COHEN and WOLF P.C.
ATTORNEYS AT LAW

RACHEL A. SCHWARTZMAN

Please Reply To: Bridgeport
Writer's Direct Dial: (203) 337-4110
E-Mail: rschwartzman@cohenandwolf.com

October 6, 2014

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06501

Re: Notice of Exempt Modification
Town of Plainville/T-Mobile co-location
Site ID CTHA110B
77 West Main Street, Plainville, CT

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, the town of Plainville owns the existing self-supporting telecommunications tower and related facility at 77 West Main Street, Plainville, Connecticut (41.6708/-72.8711). T-Mobile intends to add three (3) antennas and related equipment at this existing telecommunications facility in Plainville ("Plainville 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 Town Manager, Robert E. Lee, and the property owner, the town of Plainville.

The existing Plainville Facility consists of an 80-foot self-supporting tower.[1] T-Mobile plans to add three (3) antennas mounted on double standoff brackets at a centerline of 77 feet. T-Mobile will also install coax cables, reuse existing coax cables, install an equipment cabinet on a proposed H-frame, and install three (3) remote radio units on a proposed H-frame. (See the plans revised to October 6, 2014 attached hereto as **Exhibit A**). The existing Plainville Facility is structurally capable of supporting T-Mobile's proposed modifications, as indicated in the structural analysis dated September 16, 2014, and attached hereto as **Exhibit B**.

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

---

1 While the online docket for the Connecticut Siting Council does not provide a docket or petition number for approval of this structure, it does reference this structure in connection with a notices of intent captioned TS-T-MOBILE-110-060629, EM-POCKET-110-080911, EM-T-MOBILE-110-090507, and EM-METROPCS-110-130215MA.

COHEN and WOLF P.C.
ATTORNEYS AT LAW

1. The proposed modification will not increase the height of the tower. T-Mobile's existing antennas are at a centerline of 77 feet; the additional antennas will be installed at the same 77-foot level. 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 on the site boundaries or lease area, as depicted on Sheet two of Exhibit A. T-Mobile's 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 additional antennas and equipment 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 September 25, 2014, T-Mobile's operations would add 25.87% 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 28.02% 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 additional antennas and equipment at the Plainville Facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Upon acknowledgement of this exempt modification, T-Mobile shall commence construction approximately sixty days from the receipt of the Council's decision.

Sincerely,

Rachel Schwartzman, Esq.

cc: Town Manager Robert E. Lee, Town of Plainville
Town of Plainville
Sheldon J. Freincle, Northeast Site Solutions

1115 Broad Street
P.O. Box 1821
Bridgeport, CT 06601-1821
Tel: (203) 368-0211
Fax: (203) 394-9901

158 Deer Hill Avenue
Danbury, CT 06810
Tel: (203) 792-2771
Fax: (203) 791-8149

320 Post Road West
Westport, CT 06880
Tel: (203) 222-1034
Fax: (203) 227-1373

657 Orange Center Road
Orange, CT 06477
Tel: (203) 298-4066
Fax: (203) 298-4068

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
N.T.S.

1
LE-1

CONFIGURATION

704BU

SUBMITTALS	
LE REV A	08.01.14
LE REV 0	08.04.14
LE REV 1	08.13.14
LE REV 2	10.06.14

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

LEASE EXHIBIT

SITE NUMBER:
CTHA110B

SITE NAME:
HA110/PLAINVILLE FD

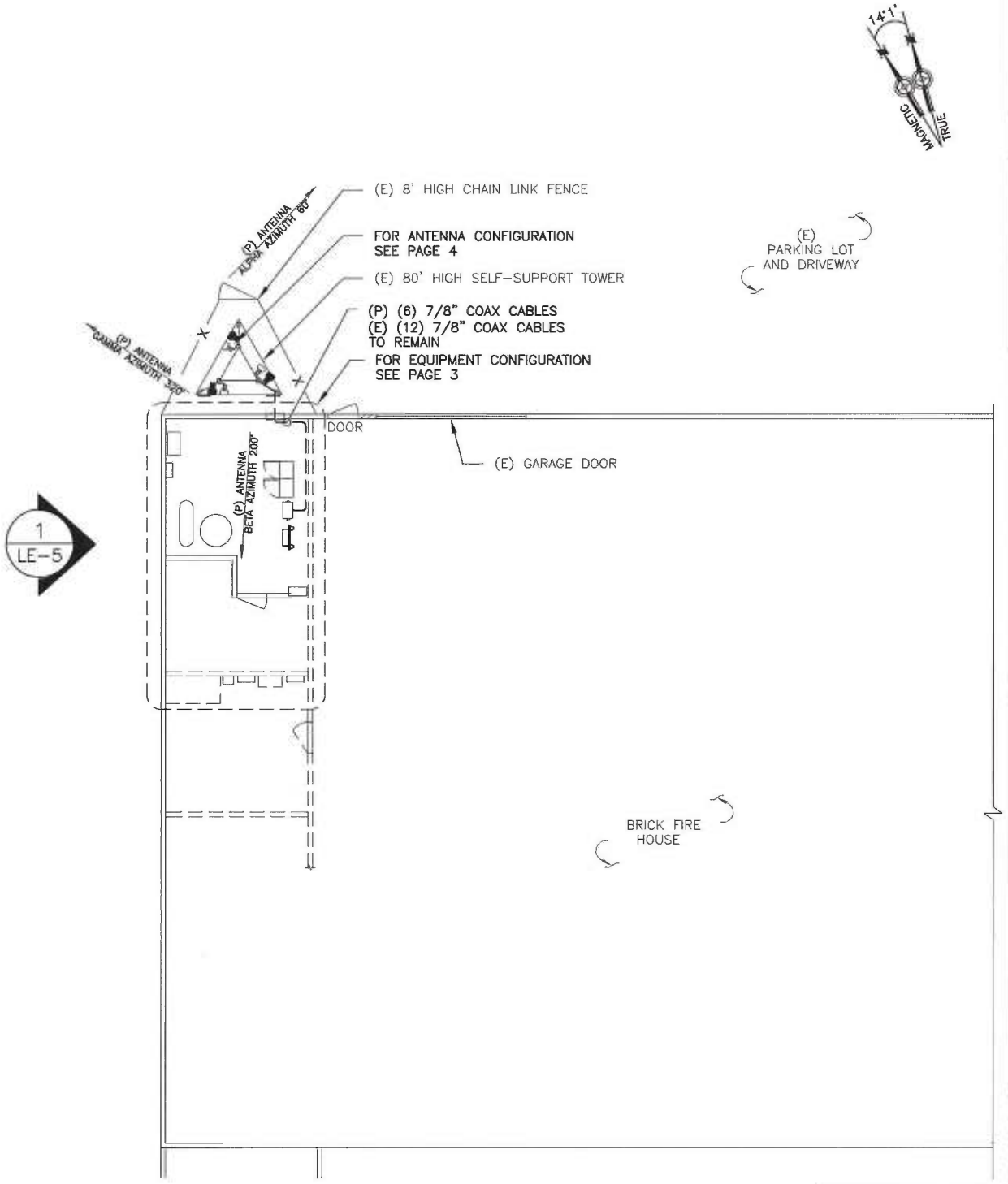
SITE ADDRESS:
77 WEST MAIN STREET
PLAINVILLE, CT 06062

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

DRAWN BY: FG | CHECKED BY:SM



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.

SITE PLAN (1 / LE-2)
N.T.S.

CONFIGURATION
704BU

SUBMITTALS	
LE REV A	08.01.14
LE REV 0	08.04.14
LE REV 1	08.13.14
LE REV 2	10.06.14

ATLANTIS GROUP
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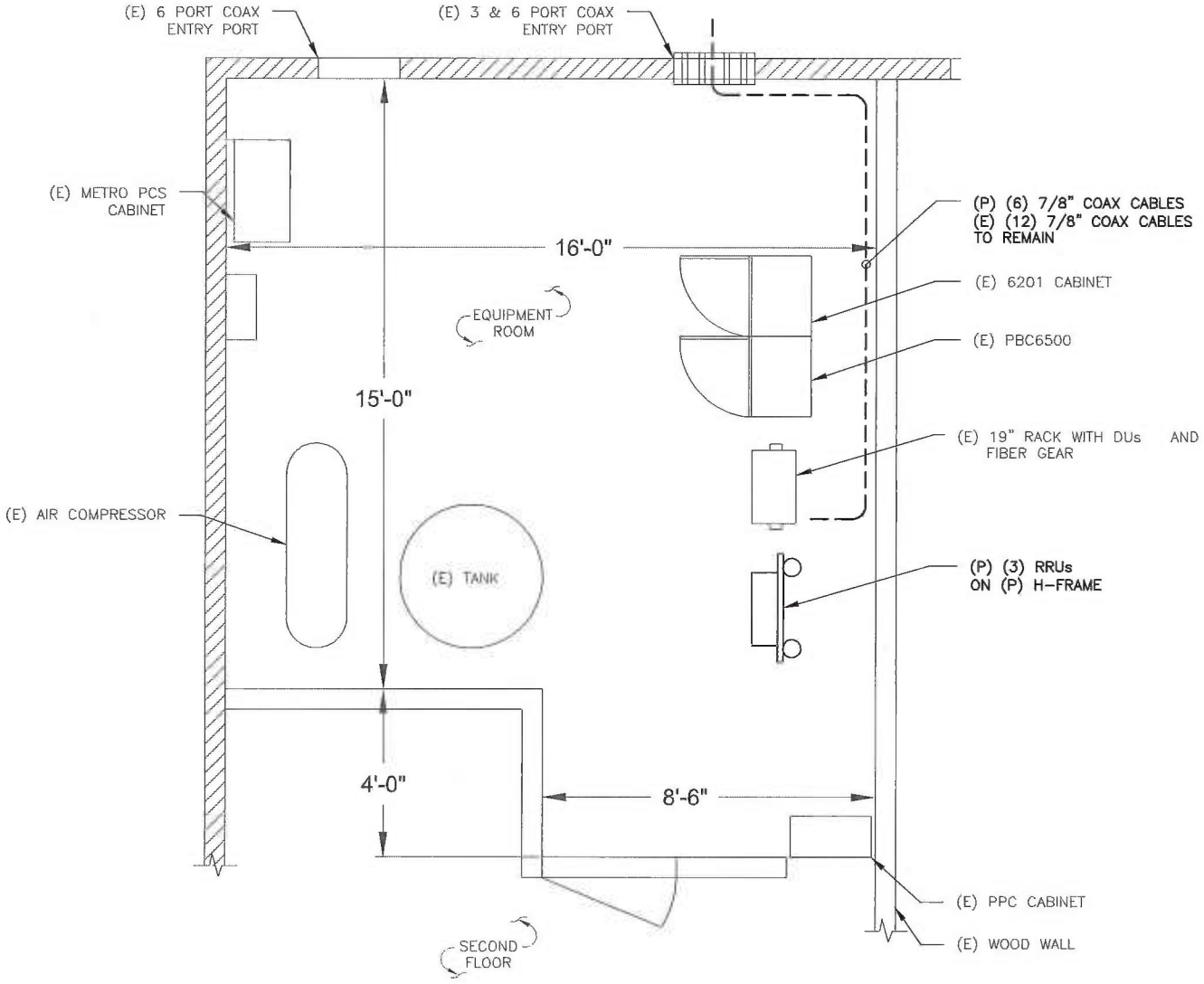

EQUIPMENT ROOM LAYOUT

N.T.S.

1 / LE-3

CONFIGURATION

704BU

SUBMITTALS	
LE REV A	08.01.14
LE REV 0	08.04.14
LE REV 1	08.13.14
LE REV 2	10.06.14

ATLANTIS GROUP
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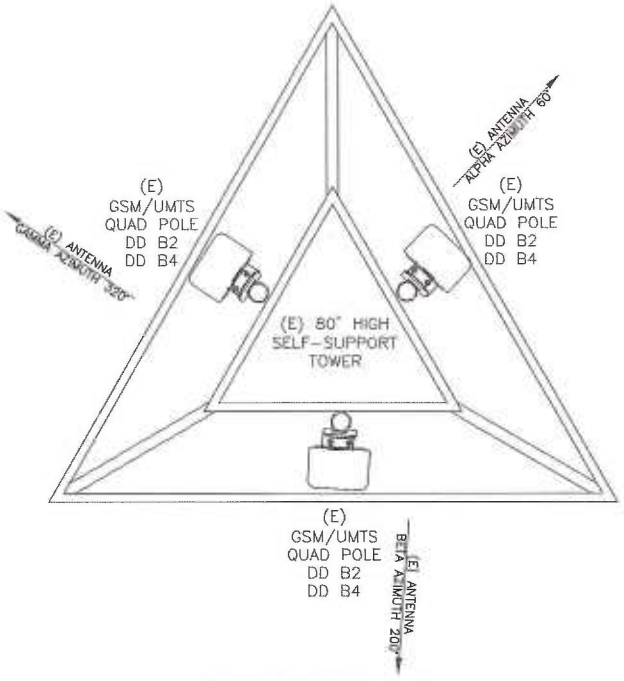
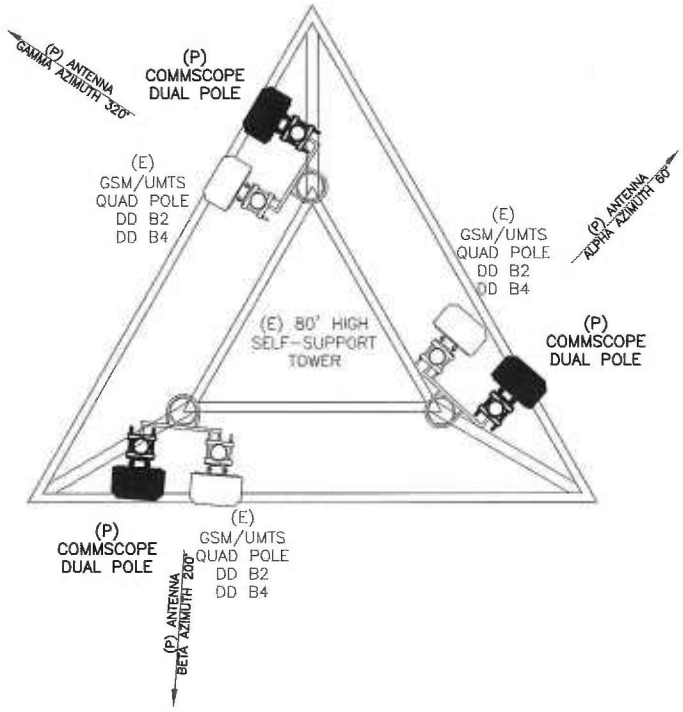


EXISTING ANTENNA PLAN



FINAL ANTENNA PLAN

CONFIGURATION

704BU

SUBMITTALS	
LE REV A	08.01.14
LE REV 0	08.04.14
LE REV 1	08.13.14
LE REV 2	10.06.14

ATLANTIS GROUP
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Fax: 617-213-5056

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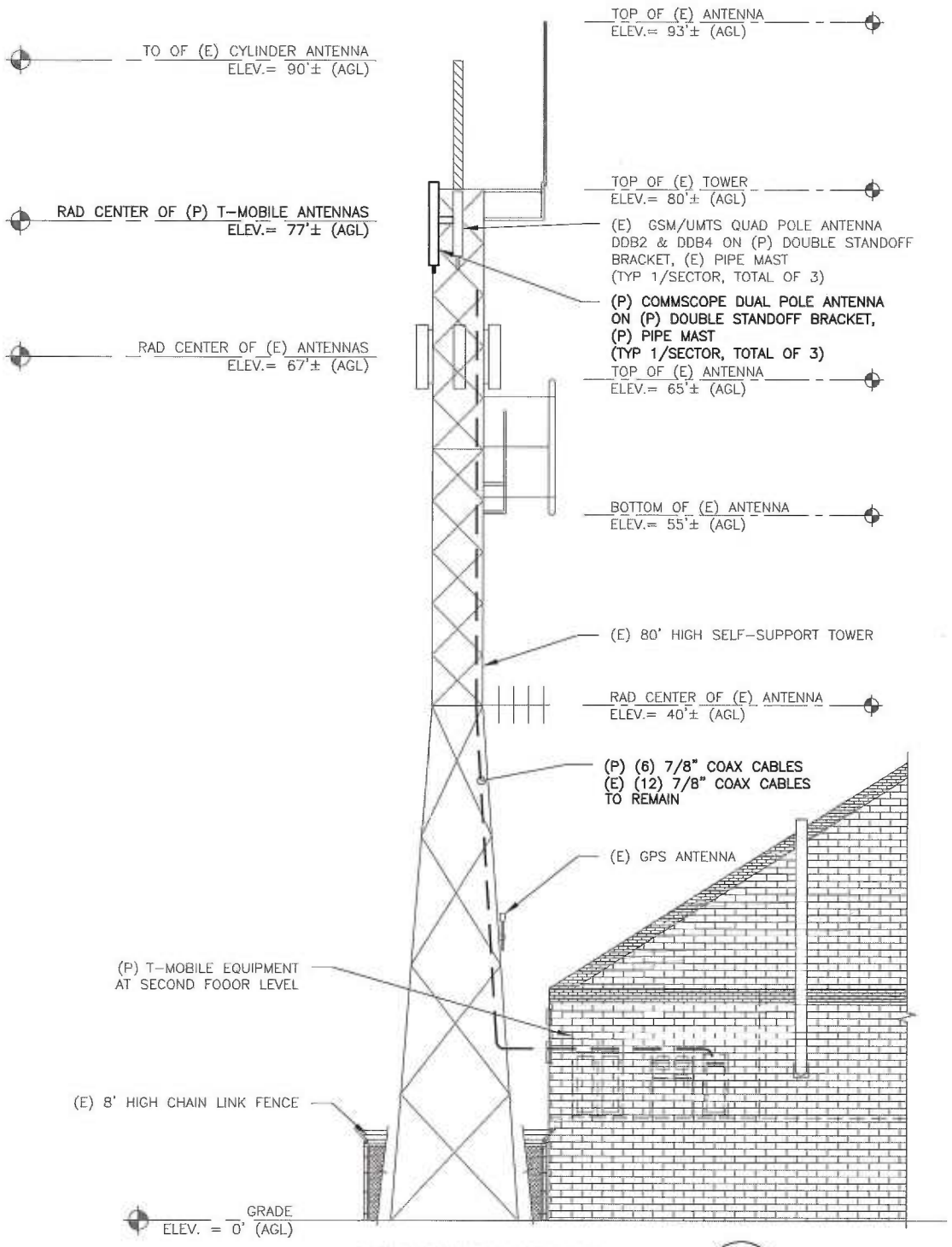

WEST ELEVATION

N.T.S.

1
LE-5

CONFIGURATION

704BU

SUBMITTALS	
LE REV A	08.01.14
LE REV 0	08.04.14
LE REV 1	08.13.14
LE REV 2	10.06.14

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

DRAWN BY: FG | CHECKED BY: SM

EXHIBIT B

REINFORCEMENT DESIGN REPORT
SELF SUPPORTING TOWER

Prepared For:

T-Mobile

35 Griffin Road South
Bloomfield, CT 06002

Tower Rating

Tower:	**Pass (96.9 %)**
Foundation:	**Unknown**

Atlantis Group, Inc.
09-16-2014

STATE OF CONNECTICUT
DIMITRIV V. ALBUL
No. 26725
LICENSED PROFESSIONAL ENGINEER

9/29/2014

CT Professional Engineer
License No: 26725

Site ID: CTHA110B
Site Name: Plainville FD
77 West Main Street
Plainville, CT

Prepared By:
Atlantis Group, Inc.
1340 Centre Street, Suite 212
Newton, Massachusetts 02459
Phone: 617-965-0789, Fax: 617-965-0103

CONTENTS

1.0 SUBJECT AND REFERENCES

The purpose of this report is to design the reinforcement of the existing 80 feet high self-supporting tower, located at 77 West Main Street, Plainville, CT for the alteration and addition of wireless telecommunication appurtenances proposed by T-Mobile.

The design is based on the following documents provided to us:

1. Structural Analysis Report prepared by our office for T-Mobile dated 09/03/2014.
2. Proposed antenna information from RFDS v3.0 provided by T-Mobile dated 05/07/2013.

1.1 STRUCTURE

The self-supporting tower is an 80 foot high, triangular tower manufactured by Rohn. Round pipe legs are X-braced the full height with single angle bracing. Please refer to the tower design drawings in Appendix A, for details about the tower reinforcement.

2.0 EXISTING AND PROPOSED CONFIGURATION

Antennas and Appurtenances:

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

Existing Configuration of T-Mobile Appurtenances:

Sector	RAD Center (ft.)	Antennas		Mount	Feed Lines
Alpha	77	GSM/UMTS	(1) APX16PV-16PVL (1) dd B2 TMA (1) dd B4 TMA	(1) Single Standoff bracket	(12) 7/8"
Beta	77	GSM/UMTS	(1) APX16PV-16PVL (1) dd B2 TMA (1) dd B4 TMA	(1) Single Standoff bracket	
Gamma	77	GSM/UMTS	(1) APX16PV-16PVL (1) dd B2 TMA (1) dd B4 TMA	(1) Single Standoff bracket	

Proposed Configuration of T-Mobile Appurtenances:

Sector	RAD Center (ft.)	Antennas		Mount	Feed Lines
Alpha	77	LTE Antenna	(1) LNX-6515DS-VTM (1) APX16PV-16PVL (1) dd B2 TMA (1) dd B4 TMA	(1) Double Standoff bracket	(18) 7/8"
Beta	77	LTE Antenna	(1) LNX-6515DS-VTM (1) APX16PV-16PVL (1) dd B2 TMA (1) dd B4 TMA	(1) Double Standoff bracket	
Gamma	77	LTE Antenna	(1) LNX-6515DS-VTM (1) APX16PV-16PVL (1) dd B2 TMA (1) dd B4 TMA	(1) Double Standoff bracket	

Existing and Remaining Appurtenances by Others:

RAD Center (ft.) Carrier	Antenna & TMA	Mount	Feed Lines
80	(1) 6"x 12' Omni		(1) 7/8"
78	(1) 2" OD x 16' Omni	3' Standoff	(1) 1/2"
76	(1) MYPB24015PTNF Panel Antenna		(1) 1/2"
67	(3) 742213 Panel Antennas	(3) Pipe Mounts	(6) 7/8"
59	(1) TAD6073A Panel Antenna (1) 14' Dipole	3' Standoff 6' Standoff	(1) ½" (1) 7/8"
58	(1) 2" OD x 12' Omni	3' Standoff	(1) 1/2"
57	(1) ANT150D3 Panel Antenna	3' Standoff	(1) 1/2"
43	(1) 1' Yagi		(1) 1/2"
41	(2) 1' Yagi		(1) 1/2"

3.0 CODES AND LOADING

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

- Basic wind speed 80 mph (W) without ice [fastest-mile speed equivalent to 95 mph 3-second gust].
- Basic wind speed 69 mph (W_i) with 1/2" radial non-escalating ice.

The following load combinations were used with wind blowing at 0°, 60° and 90°, measured from a line normal to each face of the self-supporting tower.

- D + W
- D + I + W_i

D: Dead Load of structure and appurtenances
W: Wind Load, without ice
W_i: Wind Load with ice
I: Ice Gravity Load

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 tnxTower, a non-linear 3-Dimensional finite element program, a product of Tower Numerics, Inc. Software output for this analysis is provided in Appendix A of this report.

Tower member sizes, geometry and existing antenna loading are based on a Natcomm structural analysis dated July 2008 and may not be up to date. We recommend a tower mapping to document that all provided information is accurate and that all members and connections are in good condition.

6.0 RESULTS and CONCLUSION

Based on an analysis per ANSI/TIA-222-F, the existing tower is found to have **adequate** structural capacity (once the reinforcement is installed) for the proposed changes by T-Mobile. For the aforementioned load combinations and as a maximum, the legs are stressed to **97%** of capacity. Maximum usage of bracing is 74.6%. Due to a complete lack of subsurface information, the foundation system could not be analyzed in this study.

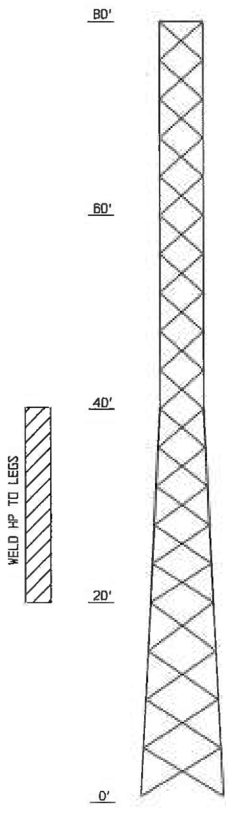
Therefore, the proposed additions and alterations by T-Mobile can be implemented with the conditions outlined in this report.

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

Sincerely,
Atlantis Group, Inc.

9/29/2014

APPENDIX A
REINFORCEMENT DRAWINGS



CONSTRUCTION NOTES (UNLESS NOTED OTHERWISE)

1. THE CONTRACTOR COMPLETING THIS WORK SHALL HAVE PRIOR EXPERIENCE WITH THIS LEVEL OF CONSTRUCTION COMPLEXITY.
2. CONTRACTOR SHALL BUDGET A SITE VISIT TO CHECK CRITICAL DIMENSIONS PRIOR TO MATERIAL ORDERING AND FABRICATION.
3. CONTRACTOR SHALL VERIFY THAT NO OBSTRUCTIONS (IE: STEP BOLTS, HAND HOLES, CABLE PORTS, SAFETY CLIMB CABLE ATTACHMENT) WILL HINDER THE PLACEMENT AND LOCATION OF REINFORCING ELEMENTS. ALL OBSTRUCTIONS AND DISCREPANCIES SHALL BE REPORTED TO ARMOR TOWER PRIOR TO CONSTRUCTION.
4. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING ENGINEER (ARMOR TOWER) OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
5. ALL PARTS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION TO ASTM A123 SPECIFICATIONS.
6. ALL GALVANIZED SURFACES TO BE WELDED SHALL BE GROUND CLEAN OF ZINC AND PAINT PRIOR TO WELDING.
7. ALL FIELD WELDS SHALL BE SPRAY GALVANIZED IMMEDIATELY AFTER CHIPPING.
8. ALL WELDS SHALL BE E7018. ALL WELDING SHALL BE COMPLETED ACCORDING TO AWS D1.1 STRUCTURAL WELDING CODE.
9. ALL FIELD WELDS AND CUT ENDS SHALL BE PROTECTED WITH 2 COATS OF ZINC-RICH PAINT (COLD GALVANIZING). THE FIRST COAT OF ZINC SHALL BE DRY PRIOR TO APPLYING SECOND COAT. SURFACE PREPARATION FOR COLD GALVANIZING SHALL BE PER ASTM A780 SPECIFICATIONS.
10. SPRAY GALVANIZING MATERIAL SHALL BE ZINGA PRODUCT OR EQUIVALENT.
11. HALF-PIPES SHALL BE SINGLE-PIECE ELEMENTS. IF HALF-PIPES MUST BE SPLICED, A FULL-PENETRATION GROOVE WELD MUST BE USED. JOINING EDGES MUST BE VISUALLY APPROVED BY ARMOR TOWER PRIOR TO SHOP WELDING. HALF-PIPES SHALL BE CONTINUOUS ALONG THE TOWER LEG AS DETAILED AND SHALL BE PLACED BETWEEN THE BASE TOWER LEG AND ALL ANTENNA MOUNTS OR OTHER OBSTRUCTIONS.
12. EDGES OF THE HALF-PIPE BETWEEN WELDS SHALL BE CAULKED TO SEAL WITH LOCTITE PL S40 POLYURETHANE SEALANT OR APPROVED EQUAL.
13. ANY INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS REQUIRING REMEDIAL OR CORRECTIVE ACTION SHALL REQUIRE ENGINEER'S REVIEW.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS & METHODS AS WELL AS PROTECTING EXISTING LINES AND FACILITIES FROM WELDING AND CONSTRUCTION DAMAGE.
15. REINFORCEMENT SEQUENCE SHALL COMMENCE FROM GROUND LEVEL UP.
16. STABILITY OF THE TOWER DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR.
17. ANY REQUIRED BRACE REPLACEMENT SHALL BE DONE ONE-AT-A-TIME.
18. ALL REINFORCEMENTS SHALL BE IN PLACE PRIOR TO ANTENNA INSTALLATION.

MATERIAL:

HALF PIPE	ASTM A500 GR. C, FY > 50 KSI

PREPARED FOR:

T-Mobile

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT

ENGINEER'S APPROVAL:

STATE OF CONNECTICUT · DMITRIY V. ALBUL · No. 28725 · LICENSED PROFESSIONAL ENGINEER

9/29/2014

ATLANTIS GROUP

1340 Centre Street, Suite 212
Newton, MA 02459
Phone: (617) 965-0789
Fax: (617) 965-0103

NO.	DATE	ISSUE DESCRIPTION	DRW / CHK
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
0	09-16-14	RELEASED FOR CONSTRUCTION	RT / DVA

SITE INFO

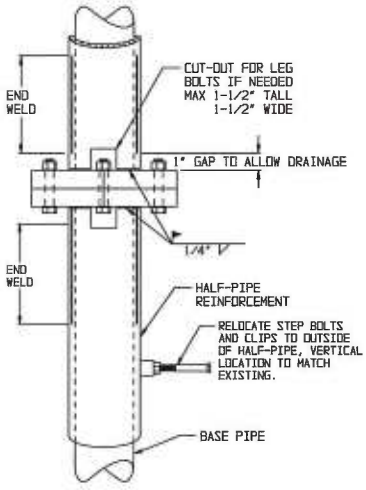
CTHA110B
PLAINVILLE FD
77 WEST MAIN STREET
PLAINVEILL, CT

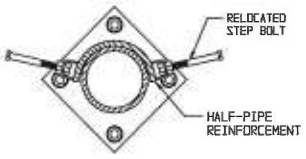
SHEET SCALE / UNITS
NTS — ALL DIMENSIONS IN INCHES UNLESS NOTED OTHERWISE

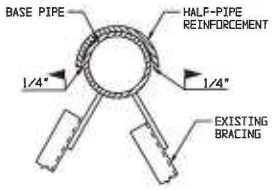
SHEET TITLE
REINFORCEMENT DESIGN

SHEET NUMBER
S-1

FILE NAME
14057







WELD SCHEDULE - LEGS (3 PCS PER SECTION)

SECTION HT.	BASE PIPE SIZE	HALF-PIPE SIZE	E70XX FILLET	END WELD LENGTH
20-40	2.0x0.154	2.5" Sch 40 HP	1/4"	4"

NOTES:
1. HALF PIPES SHALL BE CONTINUOUS, SINGLE PIECE ITEMS.
2. APPROXIMATE LENGTH OF HALF PIPE IS 240".
3. STEP BOLTS MUST BE REMOVED AND RELOCATED AS SHOWN.
4. MAXIMUM ALLOWABLE KERF FOR HALF PIPE SHALL BE 1/8".

WELDING NOTES:
1. END WELDS ARE ON BOTH SIDES OF PIPE, TOP & BOTTOM.
2. TOP AND BOTTOM EDGES OF LEG REINFORCEMENT PIPE MUST BE WELDED TO THE FLANGE WITH CUT-OUTS FOR LEG BOLTS WHERE NEEDED.
3. BOTTOM END OF LEG REINFORCEMENT PIPE MUST HAVE A 1" GAP TO ALLOW DRAINAGE.
4. INTERMEDIATE STITCH WELDS MUST BE 1-1/2" LONG AND 18" CENTER-TO-CENTER.
5. SEAL BETWEEN WELDS WITH POLYURETHANE CAULK, IE: LOCTITE PL S40 OR EQUIVALENT.

*FILLET WELD SHALL BE AS NOTED PLUS GAP BETWEEN BASE PIPE.
*STEPBOLTS THAT ARE TO BE RE-LOCATED SHALL HAVE THE ATTACHMENT CLIP CUT FLUSH WITH THE SUPPORTING PIPE AND RE-ATTACHED TO THE HALF-PIPE REINFORCEMENT.

PREPARED FOR:

T-Mobile

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT

ENGINEER'S APPROVAL:

STATE OF CONNECTICUT · TIMOTHY W. ATKINS · No. 28725 · LICENSED PROFESSIONAL ENGINEER

9/29/2014

ATLANTIS GROUP
1340 Centre Street, Suite 212
Newton, MA 02459
Phone:(617) 965-0769
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NO.	DATE	ISSUE DESCRIPTION	DRW / CHK
0	09-16-14	RELEASED FOR CONSTRUCTION	AS / DVA

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77 WEST MAIN STREET
PLAINVEILL, CT

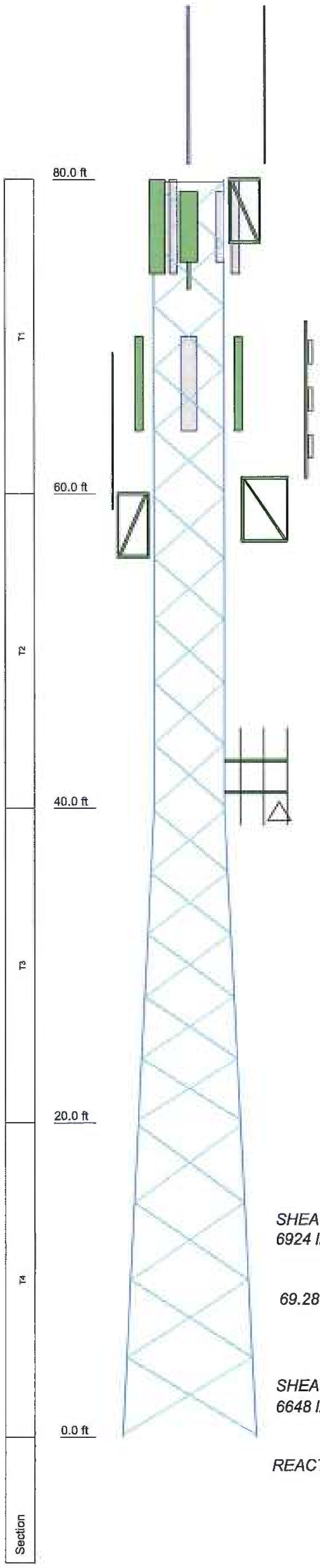
SHEET SCALE / UNITS
NTS — ALL DIMENSIONS IN INCHES UNLESS NOTED OTHERWISE

SHEET TITLE
HALF PIPE WELDING

SHEET NUMBER
S-2

FILE NAME
14057

APPENDIX B
CALCULATIONS



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
6"x12' Omni	80	RFS APX16PV-16PVL w. Pipe (E-TMO-Gamma)	77
2.0"ODx16' Omni	78	MYPB24015PTNF	76
3ft Standoff	78	742 213 w. MtgPipe (PW-Beta)	67
dd B2 (E-TMO-Alpha)	77	742 213 w. MtgPipe (PW-Gamma)	67
dd B2 (E-TMO-Beta)	77	742 213 w. MtgPipe (PW-Alpha)	67
dd B2 (E-TMO-Gamma)	77	14ft Dipole	59
dd B4 (E-TMO-Alpha)	77	4' x 6' x 2" pipe gate boom	59
dd B4 (E-TMO-Beta)	77	TAD6073A	59
dd B4 (E-TMO-Gamma)	77	3ft Standoff	59
LNX-6515DS-VTM w. MtgPipe (P-TMO-Alpha)	77	2.0"ODx12' Omni	58
LNX-6515DS-VTM w. MtgPipe (P-TMO-Beta)	77	3ft Standoff	58
		ANT150D3	57
LNX-6515DS-VTM w. MtgPipe (P-TMO-Gamma)	77	3ft Standoff	57
		1ft Yagi	43
RFS APX16PV-16PVL w. Pipe (E-TMO-Alpha)	77	1ft Yagi	41
RFS APX16PV-16PVL w. Pipe (E-TMO-Beta)	77		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-50	50 ksi	62 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80.00 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69.28 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 60.00 mph wind.
5. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
6. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
7. Welds are fabricated with ER-70S-6 electrodes.
8. T-Mobile loading is indicated as (P)roposed and (E)xisting Installation. All others considered Existing
9. TOWER RATING: 96.9%

MAX. CORNER REACTIONS AT BASE:
DOWN: 48958 lb
SHEAR: 4107 lb

UPLIFT: -42817 lb
SHEAR: 3777 lb

AXIAL 8485 lb
SHEAR 6924 lb
MOMENT 341 kip-ft
TORQUE 2 kip-ft
69.28 mph WIND - 0.50 in ICE

AXIAL 4018 lb
SHEAR 6648 lb
MOMENT 340 kip-ft
TORQUE 1 kip-ft
REACTIONS - 80.00 mph WIND

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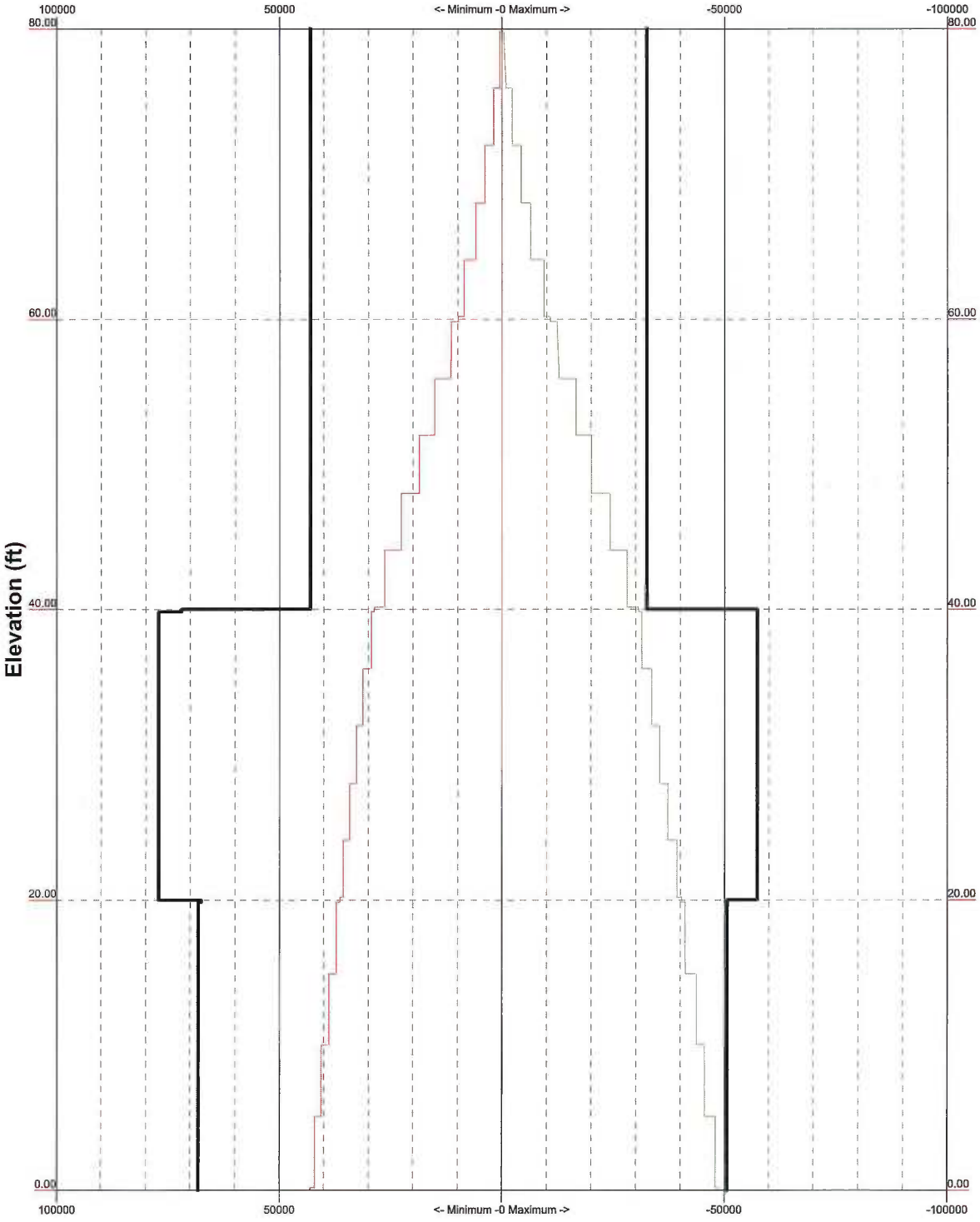
Job: **80ft ROHN SSV MOD DESIGN**	
Project: **CTHA110B**	
Client: T-Mobile	Drawn by: AS / App'd:
Code: TIA/EIA-222-F	Date: 09/15/14 / Scale: NTS
Path: Y:\Atlantis Group\T-Mobile\CTHA110B Plainville FD\2014-09 Mod Design\tnx calcs-Mod Design\80SS.eri	Dwg No. E-1

TIA/EIA-222-F - 80.00 mph/69.28 mph 0.50 in Ice

Leg Capacity ——— **Leg Compression (lb)**



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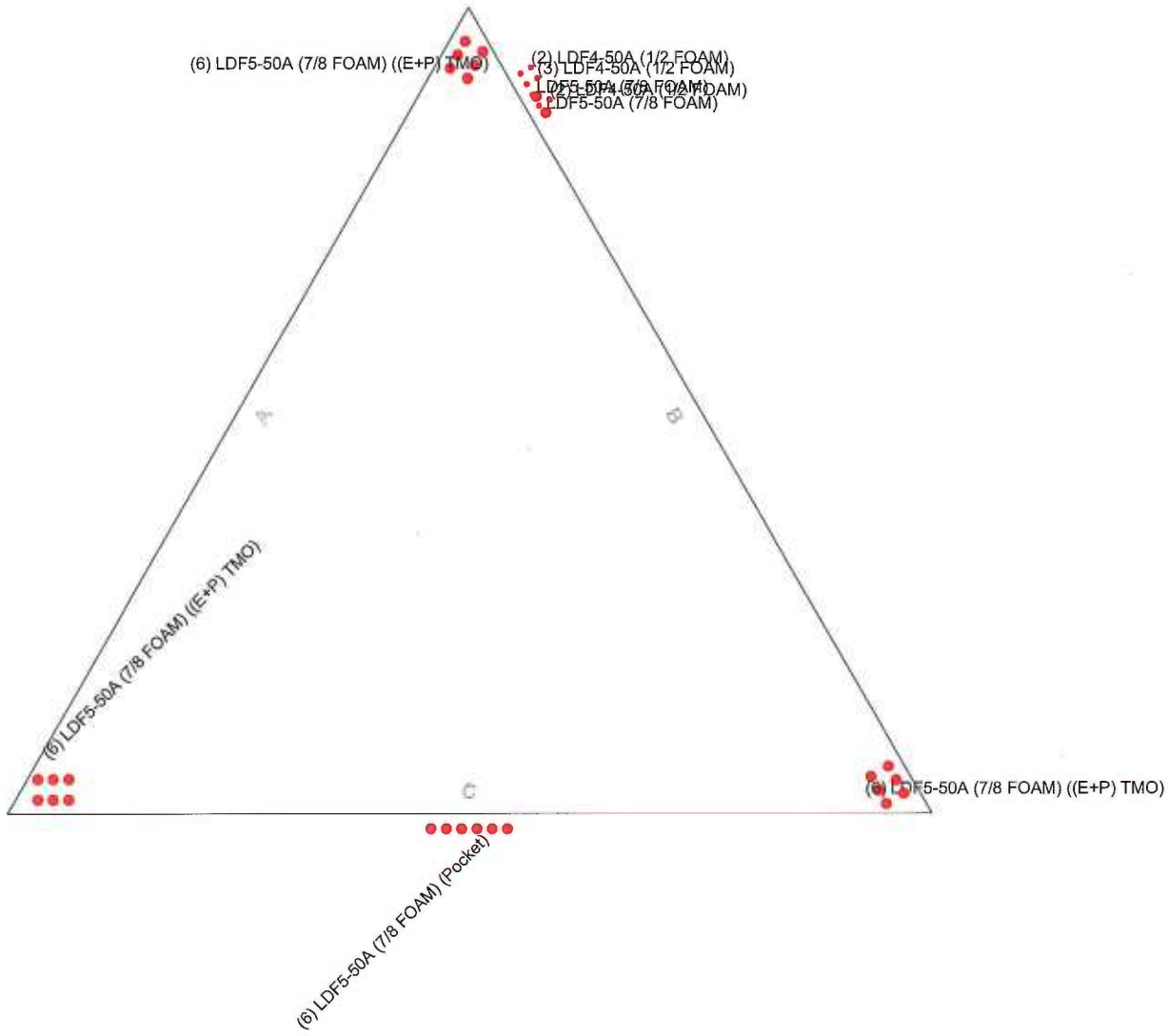
Job: ***80ft ROHN SSV MOD DESIGN***		
Project: ***CTHA110B***		
Client: T-Mobile	Drawn by: AS	App'd:
Code: TIA/EIA-222-F	Date: 09/15/14	Scale: NTS
Path: Y:\Atlantis Group\T-Mobile\CTHA110B Palmyra FD\2014-09 Mod Design\calcs-Mod Design\80SS.tnx		Dwg No. E-3

Feed Line Plan

Round Flat App In Face App Out Face



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Job: ***80ft ROHN SSV MOD DESIGN***		
Project: ***CTHA110B***		
Client: T-Mobile	Drawn by: AS	App'd:
Code: TIA/EIA-222-F	Date: 09/15/14	Scale: NTS
Path: Y:\Atlantis Group\T-Mobile\CTHA110B Plainville FD\2014-09 Mod Design\tnx calcs-Mod Design\80SSV.eri		Dwg No. E-7

ATLANTIS GROUP *Atlantis Group, Inc.* *1340 Centre Street, Suite 212* *Newton, MA 02459* *Phone: (617) 965-0789* *FAX: (671) 965-0103*	**Job** 80ft ROHN SSV MOD DESIGN	**Page** 1 of 5
	Project CTHA110B	**Date** 11:38:38 09/15/14
	Client T-Mobile	**Designed by** AS

Load Combinations

Comb. No.	*Description*
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	*Elevation*	*Horz. Deflection*	*Gov. Load Comb.*	*Tilt*	*Twist*
	ft	*in*		°	°
T1	80 - 60	4.36	31	0.439	0.051
T2	60 - 40	2.54	27	0.404	0.042
T3	40 - 20	1.09	27	0.247	0.023
T4	20 - 0	0.28	27	0.125	0.008

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Job	Page
80ft ROHN SSV MOD DESIGN	2 of 5
Project CTHA110B	**Date** 11:38:38 09/15/14
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Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	*Appurtenance*	*Gov. Load Comb.*	*Deflection* in	*Tilt* °	*Twist* °	*Radius of Curvature* ft
80.00	6"x12' Omni	31	4.36	0.439	0.051	55801
78.00	2.0"ODx16' Omni	31	4.17	0.439	0.051	55801
77.00	RFS APX16PV-16PVL w. Pipe	31	4.08	0.439	0.050	55801
76.00	MYPB24015PTNF	31	3.99	0.439	0.050	55801
67.00	742 213 w. MtgPipe	31	3.16	0.429	0.047	21462
59.00	14ft Dipole	27	2.46	0.399	0.041	13097
58.00	2.0"ODx12' Omni	27	2.38	0.393	0.041	12420
57.00	ANT150D3	27	2.29	0.386	0.040	11797
43.00	1ft Yagi	27	1.27	0.271	0.026	6885
41.00	1ft Yagi	27	1.14	0.255	0.024	6595

Maximum Tower Deflections - Design Wind

Section No.	*Elevation* ft	*Horz. Deflection* in	*Gov. Load Comb.*	*Tilt* °	*Twist* °
T1	80 - 60	7.74	2	0.776	0.096
T2	60 - 40	4.53	2	0.716	0.080
T3	40 - 20	1.93	10	0.439	0.044
T4	20 - 0	0.51	15	0.222	0.016

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	*Appurtenance*	*Gov. Load Comb.*	*Deflection* in	*Tilt* °	*Twist* °	*Radius of Curvature* ft
80.00	6"x12' Omni	2	7.74	0.776	0.096	31744
78.00	2.0"ODx16' Omni	2	7.41	0.776	0.095	31744
77.00	RFS APX16PV-16PVL w. Pipe	2	7.25	0.776	0.095	31744
76.00	MYPB24015PTNF	2	7.08	0.776	0.094	31744
67.00	742 213 w. MtgPipe	2	5.61	0.760	0.088	12209
59.00	14ft Dipole	2	4.38	0.706	0.079	7445
58.00	2.0"ODx12' Omni	2	4.23	0.695	0.077	7059
57.00	ANT150D3	2	4.08	0.684	0.076	6703
43.00	1ft Yagi	10	2.25	0.482	0.049	3900
41.00	1ft Yagi	10	2.04	0.453	0.046	3735

Bolt Design Data

Section No.	*Elevation* ft	*Component Type*	*Bolt Grade*	*Maximum Load per Bolt* lb	*Allowable Load* lb	*Ratio Load / Allowable*	*Allowable Ratio*	*Criteria*
T1	80	Leg	A325N	2451.04	13480.50	0.182 ✔	1.333	Bolt Tension
		Diagonal	A325N	1378.11	2084.38	0.661 ✔	1.333	Member Block Shear
		Top Girt	A325N	87.34	2084.38	0.042 ✔	1.333	Member Block Shear
T2	60	Leg	A325N	7132.22	13445.20	0.530 ✔	1.333	Bolt Tension
		Diagonal	A325N	2072.85	2084.38	0.994 ✔	1.333	Member Block

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	Project CTHA110B	**Date** 11:38:38 09/15/14
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Section No.	Elevation ft	Component Type	Bolt Grade	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T3	40	Leg	A325N	9067.11	13488.90	0.672 ✓	1.333	Shear Bolt Tension
		Diagonal	A325N	1133.69	2084.38	0.544 ✓	1.333	Member Block Shear
T4	20	Leg	A354-BC	10741.20	12655.30	0.849 ✓	1.333	Bolt Tension
		Diagonal	A325N	1418.60	2084.38	0.681 ✓	1.333	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	80 - 60	20.00	3.93	60.0 K=1.00	22.72	1.07	-10860.10	24417.10	0.445 ✓
T2	60 - 40	20.00	3.93	60.0 K=1.00	22.72	1.07	-30614.20	24417.10	1.254 ✓
T3	40 - 20	20.03	3.94	62.0 K=1.00	22.37	1.93	-40309.20	43097.90	0.935 ✓
T4	20 - 0	20.03	4.92	62.4 K=1.00	22.31	1.70	-49112.90	38012.90	1.292 ✓

Diagonal Design Data (Compression)

Section No.	Elevation ft	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	80 - 60	6.01	2.77	114.1 K=1.02	11.11	0.36	-1370.66	3992.64	0.343 ✓
T2	60 - 40	6.01	2.77	114.1 K=1.02	11.11	0.36	-2135.58	3992.64	0.535 ✓
T3	40 - 20	7.45	3.61	146.3 K=1.00	6.98	0.36	-1006.89	2508.14	0.401 ✓
T4	20 - 0	9.21	4.51	182.6 K=1.00	4.48	0.36	-1292.17	1609.80	0.803 ✓

Top Girt Design Data (Compression)

Section No.	Elevation ft	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	80 - 60	4.54	4.13	167.5 K=1.00	5.32	0.36	-96.23	1913.29	0.050 ✓

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Tension Checks

Leg Design Data (Tension)

Section No.	*Elevation*	*L*	L_u	*Kl/r*	F_a	*A*	*Actual P*	*Allow. P_a*	*Ratio P / P_a*
	ft	*ft*	*ft*		*ksi*	*in²*	*lb*	*lb*	
T1	80 - 60	20.00	3.93	60.0	30.00	1.07	9804.16	32235.90	0.304 ✔
T2	60 - 40	20.00	3.93	60.0	30.00	1.07	28528.90	32235.90	0.885 ✔
T3	40 - 20	20.03	3.94	62.0	30.00	1.93	36268.40	57810.00	0.627 ✔
T4	20 - 0	20.03	4.92	62.4	30.00	1.70	42964.70	51121.50	0.840 ✔

Diagonal Design Data (Tension)

Section No.	*Elevation*	*L*	L_u	*Kl/r*	F_a	*A*	*Actual P*	*Allow. P_a*	*Ratio P / P_a*
	ft	*ft*	*ft*		*ksi*	*in²*	*lb*	*lb*	
T1	80 - 60	6.01	2.77	74.1	29.00	0.21	1378.11	6117.19	0.225 ✔
T2	60 - 40	6.01	2.77	74.1	29.00	0.21	2072.85	6117.19	0.339 ✔
T3	40 - 20	7.45	3.61	95.8	29.00	0.21	1133.69	6117.19	0.185 ✔
T4	20 - 0	9.63	4.71	124.3	29.00	0.21	1418.60	6117.19	0.232 ✔

Top Girt Design Data (Tension)

Section No.	*Elevation*	*L*	L_u	*Kl/r*	F_a	*A*	*Actual P*	*Allow. P_a*	*Ratio P / P_a*
	ft	*ft*	*ft*		*ksi*	*in²*	*lb*	*lb*	
T1	80 - 60	4.54	4.13	112.0	29.00	0.21	87.34	6117.19	0.014 ✔

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	Project CTHA110B	**Date** 11:38:38 09/15/14
	Client T-Mobile	**Designed by** AS

Section Capacity Table

Section No.	*Elevation ft*	*Component Type*	*Critical Element*	*P lb*	*SF*P$_{allow}$ lb*	*% Capacity*	*Pass Fail*
T1	80 - 60	Leg	3	-10860.10	32547.99	33.4	Pass
T2	60 - 40	Leg	39	-30614.20	32547.99	94.1	Pass
T3	40 - 20	Leg	72	-40309.20	57449.50	70.2	Pass
T4	20 - 0	Leg	105	-49112.90	50671.19	96.9	Pass
T1	80 - 60	Diagonal	10	-1370.66	5322.19	25.8 49.6 (b)	Pass
T2	60 - 40	Diagonal	43	-2135.58	5322.19	40.1 74.6 (b)	Pass
T3	40 - 20	Diagonal	76	-1006.89	3343.35	30.1 40.8 (b)	Pass
T4	20 - 0	Diagonal	115	-1292.17	2145.86	60.2	Pass
T1	80 - 60	Top Girt	5	-96.23	2550.42	3.8	Pass
						Summary	
					Leg (T4)	96.9	Pass
					Diagonal (T2)	74.6	Pass
					Top Girt (T1)	3.8	Pass
					Bolt Checks	74.6	Pass
					RATING =	**96.9**	**Pass**

EXHIBIT C

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

T-Mobile Existing Facility

Site ID: CTHA110B

Plainville FD
77 West Main Street
Plainville, CT 06062

September 25, 2014

EBI Project Number: 62145179

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	28.02 %

21 B Street Burlington, MA 01803 Tel: (781) 273.2500 Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

September 25, 2014

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

Emissions Analysis for Site: **CTHA110B – Plainville FD**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **77 West Main Street, Plainville, 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 $\mu W/cm^2$ 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 ($\mu W/cm^2$). The general population exposure limit for the 700 MHz Band is 467 $\mu W/cm^2$, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu W/cm^2$. 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 **77 West Main Street, Plainville, 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, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of 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 (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel

2) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

5) 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.

6) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

7) The antennas used in this modeling are the **RFS APX16DWV-16DWVS-E-A20** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **RFS APX16DWV-16DWVS-E-A20** has a maximum gain of **16.3 dBd** at its main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antenna mounting height centerline of the proposed antennas is **77 feet** above ground level (AGL).

9) 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 calculations were done with respect to uncontrolled / general public threshold limits.

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 dBd
Height (AGL):	77	Height (AGL):	77	Height (AGL):	77
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	6	Channel Count	6	# PCS Channels:	6
Total TX Power:	240	Total TX Power:	240	# AWS Channels:	240
ERP (W):	3,833.82	ERP (W):	3,833.82	ERP (W):	3,833.82
Antenna A1 MPE%	7.30	Antenna B1 MPE%	7.30	Antenna C1 MPE%	7.30
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	77	Height (AGL):	77	Height (AGL):	77
Frequency Bands	700 Mhz	Frequency Bands	700 Mhz	Frequency Bands	700 Mhz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	445.37	ERP (W):	445.37	ERP (W):	445.37
Antenna A2 MPE%	1.32	Antenna B2 MPE%	1.32	Antenna C2 MPE%	1.32

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile	**25.87**
Various Town Antennas	2.15 %
Site Total MPE %:	**28.02 %**

T-Mobile Sector 1 Total:	8.62 %
T-Mobile Sector 2 Total:	8.62 %
T-Mobile Sector 3 Total:	8.62 %
Site Total:	28.02 %

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Summary

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

The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector 1:	8.62 %
Sector 2:	8.62 %
Sector 3 :	8.62 %
T-Mobile Total:	25.87 %
Site Total:	28.02 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **28.02%** 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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