenna w/mount pipe (Clearwire)	118
Omni antenna	238	(2) APL866513 w/Mount Pipe (Verizon)	110
(2) Ericsson AIR21 Panel Antenna (T-Mobile)	180	mounting frames w/stable bar (Verizon)	110
mounting frames w/stable bar (T-Mobile)	180	mounting frames w/stable bar (Verizon)	110
mounting frames w/stable bar (T-Mobile)	180	(2) APL866513 w/Mount Pipe (Verizon)	110
mounting frames w/stable bar (T-Mobile)	180	(2) APL866513 w/Mount Pipe (Verizon)	110
(2) Ericsson AIR21 Panel Antenna (T-Mobile)	180	mounting frames w/stable bar (Verizon)	110
(2) Ericsson AIR21 Panel Antenna (T-Mobile)	180	Lucent LNX-6514DS-T4M (Verizon)	110
APX16PV_PVL (T-Mobile)	180	Lucent LNX-6514DS-T4M (Verizon)	110
APX16PV_PVL (T-Mobile)	180	Lucent P65-16-XL-2 (Verizon)	110
APX16PV_PVL (T-Mobile)	180	MGD3-800-TX (Verizon)	110
TMA (T-Mobile)	180	MGD3-800-TX (Verizon)	110
TMA (T-Mobile)	180	MGD3-800-TX (Verizon)	110
TMA (T-Mobile)	180	PX2F-52-N7A (County)	100
(2) MetroPCS Antenna (MetroPCS)	138	mounting frames w/stable bar (Nextel)	83
(2) MetroPCS Antenna (MetroPCS)	138	mounting frames w/stable bar (Nextel)	83
(2) MetroPCS Antenna (MetroPCS)	138	mounting frames w/stable bar (Nextel)	83
mounting frames w/stable bar (MetroPCS)	138	(4) sector antenna (Nextel)	83
mounting frames w/stable bar (MetroPCS)	138	(4) sector antenna (Nextel)	83
		(4) sector antenna (Nextel)	83

*Proposed removal of (2) existing T-Mobile antennas per sector @180' AGL
*Addition of (6) Ericsson AIR21 antennas @ 180' AGL

3.0 COMMENTARY

Our scope of work is to determine if the existing structure with reinforcement is capable of withstanding the additional stresses/forces imposed by the installation of the proposed equipment noted in the tower inventory. The tower is a 250' Rohn self support tower with a triangular platform located at the top of the tower.

A tower climb was performed by KM Consulting Engineers, Inc. On March 18, 2010 in order to ascertain the antenna configurations and antenna heights on the tower. The tower inventory for this analysis was taken from the previous mentioned climb updated with the proposed inventory. The tower member layout/sizes and foundation information was obtained from a previous analysis by KM Consulting Engineers, Inc. dated 4/22/10.

The analyses include proposed reinforcement by KM Consulting Engineers, Inc. dated August 23rd, 2012.

The following report will provide analytical calculations and commentary regarding the capacity of the proposed tower and subsequent recommendations.

4.0 ANALYSIS PROCEDURE

KM Consulting Engineers, Inc. carried out their structural analysis by correlating field inspection and tower member data into proprietary software designed specifically for communication tower analysis.

These programs run in conjunction with the guidelines set down in the TIA/EIA-222-F June 1996 Standard entitled "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures."

The tower is analyzed by placing wind forces on the structure in 30° positional increments around the tower (ie. wind pressure directly onto the tower corners, faces and parallel to the faces). This enables the user to "create" a three-dimensional representation, yielding results for worst case scenarios. In effect, the production of these results allows the user to study the structural integrity of the tower when influenced by wind forces from any direction.

The proceeding report includes analysis for the tower with the addition of antenna in the scenarios stated. For clarity, the analysis shall include worst case loadings and a typical elevation view with maximum foundation loads tabulated.

Should the client require to be furnished with a full copy of our analysis, we will gladly do so (approximately 80 pages).

Codes and Standards

ACI - American Concrete Institute - *Building Code Requirements for Structural Concrete (ACI 318-05)*, 2005

AISC - American Institute of Steel Construction - *Manual of Steel Construction, Allowable Stress Design*, 14th edition, 2010

TIA - Telecommunications Industry Association - *TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, 1996*

IBC 2003- International Building Code

5.0 TOWER ANALYSIS RESULTS

The existing tower with reinforcement was analyzed for the inventory detailed in Section 2.0 "Tower Inventory".

Structural wind speed is in accordance with TIA/EIA-222-F listing applicable to Fairfield County, CT: 85 MPH (fastest mile), no ice and 74 MPH (fastest mile), ½" radial ice.

All allowable capacities have been calculated to comply with the permitted TIA allowable increases (for wind).

Load Case No. 1: Existing inventory with the addition of (6) Ericsson AIR21 antennas and removal of (2) existing T-Mobile panel antennas per sector.

With proposed reinforcement by KM Consulting Engineers, Inc. dated August 23rd, 2012, the tower superstructure meet the current TIA design standards. The existing tower superstructure with reinforcement is at 97.6%. The foundation is deemed acceptable.

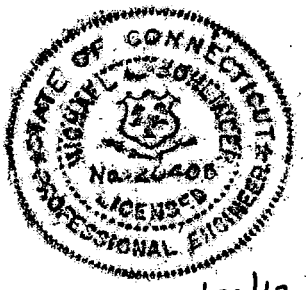
6.0 RECOMMENDATIONS

Further to our calculations, we conclude that the existing tower superstructure with reinforcement has adequate capacity and therefore meets the current TIA/EIA-222-F design standards.

Please do not hesitate to contact our office with any questions or concerns regarding this report.

Prepared By:

Domenic Aversa, EIT
Project Manager



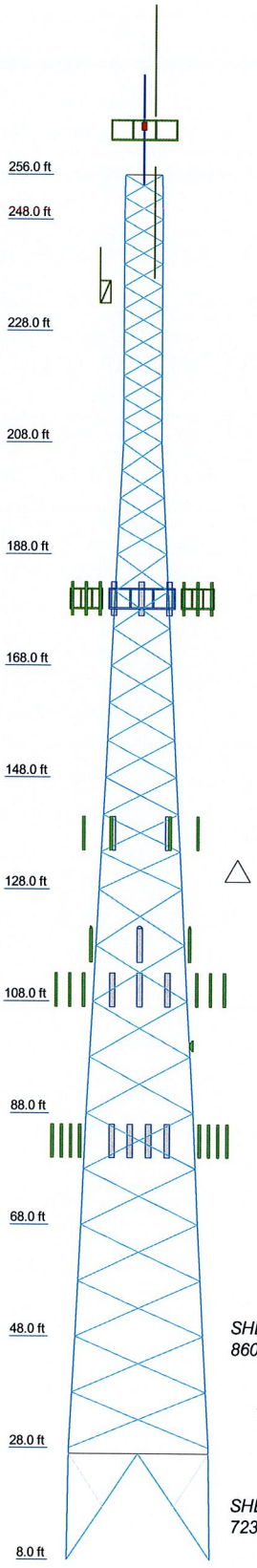
8/29/12

Reviewed and Approved by:

Michael L. Bohlinger, PE
Principal
CT License No. 20405

7.0 APPENDIX

LOAD CASE 1



Section		T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs			P10x.5			ROHN 8 EH	ROHN 8 EHS		ROHN 6 EH		ROHN 5 EH	ROHN 4 EH	ROHN 3 EH	A
Leg Grade								A572-50						
Diagonals	C		L5x5x3/8			L4x4x0.31	L4x4x3/8	L3x3x1/4		L2 1/2x2 1/2x1/4		L2x2x1/4		B
Diagonal Grade								A572-50						
Top Girts	D	ROHN 3 STD						N.A.						
Red. Diagonals		ROHN 3 STD						N.A.						
Red. Hips		ROHN 1.5 STD						N.A.						
Inner Bracing		ROHN 3 STD						N.A.						
Face Width (ft)	25.97	25.333	23.229	21.25	19.25	17.0833	14.989	12.916	10.916	8.916	6.833	6.9	6.604	
# Panels @ (ft)		1 @ 19			10 @ 10			9 @ 6.66667			4 @ 5	12 @ 4		
Weight (lb)	50256.7	6676.5	7164.6	6887.4	6622.3	4629.8	4196.6	3083.2	2923.5	2590.2	1965.2	1660.8	1379.5	478.2

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Omni antenna	276.5	mounting frames w/stable bar (MetroPCS)	138
yaggi in radom	264	1' dish (Clearwire)	121
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mounting frames w/stable bar (MetroPCS)	138	(4) sector antenna (Nextel)	83
		(4) sector antenna (Nextel)	83

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	ROHN 3 STD	C	ROHN 3 STD w/L4x4x1/4
B	L1 3/4x1 3/4x3/16	D	L3x3x1/4

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 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 60 mph wind.
5. TOWER RATING: 97.6%

MAX. CORNER REACTIONS AT BASE:
DOWN: 489666 lb
UPLIFT: -401901 lb
SHEAR: 45398 lb

AXIAL
115031 lb

SHEAR
86025 lb

MOMENT
10150550 lb-ft

TORQUE 1235 lb-ft
74 mph WIND - 0.7500 in ICE

AXIAL
64516 lb

SHEAR
72308 lb

MOMENT
8436906 lb-ft

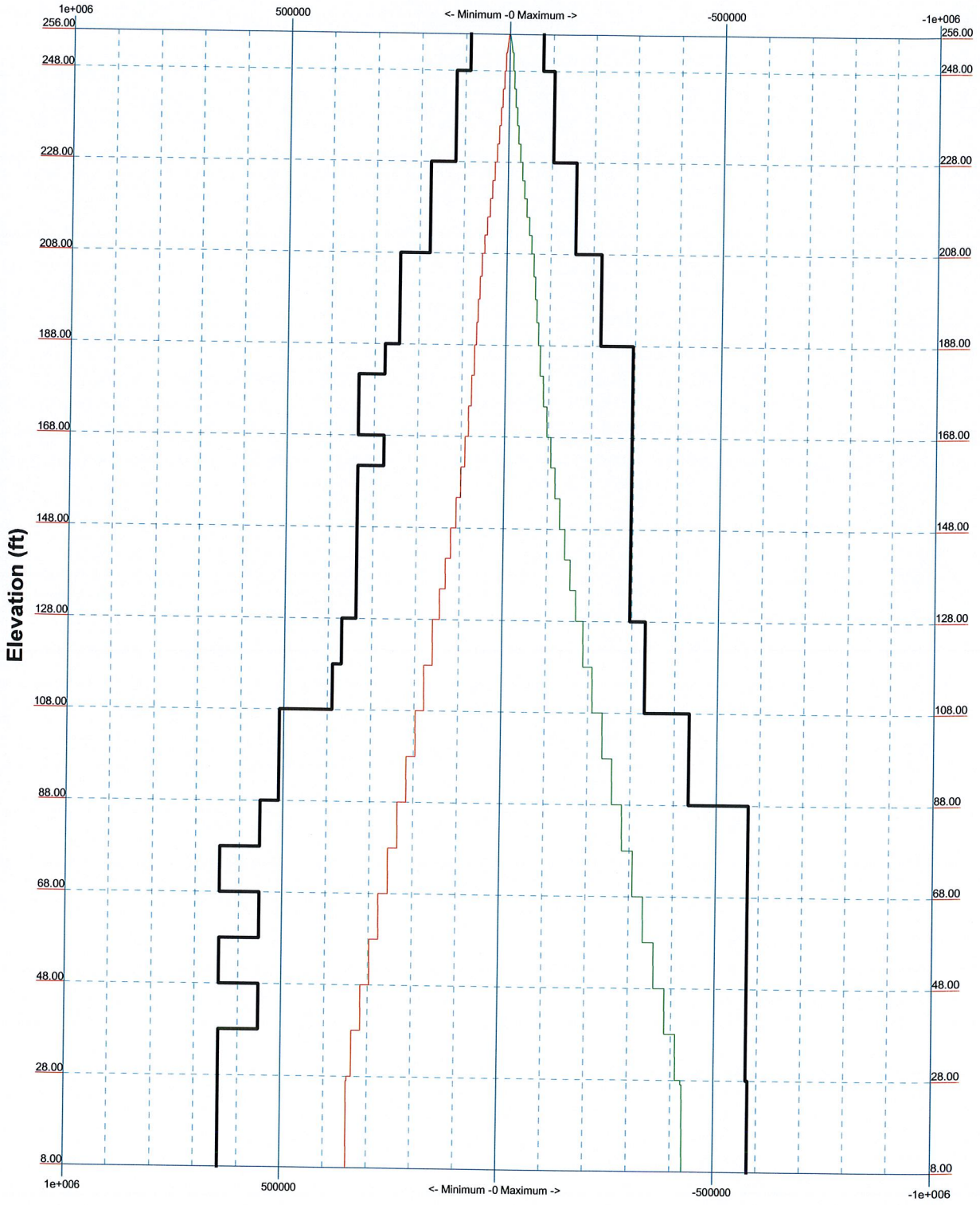
TORQUE 1546 lb-ft
REACTIONS - 85 mph WIND

KM Consulting Engineers Inc.
32 West Upper Ferry Road
Ewing, NJ. 08628
Phone: (609) 538-0400
FAX: (609) 538-8858

Job: **Bridgeport RCI Tower**			
Project: **250' Rohn Self Support Tower**			
Client: T-Mobile	Drawn by: Michael Bohlinger	App'd:	
Code: TIA/EIA-222-F	Date: 08/29/12	Scale: NTS	
Path: K:\T-MOBILE\Bridgeport, CT\Engineering\Bridgeport LC1 reinforced.eri		Dwg No. E-1	

TIA/EIA-222-F - 85 mph/74 mph 0.5000 in Ice

Leg Capacity ——— Leg Compression (lb)



KM Consulting Engineers Inc.
32 West Upper Ferry Road
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Job: **Bridgeport RCI Tower**			
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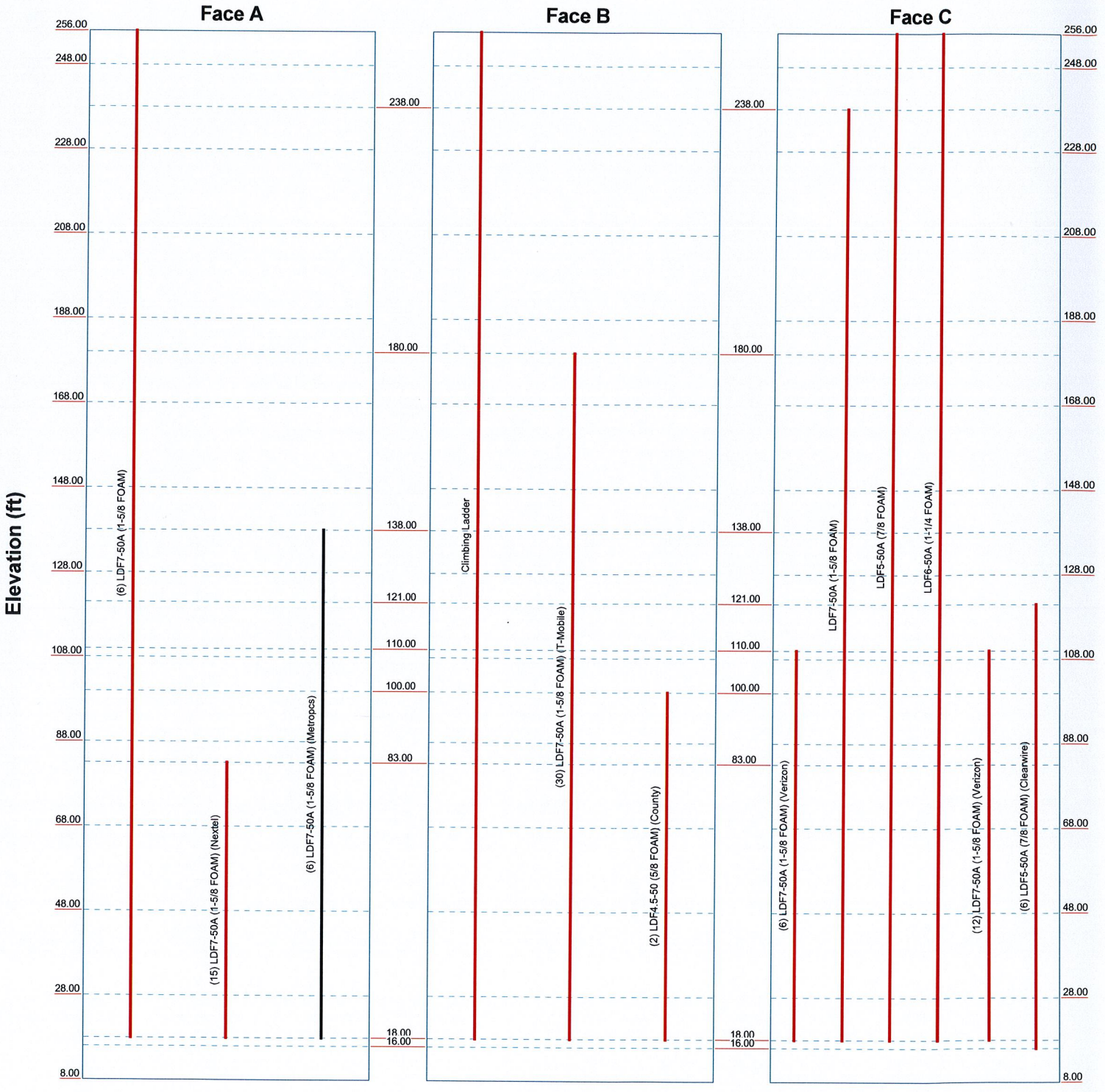
Client: T-Mobile	Drawn by: Michael Bohlinger	App'd:	
Code: TIA/EIA-222-F	Date: 08/29/12	Scale: NTS	
Path: K:\T-MOBILE\Bridgeport, CT\Engineering\Bridgeport LC1 reinforced.eri		Dwg No. E-3	

Feedline Distribution Chart
8' - 256'

Round | Flat | App In Face | App Out Face | Truss Leg



KM Consulting Engineers Inc.
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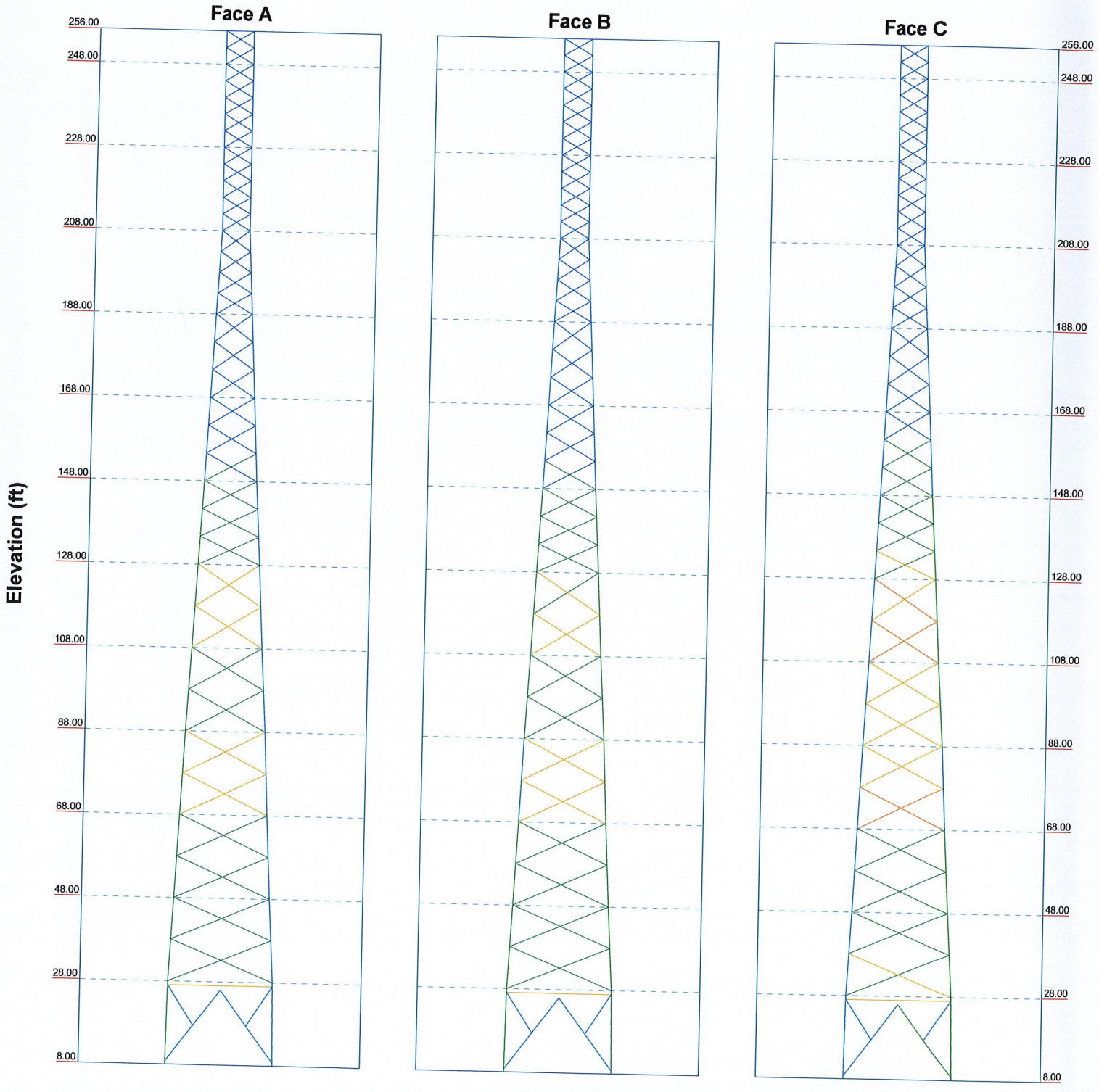
FAX: (609) 538-8858

Job: **Bridgeport RCI Tower**			
Project: **250' Rohn Self Support Tower**			
Client: T-Mobile	Drawn by: Michael Bohlinger		App'd:
Code: TIA/EIA-222-F	Date: 08/29/12		Scale: NTS
Path: K:\T-MOBILE\Bridgeport, CT\Engineering\Bridgeport LC1 reinforced.eri			Dwg No. E-7

Stress Distribution Chart
8' - 256'

> 100% | 90%-100% | 75%-90% | 50%-75% | < 50% Overstress



KM Consulting Engineers Inc.
32 West Upper Ferry Road
Ewing, NJ. 08628
Phone: (609) 538-0400
FAX: (609) 538-8858

Job: ***Bridgeport RCI Tower***			
Project: ***250' Rohn Self Support Tower***			
Client: T-Mobile	Drawn by: Michael Bohlinger	App'd:	
Code: TIA/EIA-222-F	Date: 08/29/12	Scale: NTS	
Path: K:\T-MOBILE\Bridgeport, CT\Engineering\Bridgeport LC1 reinforced.eri		Dwg No. E-8	

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$

Inner Bracing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T13	28 - 8	ROHN 3 STD	12.68	12.68	130.8	30.000	2.2285	425.76	66854.10	0.006 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T1	256 - 248	Leg	ROHN 3 STD	3	-8780.60	76206.01	11.5	Pass
		Diagonal	L1 3/4x1 3/4x3/16	8	-1479.98	6904.95	21.4	Pass
		Top Girt	L3x3x1/4	4	-584.61	17508.29	3.3	Pass
T2	248 - 228	Leg	ROHN 3 EH	21	-27706.40	102570.88	27.0	Pass
		Diagonal	L2x2x1/4	23	-2786.05	13590.20	20.5	Pass
							32.4 (b)	
T3	228 - 208	Leg	ROHN 4 EH	54	-56218.60	157673.90	35.7	Pass
		Diagonal	L2x2x1/4	56	-3944.99	14108.47	28.0	Pass
							45.9 (b)	
T4	208 - 188	Leg	ROHN 5 EH	87	-74538.10	218465.36	34.1	Pass
		Diagonal	L2x2x1/4	89	-2373.02	8319.80	28.5	Pass
T5	188 - 168	Leg	ROHN 6 EH	114	-96696.60	294794.27	32.8	Pass
		Diagonal	L2 1/2x2 1/2x1/4	116	-4672.78	10570.13	44.2	Pass
T6	168 - 148	Leg	ROHN 6 EH	135	-129074.00	294794.27	43.8	Pass
		Diagonal	L3x3x1/4	137	-7316.19	14250.70	51.3	Pass
							59.2 (b)	
T7	148 - 128	Leg	ROHN 6 EH	156	-169625.00	294787.61	57.5	Pass
		Diagonal	L3x3x1/4	158	-9355.02	11088.25	84.4	Pass
T8	128 - 108	Leg	ROHN 8 EHS	177	-210598.00	332528.83	63.3	Pass
		Diagonal	L4x4x3/8	179	-12071.30	26862.75	44.9	Pass
							97.6 (b)	
T9	108 - 88	Leg	ROHN 8 EH	192	-257751.00	435191.16	59.2	Pass
		Diagonal	L4x4x0.31	194	-13309.80	18685.06	71.2	Pass
							79.1 (b)	
T10	88 - 68	Leg	P10x.5	207	-308360.00	574275.04	53.7	Pass
		Diagonal	L5x5x3/8	209	-15978.70	38315.75	41.7	Pass
							94.9 (b)	
T11	68 - 48	Leg	P10x.5	222	-360444.00	574277.70	62.8	Pass
		Diagonal	L5x5x3/8	224	-17004.90	32860.98	51.7	Pass
							70.7 (b)	
T12	48 - 28	Leg	P10x.5	237	-411038.00	574259.04	71.6	Pass
		Diagonal	L5x5x3/8	239	-18125.10	28177.62	64.3	Pass
							75.4 (b)	
T13	28 - 8	Leg	P10x.5	252	-428087.00	578937.87	73.9	Pass
		Diagonal	ROHN 3 STD w/L4x4x1/4	258	-42976.60	80916.69	53.1	Pass
		Top Girt	ROHN 3 STD	253	-24581.50	27863.96	88.2	Pass
		Redund Diag 1	ROHN 3 STD	263	-6630.09	37696.70	17.6	Pass
		Bracing						
		Redund Hip 1	ROHN 1.5 STD	272	-120.96	10653.39	1.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
		Bracing						
		Redund Hip Diagonal Bracing	ROHN 1.5 STD	273	-83.24	2012.78	4.1	Pass
		Inner Bracing	ROHN 3 STD	275	-393.30	25930.58	40.2	Pass
							Summary	
							Leg (T13)	73.9 Pass
							Diagonal (T8)	97.6 Pass
							Top Girt (T13)	88.2 Pass
							Redund Diag 1 Bracing (T13)	17.6 Pass
							Redund Hip 1 Bracing (T13)	1.1 Pass
							Redund Hip Diagonal Bracing (T13)	4.1 Pass
							Inner Bracing (T13)	40.2 Pass
							Bolt Checks	97.6 Pass
							RATING =	**97.6** **Pass**

EXHIBIT D

EBI CONSULTING
www.ebiconsulting.com

21 B Street

Burlington, MA 01803

Tel: (781) 273.2500

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CT11014B

Bridgeport – I 95 / X24
623 Pine Street
Bridgeport, CT 06516

June 05, 2012

EBI CONSULTING
www.ebiconsulting.com

21 B Street

Burlington, MA 01803

Tel: (781) 273.2500

June 5, 2012

T-Mobile USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Re: Emissions Values for Site CT11014B – Bridgeport – I 95 / X24

EBI Consulting was directed to analyze the proposed T-Mobile facility located at 623 Pine Street, Bridgeport, CT, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of μW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (μW/cm2). The general population exposure limit for the cellular band is 567 μW/cm2, and the general population exposure limit for the PCS band is 1000 μW/cm2. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 623 Pine Street, Bridgeport, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, the actual antenna pattern gain value in the direction of the sample area was used. For this report the sample point is a 6 foot person standing at the base of the tower

For all calculations, all equipment was calculated using the following assumptions:

1) 2 GSM channels (1940.000 MHz—to 1950.000 MHz) were considered for each sector of the proposed installation.
2) 2 UMTS channels (2110.000 MHz to 2120.000 MHz / 2140.000 MHz to 2145.000 MHz) were considered for each sector of the proposed installation
3) 2 LTE channels (2110.000 MHz to 2120.000 MHz / 2140.000 MHz to 2145.000 MHz) were considered for each sector of the proposed installation
4) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation 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.
5) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
6) The antenna used in this modeling is the Ericsson AIR21 for LTE, UMTS and GSM. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 15.6 dBd gain value at its main lobe. Actual antenna gain values were used for all calculations as per the manufacturers specifications

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7) The antenna mounting height centerline of the proposed antennas is **180 feet** above ground level (AGL)
8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculation were done with respect to uncontrolled / general public threshold limits

Site ID	CT11014B - Bridgeport 1575 Railroad
Site Addresss	623 Pine Street, Bridgeport, CT 06516
Site Type	Self Support Tower

Sector 1

Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	180	174	None	0	0	48.326044	0.573837	0.05738%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	180	174	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	180	174	None	0	0	24.163022	0.286919	0.02869%
2B	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	180	174	1-5/8"	0	0	24.163022	0.286919	0.02869%
														Sector total Power Density Value:		0.115%	

Sector 2

Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	180	174	None	0	0	48.326044	0.573837	0.05738%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	180	174	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	180	174	None	0	0	24.163022	0.286919	0.02869%
28	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	180	174	1-5/8"	0	0	24.163022	0.286919	0.02869%
														Sector total Power Density Value:		0.115%	

Sector 3

Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	180	174	None	0	0	48.326044	0.573837	0.05738%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	180	174	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	180	174	None	0	0	24.163022	0.286919	0.02869%
28	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	180	174	1-5/8"	0	0	24.163022	0.286919	0.02869%
														Sector total Power Density Value:		0.115%	

Site Composite MPE %

Carrier	MPE %
T-Mobile	0.344%
Sprint iDEN	10.530%
Clearwire	1.290%
Sprint WiMax	8.390%
Microwave	1.370%
Verizon Wireless	20.520%
Unknown	15.080%
MetroPCS	11.640%
Total Site MPE %	**69.164%**

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Summary

All calculations performed for this analysis yielded results that were well within the allowable limits for general public exposure to RF Emissions.

The anticipated Maximum Composite contributions from the T-Mobile facility are **0.344% (0.115% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously.

The anticipated composite MPE value for this site assuming all carriers present is **69.164%** of the allowable FCC established general public limit. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were within the allowable 100% threshold standard per the federal government