NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Denise Sabo
199 Brickyard Rd Farmington, CT 06032
860-209-4690
denise@northeastsitesolutions.com

October 3, 2016

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification
555 Main St., Stamford, CT 06901
Latitude: 41.053535
Longitude: -73.535579
EM-T-MOBILE-135-160527
T-Mobile Site#: CT11410A_AIR32

Dear Ms. Bachman:

On June 27, 2016 T-Mobile received an approval for 555 Main St., Stamford, CT 06901. **EM-T-MOBILE-135-160527. After receiving the approval we noted the wrong RRUS were listed on the SA. Please accept this correction letter and revised structural analysis to update your records with correct model numbers.**
T-**Mobile also intends to remove one (1) coax line and replace it with one (1) hybrid line.**
On behalf of T-Mobile we are requesting the revision to the existing exempt modification. Please inform us if any further documentation will be need to update the file.

T-Mobile currently maintains six (6) antennas at the 210-foot AGL level and (3) antennas at the 203-foot AGL level of the exiting 231'-6" AGL roof mounted lattice tower. The tower and building are owned and operated by Frontier Communication Corporation. T-Mobile now intends to add three (3) Remote Radio Units (RRU's) - One (1) per sector at the 210-foot AGL on existing pipe mounts, behind the antenna.
Please find the Attached summary of the planned modifications, including power density calculations – Note: the proposed modifications do not transmit or receive a frequency signal. Therefore there is no environmental effect. Also included is the Property card, Parcel map, Construction drawings, Original zoning, and structural analysis for the proposed equipment change.

This facility was approved by the Council in Approvals dated April 13, 1998 and April 14, 1998 to a Notice of Intent to Modify an Existing Telecommunications Facility. These approvals included the following site-specific conditions: 1) Removal of the unused horn antenna, 2) matching the color of the proposed panel antennas with the tower, 3) removal of aviation beacons as soon as possible, consistent with FAA approval, 4) and repainting the tower to a solid neutral color, consistent with FAA approval, when such scheduled repainting is necessary, but no later than 10 years from the time of such FAA approval (see attached exhibit). The removal of horn antenna has been

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completed. The tower must be painted and lighted in accordance with the FAA Advisory Circular 70/7460- 1L as per the Painting and Lighting Specifications on the ASR (see attached exhibit).

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Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Kathleen Eagen, Town Manager for the Town of Farmington, as well as the property owner and the tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site. ·

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Denise Sabo
Mobile: 860-209-4690
Fax: 413-521-0558
Office: 199 Brickyard Rd, Farmington, CT 06032
Email: denise@northeastsitesolutions.com

Attachments

cc: The Honorable David R. Martin, Mayor, City of Stamford – as Senior Elected Official

The Southern New England Telephone Company – as Property Owner and Tower Owner

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T-Mobile Equipment Modification

Tower Owner: Frontier Communications

Property Owner: The Southern New England Telephone Company

Planned Modifications:

Remove: NONE

Remove and Replace: **(1) 1/5/8" Coax – REMOVE - (1) 1-5/8" Hybrid line - REPLACE**

Install New:
(3) RRUS32 B2 (Remote Radio Units)

Existing to Remain:
(3)AIR32 B4A/B2P Antenna
(3)AIR21 B2A/B4P Antenna
(3) Commscope LNX-6515-VTM Antenna
(3) TMA DDB4
(3) RRUS11 B12
(29) 1-5/8" Coax
(1) Hybrid Fiber Line

Power Density:

The proposed Remote Radio Units (RRUS132 B2) do not transmit or receive a frequency signal.

1) 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.

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Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR32 B4A/B2P	Make / Model:	Ericsson AIR32 B4A/B2P	Make / Model:	Ericsson AIR32 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	210	Height (AGL):	210	Height (AGL):	210
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	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	9,337.08	ERP (W):	9,337.08	ERP (W):	9,337.08
Antenna A1 MPE%	0.81	Antenna B1 MPE%	0.81	Antenna C1 MPE%	0.81
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	210	Height (AGL):	210	Height (AGL):	210
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	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%	0.40	Antenna B2 MPE%	0.40	Antenna C2 MPE%	0.40
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
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):	210	Height (AGL):	210	Height (AGL):	210
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.17	Antenna B3 MPE%	0.17	Antenna C3 MPE%	0.17

T-Mobile Sector 1 Total:	1.38 %
T-Mobile Sector 2 Total:	1.38 %
T-Mobile Sector 3 Total:	1.38 %
Site Total:	2.65 %

Structural Analysis Report

T-Mobile - Stamford / Dwtn Site #CT11410A

Owner: Frontier Communications - Stamford #1 Co Site

Stamford, Connecticut

August 24, 2016

MEI PROJECT ID: CT02768S-16V2

MALOUF ENGINEERING INTL., INC.

STRUCTURAL CONSULTANTS

17950 PRESTON ROAD, SUITE 720 ▪ DALLAS, TEXAS 75252 ▪ TEL. 972 -783-2578 FAX 972-783-2583

www.maloufengineering.com

PROFESSIONAL MEMBER

ACEC MEMBER

MALOUF ENGINEERING INTL., INC.

STRUCTURAL CONSULTANTS

August 24, 2016

Mr. Sheldon Freincle
Northeast Site Solutions
Farmington, CT 06032

STRUCTURAL ANALYSIS

Structure/Make/Model:	125 ft **Self-Supporting Tower** (onto 106.5ft Rooftop)		Not Known / Not Known	
Client/Site Name/#:	**Northeast Site Solutions / T-Mobile**		**Stamford / Dwtn #CT11410A**	
Owner/Site Name/#:	Frontier Communications		Stamford #1 Co	
MEI Project ID:	**CT02768S-16V2**			
Location:	555 Main St Stamford, CT 06901		Fairfield County FCC #1046319	
	LAT	41-03-12.74 N	LON	73-32-8.09 W

EXECUTIVE SUMMARY:

Malouf Engineering Int'l (MEI), as requested, has performed a structural analysis of the above mentioned structure to assess the impact of the changed condition as noted in Table 1.

Based on the stress analysis performed, the existing structure **is in conformance** with the Int'l Building Code (IBC) / ANSI/TIA **222-F** Standard for the loading considered under the criteria listed and referenced in the report sections – tower rated at 98.8% - Legs.

The installation of the proposed changed condition as noted in Table 1 is structurally acceptable. Please refer to Appendix 1 for Schematic Lines Layout.

MEI appreciates the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or other projects please contact us.

Respectfully submitted,

MALOUF ENGINEERING INT'L, INC.

Analysis performed by:

Luan Nguyen, PE
Sr. Project Engineer

Reviewed & Approved by:

STATE OF CONNECTICUT
MARK MALOUF
No. 17715
LICENSED
PROFESSIONAL ENGINEER

E. Mark Malouf, PE
Connecticut #17715
972-783-2578 ext. 106
mmalouf@maloufengineering.com

8/24/2016

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1. INTRODUCTION & SCOPE

A structural analysis was performed by Malouf Engineering Int'l (MEI), as requested and authorized by Mr. Sheldon Freincle, Northeast Site Solutions, on behalf of T-Mobile, to determine the acceptance of the proposed changed conditions in conformance with the IBC / ANSI/TIA-222-F Standard, "*Structural Standards for Steel Antenna Towers and Antenna Supporting Structures*".

The scope of this independent analysis is to determine the overall stability and the adequacy of structural members, foundations, and member connections, as available and stated. This analysis considers the structure to have been properly installed and maintained with no structural defects. Installation procedures and related loading are not within the scope of this analysis and should be performed and evaluated by a competent person of the erection contractor.

The different report sections detail the applicable information used in this evaluation, relating to the tower data, the appurtenances configuration and the wind and ice loading considered.

2. SOURCE OF DATA

The following information has been used in this evaluation as source data that accurately represent the existing structure and the related appurtenances:

	Source	Information	Reference
STRUCTURE			
Tower	MEI Records	Previous Structural Analysis	ID CT02768S-16V1-R2 Dated 07/22/2016
Base Support	Tower is on a building rooftop – building members to be reviewed by others.		
Material Grade	Not available from supplied documents-Assumed based on typical towers of this type-refer to Appendix		
CURRENT APPURTENANCES			
	MEI Records	Previous Structural Analysis	ID CT02768S-16V1-R2 Dated 07/22/2016
CHANGED CONDITION			
	Frontier Comm. / Ms. Elissa McOmber	Preliminary Data Questionnaire	Dated 08/22/2016
	Northeast Site Solutions/ Mr. Sheldon Freincle	E-mail Instructions	Dated 08/18/2016

Background Information:

Based on available information, the following is known regarding this structure:

DESIGNER / FABRICATOR	Not Known / Not Known
ORIGINAL DESIGN CRITERIA	TIA/EIA 222-Unknown
PRIOR STRUCTURAL MODIFICATIONS	Mods as per MEI CT02768S-11V1; CT02768S-15V2 dated 06/24/2015 – considered properly installed.

3. ANALYSIS CRITERIA

The structural analysis performed used the following criteria:

CODE / STANDARD	2003 Int'l Building Code / ANSI/TIA-222-F-96 Standard	
LOADING CASES	*Full Wind*:	85 Mph (fastest-mile) – with No Radial Ice
	Iced Case:	73.61 Mph (fastest-mile) + 0.5" Radial Ice
	Service:	50 Mph

Appurtenances Configuration

The following appurtenances configuration is denoted by the *summation of Tables 1 & 2*:

Table 1: Tenant with Changed Condition Appurtenances Configuration

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
210	T-Mobile	3	RRUS-32 B2 Boxes	[Existing Mounts]	1	1-5/8" Hybrid / Fiber Cable-(FZ)
Current Appurtenances To Remain						
210	T-Mobile	3	AIR21 B2A/B4P Panel Antennas	(3) Sector Frame Mounts	29	1-5/8" Huber-Suhner 1.25" TC-OF Cable-(FZ)*
		3	KRY 112 71/2 TMAs		1	
		3	AIR-32 B4A/B2P Panel Antennas			
203	*T-Mobile [New]*	*3*	*LNX-6515DS-VTM Panel Antennas*	(3) Sector Frame Mounts		
		3	*RRUS-11 B12 Boxes*			
To Be Removed (See Below)						
210	T-Mobile				1	1-5/8"-(FZ)

Table 2: Remaining Tenants Current and Reserved/Future Appurtenances

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
245.17		2	Top Small Beacons	13ft T-Beam Mount	1	1-1/4" R.C.
244.5		1	Top Lightning Rod			
235	AT&T	1	P65-15-XLH-RR Panel Antennas	Top Square Platform Mount	12	1-5/8"
		2	OPA-65R-LCUU-H4 Panel Antenna		4	0.75" DCPower Trunk Cables
		6	LGP21401 TMAs			
		3	RRUS-11 Boxes		2	0.625" Fiber Trunk Cable
		3	RRUS-32 Boxes			
		3	RRUS-12 w/ A2 Backpacks		1	RET Cable-(FZ)
	AT&T [New]	*6*	*HPA-45R-BUU-H6 Panel Antennas*			
233	AT&T	2	Raycap DC6-48-60-18-8F DC Surge Box			
231.5				Unused I-Beam Mount		
229	AT&T	1	1.5ft (2-Elem) Yagi Antenna	[Onto Platform]	1	1/2"-(FZ)
223.5		1	10ft Dia. HP Dish (Az. 210°±)	Dish Pipe Mount-DA Face	2	EW90-(FZ)
221.5	[Unused]				2	3/8"-(FZ)
221		1	1ft Dia. HP Dish (Windstar 43029) (Az. 210°±)	Dish Pipe Mount-BC Face	1	3/8"-(FZ)
216.5				(2) 4'Lx6'W Rest Platforms		
132	AT&T	1	4ft (7-Elem) Yagi Antenna	2ft Sidearm Mount	1	1/2"-(FZ)

Notes:

1. **Tower Base elevation is at 106.5ft Above Ground Level - All above elevations are measured from AGL.**
2. ***Line size adjusted as per previous MEI Mapping.**
3. *Analysis calculations consider (30) 1-5/8" lines and no new lines.*
4. Please note appurtenances not listed above are to be removed/not present as per data supplied.
5. (I) = Internal; (E) = External; (FZ) = Within Face Zone; (OFZ) = Outside Face Zone - as per TIA-222.
6. The above appurtenances represent MEI's understanding of the appurtenances configuration. If different than above, the analysis is invalid. Please contact MEI if any discrepancies are found.

4. ANALYSIS PROCEDURE

The subject structure is analyzed for feasibility of the installation of the proposed changed condition previously noted. The data records furnished were reviewed and a computer stress analysis was performed in accordance with the TIA-222 Standard provisions and with the agreed scope of work terms and the results of this analysis are reported.

Analysis Program

The computer program used to model the structure is a rigorous Finite Element Analysis program, tnxTower (ver. 7.07), a commercially available program by Tower Numerics Inc. The latticed structures members are modeled using beam/truss and cable members and the pole members using tubular beam elements. The structural parameters and geometry of the members are included in the model. The dead and temperature loads and the wind loads are internally calculated by the program for the different wind directions and then applied as external loads on the structure.

Assumptions

This engineering study is based on the theoretical capacity of the members and is not a condition assessment of the structure. This analysis is based on information supplied, and therefore, its results are based on and as accurate as that supplied data. MEI has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural stress analysis:

- This existing tower is assumed, for the purpose of this analysis, to have been properly maintained and to be in good condition with no structural defects and with no deterioration to its member capacities ('as-new' condition).
- The tower member sizes and configuration are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated.
- The appurtenances configuration is as supplied and/or as stated in the report. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
- Some assumptions are made regarding antennas and mounts sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type & industry practice.
- Mounts/Platforms are considered adequate to support the loading. No actual analysis of the platform/mount itself is performed, with the analysis being limited to analyzing the structure.
- The soil parameters are as per data supplied or as assumed and stated in the calculations. Refer to the Appendix. If no data is available, the foundation system is assumed to support the structure with its new reactions.
- All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report.
- All prior structural modifications, if any, are assumed to be as per data supplied/available, and to have been properly installed and to be fully effective.

If any of the above assumptions are not valid or have been made in error, this analysis results may be invalided, MEI should be contacted to review any contradictory information to determine its effect.

5. ANALYSIS RESULTS

The results of the structural stress analysis based on data available and with the previous listed criteria, indicated the following:

Table 3: Stress Analysis Results

Component Type	Maximum Stress Ratio	Controlling Elev. (ft) / Component	Pass/Fail	Comment
LEGS	**98.8%**	**231.5 - 229**	**Pass**	
DIAGONALS	87.3%	161.5 - 151.5	**Pass**	
HORIZONTALS	43.1%	141.5 - 131.5	**Pass**	
GIRTS	55.5%	141.5 - 131.5	**Pass**	
SECONDARY HORIZONTALS	18.8%	151.5 - 141.5	**Pass**	
BRACINGS	69.2%	131.5 - 119	**Pass**	
BASE SUPPORT	N/A	-	**-**	Tower is on top of building. Scope is limited to tower. Building members to be reviewed by others. Refer to Appendix 1 for reactions

Table 4: Serviceability Requirements

	Maximum Value	TIA Requirement (10dB)	Pass/Fail	Comment
TWIST/SWAY	0.1844 Deg.	4.425 Deg.	**Pass**	1ft HP Dish (Windstar 43029) Elev. 221.00ft
	0.1865 Deg.	0.2957 Deg.	**Pass**	10 FT HP DISH Elev. 223.50ft

Notes:
1. The Maximum Stress Ratio is the percentage that the maximum load in the member is relative to the allowable load as determined by Code requirements.
2. Refer to the Appendix 1 for more details on the member loads.
3. A maximum stress ratio between 100% and 105% may be considered as *Acceptable* according to industry standard practice.

6. FINDINGS & RECOMMENDATIONS

- Based on the stress analysis results, the subject structure is **rated at 98.8%** of its support capacity (controlling component: Leg) with the proposed changed condition considered. Please refer to Table 3 and to Appendix 1 for more details of the analysis results.
- Based on the stress analysis performed, the existing structure **is in conformance** with the IBC / ANSI/TIA **222-F** Standard for the loading considered under the criteria listed and referenced in the report sections.
- Please note that the tower is mounted on top of a building rooftop. Building rooftop is to be evaluated by others to determine its adequacy for the new base loads (not within scope). Refer to Appendix for tower base reactions.
- ***The installation of the proposed changed condition as noted in Table 1 is structurally acceptable***. Please refer to Appendix 1 for Schematic Lines Layout.
- This structure is at its support capacity for the appurtenances and loading criteria considered. Therefore, no changes to the configuration considered should be made without performing a new proper evaluation.

Rigging and temporary supports required for the erection/modification shall be determined, documented, furnished and installed by the erector/contractor accounting for the loads imposed on the structure due to the proposed construction method.

7. REPORT DISCLAIMER

The engineering services rendered by **M**alouf **E**ngineering **I**nternational, Inc. *('MEI') in connection with this Structural Analysis are limited to a computer analysis of the tower structure, size and capacity of its members. MEI does not analyze the fabrication, including welding and connection capacities, except as included in this Report.*

The analysis performed and the conclusions contained herein are based on the assumption that the tower has been properly installed and maintained, including, but not limited to the following:

1. Proper alignment and plumbness.
2. Correct guy tensions, as applicable.
3. Correct bolt tightness or slip jacking of sleeved connections.
4. No significant deterioration or damage to any structural component.

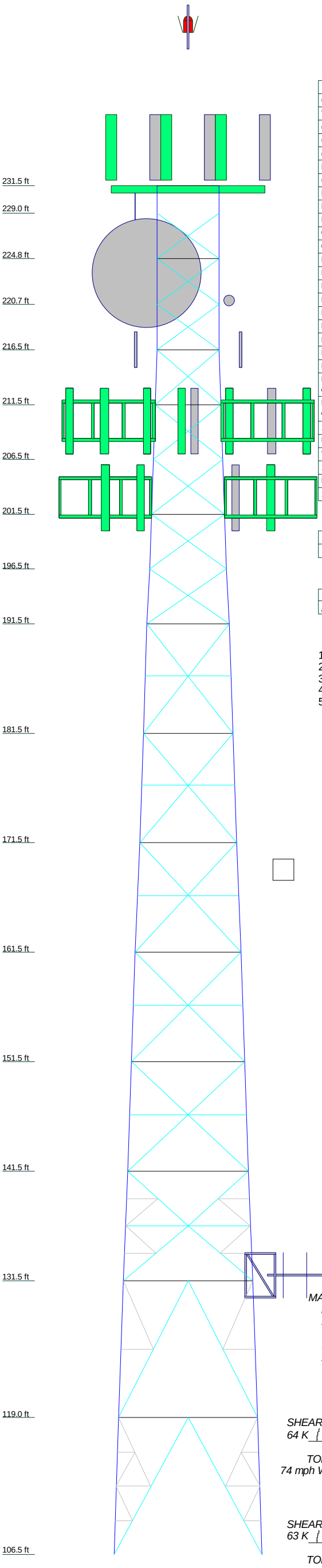
Furthermore, the information and conclusions contained in this Report were determined by application of the current "state-of-the-art" engineering and analysis procedures and formulae. MALOUF ENGINEERING INTERNATIONAL, INC. assumes no obligation to revise any of the information or conclusions contained in this Report in the event that such engineering and analysis procedures and formulae are hereafter modified or revised. In addition, under no circumstances will MALOUF ENGINEERING INTERNATIONAL, INC. have any obligation or responsibility whatsoever for or on account of consequential or incidental damages sustained by any person, firm or organization as a result of any information or conclusions contained in the Report, and the maximum liability of MALOUF ENGINEERING INTERNATIONAL, INC., if any, pursuant to this Report shall be limited to the total funds actually received by MALOUF ENGINEERING INTERNATIONAL, INC. for preparation of this Report.

Customer has requested MALOUF ENGINEERING INTERNATIONAL, INC. to prepare and submit to Customer an engineering analysis with respect to the Subject Tower and has further requested MALOUF ENGINEERING INTERNATIONAL, INC. to make appropriate recommendations regarding suggested structural modifications and changes to the Subject Tower. In making such request of MALOUF ENGINEERING INTERNATIONAL, INC., Customer has informed MALOUF ENGINEERING INTERNATIONAL, INC. that Customer will make a determination as to whether or not to implement any of the changes or modifications which may be suggested by MALOUF ENGINEERING INTERNATIONAL, INC. and that Customer will have any such changes or modifications made by riggers, erectors and other subcontractors of Customer's choice. MALOUF ENGINEERING INTERNATIONAL, INC. shall have the right to rely upon the accuracy of the information supplied by the customer and shall not be held responsible for the Customer's misrepresentation or omission of relevant fact whether intentional or otherwise.

Customer hereby agrees and acknowledges that MALOUF ENGINEERING INTERNATIONAL, INC. shall have no liability whatsoever to Customer or to others for any work or services performed by any persons other than MALOUF ENGINEERING INTERNATIONAL, INC. in connection with the implementation of services including but not limited to any services rendered for Customer or for others by riggers, erectors or other subcontractors. Customer acknowledges and agrees that any riggers, erectors or subcontractors retained or employed by Customer shall be solely responsible to Customer and to others for the quality of work performed by them and that MALOUF ENGINEERING INTERNATIONAL, INC. shall have no liability or responsibility whatsoever as a result of any negligence or breach of contract by any such rigger, erector or subcontractor and that Customer and rigger, erector, or subcontractor will provide MALOUF ENGINEERING INTERNATIONAL, INC. with a Certificate of Insurance naming MALOUF ENGINEERING INTERNATIONAL, INC. as additional insured.

APPENDIX 1 - ANALYSIS PRINTOUT & GRAPHICS

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	
Legs	L4x4x3/8				L5x5x1/2						L6x6x5/8			L6x6x3/4		L6x6x7/8		
Leg Grade	A36																	
Diagonals	2L2 1/2x2 1/2x1/4x3/8				L2 1/2x2x1/4						L3x3x1/4					2L2 1/2x2 1/2x1/4x3/8		
Diagonal Grade	A36																	
Top Girts	2L2 1/2x2 1/2x1/4x3/8										L2 1/2x2 1/2x1/4							
Horizontals	N.A.	N.A.	A		C7x9.8	L2 1/2x2x1/4	N.A.	B		N.A.		L2 1/2x2x3/16		L2 1/2x2x1/4		N.A.		
Sec. Horizontals	N.A.																	
Red. Horizontals	N.A.															L2 1/2x2x3/16		
Red. Diagonals	N.A.															L2 1/2x2x3/16		
Red. Sub-Horizs	N.A.																L2 1/2x2x3/16	
Red. Sub-Diags	N.A.																L2 1/2x2x3/16	
Inner Bracing	N.A.															L3x3x3/16		
Face Width (ft)	5.60417	N.A.	N.A.			5.96685	6.32954	6.69223	7.05492	7.41761	8.14298	8.86836	9.59373	10.3191	11.0445	11.7699	12.6766	13.5833
# Panels @ (ft)	1 @ 2.5		3 @ 4.1667			5 @ 5						5 @ 10				1 @ 12.5	1 @ 12.4999	25.4
Weight (K)	0.4	0.6	0.7	0.6	0.8	0.7	0.6	0.7	0.6	1.9	1.8	1.9	1.9	2.3	2.6	3.5	4.0	



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) TOP SMALL BEACONS (E)	245.17	PIPE DISH MOUNT (E)	221
TOP LIGHTNING ROD (E)	244.5	1 FT HP DISH (WINDSTAR 43029) (E)	221
(3) HPA-45R-BUU-H6 w/ Pipe Mounts (ATI / N)	235	4'Lx6'W REST PLATFORM (E)	216.5
(2) LGP21401 TMA'S (ATI / E)	235	4'Lx6'W REST PLATFORM (E)	216.5
(2) HPA-45R-BUU-H6 w/ Pipe Mounts (ATI / N)	235	AIR21 B2A B4P w/ pipe Mount (T-MOBILE / E)	210
HPA-45R-BUU-H6 w/ Pipe Mounts (ATI / N)	235	AIR-32 Panel w/ Pipe Mount (T-MOBILE / N)	210
(2) LGP21401 TMA'S (ATI / E)	235	AIR-32 Panel w/ Pipe Mount (T-MOBILE / N)	210
RRUS-11 (ATI / E)	235	AIR-32 Panel w/ Pipe Mount (T-MOBILE / N)	210
RRUS-11 (ATI / E)	235	KRY 112 71/2 (T-MOBILE / E)	210
P65-15-XLH-RR w/ Pipe Mount (ATI / E)	235	KRY 112 71/2 (T-MOBILE / E)	210
OPA-65R-LCUU-H4 w/ Pipe Mounts (ATI / E)	235	KRY 112 71/2 (T-MOBILE / E)	210
OPA-65R-LCUU-H4 w/ Pipe Mounts (ATI / E)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	210
LGP21401 TMA'S (ATI / E)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	210
LGP21401 TMA'S (ATI / E)	235	SECTOR FRAME MOUNT (T-MOBILE / E)	210
RRUS-11 (ATI / E)	235	RRUS-32 B2 (T-MOBILE / P)	210
RRUS-12 w/ A2 Backpack (ATI / E)	235	RRUS-32 B2 (T-MOBILE / P)	210
RRUS-12 w/ A2 Backpack (ATI / E)	235	RRUS-32 B2 (T-MOBILE / P)	210
RRUS-12 w/ A2 Backpack (ATI / E)	235	AIR21 B2A B4P w/ pipe Mount (T-MOBILE / E)	210
RRUS-32 (ATI / E)	235	AIR21 B2A B4P w/ pipe Mount (T-MOBILE / E)	210
RRUS-32 (ATI / E)	235	LNX-6515DS-VTM w/ Pipe Mnt. (T-MOBILE / E)	203
RRUS-32 (ATI / E)	235	RRUS-11 B12 (T-MOBILE / E)	203
RAYCAP DC6-48-60-18-8F DC SURGE BOX (ATI / E)	233	RRUS-11 B12 (T-MOBILE / E)	203
RAYCAP DC6-48-60-18-8F DC SURGE BOX (ATI / E)	233	RRUS-11 B12 (T-MOBILE / E)	203
13' T BEAM MOUNT (E)	231.5	SECTOR FRAME MOUNT (T-MOBILE / E)	203
UNUSED I-BEAM MOUNT (ATI / E)	231.5	SECTOR FRAME MOUNT (T-MOBILE / E)	203
TOP SQUARE PLATFORM MOUNT (ATI / E)	231.5	SECTOR FRAME MOUNT (T-MOBILE / E)	203
1.5'x2-ELEMENT YAGI AND MOUNT (ATI / E)	229	LNX-6515DS-VTM w/ Pipe Mnt. (T-MOBILE / E)	203
PIPE DISH MOUNT (E)	223.5	LNX-6515DS-VTM w/ Pipe Mnt. (T-MOBILE / E)	203
10 FT HP DISH (E)	223.5	4'x7-ELEMENT YAGI (ATI / E)	132
		2FT SIDEARM MOUNT (ATI / E)	132

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	C8x11.5	B	L2 1/2x2 1/2x1/4

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 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 50 mph wind.
5. TOWER RATING: 98.8%

MAX. CORNER REACTIONS AT BASE:
DOWN: 267 K
SHEAR: 24 K

UPLIFT: -239 K
SHEAR: 22 K

AXIAL
75 K
SHEAR 64 K *MOMENT 4769 kip-ft*

TORQUE 21 kip-ft
74 mph WIND - 0.5000 in ICE

AXIAL
48 K
SHEAR 63 K *MOMENT 4825 kip-ft*

TORQUE 24 kip-ft
REACTIONS - 85 mph WIND

MALOUF ENGINEERING INTL., INC. STRUCTURAL CONSULTANTS
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Malouf Engineering Int'l, Inc.
17950 Preston Road, Suite #720
Dallas, TX 75252
Phone: (972) 783-2578
FAX: (972) 783-2583

Job:	***125 FT SST, STAMFORD / DWTN SITE #CT11410A***		
Project:	***CT02768S-16V2***		
Client: NORTHEAST SITE SOLUTIONS / T-MOBILE		Drawn by: LNguyen	App'd:
Code: TIA/EIA-222-F		Date: 08/19/16	Scale: NTS
Path: D:\MEIProjects\16 DATA\SS\CT02768S-16V2\CT02768S-16V2.eri			Dwg No. E-1

No.	QTY.	DESCRIPTION	ELEV.	TENANT
1	1	Safety Climb & Climbing Ladder	125'	E
2	1	1 1/4" Rigid Conduit	125'	E
3	12	1 5/8	125'	AT&T / E
4	1	0.30	125'	AT&T / E
5	4	0.75" DC POWER TRUNK CABLES	125'	AT&T / E
6	2	0.625" FIBER TRUNK CABLE	125'	AT&T / E
7	2	3/8 (UNUSED)	115'	E
8	1	3/8	114.5'	E
9	1	1/2	122.5'	E
10	2	EW90	117'	E
11	1	1/2	25.5'	E
12	29	1 5/8	103.5'	T-MOBILE / E
13	1	HUBER-SUHNER 1.25" TC-OF CABLE	103.5'	T-MOBILE / E
14	1	1 5/8 (TO BE REMOVED)	103.5'	T-MOBILE / R
15	1	1 5/8 HYBRID FIBER CABLE	103.5'	T-MOBILE / P

LEGEND:

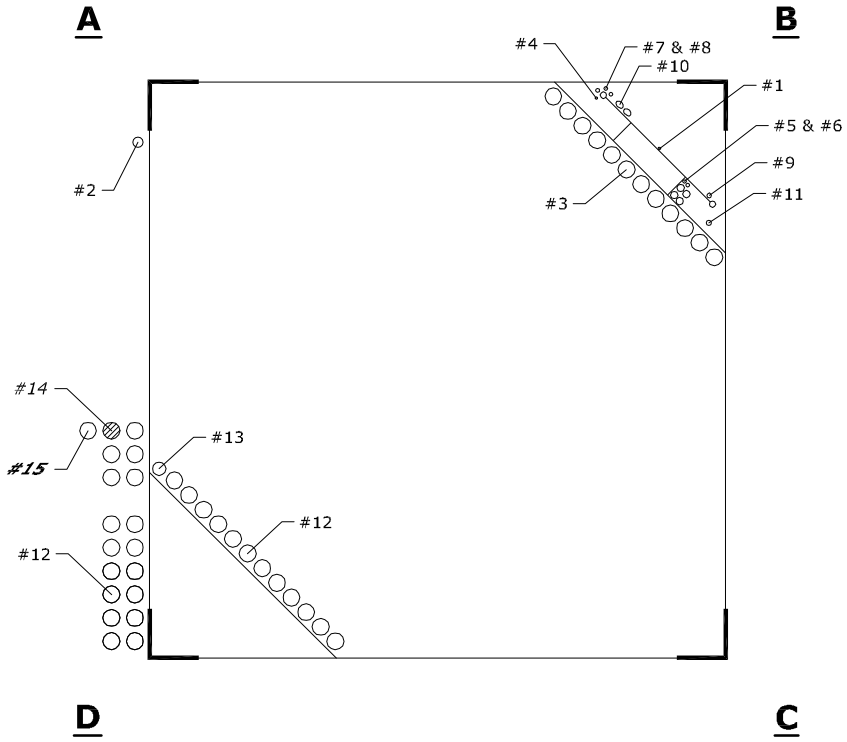
E = EXISTING #X

P = PROPOSED #X

F = FUTURE #X

R = REMOVE #X

TO RELOCATE



101 PLAN: SCHEMATIC Tx-LINE LAYOUT

SCALE: NOT TO SCALE

NOTE:
1. Tx LINE LAYOUT IS SCHEMATIC ONLY, BASED UPON MEI RECORDS. NO NEW SITE PHOTOS PROVIDED.
2. ELEVATIONS SHOWN ARE ABOVE ROOF LINE.

AUG 19, 2016

MALOUF ENGINEERING INTERNATIONAL, INC.
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17950 PRESTON ROAD SUITE 720
DALLAS, TEXAS 75252-5635
972-783-2578 (fax: 2583)
www.maloufengineering.com

T-Mobile

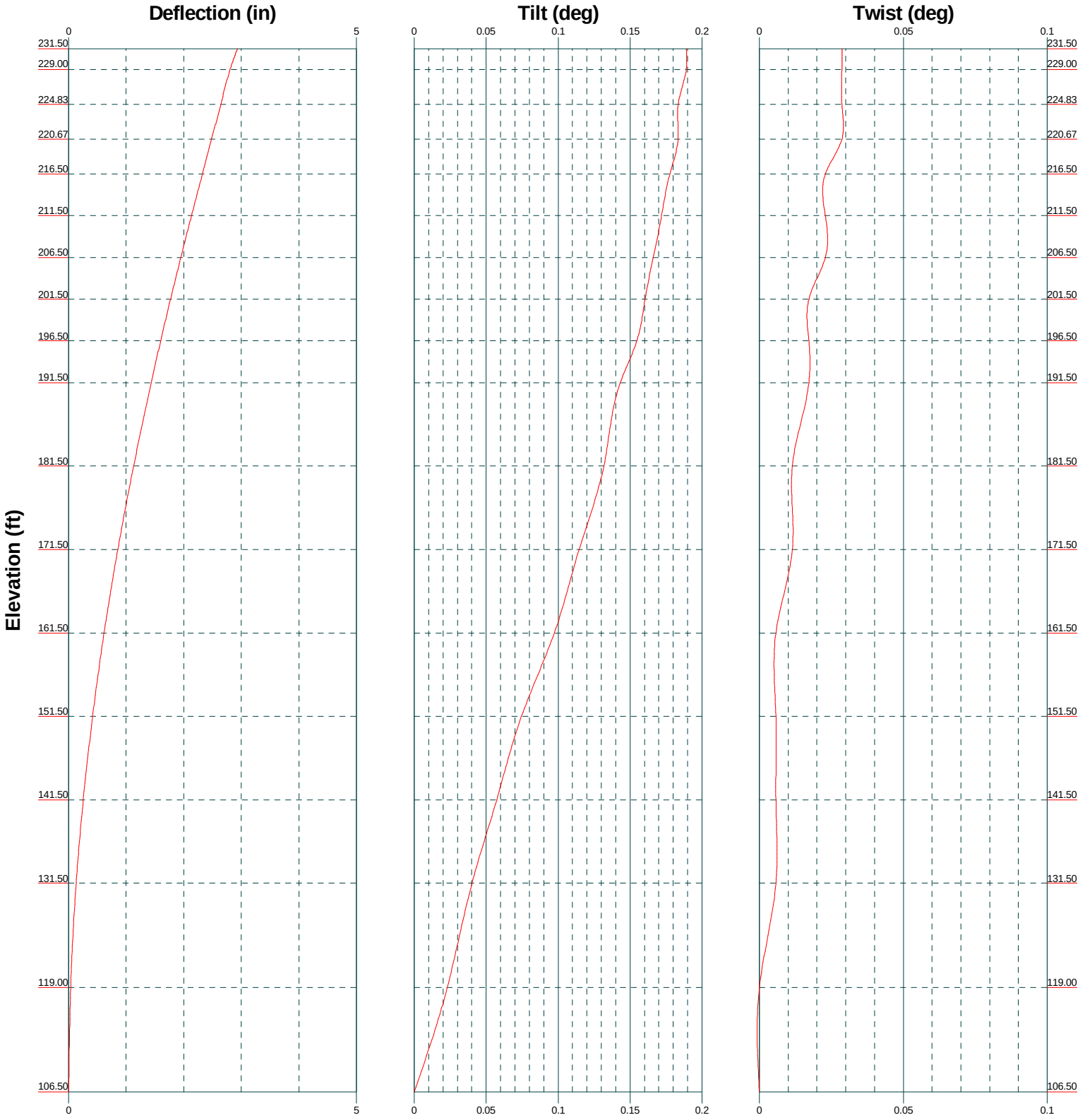
STAMFORD / DWTN SITE #CT11410A

TOWER TxLINE LAYOUT

MEI PROJECT ID	SHEET NUMBER	REV.
CT02768S-16V2	**L01**	0

TIA/EIA-222-F - Service - 50 mph

Maximum Values



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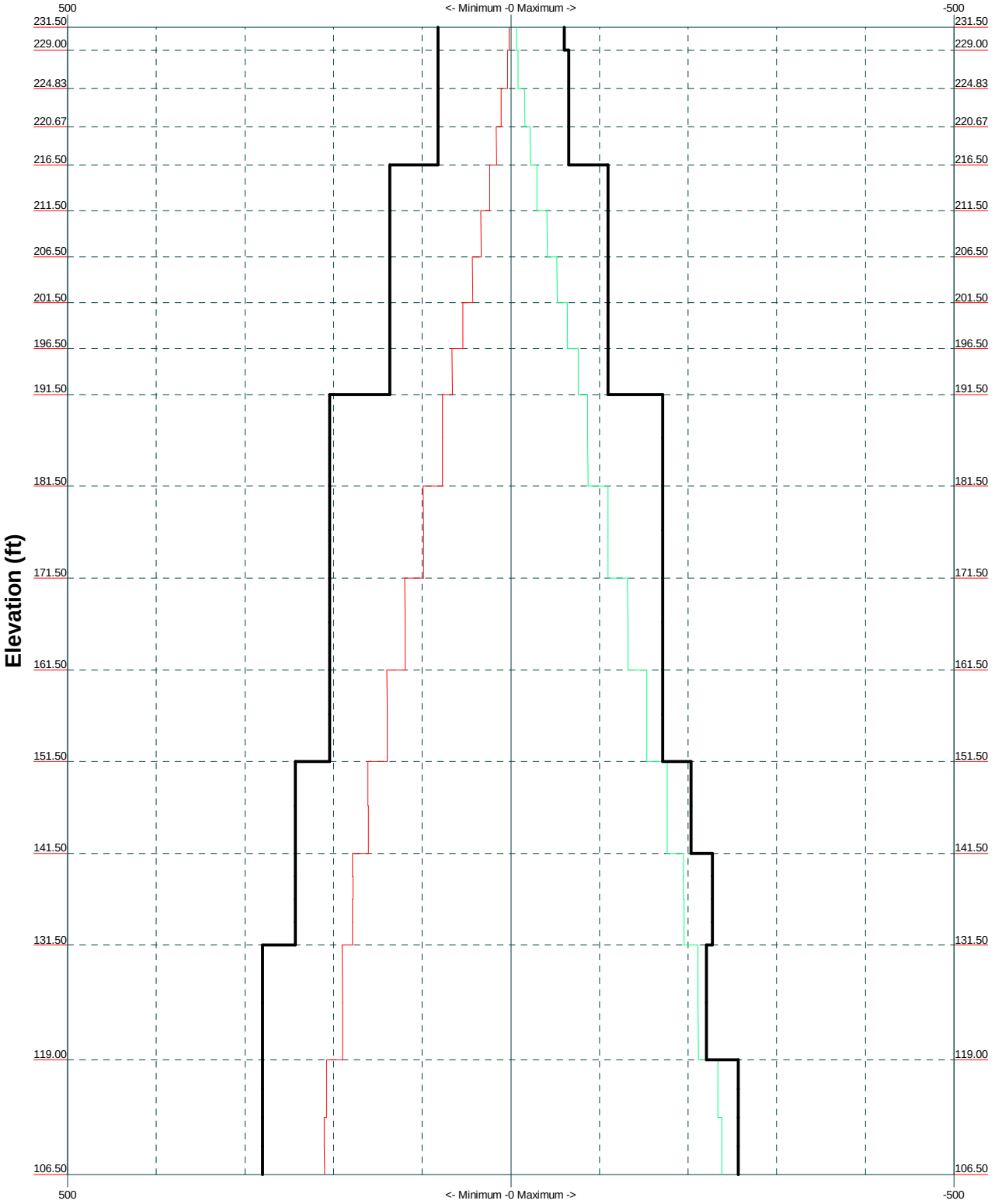
Job: ***125 FT SST, STAMFORD / DWTN SITE #CT11410A***			
Project: ***CT02768S-16V2***			
Client: NORTHEAST SITE SOLUTIONS / T-MOBILE	Drawn by: LNguyen	App'd:	
Code: TIA/EIA-222-F	Date: 08/19/16	Scale: NTS	
Path: D:\MEIProjects\16 DATA\SS\CT02768S-16V2\CT02768S-16V2.eri		Dwg No. E-5	

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

Leg Capacity ——— **Leg Compression (K)**



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Job: ***125 FT SST, STAMFORD / DWTN SITE #CT11410A***			
Project: ***CT02768S-16V2***			
Client: NORTHEAST SITE SOLUTIONS / T-MOBILE	Drawn by: LNguyen	App'd:	
Code: TIA/EIA-222-F	Date: 08/19/16	Scale: NTS	
Path: D:\MEIProjects\16 DATA\SS\CT02768S-16V2\CT02768S-16V2.eri		Dwg No. E-3	

Tower Input Data

The main tower is a 4x free standing tower with an overall height of 231.50 ft above the ground line.
The base of the tower is set at an elevation of 106.50 ft above the ground line.
The face width of the tower is 5.60 ft at the top and 13.58 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 74 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Placement	Total Number
	ft	
Safety Line 3/8 (E)	231.50 - 106.50	1
Climbing Ladder (E)	231.50 - 106.50	1
W/G LADDER "A" (E)	212.50 - 106.50	1
W/G LADDER "B" (E)	206.50 - 106.50	1
W/G LADDER "C" (E)	200.50 - 106.50	1
1 1/4" Rigid Conduit (E)	231.50 - 106.50	1
0.625" Fiber Trunk Cable (AT&T / E)	231.50 - 106.50	2
0.75" DC Power Trunk Cable (AT&T / E)	231.50 - 106.50	4
1 5/8 (AT&T / E)	231.50 - 106.50	12
0.30 (AT&T / E)	231.50 - 106.50	1
1/2 (E)	229.00 - 106.50	1
EW90 (E)	223.50 - 106.50	2
3/8 (E (UNUSED))	221.50 - 106.50	2
3/8 (E)	221.00 - 106.50	1
1 5/8 (T-MOBILE / E)	210.00 - 106.50	12
Huber-Suhner 1.25" TC-OF Cable (T-MOBILE / E)	210.00 - 106.50	1
1 5/8 (T-MOBILE / E)	210.00 - 106.50	6
1 5/8 (T-MOBILE / E)	210.00 - 106.50	11
1 5/8 Hybrid Fiber Cable (T-MOBILE / P)	210.00 - 106.50	1
1/2 (E)	132.00 - 106.50	1

Feed Line/Linear Appurtenances - Entered As Area

Description	Placement	Total Number
	ft	
MISCELLANEOUS (E)	231.50 - 106.50	2
MISCELLANEOUS	231.50 - 106.50	1
WEIGHT (E)		

Discrete Tower Loads

Description	Placement	Weight
	ft	K
(2) TOP SMALL BEACONS	245.17	0.06
(E)		0.09
TOP LIGHTNING ROD	244.50	0.05
(E)		0.07
13' T BEAM MOUNT	231.50	0.10
(E)		0.15
(3) HPA-45R-BUU-H6 w/	235.00	0.08
Pipe Mounts		0.17
(AT&T / N)		
(2) LGP21401 TMA'S	235.00	0.02
(AT&T / E)		0.03
(2) HPA-45R-BUU-H6 w/	235.00	0.08
Pipe Mounts		0.17
(AT&T / N)		
HPA-45R-BUU-H6 w/ Pipe	235.00	0.08
Mounts		0.17
(AT&T / N)		
(2) LGP21401 TMA'S	235.00	0.02
(AT&T / E)		0.03
RRUS-11	235.00	0.05
(AT&T / E)		0.07
RRUS-11	235.00	0.05
(AT&T / E)		0.07
RAYCAP DC6-48-60-18-8F	233.00	0.03
DC SURGE BOX		0.06
(AT&T / E)		
P65-15-XLH-RR w/ Pipe	235.00	0.07
Mount		0.12
(AT&T / E)		
OPA-65R-LCUU-H4 w/ Pipe	235.00	0.08
Mounts		0.13
(AT&T / E)		
OPA-65R-LCUU-H4 w/ Pipe	235.00	0.08
Mounts		0.13
(AT&T / E)		
LGP21401 TMA'S	235.00	0.02
(AT&T / E)		0.03
LGP21401 TMA'S	235.00	0.02
(AT&T / E)		0.03
RRUS-11	235.00	0.05
(AT&T / E)		0.07
RRUS-12 w/ A2 Backpack	235.00	0.08
(AT&T / E)		0.11
RRUS-12 w/ A2 Backpack	235.00	0.08
(AT&T / E)		0.11
RRUS-12 w/ A2 Backpack	235.00	0.08
(AT&T / E)		0.11
RAYCAP DC6-48-60-18-8F	233.00	0.03
DC SURGE BOX		0.06
(AT&T / E)		
RRUS-32	235.00	0.08
(AT&T / E)		0.10
RRUS-32	235.00	0.08
(AT&T / E)		0.10
RRUS-32	235.00	0.08
(AT&T / E)		0.10

Description	Placement	Weight
	ft	K
UNUSED I-BEAM MOUNT	231.50	0.10
(AT&T / E)		0.15
1.5'x2-ELEMENT YAGI	229.00	0.07
AND MOUNT		0.13
(AT&T / E)		
TOP SQUARE PLATFORM	231.50	5.50
MOUNT		7.50
(AT&T / E)		
PIPE DISH MOUNT	223.50	0.15
(E)		0.23
PIPE DISH MOUNT	221.00	0.07
(E)		0.10
4'Lx6'W REST PLATFORM	216.50	0.75
(E)		1.25
4'Lx6'W REST PLATFORM	216.50	0.75
(E)		1.25
AIR21 B2A B4P w/ pipe	210.00	0.13
Mount		0.18
(T-MOBILE / E)		
AIR21 B2A B4P w/ pipe	210.00	0.13
Mount		0.18
(T-MOBILE / E)		
AIR21 B2A B4P w/ pipe	210.00	0.13
Mount		0.18
(T-MOBILE / E)		
AIR-32 Panel w/ Pipe Mount	210.00	0.15
(T-MOBILE / N)		0.22
AIR-32 Panel w/ Pipe Mount	210.00	0.15
(T-MOBILE / N)		0.22
AIR-32 Panel w/ Pipe Mount	210.00	0.15
(T-MOBILE / N)		0.22
KRY 112 71/2	210.00	0.01
(T-MOBILE / E)		0.02
KRY 112 71/2	210.00	0.01
(T-MOBILE / E)		0.02
KRY 112 71/2	210.00	0.01
(T-MOBILE / E)		0.02
SECTOR FRAME MOUNT	210.00	0.40
(T-MOBILE / E)		0.60
SECTOR FRAME MOUNT	210.00	0.40
(T-MOBILE / E)		0.60
SECTOR FRAME MOUNT	210.00	0.40
(T-MOBILE / E)		0.60
RRUS-32 B2	210.00	0.05
(T-MOBILE / P)		0.07
RRUS-32 B2	210.00	0.05
(T-MOBILE / P)		0.07
RRUS-32 B2	210.00	0.05
(T-MOBILE / P)		0.07
LNX-6515DS-VTM w/ Pipe	203.00	0.08
Mnt.		0.17
(T-MOBILE / E)		
LNX-6515DS-VTM w/ Pipe	203.00	0.08
Mnt.		0.17
(T-MOBILE / E)		
LNX-6515DS-VTM w/ Pipe	203.00	0.08

Description	Placement	Weight
	ft	K
Mnt. (T-MOBILE / E)		0.17
RRUS-11 B12 (T-MOBILE / E)	203.00	0.05 0.07
RRUS-11 B12 (T-MOBILE / E)	203.00	0.05 0.07
RRUS-11 B12 (T-MOBILE / E)	203.00	0.05 0.07
SECTOR FRAME MOUNT (T-MOBILE / E)	203.00	0.40 0.60

Description	Placement	Weight
	ft	K
SECTOR FRAME MOUNT (T-MOBILE / E)	203.00	0.40 0.60
SECTOR FRAME MOUNT (T-MOBILE / E)	203.00	0.40 0.60
4'x7-ELEMENT YAGI (AT&T / E)	132.00	0.03 0.04
2FT SIDEARM MOUNT (AT&T / E)	132.00	0.10 0.15

Dishes

Description	Dish Type	Elevation	Outside Diameter	Weight
		ft	ft	K
10 FT HP DISH (E)	Paraboloid w/Shroud (HP)	223.50	10.00	0.40 0.81
1 FT HP DISH (WINDSTAR 43029) (E)	Paraboloid w/Shroud (HP)	221.00	1.00	0.03 0.04

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg D	Max. Vert	16	263.35	16.38	-17.09
	Max. H_x	16	263.35	16.38	-17.09
	Max. H_z	3	-239.48	-15.14	16.12
	Min. Vert	3	-239.48	-15.14	16.12
	Min. H_x	3	-239.48	-15.14	16.12
	Min. H_z	16	263.35	16.38	-17.09
Leg C	Max. Vert	14	254.40	-16.45	-16.20
	Max. H_x	18	-219.07	15.03	14.89
	Max. H_z	18	-219.07	15.03	14.89
	Min. Vert	9	-224.44	14.96	14.76
	Min. H_x	14	254.40	-16.45	-16.20
	Min. H_z	14	254.40	-16.45	-16.20
Leg B	Max. Vert	12	266.57	-17.27	16.53
	Max. H_x	7	-234.97	15.72	-15.09
	Max. H_z	12	266.57	-17.27	16.53
	Min. Vert	7	-234.97	15.72	-15.09
	Min. H_x	12	266.57	-17.27	16.53
	Min. H_z	7	-234.97	15.72	-15.09
Leg A	Max. Vert	18	255.87	16.17	16.52
	Max. H_x	18	255.87	16.17	16.52
	Max. H_z	18	255.87	16.17	16.52
	Min. Vert	5	-223.72	-14.59	-15.14
	Min. H_x	14	-217.58	-14.74	-15.14
	Min. H_z	14	-217.58	-14.74	-15.14

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	231.5 - 229	2.933	20	0.1869	0.0308
T2	229 - 224.833	2.805	20	0.1864	0.0273
T3	224.833 - 220.667	2.643	20	0.1852	0.0270
T4	220.667 - 216.5	2.482	20	0.1822	0.0263
T5	216.5 - 211.5	2.324	20	0.1777	0.0254
T6	211.5 - 206.5	2.135	20	0.1734	0.0233
T7	206.5 - 201.5	1.950	20	0.1675	0.0212
T8	201.5 - 196.5	1.771	20	0.1606	0.0190
T9	196.5 - 191.5	1.599	20	0.1521	0.0169
T10	191.5 - 181.5	1.436	20	0.1427	0.0150
T11	181.5 - 171.5	1.130	20	0.1292	0.0118
T12	171.5 - 161.5	0.855	20	0.1134	0.0094
T13	161.5 - 151.5	0.616	20	0.0956	0.0074
T14	151.5 - 141.5	0.417	20	0.0762	0.0058
T15	141.5 - 131.5	0.255	20	0.0587	0.0044
T16	131.5 - 119	0.131	20	0.0407	0.0033
T17	119 - 106.5	0.037	20	0.0207	0.0015

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
245.17	(2) TOP SMALL BEACONS	20	2.933	0.1869	0.0308	7196
244.50	TOP LIGHTNING ROD	20	2.933	0.1869	0.0308	7196
235.00	(3) HPA-45R-BUU-H6 w/ Pipe Mounts	20	2.933	0.1869	0.0308	7196
233.00	RAYCAP DC6-48-60-18-8F DC SURGE BOX	20	2.933	0.1869	0.0308	7196
231.50	13' T BEAM MOUNT	20	2.933	0.1869	0.0308	7196
229.00	1.5'x2-ELEMENT YAGI AND MOUNT	20	2.805	0.1864	0.0273	7196
223.50	10 FT HP DISH	20	2.592	0.1845 (3 dB) 0.2957	0.0270 (3 dB) 0.2957	107976
221.00	1 FT HP DISH (WINDSTAR 43029)	20	2.495	0.1825	0.0264	263132
216.50	4'Lx6'W REST PLATFORM	20	2.324	0.1777	0.0254	150891
210.00	AIR21 B2A B4P w/ pipe Mount	20	2.079	0.1718	0.0227	53790
203.00	LNX-6515DS-VTM w/ Pipe Mnt.	20	1.824	0.1628	0.0197	43846
132.00	4'x7-ELEMENT YAGI	20	0.136	0.0415	0.0033	27098

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T1	231.5 - 229	Leg	L4x4x3/8	4	-4.96	60.16	98.8	Pass
T2	229 - 224.833	Leg	L4x4x3/8	12	-8.16	65.17	12.5	Pass
T3	224.833 - 220.667	Leg	L4x4x3/8	21	-16.00	65.17	24.6	Pass
T4	220.667 - 216.5	Leg	L4x4x3/8	37	-22.05	65.17	33.8	Pass
T5	216.5 - 211.5	Leg	L5x5x1/2	51	-29.50	109.68	26.9	Pass
T6	211.5 - 206.5	Leg	L5x5x1/2	67	-41.34	109.68	37.7	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T7	206.5 - 201.5	Leg	L5x5x1/2	83	-52.20	109.68	47.6	Pass
T8	201.5 - 196.5	Leg	L5x5x1/2	95	-63.83	109.68	58.2	Pass
T9	196.5 - 191.5	Leg	L5x5x1/2	111	-76.20	109.68	69.5	Pass
T10	191.5 - 181.5	Leg	L6x6x5/8	123	-86.96	171.13	50.8	Pass
T11	181.5 - 171.5	Leg	L6x6x5/8	148	-109.90	171.31	64.2	Pass
T12	171.5 - 161.5	Leg	L6x6x5/8	168	-132.05	171.45	77.0	Pass
T13	161.5 - 151.5	Leg	L6x6x5/8	193	-153.60	171.58	89.5	Pass
T14	151.5 - 141.5	Leg	L6x6x3/4	213	-176.58	203.35	86.8	Pass
T15	141.5 - 131.5	Leg	L6x6x3/4	238	-195.50	227.69	85.9	Pass
T16	131.5 - 119	Leg	L6x6x7/8	306	-211.61	220.76	95.9	Pass
T17	119 - 106.5	Leg	L6x6x7/8	347	-238.21	256.70	92.8	Pass
T2	229 - 224.833	Diagonal	2L2 1/2x2x1/4x3/8	20	-3.83	47.46	8.1	Pass
							9.9 (b)	
T3	224.833 - 220.667	Diagonal	2L2 1/2x2x1/4x3/8	35	-4.44	47.46	9.4	Pass
							11.7 (b)	
T4	220.667 - 216.5	Diagonal	2L2 1/2x2x1/4x3/8	47	-5.70	42.32	13.5	Pass
							15.2 (b)	
T5	216.5 - 211.5	Diagonal	L2 1/2x2x1/4	63	-5.81	16.13	36.0	Pass
T6	211.5 - 206.5	Diagonal	L2 1/2x2x1/4	79	-6.28	15.52	40.5	Pass
T7	206.5 - 201.5	Diagonal	L2 1/2x2x1/4	91	-7.07	14.88	47.5	Pass
T8	201.5 - 196.5	Diagonal	L2 1/2x2x1/4	107	-7.53	14.20	53.0	Pass
T9	196.5 - 191.5	Diagonal	L2 1/2x2x1/4	119	-7.58	13.49	56.2	Pass
T10	191.5 - 181.5	Diagonal	L3x3x1/4	138	-12.82	18.16	70.6	Pass
T11	181.5 - 171.5	Diagonal	L3x3x1/4	158	-12.75	17.25	73.9	Pass
T12	171.5 - 161.5	Diagonal	L3x3x1/4	183	-13.12	16.34	80.3	Pass
T13	161.5 - 151.5	Diagonal	L3x3x1/4	203	-13.50	15.46	87.3	Pass
T14	151.5 - 141.5	Diagonal	L3x3x1/4	228	-12.72	14.61	87.0	Pass
T15	141.5 - 131.5	Diagonal	L3x3x1/4	260	-14.90	23.59	63.2	Pass
							67.3 (b)	
T16	131.5 - 119	Diagonal	2L2 1/2x2 1/2x1/4x3/8	340	-18.80	23.51	80.0	Pass
T17	119 - 106.5	Diagonal	2L2 1/2x2 1/2x1/4x3/8	407	-18.14	49.40	36.7	Pass
							50.1 (b)	
T15	141.5 - 131.5	Horizontal	L2 1/2x2x1/4	251	-2.93	6.80	43.1	Pass
T10	191.5 - 181.5	Secondary Horizontal	L2 1/2x2x1/4	143	-1.31	17.59	7.4	Pass
T11	181.5 - 171.5	Secondary Horizontal	L2 1/2x2x1/4	163	-1.65	16.77	9.8	Pass
T12	171.5 - 161.5	Secondary Horizontal	L2 1/2x2x3/16	188	-1.98	12.25	16.2	Pass
T13	161.5 - 151.5	Secondary Horizontal	L2 1/2x2 1/2x1/4	208	-2.31	19.73	11.7	Pass
							11.9 (b)	
T14	151.5 - 141.5	Secondary Horizontal	L2 1/2x2x1/4	233	-2.65	14.08	18.8	Pass
T1	231.5 - 229	Top Girt	C8x11.5	8	-0.59	45.47	19.8	Pass
T3	224.833 - 220.667	Top Girt	L2 1/2x2 1/2x1/4	25	-1.07	16.58	6.5	Pass
T5	216.5 - 211.5	Top Girt	C7x9.8	53	-1.11	44.01	2.5	Pass
							3.9 (b)	
T6	211.5 - 206.5	Top Girt	L2 1/2x2x1/4	69	-0.93	11.61	8.0	Pass
T8	201.5 - 196.5	Top Girt	L2 1/2x2 1/2x1/4	97	-0.81	13.26	6.1	Pass
T10	191.5 - 181.5	Top Girt	L2 1/2x2 1/2x1/4	127	3.73	28.16	13.2	Pass
							20.0 (b)	
T11	181.5 - 171.5	Top Girt	L2 1/2x2 1/2x1/4	150	-5.58	17.20	32.5	Pass
							37.9 (b)	
T12	171.5 - 161.5	Top Girt	L2 1/2x2 1/2x1/4	170	-6.06	22.37	27.1	Pass
							40.8 (b)	
T13	161.5 - 151.5	Top Girt	L2 1/2x2 1/2x1/4	195	-6.67	14.22	46.9	Pass
T14	151.5 - 141.5	Top Girt	L2 1/2x2 1/2x1/4	215	-6.18	21.28	29.0	Pass
							41.9 (b)	
T15	141.5 - 131.5	Top Girt	L2 1/2x2 1/2x1/4	240	-6.43	11.58	55.5	Pass
T16	131.5 - 119	Top Girt	2L2 1/2x2 1/2x1/4x3/8	311	-9.52	47.16	20.2	Pass
							27.3 (b)	
T17	119 - 106.5	Top Girt	2L2 1/2x2 1/2x1/4x3/8	352	-8.76	36.94	23.7	Pass
T15	141.5 - 131.5	Redund Horz 1 Bracing	L2 1/2x2x3/16	256	-2.93	14.46	20.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P_{allow} K	% Capacity	Pass Fail
T16	131.5 - 119	Redund Horz 1 Bracing	L2 1/2x2x3/16	331	-3.18	14.29	22.2	Pass
T17	119 - 106.5	Redund Horz 1 Bracing	L2 1/2x2x3/16	389	-3.58	13.76	26.0	Pass
T15	141.5 - 131.5	Redund Diag 1 Bracing	L2 1/2x2x3/16	287	-1.99	12.65	15.7	Pass
T16	131.5 - 119	Redund Diag 1 Bracing	L2 1/2x2x3/16	328	-3.68	5.32	69.2	Pass
T17	119 - 106.5	Redund Diag 1 Bracing	L2 1/2x2x3/16	360	5.43	23.29	23.3	Pass
T15	141.5 - 131.5	Redund Hip 1 Bracing	L2x2x1/4	303	-0.03	12.17	0.2	Pass
T16	131.5 - 119	Redund Hip 1 Bracing	L2x2x1/4	344	-0.15	11.45	1.3	Pass
T17	119 - 106.5	Redund Hip 1 Bracing	L2x2x1/4	402	-0.19	9.87	1.9	Pass
T17	119 - 106.5	Redund Hip Diagonal 1 Bracing	L2x2x1/4	419	-0.12	2.18	5.3	Pass
T17	119 - 106.5	Redund Sub Horz Bracing	L2 1/2x2x3/16	365	-4.03	20.91	19.3	Pass
T17	119 - 106.5	Redund Sub Diagonal Bracing	L2 1/2x2x3/16	394	-4.74	15.91	29.8	Pass
T10	191.5 - 181.5	Inner Bracing	L2 1/2x2 1/2x3/16	133	-0.05	5.55	0.8	Pass
T12	171.5 - 161.5	Inner Bracing	L2 1/2x2 1/2x3/16	178	-0.09	3.88	2.3	Pass
T14	151.5 - 141.5	Inner Bracing	L2x2 1/2x3/16	223	-0.09	1.91	4.8	Pass
T16	131.5 - 119	Inner Bracing	L3x3x3/16	316	-0.14	3.86	3.6	Pass
T17	119 - 106.5	Inner Bracing	L3x3x3/16	357	-0.13	3.33	3.9	Pass
						Summary		
						Leg (T1)	98.8	Pass
						Diagonal (T13)	87.3	Pass
						Horizontal (T15)	43.1	Pass
						Secondary Horizontal (T14)	18.8	Pass
						Top Girt (T15)	55.5	Pass
						Redund Horz 1 Bracing (T17)	26.0	Pass
						Redund Diag 1 Bracing (T16)	69.2	Pass
						Redund Hip 1 Bracing (T17)	1.9	Pass
						Redund Hip Diagonal 1 Bracing (T17)	5.3	Pass
						Redund Sub Horz Bracing (T17)	19.3	Pass
						Redund Sub Diagonal Bracing (T17)	29.8	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P_{allow} K	% Capacity	Pass Fail
						Inner Bracing (T14)	4.8	Pass
						Bolt Checks	67.3	Pass
						RATING =	**98.8**	**Pass**

APPENDIX 2 – SOURCE / CHANGED CONDITION

Tower / Radio Information - Call Sign information needs to be tied to a specific antenna(s). Adjust letters as needed.

A	Call Sign	KNLF202
	Class of Station	CW - PCS
	Emission Type	UMTS
	Transmit Frequency	1930-1945 MHz
	Output Power (watts)	40W
	Transmitter ERP (dBm)	2 x 62,5 dBm
	Receive Frequency	1850-1865 MHz

A	Call Sign	WQJQ696
	Class of Station	WY - Block A
	Emission Type	LTE
	Transmit Frequency	728-734
	Output Power (watts)	40W
	Transmitter ERP (dBm)	2 x 62,5 dBm
	Receive Frequency	698-704

A	Call Sign	WQGA731
	Class of Station	AW - AWS
	Emission Type	LTE
	Transmit Frequency	2135-2140
	Output Power (watts)	40W
	Transmitter ERP (dBm)	2 x 62,5 dBm
	Receive Frequency	1735-1740

A	Call Sign	WQKF358
	Class of Station	AW - AWS
	Emission Type	LTE
	Transmit Frequency	2130-2135
	Output Power (watts)	40W
	Transmitter ERP (dBm)	2 x 62,5 dBm
	Receive Frequency	1730-1735

A	Call Sign	WQGB373
	Class of Station	AW - AWS
	Emission Type	LTE
	Transmit Frequency	2140-2145
	Output Power (watts)	40W
	Transmitter ERP (dBm)	2 x 62,5 dBm
	Receive Frequency	1740-1745

A	Call Sign	WQPZ969
	Class of Station	AW - AWS
	Emission Type	LTE
	Transmit Frequency	2145-2155
	Output Power (watts)	40W
	Transmitter ERP (dBm)	2 x 62,5 dBm
	Receive Frequency	1745-1755

Coax / Waveguide / Cable Information	
Type:	Coax
Size:	1-5/8"
Length:	180'
# of runs:	30 - removing 1 for 29
Type:	Hybrid / fiber
Size:	1-5/8"
Length:	180'
# of runs:	1
Type:	**Cabling 105' on tower**
Size:	
Length:	
# of runs:	
Type:	Hybrid / fiber
Size:	1-1/4"
Length:	180'
# of runs:	1

	Antenna & Ancillary Equipment Information		**Check one**					**Heights** - Above Ground Level (feet)			**Notes:** (including removals, ice shields, etc.)
@	Make	Model	Existing	Proposed	Size / Dimensions	Weight	Azimuth	RAD Center	Attachment	Tip	
A	Ericsson (panel)	AIR32 B4A/B2P		x	56.6" x 12.9" x 8.7"	132.2 lbs	100	210'	208', 212'	212.3'	
A	Ericsson (panel)	AIR32 B4A/B2P		x	56.6" x 12.9" x 8.7"	132.2 lbs	220	210'	208', 212'	212.3'	
A	Ericsson (panel)	AIR32 B4A/B2P		x	56.6" x 12.9" x 8.7"	132.2 lbs	330	210'	208', 212'	212.3'	
A	Commscope (panel)	LNX-6515DS-VTM	x		96.4 x 11.9 x 7.1	50.3 lbs	100	203'	201', 205'	207'	
A	Commscope (panel)	LNX-6515DS-VTM	x		96.4 x 11.9 x 7.1	50.3 lbs	220	203'	201', 205'	207'	
A	Commscope (panel)	LNX-6515DS-VTM	x		96.4 x 11.9 x 7.1	50.3 lbs	330	203'	201', 205'	207'	
A	Ericsson	RRUS 11 B12	x		19.69" x 16.97" x 7.17" ea	50.71 lbs ea		203'	203'		Three (3) RRU units
A	Ericsson (panel)	AIR21	x		56" x 12" x 8"	91 lbs	100	210'	208', 212'	212.3'	to be removed
A	Ericsson (panel)	AIR21	x		56" x 12" x 8"	91 lbs	100	210'	208', 212'	212.3'	to be removed
A	Ericsson (panel)	AIR21	x		56" x 12" x 8"	91 lbs	220	210'	208', 212'	212.3'	to be removed
A	Ericsson (panel)	AIR21 B2A/B4P	x		56" x 12" x 8"	91 lbs	220	210'	208', 212'	212.3'	
A	Ericsson (panel)	AIR21 B2A/B4P	x		56" x 12" x 8"	91 lbs	330	210'	208', 212'	212.3'	
A	Ericsson (panel)	AIR21 B2A/B4P	x		56" x 12" x 8"	91 lbs	330	210'	208', 212'	212.3'	
A	Ericsson	KRY 112 71	x		12.5" x 5.6" x 3.7"	13.2 lbs ea		210'	210'		Three (3) TMA units
	Ericsson	RRUS 32 B2		x	27.1"x 12.0" x 7.0"	52.9 lbs		210'	210'		Three (3) RRU units

From: Sheldon F <sheldon@northeastsitesolutions.com>
Sent: Thursday, August 18, 2016 3:38 PM
To: Mark Malouf; McOmber
Cc: Joe Carbonell; Scott Chase; NSS All; Liz Adkins
Subject: RE: NESS / T-Mobile - Stamford / Dwtn #CT11410A - SA - 04/28/2016 / on hold - New PDQ dated 7/21/16

Yes, we are also replacing (1) coax with (1) hybrid.

Sheldon Freincle
Project Manager
(201) 776-8521

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

From: Sheldon F [mailto:sheldon@northeastsitesolutions.com]
Sent: Thursday, August 18, 2016 12:40 PM
To: Mark Malouf <MMalouf@maloufengineering.com>
Cc: Joe Carbonell <carbonell@northeastsitesolutions.com>; Scott Chase <scott@northeastsitesolutions.com>; NSS All <nssall@northeastsitesolutions.com>; Liz Adkins <LAdkins@maloufengineering.com>
Subject: RE: NESS / T-Mobile - Stamford / Dwtn #CT11410A - SA - 04/28/2016 / on hold - New PDQ dated 7/21/16

Thank you, Mark.

The structural is for CSC and we already have approval on the AIR32 antennas. We will need an analysis on the proposed RRU's only. Please show the AIR32 antennas as existing.

Sheldon Freincle
Project Manager
(201) 776-8521

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

June 27, 2016

Denise Sabo
Northeast Site Solutions
199 Brickyard Road
Farmington, CT 06032

RE: **EM-T-MOBILE-135-160527** – T-Mobile notice of intent to modify an existing telecommunications facility located at 555 Main Street, Stamford, Connecticut.

Dear Ms. Sabo:

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:

1. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;

2. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;

3. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;

4. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by T-Mobile shall be removed within 60 days of the date the antenna ceased to function;

5. The validity of this action shall expire one year from the date of this letter; and

6. 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 May 25, 2016 and additional information received on June 16, 2016. 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 by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut 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,

Melanie A. Bachman
Acting Executive Director

MAB/FOC/lm

c: The Honorable David Martin, Mayor, City of Stamford
Norman Cole, AICP, Land Use Bureau Chief, City of Stamford
The Southern New England Telephone Company