

JULIE D. KOHLER

PLEASE REPLY TO: Bridgeport
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E-Mail Address: jkohler@cohenandwolf.com

March 27, 2014

Attorney Melanie Bachman Acting Executive Director Connecticut Siting Council Ten Franklin Square New Britain, CT 06051

Re: Notice of Exempt Modification

Message Center Management/T-Mobile co-location

Site ID CT11166A

1 Broadway Extension, (7 Broadway Avenue Extension, Stonington) Mystic,

Connecticut

Dear Attorney Bachman:

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, Message Center Management owns the existing water tower and related facility located at 1 Broadway Extension, (7 Broadway Avenue Extension, Stonington) Mystic, Connecticut (Latitude: 41.32214401 Longitude: -72.3074655). T-Mobile intends to replace nine antennas and related equipment at this existing telecommunications facility in Mystic ("Mystic Facility"). Please accept this letter as notification, pursuant to R.C.S.A. § 16-50j-73, of construction which 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 First Selectman of Stonington, Edward Haberek Jr. and the property owner, Planeta Properties.

The existing Mystic Facility consists of a 152 foot tall water tower. T-Mobile plans to replace nine antennas and nine TMAs (tower mounted amplifiers) with nine antennas and three TMAs at a centerline of 116.5 feet. (See the plans revised to February 18, 2014 attached hereto as Exhibit A). T-Mobile will also install fiber cable, and reuse coax cable. The existing Mystic Facility is structurally capable of supporting T-Mobile's proposed modifications, as indicated in the structural analysis dated March 20, 2014 and attached hereto as Exhibit B.

The planned modifications to the Mystic Facility fall squarely within those activities

While the online docket for the Connecticut Siting Council does not provide a docket or petition number for the approval of this structure, it does reference this structure in connection with notices of intent captioned EM-CING-007-062-126-135-137-070809, EM-METROPCS-137-090616B, and EM-CING-137-110225.



March 27, 2014 Site ID CT11166A Page 2

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 a centerline of 116.5 feet, merely replacing existing antennas located at the same 116.5 foot elevation. The enclosed tower drawing confirms that the proposed modification will not increase the height of the tower.
- 2. The proposed modifications will not require an extension of the site boundaries. T-Mobile's equipment will be located entirely within the existing compound and leased area as shown on Pages 1 and 2 of Exhibit A.
- 3 . The proposed modification to the Mystic 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 February 21, 2014, T-Mobile's operations would add 0.925% 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 67.135% of the FCC Standard as calculated for a mixed frequency site as evidenced by the engineering exhibit attached hereto as Exhibit C.

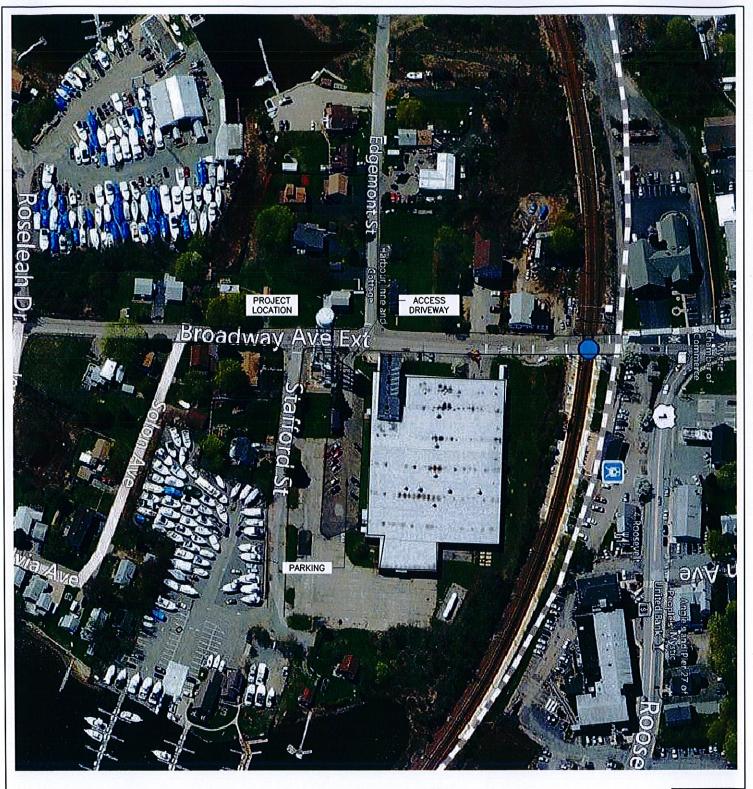
For the foregoing reasons, T-Mobile respectfully submits that the proposed replacement antennas and equipment at the Mystic Facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Upon acknowledgement by the Council of this proposed exempt modification, T-Mobile shall commence construction approximately sixty days from the date of the Council's notice of acknowledgement.

Sincerely,

Julie D. Kohler, Esq.

cc: Town of Stonington, First Selectman of Stonington, Edward Haberek Jr Message Center Management Planeta Properties Northeast Site Solutions, Sheldon J. Freincle

EXHIBIT A



ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY LESSEE/LICENSEE'S STRUCTURAL & RF ENGINEERS. LOCATIONS OF POWER & TELEPHONE FACILITIES ARE SUBJECT TO APPROVAL BY UTILITY COMPANIES.

KEY MAP



CONFIGURATION

SUBMITTALS					
LE REV A	02.11.14				
LE REV 0	02.18.14				

TLANTIS GROUP

1340 Centre Street Suite 212 Newton, MA 02459 Office: 617-965-0789 Fax: 617-213-5056

LEASE EXHIBIT

CT11166A

SITE NAME: MYSTIC/DOWNTOWN_1

SITE ADDRESS: 1 BROADWAY EXTENTION MYSTIC, CT 06355

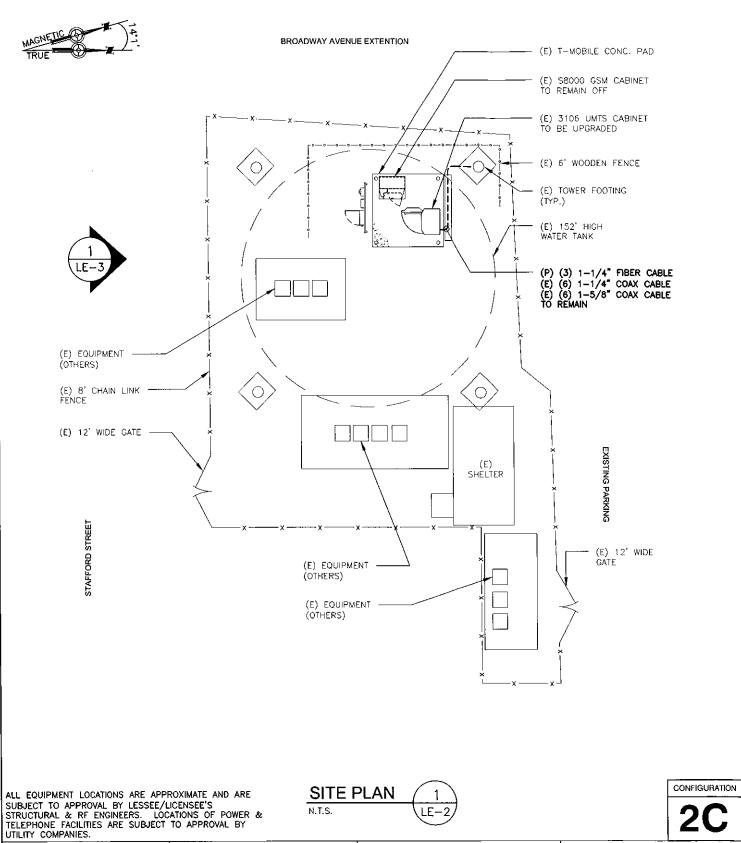
DRAWN BY: EB CHECKED BY:SM

NORTHEAST SITE SOLUTIONS

54 MAIN STREET, UNIT 3 STURBRIDGE, MA 01566 (508) 434-5237

T-MOBILE NORTHEAST, LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 OFFICE: (860) 692-7100 FAX: (860) 692-7159

PAGE 1 OF 4



| SUBMITTALS |
| LE REV A | 02.11.14 |
| LE REV 0 | 02.18.14 |

TLANTIS G R O U P

1340 Centre Street Sulte 212 Newton, MA 02459 Office: 617-965-0789 Fax: 617-213-5056

LEASE EXHIBIT

SITE NUMBER: CT11166A

SITE NAME: MYSTIC/DOWNTOWN_1

SITE ADDRESS: 1 BROADWAY EXTENTION MYSTIC, CT 06355

DRAWN BY: EB CHECKED BY: SM

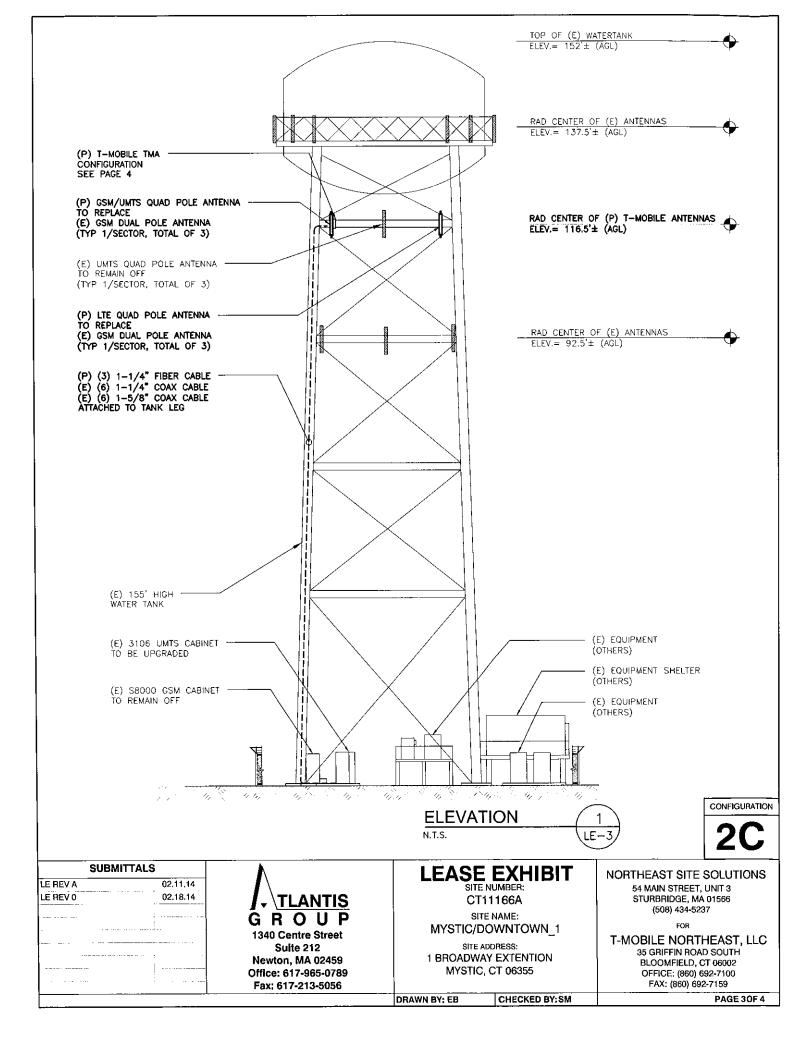
NORTHEAST SITE SOLUTIONS

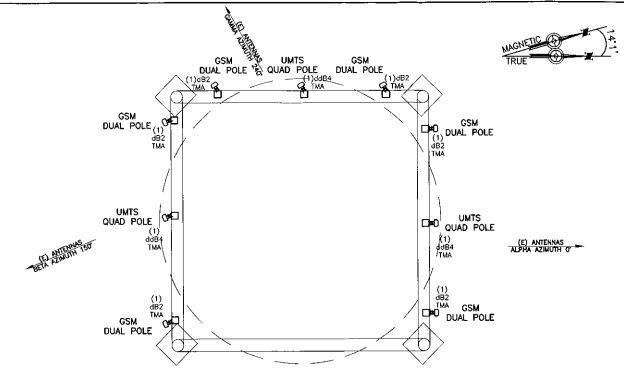
54 MAIN STREET, UNIT 3 STURBRIDGE, MA 01566 (508) 434-5237

FOR

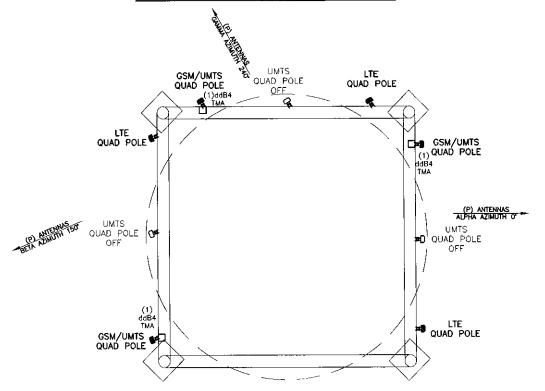
T-MOBILE NORTHEAST, LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002

OFFICE: (860) 692-7100 FAX: (860) 692-7159 PAGE 2 OF 4





EXISTING ANTENNA CONFIGURATION



PROPOSED ANTENNA CONFIGURATION

CONFIGURATION

2C

SUBMITTA	LS
LE REV A	02.11.14
LE REV 0	02.18.14
	1
	1

TLANTIS G R O U P

1340 Centre Street Suite 212 Newton, MA 02459 Office: 617-965-0789 Fax: 617-213-5056

LEASE EXHIBIT

SITE NUMBER: CT11166A

SITE NAME: MYSTIC/DOWNTOWN_1

SITE ADDRESS: 1 BROADWAY EXTENTION MYSTIC, CT 06355

DRAWN BY: EB CHECKED BY: SM

NORTHEAST SITE SOLUTIONS

54 MAIN STREET, UNIT 3 STURBRIDGE, MA 01566 (508) 434-5237

FOR

T-MOBILE NORTHEAST, LLC 35 GRIFFIN ROAD SOUTH BLOOMEIGLD CT 06002

BLOOMFIELD, CT 06002 OFFICE: (860) 692-7100 FAX: (860) 692-7159

PAGE 40F 4

EXHIBIT B

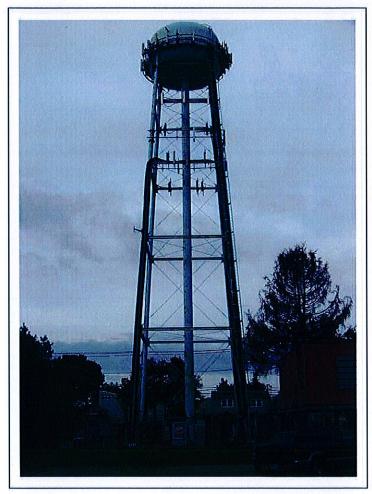
STRUCTURAL ANALYSIS REPORT WATER TOWER



Prepared For:

Mobile

South
Bloomfield, CT 06002



Tower Rating

Tower:

Pass (99.9 %)

Atlantis Group, Inc. 3-20-2014



03/20/2014

CT Professional Engineer License No: 26725

Site ID: CT11166A
Site Name: Mystic/Downtown_1
1 Broadway Extension,
Mystic, CT 06355

Prepared By:

Atlantis Group, Inc. 1340 Centre Street, Suite 203 Newton, Massachusetts 02459 Phone: 617-965-0789, Fax: 617-965-0103 Page

CT11166A-Structural Analysis

CONTENTS

- 1.0 SUBJECT AND REFERENCES
- 2.0 PROPOSED ADDITION
- 3.0 CODES AND LOADING
- 4.0 STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES
- 5.0 ANALYSIS AND ASSUMPTIONS
- 6.0 RESULTS AND CONCLUSION

APPENDIX

A - CALCULATIONS



CT11166A-Structural Analysis

1.0 SUBJECT AND REFERENCES

The purpose of this analysis is to evaluate the structural capacity of the existing 152 feet high water tower, located at 1 Broadway Extension, Mystic, CT 06355, for the alteration and addition of wireless telecommunication appurtenances proposed by T-Mobile.

The structural analysis of the site is based on the following documents provided to us:

- 1. Structural Analysis Report prepared by Armor Tower Engineering for Sprint site CT03XC113, dated 03/04/2014.
- 2. Water tank inventory provided by the tower owner dated 06/13/2013.
- 3. Existing and proposed antenna information provided by T-Mobile.

The provided structural information does not include information about the foundations. This certification does not include foundations.

1.1 STRUCTURE

The water tower is a 152 feet high tower with 4 legs and a standpipe, manufactured by Hammond. Round pipe legs are X-braced with wide-flange horizontals and tension rod diagonals. The round standpipe supports each of the tower legs with tension rods. The water tank was confirmed to be empty. Please refer to the tower elevation drawing in Appendix A for details about the tower geometry.

2.0 EXISTING AND PROPOSED CONFIGURATION

Antennas and Appurtenances:

The analysis is based on the following existing and proposed appurtenances:



CT11166A-Structural Analysis

Existing Configuration of T-MOBILE Appurtenances:

Sector	RAD Center (ft.)	Ante	Antenna & TMA				
Alpha 116		(2) GSM Antennas (1) UMTS Antenna (2) TMAs	(2) RR90-17-02DP (1) APX16DWV-16DWV (2) d B2 & (1) ddB4	(1) Pipe Mount per antenna	(6) 1 5/8" (6)		
Beta	116	(2) GSM Antennas (1) UMTS Antenna (2) TMAs	(2) RR90-17-02DP (1) APX16DWV-16DWV (2) d B2 & (1) ddB4	(1) Pipe Mount per antenna	1 1/4'		
Gamma	116	(2) GSM Antennas (1) UMTS Antenna (2) TMAs	(2) RR90-17-02DP (1) APX16DWV-16DWV (2) d B2 & (1) ddB4	(1) Pipe Mount per antenna			

Proposed Configuration of T-MOBILE Appurtenances:

Sector	RAD Center Antenna & TMA (ft.)		Antenna & TMA					
Alpha	117	GSM/UMTS Antenna UMTS Antenna LTE Antenna TMA	(1) AIR21 B2A/B4P (1) APX16DWV-16DWV (1) AIR21 B4A/B2P (1) dd B4	(1) Pipe Mount per antenna	(6) 1 5/8" (6) 1 1/4"			
Beta	117	GSM/UMTS Antenna UMTS Antenna LTE Antenna TMA	(1) AIR21 B2A/B4P (1) APX16DWV-16DWV (1) AIR21 B4A/B2P (1) dd B4	(1) Pipe Mount per antenna	(3) 1 1/4" Fiber			
Gamma	117	GSM/UMTS Antenna UMTS Antenna LTE Antenna TMA	(1) AIR21 B2A/B4P (1) APX16DWV-16DWV (1) AIR21 B4A/B2P (1) dd B4	(1) Pipe Mount per antenna				

CT11166A-Structural Analysis

Existing and Remaining Appurtenances by Others:

RAD Center (ft.) Carrier	Antenna & TMA	Mount	Feed Lines (18) 1 5/8" (1) Fiber trunk (6) 1 5/8", (3) 1 1/4"	
139 AT&T	(6) 7770.00, (3) KMW14-65, (6) RRUS-11, (3) Surge Suppressors (6) LGP21401 TMA, (6) LGP13519 Diplexer (1) SP4-5.2 Dish	Water tank handrail		
139 Sprint	(1) APXV9ERR18-C, (2) APXVSPP18-C, (6) DB980H90E-M, (6) RRHs	Water tank handrail		
139 American Messaging	(1) DB809	Water tank handrail	(1) 7/8"	
139 Town of Stonington	(1) DB212	Water tank handrail	(1) 7/8"	
104 MetroPCS	(6) 800-10504, (6) RETs	(3) Sector Mounts	(12) 1 5/8"	
92 Verizon	(6) LPA80080-4CF (3) MG D5-800Tx (3) BXA-70063-6CF	Tower bracing member	(12) 1 5/8"	

3.0 CODES AND LOADING

The tower was analyzed per ANSI/TIA-222-F as referenced by the 2005 Connecticut Building Code with 2011 Supplement, which is the adopted building code. The following wind loading was used in compliance with the standard for New London County, CT.

- Basic wind speed 85 mph (W) without ice [fastest-mile speed equivalent to 100 mph 3-second gust].
- Basic wind speed 73.61 mph (W_i) with 1/2" radial and escalating ice.

The following load combinations were used with wind blowing at 0°, 45° and 90°, measured from a line normal to the face of the tower.

- D+W
- D+I+W_i+1.0Ti

D: Dead Load of structure and appurtenances

W: Wind Load, without ice

Wi: Wind Load with ice

I: Ice Gravity Load



CT11166A-Structural Analysis

4.0 STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

The analysis is based on the information provided to Atlantis Group and is assumed to be current and correct. Unless otherwise noted, the structure and the foundation system are assumed to be in good condition, free of defects and can achieve theoretical strength.

It is assumed that the structure has been maintained and shall be maintained during its service. The superstructure and the foundation system are assumed to be designed with proper engineering practice and fabricated, constructed and erected in accordance with the design documents. Atlantis Group will accept no liability which may arise due to any existing deficiency in design, material, fabrication, erection, construction, etc. or lack of maintenance. Contractor should inspect the condition of the existing structure, mounts and connections and notify Atlantis Group for any discrepancies and deficiencies before proceeding with the construction.

The evaluation results presented in this report are only applicable for the previously mentioned existing and proposed additions and alterations. Any deviation of the proposed equipment and placement, etc., will require Atlantis Group to generate an additional structural evaluation.

5.0 ANALYSIS and ASSUMPTIONS

The tower was analyzed by utilizing tnx-Tower, a non-linear 3-Dimensional finite element software, a product of Tower Numerics, Inc. Software output for this analysis is provided in Appendix-A of this report.



CT11166A-Structural Analysis

6.0 RESULTS and CONCLUSION

Based on an analysis per ANSI/TIA-222-F, the existing tower is found to have adequate structural capacity for the proposed changes by T-mobile. For the aforementioned load combinations and as a maximum, the tower diagonals between 65 feet and 92 feet AGL will be stressed to 99.9% of capacity. Maximum usage of tower legs is 44%. Foundation details have not been provided for our review and are therefore considered unknown.

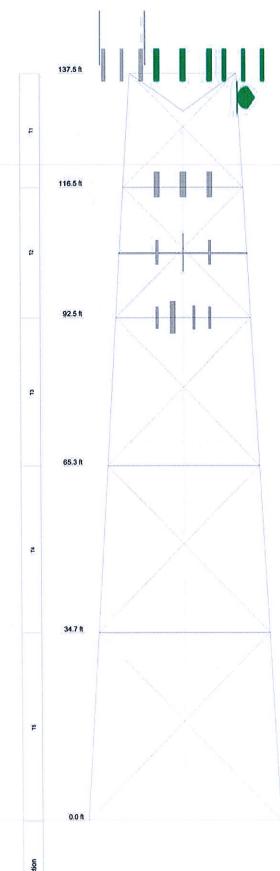
Therefore, the proposed additions and alterations by T-Mobile can be implemented with the conditions outlined in this report.

Should you have any questions or need any clarifications about this report, please contact us at (617) 965-0789.

Sincerely, Atlantis Group, Inc.



APPENDIX A CALCULATIONS



DESIGNED APPLIETENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION	
Vater tank w/o water	137.5	3"Sch40 x 6ft (Dish Mount)	133	
"Wide Catwalk	137.5	Radiowaves SP4-5.2 (E-ATT)	133	
0B809 (E-Am. Msg.)	137.5	(2) AIR21 B2A/B4P w. MlgPipe	116.5	
0B212 (E-Town)	137.5	(P-TMO-Alpha)		
2) DB980H90E-M w/Mount Pipe	137.5	(2) AIR21 B2A/B4P w. MtgPipe (P-TMO-Beta)		
E-Sprint-Alpha)		(2) AIR21 B2A/B4P w. MtgPipe (P-TMO-Gamma)	116.5	
2) DB980H90E-M w/Mount Pipe E-Sprint-Gamma)	137.5	A second		
2) DB980H90E-M w/Mount Pipe	137.5	RFS APX16DWV w. MtgPipe (E-TMO-Alpha) RFS APX16DWV w. MtgPipe (E-TMO-Beta)	116.5 116.5	
E-Sprint-Beta)	137.3	RFS APX16DWV w. MigPipe (C*TMO*Beta)		
2) Powerwave 7770.00 w. MtgPipe	137.5	(E-TMO-Gamma)	116.5	
E-ATT-Alpha)	98030	AWS-PCS TMA (behind antenna)	116.5	
2) Powerwave 7770.00 w, MtgPipe	137.5	(P-TMO-Alpha)	4.5074	
E-ATT-Beta)		AWS-PCS TMA (behind antenna)	116.5	
2) Powerwave 7770.00 w. MtgPipe	137.5	(P-TMO-Beta)		
E-ATT-Gamma)		AWS-PCS TMA (behind antenna) (P-TMO-Gamma)	116.5	
KMW14-65 w. MtgPipe (E-ATT-Alpha)	137.5		1016	
(MW14-65 w. MtgPipe (E-ATT-Beta)	137.5	(2) Kathrein 800-10504 w. Mtg Pipe (E-mPCS-Gamma)	104.5	
(MW14-65 w. MtgPipe (E-ATT-Gamma)	137.5	27' Face Mount (E-mPCS-Alpha)	104.5	
2) Ericsson RRUS-11 (E-ATT-Alpha)	137.5	27 Face Mount (E-mPCS-Reta)	104.5	
2) Ericsson RRUS-11 (E-ATT-Bela)	137.5	27 Face Mount (E-mPCS-Gamma)	104.5	
2) Ericsson RRUS-11 (E-ATT-Gamma)	137.5	(2) 2" Sch.40 x 7ft (E-mPCS-Alpha)	104.5	
Surge Suppressor (E-ATT-Alpha)	137.5	(2) 2" Sch.40 x 7ft (E-mPCS-Beta)	104.5	
Surge Suppressor (E-ATT-Beta)	137.5	(2) 2" Sch.40 x 7ft (E-mPCS-Gamma)	104.5	
Surge Suppressor (E-ATT-Gamma)	137.5	(2) Kathrein 800-10504 w. Mtg Pipe	104.5	
4) Powerwave LGP21401 TMA E-ATT-Alpha)	137.5	(E-mPCS-Alpha)		
4) Powerwave LGP21401 TMA (E-ATT-Beta)	137.5	(2) Kathrein 800-10504 w. Mtg Pipe (E-mPCS-Beta)	104.5	
4) Powerwave LGP21401 TMA	137.5	A STREET AND DESCRIPTION OF THE PROPERTY OF TH	104.5	
E-ATT-Gamma)		(2) Kathrein 860-10025 RET (E-mPCS-Alpha)	- 5- 10 C	
4) Powerwave LGP13519 Diplexer E-ATT-Alpha)	137.5	(2) Kathrein 860-10025 RET (E-mPCS-Alpha) (2) Kathrein 860-10025 RET (E-mPCS-Alpha)		
	107 8			
(4) Powerwave LGP13519 Diplexer E-ATT-Beta)	137.5	BXA-70063-6CF w. Mtg Pipe (E-VZW-Beta) (2) LPA-80080-4CF w. Mtg Pipe	92.5 92.5	
(4) Powerwave LGP13519 Diplexer	137.5	(E-VZW-Alpha)	92.0	
(E-ATT-Gamma)		(2) LPA-80080-4CF w. Mtg Pipe	92.5	
1900 MHz RRH (E-Sprint-Alpha)	137.5	(E-VZW-Beta)		
1900 MHz RRH (E-Sprint-Beta)	137.5	(2) LPA-80080-4CF w. Mlg Pipe	92.5	
1900 MHz RRH (E-Sprint-Gamma)	137.5	(E-VZW-Gamma)		
300 MHz RRH (E-Sprint-Alpha)	137.5	MG D5-800Tx w. MtgPipe (E-VZW-Alpha)	92.5	
800 MHz RRH (E-Sprint-Beta)	137.5	MG D5-800Tx w. MtgPipe (E-VZW-Beta)	92.5	
300 MHz RRH (E-Sprint-Gamma)	137.5	MG D5-800Tx w, MtgPipe (E-VZW-Gamma)	92.5	
APXV9ERR18-C w.MtgPipe (E-Sprint-Alpha)	137.5	BXA-70063-6CF w. Mtg Pipe (E-VZW-Alpha)	92.5	
APXVSPP18-C w. MtgPipe (E-Sprint-Beta)	137.5	BXA-70063-6CF w. Mtg Pipe	92.5	
APXVSPP18-C w. MtgPipe	137.5	(E-VZW-Gamma)	68	

TOWER DESIGN NOTES

Tower is located in New London 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.

Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.

Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
 Welds are fabricated with ER-70S-6 electrodes.
 Appurtenance elevation used is where it is attached to the tower. Antenna RAD centers may be different.
 Antennas for T-Mobile are indicated as (E)xisting or (P)roposed. All others are Existing.
 TOWER RATING: 90 894.

10. TOWER RATING: 99.9%

SHEAR 61552 lb

MOMENT 5349 kip-ft

TORQUE 47 kip-ft 74 mph WIND - 0.5000 in ICE AXIAL 128460 lb

SHEAR 66799 lb

MOMENT ▼ 5825 kip-ft

TORQUE 56 kip-ft REACTIONS - 85 mph WIND

TLANTIS

Atlantis Group 1340 Centre St, Ste 212

Newton, MA 02459 Phone: (617) 965-0789 FAX: (617) 213-5056

152' WATER TANK ANALYSIS

Project: CT11166A Mystic/Downtown 1 Drawn by: DJH Client: T-Mobile Northeast, LLC

Scale: NTS Date: 03/20/14 Code: TIA/EIA-222-F Dwg No. E-1

App'd:

App Out Face (2) LDF5-50A (7/8 FDAM) (E-Town) (18) LDF7-50A (1-5/8 FOAM) (E-AT&T) reedline Ladder (Af) В (12) LDF7-50A (1-5/8 FOAM) (E-mPCS) 0 K (6) LDF7-50A (1-5/8 FOAM) (E-VZW) D (6) LDF7-50A (1-5/8 FOAM) (E-Sprint) rich

Atlantis Group 1340 Centre St, Ste 212

Newton, MA 02459 Phone: (617) 965-0789 FAX: (617) 213-5056

b: 152' WATER TANK ANALYSIS

Project: CT11166A Mystic/Downtown 1

Drawn by: DJH

App'd: Date: 03/20/14 Code: TIA/EIA-222-F

Scale: NTS

	Job	152' WATER TANK ANALYSIS	Page 1 of 5
Atlantis Group 1340 Centre St, Ste 212	Project	CT11166A Mystic/Downtown 1	Date 13:10:19 02/25/14
Newton, MA 02459 Phone: (617) 965-0789 FAX: (617) 213-5056	Client	T-Mobile Northeast, LLC	Designed by DJH

Load Combinations

Comb.	T.	escription
No.		·
ī	Dead Only	•
2	Dead+Wind 0 deg - No Ice+Guy	
3	Dead+Wind 45 deg - No Ice+Guy	
4	Dead+Wind 90 deg - No Ice+Guy	
5	Dead+Wind 135 deg - No Ice+Guy	
6	Dead+Wind 180 deg - No Ice+Guy	
7	Dead+Wind 225 deg - No Ice+Guy	
8	Dead+Wind 270 deg - No Ice+Guy	
9	Dead+Wind 315 deg - No Ice+Guy	
10	Dead+lce+Temp+Guy	
11	Dead+Wind 0 deg+lce+Temp+Guy	
12	Dead+Wind 45 deg+Ice+Temp+Guy	
13	Dead+Wind 90 deg+lce+Temp+Guy	
14	Dead+Wind 135 deg+lce+Temp+Guy	
15	Dead+Wind 180 deg+lce+Temp+Guy	
16	Dead+Wind 225 deg+lcc+Temp+Guy	
17	Dead+Wind 270 deg+lce+Temp+Guy	
18	Dead+Wind 315 deg+lcc+Temp+Guy	
19	Dead+Wind 0 deg - Service+Guy	
20	Dead+Wind 45 deg - Service+Guy	
21	Dead+Wind 90 deg - Service+Guy	
22	Dead+Wind 135 deg - Service+Guy	
23	Dead+Wind 180 deg - Service+Guy	
24	Dead+Wind 225 deg - Service+Guy	
25	Dead+Wind 270 deg - Service+Guy	
26	Dead+Wind 315 deg - Service+Guy	

Maximum Tower Deflections - Service Wind

Section	Elevation	Horz.	Gov.	Tilt	Twist
No.		Deflection	Load		
	fi	in	Comb.	۰	۰
Ti	137.5 - 116.5	0.909	20	0.0033	0.0093
T2	116.5 - 92.5	0.846	20	0.0018	0,0091
T3	92.5 - 65.33	0.694	24	0.0031	0.0078
T4	65.33 - 34.66	0.482	24	0.0041	0.0054
T5	34.66 - 0	0.246	24	0.0032	0.0032

Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load	Deflection	Tilı	Twist	Radius of Curvature
fi		Comb.	în	o	0	ft
137.50	Water tank w/o water	20	0.909	0.0033	0.0093	218616
133.00	Radiowaves SP4-5.2	20	0.899	0.0029	0.0093	218616
116.50	(2) AIR21 B2A/B4P w. MtgPipe	20	0.846	0.0018	0.0091	55861
104.50	27' Face Mount	20	0.778	0.0023	0.0086	88328
92.50	(2) LPA-80080-4CF w. Mtg Pipe	24	0.694	0.0031	0.0078	259033
68.00	GPS	24	0.504	0.0041	0.0056	972368

	Job	152' WATER TANK ANALYSIS	Page 2 of 5
Atlantis Group 1340 Centre St, Ste 212	Project	CT11166A Mystic/Downtown 1	Date 13:10:19 02/25/14
Newton, MA 02459 Phone: (617) 965-0789 FAX: (617) 213-5056	Client	T-Mobile Northeast, LLC	Designed by DJH

		Maximum	Tower	Deflections	- Design w
Section No.	Elevation	Horz. Deflection	Gov. Load	Tilt	Twist
1100	ft	in	Comb.	50)	0
TI	137.5 - 116.5	2,905	3	0.0131	0.0336
T2	116.5 - 92.5	2.673	3	0.0072	0.0331
T3	92.5 - 65.33	2.165	3	0.0049	0.0290
T4	65.33 - 34.66	1.482	7	0.0091	0.0208
T5	34.66 - 0	0.739	7	0.0084	0.0111

Critical Deflections and Radius of Curvature - Design Wind								
Elevation	Appurtenance	Gov. Load	Deflection	Tilt	Twist	Radius of Curvature		
ſì		Comb.	in	0	0;	ſt		
137.50	Water tank w/o water	3	2.905	0.0131	0.0336	76850		
133.00	Radiowaves SP4-5.2	3	2.865	0.0118	0.0336	76850		
116.50	(2) AIR21 B2A/B4P w. MtgPipe	3	2.673	0.0072	0.0331	19655		
104.50	27' Face Mount	3	2.446	0.0045	0.0316	31708		
92.50	(2) LPA-80080-4CF w. Mtg Pipe	3	2.165	0.0049	0.0290	96900		
68.00	GPS	7	1.550	0.0087	0.0216	260410		

Section No.	Elevation	Component Type	Bolt Grade	Number Of	Maximum Load per	Allowable Load	Ratio Load	Allowable Ratio	Criteria
	fì			Bolts	Bolt lb	1b	Allowable		
TI	137.5	Diagonal	A325N	ı	10222	54375	0.188	1.333	Gusset Bearing
T2	116.5	Diagonal	A325N	ì	15777	54375	0.290	1.333	Gusset Bearing
T3	92.5	Diagonal	A325N	1	22595	54375	0.416	1.333	Gusset Bearing
T4	65.33	Diagonal	A325N	1	26052	54375	0.479	1.333	Gusset Bearing
T5	34.66	Leg	A325N	4	14367	53994	0.266	1.333	Bolt Tension
		Diagonal	A325N	1	29246	54375	0.538	1.333	Gusset Bearing

	Job	152' WATER TANK ANALYSIS	Page 3 of 5
Atlantis Group 1340 Centre St, Ste 212	Project	CT11166A Mystic/Downtown 1	Date 13:10:19 02/25/14
Newton, MA 02459 Phone: (617) 965-0789 FAX: (617) 213-5056	Client	T-Mobile Northeast, LLC	Designed by DJH

Feed Guy Design Data										
Section No.	Elevation ft	Initial Tension lb	Breaking Load lb	Actual T lb	Allowable T _u lb	Required S.F.	Actual S.F.			
TI	137.50 (86)	523	34877	1262	17314	2.014	27.645			
	137.50 (87)	523	34877	1287	17314	2.014	27.093			
	137.50 (88)	523	34877	1314	17314	2.014	26.549			
	137.50 (89)	523	34877	1316	17314	2.014	26.504			
T2	116.50 (90)	523	34877	1440	17314	2.014	24.224			
	116.50 (91)	523	34877	1417	17314	2.014	24.607			
	116.50 (92)	523	34877	1399	17314	2.014	24.921			
	116.50 (93)	523	34877	1397	17314	2.014	24.961			
T3	92.50 (94)	523	34877	1307	17314	2.014	26.685			
	92.50 (95)	523	34877	1303	17314	2.014	26.761			
	92.50 (96)	523	34877	1291	17314	2.014	27.008			
	92.50 (97)	523	34877	1291	17314	2.014	27.011			
T4	65.33 (98)	523	34877	1018	17314	2.014	34.265			
	65.33 (99)	523	34877	1012	17314	2.014	34.469			
	65.33 (100)	523	34877	1000	17314	2.014	34.891			
	65.33 (101)	523	34877	1006	17314	2.014	34.660			
T5	34.66 (102)	523	34877	2269	17314	2.014	15.374			
	34.66 (103)	523	34877	2251	17314	2.014	15.492			
	34.66 (104)	523	34877	2257	17314	2.014	15.452			
	34.66 (105)	523	34877	2253	17314	2.014	15.482			

Compression Checks

Section Elevation No. fi	Elevation	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Rat P	io
	fi	ft	ft		ksi	in ²	lb	lb	P	r .
TI	137.5 - 116.5	21.07	21.07	40.3 K=1.00	18.678	13,9408	-23784	260382	0.091	V
T2	116.5 - 92.5	24.08	24.08	46.0 K=1.00	18.226	13.9408	-43491	254087	0.171	V
T3	92.5 - 65.33	27.26	27.26	52.1 K=1.00	17.720	13.9408	-69615	247036	0.282	V
T4	65.33 - 34.66	30.78	30.78	58.8 K=1.00	17.129	13.9408	-100781	238792	0.422	V
T5	34.66 - 0	34.78	34.78	66,5 K=1.00	16.414	13.9408	-134200	228823	0.586	V

	Job	152' WATER TANK ANALYSIS	Page 4 of 5
Atlantis Group 1340 Centre St. Ste 212	Project	CT11166A Mystic/Downtown 1	Date 13:10:19 02/25/14
Newton, MA 02459 Phone: (617) 965-0789 FAX: (617) 213-5056	Client	T-Mobile Northeast, LLC	Designed by DJH

Section No.	Elevation	L.	Lu	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio P
	ſŧ	ſŧ	ſŧ		ksi	in ²	lb	lb	P_u
Ti	137.5 - 116.5	19.84	18.34	108.4 K=1.00	11,884	10.3000	-4892	122410	0.040
T2	116.5 - 92.5	22.31	20.81	123.0 K=1.00	9.848	10.3000	-9980	101434	0.098
Т3	92.5 - 65.33	25.13	23.63	139.7 K=1.00	7.654	10,3000	-14233	78838	0.181
T4	65.33 - 34.66	28.32	26.82	124.3 K=1.00	9.662	20.0000	-17732	193239	0.092
T5	34.66 - 0	31.93	30.43	141.0 K=1.00	7.514	20.0000	-20091	150284	0.134

Tonsion	Checks
161121011	CHECKS

	Leg Design Data (Tension)									
Section No.	Elevation	L	Lu	Kl/r	F_a	A	Actual P	Allow. P _u	Ratio P	
	fi	fi	ft		ksi	in ²	<i>lb</i>	lb	Pa	
Т3	92.5 - 65.33	27.26	27.26	52.1	21.000	13.9408	12941	292757	0.044	
T4	65.33 - 34.66	30.78	30.78	58.8	21.000	13.9408	33300	292757	0.114	
T5	34.66 - 0	34.78	34.78	66.5	21.000	13.9408	57469	292757	0.196	

	Diagonal Design Data (Tension)									
Section No.	Elevation	L	Lu	Kl/r	Fa	A	Actual P	Allow. P _u	Ratio P	
	fi	fi fi	fi		ksi	ksi in²	lb	lb	P_a	
Tl	137.5 - 116.5	29.78	27.66	1517.4	21.600	0.6013	10222	12989	0.787	
T2	116.5 - 92.5	33.77	31.64	1735.7	21,600	0.6013	15777	12989	1.215	
T3	92.5 - 65.33	38.14	36.01	1728.3	21,600	0.7854	22595	16965	1.332	
T4	65.33 - 34.66	43.03	40.89	1744.6	21.600	0.9940	26052	21471	1.213	
T5	34.66 - 0	48.57	46.43	1782.8	21.600	1.2272	29246	26507	1.103	

	Job	152' WATER TANK ANALYSIS	Page 5 of 5
Atlantis Group 1340 Centre St, Ste 212	Project	CT11166A Mystic/Downtown 1	Date 13:10:19 02/25/14
Newton, MA 02459 Phone: (617) 965-0789 FAX: (617) 213-5056	Client	T-Mobile Northeast, LLC	Designed by DJH

Section	Capa	city	Table
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Section	Elevation	Component	Critical	Р	$SF*P_{allow}$	% Capacity	Pass
Nσ.	ft	Туре	Element	lb	lb		Fail
T1	137.5 - 116.5	Leg	3	-23784	347089	6.9	Pass
T2	116.5 - 92.5	Leg	19	-43491	338698	12.8	Pass
T3	92.5 - 65.33	Leg	35	-69615	329299	21.1	Pass
T4	65.33 - 34.66	Leg	51	-100781	318310	31.7	Pass
T5	34.66 - 0	Leg	67	-134200	305021	44.0	Pass
TI	137.5 - 116.5	Diagonal	12	10222	17314	59.0	Pass
T2	116.5 - 92.5	Diagonal	29	15777	17314	91.1	Pass
T3	92.5 - 65.33	Diagonal	45	22595	22614	99.9	Pass
T4	65.33 - 34.66	Diagonal	61	26052	28621	91.0	Pass
T5	34.66 - 0	Diagonal	77	29246	35334	82.8	Pass
Τl	137.5 - 116.5	Top Girt	6	-4892	163173	3.0	Pass
T2	116.5 - 92.5	Top Girt	23	-9980	135212	7.4	Pass
T3	92.5 - 65.33	Top Girt	39	-14233	105091	13.5	Pass
T4	65.33 - 34.66	Top Girt	55	-17732	257588	6.9	Pass
T5	34.66 - 0	Top Girt	71	-20091	200329	10.0	Pass
T 1	137.5 - 116.5	Feed Tower Guy	89	1316	17314	7.6	Pass
T2	116.5 - 92.5	Feed Tower Guy	90	1440	17314	8.3	Pass
T3	92.5 - 65.33	Feed Tower Guy	94	1307	17314	7.5	Pass
T4	65.33 - 34.66	Feed Tower Guy	98	1018	17314	5.9	Pass
T5	34.66 - 0	Feed Tower Guy	102	2269	17314	13.1	Pass
						Summary	
					Leg (T5)	44.0	Pass
					Diagonal (T3)	99.9	Pass
					Top Girt (T3)	13.5	Pass
					Feed Tower Guy	13.1	Pass
					(T5)		
					Bolt Checks	40.3	Pass
					RATING =	99.9	Pass

EXHIBIT C



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

T-Mobile Existing Facility

Site ID: CT11166A

Mystic / Downtown 1 1 Broadway Extension Mystic, CT 06355

February 21, 2014

EBI Project Number: 62140929



February 21, 2014

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

Re: Emissions Values for Site: CT11166A - Mystic / Downtown 1

EBI Consulting was directed to analyze the proposed T-Mobile facility located at 1 Broadway Extension, Mystic, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μ W/cm2). The number of μ W/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 (μ W/cm2). The general population exposure limit for the cellular band is 567 μ W/cm2, and the general population exposure limit for the PCS and AWS bands is 1000 μ W/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.



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 1 Broadway Extension, Mystic, 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:

- 2 GSM / UMTS channels (1935.000 MHz to 1945.000 MHz / 1983.000 MHz to 1984.000 MHz) were considered for each sector of the proposed installation.
- 2) 4 UMTS / LTE channels (2110.000 to 2120.000 MHz / 2140.000 MHz to 2145.000 MHz) were considered for each sector of the proposed installation
- 3) 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.
- 4) 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.
- 5) 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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- 6) The antenna mounting height centerline of the proposed antennas is **116.5 feet** above ground level (AGL)
- 7) 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	CT11166	A - Mystic / D	Downtown 1	1												
	Site Addresss			ystic, CT 06355													
	Site Type	Toroccurcy	Water Tan														
	Stead of the																
							Sec	tor 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 Percentag
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	116.5	110.5	None	0	0	48.326044	1.422862	0.14229%
1b	Ericsson	AIR21 B4A/B2P	Not Used				7.95	0	-3.95	116.5	110.5	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	116.5	110.5	None	0	0		0.711431	0.07114%
1b	Ericsson	AIR21 B4A/B2P	Passive	AWS - 2100 MHz	UMTS	40	2	80	-3.95	116.5	110.5	None	0	0		0.948574	0.09486%
	Charles and Street	Control of the Control	and visit and	Vivil to the large water to	No. of the Control of				Service Marie			Sector tot	al Power De	ensity Value:	0.308%	BULLEYS.	
Antenna		Antenna Model		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 Percentag
1a	Antenna Make Ericsson	AIR21 B4A/B2P	Status Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	116.5	110.5	None	0	0	48.326044	1.422862	0.142299
			Not Used	AW3 - 2100 MINZ	Service City (Service)	00		0	-3.95	116.5	110.5	None	0	0	0	0	0.000009
	Friceson										110.5	None	0	0	24.163022	0.711431	0.071149
1b	Ericsson	AIR21 B4A/B2P AIR21 B2A / B4P		PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	116.5							
1b 2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz AWS - 2100 MHz	GSM / UMTS UMTS	30 40	2	80	-3.95 -3.95	116.5	110.5	None	0	0	32.217363	0.948574	
1b				PCS - 1950 MHz AWS - 2100 MHz								None		0 ensity Value:		0.948574	0.094869
1b 2a	Ericsson	AIR21 B2A / B4P	Active				2					None			32.217363	0.948574	
1b 2a 1b	Ericsson	AIR21 82A / 84P AIR21 84A / 82P	Active				2	80		116.5	110.5	None	Cable Loss	ensity Value:	32.217363 0.308%	Power Density Value	Power Density Percenta
1b 2a 1b	Ericsson Ericsson	AIR21 82A / 84P AIR21 84A/82P Antenna Model AIR21 84A/82P	Active Passive	AW5 - 2100 MHz	UMTS	Power Out Per Channel	See Number of	Composite Power 120	-3.95 Antenna Gain in direction of sample point (dBd) -3.95	Antenna Height (ft)	analysis height 110.5	None Sector to	Cable Loss	Additional Loss	32.217363 0.308% ERP 48.326044	Power Density Value 1.422862	Power Density Percentag 0.14229
1b 2a 1b	Ericsson Ericsson Antenna Make	AIR21 B2A / B4P AIR21 B4A/B2P Antenna Model AIR21 B4A/B2P AIR21 B4A/B2P AIR21 B4A/B2P	Active Passive	Frequency Band AWS - 2100 MHz	Technology LTE	Power Out Per Channel (Watts)	See Number of Channels	Composite Power 120 0	-3.95 Antenna Gain in direction of sample point (dBd) -3.95	Antenna Height (ft) 116.5	analysis height 110.5 110.5	Cable Size None None	Cable Loss (dB)	Additional Loss	32.217363 0.308% ERP 48.326044	Power Density Value 1.422862	Power Density Percentag 0.14229
1b 2a 1b Antenna Number 1a	Ericsson Ericsson Antenna Make Ericsson	AIR21 82A / 84P AIR21 84A/82P Antenna Model AIR21 84A/82P	Active Passive Status Active	AWS - 2100 MHz	UMTS	Power Out Per Channel (Watts)	See Number of Channels	Composite Power 120	-3.95 Antenna Gain in direction of sample point (dBd) -3.95	Antenna Height (ft)	analysis height 110.5	None Sector to	Cable Loss	Additional Loss	32.217363 0.308% ERP 48.326044	Power Density Value 1.422862 0	Power Density Percental 0.14229

Carrier	MPE %
T-Mobile	0.925%
American Messaging	0.280%
Sprint	5.280%
Nextel	4.720%
Verizon Wireless	43.090%
AT&T	8.330%
MetroPCS	4.510%
Total Site MPE %	67.135%



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 **0.925%** (**0.308% from each sector**) of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **67.135%** of the allowable FCC established general public limit sampled at the ground level. 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 well within the allowable 100% threshold standard per the federal government.

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